





Introduction

Welcome	2
Local feed through	3
Support for Standard and High Dynamic Ranges	4
Technical Specifications	5
ALIF4000 unit features	6
Supplied items	7
Optional extras	8

Installation

Connections	9
Mounting	9
TX video links	10
TX analog audio links	10
TX USB links	11
TX AUX (serial) port	11
TX power in	12
TX/RX high speed links	13
RX video display	15
RX microphone & speakers	15
RX USB devices	16
RX power in	17

Configuration

ALIF4000 configuration via web pages	18
Performing a manual factory reset	19
Placing the device into recovery mode	20
Configuring dual touchscreens	21
Creating an unmanaged matrix	22
Creating and editing presets	23

Operation

Front panel indications	24
Using the On Screen Display	25
Port status popups	26

Further information

Getting assistance	27
Appendix A - Configuration pages	28
Appendix B - Support for analog and digital audio	48
Appendix C - Tips for success when networking ALIF units	49
Appendix D - Troubleshooting	51
Appendix E - Glossary	53
Appendix F - Null modem cable pinout	56
Appendix G - Fiber/copper modules and cables	57
Appendix H - Using the optional ALIF4000 rack shelf	58
Appendix I - Open source licenses	59

Index

介

欢迎.....	2
本地进料.....	3
支持标准和高动态范围.....	4
技术规范.....	5
ALIF4000装置特点.....	6
已提供的项目.....	7
可选附加组件.....	8

安装

连接.....	9
正在安装.....	9
TX视频链接.....	10
TX模拟音频链接.....	10
TX USB链路.....	11
TX AUX（串行）端口.....	11
TX电源输入.....	12
TX/RX高速链路.....	13
RX视频显示器.....	15
RX麦克风和扬声器.....	15
RX USB设备.....	16
RX电源输入.....	17

配置

通过网页配置ALIF4000.....	18
执行手动出厂重置.....	19
将设备置于恢复模式.....	20
配置双触摸屏.....	21
创建非托管矩阵.....	22
创建和编辑预设.....	23

操作

前面板指示灯.....	24
使用屏幕显示.....	25
端口状态弹出窗口.....	26

进一步资料

获得援助.....	27
附录A-配置页面.....	28
附录B——模拟和数字音频支持.....	48
附录C-ALIF单元网络连接成功提示.....	49
附录D-故障排除.....	51
附录E-术语表.....	53
附录F-空调制解调器电缆引脚排.....	56
附录G-光纤/铜缆模块和电缆.....	57
附录H-使用可选ALIF4000机架.....	58
附录一：开放源码许可证.....	59

索引

Introduction



WELCOME

Thank you for choosing the ADDERLink™ INFINITY 4000 (aka ALIF4000) high performance extenders. The ALIF4000 range offers dual-head 4K, audio and USB delivered over a single fiber connection. Pixel-perfect color, accurate picture quality and USB2.0 with fast switching.

Product in brief

- Support for dual link speeds up to 10GbE using either CATx and/or fiber. Two model variants available:
 - **ALIF4001** models* have two SFP sockets for CATx or fiber modules (up to 10GbE).
 - **ALIF4021** models have two fixed 1GbE CATx ports as well as two SFP sockets for additional CATx or fiber modules (up to 10GbE).
- Dual-head 5K, video, audio and USB over a single fiber connection,
- Pixel-perfect, color accuracy at 4K60,
- Support for 5K resolution: 5120 pixels by 2880*, 2160 or 1440 (* at 30Hz refresh)
- Support for 240Hz frame rate at HD resolutions,
- Support for three dynamic color ranges: SDR8, SDR10 and HDR10 (see page 4),
- Bi-directional analog audio,
- DisplayPort™ audio with 2, 4, 6 or 8 channels on both video heads (supports 5.1 and 7.1),
- Adder's USB True Emulation for fast switching,
- Support for local feed through, using an additional ALIF transmitter to allow a local host PC to be connected directly to an ALIF4000 RX in addition to its network links (see page 3),
- Support for advanced diagnostic and troubleshooting tools,
- Backwards compatibility with existing ALIF range,
- Plug and play.

*ALIF4001 models are only supported by software version v5.05 or later.

Safety

Please refer to the safety booklet provided in the box before use of this product.

Linking

ALIF4000 units can be linked in two main ways: Direct or Networked.

Direct linking

Where ALIF4000 transmitters and receivers are directly linked to each other, very little configuration action is required, provided that they both have their factory default settings in place - just link them together. If the standard settings have been changed in a previous installation, you merely need to perform a [manual factory reset](#) on each unit.

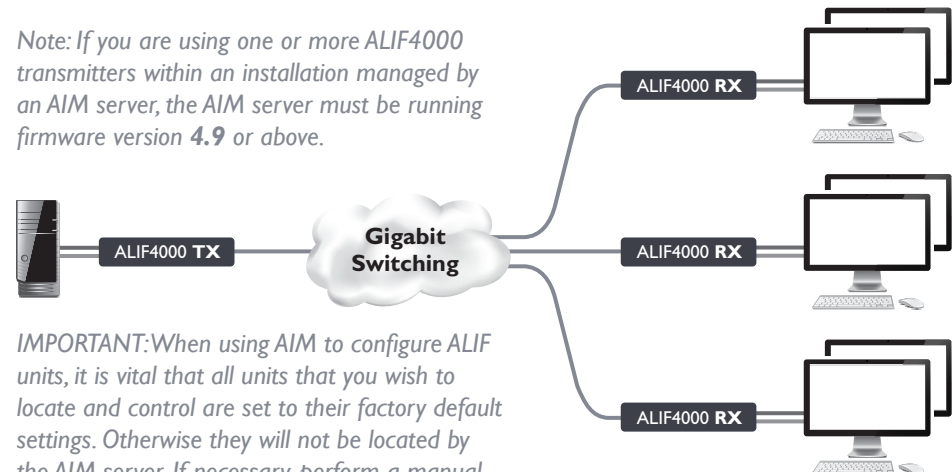


Networked linking

Where ALIF4000 units are connected via networked links, you can either configure them individually, or configure them collectively using an AIM server:

- **Configuring networked ALIF units individually** - In the absence of an AIM server, unallocated ALIF4000 units have the ability to locate each other. You can alter settings via the OSD on the console connected to the RX unit by pressing **CTRL + ALT + C**.
- **Configuring networked ALIF units collectively** - The ADDERLink™ INFINITY Management (AIM) server allows you to configure, control and coordinate any number of ALIF transmitters and receivers from a single application.

Note: If you are using one or more ALIF4000 transmitters within an installation managed by an AIM server, the AIM server must be running firmware version 4.9 or above.



IMPORTANT: When using AIM to configure ALIF units, it is vital that all units that you wish to locate and control are set to their factory default settings. Otherwise they will not be located by the AIM server. If necessary, perform a manual factory reset on each ALIF unit.

See [Start of Life: AIM or Point to Point configuration](#)

欢迎

感谢您选择ADDERLink™INFINITY 4000（又名ALIF4000）高性能扩展器。ALIF 4000系列通过单根光纤连接即可实现双头4K、音频和USB传输。精准的色彩还原、清晰的画面质量以及支持快速切换的USB2.0接口，让您的设备体验更上一层楼。

产品简介

- 支持使用CATx和/或光纤实现高达10GbE的双链路速度。提供两种型号变体：
 - ALIF4001型号*具有两个SFP插槽，用于CATx或光纤模块（最高10GbE）。
 - ALIF4021型号有两个固定的1GbE CATx端口以及两个SFP插槽，用于安装额外的CATx或光纤模块（最高可达10GbE）。
- 双头5K，视频，音频和USB通过单根光纤连接，
- 像素完美，4K60色彩准确度，
- 支持5K分辨率：5120像素×2880*、2160或1440（*在30Hz刷新率下）
- 支持240Hz帧率的高清分辨率，
- 支持三种动态色彩范围：SDR8、SDR10和HDR10（参见第4页），•双向模拟音频，
- 双视频接口支持2、4、6或8声道DisplayPort™音频（兼容5.1和7.1声道），•采用Adder公司USB真模拟技术实现快速切换，
- 支持本地馈入，使用额外的ALIF发射器允许本地主机PC除了网络链接之外直接连接到ALIF4000RX（参见第3页），
- 支持高级诊断和故障排除工具，
- 与现有ALIF系列的向后兼容性，
- 即插即用。

*ALIF4001型号仅支持软件版本v5.05或更高版本。

安全

使用本产品前请参考包装盒内提供的安全手册。

耦合

ALIF4000设备可通过两种供电方式连接：直接或网络。

直接链接

如果ALIF4000变送器和接收器彼此直接连接，则几乎不需要进行任何配置操作，只要它们都处于出厂默认设置即可——只需将它们连接起来即可。如果在以前的安装中更改了标准设置，则只需对每个装置执行**手动出厂重置**即可。



网络链接

如果ALIF4000设备通过网络链接进行连接，则可以单独配置它们，也可以使用AIM服务器对它们进行集中配置：

- 单独配置网络化的ALIF单元** - 在没有AIM服务器的情况下，未分配的ALIF4000单元能够相互定位。通过按**CTRL + ALT + C**，可以使用连接至RX单元的控制台上的OSD来更改设置。
- 集成式网络化ALIF装置的配置**—ADDERLink™INFINITY管理（AIM）服务器允许您通过单个应用程序配置、控制和协调任意数量的ALIF发射器和接收器。

注：如果在一个由AIM服务器管理的安装中使用一个或多个ALIF4000发送器，则AIM服务器必须运行**固件版本4.9**或更高版本。



重要提示：使用AIM配置ALIF设备时，必须将所有待定位和控制的设备设置为出厂默认设置。否则系统将无法定位这些设备。AIM服务器。如有必要，对每个ALIF单元执行**手动出厂重置**。

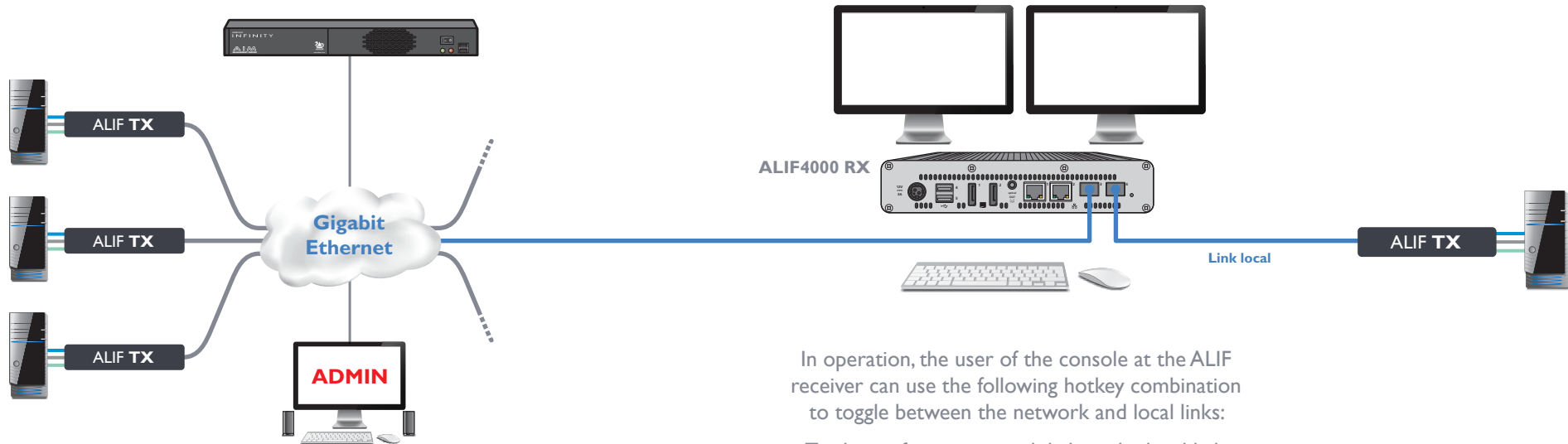
请参阅 [“Life开始：AIM或点对点配置”](#)

LOCAL FEED THROUGH

ALIF receiver units can be configured to support a local link to a separate host PC, via a dedicated ALIF transmitter, in addition to the main link to the network. The locally linked PC remains completely isolated from the main network.

To configure this arrangement, ensure that the receiver is using its default IP address and is directly connected to the transmitter. The transmitter must use its primary network port, which is the interface using 169.254.1.33 as its default address, and be configured to either “Auto” or “Allow” for insecure connections (see “Insecure connections” on page 40). The easiest way to do this is to use a factory new or factory reset transmitter; you can then change any additional settings after connecting it to the receiver.

Notes: For the local feed through feature to operate, the AIM server must be at version 4.8 or greater while the endpoints must be at version 4.0 or greater. The TX must use its primary network port and be in its default configuration, which can be achieved via a new unit or a factory refresh, when connected to the RX.



In operation, the user of the console at the ALIF receiver can use the following hotkey combination to toggle between the network and local links:

To change from a network link to the local link:
enter CTRL+ALT+L

To change from the local link to a network link:
enter CTRL+ALT +C
to display the OSD and choose
the required connection.

Note: The L and C default hotkeys can be changed within the AIM control panel.

本地进料通道

ALIF接收器单元可配置为支持通过专用ALIF发送器与单独的主机PC建立本地链路，除了到网络的主链路之外。本地链接的PC完全与主网络隔离。

要配置此设置，请确保接收器使用其默认IP地址且直接连接到发射器。发射器必须使用其主网络端口（该接口默认使用169.254.1.33作为地址），并将其非安全连接配置为“自动”或“允许”（参见第40 40页的“非安全连接”）。最简便的方法是使用出厂新机或已恢复出厂设置的发射器，连接接收器后即可修改其他所有设置。

注：要使本地直通功能运行，AIM服务器必须为4.8或更高版本，而端点必须为4.0或更高版本。TX必须使用其主网络端口并处于默认配置，当连接到RX时，可通过新设备或工厂刷新实现。



在操作中，ALIF接收器的控制台用户可以使用以下热键组合

在网络与本地链路之间切换：

要从网络链路切换到本地链路：

输入CTRL+ALT+L

要从本地链路切换到网络链路：输入CTRL+

ALT+C以显示OSD并选择所需的连接。

注：L和C默认热键可以在AIM控制面板中更改。

SUPPORT FOR STANDARD AND HIGH DYNAMIC RANGES (SDR8/SDR10/HDR10)

With the introduction of firmware versions 4.00 (and above), ALIF4000 models now support video signals with color formats that use 30-bpp (bits per pixel) as well as the standard 24-bpp. The supported dynamic ranges are:

- **SDR8** - Uses 24-bpp (ie. 8-bits per color), as supported across the ALIF range.
- **SDR10** - Uses 30-bpp (10-bits per color) in order to define a wider color gamut.
- **HDR10** - Uses 30-bpp to define a wider color gamut and also benefits from support for ST2084 dynamic range mastering and BT.2020 colorimetry.

All ALIF devices use the AFZ24 codec to support SDR8 signals; ALIF4000 devices (with firmware v4.xx) also use the newer AFZ30 to support SDR10 and HDR10 modes.

The ability to successfully deliver full SDR10 or HDR10 video signals from a host PC to any particular remote video display relies upon a series of factors:

- The host PC must produce video signals with SDR10 or HDR10 content.
- The ALIF4000 TX must have firmware v4.00 or greater.
- The receiving ALIF4000 RX units must have firmware v4.00 or greater.
- The video display(s) connected to a receiver must support SDR10 or HDR10.

Where possible, you are recommended to upgrade all ALIF4000 devices to 4.xx firmware. Where a mix of ALIF4000 and non-ALIF4000 receivers exist, an ALIF4000 TX will respond in manner discussed on the right to negotiate access.

To lock an ALIF4000 TX into SDR8 mode

If a mixture of new and legacy devices is unavoidable **and** it is vital that no legacy receiver is ever locked out from a particular ALIF4000 TX, then set the ALIF4000 TX to use a maximum of 24-bpp (regardless of the input signal):

If the unit IS under AIM control

- 1 Login to the AIM suite.
- 2 Click the Transmitters tab and locate the ALIF4000 TX within the list of devices.
- 3 Click the icon for the ALIF4000 TX.
- 4 For video port 1, set the Maximum Bits Per option to '24bpp'.
- 5 Repeat step 4 for video port 2, if necessary.
- 6 Click the Save button.

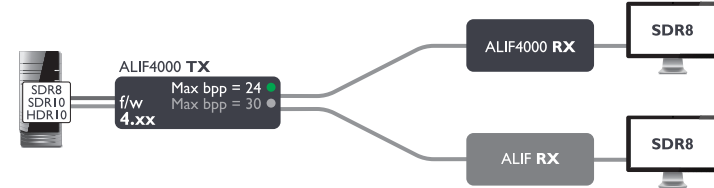
If the unit is NOT under AIM control

- 1 On the console keyboard attached to an RX unit, access the OSD by pressing: **CTRL + ALT + C**.
- 2 Click on the **Transmitters** option and click the icon for the required TX.
- 3 Click the **Ports** link and ensure that the page is selected.
- 4 For video port 1, set the Max Bits per Pixel option to '24'.
- 5 Repeat step 4 for video port 2, if necessary.
- 6 Click the Apply button.

Mixing devices

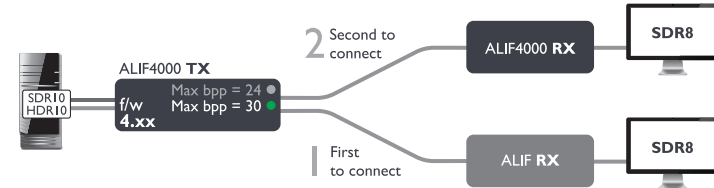
Care should be taken when using a mixture of ALIF4000 (v4.00 and greater) and non-ALIF4000 devices. It is not possible for an ALIF 4000 TX to deliver SDR10/HDR10 to multiple RX units if one or more of them are only able to process SDR8. When a mixture of RX devices make connection, the TX will employ the following methods to negotiate access - on a first-come, first-served basis:

TX configured to use only 24-bpp



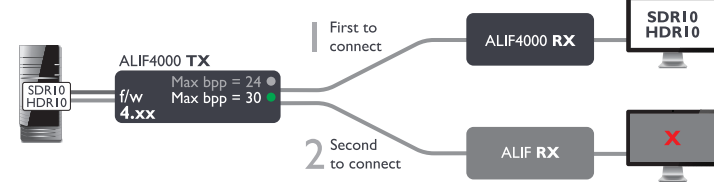
Max Bits per Pixel is set to '24' on the ALIF4000 TX. This means that regardless of the signal type received from the host (SDR8, SDR10 or HDR10), the TX will only send out SDR8. Consequently, all types of ALIF RX units are fully supported, albeit at the lower dynamic range and color depth (see lower left).

Non-ALIF4000 RX connects first



Max Bits per Pixel is set to '30' on the ALIF4000 TX. However, the first RX to connect with the TX is a non-ALIF4000 type, which means that the TX scales back the video output to SDR8 for this and all subsequent RX units.

ALIF4000 RX connects first



The ALIF4000 TX has been set to either SDR10 or HDR10. The first to connect with the TX is an ALIF4000 RX and subsequently receives SDR10/HDR10 output. The next to join is a non-ALIF4000 RX and is rejected from connecting. It will continue to attempt a connection.

After either of the last two scenarios have occurred; once all RX units have disconnected, the ALIF4000 TX will revert to SDR8, SDR10 or HDR10 (as determined by the host signal and the ALIF4000 TX settings) and be ready to respond accordingly to connecting RX units.

对标准动态范围和高动态范围（SDR8/SDR10/HDR10）的支持

随着固件版本4.00（及更高版本）的推出，ALIF4000型号现在支持使用30-bpp

（每像素位数）以及标准24-bpp的彩色格式视频信号。支持的动态范围为：

- **SDR8**—使用24-bpp（即每种颜色8位），这在ALIF系列中得到支持。
 - **SDR10** -使用30-bpp（每颜色10位）以定义更宽的色域。
 - **HDR10**—使用30-bpp来定义更宽的色域，并且得益于对ST2084动态范围制作和BT.2020色度测量的支持。
- 所有ALIF设备均使用AFZ24编解码器来支持SDR8信号；ALIF4000设备（固件v4.xx）还使用更新的AFZ30来支持SDR10和HDR10模式。
- 从主机PC向任何特定远程视频显示器成功传送完整的SDR10或HDR10视频信号的能力取决于以下一系列因素：
- 主机PC必须产生具有SDR10或HDR10内容的视频信号。
 - ALIF4000 TX必须具有v4.00或更高版本的固件。
 - 接收ALIF4000 RX设备必须具有v4.00或更高版本的固件。
 - 连接到接收器的视频显示器(s)必须支持SDR10或HDR10。建议您尽可能将所有ALIF4000设备升级至4.xx固件。如果ALIF4000接收器与非ALIF4000接收器混合使用，ALIF4000发射器将按照右侧讨论的方式响应以协商访问。

将ALIF4000 TX锁定在SDR8模式

如果新设备和旧设备的混合使用不可避免，并且必须确保没有旧版接收器被锁定在特定的ALIF4000发送器之外，则将ALIF4000发送器设置为使用最大24bps速率（无论输入信号如何）：

如果设备处于AIM控制下

- 1 登录到AIM套件。
- 2 单击发送器选项卡，并在设备列表中找到ALIF4000 TX。
- 3 单击 ALIF4000 TX的图标。
- 4 对于视频端口1，将“Maximum Bits Per”选项设置为“24bpp”。
- 5 如果需要，对视频端口2重复步骤4。
- 6 单击“保存”按钮。

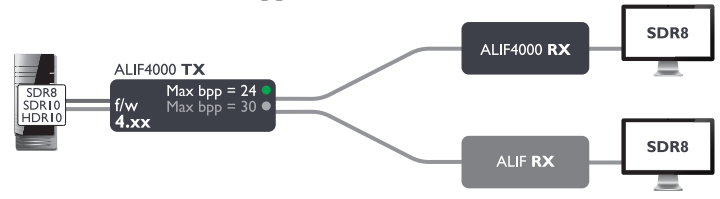
如果设备未处于AIM控制下

- 1 在连接RX装置的控制台键盘上，按下以下键可访问OSD：
CTRL + ALT + C。
- 2 单击**发射器**选项，然后单击 所需TX的图标。
- 3 单击**端口**链接并确保 页面被选中。
- 4 对于视频端口1，将“每像素最大位数”选项设置为“24”。
- 5 如果需要，对视频端口2重复步骤4。
- 6 单击“应用”按钮。

混合装置

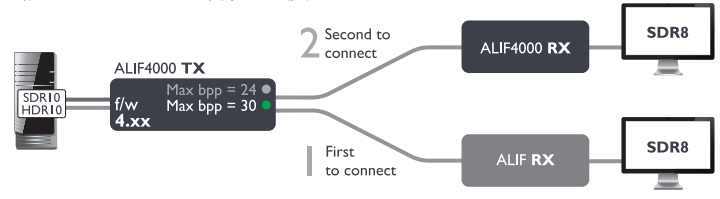
当使用ALIF4000（v4.00及以上版本）与非ALIF4000设备的混合配置时需特别注意。若多个接收单元仅支持SDR8协议，ALIF 4000发射器将无法向这些设备同时传输SDR10/HDR10信号。当不同型号接收设备连接时，发射器将采用先先得的访问机制进行协议协商：

TX配置为仅使用24-bpp



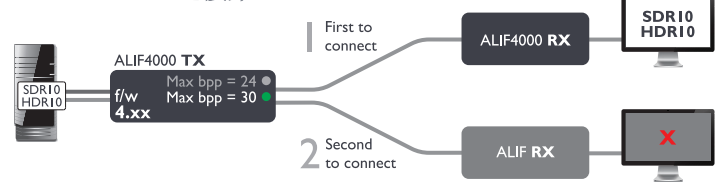
在ALIF4000TX上，将“最大比特数/像素”设置为“24”。这意味着，无论从主机接收的信号类型是什么（SDR8、SDR10 或 HDR10），TX将只发送SDR8。因此，所有类型的ALIF RX单元都得到完全支持，尽管其动态范围和颜色深度较低（请参见左下方）。

非ALIF4000 RX首先连接



在ALIF4000TX上，将“最大比特数/像素”设置为“30”。但是，第一个RX与TX连接的类型不是ALIF4000型，这意味着TX将视频输出缩回到SDR8，用于此RX和所有后续RX单元。

ALIF4000 RX连接第一



ALIF4000 TX已被设置为SDR10或HDR10。第一个连接到TX的是ALIF4000 RX，随后接收SDR10/HDR10输出。下一个要加入的设备是非ALIF4000 RX，它被拒绝连接。它将继续尝试进行连接。

在最后两种情况中的任一种发生后：一旦所有RX单元都断开连接，ALIF4000 TX将恢复为SDR8、SDR10或HDR10（由主机信号和ALIF4000 TX设置确定），并准备好相应地响应连接的RX单元。

TECHNICAL SPECIFICATIONS

Operating/storage conditions

Operating temperature:	0 to 50°C / 32 to 122°F
Storage temperature:	0 to 50°C / 32 to 122°F
Storage and operating relative humidity:	10 to 90% non-condensing
Altitude:	< 2000m

Power

External power:	12VDC, 5A
Typical power consumption:	20W

Physical

Dimensions	(L)210mm /8.3" x (W)215mm/8.5" x (D)40mm/1.6"
Weight:	1.8kg / 4 lbs

Materials

Aluminium and steel construction

Connectors

Local Unit - Transmitter (TX)

Computer:	2x DisplayPort™, 2x USB type B, 2x 3.5mm audio jack sockets, 1x DB9 socket. 3-pin Kycon power socket. ALIF400I model: 2x SFP sockets for up to 10GbE fiber/CATx network connections. ALIF402I model: 2x 8p8c RJ45 CATx ports for 1GbE (no 10/100 support) plus 2x SFP sockets for up to 10GbE fiber or CATx network connections.
-----------	--

Remote Unit - Receiver (RX)

Desk:	2x DisplayPort, 5x USB type A, 2x 3.5mm audio jack sockets, 1x 3.5mm SPDIF socket. 3-pin Kycon power socket. ALIF400I model: 2x SFP sockets for up to 10GbE fiber/CATx network connections. ALIF402I model: 2x 8p8c RJ45 CATx ports for 1GbE (no 10/100 support) plus 2x SFP sockets for up to 10GbE fiber or CATx network connections.
-------	---

USB

4 ports of USB2.0 with USB True Emulation to support keyboard, mouse and touch.
1 additional port provides transparent high speed USB2.0, best suited to mass storage, web cams, headsets and microphones.
USB device seen as: 7 or 13 port hub

Max video resolution

Supports 4K UHD or DCI and refresh rates to 60Hz
Supports 5K at 60, 50 or 30Hz refresh rates (dependent on vertical resolution)
Supports 8- and 10-bit color depth

Audio

Analog Line in/out 2 channel 16bit 48KHz 1V RMS in / 1V RMS out
DisplayPort digital audio (LPCM), up to 8 channels, 16, 20 or 24bit, 32, 44.1, 48, 88.2, 96, 176.4 or 192KHz

Ethernet

ALIF400I model* features 2x SFP ports: CATx support for 10,5,2.5 and 1GbE. Fiber support for 10GbE (no 10/100/1000 support).

ALIF402I model* features 2x SFP ports: CATx support for 10,5,2.5 and 1GbE. Fiber support for 10GbE (no 10/100/1000 support).
Plus 2x 8p8c RJ45 CATx ports: Support for 1GbE (no 10/100 support).

Packing Box

Dimensions:	(L) 285mm /11.2" x (W) 245mm/9.6" x (D)145mm/5.7"
Weight:	2.5kg / 5.5lb

Approvals / Compliance

CE and FCC: See the compliance web page for the full list

Product information labels

The product information labels are located on the base of each unit.

* Software version v5.05 or later required.

技术规格

操作/储存条件

工作温度:	0到50°C/32到122°F
储存温度:	0到50°C/32到122°F
储存和操作相对湿度:	10至90%无冷凝
海拔	< 2000m

权力

外部电源:	12VDC, 5A
典型功耗:	20W

身体

尺寸	(L)210mm /8.3" x (W)215mm/8.5" x (D) 40毫米/1.6英寸
----	--

体重:	1.8kg / 4 lbs
-----	---------------

材料

铝、钢结构

连接器

本地单元-发射器 (TX) 计算机

2x DisplayPort™, 2x USB type B,
2x 3.5mm 音频插孔,
1 个 DB9 插座。3 针 Kycon 电源插座。
ALIF4001型: 2个SFP插座, 用于最多10
GbE 光纤 /CATx 网络连接。**ALIF4021**
型: 2个8p8c RJ45 CATx端口, 用于1GbE
(不支持10/100) 以及2个SFP插座, 用
于最多10GbE光纤或CATx网络连接。

远程装置-接收器 (RX) 办公桌:

2x DisplayPort, 5x USB type A,
2x 3.5mm 音频插孔,
1x 3.5mm SPDIF插座。3针Kycon电源插
座。
ALIF4001型: 2个SFP插槽, 最多支持10
GbE光纤/CATx网络连接。**ALIF4021**型: 2
个8p8c RJ45 CATx端口, 支持1GbE (不支
持10/100) 以及2个SFP插槽, 最多支持10
GbE光纤或CATx网络连接。

统一的S波段

4个USB2.0端口, 支持USB真实模拟, 可支持键盘、鼠标和触摸。

1个额外端口提供透明高速USB2.0, 最适合大容量存储,
网络摄像头, 耳机和麦克风。

USB设备视为: 7端口或13端口集线器

最大视频分辨率

支持4K UHD或DCI, 刷新率高达60Hz

支持以60、50或30Hz刷新率进行5K扫描 (取决于垂直分辨率) 支持8位和10

位颜色深度

音频

模拟线路输入/输出, 2通道, 16位, 48KHz, 1V RMS输入/ 1V RMS输出

DisplayPort数字音频 (LPCM), 最多支持8通道, 支持16、20或24位, 32、44.1、48、88.2、96等规格。
176.4或192KHz

以太网

ALIF4001型号*具有2个SFP端口: 支持CATx, 可实现10、5、2.5和1GbE。
支持10GbE光纤 (不支持10/100/1000)。

ALIF4021型号*具有2个SFP端口: 支持CATx, 可实现10、5、2.5和1GbE。
支持10GbE的光纤 (不支持10/100/1000)。

Plus 2x 8p8c RJ45 CATx端口: 支持1GbE (不支持10/100)。

包装箱

尺寸: (长) 285毫米/11.2英寸x (宽) 245毫米/9.6英寸x (高) 145毫米/5.7英寸

体重: 2.5kg / 5.5lb

批准 / 合规

CE和面心立方: 请参阅合规网页以获取完整列表

产品信息标签

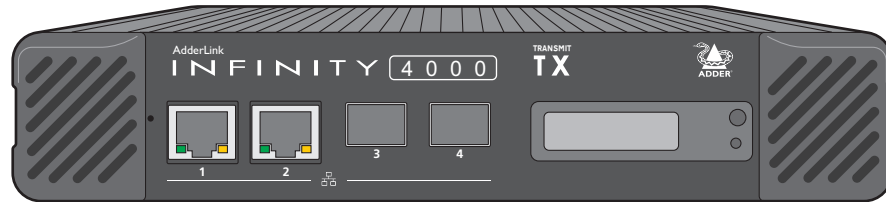
产品信息标签位于每个装置的底部。

*要求软件版本v5.05或更高版本。

ALIF4000 UNIT FEATURES

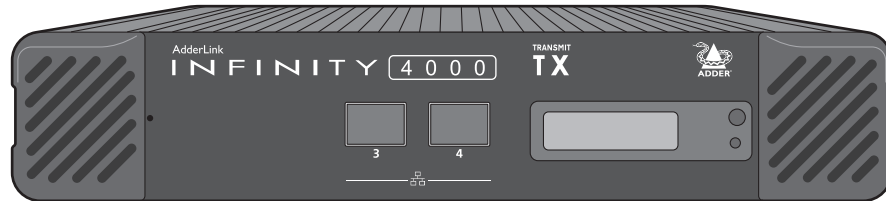
The transmitter and receiver modules are housed within durable, vented enclosures with connectors situated on the front and rear panels. The ALIF4001 model variants have two SFP sockets rather than SFP sockets plus CATx, but are otherwise identical.

Transmitter - front (ALIF4021 model)



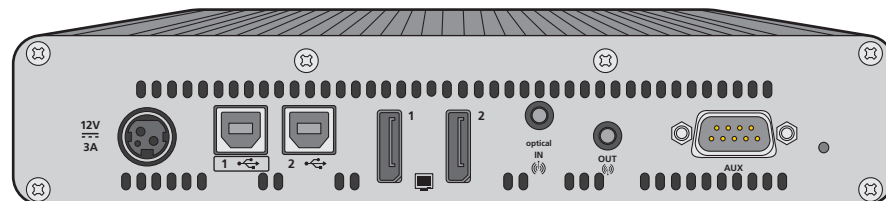
- Reset switch
- CATx and SFP link ports
- OLED screen, control button and status indicator

Transmitter - front (ALIF4001 model)



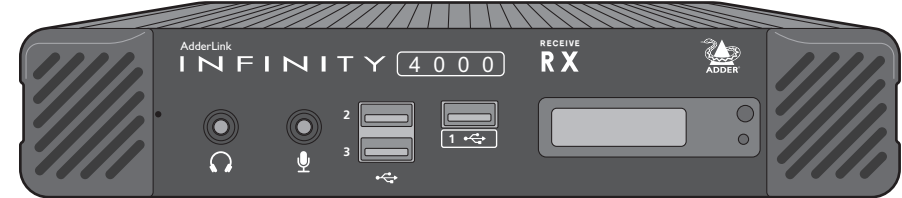
- 2x SFP link sockets

Transmitter - rear



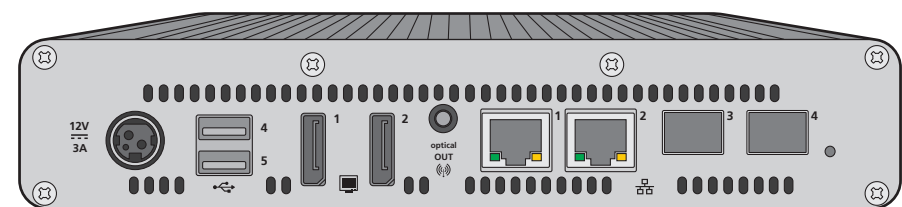
- Power in
- USB
- Reserved
- Secondary video in
- Analog audio in
- Analog audio out
- Serial (Auxiliary) port

Receiver - front



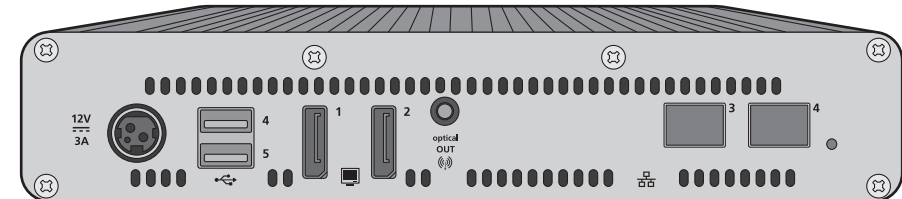
- Reset switch
- Headphones (analog audio)
- Microphone (analog audio)
- USB
- USB2.0 transparent high speed port
- OLED screen, control button and status indicator

Receiver - rear (ALIF4021 model)



- Power in
- USB
- Primary display
- Secondary display
- Analog audio line out
- CATx and SFP link ports

Receiver - rear (ALIF4001 model)

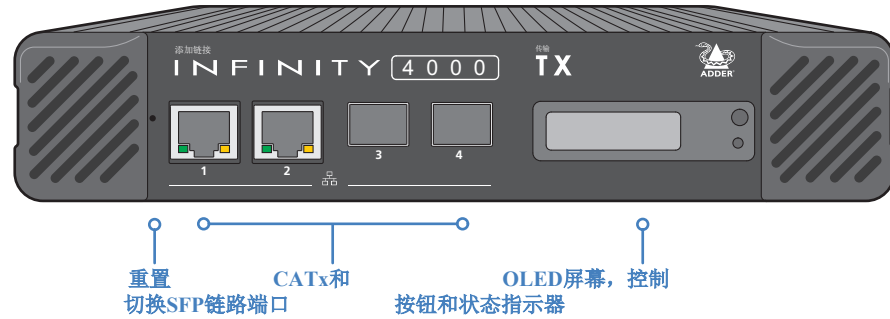


- 2x SFP link sockets

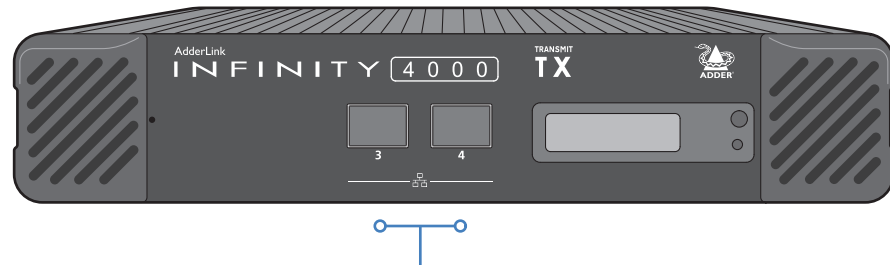
ALIF4000装置功能

发射器和接收器模块安装在耐用的带通风孔的外壳内，连接器位于前面板和后面板上。ALIF4001型号变体具有两个SFP插座，而不是SFP插座加上CATx，但除此之外完全相同。

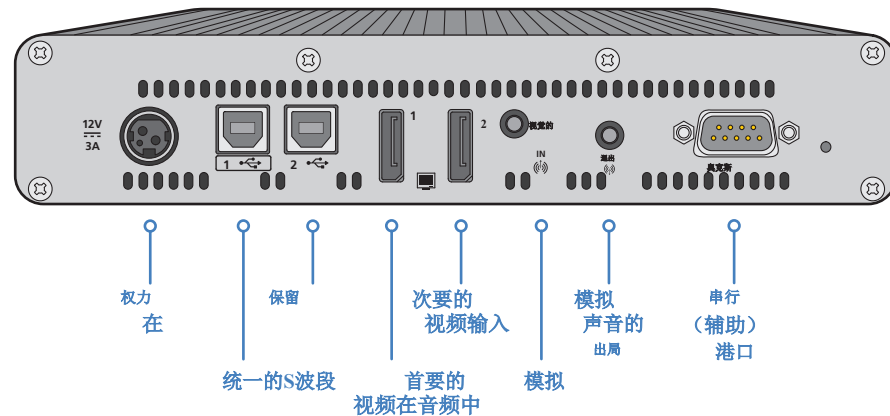
发射器-前部 (ALIF4021型)



发射器-前部 (ALIF4001型)



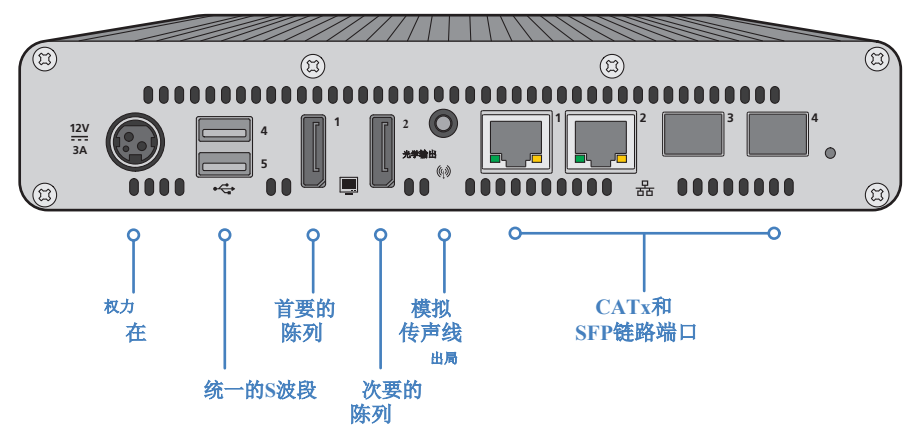
发射器-后部



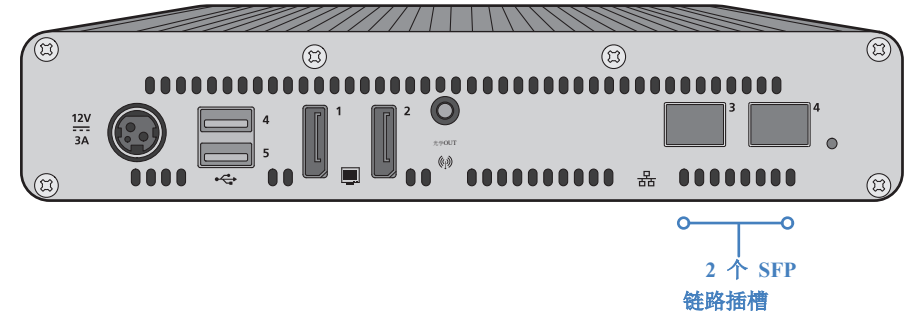
接收器-前部



接收器-后部 (ALIF4021型)

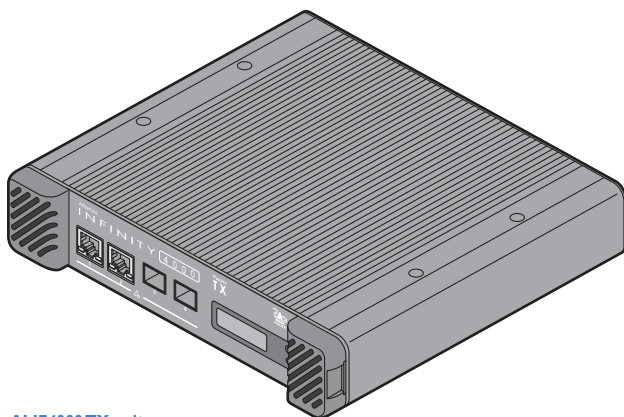


接收器-后部 (ALIF4001型)



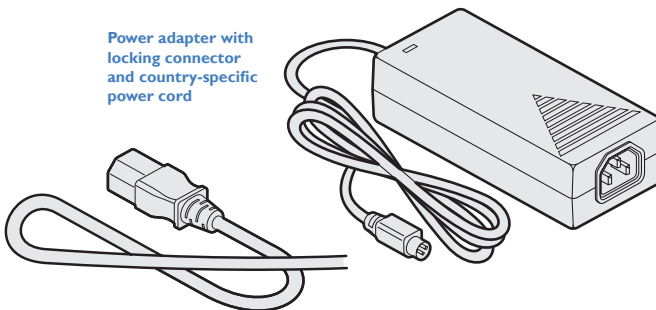
SUPPLIED ITEMS

ALIF4000 TX package

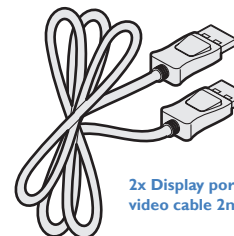


ALIF4000 TX unit

Power adapter with
locking connector
and country-specific
power cord

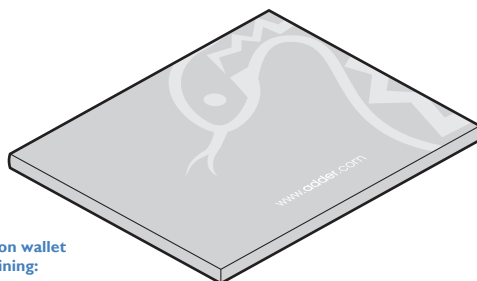


2x Display port
video cable 2m

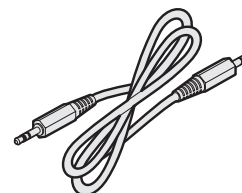


Information wallet
containing:

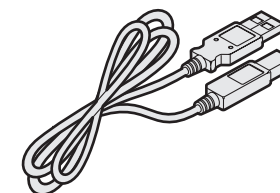
Four self-adhesive rubber feet
Quick start guide
Safety document



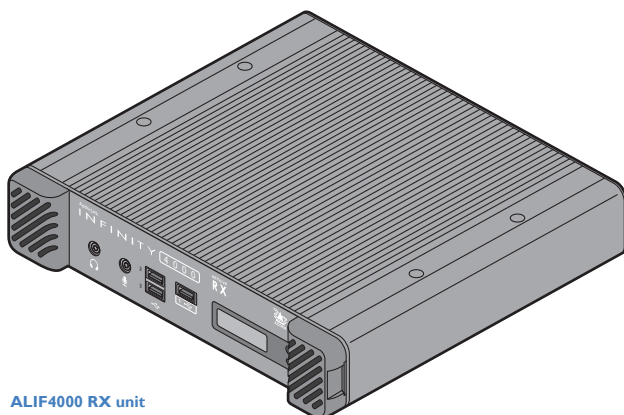
2x Audio cable 2m
(3.5mm stereo jacks)



2x USB cable 2m (type A to B)
Part number: VSC24



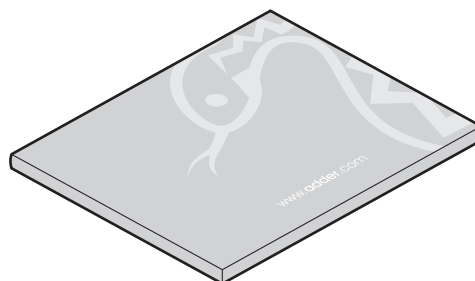
ALIF4000 RX package



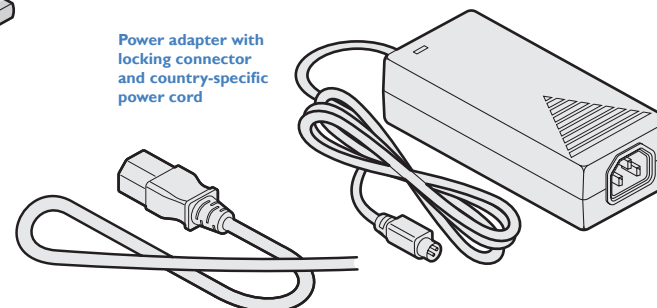
ALIF4000 RX unit

Information wallet
containing:

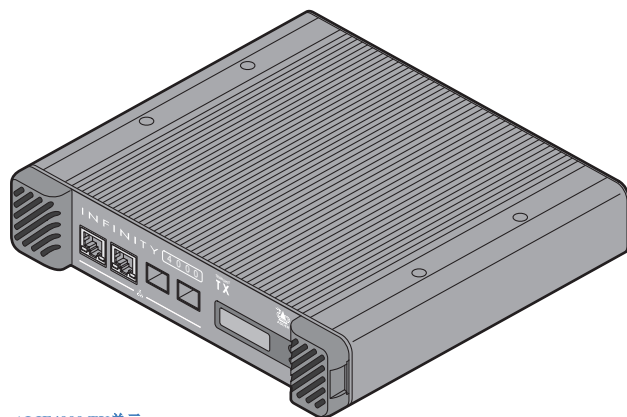
Four self-adhesive rubber feet
Quick start guide
Safety document



Power adapter with
locking connector
and country-specific
power cord

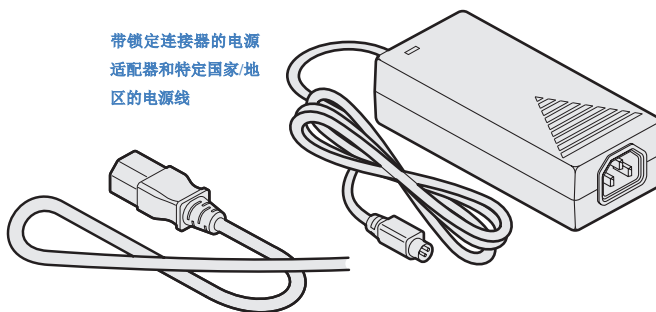


ALIF4000 TX软件包

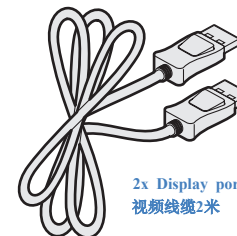


ALIF4000 TX单元

带锁定连接器的电源
适配器和特定国家/地
区的电源线

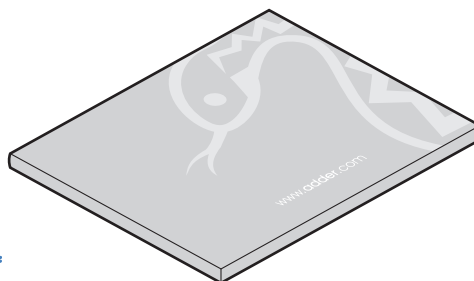


2x Display port
视频线2米

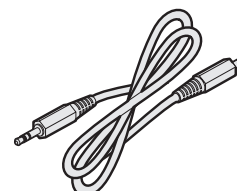


信息钱包包含:

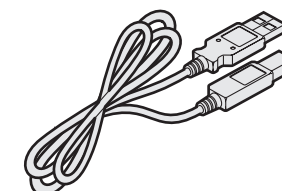
四个自粘橡胶脚垫快速启动
指南安全文件



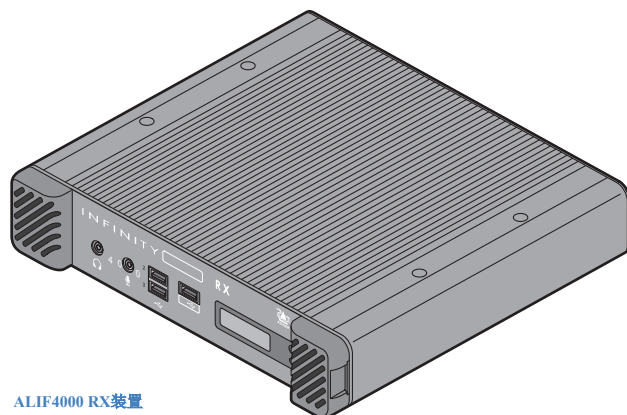
2根音频线 (2米, 3.5
mm立体声插孔)



2根2米USB线 (A型转B型)
部件号: VSC24



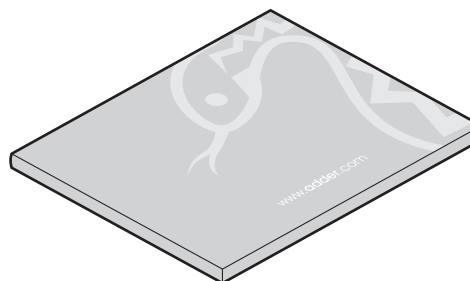
ALIF4000 RX软件包



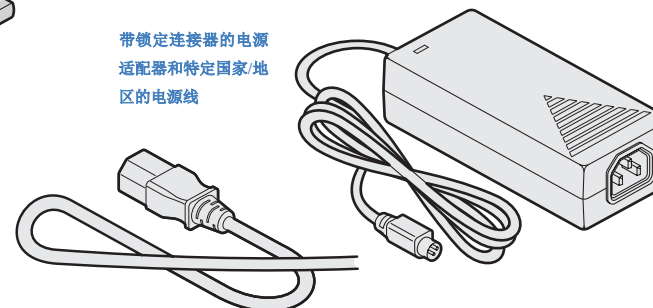
ALIF4000 RX装置

信息钱包包含:

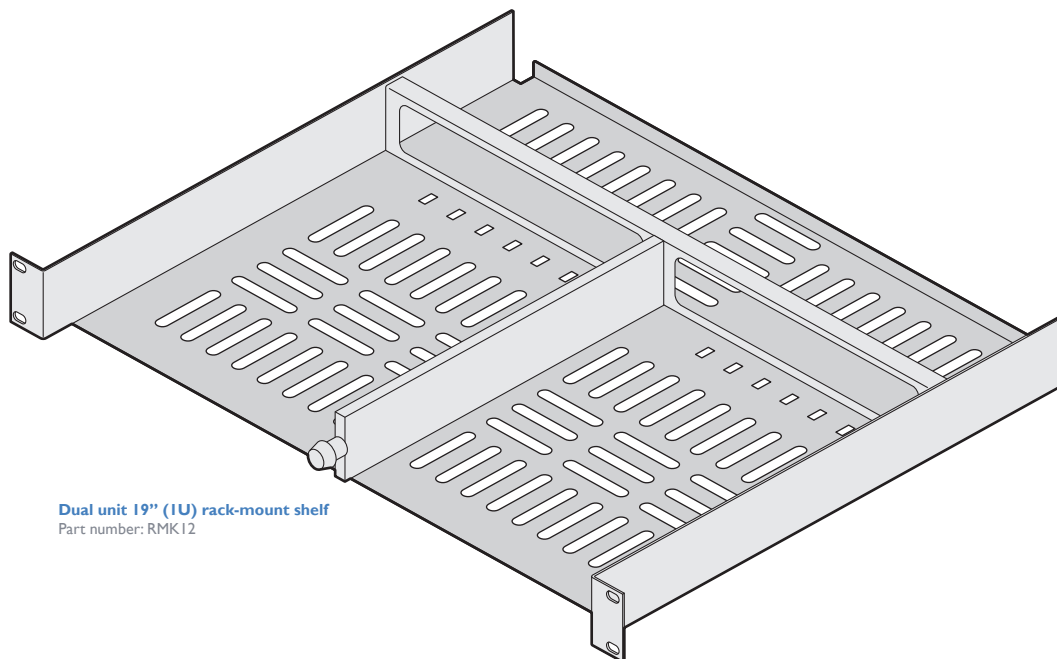
四个自粘橡胶脚垫快速启动
指南安全文件



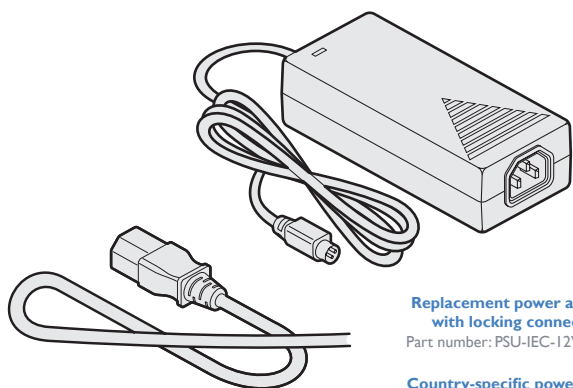
带锁定连接器的电源
适配器和特定国家/地
区的电源线



OPTIONAL EXTRAS

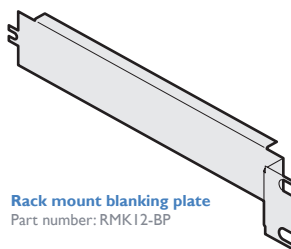


Dual unit 19" (1U) rack-mount shelf
Part number: RMK12

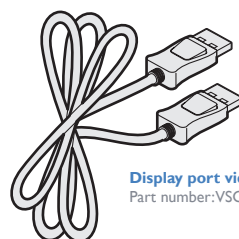


Replacement power adapter with locking connector
Part number: PSU-IEC-12VDC-5A

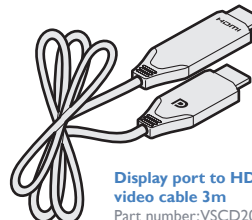
Country-specific power cords
CAB-IEC-AUS (Australia)
CAB-IEC-EURO (Central Europe)
CAB-IEC-UK (United Kingdom)
CAB-IEC-USA (United States)
CAB-IEC-JP (Japan)
CAB-IEC-CN (China)



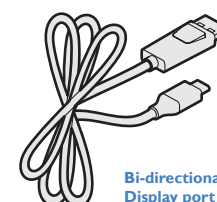
Rack mount blanking plate
Part number: RMK12-BP



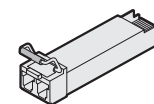
Display port video cable 2m
Part number: VSCD10A



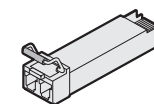
Display port to HDMI 2.1 video cable 3m
Part number: VSCD20



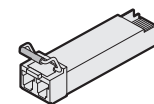
Bi-directional USB type C to Display port video cable 2m
Part number: VSCD21



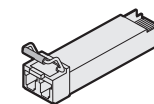
1GbE single mode fiber SFP module*
Part number: SFP-SM-LC



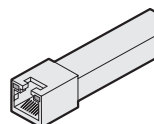
10GbE single mode fiber SFP module
Part number: SFP-SM-LC-10G



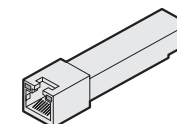
1GbE multi mode fiber SFP module
Part number: SFP-MM-LC



10GbE multi mode fiber SFP module
Part number: SFP-MM-LC-10G



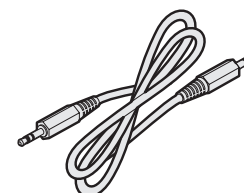
1GbE fixed rate copper SFP module*
Part number: SFP-CATX-Rj45



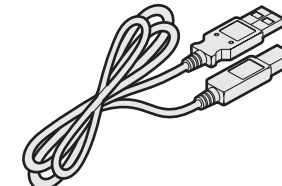
10, 5, 2.5 and 1GbE multi-rate copper SFP module
Part number: SFP-CATX-MR

Please refer to the table in [Appendix G](#) for information about fiber modules and cables.

* Software version v5.05 or later required.

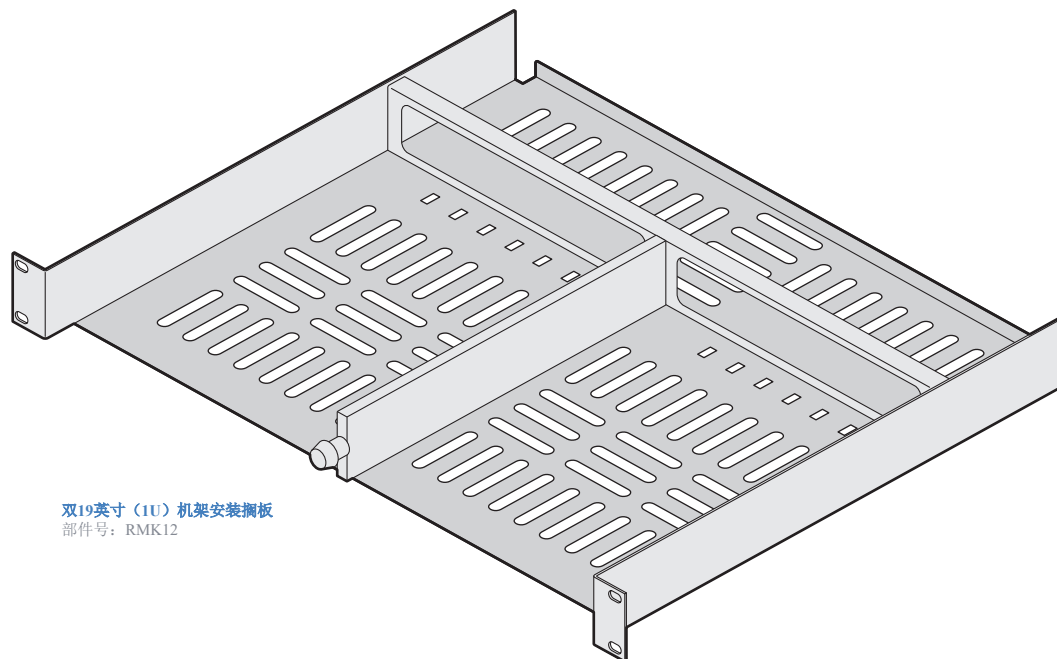


Audio cable 2m (3.5mm stereo jacks)
Part number: VSC22

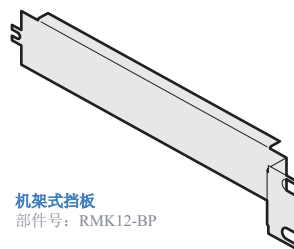


USB cable 2m (type A to B)
Part number: VSC24

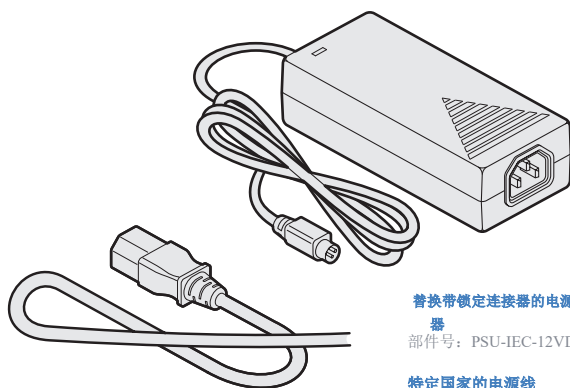
可选附加组件



双19英寸 (1U) 机架安装搁板
部件号: RMK12

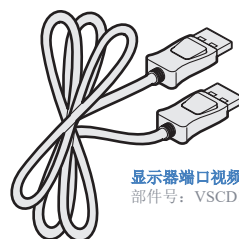


机架式挡板
部件号: RMK12-BP



替换带锁定连接器的电源适配器
部件号: PSU-IEC-12VDC-5A

特定国家的电源线
CAB-IEC-AUS (澳大利亚)
CAB-IEC-EURO (中欧)
CAB-IEC-UK (英国)
CAB-IEC-USA (美国)
CAB-IEC-JP (日本)
CAB-IEC-CN (中国)



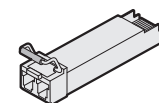
显示器端口视频线2米
部件号: VSCD10A



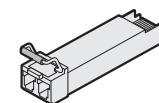
显示器端口到HDMI 2.1视频线3米
部件号: VSCD20



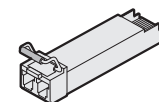
双向USB Type-C转Display port视频线2米
部件号: VSCD21



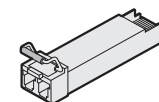
1GbE单模光纤SFP模块*
部件号: SFP-SM-LC



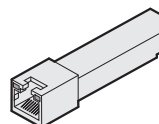
10GbE单模光纤SFP模块
部件号: SFP-SM-LC-10G



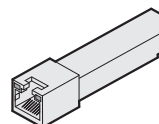
1GbE多模光纤SFP模块
部件号: SFP-MM-LC



10GbE多模光纤SFP模块
部件号: SFP-MM-LC-10G



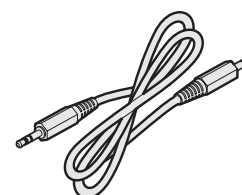
1GbE固定速率铜缆SFP模块*
部件号: SFP-CATX-RJ45



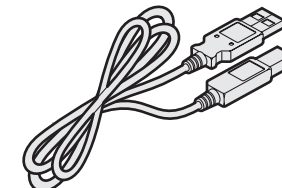
10、5、2.5和1GbE多速率铜
SFP模块
部件号: SFP-CATX-MR

有关光纤模块和电缆的信息, 请参阅附录G中的表格。

*要求软件版本v5.05或更高版本。



音频线缆2m
(3.5mm立体声插孔)
部件号: VSC22



USB线缆2米 (A型到B型)
部件号: VSC24

Installation



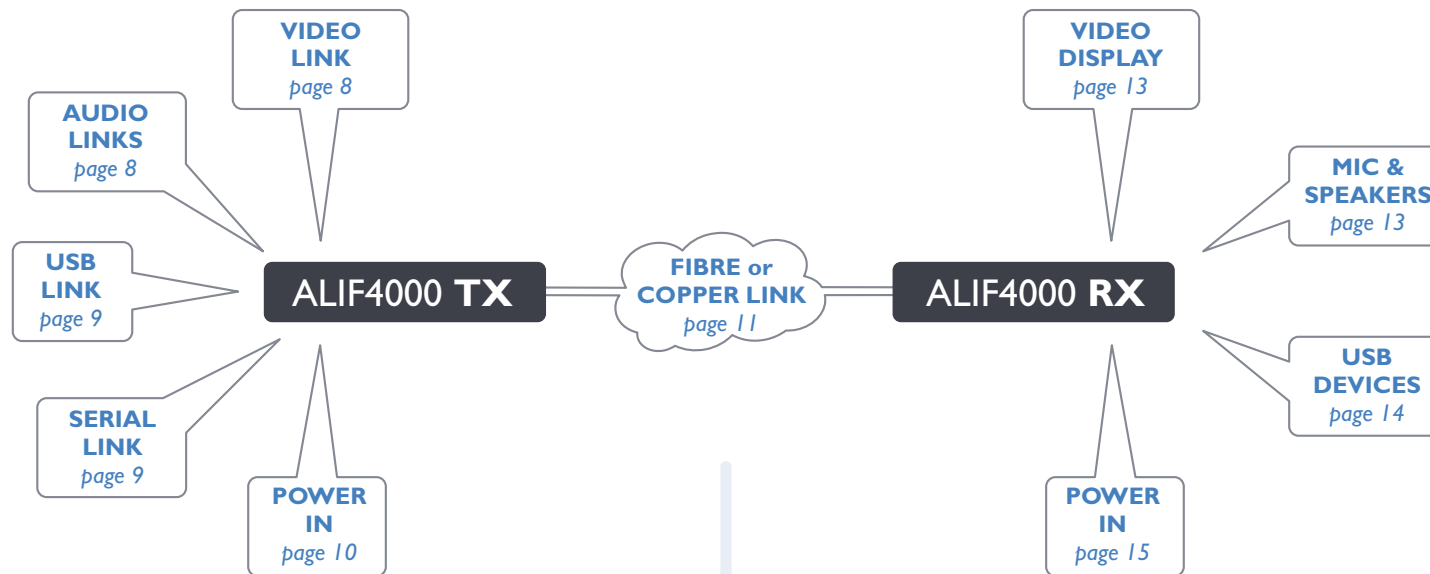
CONNECTIONS

Installation involves linking the ALIF4000 TX unit to various ports on the host computer, while the ALIF4000 RX unit is attached to your peripherals (collectively known as the Console):

MOUNTING

Please see [Appendix H](#) for details about mounting options for the ALIF units.

IMPORTANT: When mounting the ALIF units (and their power adapters), ensure that the vents are not obscured and that there is sufficient airflow. The operating temperature range is 0 to 50°C (32 to 122°F) and must not be exceeded.



Note: RS232 connections are supported when a USB to serial adaptor is used.

Click a connection to see details

Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.

Peut être installé dans des salles de matériel de traitement de l'information conformément à l'article 645 du National Electrical Code et à la NFPA 75.

IMPORTANT: When using an ADDERLink™ INFINITY Management box to configure ALIF units, it is vital that all ALIF units that you wish to locate and control are set to their factory default settings. Otherwise they will not be located by the AIM server. If necessary, perform a [factory reset](#) on each ALIF unit. Please also see [Appendix C - Tips for success when networking ALIF units](#)

连接

安装过程包括将ALIF4000 TX单元连接到主机上的各个端口，同时将ALIF4000 RX单元连接到外围设备（统称为控制台）：

正在堆积

有关ALIF装置安装选项的详细信息，请参见附录H。

重要提示：安装ALIF设备（及其电源适配器）时，应确保通风口未被遮挡且有足够气流。设备工作温度范围为0到50°C（32到122°F），且不得超过该温度范围。



注：使用USB到串行适配器时，RS 232连接是受支持的。

单击连接以查看详细信息

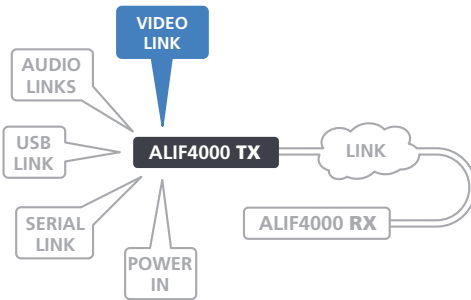
根据国家电气规范第645条和 NFPA 75，适合安装在信息技术室内。

可按照《国家电气规范》第645条及NFPA 75标准，安装于信息处理设备机房内。

重要提示：使用ADDERLink™ INFINITY控制箱配置ALIF装置时，必须将要定位和控制的所有ALIF装置设置为出厂默认设置。否则AIM服务器将无法定位它们。如有必要，请对每个ALIF装置执行工厂重置。请同时参阅附录C-关于ALIF单元联网工作的成功技巧

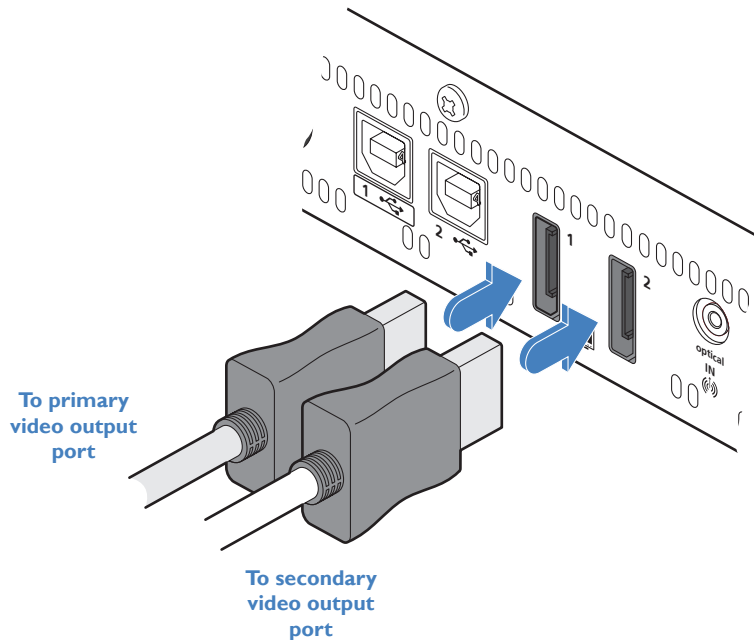
TX video links

The TX unit supports two DisplayPort connections, each up to 5K 5120 pixels by 2880, 2160 or 1440, with refresh rates of 30, 50 and 60Hz respectively and at dynamic ranges of SDR8, SDR10 or HDR10 (ie 24-bit per pixel standard dynamic range, 30-bpp standard dynamic range, or 30-bpp high dynamic range). Digital audio, with support for stereo, 5.1 surround or 7.1 surround sound, is also supported via the DisplayPort connections.



To make a video link

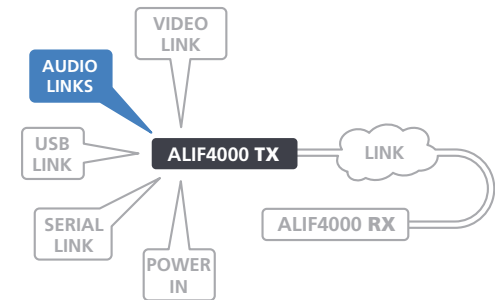
- 1 Connect your digital video link cable(s) to the DisplayPort socket(s) on the TX unit rear panel:



- 2 Connect the plug at the other end of the cable(s) to the corresponding video output socket(s) of the host computer.

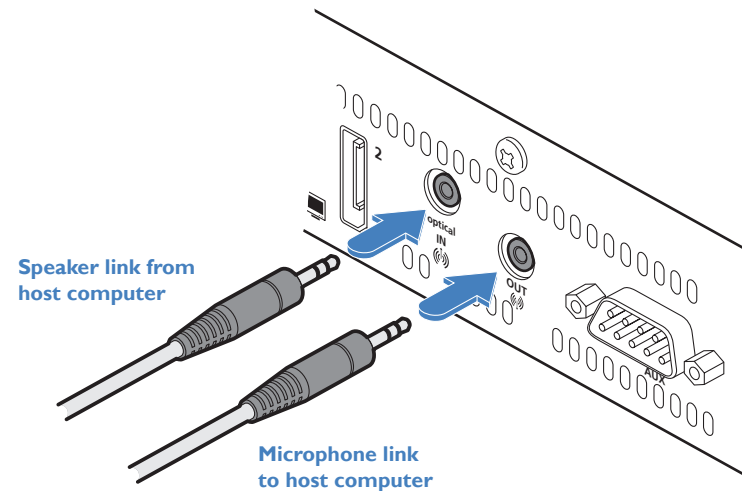
TX analog audio links

The TX unit supports two way stereo analog audio so that you can use a remote microphone as well as speakers. Digital audio is handled separately via the DisplayPort connectors. See [Appendix B - Support for analog and digital audio](#) for details.



To make audio links

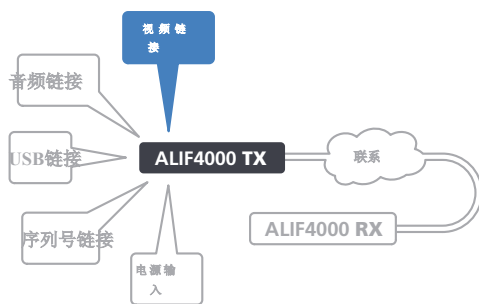
- 1 Connect an audio link cable between the **optical IN** socket on the TX unit rear panel and the speaker output socket of the host computer.



- 2 [Where a microphone is to be used]: Connect a second audio link cable between the **OUT** socket on the TX unit rear panel and the Line In socket of the host computer.

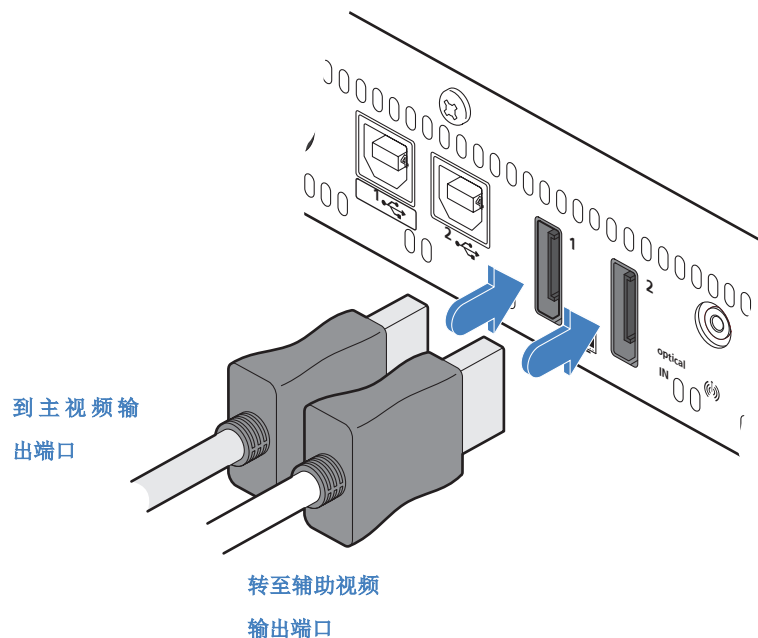
TX视频链接

TX单元支持两个DisplayPort连接，每个连接最高可达5K 5120像素，2880、2160或1440，刷新率分别对应30、50和60Hz的频率，动态范围支持SDR8、SDR10或HDR10（即24位/像素标准动态范围、30位/像素标准动态范围或30位/像素高动态范围）。数字音频支持立体声、5.1环绕声或7.1环绕声声音，也通过DisplayPort连接支持。



制作视频链接

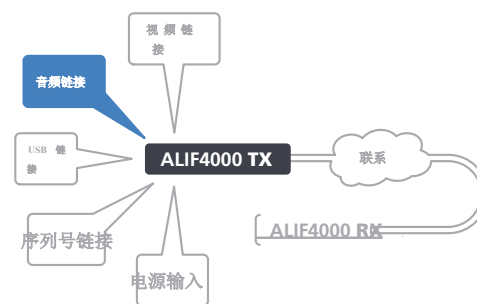
- 1 将数字视频连接线(s)连接至TX设备后面板上的Display-Port插座(s):



- 2 将电缆另一端的插头连接到主机对应的视频输出插座上。

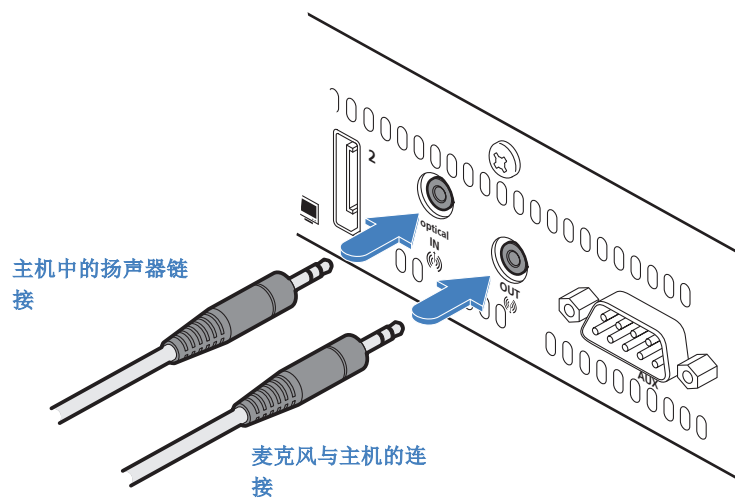
TX模拟音频链接

TX设备支持双向立体声模拟音频，因此您可以使用远程麦克风以及扬声器。数字音频通过DisplayPort连接器单独处理。有关详细信息，请参见[附录B - “对模拟和数字音频的支持”](#)。



建立音频链接

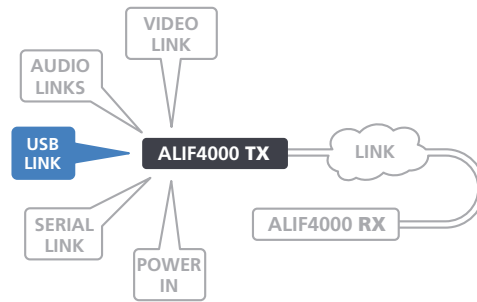
- 1 在TX设备后面板上的光纤IN插座和主机计算机的扬声器输出插座之间连接音频链路电缆。



- 2 [使用麦克风的位置]: 在TX设备后面板的OUT插座和主机的Line In插口之间连接第二根音频链路电缆。

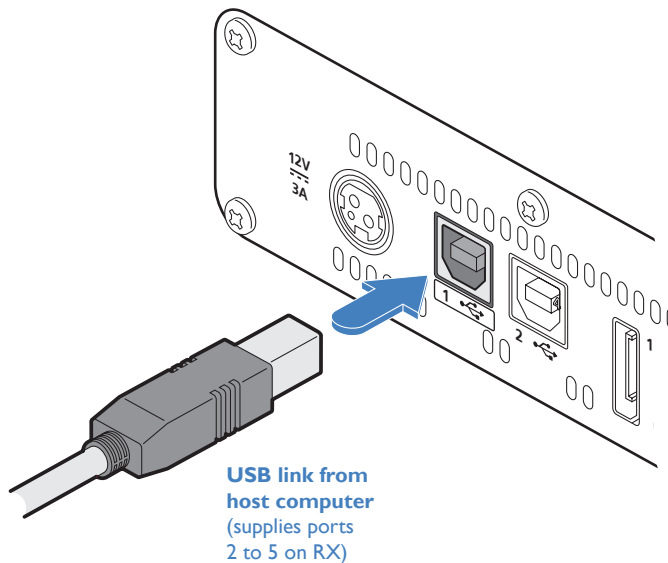
TX USB links

The TX unit has two USB type B sockets on the rear panel. Port 2 is not currently used.



To make a USB link

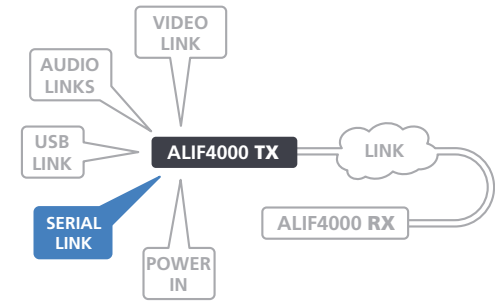
- 1 Connect the type B connector of the supplied USB cable to the USB port 1 on the TX unit rear panel.



- 2 Connect the type A connector of the supplied cable to a vacant USB socket on the host computer.

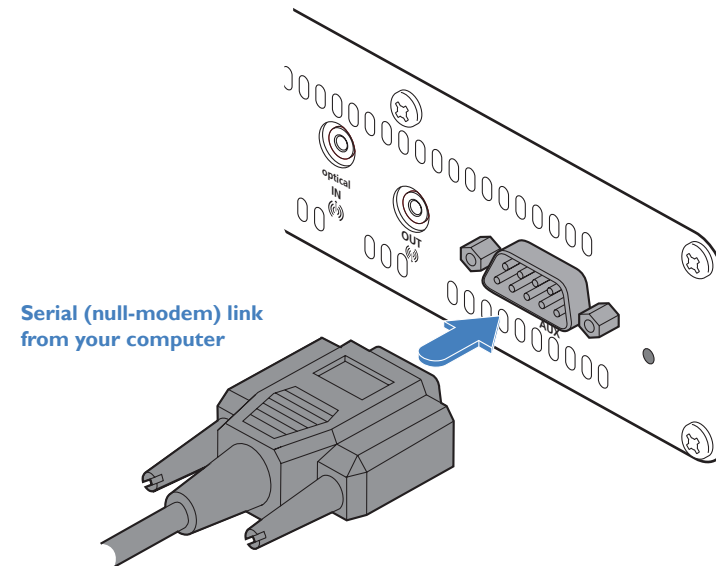
TX AUX (serial) port

The AUX port is an RS232 serial port that allows extension of RS232 signals up to a baud rate of 115200. The port has software flow control, but no hardware flow control. A third-party USB-to-serial adaptor is required at each RX unit (that is required to make a serial link).



To connect the AUX port

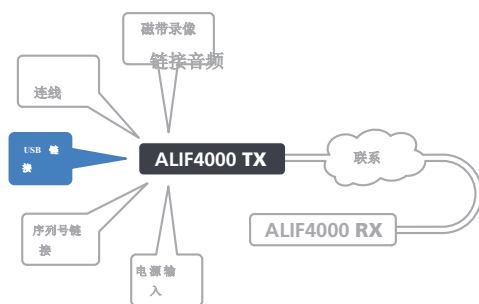
- 1 Connect a suitable serial 'null-modem' cable (see [Appendix F](#) for pin-out) between a vacant serial port on your computer and the AUX port on the right hand side of the ALIF rear panel.



- 2 At the required RX unit(s), use a USB-to-serial adaptor connected to one of the USB ports.

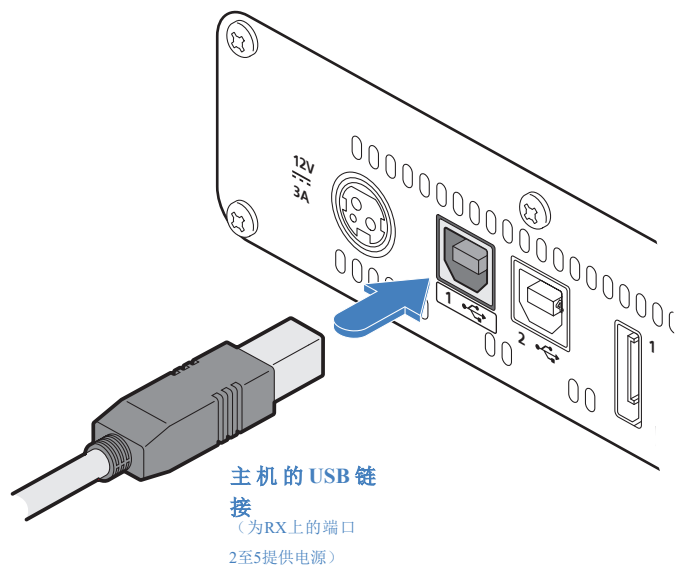
TX USB链路

TX单元后面板上有两个USB B型接口，其中端口2目前未使用。



建立USB链接

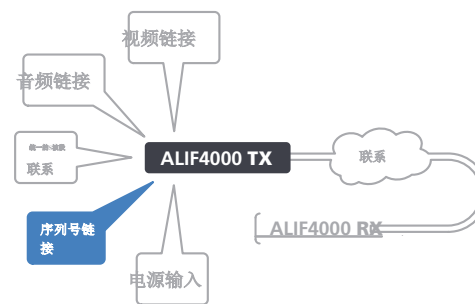
- 1 将提供的USB电缆的B型连接器连接至TX装置后面板上的USB端口1。



- 2 将提供的电缆的A型连接器连接到主机计算机上的空USB插座。

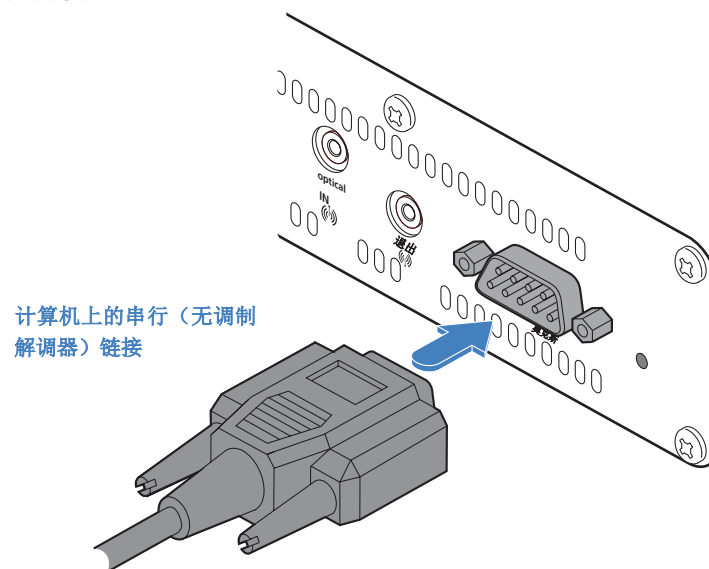
TX AUX (串行) 端口

AUX端口是一个RS232串行端口，允许将RS232信号扩展到波特率为115200。该端口具有软件流控制，但没有硬件流控制。在每个RX单元中都需要一个第三方USB到串行适配器（即需要建立串行链接）。



连接AUX端口

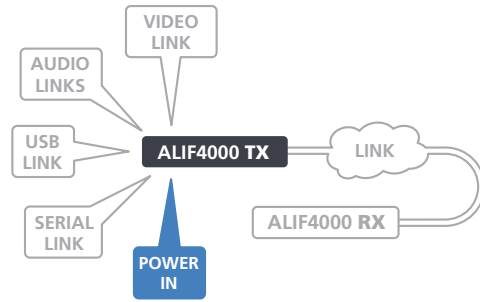
- 1 在计算机的空闲串行端口和右侧的AUX端口之间连接合适的串行“空调制解调器”电缆（引脚排布请参见附录F）。ALIF后面板。



- 2 在所需的RX单元(s)上，使用USB到串行适配器连接到其中一个USB端口。

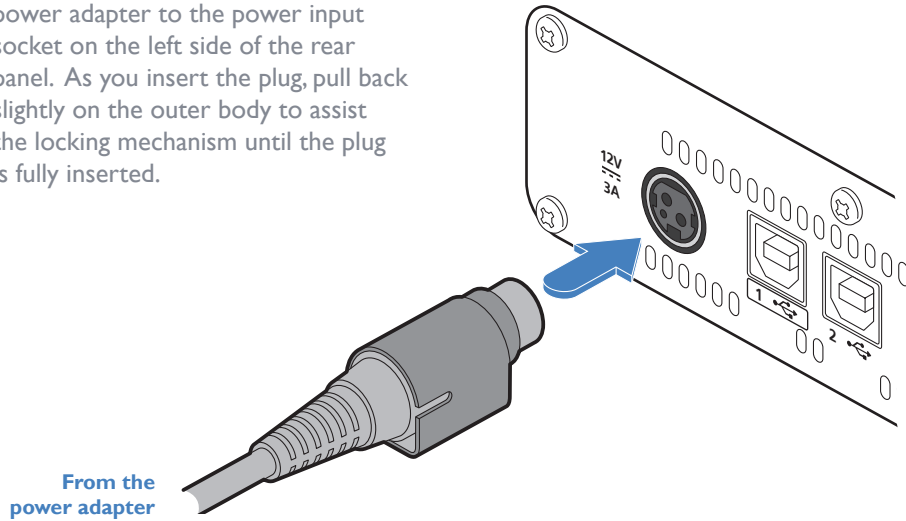
TX power in

Each unit is supplied with a power adapter and country-specific power cord. The supplied power adapter uses a locking-type plug to help prevent accidental disconnection; please follow the instructions shown on the right when disconnecting a power adapter.

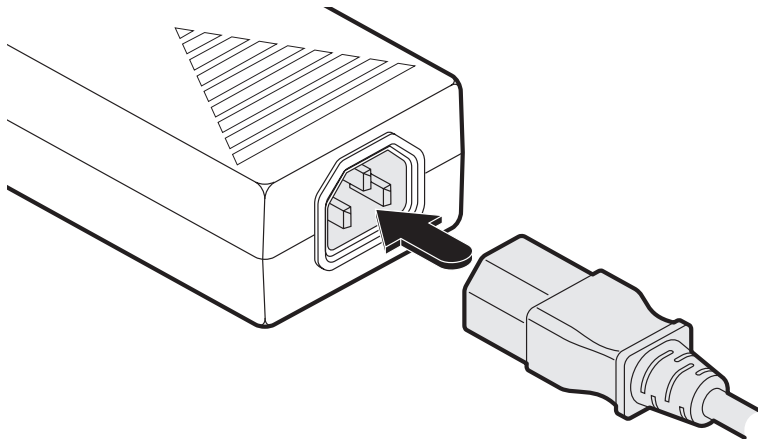


To connect the power adapter

- 1 Attach the output plug of the supplied power adapter to the power input socket on the left side of the rear panel. As you insert the plug, pull back slightly on the outer body to assist the locking mechanism until the plug is fully inserted.



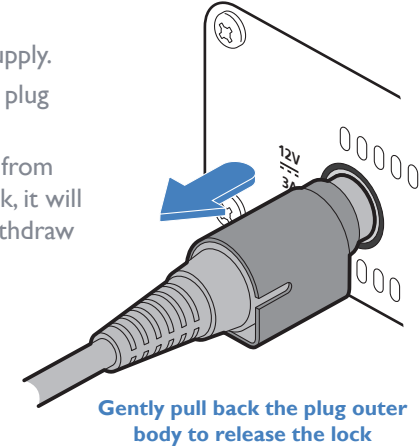
- 2 Insert the IEC connector of the supplied country-specific power cord to the socket of the power adapter.



- 3 Connect the power cord to a nearby mains supply socket.

To disconnect the power adapter

- 1 Isolate the power adapter from the mains supply.
- 2 Grasp the outer body of the power adapter plug where it connects with the node.
- 3 Gently pull the body of the outer plug away from the node. As the body of the plug slides back, it will release from the socket and you can fully withdraw the whole plug.

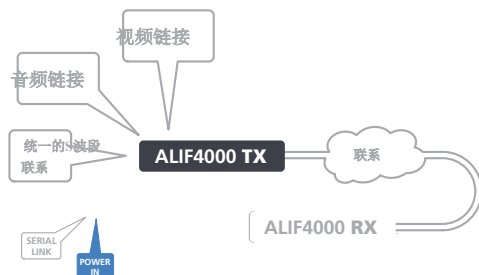


IMPORTANT: Please read and adhere to the electrical safety information given within the Safety information booklet provided with this product. In particular, do not use an unearthed power socket or extension cable.

Note: The unit and the power adapter generate heat when in operation and will become warm to the touch. Do not enclose them or place them in locations where air cannot circulate to cool the equipment. Do not operate the equipment in ambient temperatures exceeding 50 degrees Centigrade. Do not place the products in contact with equipment whose surface temperature exceeds 50 degrees Centigrade.

TX电源输入

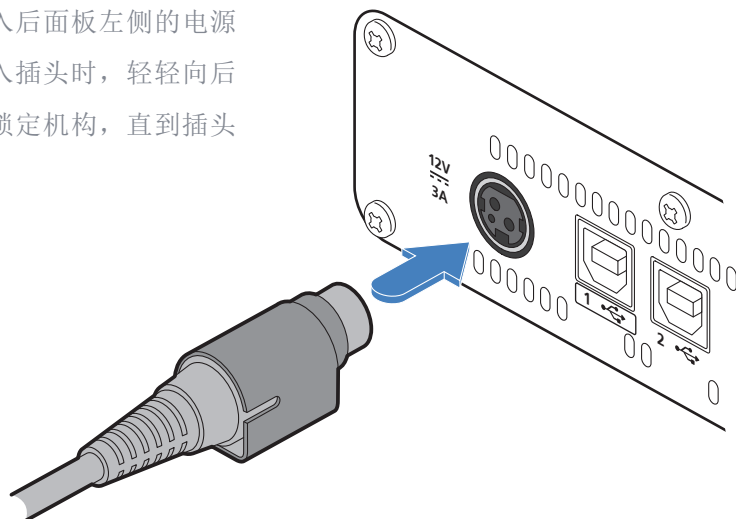
每个设备都配有电源适配器和特定国家/地区的电源线。提供的电源适配器采用锁定式插头，以防止意外断开，请继续断开电源适配器时右侧显示的说明。



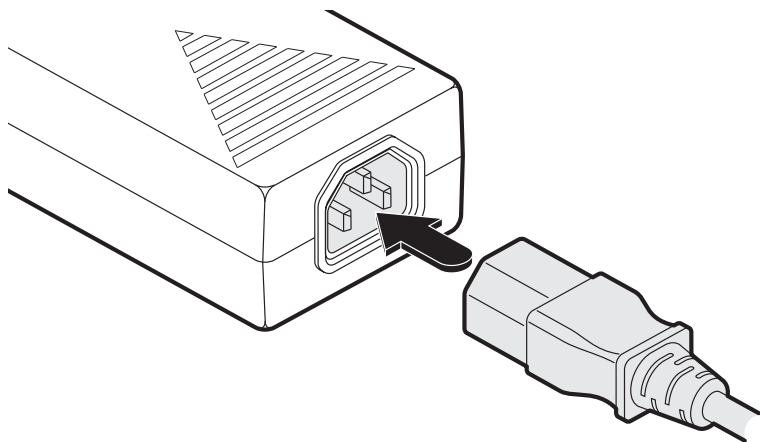
连接电源适配器

- 1 连接所提供的设备的输出插头
电源适配器插入后面板左侧的电源输入插座。插入插头时，轻轻向后拉外罩以帮助锁定机构，直到插头完全插入。

从电源适配器



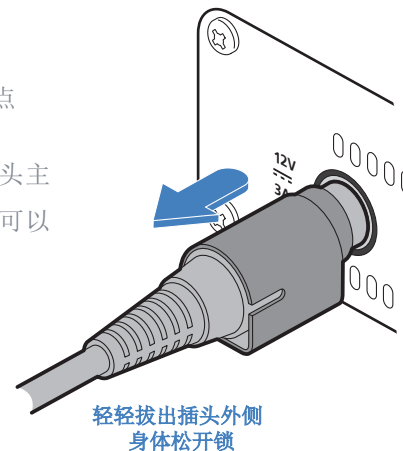
- 2 将提供的国家/地区专用电源线的IEC连接器插入电源适配器的插座。



- 3 将电源线连接到附近的市电插座。

断开电源适配器

- 1 将电源适配器从主电源中分离。
- 2 抓住电源适配器插头的外侧，即插头与节点连接处。
- 3 轻轻将外插头的主体从节点上拉出。当插头主体滑回时，它就会从插座中释放出来，您可以完全抽出整个插头。



重要提示：请仔细阅读并严格遵守本产品随附的安全手册中提供的电气安全信息。特别注意：请勿使用未接地的电源插座或延长线。

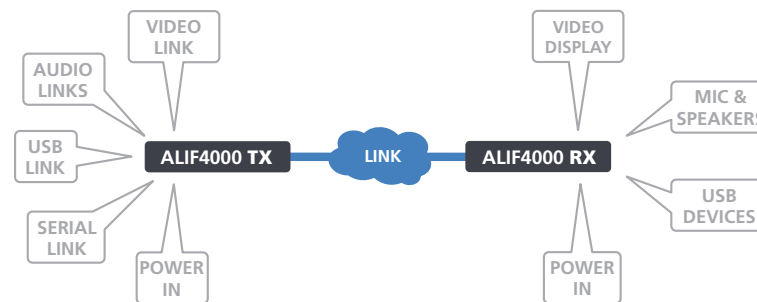
注意：设备和电源适配器在运行时会产生热量，触摸时会感觉温暖。请勿将它们封闭或放置在无法通风的区域。请勿在超过50摄氏度的环境温度下操作设备。请勿将产品与表面温度超过50摄氏度的设备接触。

TX/RX high speed links

ALIF4000 units can be either connected directly to each other or via a high speed (up to 10GbE) network. There are three main ways to make high speed links:

- Using the in-built CATx port(s) for connections up to 1GbE (ALIF4021 only, see below),
Allows high video resolutions but with reduced frame rates. Use both CATx ports in combination for teaming to mitigate the relatively slow data rate and improve video quality.
- Using the SFP port(s) with optional CATx module(s) for connections up to 10GbE (see next page),
Single or dual 10GbE links will allow full resolution and high frame rate video to be transferred. Slower links may be subject to varying frame rates, depending on the video content and CODEC settings. Dual links to provide teaming will help a great deal, particularly with slower connection speeds.

- Using the SFP port(s) with optional fiber (FCoE) module(s) for connections up to 10GbE (see next page),
Single or dual 10GbE links will allow full resolution and high frame rate video to be transferred. Dual links to provide teaming will help a great deal, particularly with slower connection speeds.



Optional SFP module types

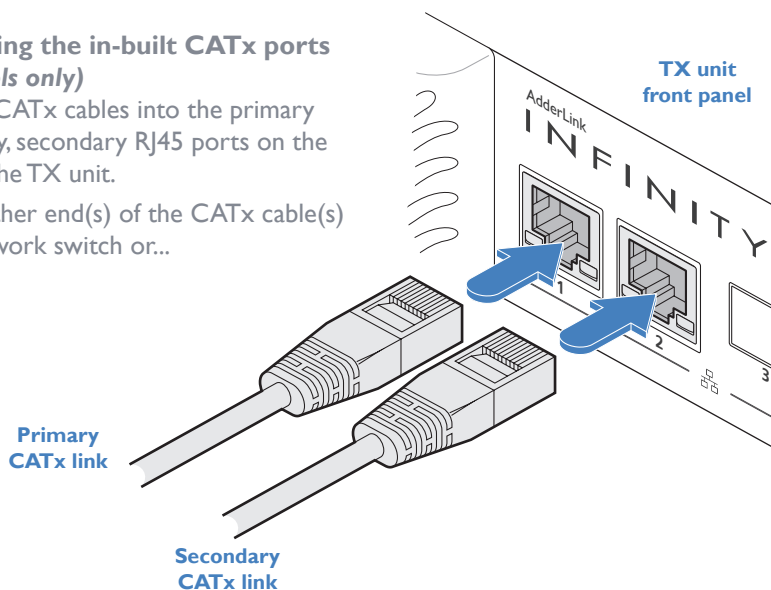
- SFP-CATX-RJ45 for use with CAT5e (and above) cable (1GbE)*.
- SFP-CATX-MR for use with CAT5e (and above) cable (10, 5, 2.5 and 1GbE).
- SFP-SM-LC modules require OS1 or OS2 single mode fiber (1GbE)*.
- SFP-SM-LC-10G modules require OS1 or OS2 single mode fiber (10GbE).
- SFP-MM-LC modules require OM1, OM2, OM3 or OM4 multi-mode fiber (1GbE).
- SFP-MM-LC-10G modules require OM1, OM2, OM3 or OM4 multi-mode fiber (10GbE).

See [Appendix G](#) for further details about SFP modules and cable lengths.

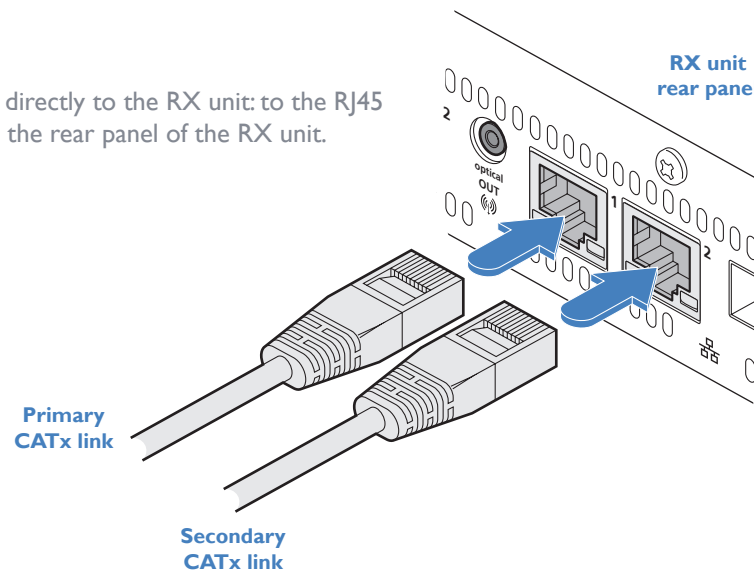
* Software version v5.05 or later required.

To link units using the in-built CATx ports (ALIF4021 models only)

- 1 Insert suitable CATx cables into the primary and, if necessary, secondary RJ45 ports on the front panel of the TX unit.
- 2 Connect the other end(s) of the CATx cable(s) to either a network switch or...



... connect directly to the RX unit: to the RJ45 port(s) on the rear panel of the RX unit.



TX/RX高速链路

ALIF4000单元既可以彼此直接连接，也可以通过高速（最高达10GbE）网络连接。

实现高速链路有三种主要方式：

- 使用内置的CATx端口（仅限ALIF4021，见下文）进行最高达1GbE的连接，

允许高视频分辨率，但帧速率降低。同时使用两个CATx端口组合到团队中，以降低相对缓慢的数据速率并提高视频质量。

- 使用SFP端口(s)和可选的CATx模块(s)进行连接，最高可达10GbE（见下页），

单链路或双链路10GbE链路将允许传输全分辨率和高帧率视频。较慢的链路可能受帧速率变化的影响，这取决于视频内容和编解码器设置。提供配对的双链路将非常有帮助，特别是在较慢的连接速度下。

- 使用SFP端口(s)和可选光纤（FCoE）模块(s)，连接速度可达10GbE（见下页），

单链路或双链路10GbE将允许传输全分辨率和高帧率视频。双链路提供组队将大有帮助，特别是在较慢的连接速度下。



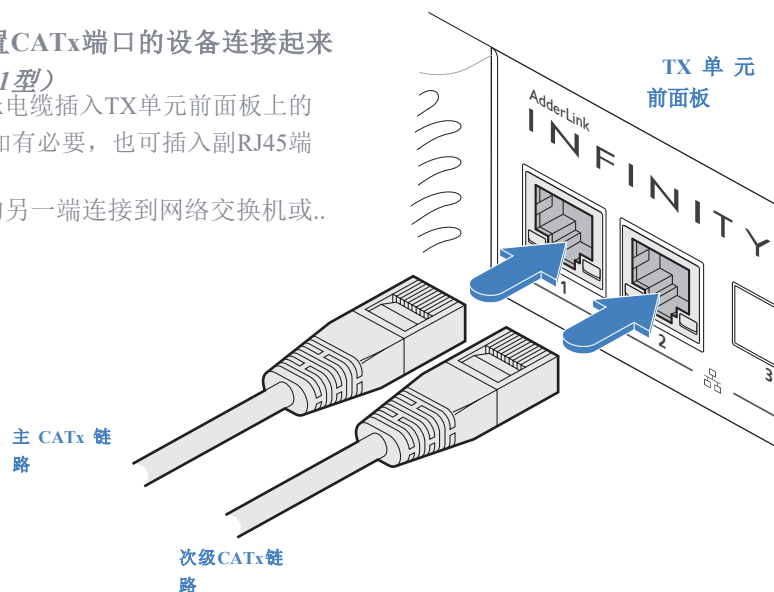
可选的SFP模块类型

- SFP-CATX-RJ45用于CAT5e（及更高版本）电缆（1GbE）*。
- SFP-CATX-MR适用于CAT5e（及更高版本）电缆（10、5、2.5和1GbE）。
- SFP-SM-LC模块需要OS1或OS2单模光纤（1GbE）*。
- SFP-SM-LC-10G模块需要OS1或OS2单模光纤（10GbE）。
- SFP-MM-LC模块需要OM1、OM2、OM3或OM4多模光纤（1GbE）。
- SFP-MM-LC-10G模块需要OM1、OM2、OM3或OM4多模光纤（10GbE）。有关SFP模块和线缆长度的更多详细信息，请参阅附录G。

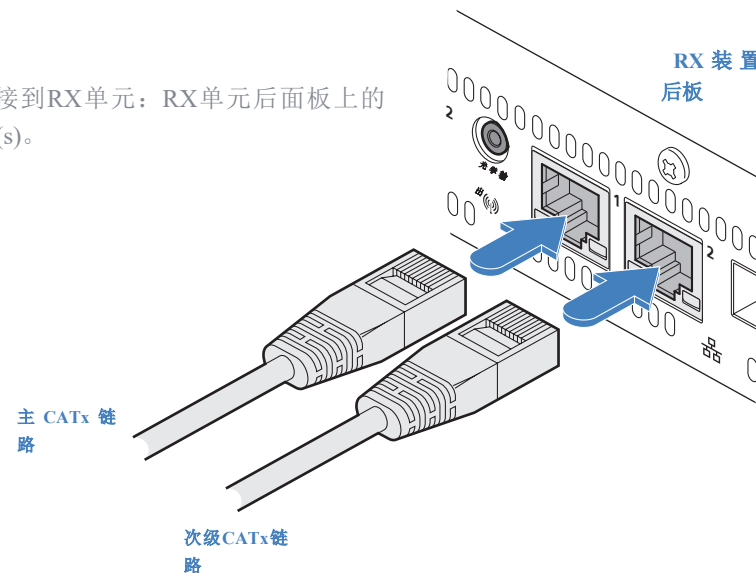
*要求软件版本v5.05或更高版本。

若要将使用内置CATx端口的设备连接起来 (仅限ALIF4021型)

- 1 将合适的CATx电缆插入TX单元前面板上的主RJ45端口，如有必要，也可插入副RJ45端口。
- 2 将CATx电缆的另一端连接到网络交换机或..



...直接连接到RX单元：RX单元后面板上的RJ45端口(s)。

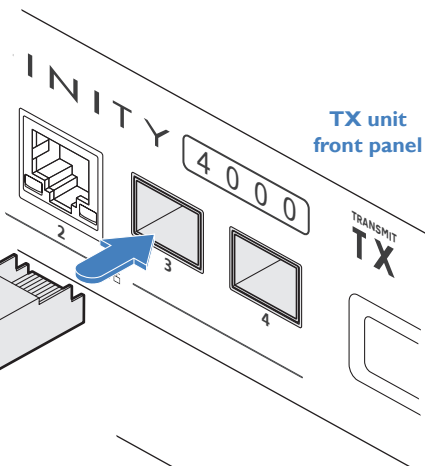


To link units via CATx modules

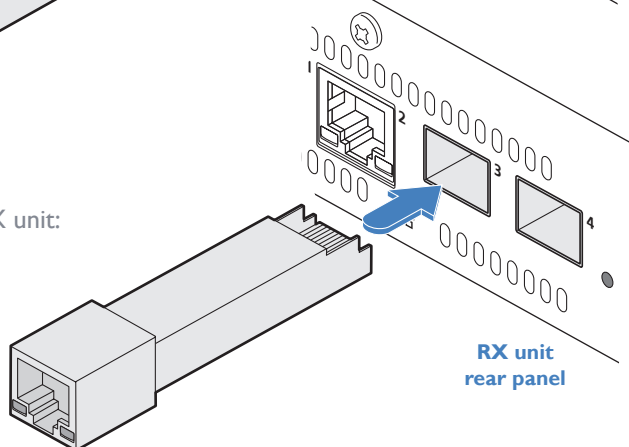
1 Insert the optional SFP module(s) (SFP-CATX-MR) into socket 3 and, if necessary, socket 4 located on the front panel of the TX unit...

Note: Take care when inserting multirate SFP modules as they can damage the metal tab at the top of the socket if misaligned.

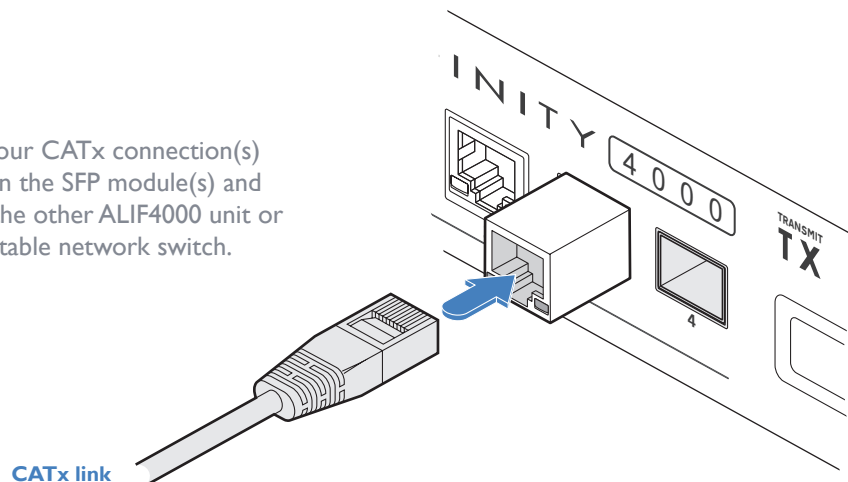
CATx SFP module



...and the rear panel of the RX unit:



2 Make your CATx connection(s) between the SFP module(s) and either the other ALIF4000 unit or to a suitable network switch.

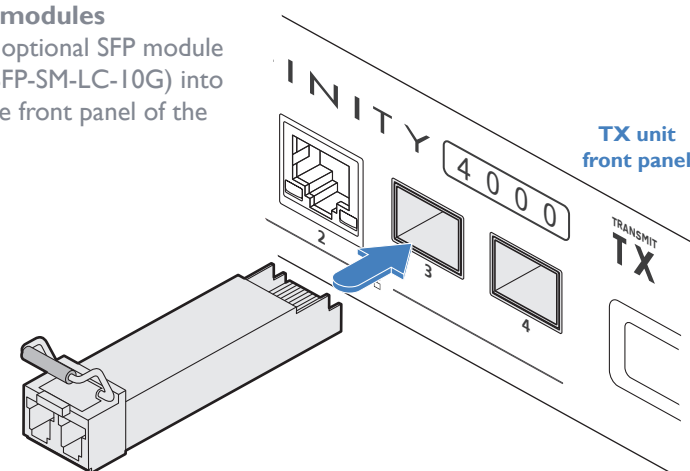


CATx link

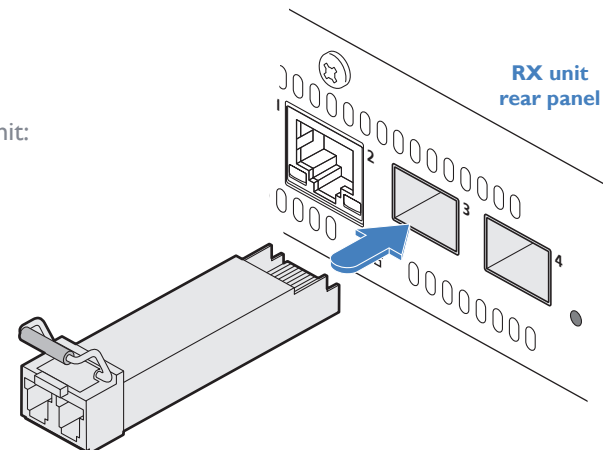
To link units via fiber modules

1 Insert the appropriate optional SFP module (SFP-MM-LC-10G or SFP-SM-LC-10G) into socket 3 located on the front panel of the TX unit...

Fiber SFP module

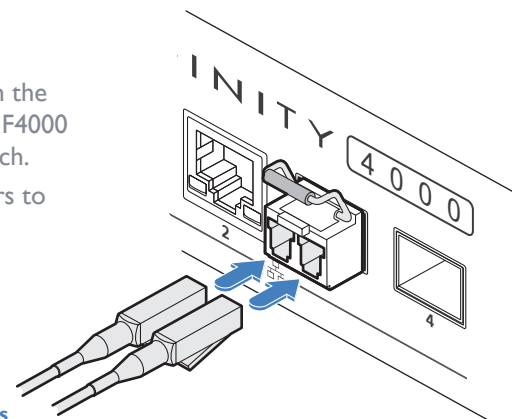


...and the rear panel of the RX unit:



2 Make your fiber connection(s) between the SFP module(s) and either the other ALIF4000 unit or to a suitable fiber network switch.
3 Close the latch over the link connectors to lock them into place.

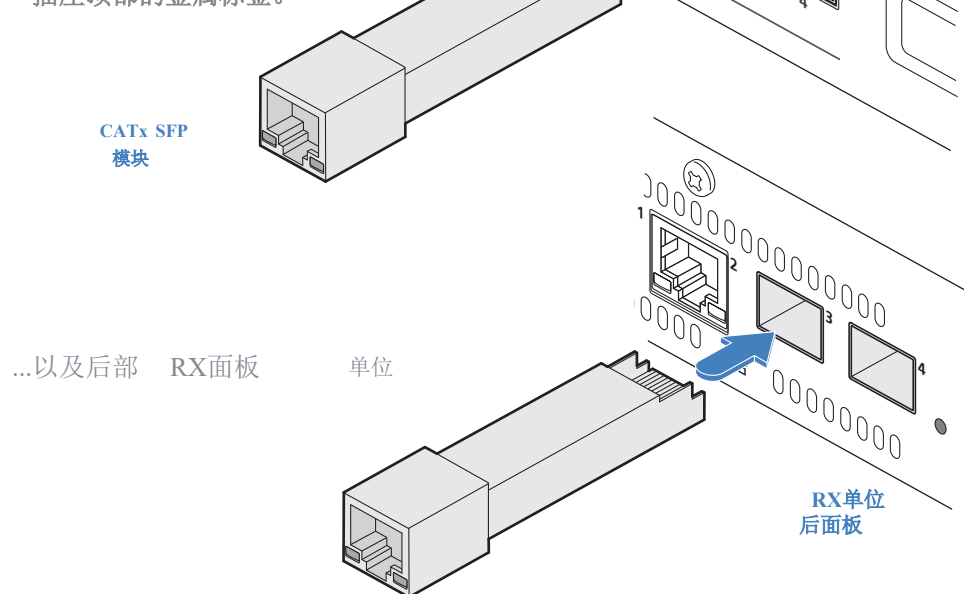
Transmit and receive fiber links



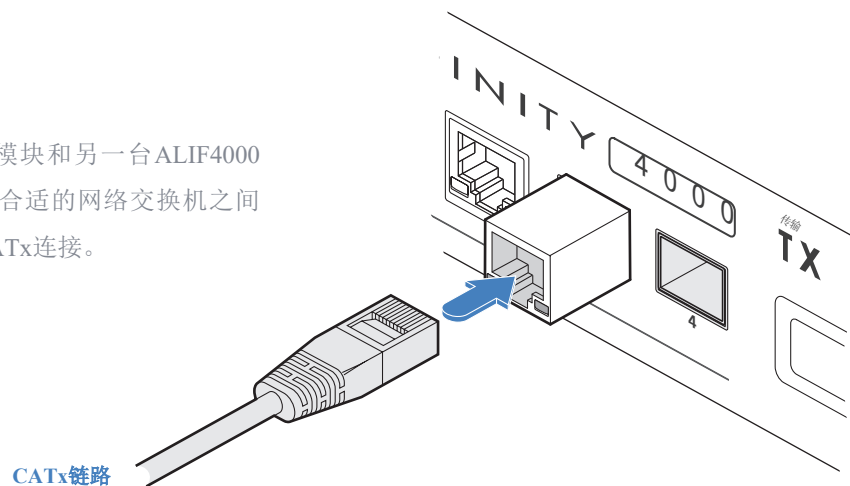
通过CATx模块连接设备

1 将可选的SFP模块(s) (SFPCATX-MR) 插入插槽3, 如果需要, 插入位于TX单元前面板上的插槽4...

注意: 插入多速率SFP模块时要小心, 如果错位, 可能损坏插座顶部的金属标签。

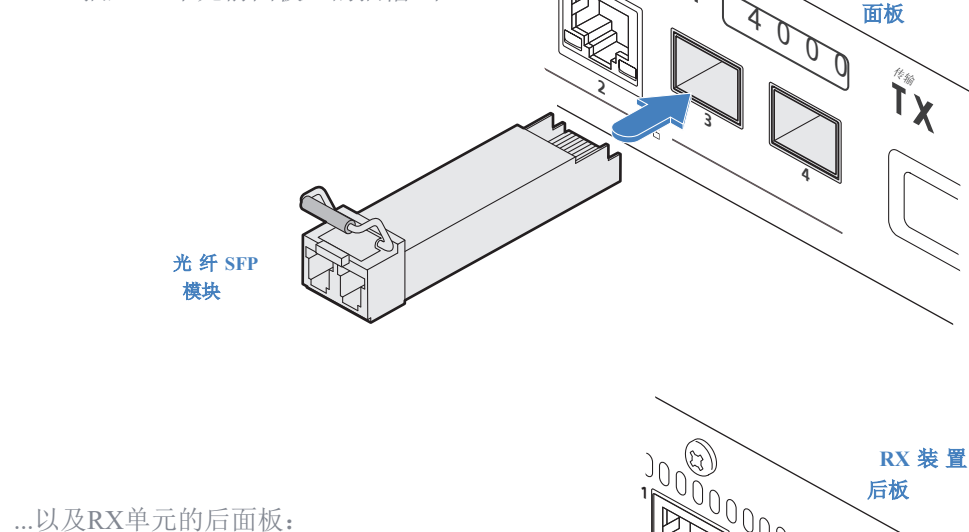


2 在SFP模块和另一台ALIF4000设备或合适的网络交换机之间建立CATx连接。

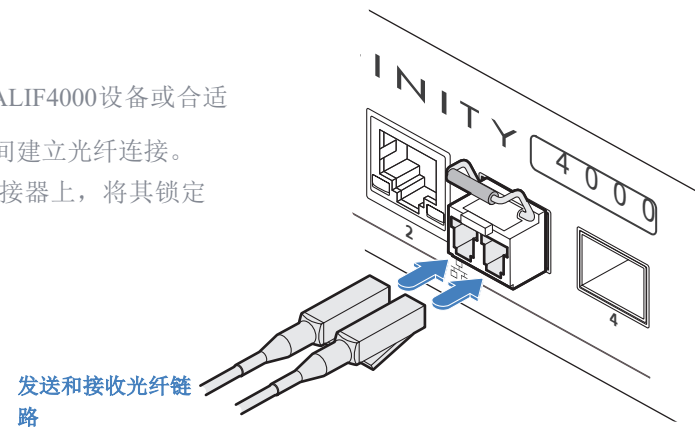


通过光纤模块连接单元

1 插入适当的可选SFP模块
将 (SFP-MM-LC-10G 或 SFP-SM-LC-10G) 插入TX单元前面板上的插槽3中...

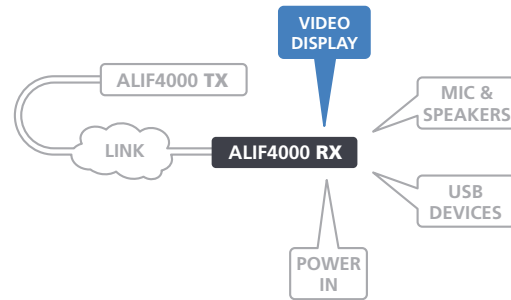


2 在SFP模块和另一台ALIF4000设备或合适的光纤网络交换机之间建立光纤连接。
3 将门锁闭合在连杆连接器上, 将其锁定到位。



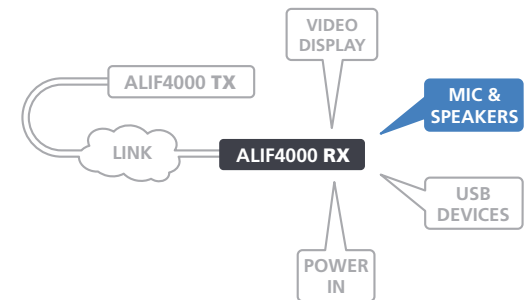
RX video display

The RX unit supports two DisplayPort connections, each up to 5K 5120 pixels by 2880, 2160 or 1440, with refresh rates of 30, 50 and 60Hz respectively. Digital audio, with support for stereo, 5.1 surround or 7.1 surround sound, is also supported via the DisplayPort connections.



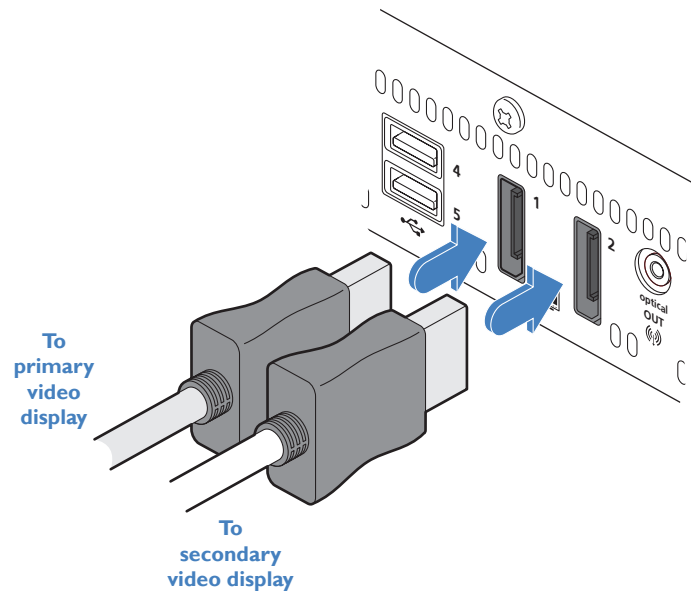
RX microphone & speakers

The RX unit can support a microphone as well as speakers providing the necessary connections have been made between the TX unit and the host computer. Digital audio is handled separately via the DisplayPort connectors. See [Appendix B - Support for analog and digital audio](#) for details.



To connect video displays

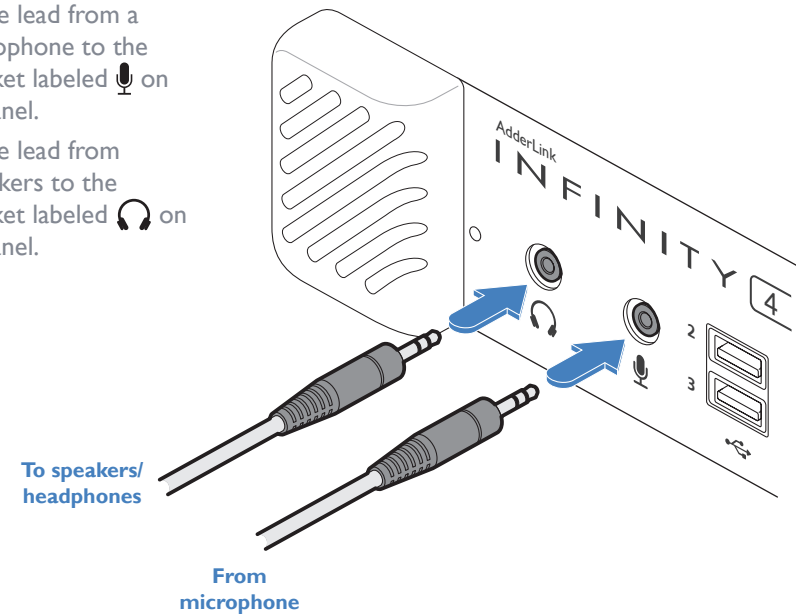
- 1 Connect the lead from the primary video display to the DisplayPort socket marked '1' on the RX unit rear panel:



- 2 If required, connect the lead from the second video display to the DisplayPort socket marked '2' on the RX unit rear panel.

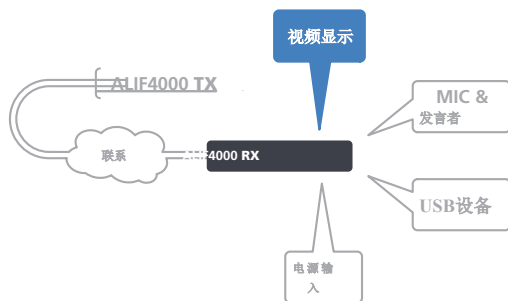
To connect a microphone (or line in) and/or speakers

- 1 Connect the lead from a mono microphone to the 3.5mm socket labeled  on the front panel.
- 2 Connect the lead from stereo speakers to the 3.5mm socket labeled  on the front panel.



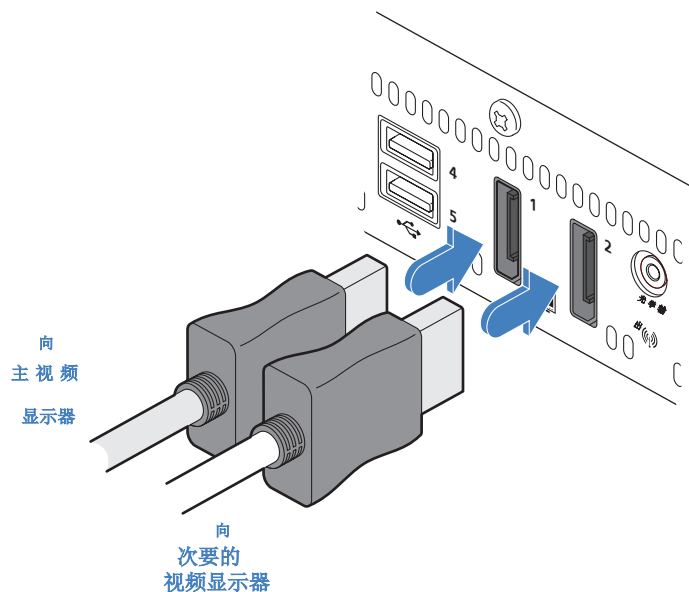
RX视频显示器

RX设备支持两个DisplayPort接口，每个接口支持最高5K 5120像素分辨率（对应2880、2160或1440分辨率），分别对应30Hz、50Hz和60Hz刷新率。同时，该设备还通过DisplayPort接口支持数字音频传输，兼容立体声、5.1环绕声及7.1环绕声等多种音频格式。



连接视频显示器

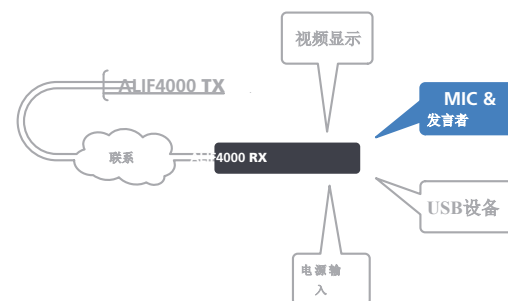
- 1 将主视频显示器的导线连接到RX设备后面板上标记为“1”的DisplayPort插座：



- 2 如果需要，将第二个视频显示器的导线连接到RX单元后面板上标记为“2”的DisplayPort插座。

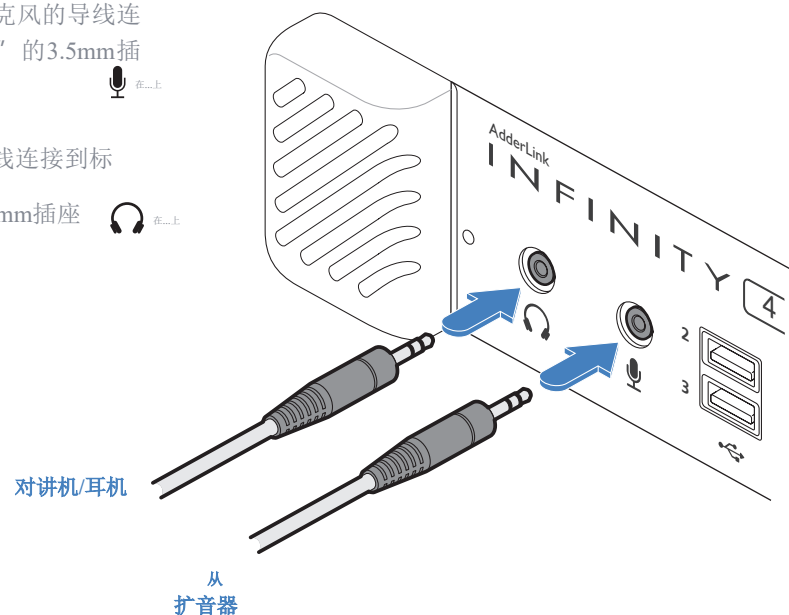
RX麦克风和扬声器

在发送单元和主机之间完成必要的连接后，接收单元可以支持麦克风以及扬声器。数字音频通过DisplayPort连接器单独处理。有关模拟和数字音频的详细信息，请参见附录B - 支持。



连接麦克风（或线路输入）和/或扬声器

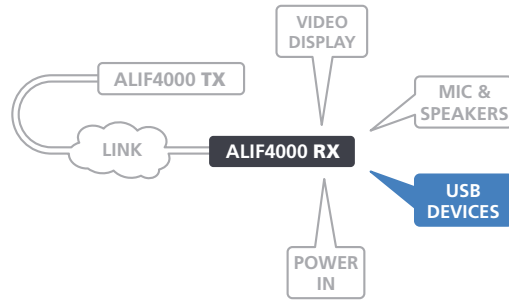
- 1 将单声道麦克风的导线连接到标有“”的3.5mm插座
座
前面板。
在...上
- 2 将音响的导线连接到标有“”的3.5mm插座
前面板。
在...上



RX USB devices

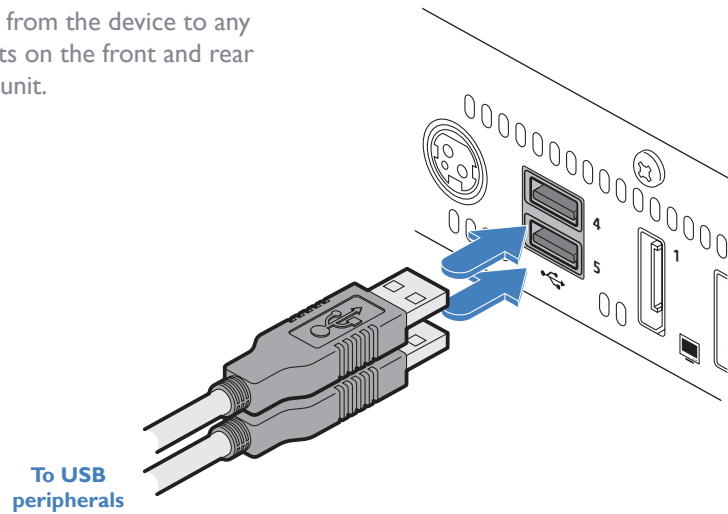
The ALIF RX unit has five USB ports (three on the front panel and two on the rear) to which peripherals may be connected.

To connect more than five peripherals, one or more USB hubs may be used. The total current that may be drawn from the USB ports is 1.2A, which should be sufficient for a keyboard, mouse (no more than 100mA each) and any two other devices (500mA maximum each). If more power for USB devices is required, use a powered USB hub.



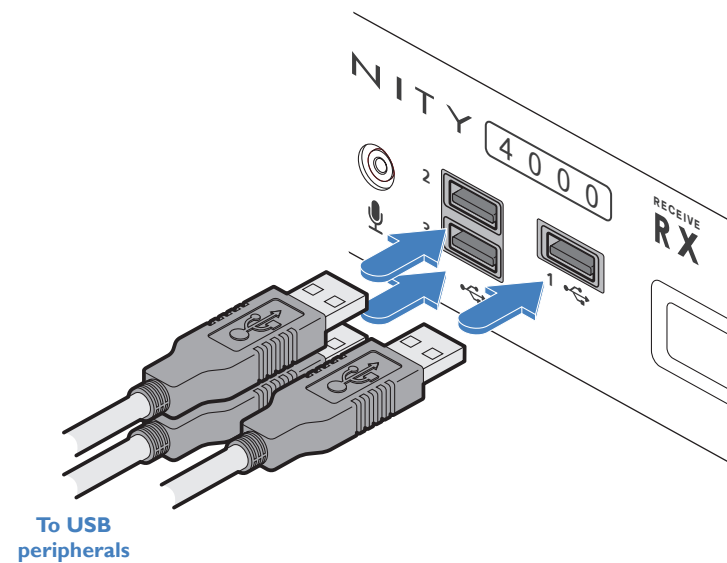
To connect USB devices

- 1 Connect the lead from the device to any of the USB sockets on the front and rear panels of the RX unit.



RS232 serial support

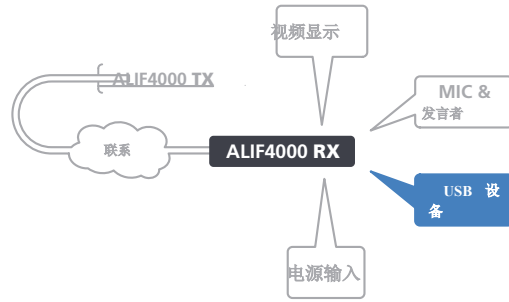
To support RS232 serial connections, use a third-party USB-to-serial adaptor connected to any of the USB ports from 2 to 5. The serial connection will be replicated at the serial port on the connected ALIF4000 TX unit.



RX USB设备

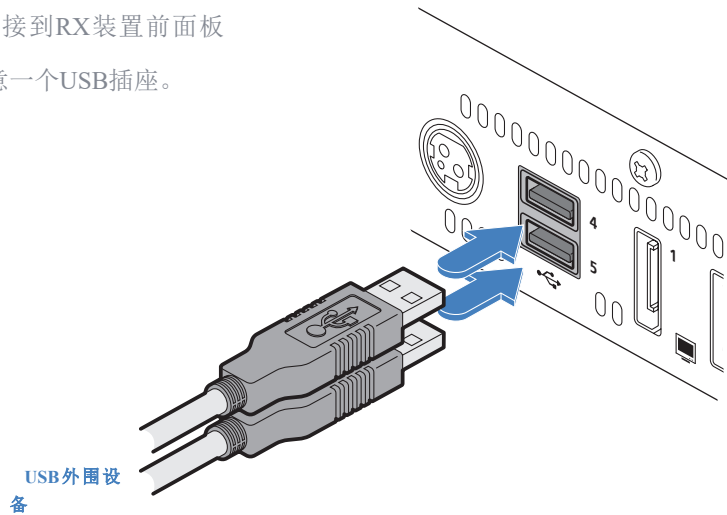
ALIF RX设备有五个USB端口（前面板三个，后面板两个），外设可连接到这些端口。

若要连接五个以上的外设，可以使用一个或多个USB集线器。USB端口的总电流为1.2A，应满足足够使用键盘、鼠标（每个不超过100mA）和任意两个其他设备（每个最大500mA）。如果USB设备需要更多功率，请使用带电源的USB集线器。



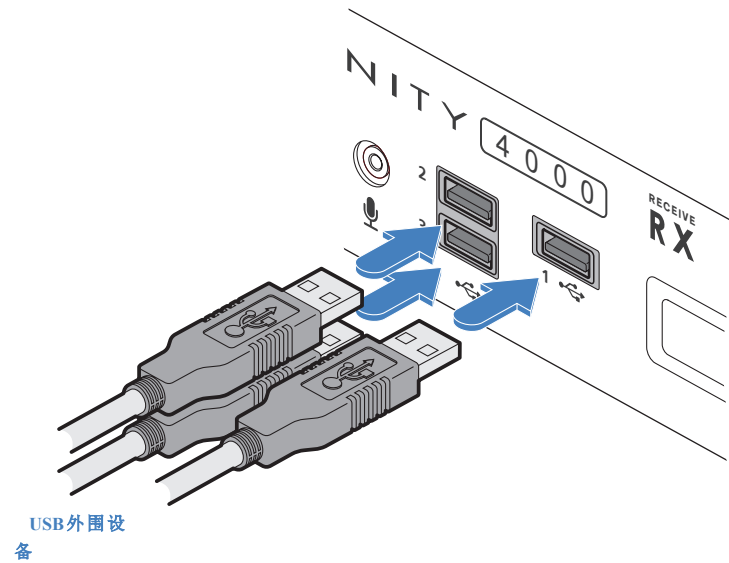
连接USB设备

- 1 将设备的导线连接到RX装置前面板和后面板上的任意一个USB插座。



RS232串行支持

为支持RS232串行连接，请使用第三方USB-serial适配器连接到2至5号任意USB端口。在连接的ALIF4000 TX单元的串行端口上将复制串行连接。



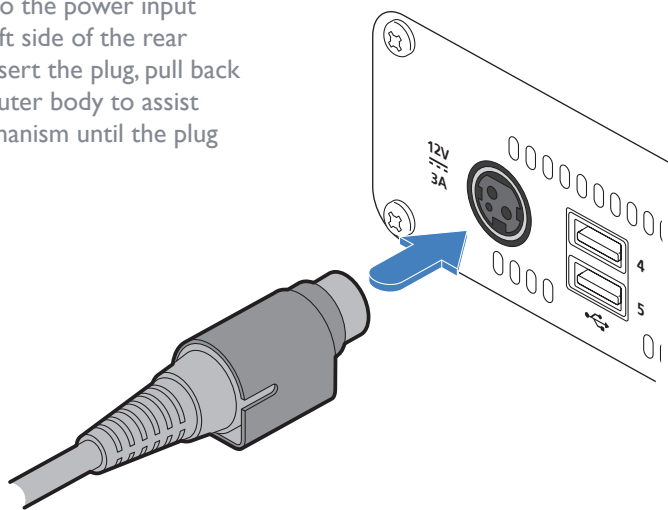
RX power in

Each unit is supplied with a power adapter and country-specific power cord. The supplied power adapter uses a locking-type plug to help prevent accidental disconnection; please follow the instructions shown on the right when disconnecting a power adapter.

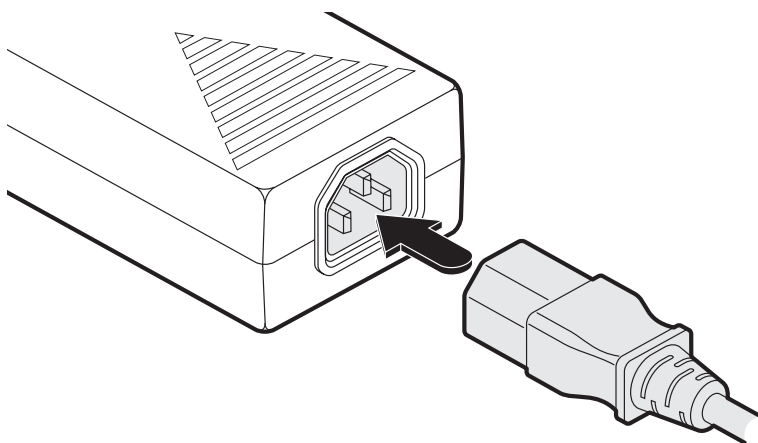
To connect the power adapter

- 1 Attach the output plug of the supplied power adapter to the power input socket on the left side of the rear panel. As you insert the plug, pull back slightly on the outer body to assist the locking mechanism until the plug is fully inserted.

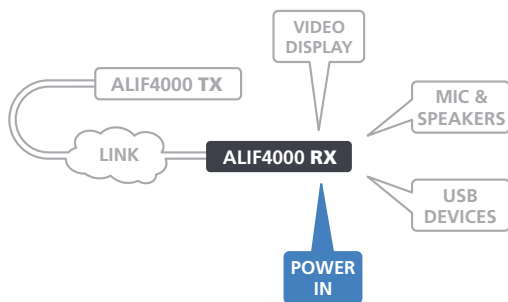
From the power adapter



- 2 Insert the IEC connector of the supplied country-specific power cord to the socket of the power adapter.

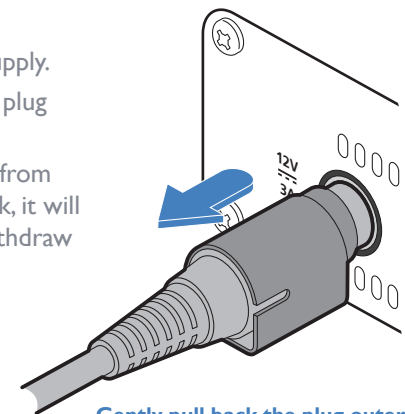


- 3 Connect the power cord to a nearby mains supply socket.



To disconnect the power adapter

- 1 Isolate the power adapter from the mains supply.
- 2 Grasp the outer body of the power adapter plug where it connects with the node.
- 3 Gently pull the body of the outer plug away from the node. As the body of the plug slides back, it will release from the socket and you can fully withdraw the whole plug.



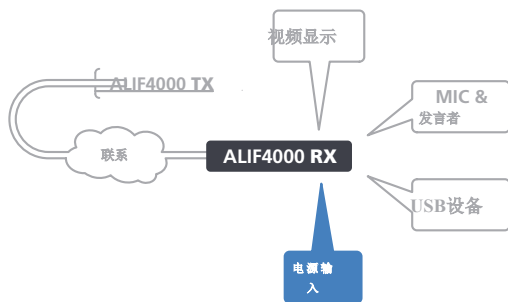
Gently pull back the plug outer body to release the lock

IMPORTANT: Please read and adhere to the electrical safety information given within the Safety information booklet provided with this product. In particular, do not use an unearthed power socket or extension cable.

Note: The unit and the power adapter generate heat when in operation and will become warm to the touch. Do not enclose them or place them in locations where air cannot circulate to cool the equipment. Do not operate the equipment in ambient temperatures exceeding 50 degrees Centigrade. Do not place the products in contact with equipment whose surface temperature exceeds 50 degrees Centigrade.

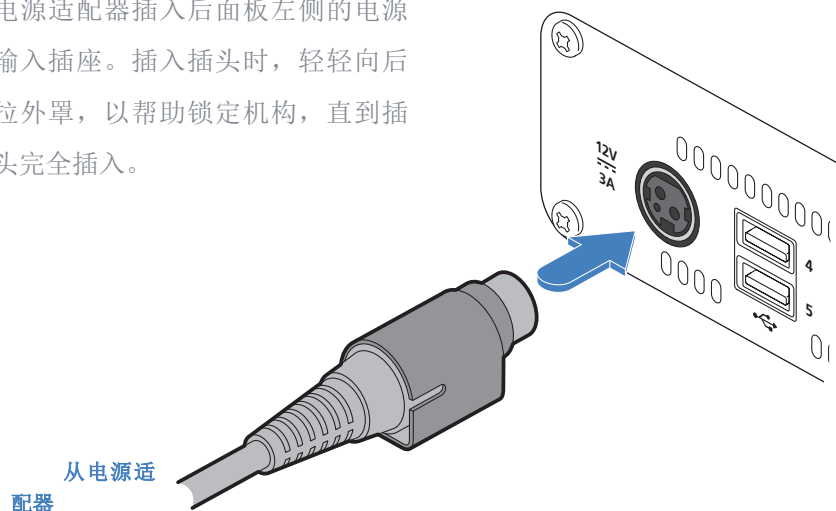
RX电源输入

每个设备都配有电源适配器和对应国家/地区的电源线。提供的电源适配器采用锁定式插头设计，可有效防止意外断开连接，请按照说明操作。断开电源适配器时右侧显示的说明。

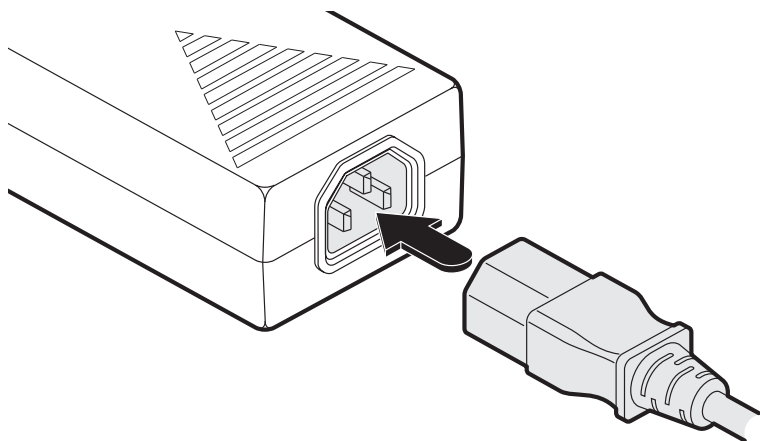


连接电源适配器

- 1 连接所提供的设备的输出插头
电源适配器插入后面板左侧的电源输入插座。插入插头时，轻轻向后拉外罩，以帮助锁定机构，直到插头完全插入。



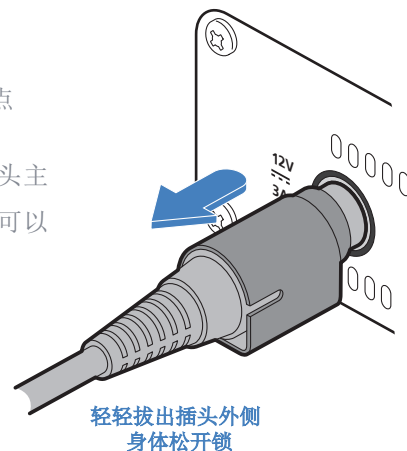
- 2 将提供的国家/地区专用电源线的IEC连接器插入电源适配器的插座。



- 3 将电源线连接到附近的电源插座。

断开电源适配器

- 1 将电源适配器从主电源中分离。
- 2 抓住电源适配器插头的外侧，即插头与节点连接处。
- 3 轻轻将外插头的主体从节点上拉出，当插头主体滑回时，它就会从插座中释放出来，您可以完全抽出整个插头。



重要提示：请阅读并遵守本产品随附的安全信息手册中提供的电气安全信息。

特别注意，切勿使用未接地的电源插座或延长线。

注意：设备和电源适配器在运行时会产生热量，触摸时会感觉温暖。请勿将它们封闭或放置在无法通风的区域。请勿在超过50摄氏度的环境温度下操作设备。请勿将产品与表面温度超过50摄氏度的设备接触。

ALIF4000 CONFIGURATION VIA WEB PAGES

Each ALIF4000 unit hosts its own internal set of web pages which contain all configuration details and settings (see also *Start of Life, shown right*). You will need to use a computer connected to the same network as each ALIF4000 unit to access the web pages. Additionally, on the console attached to the ALIF4000 RX unit, you can access its configuration details via the On Screen Display (OSD) by pressing **CTRL + ALT + C** (or by tapping the  icon on the touchscreen) - see page 25.

To manually configure ALIF4000 units via their web pages

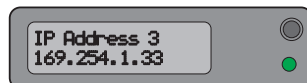
Run a web browser on your computer and enter the IP address of the required ALIF4000 unit:

The default addresses (if using ports **1** or **3**) are **TX:** <https://169.254.1.33>
RX: <https://169.254.1.32>

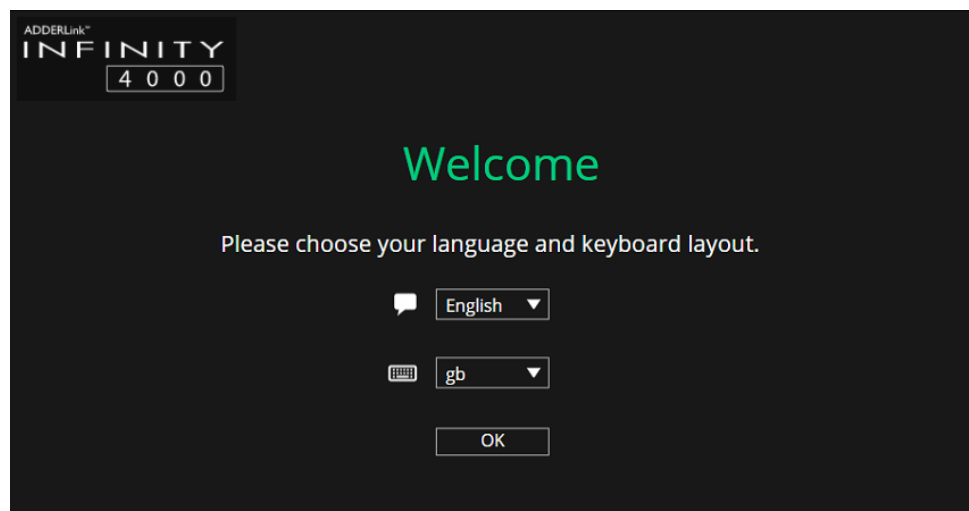
The default addresses (if using ports **2** or **4**) are **TX:** <https://169.254.1.43>
RX: <https://169.254.1.42>

If the IP address of a unit has been changed, you can either:

- Discover the unit's main IP address by pressing the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* (or *IP Address 4*).
- Alternatively, providing it is appropriate to do so, perform a manual factory reset (see next page) to restore the default address.



The opening page should be displayed:



For explanations of the options within each page, please see [Appendix A](#).

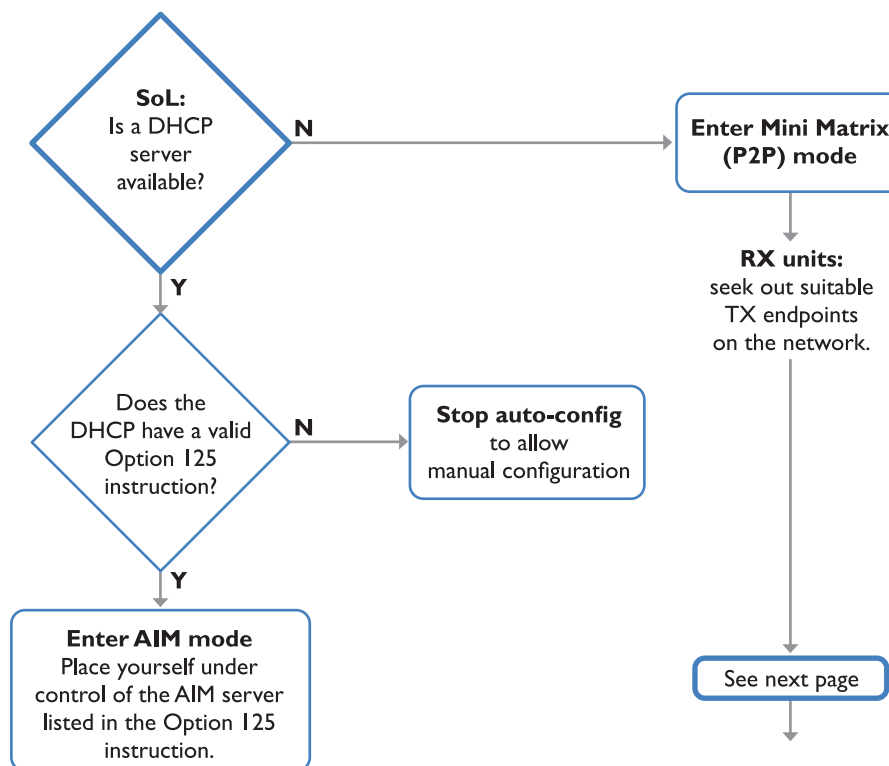
Start of Life: AIM or Point to Point configuration

To streamline initial configuration processes, all ALIF4000 units employ a Start of Life (SoL) procedure when they are in an unconfigured state; either because they are new or because they have undergone a factory reset.

When an unconfigured ALIF4000 unit boots, its SoL procedure will guide it to automatically determine which of two modes it should adopt:

- AIM mode** - place itself into the control of a specific AIM server on the network, whereupon the ALIF4000 will be assigned suitable configuration details to fit within the network of similar units.
- Mini Matrix (P2P) mode** - place itself into Point to Point (P2P) mode to allow manual configuration of links with other ALIF units.

The SoL procedure follows this basic logic flow to determine the correct mode:



ALIF4000网页配置

每台ALIF4000设备都配备独立的内部网页系统，其中完整存储着所有配置参数和设置信息（具体配置详情可参考右侧展示的“设备启动界面”）。用户需要通过连接至同一网络的计算机才能访问这些网页。此外，在ALIF4000 RX设备的控制台上，可通过按**CTRL + ALT + C**键（或点击屏幕上的相应图标）来调出其配置界面，该操作可通过屏幕显示（OSD）实现。☰（触摸屏上的图标）-请参见第25页。

通过其网页手动配置ALIF4000装置

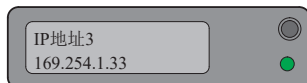
在计算机上运行网页浏览器，输入所需的ALIF4000单元的IP地址：

默认地址（如果使用端口1或3）为**TX**： <https://169.254.1.33>
RX： <https://169.254.1.32>

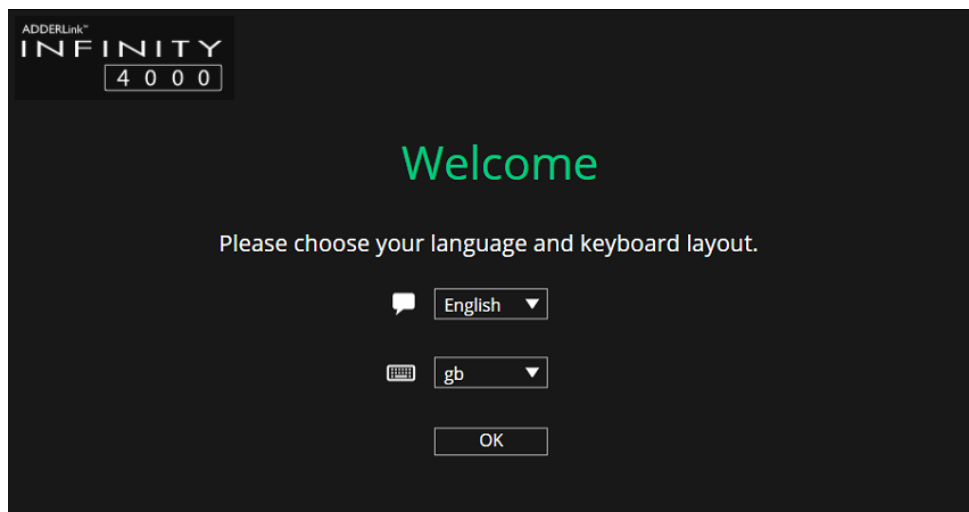
默认地址（如果使用端口2或4）为**TX**： <https://169.254.1.43>
RX： <https://169.254.1.42>

如果单元的IP地址已更改，您可以执行以下操作：

- 按下OLED屏幕旁边的前面板上的小按钮，即可发现设备的主IP地址，显示**IP地址3**（或**IP地址4**）的值。
- 或者，如果合适，执行手动出厂重置（参见下一页），以恢复默认地址。



应显示起始页：



有关每页内各选项的说明，请参见附录A。

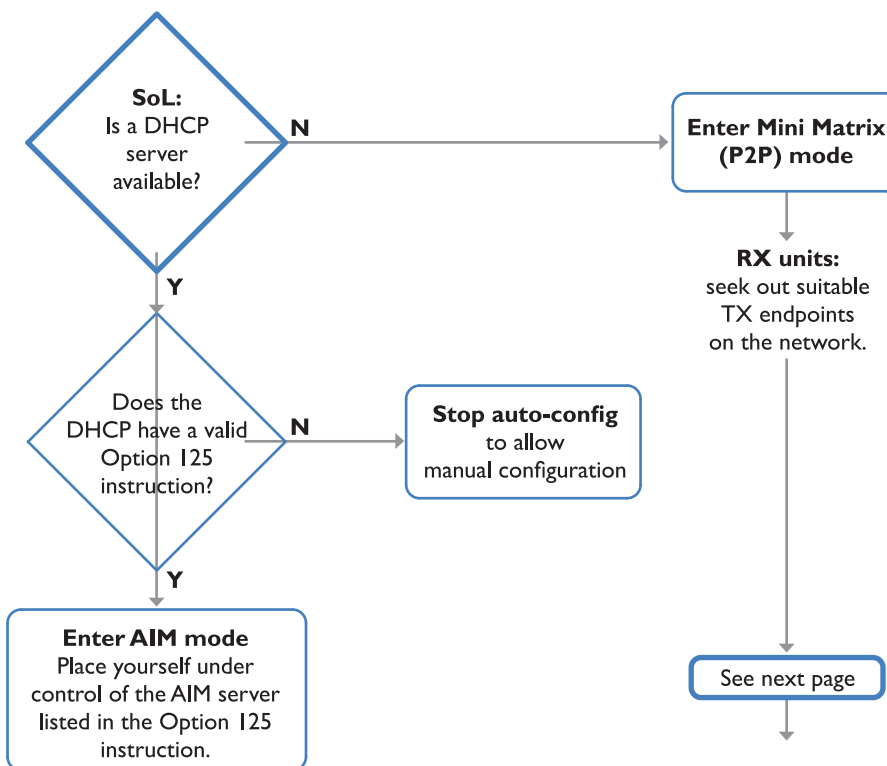
启动原因：AIM或点对点配置

为了简化初始配置过程，所有ALIF4000装置在未配置状态下均采用“初始状态（SoL）”程序；原因可能是新装置或已执行出厂重置。

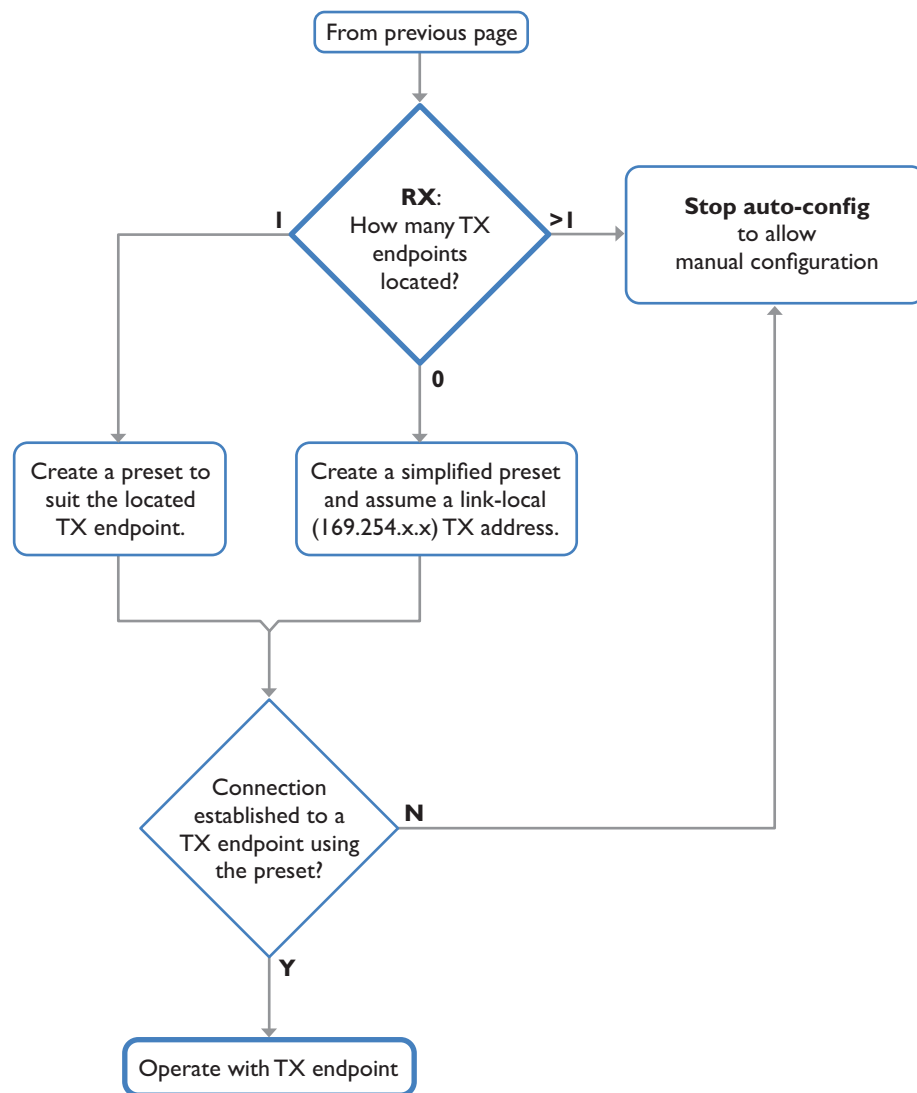
未配置的ALIF4000设备启动时，其SoL程序将引导它自动确定应该采用两种模式中的哪一种：

- AIM模式**—将自身置于网络上特定AIM服务器的控制之下，此时ALIF4000将被分配适当的配置详细信息，以便适配类似的设备网络。
- Mini Matrix（P2P）模式**—将自身置于点对点（P2P）模式，以便手动配置与其他ALIF单元的链接。

SoL程序遵循以下基本逻辑流程来确定正确的模式：



Start of Life configuration (continued)



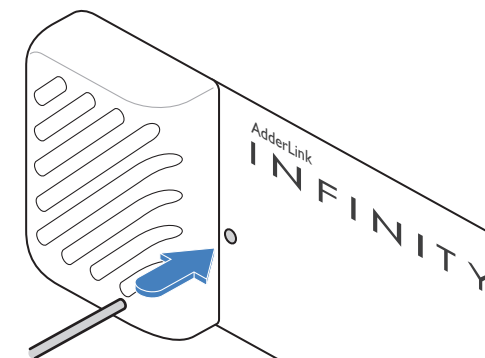
Once the mode has been set to AIM control, an ALIF4000 will remain operating that way until it undergoes a [factory reset](#). If set to Mini Matrix (P2P) mode, an ALIF4000 will remain thus until it undergoes a factory reset or is discovered by an AIM server.

PERFORMING A MANUAL FACTORY RESET

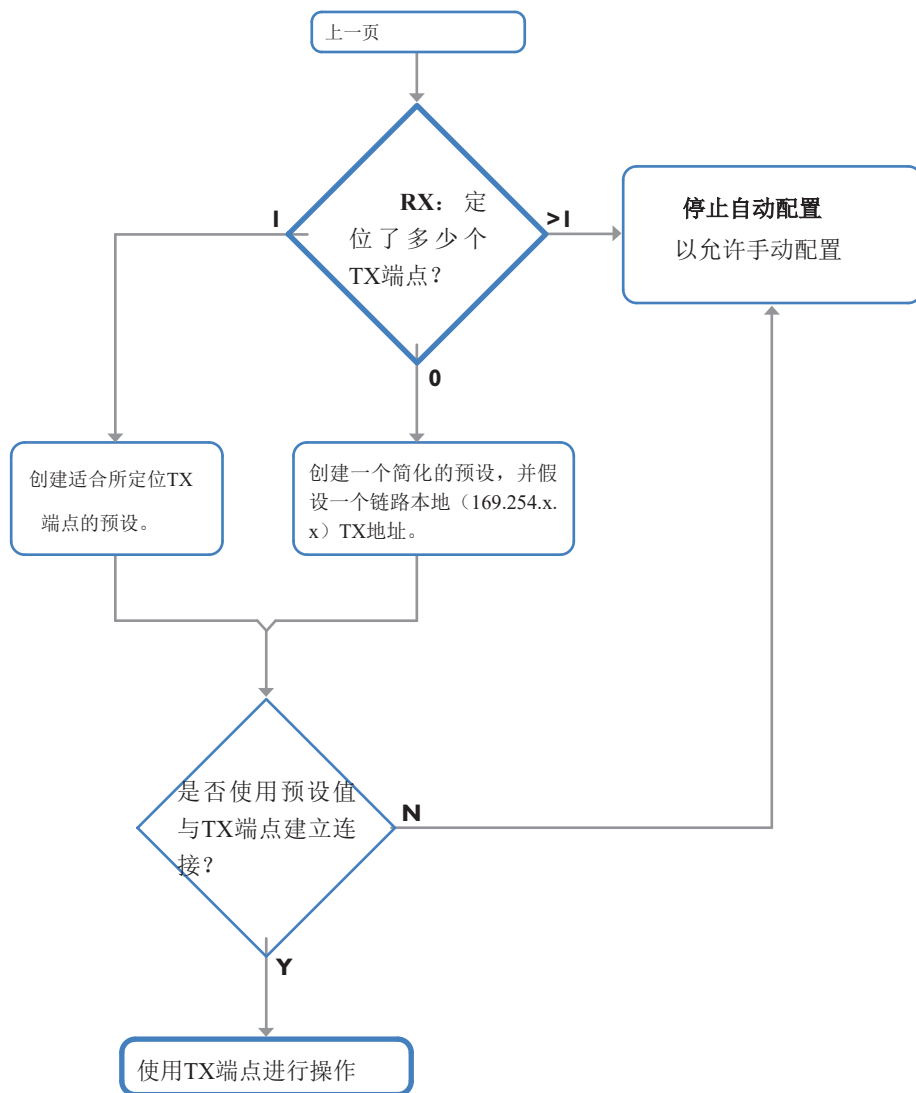
A factory reset returns ALIF4000 unit to its default configuration.

To perform a manual factory reset

- 1 Power on the ALIF4000 unit.
- 2 Use a long narrow implement (e.g. a straightened-out paper clip) to press-and-hold the recessed reset button on the front panel for roughly ten seconds, until the status indicator turns **blue** (Note: alternating red/green indications will occur during the ten second period while the button is still pressed).
- 3 Release the reset switch. The indicator will change to **red** for a short while (less than ten seconds) and then back to **blue** while ALIF4000 unit performs the reset and should then change to an alternative color, usually **orange** initially, signifying that the operation is complete.



Note: If you are performing a factory reset and intend to disconnect the power immediately after the reset, you must wait at least 30 seconds after you have released the reset button for it to complete the process.



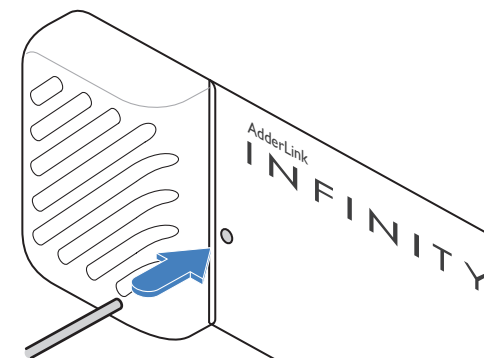
将模式设置为AIM控制后，ALIF4000将一直以这种方式运行，直至执行恢复出厂设置。如果将ALIF4000设置为迷你矩阵（P2P）模式，则ALIF4000将一直保持此模式，直至执行恢复出厂设置或被AIM服务器发现。

执行手动工厂重置

工厂重置将ALIF4000装置恢复为默认配置。

执行手动出厂重置

- 1 打开ALIF4000装置电源。
- 2 使用细长工具（例如拉直的回形针）按住前面板上凹陷的复位按钮约10秒钟，直到状态指示灯变为蓝色（注意：在按钮仍被按下的10秒钟期间，指示灯会交替显示红色/绿色）。
- 3 松开复位开关，指示灯将变为红色



色并保持较短时间（不到十秒）

然后返回到蓝色，同时ALIF4000装置执行复位，然后应变为另一种颜色，通常最初为橙色，表示操作完成。

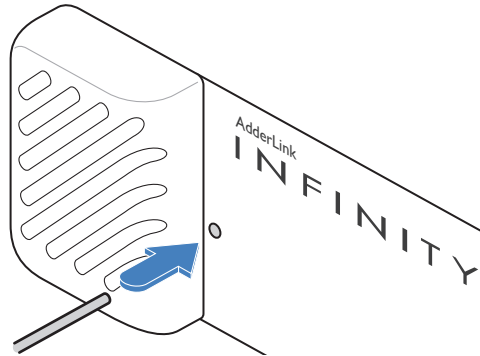
注意：如果执行出厂重置并且打算在重置后立即断开电源，则必须在释放重置按钮后等待至少30秒，以完成该过程。

PLACING THE DEVICE INTO RECOVERY MODE

Recovery mode may allow an ALIF4000 unit to be diagnosed or upgraded in the event of the main mode being non-operational.

To boot the device into recovery mode

- 1 Power on the ALIF4000 unit.
- 2 Use a long narrow implement (e.g. a straightened-out paper clip) to press-and-hold the recessed reset button on the front panel (for less than ten seconds) until the status indicator starts alternating **red/green**. *Note: A solid **blue** indication will occur after the ten second period.*
- 3 Release the reset switch. The indicator will change to **red** for a short while (less than ten seconds) and then alternating **red/green** signifying that the device is in recovery mode. *Note: If the indicator turns **blue**, then a factory reset has been performed instead, the device will not be in recovery mode and the operation will need to be attempted again.*

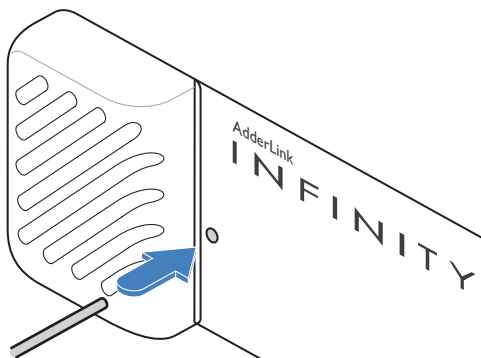


将器械置于恢复模式

在主模式不可用的情况下，恢复模式可能允许对ALIF4000装置进行诊断或升级。

将设备引导至恢复模式

- 1 打开ALIF4000装置电源。
- 2 使用长而窄的工具（例如。
）将一个拉直的回形针按住前面板上凹陷的复位按钮（按住时间不超过10秒），直到状态指示灯开始交替显示**红绿**两色。**注意：**在**10秒后**将出现蓝色固定指示灯。
- 3 松开复位开关。



指示器将暂时（不到10秒）变为

红色，然后交替显示**红色 / 绿色**

表示设备处于恢复模式。**注意：**如果指示灯变为**蓝色**，则表示已执行出厂

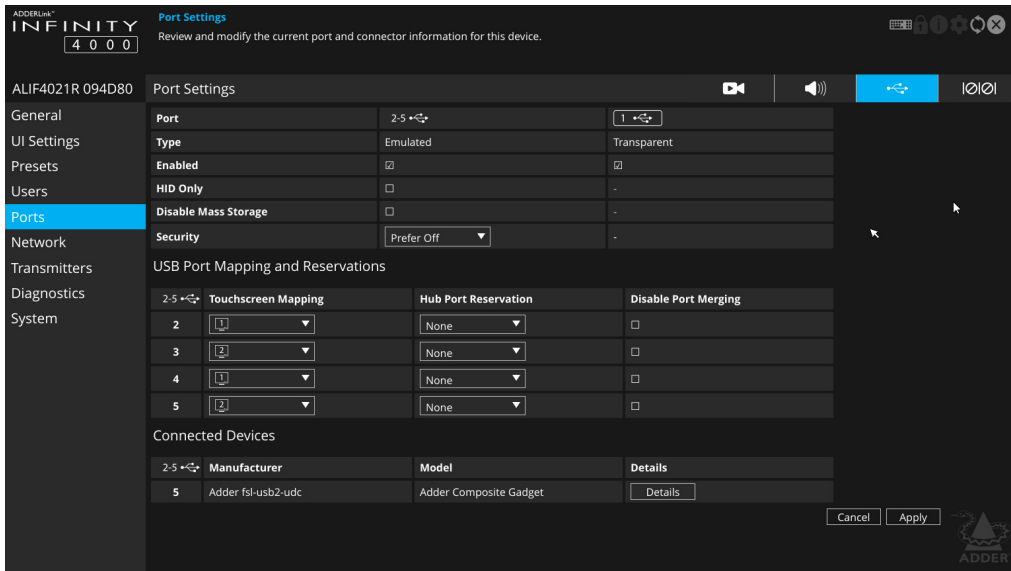
重置，设备将不处于恢复模式，需要重新尝试该操作。

CONFIGURING DUAL TOUCHSCREENS

When a single touchscreen is used with an ALIF RX, it should operate correctly as soon as the USB link is made between the screen and the ALIF RX. However, if two touchscreens are installed it may be necessary to instruct the ALIF RX which screen to correctly attribute to each USB input.

To attribute dual touchscreens

- 1 Access the Configuration pages on the ALIF RX - see page 25.
- 2 Click the Ports entry from the list of pages on the left side.
- 3 Click the USB page icon:  to display the following:



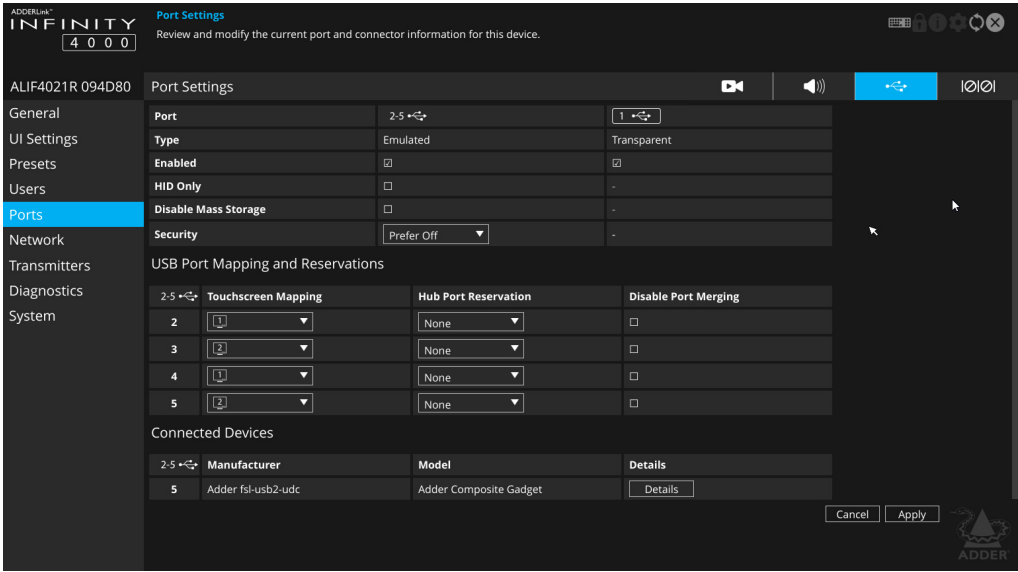
- 4 In the USB Port Mapping and Reservations section, match the primary touchscreen to the port number (2 -5) that its USB cable is connected to.
- 5 Repeat step 4 for the secondary touchscreen.
- 6 Click the Apply button and exit from the configuration pages.

配置双触摸屏

当使用单个触摸屏与ALIF RX一起使用时，只要在屏幕和ALIF RX之间建立USB连接，它就应该正常运行。但是，如果安装了两个触摸屏，则可能需要指导ALIF RX将哪个屏幕正确分配给每个USB输入。

为双触摸屏添加属性

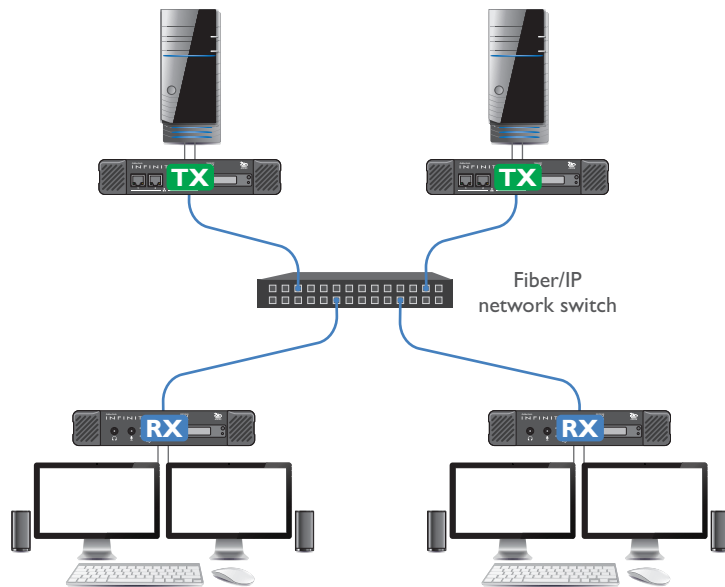
- 1 访问ALIF RX上的配置页面-请参见第25页。
- 2 单击左侧页面列表中的端口条目。
- 3 单击USB页面图标： 显示以下内容：



- 4 在USB端口映射和保留部分，将主触摸屏与它的USB电缆连接到的端口号（2 - 5）匹配。
- 5 对辅助触摸屏重复步骤4。
- 6 单击“应用”按钮并退出配置页面。

CREATING AN UNMANAGED MATRIX

Although ALIF units are most often organised and managed by a central AIM server, it is possible to create small networks of ALIF units, most often in matrix arrangements, ie multiple TX and RX units which can freely cross-connect.



This method of connection works well for small numbers of TX and RX units, but will become more difficult to manage as more units are attached. The maximum number of TX sources that can be made available to any RX is 16.

To create an unmanaged matrix

- 1 Connect ALIF4000 TX and RX units (with their various hosts and peripherals) to a suitable switch, as described in the Installation section - see page 9.

Note: If any device was previously managed by AIM, then it will need to be given a factory reset before continuing with this procedure. There must not be an AIM connected on the matrix network otherwise, when such devices undergo a factory reset, they will automatically revert to AIM control.

You now need to perform the following procedure on each ALIF RX in turn:

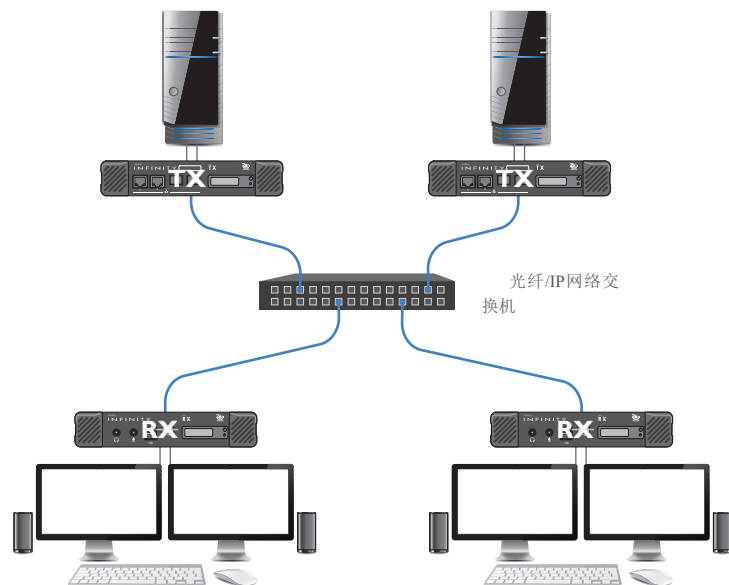
- 2 Access the Configuration pages - see page 25.
- 3 Click the Transmitters option from the list on the left side. This page will list all of the available TX units which are not under AIM control. See page 37.
- 4 Click the Presets option from the list on the left side. Use this page to add each TX unit to the list of presets for the RX that you are editing. See page 32.

To use the matrix

- On each RX, use the OSD to access the required TX units in the usual manner. See page 25.

创建非托管矩阵

虽然ALIF单元通常由一个中央AIM服务器组织和管理，但也可以创建小型的AL-IF单元网络，最常见的是矩阵式排列，即多个TX和RX单元可以自由交叉连接。



此连接方法对于少量的TX和RX单元工作良好，但随着更多单元的连接，管理将会变得更加困难。可提供给任何RX的TX源的最大数量为16。

创建非托管矩阵

1 将ALIF4000 TX和RX单元（及其各种主机和外围设备）连接到合适的交换机，如安装章节所述-请参见第9页。

注意：如果任何设备之前由AIM管理，则在继续执行此步骤之前，需要对其进行出厂重置。必须确保矩阵网络上没有连接AIM，否则当此类设备进行出厂重置时，它们将自动恢复为AIM控制。

现在需要对每台ALIF RX依次执行以下步骤：

- 2 访问配置页，参见第25页。
- 3 单击左侧列表中的发射机选项。此页将列出所有不受AIM控制的可用TX单元。请参阅第37页。
- 4 单击左侧列表中的“预设”选项。使用此页将每个TX单元添加到正在编辑的RX的预设列表中。请参阅第32页。

使用矩阵

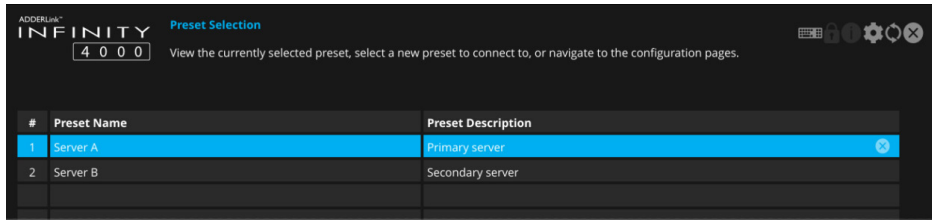
- 在每次RX时，使用OSD以常规方式访问所需的TX单元。请参见第25页。

CREATING AND EDITING PRESETS

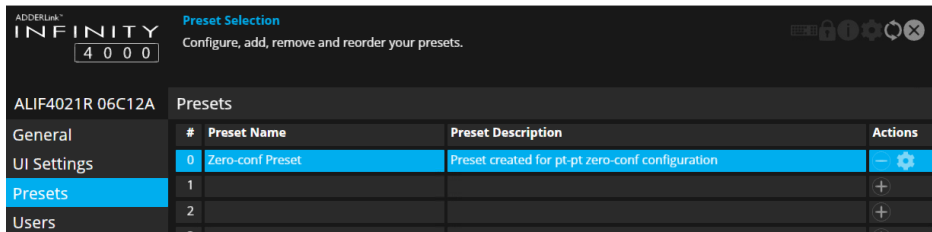
Presets allow you to create shortcuts from any ALIF receivers to any available ALIF transmitters. These are particularly useful when using an ALIF installation that is not under AIM control.

To access the Preset configuration page

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the icon on the touchscreen.
- 2 The Preset Selection page will be displayed:



- 3 Click/tap the icon in the top right corner.
- 4 Choose the Presets option from the list on the left side of the screen. This page will show the same list of presets, but with options to add (+) or edit (gear) entries:

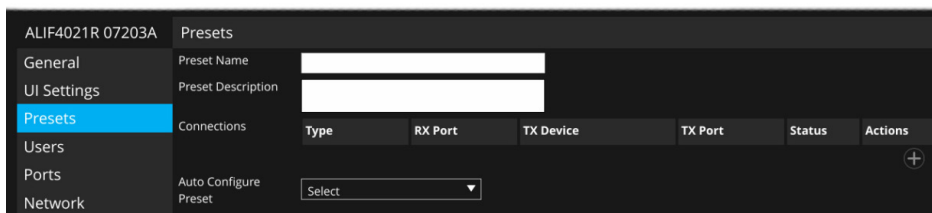


To remove a preset

- 1 Access the Preset configuration page as discussed above.
- 2 In the Actions column, click the icon for the entry that you wish to remove.

To add a preset

- 1 Access the Preset configuration page as discussed above.
- 2 Click the icon on the right hand side of the list to display the configuration page:



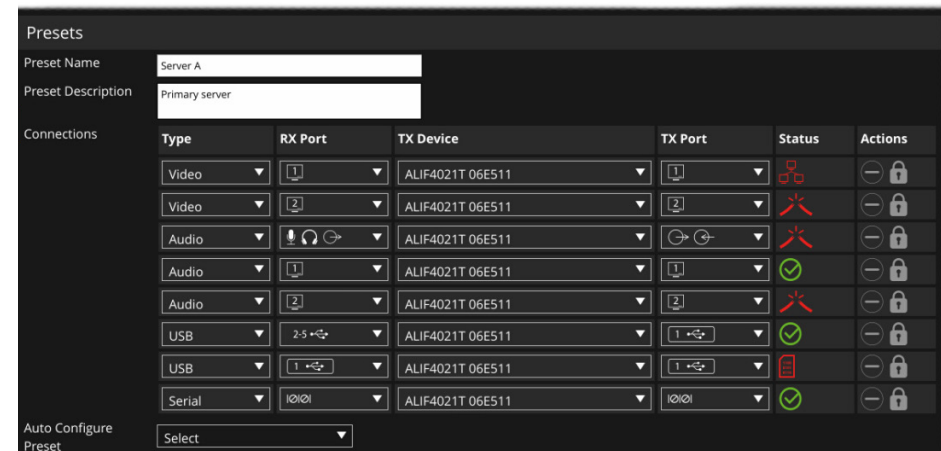
- 3 Enter a name and description for the new preset.

- 4 You can now choose how to configure your new preset - Auto or Custom:

- **Auto** - Click the Auto Configure Preset drop down and choose the ALIF transmitter that you wish to connect with. All of the supported default connections will be configured (on a 1-to-1 basis) between the receiver and chosen transmitter. Click the Apply button.
- **Custom** - Configure individual connections (useful when unusual cross connections are required).
 - 1 Click the icon on the right side to add a new connection entry.
 - 2 Check that the correct ALIF4000 TX is shown in the TX Device column. Click and change this entry, if required.
 - 3 In the Type column, click the Select option (highlighted in red) and choose the type of connection: Video, Audio, USB or Serial.
 - 4 Click the RX Port drop down and choose the required port.
 - 5 Click the TX Port drop down and choose the port that you wish the current RX port to connect with. If only one option is available it will be auto-selected.
 - 6 Repeat steps 1 to 5 for each of the required ports.
 - 7 Click the Apply button.

To edit a preset

- 1 Access the Preset configuration page as discussed left.
- 2 In the Actions column, click the icon for the preset entry you wish to edit. An editable list of connections will be shown, together with their status representations:



- 3 Make your changes as required and then click the Apply button to save.

To re-order presets

- 1 Access the Preset configuration page as discussed left.
- 2 Click and drag a preset to the required position within the list.

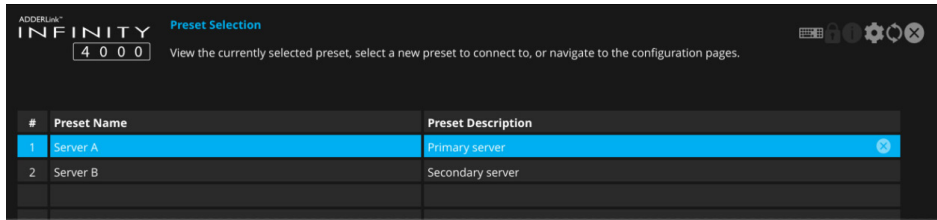
For more information about the options and status indications, see page 32.

创建和编辑预置

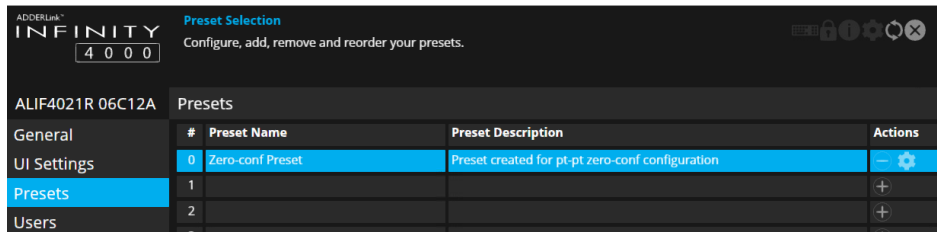
预置允许您创建从任何ALIF接收器到任何可用ALIF发射器的快捷方式。当使用不受AIM控制的ALIF安装时，这些功能特别有用。

访问预置配置页面

- 1 在连接至RX装置的控制台键盘上，通过按**CTRL + ALT + C**或点击触摸屏上的自图标来访问OSD。
- 2 此时将显示“预置选择”页面：



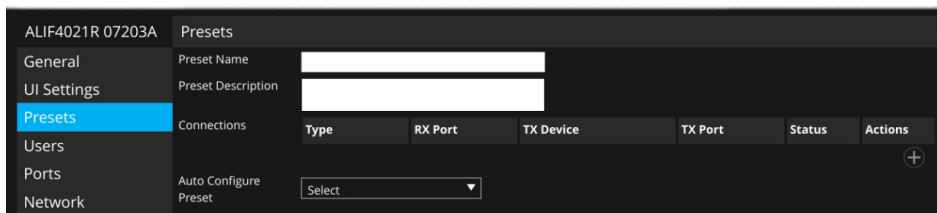
- 3 单击/轻按  右上角的图标。
- 4 从屏幕左侧的列表中选择“预置”选项。此页面将显示相同的预置列表，但会显示添加选项 (+) 或编辑 (gear icon) 的复数形式



删除预置

- 1 访问“预置”配置页面，如上文所述。
- 2 在“操作”列中，单击  要删除的条目的图标。要添加预置

- 1 访问“预置”配置页面，如上文所述。
- 2 单击  在列表的右侧单击图标以显示配置页面：



- 3 输入新预设的名称和描述。

- 4 现在您可以选择如何配置您的新预设- Auto或Custom:

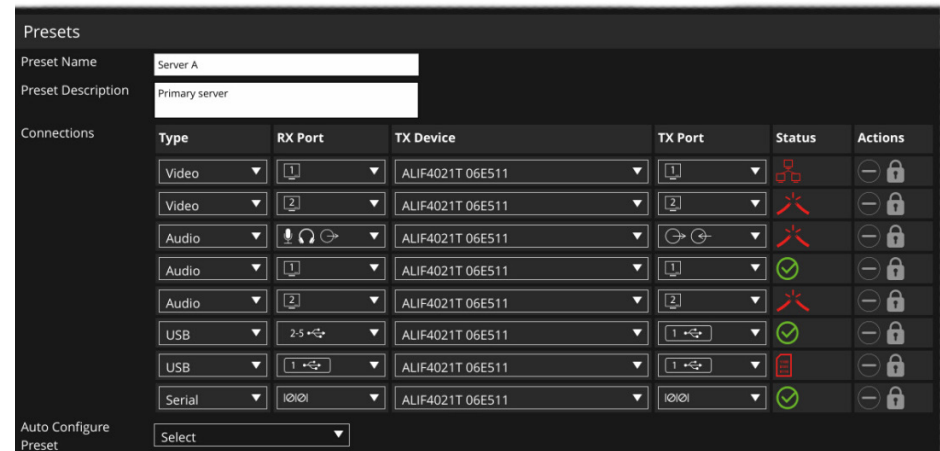
- **Auto** -单击自动配置预设下拉框并选择要与其连接的ALIF发射器。所有支持的默认连接将在接收器和所选发射器之间进行配置（一对一）。单击应用按钮。

- **自定义**—配置单个连接（当需要非常规交叉连接时很有用）。

- 1 单击  右侧的图标用于添加新的连接条目。
- 2 检查TX设备列中是否显示正确的ALIF4000 TX。如果需要，单击并更改该条目。
- 3 在类型栏中，单击选择选项（红色高亮），并选择连接类型：视频、音频、USB或串行。
- 4 单击RX端口下拉菜单并选择所需的端口。
- 5 单击TX端口下拉菜单，选择希望当前RX端口连接的端口。如果只有一个选项可用，则将自动选择该端口。
- 6 对每个需要的端口重复步骤1至5。
- 7 单击“应用”按钮。

编辑预置

- 1 访问“预置”配置页面，如左图所示。
- 2 在“操作”列中，单击  您希望编辑的预设条目的图标。将显示可编辑的连接列表，以及它们的状态表示：



- 3 根据需要进行修改，然后单击“应用”按钮保存。若要重新排序预置

置

- 1 访问“预置”配置页面，如左图所示。
- 2 单击并拖动一个预置到列表中的所需位置。有关选项和状态指示的详细信息，请参阅第32页。

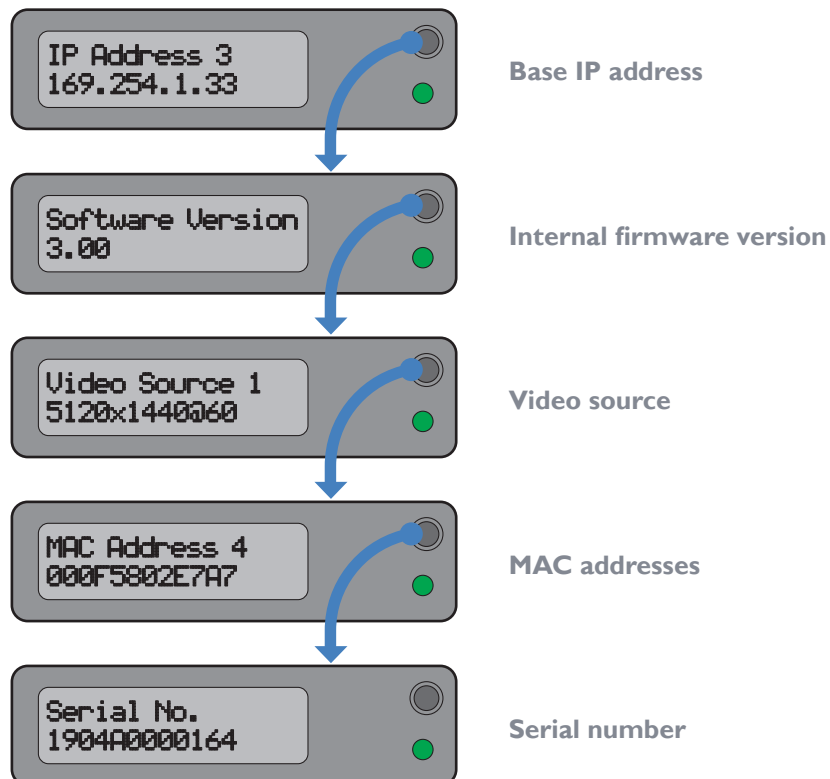
In operation, many ALIF4000 installations require no intervention once configured. The TX and RX units take care of all connection control behind the scenes so that you can continue to work unhindered.

FRONT PANEL INDICATIONS

The front panel of each ALIF4000 unit features an OLED information screen plus a single indicator capable of producing numerous color and flash patterns to provide a useful guide to operation.

OLED screen

Press and release the button to wake the OLED screen and begin showing information. Press the button repeatedly to change between subjects:



Indicator color and flash patterns

The single front panel indicator uses varying color and flashing patterns to signal key status:

Off	No power.
Green	All services present as compared to the configuration required.
Amber	Running but video, USB or network link missing (or not connected to another ALIF unit).
Red	Booting before processor loaded or failed.
Blue	Factory reset mode active.
Red/green flash	Booting into factory recovery mode.
Green/blue flash	Upgrade mode active.
Fast green flash	Identify mode active.

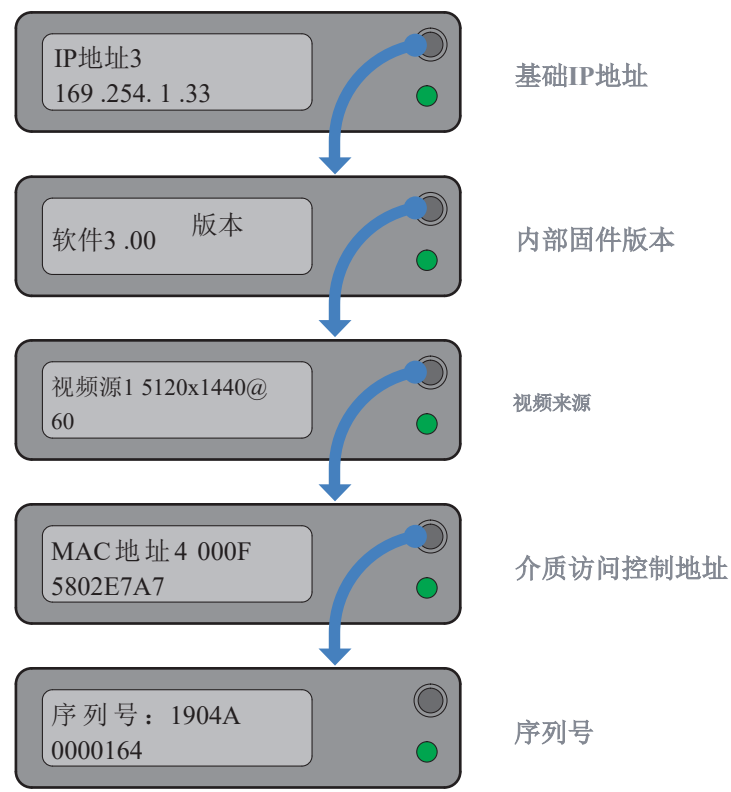
在运行过程中，许多ALIF4000安装一旦配置完成就无需干预。TX和RX单元在后台处理所有连接控制，因此您可以继续不受干扰地工作。

前面板指示

每个ALIF4000单元的前面板具有一个OLED信息屏幕和一个能够产生多种颜色和闪烁模式的指示器，以提供有用的运行指南。

OLED屏幕

按住并松开按钮，唤醒OLED屏幕并开始显示信息。反复按住按钮可在不同主题之间切换：



指示灯颜色和闪烁模式

单个前面板指示灯使用不同的颜色和闪烁模式来指示按键状态：

- | | |
|---------|--------------------------------------|
| 关闭 | 没有权力。 |
| 格林 | 与所需配置相比，所有服务都已存在。 |
| 琥珀 | 正在运行，但缺少视频、USB或网络链接（或未连接（另见ALIF单元））。 |
| 红色的 | 在处理器加载或失败之前启动。 |
| 蓝色 | 出厂设置模式处于活动状态。 |
| 红/绿闪烁 | 正在启动进入出厂恢复模式。 |
| 绿色/蓝色闪烁 | 升级模式已激活。 |
| 快绿灯 | 识别模式已激活。 |

USING THE ON SCREEN DISPLAY

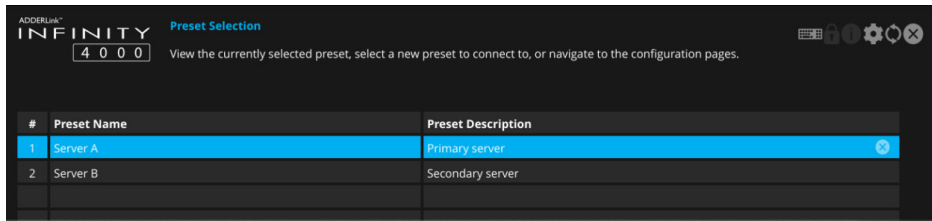
The OSD provides a quick and easy way to access ALIF transmitters as well as configuration details.

To access the OSD

1 On the console of your ALIF4000 RX unit, either:

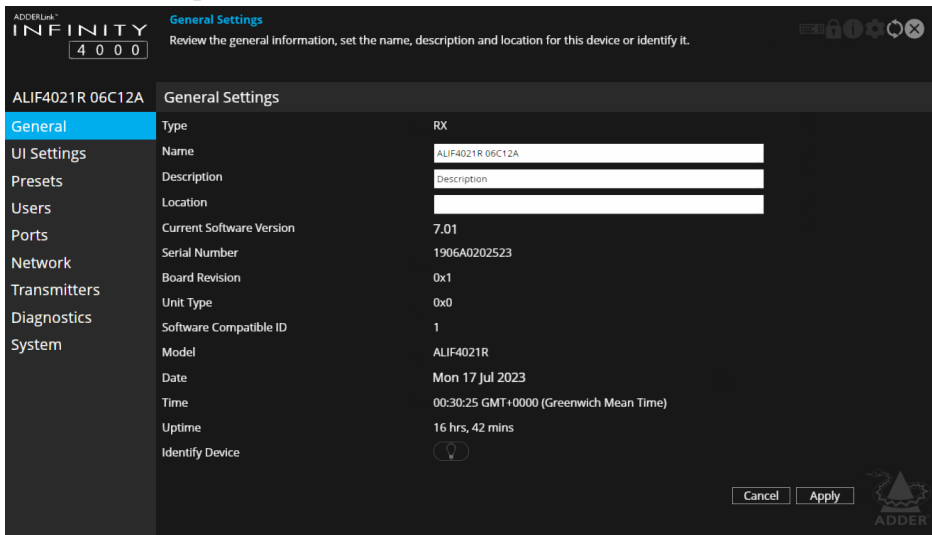
- Press **CTRL + ALT + C** on the keyboard,
- or
- Tap the  icon* on the touchscreen.

2 The Preset Selection page will be displayed:



3 On the preset page, either

- Click/tap a preset entry to connect with the required ALIF TX,
- or
- Click/tap the  icon to enter the first Configuration page:



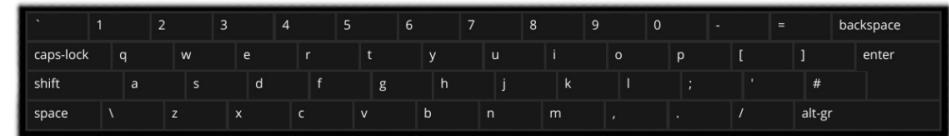
For explanations of the options within each page, please see [Appendix A](#).

To use the OSD keyboard (when using a touchscreen)

1 Access the OSD as discussed left.

2 Tap the  icon in the top right corner:

3 The OSD keyboard will be displayed to assist you when entering text and numerics:



To hide the OSD keyboard

1 Tap the  icon in the top right corner.

*To move the  icon on your touchscreen, tap and hold it until it changes color and then drag it to the best position.

使用屏幕显示

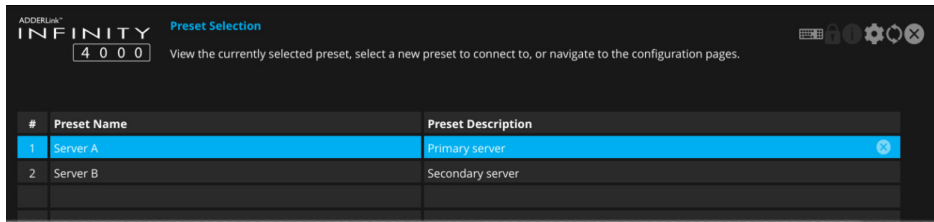
OSD提供了一种快速简便的方法来访问ALIF发送器以及配置详细信息。

访问OSD

1 在ALIF4000 RX装置的控制台上，可以：

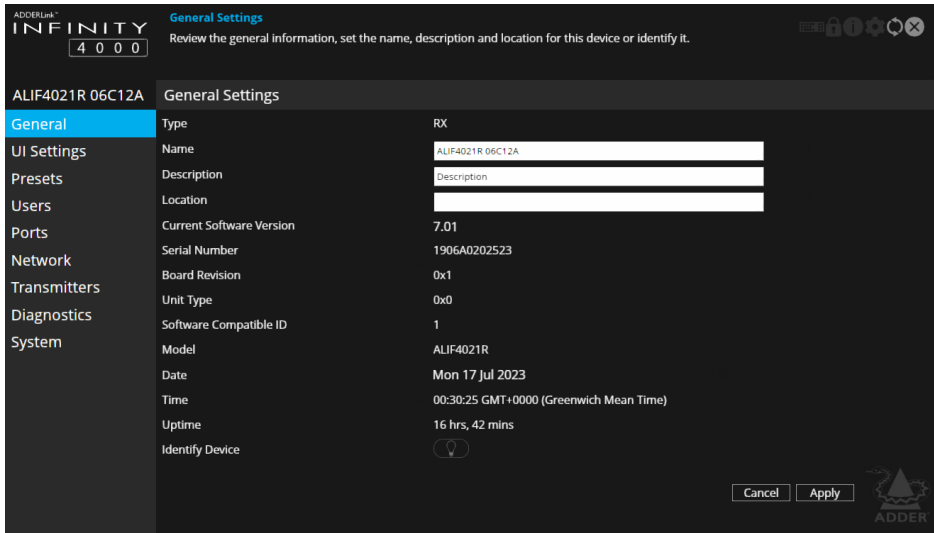
- 在键盘上按CTRL + ALT + C，或
- 点击触摸屏上的自图标*。

2 此时将显示“预置选择”页面：



3 在预置页面上，任一

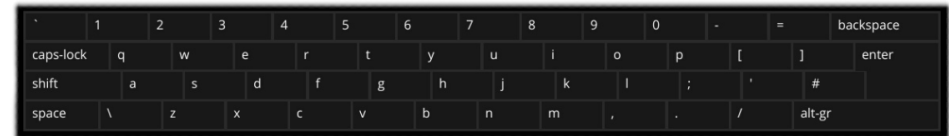
- 点击/轻触预设条目以连接所需的ALIFTX，或
- 单击/轻按⚙️图标，进入第一个配置页面：



有关每页内各选项的说明，请参见附录A。

使用OSD键盘（当使用触摸屏时）

- 1 按左图所述访问OSD。
- 2 点击“⌨️”右上角的图标：
- 3 输入文字和数字时，OSD键盘将显示出来以帮助您：

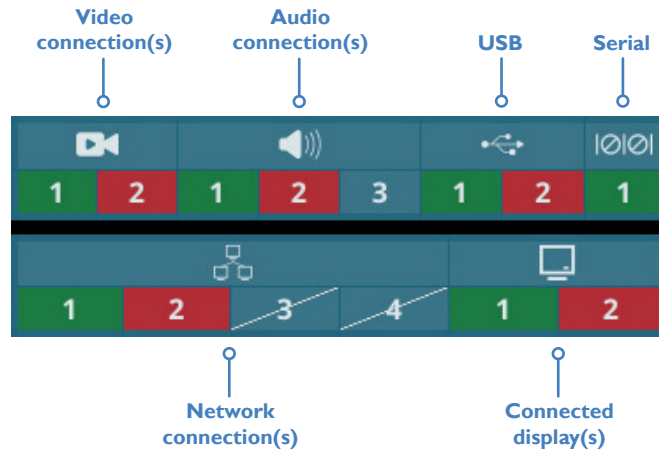


隐藏OSD键盘

- 1 点击“⌨️”右上角的图标。

*要移动触摸屏上的自图标，点击并按住它，直到它改变颜色，然后把它拖到最佳位置。

PORT STATUS POPUPS



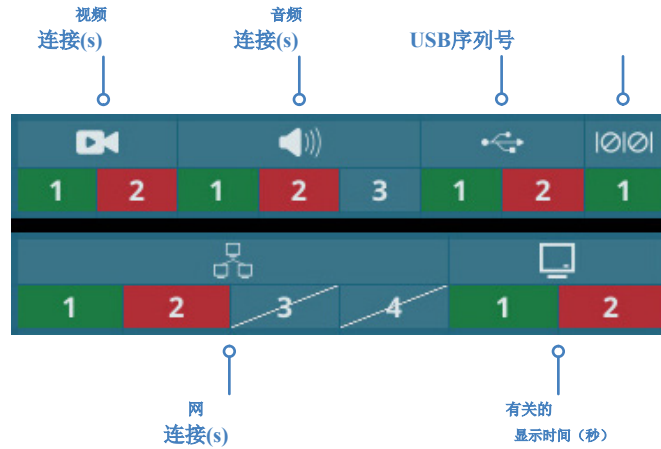
These useful status indicators will be displayed in the top left corner (or elsewhere according to UI Settings) of the primary console display:

- Whenever the OSD is in use,
- If any issues occur with one or more ports (when the OSD is not in use).

The status of each port will be shown as follows:



端口状态弹出窗口



这些有用的状态指示器将显示在主控制台显示器的左上角（或根据UI设置显示在其他位置）：

- 每当OSD在使用时，
- 如果一个或多个端口出现任何问题（OSD未使用时），则每个端口的状态

将显示如下：



Further information



This chapter contains a variety of information, including the following:

- Getting assistance - see right
- [Appendix A](#) - Configuration pages
- [Appendix B](#) - Support for analog and digital audio
- [Appendix C](#) - Tips for success when networking ALIF units
- [Appendix D](#) - Troubleshooting
- [Appendix E](#) - Glossary
- [Appendix F](#) - RS232 'null-modem' cable pinout
- [Appendix G](#) - Fiber modules and cables
- [Appendix H](#) - Using the optional ALIF4000 rack shelf
- [Appendix I](#) - Open source licenses

GETTING ASSISTANCE

If you are still experiencing problems after checking the information contained within this guide, then please refer to the Support section of our website:

www.adder.com

INSTALLATION

CONFIGURATION

OPERATION

FURTHER
INFORMATION

INDEX

进一步资料



本章包含多种信息，包括以下内容：

- 获得援助-见右
- 附录A -配置页
- 附录B—模拟和数字音频支持
- 附录C-成功建立ALIF网络的技巧
- 附录 D -故障排除
- 附录 E -术语表
- 附录 F - RS232 “null-modem” 电缆引脚排
- 附录 G—光纤模块和电缆
- 附录 H -使用可选的ALIF4000机架
- 附录I -开源许可证

获取帮助

如果检查本指南中的信息后，您仍然遇到问题，请访问我们的网站，查看“支持”部分：

www.adder.com

安装

配置

业务

更多信息

索引

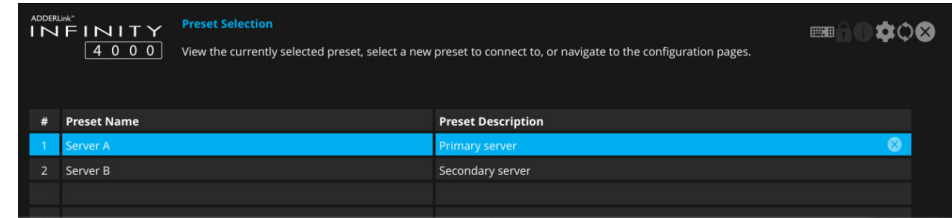
APPENDIX A - Configuration pages

This section covers the web page configuration for the ALIF4000 units:

- [RX - General Information](#)
- [RX - UI Settings](#)
- [RX - Presets](#)
- [RX - Users](#)
- [RX - Ports](#)
- [RX - Network](#)
- [RX - Transmitters](#)
- [RX - Diagnostics and Statistics](#)
- [RX - System](#)
- [TX - General Information](#)
- [TX - UI Settings](#)
- [TX - Users](#)
- [TX - Ports](#)
- [TX - Network](#)
- [TX - Diagnostics and Statistics](#)
- [TX - System](#)

To access the OSD

- 1 On the console of your ALIF4000 RX unit, either:
 - Press **CTRL + ALT + C** on the keyboard,
 - or
 - Tap the  icon* on the touchscreen.
- 2 The Preset Selection page will be displayed:



- 3 On the preset page, either
 - Click/tap a preset entry to connect with the required ALIFTX,
 - or
 - Click/tap the  icon to enter the first Configuration page:

To use the OSD keyboard (when using a touch screen)

- 1 Access the OSD as discussed on page 25.
- 2 Tap the  icon in the top right corner of the screen.
- 3 The OSD keyboard will be displayed to assist you when entering text and numerics:



To hide the OSD keyboard

- 1 Tap the  icon in the top right corner.

附录A-配置页面

本节介绍ALIF4000装置的网页配置：

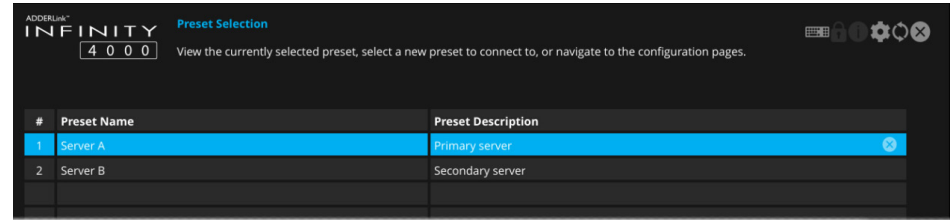
- [RX -一般信息](#)
- [RX -用户界面设置](#)
- [RX -预设](#)
- [RX -用户](#)
- [RX -端口](#)
- [RX -网络](#)
- [RX -网络](#)
- [RX -发射器](#)
- [RX -诊断和统计](#)
- [RX -系统](#)
- [TX -一般信息](#)
- [TX - UI设置](#)
- [TX -用户](#)
- [TX -端口](#)
- [TX -网络](#)
- [TX -诊断和统计](#)
- [TX -系统](#)

访问OSD

1 在ALIF4000 RX装置的控制台上，可以：

- 在键盘上按**CTRL + ALT + C**，或
- 点击触摸屏上的自图标*。

2 此时将显示“预置选择”页面：



3 在预置页面上，任一

- 点击/轻触预设条目以连接所需的ALIFTX，或
- 单击/轻按⚙️图标，进入第一个配置页面：

使用OSD键盘（当使用触摸屏时）

- 1 访问OSD，如第25页所述。
- 2 点击“ 屏幕右上角的图标。
- 3 输入文本和数字时，OSD键盘将显示出来以帮助您：



隐藏OSD键盘

- 1 点击“ 右上角的图标。

RX - General Information

To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 If necessary, click the **General** link.

OR

- 1 Connect a computer to the same network as the RX unit.
- 2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* or *1* (or *IP Address 4* or *2*) and use that address.
- 3 If necessary, click the **General** link.

General Information

Type - States whether the device is a transmitter (TX) or a receiver (RX).

Name - Name details that you can alter to distinguish this unit from all others. Not shown when operating under AIM server control.

Description - Allows you to optionally add a description of the device. Useful when many ALIF units are being used. Not shown when operating under AIM server control.

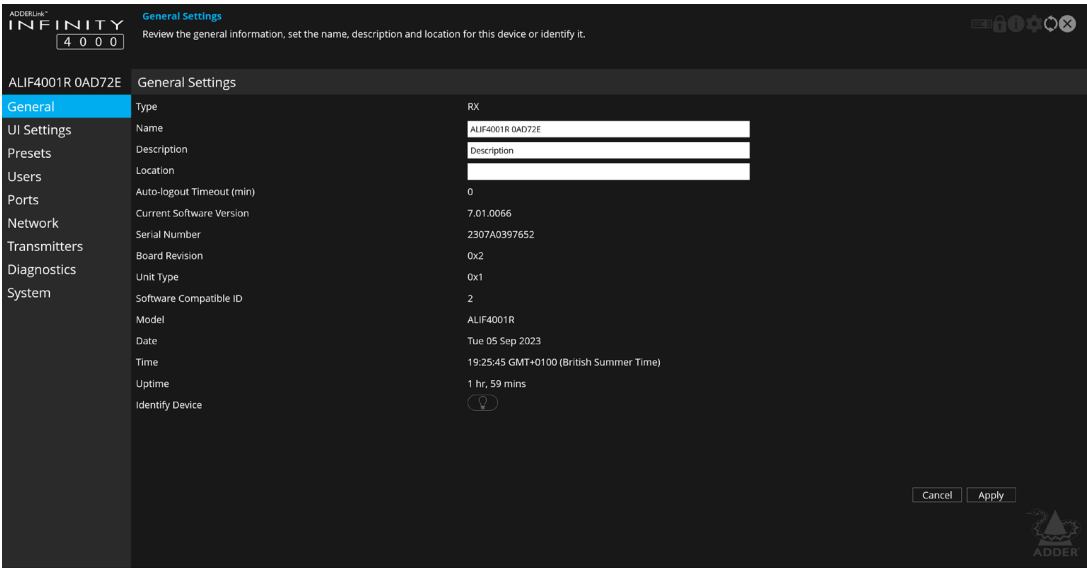
Location - Allows you to optionally add a description of the device's location. Useful when many ALIF units are being used. Not shown when operating under AIM server control.

Auto-logout Timeout - Determines the period of inactivity (in minutes) after which the configuration page should automatically log out.

Current Software Version - Displays the version number of the currently installed (and active) internal software.

Serial Number - Displays the fixed serial number of the device.

Board Revision - Displays the revision number of the device's main circuit board.



Unit Type - Used for Adder technical support purposes, this entry shows a code depicting the type of the main circuit board.

Software Compatible ID - Used for Adder technical support purposes, this entry shows the software compatible ID of the main circuit board.

Model - Displays the model number of the device.

Date and Time - Displays the current date and time used by the device when this page was last loaded (select refresh icon to update).

Uptime - Shows the time period for which the device has currently been running since the last time this page was loaded (select refresh icon to update).

Identify Device - When clicked, this button will cause the indicator on the front panel of the device to flash to assist with identification when multiple units are installed in the same area. A popup dialog will also be displayed on screen showing all relevant identification details. Click the Cancel button to stop the identification process or click the OK button to close the popup (and then click the Identify Device button when you're ready to cancel this operation).



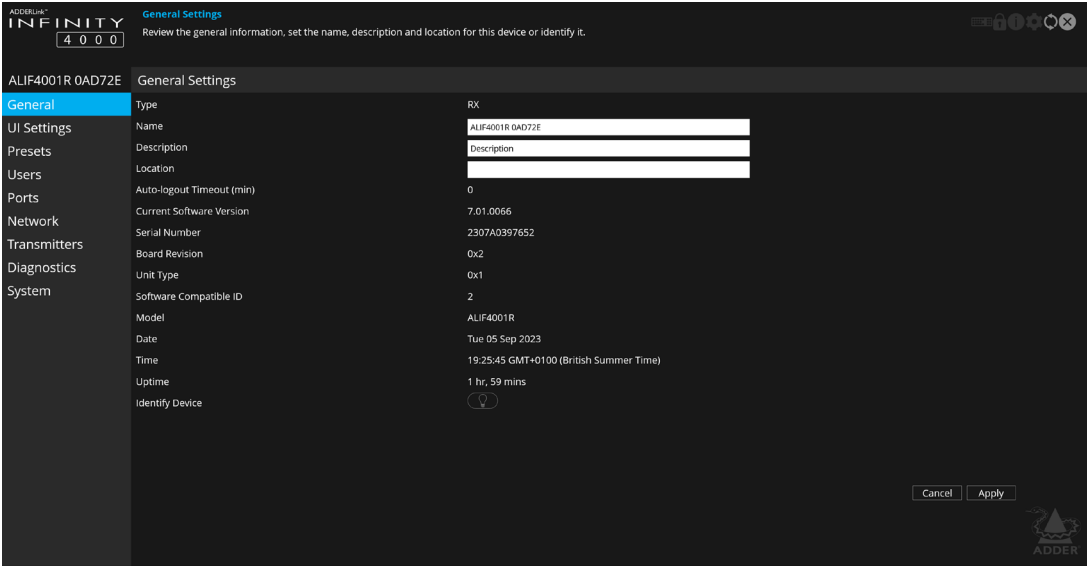
到此地的路线

可通过两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD，将显示 “预设选择” 页面。
- 2 单击 “⚙️ 右上角的图标。
- 3 如有必要，请单击 “常规” 链接。

或

- 1 将计算机连接至与RX单元相同的网络。
- 2 运行网络浏览器并输入RX单元的IP地址：
https://169.254.1.32（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用SFP端口4或RJ45端口2，则默认地址将为**https://169.254.1.42**如果 IP地址未知，按OLED屏幕旁边的前面板上的小按钮，显示IP地址3或1（或IP地址4或2)的值并使用该地址。
- 3 如有必要，请单击 “常规” 链接。



一般信息

类型—说明设备是发射器（TX）还是接收器（RX）。

名称 -可以更改的名称详细信息，用于将该单位与其他所有单位区分。在AIM服务器控制下运行时不会显示此名称。

描述 -允许您可选地添加设备的描述。在使用许多ALIF装置时很有用。在AIM服务器控制下运行时不会显示。

位置 -允许您选择性地添加设备位置的描述。在使用许多ALIF装置时很有用。在AIM服务器控制下运行时不会显示此选项。

自动注销超时—确定配置页面自动注销的不活动时间（分钟）。当

前软件版本—显示当前安装（且处于活动状态）的内部软件的版本号。

序列号—显示设备的固定序列号。

板修订—显示设备主电路板的修订号。

单元类型—用于加法器技术支持目的，此条目显示一个描述主电路板类型的代码。

软件兼容ID -用于加法器技术支持目的，此条目显示了主电路板的软件兼容ID。

型号 -显示设备的型号。

日期和时间—显示设备上上次加载此页面时使用的当前日期和时间（选择刷新图标以更新）。

Uptime—显示自上次加载此页面以来设备当前运行的时间段（选择刷新图标以更新）。

识别设备 -单击此按钮时，设备前面板上的指示灯将闪烁，以便在同一个区域安装多个设备时进行识别。屏幕上还将显示一个弹出对话框，显示所有相关的识别详细信息。单击“取消”按钮可停止识别过程，或单击“确定”按钮关闭弹出对话框（然后单击“识别设备”按钮，准备取消此操作）。

RX - UI Settings

To get here

You can access this page in two ways:

1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.

2 Click the  icon in the top right corner.

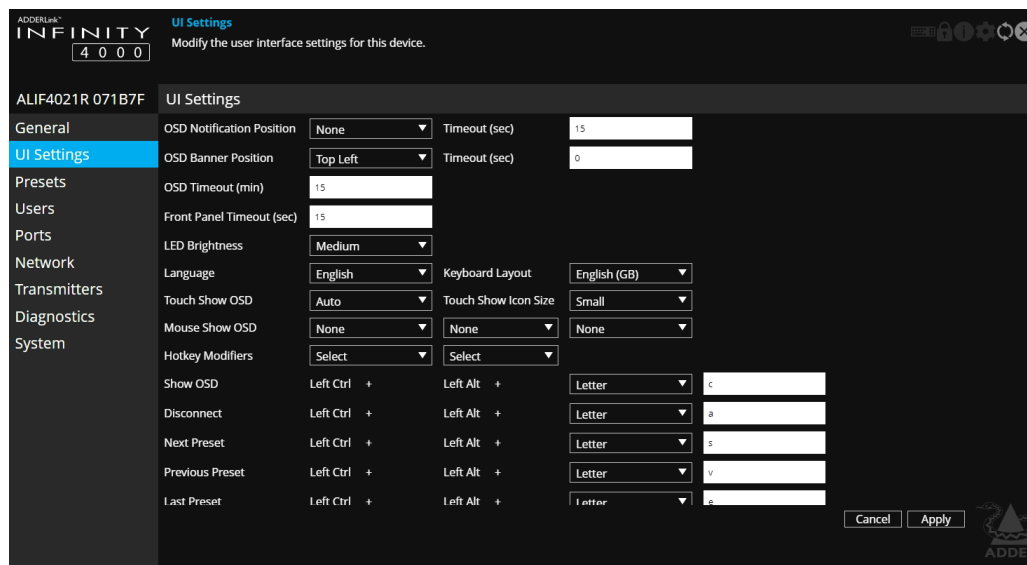
3 Click the **UI Settings** link.

OR

1 Connect a computer to the same network as the RX unit.

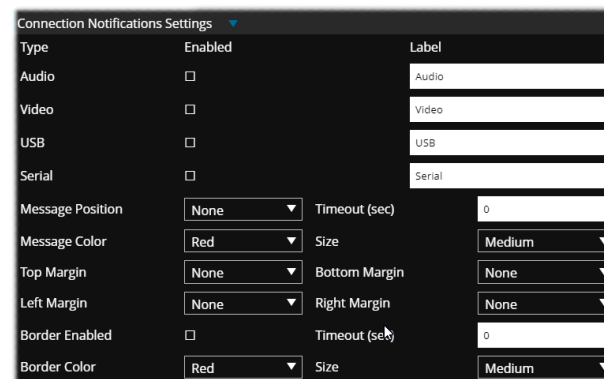
2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* or *1* (or *IP Address 4* or *2*) and use that address.

3 Click the **UI Settings** link.



Show OSD... ..Last Preset - These entries determine the hotkey letters required (together with the modifier keys selected above) to enact various presets and modes. Not shown when operating under AIM server control.

Connection Notification Settings - A collection of settings that can be used to configure the visual appearance, location, and timeout for notifications. Click the arrow to reveal the available options:



UI Settings

OSD Notification Position (plus Timeout) - Determines the location and persistence of notifications issued on users' screens.

OSD Banner Position (plus Timeout) - Determines the location and persistence of banners (a banner is a popup showing the current preset/channel name) displayed on users' screens.

OSD Timeout - Determines the period (in minutes) of inactivity that should elapse before the OSD is closed.

Front Panel Timeout - Determines the period of inactivity (in seconds) that should elapse before the front panel display should return to a blank state.

LED brightness - Determines the brightness of the front panel LED indicator.

The following entries are also editable when the unit is not under AIM control:

Language - Determines the language used for all text labels within the configuration pages.

Keyboard Layout - Determines the appropriate keyboard layout for use with the configuration pages.

Touch Show OSD - (When touch screens are used) Determines whether the Show OSD icon is displayed continually, not at all or automatically.

Touch Show Icon Size - (When touch screens are used) Determines the size of the Show OSD icon. Options range from Small to Very Large.

Mouse Show OSD - Determines the mouse button press combination that should be used to call the OSD.

Hotkey Modifiers - Determines the special modifier keys that will be used to form the basis of all the hotkey functions listed below.

Enabled tick box - enables/disables connection notification messages for each connection type.

Label - defines the text label to use in the notification messages in place of the "%type%" token - see "Connection Notification Messages" on next page.

Position - "None" = All Connection notifications messages are disabled (regardless of enabled settings above). All other values for this setting enable the messages for the given connection types above that are enabled.

Timeout - 0 = no timeout, messages remain on screen indefinitely (unless user "clicks" on them to clear them using the mouse when OSD is onscreen). Any other value sets the duration in seconds that a given notification message remains on screen.

Message Colour - set the colour of the notification messages.

Size - set the size of the notification messages.

Margins (top,right,bottom,left) - each can be set to None, Small, Medium or Large to determine an offset that will be applied to the notification messages dependent on their displayed position.

Border Enabled - enable/disable border. If enabled, then a border is drawn around the whole screen (only on the video head that shows the OSD) when any preset connection is in an error state/status.

Border Colour - set the border colour to use.

Size - width of border to use.

到此地的路线

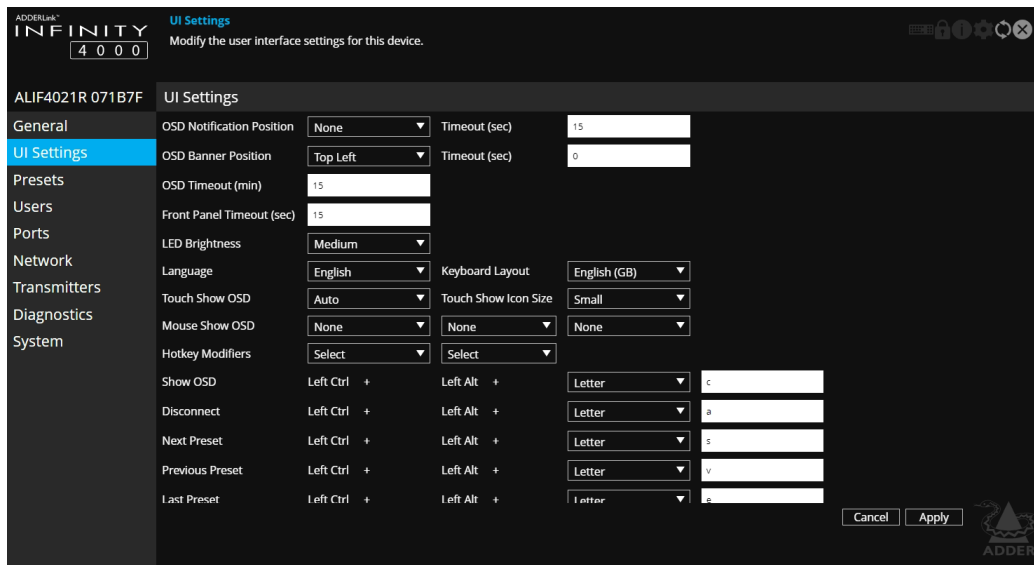
可通过以下两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。
- 2 单击“ 右上角的图标。
- 3 单击“UI设置”链接。

或

- 1 将计算机连接至与RX单元相同的网络。
- 2 运行网络浏览器并输入RX单元的IP地址：
https://169.254.1.32（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2，那么默认地址将为**https://169.254.1.42**如果 IP地址未知，按下前面板OLED屏幕旁边的按钮，即可显示IP地址3或1（或IP地址4或2）的数值并使用该地址。

- 3 单击“UI设置”链接。



用户界面设置

OSD通知位置（加上超时）-确定用户屏幕上发出的通知的位置和持续时间。

OSD横幅位置（加上超时）-确定用户屏幕上显示的横幅（一个显示当前预设频道/频道名称的弹出窗口）的位置和持续时间。

OSD超时—确定在关闭OSD前应经过的不活动时间（以分钟为单位）。

前面板超时—确定前面板显示器在达到特定状态之前应返回空白状态的不活动时间（以秒为单位）。

LED亮度—确定前面板LED指示灯的亮度。

在设备未处于AIM控制下时，以下条目也可编辑：

语言—确定配置页面中所有文本标签使用的语言。

键盘布局—确定配置页面使用的适当键盘布局。

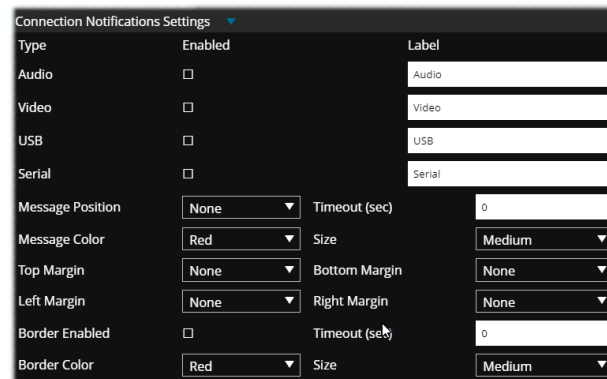
触摸屏显示OSD-（当使用触摸屏时）确定是否持续显示、根本不显示或自动显示“显示OSD”图标。

触摸屏显示图标大小-（当使用触摸屏时）确定显示OSD图标的大小。选项范围从小到非常大。**鼠标显示OSD**-确定调用OSD应使用的鼠标按钮按压组合。

Hotkey Modifiers -确定特殊修饰符键，这些修饰符将用作下列所有热键功能的基础。

显示OSD.....最后使用的预设-这些条目确定执行各种预设和模式所需的热键字母（与上面选择的修饰符键一起）。在AIM服务器控制下运行时不会显示。

连接通知设置—一组可用于配置通知的视觉外观、位置和超时的设置。单击箭头以显示可用选项：



启用复选框—启用/禁用每个连接类型的连接通知消息。

Label-定义在通知消息中使用的文本标签，以代替“%type%”标记-请参阅下一页的“连接通知消息”。

位置 - “无” =禁用所有连接通知消息（不考虑上面的启用设置）。

此设置的其他值将为上述给定连接类型启用消息，这些连接类型包括激活的

Timeout - 0 =无超时，消息无限期地保留在屏幕上（除非用户在OSD屏幕上时用鼠标“点击”它们以清除它们）。任何其它值都设置特定通知消息保留在屏幕上的持续时间，单位为秒。

消息颜色—设置通知消息的颜色。

大小—设置通知消息的大小。

边距（顶部、右侧、底部、左侧）—每个边距都可以设置为“无”、“小”、“中”或“大”，以根据通知邮件的显示位置确定要应用的偏移量。

边框启用 -启用/禁用边框。如果启用，当任何预置连接处于错误状态/状态时，将在整个屏幕周围绘制边框（仅在显示OSD的视频头上）。

边框颜色—设置要使用的边框颜色。

Size—要使用的边框的宽度。

继续的

Connection Notification Messages - These settings are used to configure the message text for each possible connection state or status, and can be customised as required to give different descriptions (or in different languages) as needed. Click the arrow to reveal the available options:

Connection Notification Messages ▼	
Disconnected	%type% to %sinkid% from %sourceid% disconnected
Connecting	%type% to %sinkid% from %sourceid% connecting
Connected	%type% to %sinkid% from %sourceid% connected
Incompatible Version	%type% to %sinkid% from %sourceid% has an incompatible version
Incompatible Security Settings	%type% to %sinkid% from %sourceid% has incompatible security settings
Bad Authorisation	%type% to %sinkid% from %sourceid% has incorrect authorization credentials
Bad Association	%type% to %sinkid% from %sourceid% has failed to associate
Source In Rma	TX device is operating in <u>RMA</u> mode
Source In Recovery	TX device is operating in RECOVERY mode
Source Not Supported	%type% to %sinkid% from %sourceid% - source port is not supported by the TX
Too Many Connections	%type% to %sinkid% from %sourceid% failed due to too many connections at the TX
Source Disabled	%type% to %sinkid% from %sourceid% failed as the port is disabled at the TX
Source Port Not Connected	%type% to %sinkid% from %sourceid% is not connected at the TX
No Source	%type% to %sinkid% from %sourceid% has no input signal at the TX
Source Out Of Range	%type% to %sinkid% from %sourceid% has an unsupported input signal at the TX
Source Out Of Resources	%type% to %sinkid% from %sourceid% has insufficient resources at the TX
Insufficient Bandwidth	%type% to %sinkid% from %sourceid% has insufficient network bandwidth
Encoding Stopped	%type% to %sinkid% from %sourceid% has stopped encoding at the TX
Port Not Connected	%type% to %sinkid% from %sourceid% is not connected at the RX
No Data	%type% to %sinkid% from %sourceid% is not receiving data from the TX
Out Of Range	%type% to %sinkid% from %sourceid% is not supported at the RX
Out Of Resources	%type% to %sinkid% from %sourceid% is out of resources at the RX
Decoding Stopped	%type% to %sinkid% from %sourceid% has stopped decoding at the RX

The %type%, %sinkid% and %sourceid% entries are special tokens that are replaced when the notification is generated:

- %type% will be replaced with the connection type *Label* entry defined above in Connection Notification Settings.
- %sinkid% will be replaced with the connection type's destination port number on the RX, eg. for the secondary video head connection this would be "2".
- %sourceid% will be replaced by the connection type's TX source port number, eg. for the Primary Video head this would be "1".

连接通知消息—这些设置用于配置每个可能的连接状态或状况的文本消息，并可根据需要进行自定义以提供不同的描述（或不同语言）。单击箭头可显示可用选项：

Connection Notification Messages ▾	
Disconnected	%type% to %sinkId% from %sourceId% disconnected
Connecting	%type% to %sinkId% from %sourceId% connecting
Connected	%type% to %sinkId% from %sourceId% connected
Incompatible Version	%type% to %sinkId% from %sourceId% has an incompatible version
Incompatible Security Settings	%type% to %sinkId% from %sourceId% has incompatible security settings
Bad Authorisation	%type% to %sinkId% from %sourceId% has incorrect authorization credentials
Bad Association	%type% to %sinkId% from %sourceId% has failed to associate
Source In Rma	TX device is operating in <u>RMA</u> mode
Source In Recovery	TX device is operating in RECOVERY mode
Source Not Supported	%type% to %sinkId% from %sourceId% - source port is not supported by the TX
Too Many Connections	%type% to %sinkId% from %sourceId% failed due to too many connections at the TX
Source Disabled	%type% to %sinkId% from %sourceId% failed as the port is disabled at the TX
Source Port Not Connected	%type% to %sinkId% from %sourceId% is not connected at the TX
No Source	%type% to %sinkId% from %sourceId% has no input signal at the TX
Source Out Of Range	%type% to %sinkId% from %sourceId% has an unsupported input signal at the TX
Source Out Of Resources	%type% to %sinkId% from %sourceId% has insufficient resources at the TX
Insufficient Bandwidth	%type% to %sinkId% from %sourceId% has insufficient network bandwidth
Encoding Stopped	%type% to %sinkId% from %sourceId% has stopped encoding at the TX
Port Not Connected	%type% to %sinkId% from %sourceId% is not connected at the RX
No Data	%type% to %sinkId% from %sourceId% is not receiving data from the TX
Out Of Range	%type% to %sinkId% from %sourceId% is not supported at the RX
Out Of Resources	%type% to %sinkId% from %sourceId% is out of resources at the RX
Decoding Stopped	%type% to %sinkId% from %sourceId% has stopped decoding at the RX

%type%、%sinkId%和%sourceId%条目是特殊标记，在生成通知时会被替换：

- 将用在连接通知设置中定义的**连接类型**标签条目替换%type%。
- RX上的%sinkId%将被替换为连接类型的接收端口号，例如，对于辅助视频磁头连接，该值将为“2”。
- %sourceId%将被连接类型的TX源端口号替换，例如，对于主视频头，该数值为“1”。

RX - Presets

To get here

You can access this page in two ways, however, the first method is not available if the module is under AIM control:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 If necessary, click the **Presets** link.
- 4 Either add a new preset (click ) or click  to edit an existing one.

OR

- 1 Connect a computer to the same network as the RX unit.
- 2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42**. If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3 or 1 (or IP Address 4 or 2)* and use that address.
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **Presets** link.
- 5 Either add a new preset (click ) or click  to edit an existing one.

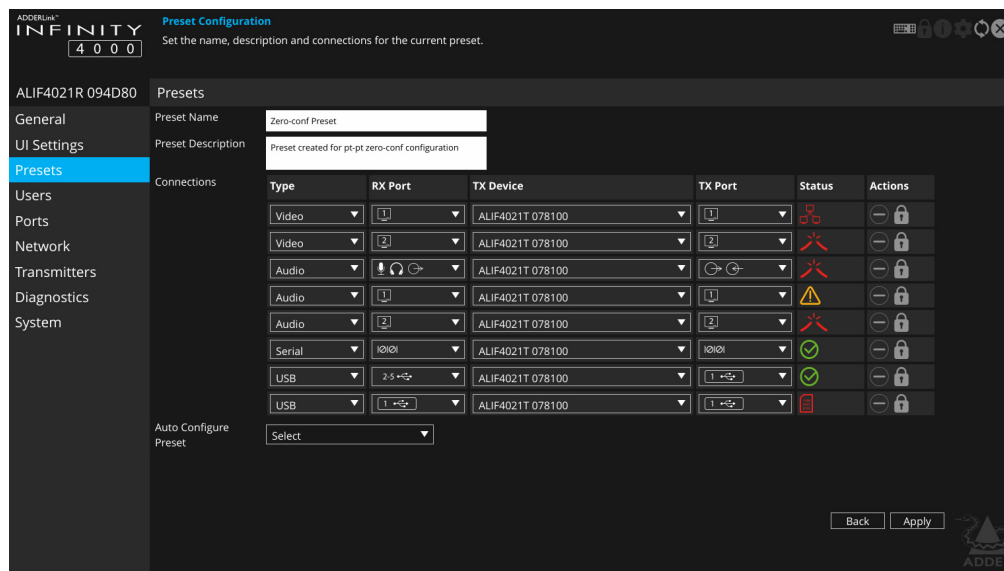
Preset Information

This page lists the details and connection status for the current channel/preset which the receiver is using. Under AIM control this lists the connection details for the channel that the RX is currently connected to.

Each row details one type of connection which has been made. It lists the output port on the RX and the source port from the TX which it is connected to, as well as the name of the device it is connected to.

-  Click this icon in the **Actions** column to remove a particular row of connections from the list.
-  Click this icon to manually set the password for the specified device so that it has the necessary permission to access the appropriate channel on the selected transmitter. In most connections, the access passwords for all the peripherals will be set collectively during the initial linking between the receiver and transmitter. The  links given here provide an alternative method as backup.
-  Click this icon to add a new connection to the list.

Auto Configure Preset - Select to automatically create a new set of connection presets from the selected TX.



Analog and digital audio

ALIF4000 units support both analog and digital audio connections from the host PC. Although originating from possibly the same audio source, these two connections are switched completely separately and cannot be mixed. In the connections table, the two types are represented thus:

- **Analog** audio () at RX only connects to () at TX.
- **Digital** audio ( or ) at RX only connect to ( or ) at TX.

For more details, please see [Support for analog and digital audio](#).

Status

The following icons may be shown within the Status column:

-  The connection is fully operational.
-  A connection has not been established.
-  The control protocol version is incompatible/unsupported between the peer and this device.
-  The control protocol security settings are incompatible/unsupported between the peer and this device.
-  The connection failed the authorisation stage (most likely a bad password).
-  The connection is established but there is no input signal being received from the peer device.
-  The connection has an invalid or unsupported input source signal peer device (audio and video connections only), or

The connection is currently out of resources at the peer device, or

There is insufficient network bandwidth to support the requested data for this connection.

 The encoding of the source data at the peer has stopped (due to an error or fault).

 There is no input device available on the port for this connection (eg. no PC connected).

 There is no output device available on the port for this connection (eg. no monitor connected).

 There is no data currently being received by the device.

 The video data for the connection produces an output signal that is out of range for the capabilities of this device, or the appliance connected to this device, or

The device is currently out of resources to process the video data for this connection.

 The audio data for the connection produces an output signal that is out of range for the capabilities of this device, or the appliance connected to this device, or

The device is currently out of resources to process the audio data for this connection.

 The decoding of the data at this device has stopped (due to an error or fault).

到此地的路线

但是，您可以使用两种方式访问此页面，如果模块处于AIM控制下，则无法使用第一种方式：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD，将显示“预设选择”页面。
- 2 单击“⚙️”右上角的图标。
- 3 如有必要，请单击“预置”链接。
- 4 Either add a new preset (click ⊕) or click ⚙️ to edit an existing one.

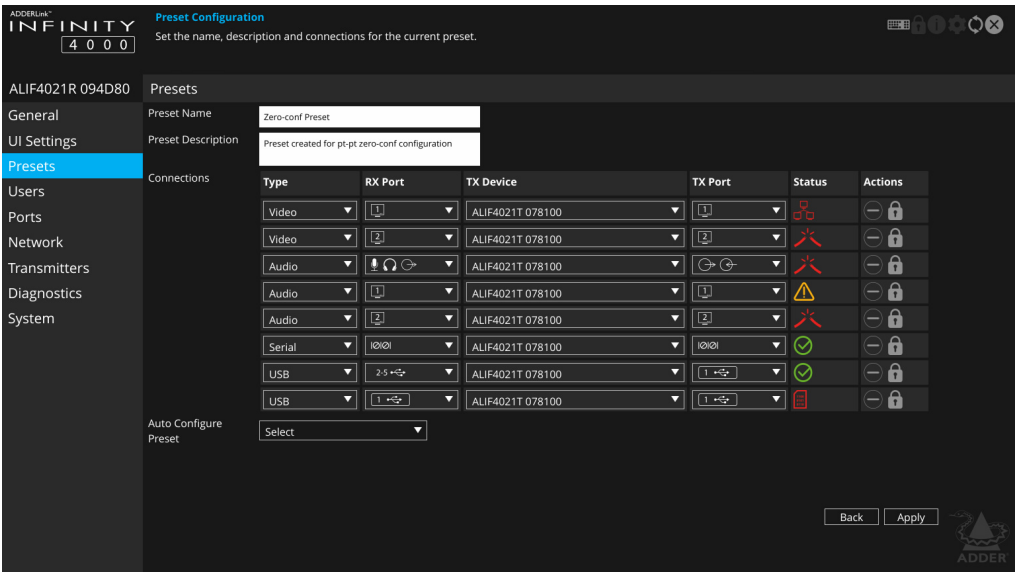
- 或
- 1 将计算机连接至与RX单元相同的网络。
- 2 运行网络浏览器并输入RX单元的IP地址：
https://169.254.1.32（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2，然后默认地址将为**https://169.254.1.42**如果IP 地址未知，请按前面板OLED屏幕旁边的按钮，显示IP地址3或1（或IP地址4或2)的值并使用该地址。
- 3 单击“⚙️”右上角的图标。
- 4 如有必要，请单击“预置”链接。
- 5 Either add a new preset (click ⊕) or click ⚙️ to edit an existing one.

预置信息

本页详细列出了接收器当前使用的通道/预设的连接状态信息。在AIM控制模式下，该页面会显示接收器当前连接的通道详细信息。每行记录一种已建立的连接类型，具体包含接收端的输出口、与之相连的发送端输入端口，以及所连接设备的名称。

- ⊖ 单击“操作”列中的该图标，可从列表中删除特定行的连接。
- 🔒 单击此图标可手动设置指定设备的密码，以便其具有访问所选发射器上相应通道的必要权限。在大多数连接中，所有外围设备的访问密码将在接收器和发射器之间的初始链接期间一起设置。🔒 此处提供的链接提供了另一种备份方法。
- ⊕ Click this icon to add a new connection to the list.

自动配置预设 -选择该选项可从所选TX中自动创建一组新的连接预设。



模拟和数字音频

ALIF4000设备同时支持主机PC的模拟和数字音频连接。虽然这两个连接可能源自相同的音频源，但它们完全独立地进行切换，不能混合使用。在连接表中，这两种类型表示如下：

- 模拟音频 (🎧)在RX上仅连接到 (🔊)在TX。
- 仅在接收端连接数字音频 (1_或2_)至(1_或2_)。如需了解

详细信息，请参见Support_for_analog_and_digital_音频。

状态

状态栏中可能显示以下图标：✅ 连接完全正常。

- ❌ 未建立连接。
- 🔄 对方和本设备之间的控制协议版本不兼容/不受支持。
- 🔒 对方和本设备之间的控制协议安全设置不兼容/不受支持。
- 🔒 连接在授权阶段失败（很可能是密码错误）。
- 📶 已建立连接，但是没有从对等设备接收输入信号。
- 📶 连接的输入源信号对端设备无效或不受支持（仅限音频和视频连接），或者

对等设备上的连接当前没有资源，或者网络带宽不足，无法支

持此连接所请求的数据。

❌ 对方已停止对源数据的编码（由于错误或故障）。

❌ ！该连接的端口上没有可用的输入设备（例如，没有连接的PC）。

❌ 此连接的端口上没有可用的输出设备（例如，未连接监视器）。

设备❌目前未接收数据。

📶 连接的视频数据产生超出本设备或连接到该设备的装置的功能范围的输出信号，或者

设备❌当前没有足够的资源来处理此连接的视频数据。

📶 连接的音频数据产生超出本设备或连接到该设备的装置功能范围的输出信号，或者

设备❌当前没有足够的资源来处理此连接的音频数据。

⚠️ 此设备上的数据解码已停止（由于错误或故障）。



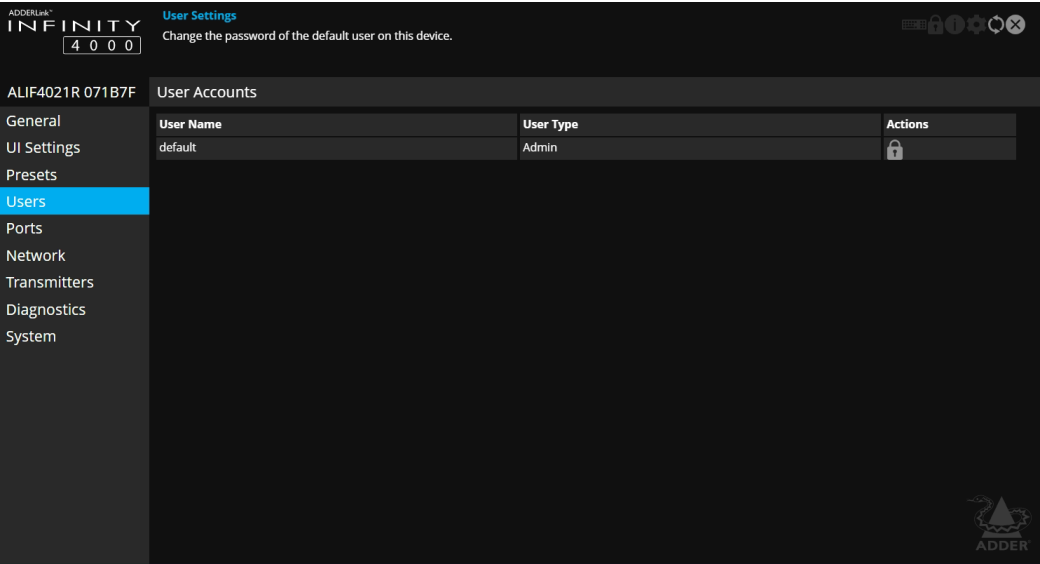
RX - Users

To get here

- You can access this page in two ways:
- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
 - 2 Click the  icon in the top right corner.
 - 3 Click the **Users** link.

OR

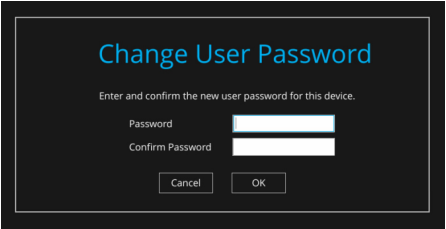
- 1 Connect a computer to the same network as the RX unit.
- 2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* or *1* (or *IP Address 4* or *2*) and use that address.
- 3 Click the **Users** link.



User accounts

This page allows you to change the password for the admin user.

Click the  icon to display the following dialog:



Enter and confirm the current and new admin password and click OK.



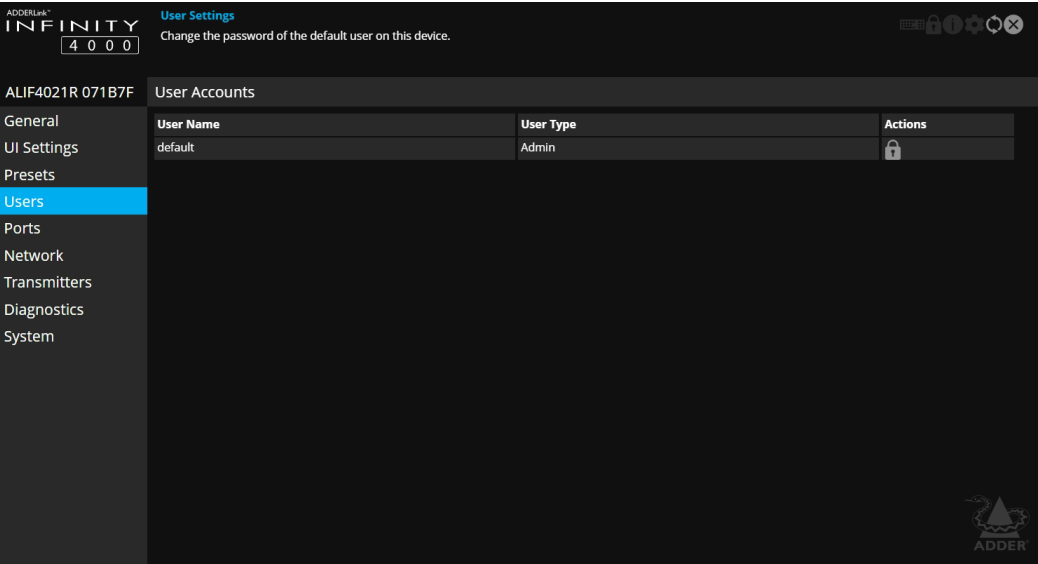
到此地的路线

可通过两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD，将显示 “预设选择” 页面。
- 2 单击 “⚙️” 右上角的图标。
- 3 单击用户链接。

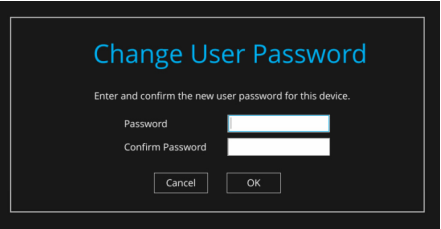
或

- 1 将计算机连接至与RX单元相同的网络。
- 2 运行网络浏览器并输入RX单元的IP地址：
https://169.254.1.32（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2，那么默认地址将为**https://169.254.1.42**如果 IP地址未知，按OLED屏幕旁边的前面板上的小按钮，即可显示IP地址3或1（或IP地址4或 2)的数值并使用该地址。
- 3 单击用户链接。



用户帐户

此页允许您更改管理员用户的密码。单击🔒 图标将显示以下对话框：



输入并确认当前和新管理员密码，然后单击 “确定” 。



RX - Ports

To get here

You can access this page in two ways:

1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.

2 Click the  icon in the top right corner.

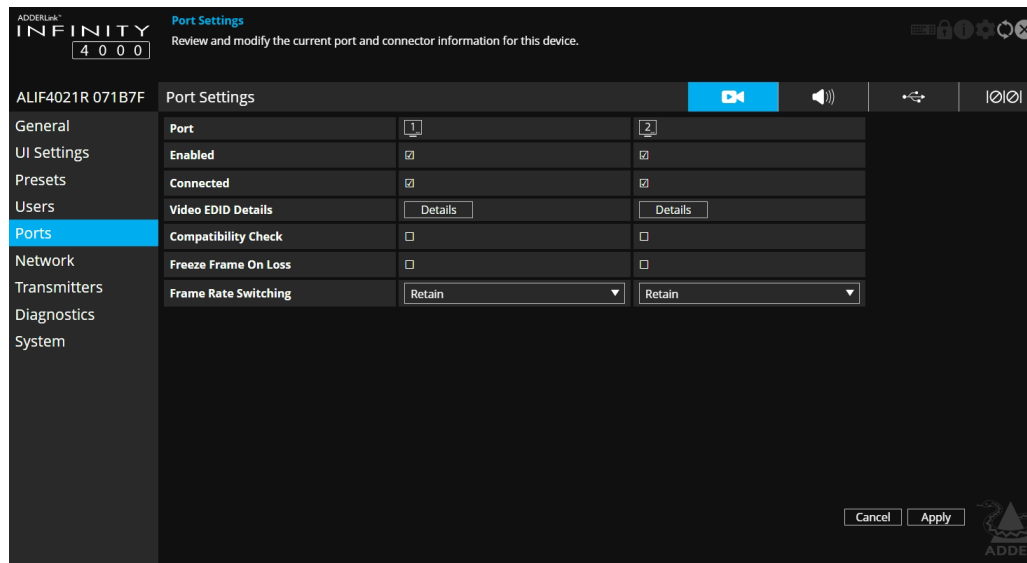
3 Click the **Ports** link.

OR

1 Connect a computer to the same network as the RX unit.

2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for IP Address 3 or 1 (or IP Address 4 or 2) and use that address.

3 Click the **Ports** link.



Freeze Frame On Loss - If disabled (default), video will blank when a video connection error occurs. If enabled, video will freeze (or remain blank if no video yet received) when error occurs. Video will resume once error clears. Video will blank if frozen and connection is terminated (eg. different preset selected). A coloured border and messages can be added in the Connection Notification Settings - see page 30.

Frame Rate Switching - Determines the strategy to use for the frame rate when switching resolutions. Similar in function to the *Match Frame Rate* setting on AIM servers:

Force 60 - The frame rate is always forced to be 60Hz unless the Compatibility check option is on and the monitor does not indicate it supports 60Hz.

Retain - When switching to the same resolution with a potentially different frame rate, it will retain the current frame.

Auto - The frame rate always changes to match the mode it is connected to.



Audio Ports

This page provides basic information about the analog and digital audio ports located on the RX unit.

Enabled - Confirms whether the audio ports are enabled or disabled.

Connected - Confirms whether devices are connected to respective ports.

Gain - (Analog audio only) Determines the microphone amplification level:

None - no device connected on this port.

Mic - standard gain for normal microphone input devices.

Mic boost - 20dB boost to volume for microphone input devices.

Audio EDID Details - Click the Details button to show a popup listing the audio capabilities of the device connected to that DP port. Unsupported formats will be greyed out.

Compatibility Check - When ticked, the RX will not output audio on this port if it is not compatible with the attached device's audio capabilities. If unticked, audio will be output regardless of the attached device's capabilities. For example, if an attached device supports 2 channel stereo but the incoming stream is 6 channels, turning this off may allow L & R audio output to work - if the attached device can cope, but other channels will be lost (ie. there is no down-mix support).



USB Ports

This page provides basic information about the USB ports numbered 2 to 5 inclusive, located on the RX unit. USB port 1 is transparent and its devices are not listed.

Type - Identifies the type of the USB port. Port 1 on the front of the RX is Transparent, 2-3 on the front, 4-5 on the back are the Emulated ports.

Enabled - Confirms whether the USB ports are enabled or disabled.

HID Only - (For emulated USB ports only) When ticked, all ports are limited to supporting Human Interface Devices only, such as keyboards and mice.

Disable Mass Storage - When ticked, this option prevents the use of USB mass storage devices on the receiver unit. This could be useful in situations where smart card readers need to be used for security purposes but the use of USB drives need to be prevented.

Security - (For emulated USB ports only) Controls whether USB data is encrypted. *On* forces always on, *Off* forces always off and *Prefer off* will be off unless the TX requests it.



Video Ports

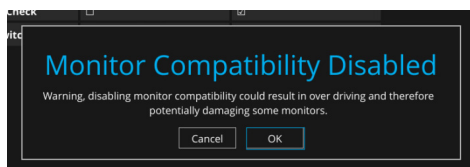
This page provides basic information about the two video ports located on the RX unit.

Enabled - Confirms whether each video port is enabled or disabled.

Connected - Confirms whether functioning video displays are connected to the two video ports.

Video EDID Details - Click the Details button to show a popup for the connected video display. EDID details listed include: *Manufacturer, model, serial number, manufacture date, EDID version as well as supported (and preferred) EDID modes, maximum bits per color, encodings, colorimetry and dynamic range masterings supported by the monitor. Note: EDID modes that are supported by the monitor but not by the device will be greyed out. In cases where a resolution reported by the video display is supported, but at a lower frame rate than the display calls for, such entries will be shown in italics.*

Compatibility Check - **WARNING: Disabling this option can result in damage to display monitors in certain circumstances.** When ticked this option confirms video compatibility between the source and display device, (such as the video display's maximum resolution, bpp, SDR/HDR, etc.) and prevents signals being sent that the video display can't support. When unticked, signals will always be sent regardless of video display's declared capabilities. If you untick the option, the following warning will be displayed:



continued

到此地的路线

可通过两种方式访问此页：

1 在连接至RX装置的控制台键盘上，按**CTRL + ALT + C**或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。

2 单击“ 右上角的图标。

3 单击**端口**链接。

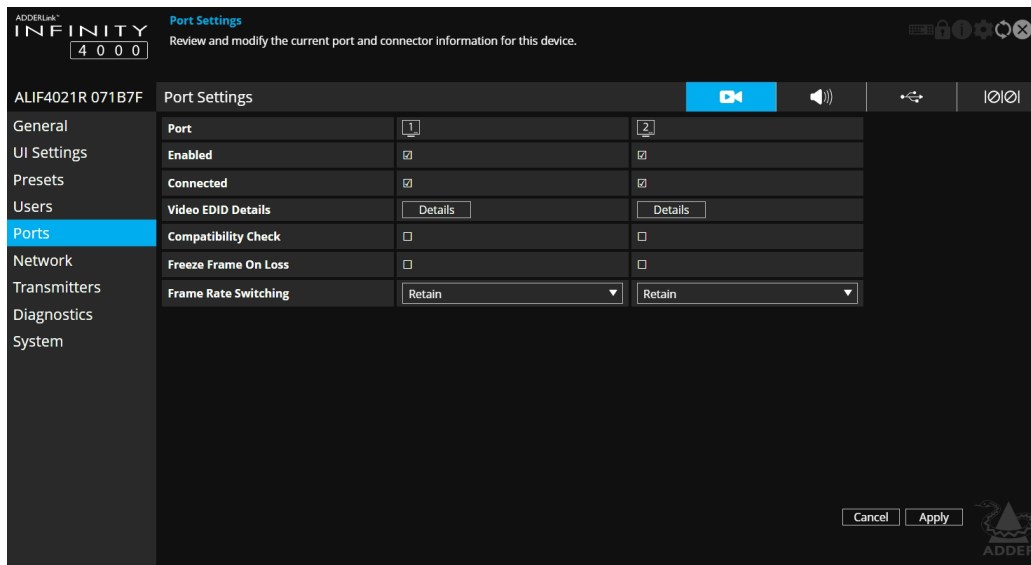
或

1 将计算机连接至与RX单元相同的网络。

2 运行网络浏览器并输入RX单元的IP地址：

https://169.254.1.32（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2，那么默认地址将为**https://169.254.1.42**如果 IP地址未知，按OLED屏幕旁边的前面板上的小按钮，即可显示**IP地址3或1（或IP地址4或2）**的数值并使用该地址。

3 单击“**端口**”链接。



Freeze Frame On Loss—如果禁用（默认），当视频连接错误发生时，视频将变为空白。如果启用，当错误发生时，视频将冻结（或在尚未接收视频时保持空白）。一旦错误清除，视频将恢复。如果冻结且连接被终止（例如：选择了不同的预设），视频将变为空白。可以在连接通知设置中添加彩色边框和消息——请参阅第30页。

帧率切换—确定切换分辨率时使用的帧率策略，其功能类似于AIM服务器上的**匹配帧率**设置：

Force 60—除非“兼容性检查”选项处于打开状态且显示器未显示其支持60Hz，否则帧速率始终被强制为60Hz。

保留—当切换到可能具有不同帧速率的相同分辨率时，它将保留当前帧。

Auto—帧速率始终会根据所连接的模式进行调整。



音频端口

本页提供有关RX设备上模拟和数字音频端口的基本信息。

启用-确认音频端口是否启用或禁用。**连接**-确认设备是否连接到相应端口。**增益**-(仅限模拟音频)确定麦克风放大级别：**无**-未在此端口上连接任何设备。

Mic—常规麦克风输入设备的标准增益。

麦克风增益—为麦克风输入设备提供20dB的音量增益。

音频EDID详细信息-单击“详细信息”按钮，将显示一个弹出窗口，其中列出连接到该DP端口的设备的音频功能。不支持的格式将显示为灰色。

兼容性检查—勾选此项后，若所连接设备的音频功能不兼容，接收器将不会通过该端口输出音频。取消勾选后，无论连接设备是否支持音频功能，都会进行音频输出。例如：当连接设备支持双声道立体声但输入信号为六声道时，关闭此选项可能使左右声道音频输出正常工作（此时设备具备混音处理能力），但其他声道将无法播放（即不支持混音处理功能）。



USB端口

本页提供RX设备上编号为2至5（含）的USB端口的基本信息。

USB端口1是透明的，其设备未列出。

Type-标识USB端口的类型。RX前端的端口1是透明端口，前端的端口2-3，后端的端口4-5是模拟端口。**Enabled**-确认USB端口是否启用。

HID Only-(仅用于模拟的USB端口)选中此复选框时，所有端口都只能支持人机接口设备，例如键盘和鼠标。

禁用大容量存储设备-选中此选项时，将禁止接收器上使用USB大容量存储设备。在需要使用智能卡读卡器进行安全操作但又必须禁止使用USB驱动器的情况下，此选项可能很有用。

安全性-(仅限于模拟USB端口)控制是否加密USB数据。“**强制始终打开**”、“**强制始终关闭**”和“**首选关闭**”选项将处于关闭状态，除非TX请求，否则将保持关闭状态。

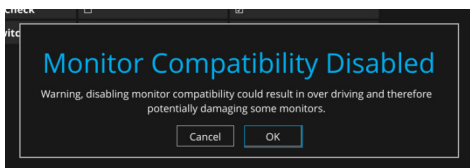
继续的

视频端口

本页提供RX设备上两个视频端口的基本信息。

启用—确认每个视频端口是否启用或禁用。**连接**—确认两个视频端口上是否连接了正常工作的视频显示器。

视频EDID详细信息-点击“详细信息”按钮会弹出连接显示器的EDID参数窗口。显示内容包括：**制造商、型号、序列号、生产日期、EDID版本以及显示器支持（及推荐）的EDID模式、每色彩码位上限、编码格式、色域和动态范围等参数。注意：显示器支持但设备不支持的EDID模式会显示为灰色。当视频显示器支持特定分辨率但帧率低于要求时，相关参数将以斜体形式显示。****兼容性检查**-警告：禁用此选项可能损坏显示器。勾选该选项可确认源设备与显示设备的视频兼容性（如显示器最大分辨率、每秒像素数、SDR/HDR等参数），并阻止发送超出显示设备支持范围的信号。取消勾选后，系统将无视显示设备声明的性能参数持续发送信号。若选择取消勾选，将显示以下警告：



RX - Ports (continued)

USB Port Mapping and Reservations - This section is useful when multiple touchscreens are in use and allows you to match each USB port input to the correct touchscreen.

Connected Devices - This section lists all connected devices with manufacturer and model details where reported. Click the Details button against each device to view further information, such as the Device Type, Protocol Version, Speed and Max Power Consumption.



Serial Port

This page provides basic information about the serial option port located on the RX unit.

Enabled - Confirms whether the serial port is enabled or disabled.

Disabling the serial port (or excluding it from the preset connection list) allows an attached USB-serial adapter to instead be used over the USB connection to the TX, rather than the explicit serial connection.

RX端口（续）

USB端口映射和保留—当多个触摸屏被使用时，此部分非常有用，它允许您将每个USB端口输入与正确的触摸屏匹配。

已连接的设备 -此部分列出所有已连接的设备，其中详细说明了制造商和型号。单击每个设备旁的“详细信息”按钮，查看详细信息，例如设备类型、协议版本、速度和最大功耗。



串行端口

本页提供了关于RX设备上串行选项端口的基本信息。

Enabled -确认串行端口是否启用或禁用。
禁用串行端口（或将其排除在预设连接列表之外）允许通过USB连接到TX，而不是显式的串行连接，使用连接的USB-serial适配器。

RX - Network

To get here

You can access this page in two ways:

1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.

2 Click the  icon in the top right corner.

3 Click the **Network** link.

OR

1 Connect a computer to the same network as the RX unit.

2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* or *1* (or *IP Address 4* or *2*) and use that address.

3 Click the **Network** link.



Port Settings

This page provides numerous network details for each of the installed ports on the RX unit.

Socket - Details each operational network socket and what connection speeds they have established. Sockets 3 and 4 are determined by the SFP modules plugged into them.

MAC Address - Displays the unique, fixed hardware identification number for each port.

Link Up - Indicates whether the link state of this network interface is up. This should be the case if the device is connected to a functioning network.

IP Address - This shows the IP address in use, which can be obtained via DHCP, a static IP or a link local (zero-config).

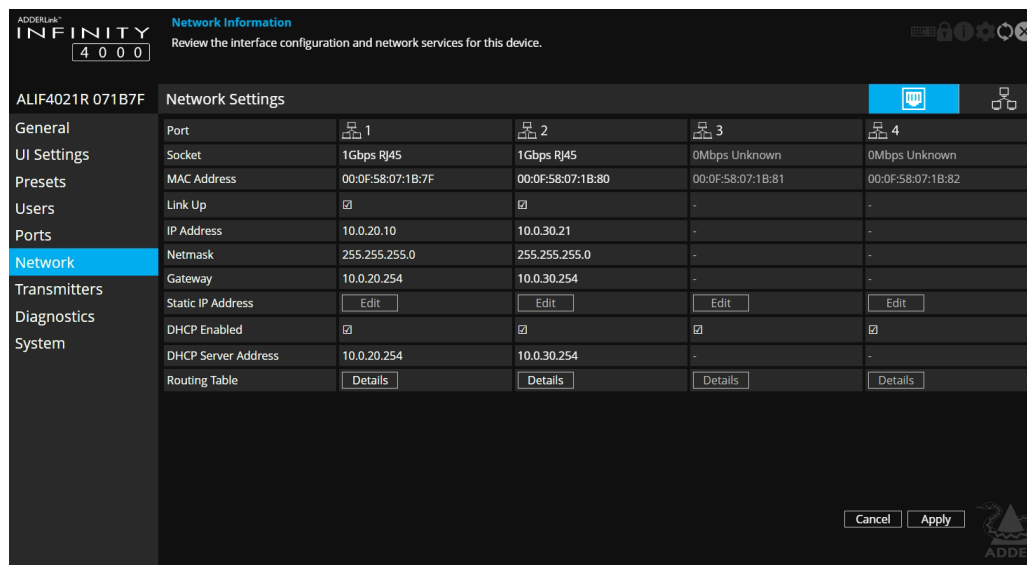
Netmask - The netmask of this network interface. The device can function in a network zero-config state which does not require the setting of a static netmask.

Gateway - The gateway address of this network interface. The device can function in a network zero-config state which does not require the setting of a static gateway.

Static IP Address - When the 'DHCP enabled' option (below) is unchecked, click on 'Edit' to enter/edit a static IP Address, Netmask and Gateway for the unit.

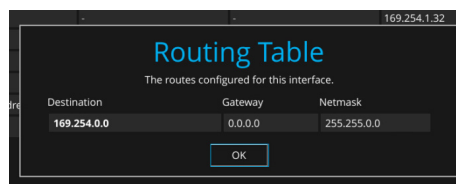
DHCP Enabled - When ticked, the corresponding port will derive its IP Address, Netmask and Gateway details from the DHCP server listed in the field below.

DHCP Server Address - Indicates the server that provided the DHCP details.



Note: ALIF4001 models will list only two ports on this page.

Routing Table - Click on 'Details' to show the routing table entries corresponding to this network interface. In it are the destination address, gateway and netmask for the routes to particular network destinations.



Network Information

Default Domain - Reserved for future use.

Independent Networks - When ticked, the ALIF4000 receiver will treat its two main network ports as independent routes to the transmitter(s) and not attempt to find secondary cross connections, which may not be possible due to the network topology. This setting will have no effect when ALIF4000 receivers link with ALIF4000 transmitters due to their use of auto discovery. However, when an ALIF4000 receiver links with other dual port ALIF transmitters (such as an ALIF2002T), enabling this option can prevent unnecessary delays due to the time taken looking for routes that are effectively network dead ends.

Route of Last Resort - In a multi-interface device such as this, the interface which is ticked will be used as the default whenever it is unclear which interface should be used for network traffic.

Dynamic DNS Servers - List of DNS server addresses obtained via DHCP.

Static DNS Servers - Lists DNS server addresses that have been manually configured.

NTP Enabled - When ticked, the unit will derive its time and date information from a suitable NTP server.

NTP Key ID - The ID of the key used for secure NTP.

NTP Key Value - The value of the key used for secure NTP as a hexadecimal string.

Dynamic NTP Servers - Lists NTP server addresses obtained via DHCP.

Static NTP Servers - Lists NTP server addresses that have been manually configured.

AIM Enabled - Indicates whether server management is enabled for this device.

Dynamic AIM Servers - Lists AIM server addresses obtained via DHCP.

Static AIM Servers - Lists management server addresses that have been manually configured.



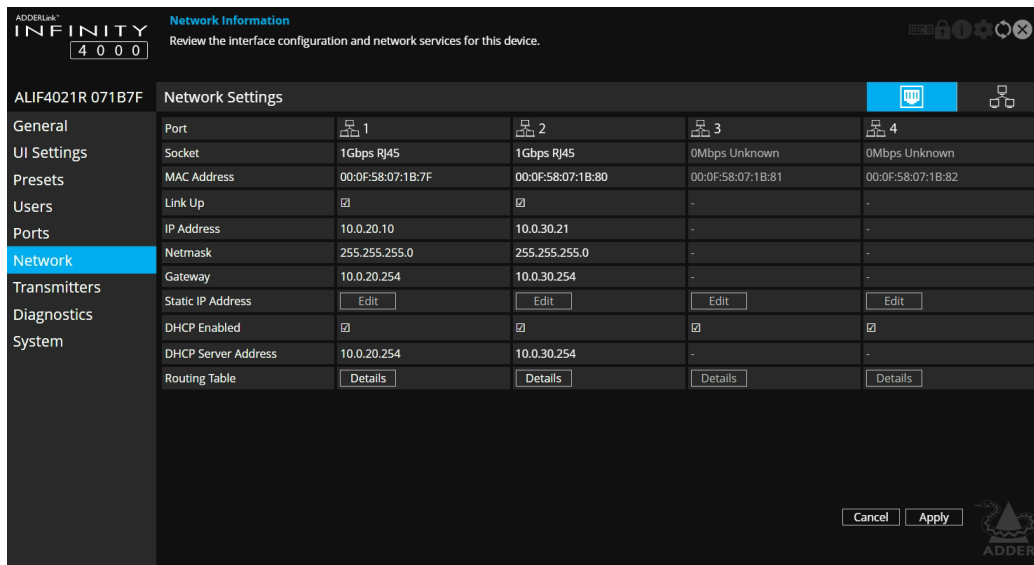
到此地的路线

可通过两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标，即可访问OSD。此时将显示“预设选择”页面。
- 2 单击“⚙️”右上角的图标。
- 3 单击**网络**链接。

或

- 1 将计算机连接至与RX单元相同的网络。
- 2 运行网络浏览器并输入RX单元的IP地址：
https://169.254.1.32（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用SFP端口4或RJ45端口2，则默认地址将为**https://169.254.1.42**如果 IP地址未知，按OLED屏幕旁边的前面板上的小按钮，显示**IP地址3**或**1**（或**IP地址4**或**2**）的值并使用该地址。
- 3 单击**网络**链接。



注：ALIF4001 型号将仅在此页面列出两个端口。



端口设置

此页提供了RX设备上每个已安装端口的大量网络详细信息。

Socket—详细说明每个操作网络套接字及其建立的连接速度。套接字3和4由插入它们的SFP模块决定。

MAC地址—显示每个端口的唯一、固定的硬件标识号。

Link Up—指示该网络接口的链路状态是否处于打开状态。如果设备连接到正常工作的网络，则应显示为打开状态。

IP地址—显示正在使用的IP地址，该地址可以通过DHCP、静态IP或链路本地（零配置）获得。

网络掩码 -此网络接口的**网络掩码**。设备可以处于网络零配置状态，而不需要设置静态网络掩码。

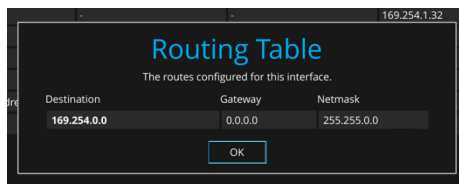
网关 -该网络接口的网关地址。设备可以在网络零配置状态下运行，而不需要设置静态网关。

静态IP地址 -当“DHCP启用”选项（如下）未选中时，单击“编辑”以输入/编辑单元的静态IP地址、子网掩码和网关。

DHCP Enabled -选中后，对应的端口将从下面字段所列出的DHCP服务器获取其IP地址、子网掩码和网关详细信息。

DHCP服务器地址—表示提供DHCP详细信息的服务器。

路由表 -单击“详细信息”显示与此网络接口对应的路由表条目，其中包含到特定网络目的地的路由的目的地址、网关和网络掩码。



网络信息

默认域 -保留以备将来使用。

独立网络 -单选时，ALIF4000接收器该设置将把两个主要网络端口视为独立的传输路径，不会尝试寻找次级交叉连接（由于网络拓扑结构限制，这种操作可能无法实现）。当ALIF4000接收器与ALIF4000发射器通过自动发现功能建立连接时，此设置将不会生效。但若ALIF4000接收器与其他双端口ALIF发射器（如ALIF2002T）建立连接时，启用此选项可避免因寻找实际上属于网络死胡同的路由而产生的不必要延迟。

最后一法的路由：在这样的多接口设备中，如果不清楚应该使用哪个接口来传输网络流量，则选中的接口将作为默认接口。

动态DNS服务器—通过DHCP获得的DNS服务器地址列表。

静态DNS服务器 -列出已手动配置的DNS服务器地址。

NTP已启用 -选中后，设备将从合适的NTP服务器派生其时间和日期信息。

NTP密钥ID—用于安全NTP的密钥的ID。

NTP Key Value -用于安全NTP的密钥的值，以十六进制字符串表示。

动态NTP服务器—列出通过DHCP获得的NTP服务器地址。

静态NTP服务器 -列出已手动配置的NTP服务器地址。

AIM Enabled -表示是否为此设备启用服务器管理。

Dynamic AIM服务器—列出通过DHCP获得的AIM服务器地址。

静态AIM服务器—列出已手动配置的管理服务器地址。

RX - Transmitters

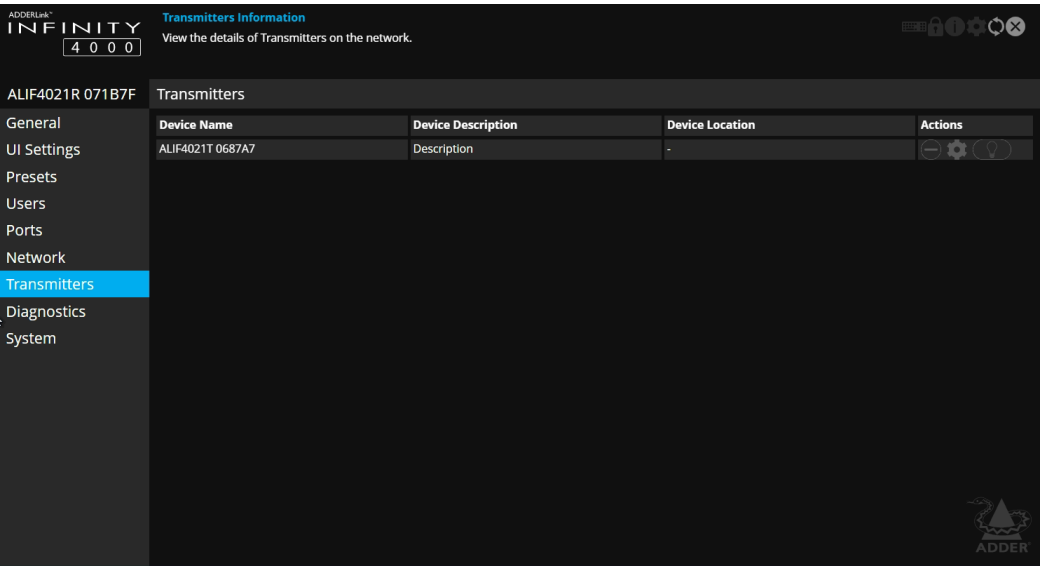
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 Click the **Transmitters** link.

OR

- 1 Connect a computer to the same network as the RX unit.
- 2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* or *1* (or *IP Address 4* or *2*) and use that address.
- 3 Click the **Transmitters** link.



Transmitters

This page lists the available transmitters on the network which aren't under AIM control - *Note:ALIF1xxxT and ALIF2xxxT units are generally not discoverable using this process, however, if the Start of Life process was able to connect point-to-point to an ALIF2xxx then it will have created a 'static' device entry and thus it will appear on this screen. However, the cog and light bulb icons will not function for the entry.*

In the Actions column you can perform the following functions for each listed transmitter:

- Click  to view the configuration page of the TX. When clicked, you will be directed to the General page for the chosen TX. See page 40.
- Click  to flash the front panel indicators on the transmitter to assist with identification.
- [When viewing TX pages] Click the X button in the top right corner to return to the RX pages.



到此地的路线

可通过以下两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。
- 2 单击“⚙️”右上角的图标。
- 3 单击“发射器”链接。

或

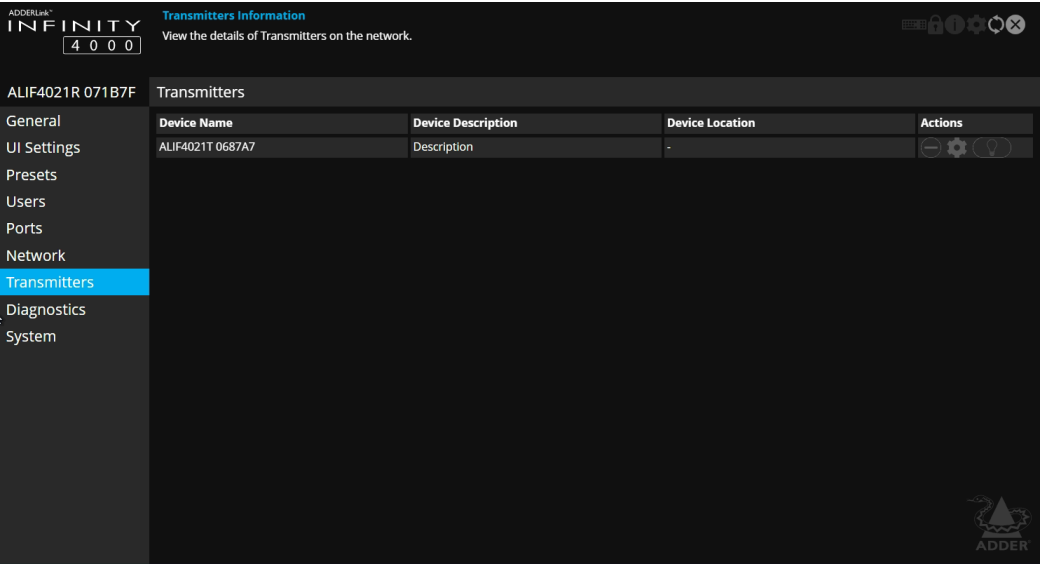
- 1 将计算机连接至与RX单元相同的网络。
- 2 运行网络浏览器并输入RX单元的IP地址：
https://169.254.1.32（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2，那么默认地址将为**https://169.254.1.42**如果 IP地址未知，按下前面板OLED屏幕旁边的按钮，即可显示IP地址3或1（或IP地址4或2）的数值并使用该地址。
- 3 单击“发射器”链接。

发射机

本页面展示网络中未被AIM系统管控的发射器列表——注意：AL-IF1xxxT和ALIF2xxxT设备通常无法通过此流程被发现，但若“生命起始”进程成功与ALIF2xxx设备建立点对点连接，则会创建“静态”设备条目，此时该设备将显示在本页面。不过，对应的智能齿轮与灯泡图标标识将无法正常工作。

在“操作”栏中，您可以对每个列出的发送器执行以下功能：

- 点击⚙️ 查看TX的配置页面。单击该按钮后，将跳转至所选TX的“常规”页面。请参阅第40页。
- 点击💡 刷新发送器前面板指示灯，以协助识别。
- [查看TX页面时]点击右上角的X按钮，返回RX页面。



RX - Diagnostics and Statistics

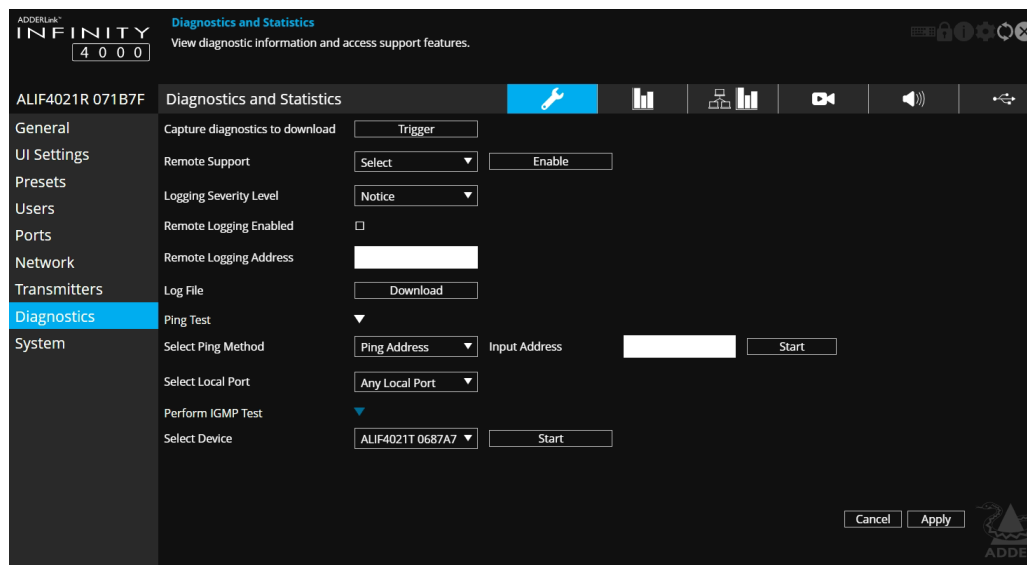
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 Click the **Diagnostics** link.

OR

- 1 Connect a computer to the same network as the RX unit.
- 2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* or *1* (or *IP Address 4* or *2*) and use that address.
- 3 Click the **Diagnostics** link.

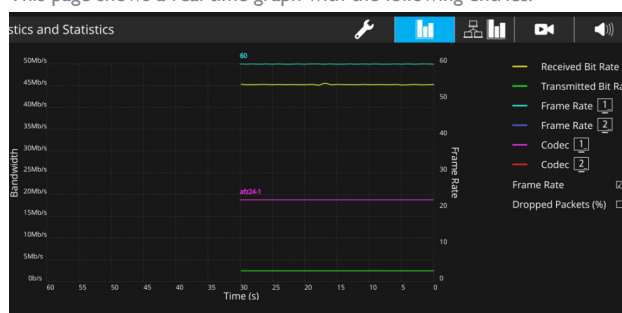


Perform IGMP Test - Allows you to conduct an IGMP test on connected devices, selectable from the drop-down list.



Basic Graph

This page shows a real time graph with the following entries:



- **Received and Transmitted Bit Rates** - the values of these correspond to the bandwidth axis on the left.
- **Frame Rate** - for both heads. Values are labeled when they change and correspond to the axis on the right.
- **Codec** - for both heads. These represent the compression used: 1 is better than 4.
- **Dropped Packets** - for both heads. Values are labeled when they change and correspond to the axis on the right.

Note: Use the Frame Rate and Dropped Packets tick box options to determine which is displayed at any given time.



Log Settings

This page provides numerous key diagnostic log settings.

Capture diagnostics to download - (Only shown when viewing this page using a PC browser). Request generation of a diagnostics dump file. This will then be downloaded by the host computer's browser; this is an encrypted diagnostics file which can be used by technical support to diagnose and fix an issue. If using the local OSD, then this will show 'Capture diagnostics to USB' and will download the same file onto a USB memory stick inserted into USB ports 2-5. *Note: When in point to point mode, you will need to plug in a USB flash drive and capture the logs to it.*

Remote Support - When using the Adder remote server, this option determines which port will be used. Multiple options are offered in case one or more ports are blocked by your firewall.

Logging Severity Level - Defines the level of messages that will be logged (according to RFC5424). Level 5 (*Notice: normal but significant condition*) is the default setting; ALIF4000 supports levels 1 to 7. Choosing levels 6 (*Informational*) or 7 (*Debug*) will cause larger numbers of lesser events to also be logged, with a potential impact to overall performance. These levels should only be used if working with the support team to diagnose a specific issue.

Remote Logging Enabled - Tick to send log files to the chosen *Remote Logging Address*.

Remote Logging Address - Enter a valid IP address for a syslog server on the local network where status logs can be sent.

Log File - If viewing this page using a browser: Click to download the log file to the host computer's browser. If viewing this page via the OSD, the log will be shown as a scrollable list.

Ping Test - Allows you to conduct a ping test to any selected address or device.



Network Statistics

This page allows you to view current communication statistics and also to create graphs in real time.

Capture and Graph Statistics - When ticked, the page will create a real time graph plotting Received Bytes alongside Received Packets.

After *Capture and Graph Statistics* is enabled, the *Show Legend* checkbox will show all other items that can be included on the plot. Click an item to tick and include it.



Video Port Status and Statistics

This page provides wide ranging information for support purposes.



Audio Port Status and Statistics

This page provides wide ranging information for support purposes.



USB Port Status and Statistics

This page provides wide ranging information for support purposes. Currently only supported for transparent USB.

RX -诊断和统计

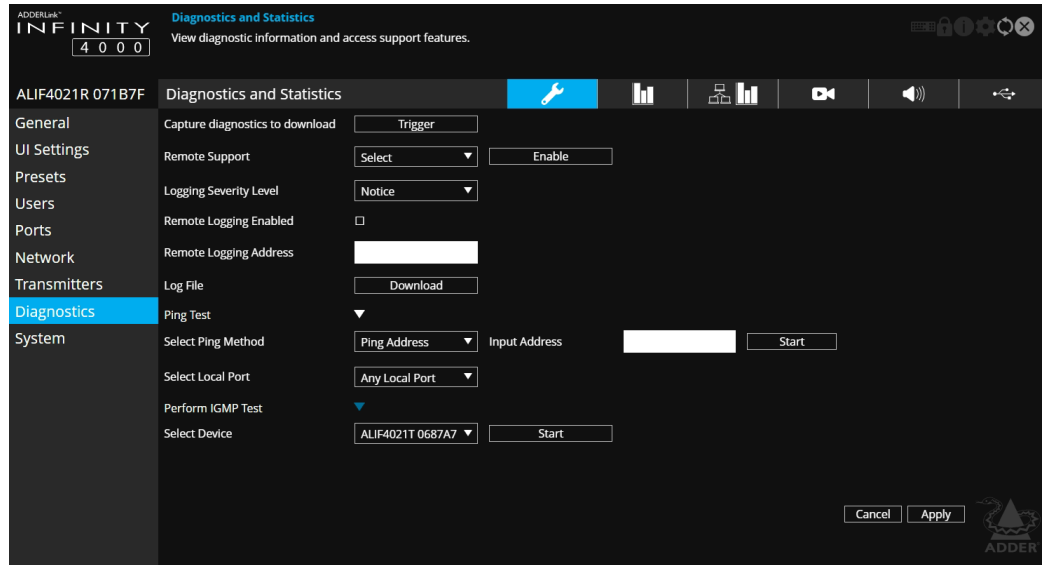
到此地的路线

可通过以下两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按**CTRL + ALT + C**或点击触摸屏自图标以访问OSD，将显示“预设选择”页面。
- 2 单击“ 右上角的图标。
- 3 单击“**诊断**”链接。

或

- 1 将计算机连接至与RX单元相同的网络。
- 2 运行网络浏览器并输入RX单元的IP地址：
https://169.254.1.32（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用SFP端口4或RJ45端口2，则默认地址为**https://169.254.1.42**如果IP地址未知，按OLED屏幕旁边的前面板上的小按钮，显示**IP地址3或1**（或**IP地址4或2**）的值并使用该地址。
- 3 单击“**诊断**”链接。

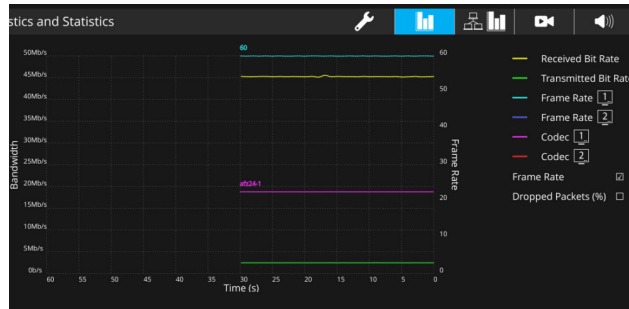


执行IGMP测试—允许您对已连接的设备执行IGMP测试，可从下列列表中选择设备。



基础图

此页面显示实时图形，其中包含以下条目：



- **接收和发送比特率**—这些值对应于左侧的带宽。
- **帧频**—两个磁头的帧频。当数值发生变化时，系统会对其进行标注，并且这些数值对应右侧的坐标轴。
- **Codec** - 两个磁头的编解码器。它们代表所使用的压缩：1比4更好。
- **丢弃的数据包**—对于两个队列而言。当值发生变化时会进行标记，并且与右侧的坐标轴相对应。

注：使用“帧速率”和“丢弃的数据包”复选框选项，可以确定在任意给定时间显示哪一个。



网络统计

此页允许您查看当前通信统计数据，并创建实时图形。

捕获和图表统计—选中后，页面将创建实时图表，绘制“接收的字节数”与“接收的数据包数”的关系曲线。

启用“**采集和图表统计**”后，“**显示图例**”复选框将显示可在图表中包括的所有其他项目。单击一个项目以勾选并包括它。



视频端口状态和统计信息

此页提供了广泛的信息以供参考。



音频端口状态和统计信息

此页提供了广泛的信息，以供支持使用。



USB端口状态和统计数据

此页面提供广泛的信息以供支持使用。目前仅支持透明USB。

日志设置

此页提供了许多关键的诊断日志设置。

诊断数据导出功能（仅在使用PC端浏览器访问本页面时显示）。点击此处可生成诊断数据转储文件，该加密文件将通过主机浏览器自动下载，技术支持人员可利用该文件进行故障诊断与修复。若使用本地操作系统界面（OSD），系统会提示“将诊断数据导出至U盘”，并自动将文件下载至插入USB 2-5端口的存储设备。*注意：当处于点对点模式时，请务必插入USB闪存驱动器，将日志导出至该设备。*

远程支持 -使用Adder远程服务器时，此选项确定使用的端口。如果防火墙阻止了某个或某些端口，则会提供多个选项。

日志记录严重性级别—定义将被记录的消息级别（根据RFC5424）。级别5（*注意：正常但重要的条件*）是默认设置；ALIF4000支持级别1到7。选择级别6（*信息性*）或7（*调试*）将导致更多次要事件也被记录，可能对整体性能产生影响。这些级别仅应在与支持团队合作诊断特定问题时使用。

远程日志记录已启用—勾选可将日志文件发送到所选*远程日志记录地址*。

远程日志记录地址 -输入本地网络中用于发送状态日志的系统日志服务器的有效IP地址。

日志文件—如果使用浏览器查看此页面：单击将日志文件下载到主机计算机的浏览器。如果通过OSD查看此页面，日志将显示为可滚动列表。

PingTest-允许您对任何选定地址或设备执行ping测试。

To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 Click the **System** link.

OR

- 1 Connect a computer to the same network as the RX unit.
- 2 Run a web browser and enter the IP address of the RX unit: **https://169.254.1.32** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2, then the default address will be **https://169.254.1.42** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* or *1* (or *IP Address 4* or *2*) and use that address.
- 3 Click the **System** link.

Software and System Operations

This page contains various indications and options related to the internal software of the unit.

Note: The highlighted (and colored) entry is the version of software currently running.

Preferred Software Version - The software version the device will boot into upon a reboot.

Recovery Software Version - The software version the device will boot into if placed into recovery mode.

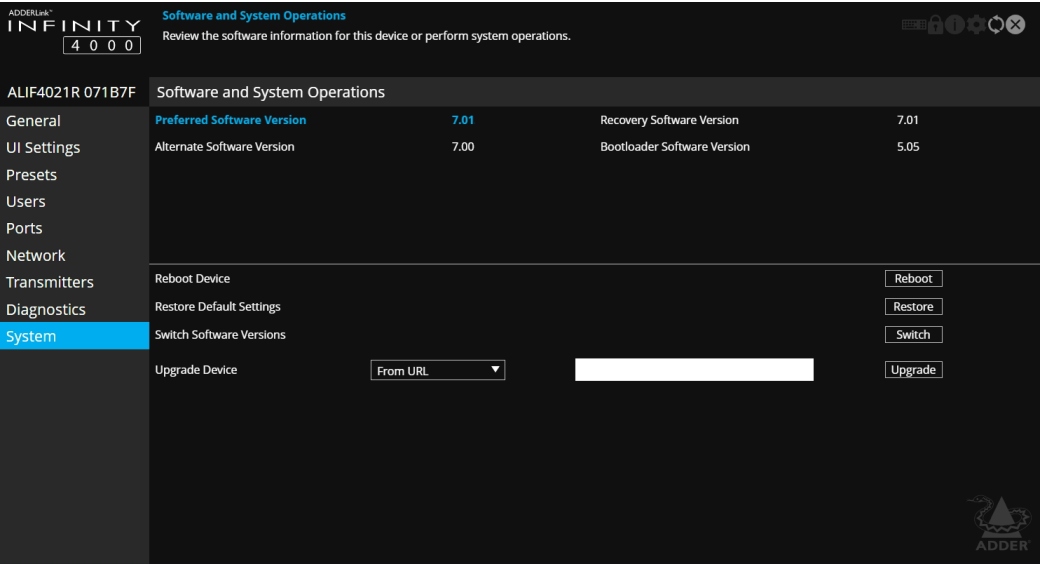
Alternate Software Version - The other (backup) version of software the device has available.

Reboot Device - Click the Reboot button to Reboot the device.

Restore Default Settings - Click the Restore button to restore the device to factory default settings.

Switch Software Versions - Click to switch to the listed 'Alternative Software Version'.

Upgrade Device - If viewing this page using a browser: Allows you to upgrade the firmware either from a trusted URL or from a locally stored file. Use the field to define the source and then click the Upgrade button.



- 到此地的路线**
可通过两种方式访问此页：
- 1 在连接至RX装置的控制台键盘上，按**CTRL + ALT + C**或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。
 - 2 单击“ 右上角的图标。
 - 3 单击“**系统**”链接。
- 或
- 1 将计算机连接至与RX单元相同的网络。
 - 2 运行网络浏览器并输入RX单元的IP地址：**https://169.254.1.32**（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2，那么默认地址将为**https://169.254.1.42**如果 IP地址未知，按下前面板OLED屏幕旁边的按钮，即可显示**IP地址3或1（或IP地址4或2）**的数值，然后使用该地址。
 - 3 单击“**系统**”链接。

软件 and 系统操作

本页包含与设备内部软件相关的各种指示和选项。

注：高亮显示（并着色）的条目是当前运行的软件版本。

最佳软件版本—设备重新启动后将要启动的软件版本。

恢复软件版本—设备进入恢复模式时将启动的软件版本。

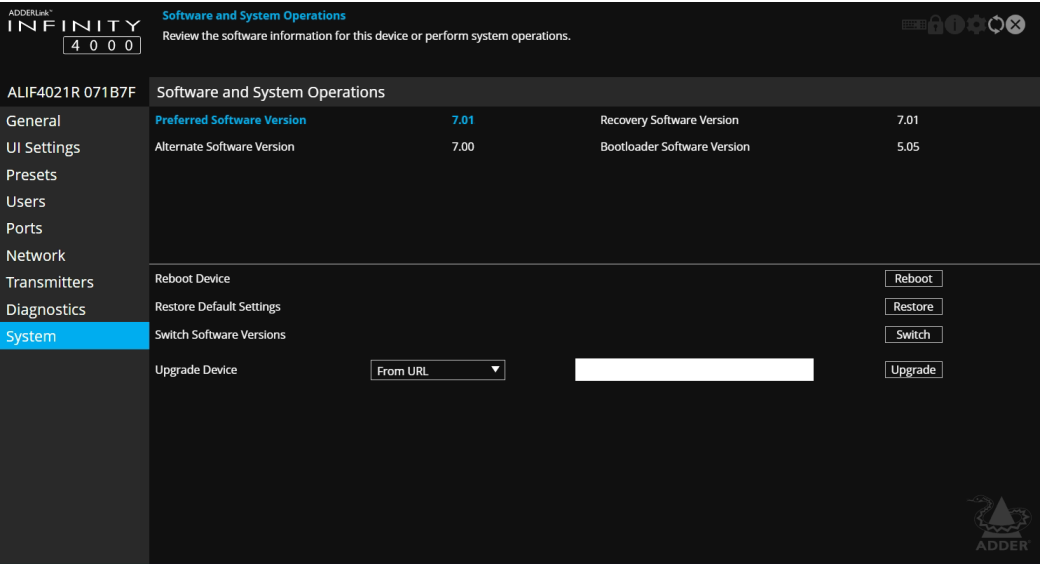
备用软件版本—设备可用的另一个（备用）软件版本。

重新启动设备—单击“重新启动”按钮即可重新启动设备。

恢复默认设置 -单击Restore按钮，将设备恢复为出厂默认设置。

切换软件版本 -单击切换到所列出的“替代软件版本”。

升级设备 -如果使用浏览器查看此页面：允许您从可信的URL或本地存储的文件升级固件。请使用字段定义源，然后单击“升级”按钮。



TX - General Information

To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 Click the **Transmitters** option and then click the  icon for the required transmitter.
- 4 If necessary, click the **General** link.

OR

- 1 Connect a computer to the same network as the TX unit.
- 2 Run a web browser and enter the IP address of the TX unit: **https://169.254.1.33** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2 then the default address will be **https://169.254.1.43** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3 (or IP Address 4)* and use that address.
- 3 If necessary, click the **General** link.

General Information

Type - States whether the device is a transmitter (TX) or a receiver (RX).

Name - Name details that you can alter to distinguish this unit from all others. Not shown when operating under AIM server control.

Description - Allows you to optionally add a description of the device. Useful when many ALIF units are being used. Not shown when operating under AIM server control.

Location - Allows you to optionally add a description of the device's location. Useful when many ALIF units are being used. Not shown when operating under AIM server control.

Current Software Version - Displays the version number of the currently installed and running internal software (unit can have two different software versions installed at once).

Serial Number - Displays the fixed serial number of the device.

Board Revision - Displays the revision number of the device's main circuit board.

Unit Type - Used for Adder technical support purposes, this entry shows a code depicting the type of the main circuit board.

Software Compatible ID - Used for Adder technical support purposes, this entry shows the software compatible ID of the main circuit board.

ADDERLink™

INFINITY

4 0 0 0

General Settings

Review the general information, set the name, description and location for this device or identify it.

ALIF4021T 0687A7

General Settings

General

UI Settings

Users

Ports

Network

Diagnostics

System

Type

Name

Description

Location

Current Software Version

Serial Number

Board Revision

Unit Type

Software Compatible ID

Model

Date

Time

Uptime

Identify Device

TX

ALIF4021T 0687A7

Description

7.01

1903A0195184

0x1

0x0

1

ALIF4021T

Thu 31 Aug 2023

12:01:48 GMT+0100 (British Summer Time)

1 mth, 7 days



Cancel

Apply

Model - Displays the model number of the device.

Date and Time - Displays the current date and time used by the device when this page was last loaded (select refresh icon to update).

Uptime - Shows the time period for which the device has currently been running since the last time this page was loaded (select refresh icon to update).

Identify Device - When clicked, this button will cause the indicator on the front panel of the device to flash to assist with identification when multiple units are installed in the same area. A popup dialog will also be displayed on screen showing all relevant identification details. Click the Cancel button to stop the identification process or click the OK button to close the popup (and then click the Identify Device button when you're ready to cancel this operation).

Access Password - Sets the password that a RX device must provide in order to connect (video, audio, etc) to the TX

Insecure Connections - Controls whether the TX will accept insecure connections from RX devices. Insecure connections are those from older ALIF products where the security credentials are not implemented. Initially, the TX will default to 'auto' which allows it to decide the setting based on the type of device that first connects to it. Once a device has connected, the setting will be changed to either 'Allowed' or 'Disallowed'.



TX -一般信息

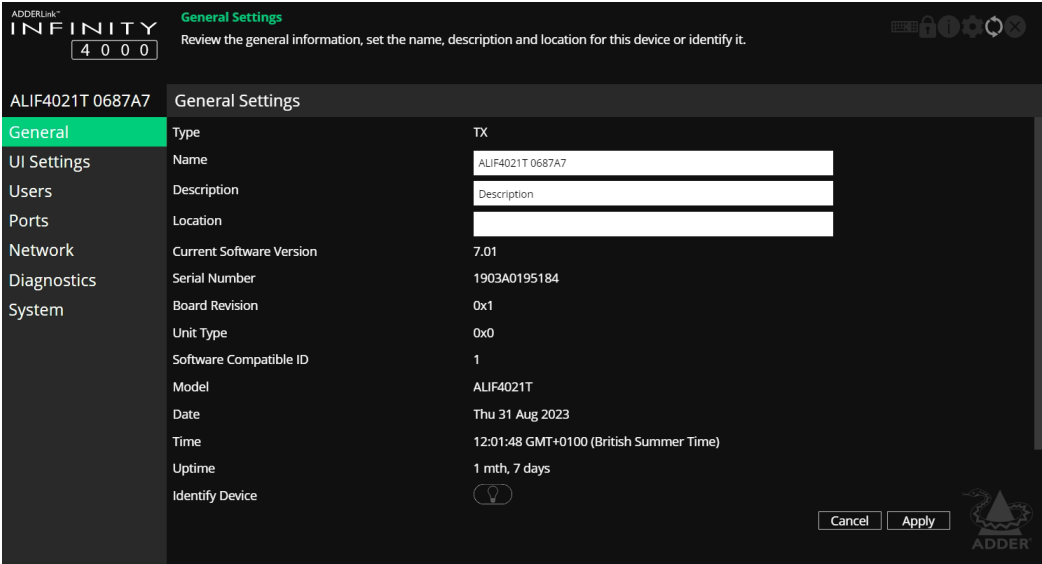
到此地的路线

可通过以下两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。
- 2 单击“⚙️”右上角的图标。
- 3 单击“发射器”选项，然后单击“⚙️”所需发射器的图标。
- 4 如有必要，请单击“常规”链接。

或

- 1 将计算机连接至与TX单元相同的网络。
- 2 运行web浏览器并输入TX装置的IP地址：
https://169.254.1.33（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用SFP端口4或RJ45端口2
2然后默认地址将为**https://169.254.1.43**如果 IP地址未知，请按OLED屏幕旁边的前面板上的小按钮，显示IP地址3（或IP地址4）的值并使用该地址。
- 3 如有必要，请单击“常规”链接。



一般信息

类型—说明设备是发射器（TX）还是接收器（RX）。

名称 -可以更改的名称详细信息，用于将该单位与其他所有单位区分。在AIM服务器控制下运行时不会显示此名称。

描述 -允许您选择性地添加设备的描述。在使用许多ALIF装置时非常有用。在AIM服务器控制下运行时不会显示此选项。

位置—允许您选择性地添加设备位置的描述。在使用许多ALIF装置时很有用。在AIM服务器控制下运行时不会显示此选项。

当前软件版本—显示当前安装并运行的内部软件的版本号（设备可以同时安装两个不同的软件版本）。

序列号—显示设备的固定序列号。

板修订 -显示设备主电路板的修订号。

单元类型—用于加法器技术支持目的，此条目显示一个描述主电路板类型的代码。

软件兼容ID—用于加法器技术支持目的，此条目显示了主电路板的软件兼容ID。

型号 -显示设备的型号。

日期和时间—显示设备上上次加载本页时使用的当前日期和时间（选择刷新图标以更新）。

Uptime—显示自上次加载此页面以来设备当前运行的时间段（选择刷新图标以更新）。

识别设备 -单击此按钮时，设备前面板上的指示灯会闪烁，以便在同一个区域安装多个设备时进行识别。屏幕上还会显示一个弹出对话框，显示所有相关的识别详细信息。单击“取消”按钮可停止识别过程，或单击“确定”按钮关闭弹出窗口（然后单击“识别设备”按钮，准备取消该操作）。

访问密码 -设置RX设备必须提供的密码，以便连接（视频、音频等）到TX

不安全连接—控制TX是否接受来自RX设备的不安全连接。不安全连接指未实现安全凭证的旧版ALIF产品。初始状态下TX默认为“自动”模式，允许其根据首次连接的设备类型决定设置。当设备完成连接后，系统将把设置更改为“允许”或“禁止”。



安装

配置

业务

更多信息

索引

TX - UI Settings

To get here

You can access this page in two ways:

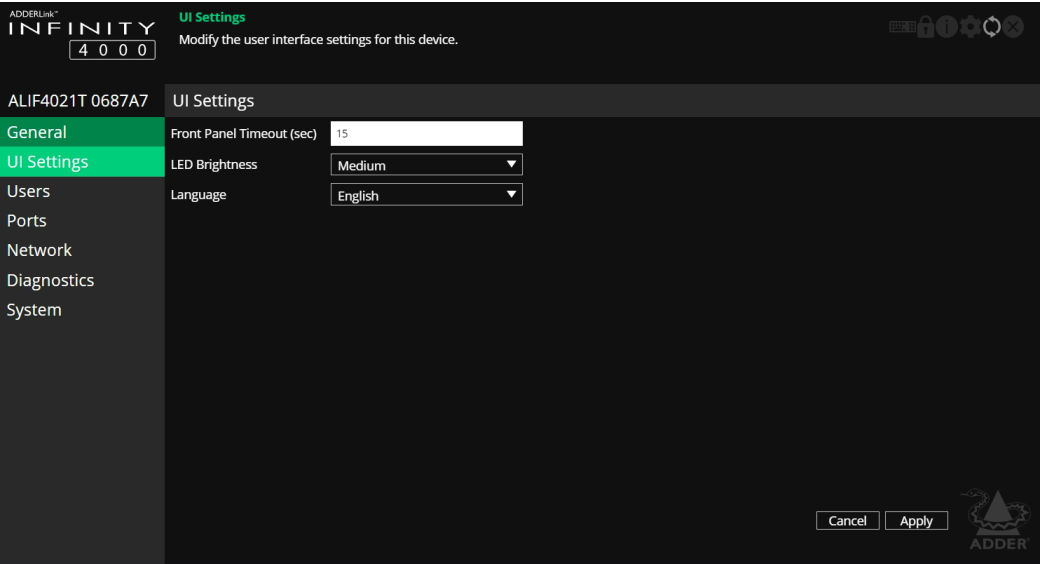
- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 Click the **Transmitters** option and then click the  icon for the required transmitter.
- 4 Click the **UI Settings** link.

OR

- 1 Connect a computer to the same network as the TX unit.
- 2 Run a web browser and enter the IP address of the TX unit: **https://169.254.1.33** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2 then the default address will be **https://169.254.1.43** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3 (or IP Address 4)* and use that address.
- 3 Click the **UI Settings** link.

UI Settings

- Front Panel Timeout** - Determines the period of inactivity that should elapse before the front panel display should return to a blank state.
- LED brightness** - Determines the brightness of the front panel LED indicator.
- Language** - Determines the language used for all text labels within the configuration pages.



到此地的路线

可通过两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。
- 2 单击“ 右上角的图标。
- 3 单击“发射器”选项，然后单击 所需发射器的图标。
- 4 单击“UI设置”链接。

或

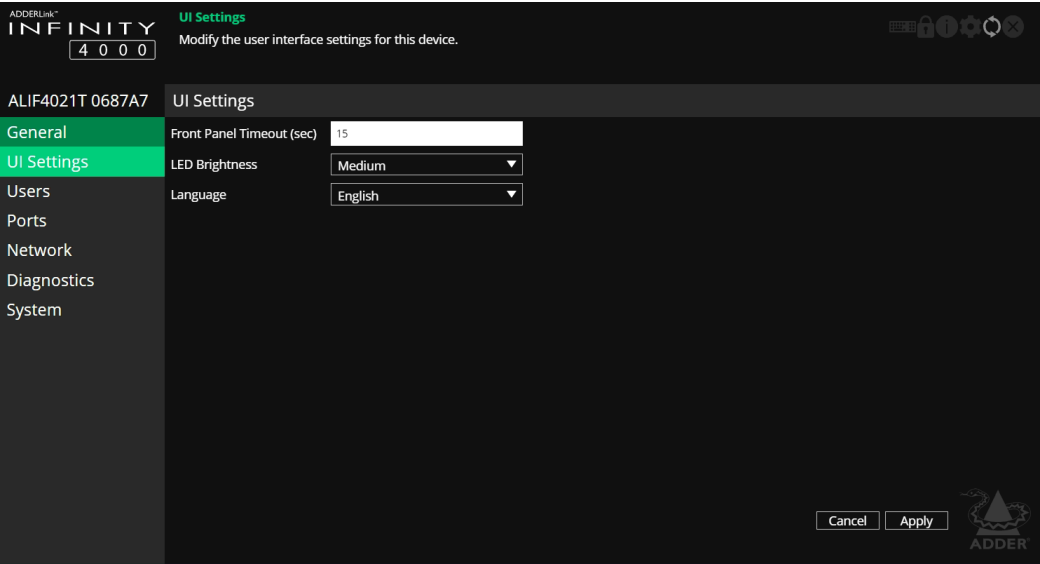
- 1 将计算机连接至与TX单元相同的网络。
- 2 运行web浏览器并输入TX装置的IP地址：**https://169.254.1.33**（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2然后默认地址将为**https://169.254.1.43**如果 IP地址未知，请按OLED屏幕旁边的前面板上的小按钮，显示IP地址3（或IP地址4)的值并使用该地址。
- 3 单击“UI设置”链接。

用户界面设置

前面板超时—确定前面板显示器在达到某个时间间隔后应返回空白状态的时间。

LED亮度—确定前面板LED指示灯的亮度。

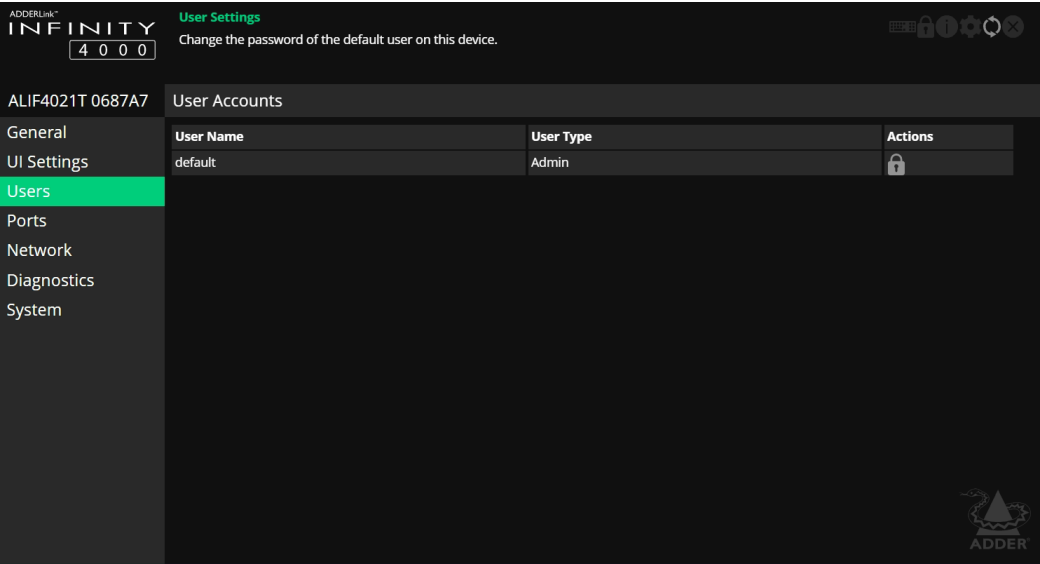
语言—确定配置页面中所有文本标签使用的语言。



TX - Users

To get here

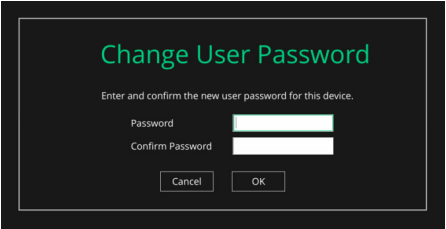
- You can access this page in two ways:
- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
 - 2 Click the  icon in the top right corner.
 - 3 Click the **Transmitters** option and then click the  icon for the required transmitter.
 - 4 Click the **Users** link.
- OR**
- 1 Connect a computer to the same network as the TX unit.
 - 2 Run a web browser and enter the IP address of the TX unit: **https://169.254.1.33** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2 then the default address will be **https://169.254.1.43** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3 (or IP Address 4)* and use that address.
 - 3 Click the **Users** link.



User accounts

This page allows you to change the password for the admin user.

Click the  icon to display the following dialog:



Enter and confirm the current and new admin password and click OK.



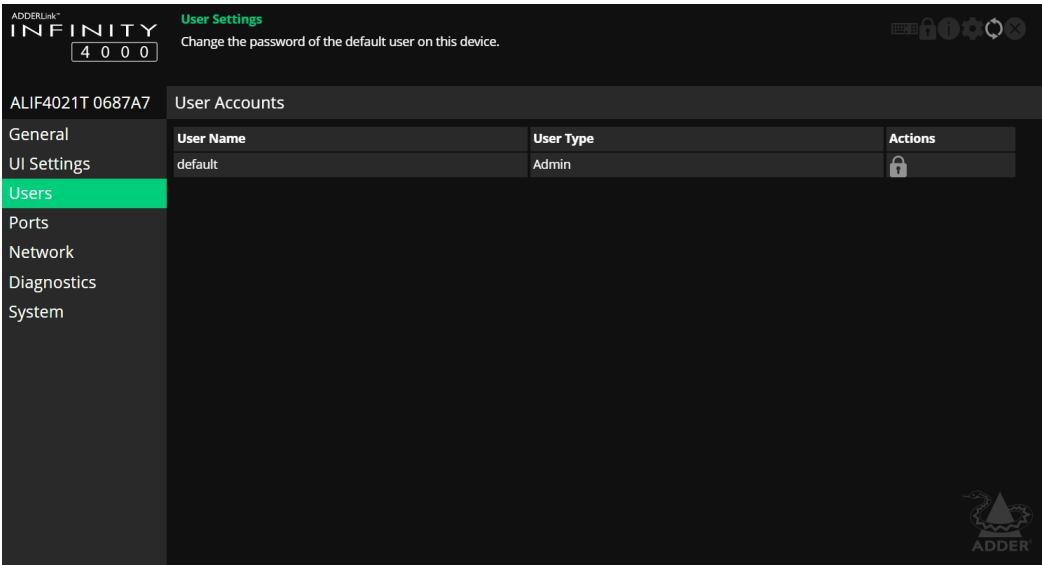
到此地的路线

可通过两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。
- 2 单击“ 右上角的图标。
- 3 单击“发射器”选项，然后单击 所需发射器的图标。
- 4 单击“用户”链接。

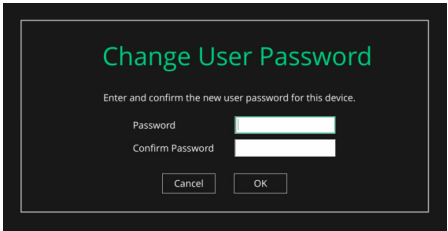
或

- 1 将计算机连接至与TX单元相同的网络。
- 2 运行web浏览器并输入TX装置的IP地址：**https://169.254.1.33**（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2然后默认地址将为**https://169.254.1.43**如果 IP地址未知，请按OLED屏幕旁边的前面板上的小按钮，显示IP地址3（或IP地址4)的值并使用该地址。
- 3 单击用户链接。



用户帐户

此页允许您更改管理员用户的密码。单击 图标将显示以下对话框：



输入并确认当前和新管理员密码，然后单击“确定”。

TX - Ports

To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 Click the **Transmitters** option and then click the  icon for the required transmitter.
- 4 Click the **Ports** link.

OR

- 1 Connect a computer to the same network as the TX unit.
- 2 Run a web browser and enter the IP address of the TX unit: **https://169.254.1.33** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2 then the default address will be **https://169.254.1.43** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3 (or IP Address 4)* and use that address.
- 3 Click the **Ports** link.



Video Ports

This page provides basic information about the two video ports located on the TX unit.

Enabled - Confirms whether each video port is enabled or disabled.

Connected - Confirms whether functioning host video drivers are connected to the two video ports.

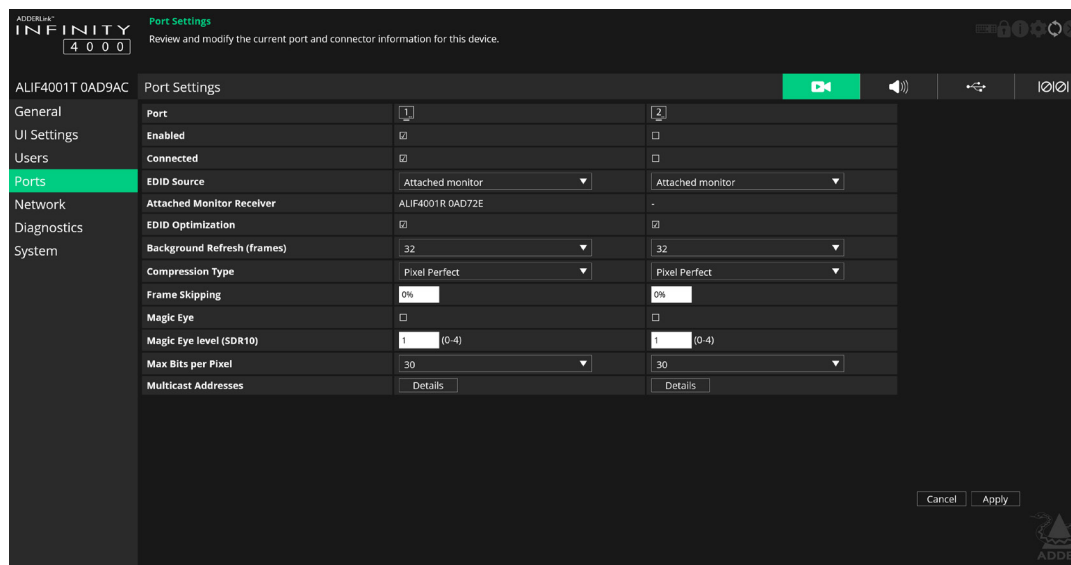
EDID Source - Lists the EDID mode currently being output on the two video connectors. An option called *Saved attached monitor* is available and will save that first RX's EDID in persistent storage and use that EDID forever (including over reboot, powercycle, etc) until it is cleared (see below) or a Fixed EDID is selected instead.

To save a monitor EDID and use it for that given video and/or audio port, select the *Saved Attached Monitor* option. The current Attached monitor EDID will be saved in persistent storage on the TX and used from now on by the TX until it is cleared (see below).

To clear the saved monitor EDID, either:

- Factory reset the TX
- Select "Attached Monitor" EDID on both the video and audio EDID Source settings for the same physical DP port.

For more information about how video and audio EDID data are derived, see [Support for analog and digital audio](#). Note: Fixed EDIDs were updated in v3.00 to add support for higher frame rates at each fixed EDID resolution. The default frame rate remains as given in the fixed EDID name (eg. 60), however, HD and higher resolutions will include higher rates which are supported at those resolutions. eg. 240Hz for 1920x1080p60.



Dynamic Range - This option is shown only when a fixed EDID is selected and allows you to determine a particular color depth and dynamic range. When set to HDR10, the transmitter will also declare support for the lower SDR8 and SDR10 modes. See page 4.

Attached Monitor Receiver - If the 'Attached monitor' option has been selected as the 'EDID Source', then this displays the name of the RX device that supplied the EDID currently being used.

EDID Optimization - When ticked, and if the *EDID source* option is set to 'Attached monitor'; upon connecting with a new receiver, the transmitter will compare the preferred video mode of the new monitor with the current video output from the host PC. Only if they differ will the transmitter present the new monitor's EDID to the host PC. This option speeds up switching as the host PC's graphics card does not have to go through a hotplug detect routine each time a new receiver is connected. If this setting is unticked, the transmitter will always present a new EDID to the host PC.

Background Refresh (frames) - The system will send all changing video as soon as it changes. In addition, it is possible to send unchanging video in the background, to overcome problems of lost network traffic. This control will configure how often a whole frame of video will be sent alongside changing video. In situations of frequently changing video, or high reliability networks, this value can be set to a higher number, or even set to disabled.

Compression Type - Allows you to select the compression method to best suit the nature of the video sources. Settings are: Pixel Perfect, Adaptive, Smoothest Video or Advanced (which allows you to set the maximum and minimum compression levels).

Frame Skipping - Frame Skipping involves 'missing out' video frames between those captured by the TX unit. For video sources that update only infrequently or for those that update very frequently but where high fidelity is not required, frame skipping is a good strategy for reducing the overall bandwidth consumed by the system. Range: 0 to 100%.

Magic Eye - When ticked, this feature increases performance and reduces network traffic if ALIF units are used with host computers that have dithered video output. It also improves performance if the video source is noisy.

Magic Eye level (SDR10) - Only active if Magic Eye is ticked. The default level of 1 is suitable for most sources. For Apple Macs with M-CPU's, level 4 may give the best results when using SDR10. In other cases, if SDR10 has no dithering but other color bit depths do, use level 0 to switch off Magic Eye for SDR10, but leave it on for all others (eg SDR8).

Max Bits per Pixel - Allows you to choose the maximum color bit depth that is passed through from the host computer to the ALIF4000 receivers and their connected video display(s). The options are 24-bits per pixel (Standard Dynamic Range) or 30-bits per pixel to support newer video displays that support the SDR10 and HDR10 (High Dynamic Range) standards. When set to 24, an incoming 30-bpp signal will be converted down to 24-bpp before being transmitted, most commonly used to ensure that all ALIF receivers are able to receive the video output. When set to 30, incoming 30-bpp will pass through unchanged, as will 24-bpp. See page 4.

Multicast Addresses - This section lists all video multicast IP addresses that have been configured. Setting the field to a blank (empty string) value will cause the system to automatically generate a default multicast address.

continued

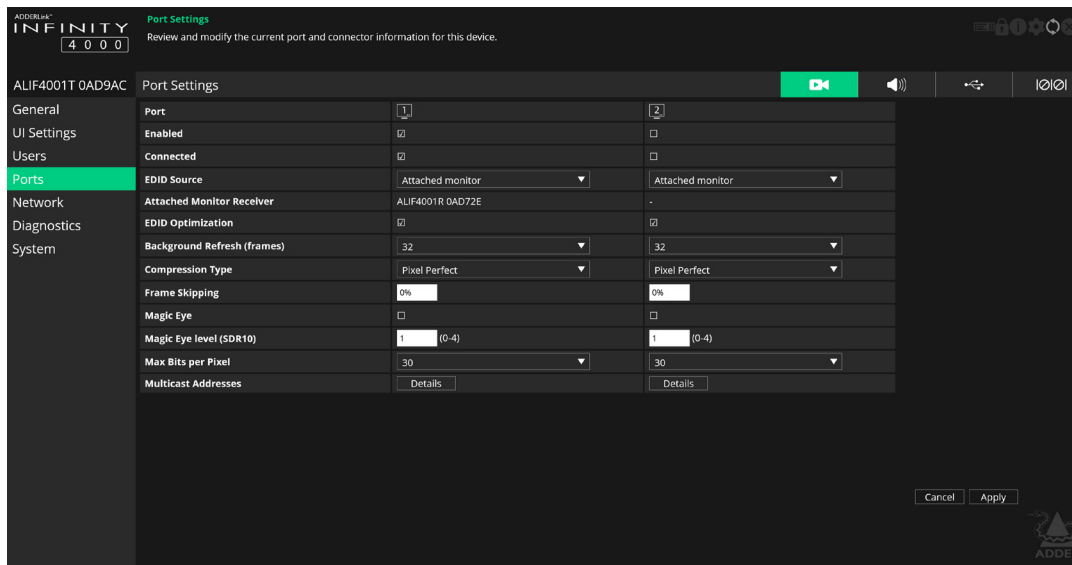
到此地的路线

可通过两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按**CTRL + ALT + C**或点击触摸屏上图标以访问OSD。此时将显示“预设选择”页面。
- 2 单击“ 右上角的图标。
- 3 单击“**发射器**”选项，然后单击 所需发射器的图标。
- 4 单击“**端口**”链接。

或

- 1 将计算机连接至与TX单元相同的网络。
- 2 运行web浏览器并输入TX装置的IP地址：**https://169.254.1.33**（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2然后默认地址将为**https://169.254.1.43**如果IP地址未知，请按OLED屏幕旁边的前面板上的小按钮，显示**IP地址3**（或**IP地址4**）的值并使用该地址。
- 3 单击“**端口**”链接。



视频端口

本页提供TX单元上两个视频端口的基本信息。

启用——确认每个视频端口是否启用或禁用。

连接——确认是否已将正常工作的主机视频驱动程序连接到两个视频端口。

EDID源 -列出当前通过两个视频接口输出的EDID模式。有一个名为“*已保存的连接监视器*”的选项，该选项将首次接收的EDID保存到永久性存储器中，并在重新启动、电源关闭后永久使用该EDID（包括重启后），直至清除该选项（参见下文）或选择“固定EDID”为止。要保存监视器EDID并将其用于指定视频和/或音频端口，请选择*已保存的连接监视器*选项。当前的已连接监视器EDID将保存在TX的永久性存储器中，TX将从此使用该EDID，直至其被清除（请参阅下文）。要清除已保存的监视器EDID，可以执行以下操作：

- 工厂重置TX
- 在同一个物理DP端口的视频和音频EDID源设置中，选择“附加监视器”EDID。

如需了解视频和音频EDID数据的生成方式，请参阅 [模拟与数字音频支持](#)。注意：在v3.00版本中，固定EDID已更新以支持更高帧率。默认帧率仍保持固定EDID名称中的数值（如60），但高清及更高分辨率版本将包含对应分辨率支持的更高帧率，例如1920x1080p60格式下的240Hz。

动态范围——仅当选择了固定EDID时才会显示此选项，它允许您确定特定的颜色深度和动态范围。当设置为HDR10时，发射器还将声明支持较低的SDR8和SDR10模式。请参阅第4页。

附加监视器接收器 -如果“附加监视器”选项被选为“EDID源”，则显示提供当前使用的EDID的RX设备的名称。

EDID优化功能——勾选此选项后，若EDID源设置为“已连接显示器”，当连接新显示器时，发射器会将新显示器的首选视频模式与主机当前输出的视频模式进行比对。只有当两者不一致时，发射器才会向主机呈现新显示器的EDID。该设置能显著提升切换效率，因为主机显卡无需每次连接新显示器时都执行热插拔检测流程。若取消勾选此选项，发射器将始终向主机呈现新显示器的EDID。

背景刷新（帧数）——系统会在画面发生变更时立即发送更新视频。此外，后台也可选择发送静态画面以规避网络流量丢失问题。该设置用于配置整帧视频与动态画面同步传输的频率。在画面频繁变化或网络稳定性高的场景下，可将此数值设为更高频率，甚至完全关闭背景刷新功能。

压缩类型 -允许您选择最适合视频源特性的压缩方法。设置包括：Pixel Perfect、Adaptive、Smoothest video或Advanced（允许您设置最大和最小压缩级别）。

帧跳 -帧跳包括在TX单元所捕获的帧之间“跳过”视频帧。对于更新频率不高的视频源，或者对于不需要高保真的更新频率很高的视频源，帧跳是降低系统所消耗的总带宽的一个很好的策略。范围：0到100%。

Magic Eye——勾选此功能后，如果ALIF设备与具有抖动视频输出的主机计算机一起使用，则可提高性能并减少网络流量。如果视频源是噪声信号，此功能还可提高性能。

魔法眼校正级别（SDR10） -仅当勾选魔法眼校正时激活。默认级别1适用于大多数光源。对于搭载M系列芯片的苹果电脑，在使用SDR10标准时，级别4可能获得最佳效果。其他情况下，若SDR10不支持抗锯齿但其他色彩位深支持，则建议使用级别0关闭SDR10的魔法眼校正，但需保留其他标准（如SDR8）的魔法眼开启。

最大像素位深度——用于设置ALIF4000接收器及其视频显示器从主机传输信号时支持的最大颜色位深度。可选标准动态范围（24位/像素）或支持SDR10与HDR10（高动态范围）标准的30位/像素。当选择24位时，输入的30位信号会先转换为24位再传输，主要用于确保所有ALIF接收器都能正确接收视频输出。选择30位时，输入的30位信号将保持原样传输，24位情况同上（详见第4页）。

组播地址 -此部分列出已配置的所有视频组播IP地址。将该字段设置为空白（空字符串）值将使系统自动生成默认组播地址。

[继续的](#)

TX - Ports (continued)



Audio Ports

This page provides basic information about the audio ports located on the TX unit.

Enabled - Confirms whether the audio ports are enabled or disabled.

Connected - Confirms whether devices are connected to respective ports.

EDID Source - Determines which audio EDID should be used:

Attached Monitor - use the audio capabilities reported by the monitor.

Saved Attached Monitor - save the audio capabilities reported by the attached monitor EDID in persistent storage on the TX and use them until they are cleared (see below).

None - remove audio support from the EDID presented by the TX to the connected PC.

2-, 6-, 8-Channel - apply a generic audio EDID.

For more information about how video and audio EDID data are derived, see [Support for analog and digital audio](#).

To clear the saved monitor EDID, either:

- Factory reset the TX
- Select “Attached Monitor” EDID on both the video and audio EDID Source settings for the same physical DP port.

Attached Monitor Receiver - If the ‘Attached monitor’ option has been selected as the ‘EDID Source’, then this displays the name of the RX device that supplied the EDID currently being used.

EDID Optimization - When ticked, and if the *EDID source* option is set to ‘Attached monitor’; upon switching to a new receiver, the transmitter will compare the preferred audio mode of the new monitor/audio subsystem with the current video output from the host PC. Only if they differ will the transmitter present the new audio EDID to the host PC. This option speeds up switching as the host PC does not have to go through a hotplug detect routine each time a new receiver is connected. If this setting is unticked, the transmitter will always present a new EDID to the host PC.

For audio there is also an extra check. Because the audio stream may not always be active (whereas video always is); if there is currently no audio stream being output by the PC, the transmitter will compare the audio capabilities of the current EDID with the new EDID. If the new EDID’s capabilities are a subset of the current EDID’s, the existing one will be changed for the new one. For example, if the current EDID supports 8 channel audio and the new only supports 6, the new will be selected to ensure the host PC doesn’t attempt to output 8 channel audio to a device that can’t handle it.

Multicast Addresses - This section lists all audio multicast IP addresses that have been configured. Setting the field to a blank (empty string) value will cause the system to automatically generate a default multicast address.



USB Ports

This page provides basic information about the USB ports located on the TX unit.

Type - Identifies the type of the USB port.

Enabled - Confirms whether the USB ports are enabled or disabled.

Connected - Confirms whether valid devices are connected to either USB port. *Note: As both USB ports share the same physical port, it is not possible to detect whether a specific port has a device connected.*

Rate Limit - This option allows you to place an upper limit on the bandwidth that can be consumed by the transparent USB subsystem as a whole. This can be useful in situations where the overall network bandwidth is quite low and high resolution video performance is being impacted by USB operation; particularly during large file transfers to or from a mass storage device inserted into the ALIF receiver. Using this option you can choose an appropriate USB bandwidth rate limit between 1 and 480Mbps.

Reserved Ports - Allows USB ports to be optionally reserved for use with particular devices. Once reserved, certain rules can be applied to them via the AdderLink Infinity Manager (AIM) application.

Present Boot Keyboard - When ticked, the TX unit will report a virtual dummy boot keyboard to the attached PC to ensure that a keyboard is always reported when the PC boots up. The dummy boot keyboard uses one of the 13 USB endpoints, therefore if all 13 endpoints are required elsewhere for USB devices (or a KVM switch only supports two HID devices) then it can be disabled by deselecting this option.

Max Hub Size - Using this option you can select whether the TX unit should report itself as a 13 or a 7 port USB hub. Some USB hosts are only able to support 7 port USB hubs. If this option is set to 7, then only 7 USB devices are supported by the PC.

Security - Controls whether USB data is encrypted. *On* forces always on, *Off* forces always off and *Prefer off* will be off unless the RX requests it.



Serial Port

This page provides basic information about the serial option port located on the TX unit. These options are configurable via the AIM server.

Enabled - Confirms whether the serial port is enabled or disabled.

Connected - Confirms whether a valid serial device is connected to the port.

Speed - The ‘baud rate’ of the serial device.

Data Bits - The number of data bits to be used (5, 6, 7, or 8).

Stop Bits - The number of stop bits to be used (1 or 2).

Parity - The parity checking to be used (none, odd or even).

TX -端口（续）



音频端口

本页提供有关TX单元上音频端口的基本信息。

启用 -确认音频端口是否启用或禁用。

已连接 -确认设备是否已连接到相应端口。

EDID源—确定应该使用哪个音频EDID：*附加的监视器*—使用监

视器所报告的音频功能。

保存所连接的监视器 -将所连接监视器EDID报告的音频功能保存到TX上的持久性存储器中，并使用这些功能，直到它们被清除（参见下文）。

None -从TX向连接的PC提供的EDID中删除音频支持。

2、6、8通道 -应用通用音频EDID。

有关如何派生视频和音频EDID数据的详细信息，请参阅[对模拟和数字音频的支持](#)。

要清除已保存的监视器EDID，可以执行以下操作：

- 工厂重置TX
- 在同一个物理DP端口的视频和音频EDID源设置中，选择“附加监视器”EDID。

附加监视器接收器 -如果“附加监视器”选项被选为“EDID

源”，则显示提供当前使用的EDID的RX设备的名称。

EDID优化功能——勾选此选项后，若EDID源设置为“已连接显示

器”，当切换至新接收器时，发射器会将新显示器/音频子系统的首选音频模式与主机当前视频输出进行比对。只有当两者不一致时，

发射器才会向主机呈现新的音频EDID。该设置可显著提升切换效率，因为主机无需每次连接新接收器时都执行热插拔检测流程。若

取消勾选此选项，发射器将始终向主机呈现最新的EDID信息。

音频信号还包含额外的验证机制。由于音频流可能并非始终处于激活状态（而视频流则始终保持开启），当当前计算机未输出音频

时，发送方会将新旧EDID的音频功能进行比对。若新EDID的功能属于现有版本的子集，则系统会自动将原有EDID更新为新版。例如，当前EDID支持

8通道音频和新的只支持6，新的将被选择以确保主机PC不会试图

将8通道音频输出到一个无法处理它的设备。

组播地址—此部分列出已配置的所有音频组播IP地址。将该字段设

置为空白（空字符串）值将使系统自动生成默认组播地址。



USB端口

本页提供有关TX装置上USB端口的基本信息。

类型—标识USB端口的类型。

启用—确认USB端口是否启用或禁用。

Connected -确认有效设备是否连接到任一USB端口。*注意：由于两个USB端口共享同一物理端口，因此无法检测特定端口上是否连接有设备。*

带宽速率限制——该选项允许您为整个透明USB子系统设置带宽上

限。当整体网络带宽较低且高分辨率视频性能受USB操作影响时，

此功能特别适用于向ALIF接收器插入的大容量存储设备传输大文件

或从中读取大文件时。使用此选项时，您可以在1到480Mbps之间选

择合适的USB带宽速率限制。

预留端口—允许将USB端口保留为特定设备使用。一旦被保留，可通

过AdderLink Infinity Manager（AIM）应用程序对它们应用某些规则。

现有启动键盘 -选中此选项后，TX设备将向连接的PC报告虚拟模拟启动键盘，以确保PC启动时始终报告键盘。该模拟启动键盘使用13个USB端点中的一个，因此如果其他地方需要全部13个端点来支持USB设备（或KVM交换机仅支持两个HID设备），则可通过取消选择此选项禁用它。

Max Hub Size -使用此选项可以指定TX单元应将自己报告为13端口

还是7端口USB集线器。某些USB主机只能支持7端口USB集线器。

如果将此选项设置为7，则PC只支持7个USB设备。

安全性—控制是否加密USB数据。“始终强制打开”、“始终关

闭”和“建议关闭”除非RX请求，否则将处于关闭状态。



串行端口

本页提供有关TX单元上串行选项端口的基本信息。这些选项可通过AIM服务器进行配置。

Enabled -确认串口是否启用或禁用。

已连接—确认是否有一个有效的串行设备连接到端口。

速度—串行设备的“波特率”。

数据位—要使用的数据位数（5、6、7或8）。

停止位—使用的停止位数（1或2）。

Parity—要使用的奇偶校验（无、奇数或偶数）。

TX - Network

To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 Click the **Transmitters** option and then click the  icon for the required transmitter.
- 4 Click the **Network** link.

OR

- 1 Connect a computer to the same network as the TX unit.
- 2 Run a web browser and enter the IP address of the TX unit: **https://169.254.1.33** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2 then the default address will be **https://169.254.1.43** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3 (or IP Address 4)* and use that address.
- 3 Click the **Network** link.



Port Settings

This page provides numerous network details for each of the installed ports on the TX unit.

Socket - Details each operational network socket. Sockets 3 and 4 are determined by the SFP modules plugged into them.

MAC Address - Displays the unique, fixed hardware identification number for each port.

Link Up - Indicates whether the link state of this network interface is up. This should be the case if the device is connected to a functioning network.

IP Address - This shows the IP address in use, which can be obtained via DHCP, a static IP or a link local (zero-config).

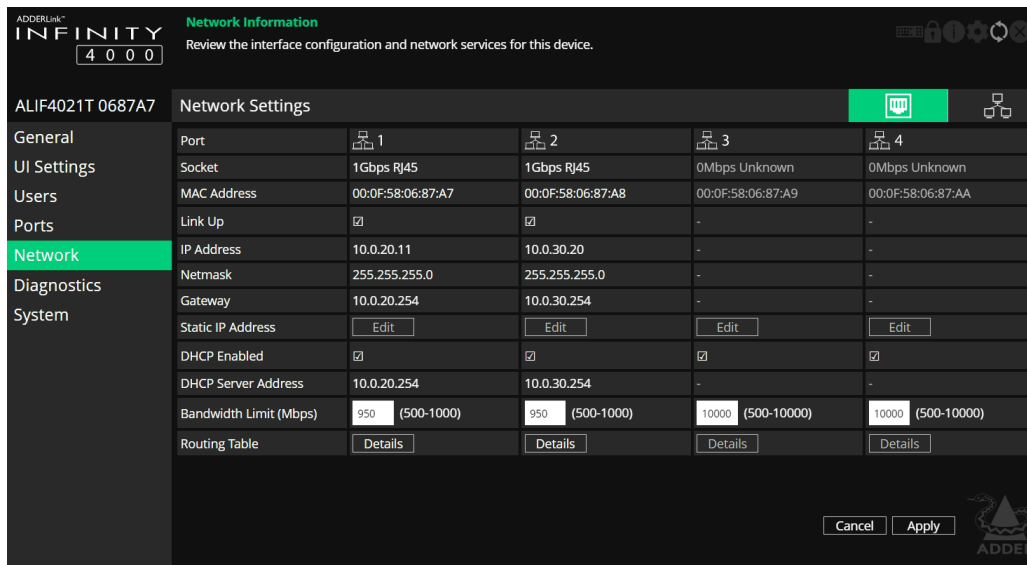
Netmask - The netmask of this network interface. The device can function in a network zero-config state which does not require the setting of a static netmask.

Gateway - The gateway address of this network interface. The device can function in a network zero-config state which does not require the setting of a static gateway.

Static IP Address - When the 'DHCP enabled' option (below) is unchecked, click on 'Edit' to enter/edit a static IP Address, Netmask and Gateway for the unit.

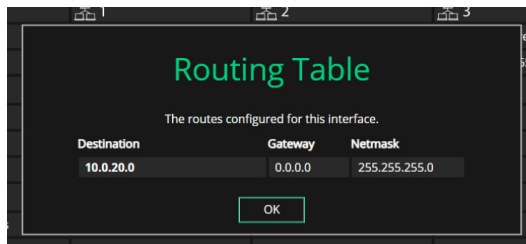
DHCP Enabled - When ticked, the corresponding port will derive its IP Address, Netmask and Gateway details from the DHCP server listed in the field below.

DHCP Server Address - Indicates the server that provided the DHCP details.



Bandwidth Limit - This option can be used to set an upper limit (between 500 and 10000 Mbps aka 10Gbps) to the amount of the network bandwidth used on the physical interface. This could be useful if multiple devices share a common network link upstream; without a limit, the link could become overloaded and drop data.

Routing Table - Click on 'Details' to show the routing table entries corresponding to this network interface. In it are the destination address, gateway and netmask for the routes to particular network destinations:



Destination	Gateway	Netmask
10.0.20.0	0.0.0.0	255.255.255.0



Network Settings

Default Domain - Reserved for future use.

Route of Last Resort - In a multi interface device such as this, the interface which is ticked will be used as the default whenever it is unclear which interface should be used for network traffic.

Dynamic DNS Servers - List of DNS server addresses obtained via DHCP.

Static DNS Servers - Lists DNS server addresses that have been manually configured.

NTP Enabled - When ticked, the unit will derive its time and date information from a suitable NTP server.

NTP Key ID - The ID of the key used for secure NTP.

NTP Key Value - The value of the key used for secure NTP as a hexadecimal string.

Dynamic NTP Servers - Lists NTP server addresses obtained via DHCP.

Static NTP Servers - Lists NTP server addresses that have been manually configured.

AIM Enabled - Indicates whether server management is enabled for this device.

Dynamic AIM Servers - Lists AIM server addresses obtained via DHCP.

Static AIM Servers - Lists management server addresses that have been manually configured.

Note: ALIF4001 models will list only two ports on this page.



到此地的路线

可通过两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。
- 2 单击“ 右上角的图标。
- 3 单击“发射器”选项，然后单击“ 所需发射器的图标。
- 4 单击网络链接。

或

- 1 将计算机连接至与TX单元相同的网络。
- 2 运行web浏览器并输入TX装置的IP地址：
https://169.254.1.33（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2
2然后默认地址将为**https://169.254.1.43**如果 IP地址未知，请按OLED屏幕旁边的前面板上的小按钮，显示IP地址3（或IP地址4）的值并使用该地址。
- 3 单击网络链接。



端口设置

此页提供了TX单元上每个已安装端口的大量网络详细信息。

Socket—详细说明每个操作网络套接字。套接字3和4由插入它们的SFP模块确定。

MAC地址—显示每个端口的唯一、固定的硬件标识号。

Link Up—指示该网络接口的链路状态是否处于打开状态。如果设备连接到正常工作的网络，则应显示为打开状态。

IP地址—显示正在使用的IP地址，该地址可以通过DHCP、静态IP或链路本地（零配置）获得。

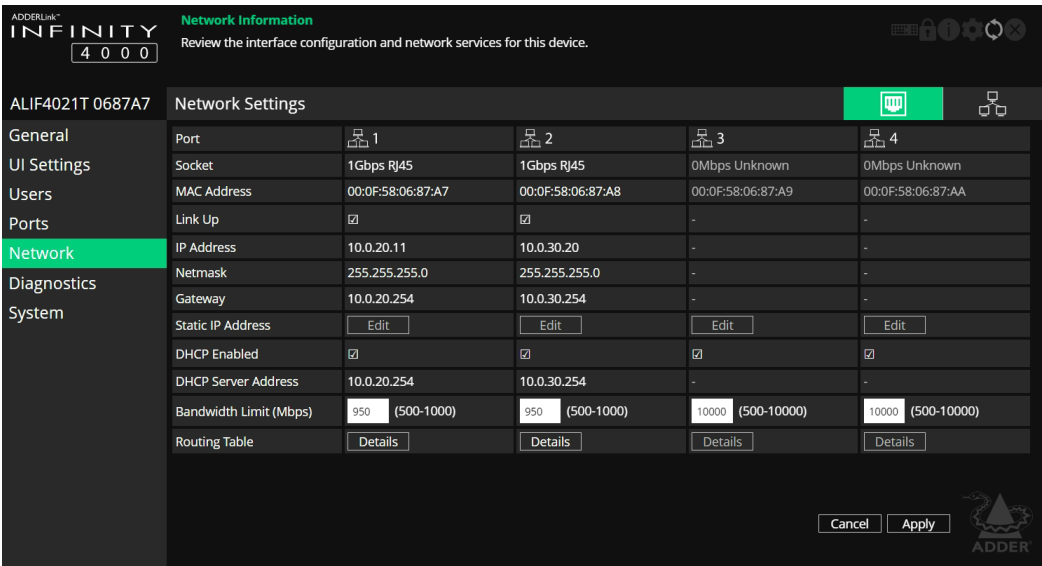
网络掩码 -此网络接口的**网络掩码**。设备可以处于网络零配置状态，不需要设置静态网络掩码。

网关—此网络接口的网关地址。设备可以在网络零配置状态下运行，而不需要设置静态网关。

静态IP地址 -当“DHCP启用”选项（如下）未选中时，单击“编辑”以输入/编辑单元的静态IP地址、子网掩码和网关。

DHCP已启用—选中后，对应的端口将从以下字段所列出的DHCP服务器获取其IP地址、子网掩码和网关详细信息。

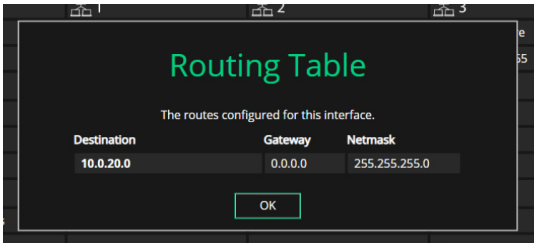
DHCP服务器地址 -表示提供DHCP详细信息的服务器。



注：ALIF4001 型号将仅在本页列出两个端口。

带宽限制——可以使用此选项设置物理接口上使用的网络带宽的上限（在500和10000 Mbps之间，即10Gbps）。如果多个设备共享一个上游公共网络链路，那么此选项可能很有用；如果没有限制，链路可能会过载并丢弃数据。

路由表 -单击“详细信息”显示与此网络接口对应的路由表条目，其中包含到特定网络目的地的路由的目的地址、网关和子网掩码：



网络设置

默认域—保留以备将来使用。

最后一法的路由：在这样的多接口设备中，如果不清楚应该使用哪个接口来传输网络流量，那么勾选的接口将作为默认接口使用。

动态DNS服务器—通过DHCP获得的DNS服务器地址列表。

静态DNS服务器—列出已手动配置的DNS服务器地址。

NTP已启用 -选中后，设备将从合适的NTP服务器派生其时间和日期信息。

NTP密钥ID—用于安全NTP的密钥的ID。

NTP Key Value -用作安全NTP的密钥的值，十六进制字符串。

动态NTP服务器 -列出通过DHCP获得的NTP服务器地址。

静态NTP服务器—列出已手动配置的NTP服务器地址。

AIM已启用 -表示是否已为此设备启用服务器管理。

Dynamic AIM服务器 -列出通过DHCP获得的AIM服务器地址。

静态AIM服务器 -列出已手动配置的管理服务器地址。

TX - Diagnostics and Statistics

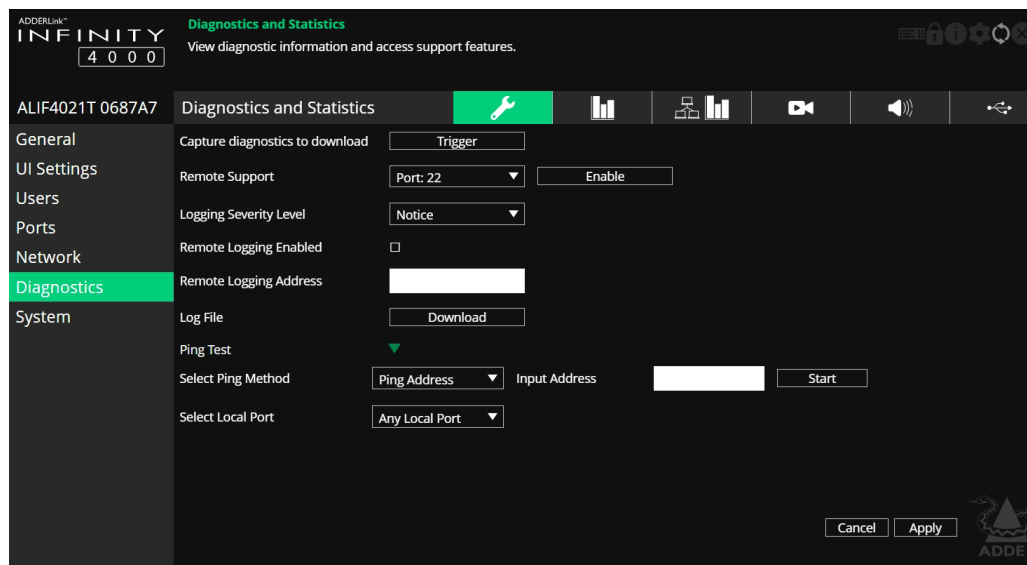
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 Click the **Transmitters** option and then click the  icon for the required transmitter.
- 4 Click the **Diagnostics** link.

OR

- 1 Connect a computer to the same network as the TX unit.
- 2 Run a web browser and enter the IP address of the TX unit: **https://169.254.1.33** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2 then the default address will be **https://169.254.1.43** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3* (or *IP Address 4*) and use that address.
- 3 Click the **Diagnostics** link.



Log Settings

This page provides numerous key diagnostic log settings.

Capture diagnostics to download - (Only shown when viewing this page using a PC browser). Request generation of a diagnostics dump file. This will then be downloaded by the host computer's browser; this is an encrypted diagnostics file which can be used by technical support to diagnose and fix an issue.

Remote Support - When using the Adder remote server, this option determines which port will be used. Multiple options are offered in case one or more ports are blocked by your firewall. When the Enable button is clicked, it will indicate the password to be used.

Logging Severity Level - Defines the level of messages that will be logged (according to RFC5424). Level 5 (*Notice: normal but significant condition*) is the default setting; ALIF4000 supports levels 1 to 7. Choosing levels 6 (*Informational*) or 7 (*Debug*) will cause larger numbers of lesser events to also be logged, with a potential impact to overall performance. These levels should only be used if working with the support team to diagnose a specific issue.

Remote Logging Enabled - Tick to send log files to the chosen Remote Logging Address.

Remote Logging Address - Enter a valid IP address for a syslog server on the local network where status logs can be sent.

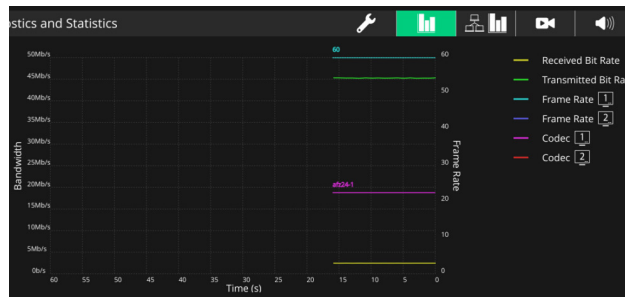
Log File - If viewing this page using a browser: Click to download the log file to the host computer's browser. If viewing this page via the OSD, the log will be shown as a scrollable list.

Ping Test - Provides a quick and easy way to check the link status to an ALIF RX. You can specify either an IP address or choose the device from a list. Click the Start button to begin; a summary of the results will be displayed.



Basic Graph

This page shows a real time graph with the following entries:



- **Received and transmitted bit rates** - the values of these correspond to the bandwidth axis on the left.
- **Frame rate** - for both heads. Values are labeled when they change and correspond to the axis on the right.
- **Codec** - for both heads. These represent the compression used: 1 is better than 4.
- **Dropped packets** - for both heads. Values are labeled when they change and correspond to the axis on the right.



Network Statistics

This page allows you to view current communication statistics and also to create graphs in real time.

Capture and Graph Statistics - When ticked, the page will create a real time graph plotting Received Bytes alongside Received Packets.

After *Capture and Graph Statistics* is enabled, the *Show Legend* checkbox will show all other items that can be included on the plot. Click an item to tick and include it.



Video Port Status and Statistics

This page provides wide ranging information for support purposes.



Audio Port Status and Statistics

This page provides wide ranging information for support purposes.



USB Port Status and Statistics

This page provides wide ranging information for support purposes. Currently only supported for transparent USB.

TX -诊断和统计

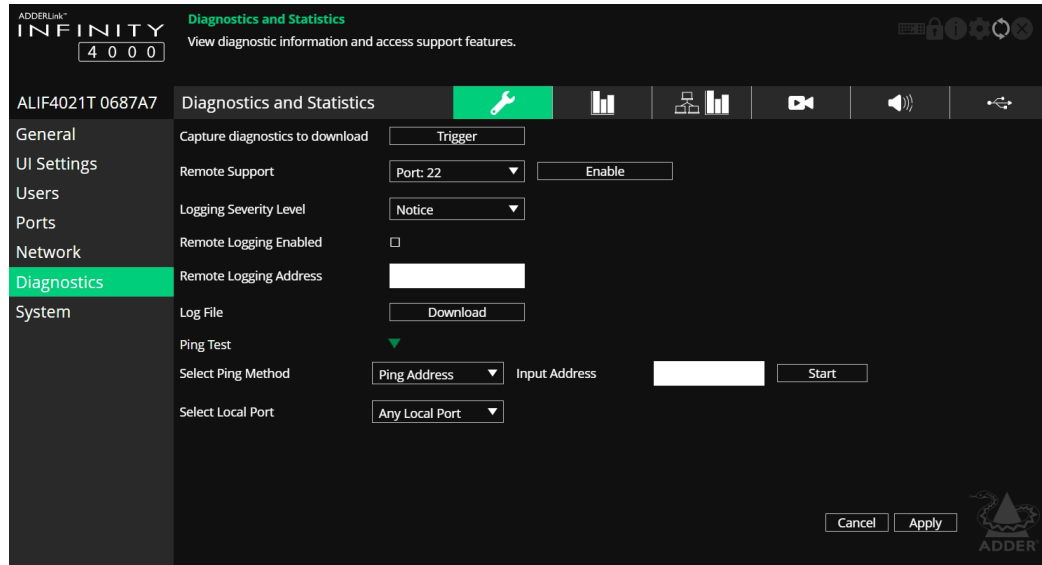
到此地的路线

可通过以下两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD。此时将显示“预设选择”页面。
- 2 单击“ 右上角的图标。
- 3 单击“发射器”选项，然后单击 所需发射器的图标。
- 4 单击“诊断”链接。

或

- 1 将计算机连接至与TX单元相同的网络。
- 2 运行web浏览器并输入TX装置的IP地址：
https://169.254.1.33（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2
2然后默认地址将为**https://169.254.1.43**如果 IP地址未知，请按OLED屏幕旁边的前面板上的小按钮，显示IP地址3（或IP地址4）的值并使用该地址。
- 3 单击“诊断”链接。



日志设置

此页提供了许多关键的诊断日志设置。

捕获诊断信息以下载（仅在使用PC浏览器查看此页面时显示）。请求生成诊断信息转储文件。随后，主机计算机的浏览器将下载该文件，该文件是加密的诊断信息，技术支持人员可利用该文件诊断并解决问题。

远程支持-使用Adder远程服务器时，此选项确定使用的端口。如果防火墙阻止了某个或多个端口，则会提供多个选项。单击“启用”按钮后，将显示要使用的密码。

日志记录严重性级别-定义将被记录的消息级别（根据RFC5424）。默认设置为级别5（注意：正常但重要的条件）；ALIF4000支持级别1到7。选择级别6（信息性）或7（调试）将导致更多次要事件也被记录，可能对整体性能产生影响。这些级别仅应在与技术支持团队合作诊断特定问题时使用。

远程日志记录已启用—勾选可将日志文件发送到所选远程日志记录地址。

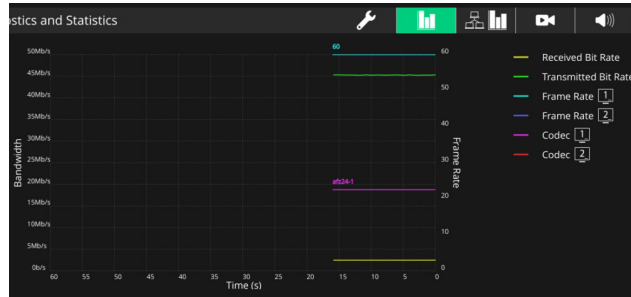
远程日志记录地址-输入本地网络中用于发送状态日志的系统日志服务器的有效IP地址。

日志文件-如果使用浏览器查看此页面：单击将日志文件下载到主机计算机的浏览器。如果通过OSD查看此页面，日志将显示为可滚动列表。

PingTest-提供一种快速简便的方法来检查与ALIF RX的链接状态。您可以指定IP地址或从列表中选择设备。单击开始按钮即可启动；将显示结果摘要。

基础图

此页面显示实时图形，其中包含以下条目：



- **接收和发送的比特率**—这些值对应于左侧的带宽轴。
- **帧频**——两个磁头的帧频。数值在发生变化时会被标记，并且与右侧的坐标轴相对应。
- **Codec**-两个磁头的编解码器。它们代表所使用的压缩：1比4更好。
- **丢弃的数据包**——针对两个标题。当数值发生变化时会对其进行标记，并且这些数值对应右侧的坐标轴。

网络统计

此页面允许您查看当前通信统计数据，也可以创建实时图形。

捕获和图表统计-选中时，页面将创建实时图表，绘制接收字节数与接收数据包数的关系。

启用“采集和图表统计信息”后，“显示图例”复选框将显示可
在该图中包括的所有其他项目。单击一个项目以勾选并包括它。



视频端口状态和统计信息

此页提供了广泛的信息以供参考。



音频端口状态和统计信息

此页提供了广泛的信息以供参考。



USB端口状态和统计数据

此页面提供广泛的信息以供支持使用。目前仅支持透明USB。

To get here

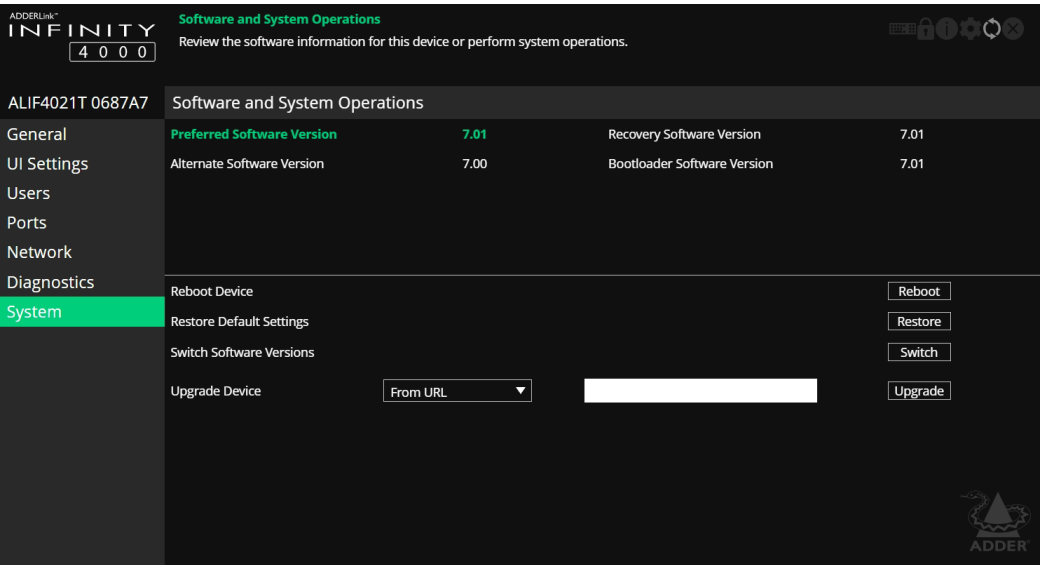
- You can access this page in two ways:
- 1 On the console keyboard attached to the RX unit, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
 - 2 Click the  icon in the top right corner.
 - 3 Click the **Transmitters** option and then click the  icon for the required transmitter.
 - 4 Click the **System** link.
- OR
- 1 Connect a computer to the same network as the TX unit.
 - 2 Run a web browser and enter the IP address of the TX unit: **https://169.254.1.33** (this is the default address when using SFP port 3 or RJ45 port 1). If you are using SFP port 4 or RJ45 port 2 then the default address will be **https://169.254.1.43** If the IP address is unknown, press the small button on the front panel next to the OLED screen to reveal the value for *IP Address 3 (or IP Address 4)* and use that address.
 - 3 Click the **System** link.

Software and System Operations

This page contains various indications and options related to the internal software of the unit.

Note: The highlighted (and colored) entry is the version of software currently running.

- Preferred Software Version** - The software version the device will boot into upon a reboot.
- Recovery Software Version** - The software version the device will boot into if placed into recovery mode.
- Alternate Software Version** - The other (backup) version of software the device has available.
- Reboot Device** - Click the Reboot button to Reboot the device.
- Restore Default Settings** - Click the Restore button to restore the device to factory default settings.
- Switch Software Versions** - Click to switch to the listed 'Alternative Software Version'.
- Upgrade Device** - Allows you to upgrade the firmware either from a trusted URL or from a locally stored file. Use the field to define the source and then click the Upgrade button.



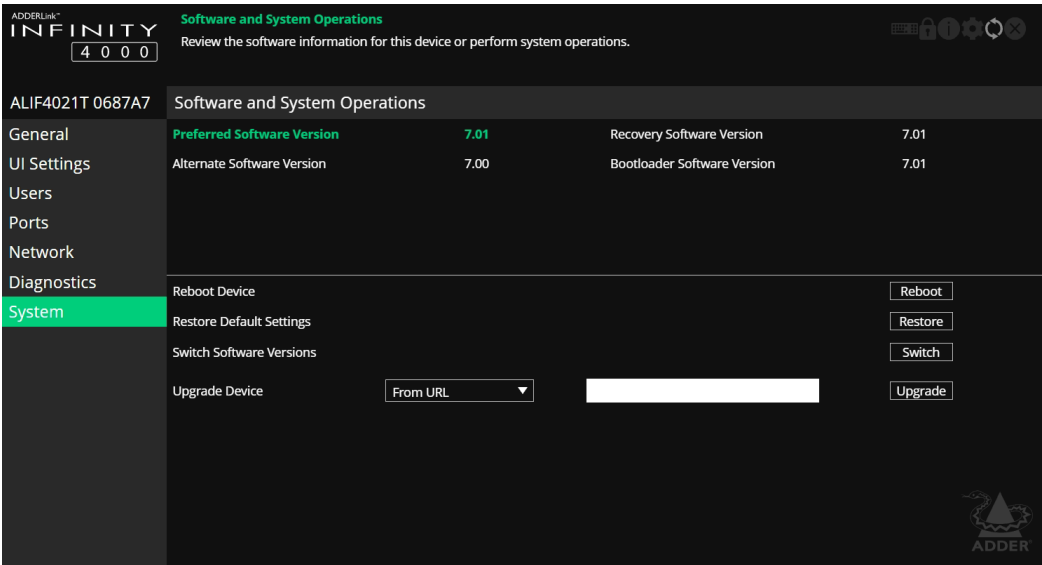
到此地的路线

可通过两种方式访问此页：

- 1 在连接至RX装置的控制台键盘上，按CTRL + ALT + C或点击触摸屏自图标以访问OSD，将显示“预设选择”页面。
- 2 单击“ 右上角的图标。
- 3 单击“发射器”选项，然后单击 所需发射器的图标。
- 4 单击“系统”链接。

或

- 1 将计算机连接至与TX单元相同的网络。
- 2 运行web浏览器并输入TX装置的IP地址：
https://169.254.1.33（这是使用SFP端口3或RJ45端口1时的默认地址）。如果使用的是SFP端口4或RJ45端口2
2然后默认地址将为**https://169.254.1.43**如果 IP地址未知，请按OLED屏幕旁边的前面板上的小按钮，显示IP地址3（或IP地址4)的值并使用该地址。
- 3 单击“系统”链接。



软件和系统操作

本页包含与设备内部软件相关的各种指示和选项。

注：高亮显示（并着色）的条目是当前运行的软件版本。

最佳软件版本—设备重新启动后将要启动的软件版本。

恢复软件版本—设备进入恢复模式时将启动的软件版本。

备用软件版本—设备可用的另一个（备用）软件版本。

重新启动设备—单击“重新启动”按钮即可重新启动设备。

恢复默认设置 -单击Restore按钮，将设备恢复为出厂默认设置。

切换软件版本 -单击切换到所列出的“替代软件版本”。

升级设备 -允许您从受信任的URL或本地存储的文件升级固件。
使用字段定义源，然后单击“升级”按钮。



APPENDIX B - Support for analog and digital audio

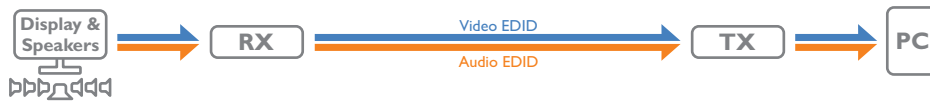
The ALIF4000 benefits from two different streams of audio signals:

- **Analog audio** - as would be output directly from the host PC's jack socket,
- **Digital audio** - as derived from the Host PC's DisplayPort video connection.

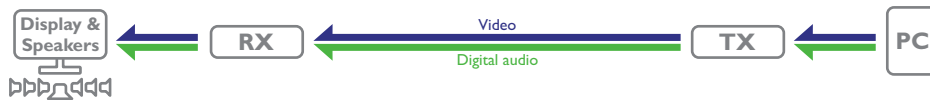
Even though the analog and digital outputs from a particular host PC might be carrying signals that originated from the same audio source, the two types are handled completely separately throughout the ALIF system and can never be mixed.

While standard analog audio will be limited to stereo only; digital audio offers the ability to send stereo or alternatively, surround sound in either the 5.1 or 7.1 varieties. In order for the host PC to know which variety of digital audio signal to send out, a valid definition of the requirement must be sent to the host PC. This is done as an audio sub-set of the EDID definition that is used to declare the video display capabilities/requirements.

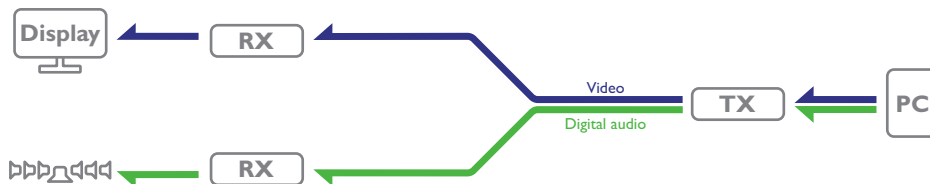
In the diagram below the display and speaker installation send their video and digital audio portions of the EDID (*Extended Display Identification Data*) definition via the ALIF4000 receiver and transmitter to the host PC:



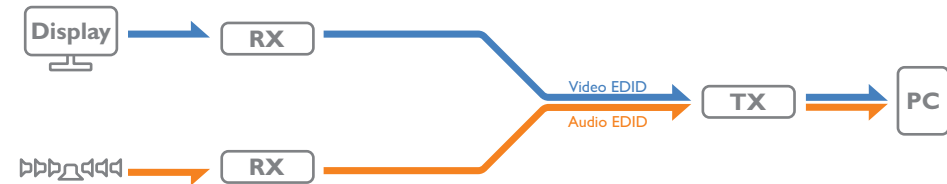
In response, the host PC begins sending video and audio signals that are appropriate for the receiving peripherals:



In the above case, the video and digital audio from the host PC are both sent to the same receiver. However, the flexibility of the ALIF system is such that peripherals and hosts can be mixed as required. For instance, the video feed could be sent to one receiver, while the digital audio is used by a set of speakers on a different receiver:



This presents an issue for the host PC and its ALIF4000 transmitter as they must now respond to separate EDID definitions from the video display on one receiver (which will probably also have its own EDID audio sub-set) and the EDID definition from the digital audio device on the other receiver:



To solve potential conflicts, the ALIF4000 transmitter uses a set of rules to determine how it mixes different EDID definitions. Firstly, for any connected video or digital audio devices, the ALIF system can consider each one using any of three selectable states:

- **Attached** - ALIF will interrogate the attached video/audio device to ascertain its exact capabilities/requirements.
- **Fixed** - ALIF will use a fixed definition (e.g 3840x2160p60 and 6-channel audio) to represent the video/audio device(s).
- **None** - No representation will be made for the device.

The above states are then combined by the ALIF4000 transmitter, as connections are made to the different devices, using the following rules:

Video EDID	Audio EDID	Action (taken by the TX as it feeds info to the PC)
Fixed	Fixed	Merge the video and audio EDID definitions.
Fixed/Attached	None	Send video EDID definition only.
Attached	Attached	Use whichever EDID definition is available first.
Attached/Fixed	Fixed/Attached	Wait for the <i>Attached</i> device to declare and then use its data to modify those of the <i>Fixed</i> device. <i>Note: The video EDID retains precedence for setting general items, such as serial no., manufacturer, etc.</i>

Note: The analog audio is switched entirely separately to the digital audio feed.

Analog and digital audio specifications

- **Analog audio:** Line in/out - 2 channel 16bit 48KHz 1V RMS in / 1V RMS out
- **Digital audio (DisplayPort):**
 - Up to 8 audio channels,
 - Seven choices of sampling frequencies: 32, 44.1, 48, 88.2, 96, 176.4 or 192kHz.
 - Three choices of bit depth, using LPCM *Linear Pulse Code Modulation*: 16, 20 or 24bit,

APPENDIX C - Tips for success when networking ALIF units

ALIF units use multiple strategies to minimize the amount of data that they send across networks. However, data overheads can be quite high, particularly when very high resolution video is being transferred, so it is important to take steps to maximize network efficiency and help minimize data output. The tips given in this section have been proven to produce very beneficial results.

Summary of steps

- Choose the right kind of switch.
- Create an efficient network layout.
- Configure the switches and devices correctly.

Choosing the right switch

[Layer 2](#) switches are what bind all of the hosts together in the subnet. However, they are all not created equally, so choose carefully. In particular look for the following:

- 10Gigabit ports,
- Support for [IGMP v2](#) (or v3) snooping,
- Support for [Jumbo frames](#) up to 9216-byte size,
- High bandwidth connections between switches, preferably Fiber Channel.
- Look for switches that perform their most onerous tasks (e.g. [IGMP snooping](#)) using multiple dedicated processors (ASICs).
- Ensure the maximum number of concurrent 'snoopable groups' the switch can handle meets or exceeds the number of ALIF transmitters that will be used to create multicast groups.
- Check the throughput of the switch: Full duplex, 10Gbps up- and down- stream speeds per port.
- Use the same switch make and model throughout a single subnet.
- You also need a [Layer 3](#) switch. Ensure that it can operate efficiently as an [IGMP Querier](#).

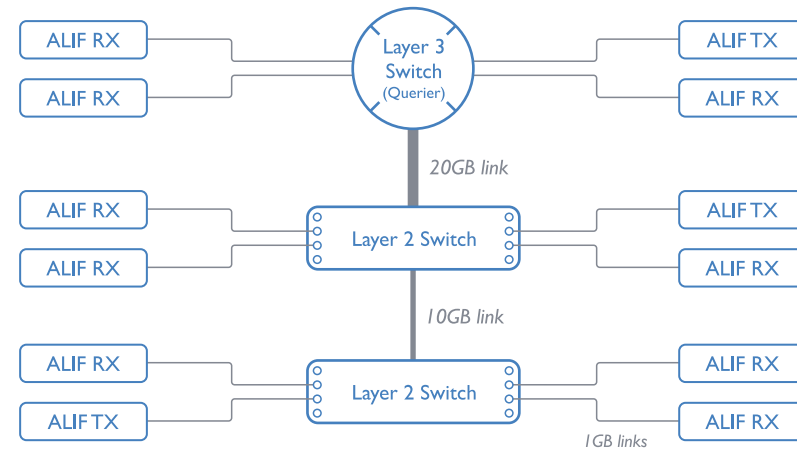
Creating an efficient network layout

Network layout is vital. The use of [IGMP snooping](#) also introduces certain constraints, so take heed:

- Keep it flat. Use a basic line-cascade structure rather than a pyramid or tree arrangement.
- Keep the distances between the switches as short as possible.
- Ensure sufficient bandwidth between switches to eliminate bottlenecks.
- Where the AIM server is used to administer multiple ALIF transceivers, ensure the AIM server and all ALIF units reside in the same subnet.
- Do not use VGA to DisplayPort converters, instead replace VGA video cards in older systems with suitable DisplayPort replacements. Converters cause ALIF TX units to massively increase data output.
- Wherever possible, create a private network.

The recommended layout

The layout shown below has been found to provide the most efficient network layout for rapid throughput when using IGMP snooping:



- Use no more than two cascade levels.
- Ensure high bandwidth between the two L2 switches and very high bandwidth between the top L2 and the L3. Typically 10GB and 20GB, respectively for 48 port L2 switches.

continued

附录C-ALIF单元网络连接成功提示

ALIF设备采用多种策略来降低网络传输数据量。不过在传输高分辨率视频时，数据开销可能相当大，因此采取措施提升网络效率、减少数据输出显得尤为重要。本节提供的技巧已被证实能带来显著效果。

步骤总结

- 选择正确的交换机类型。
- 创建高效的网络布局。
- 正确配置交换机和设备。

选择正确的交换机

Layer 2交换机用于将子网中的所有主机连接到一起。但是，并非所有交换机都是一样的，因此需要仔细选择。请特别注意以下几点：

- 10Gigabit端口，
- 支持IGMP v2（或v3）监听，
- 支持高达9216字节的Jumbo帧，
- 交换机之间的高速连接，最好采用光纤通道。
- 寻找那些使用多个专用处理器（ASIC）来执行最繁重任务（例如IGMP监听）的交换机。
- 确保交换机可以处理的最大并发“可监听组”数量达到或超过将用于创建多播组的ALIF发射器的数量。
- 检查交换机的吞吐量：全双工，每个端口的上行和下行速度为10Gbps。
- 在单个子网中使用相同交换机品牌和型号。
- 您还需要一个第三层交换机。确保它能作为IGMP查询器高效运行。

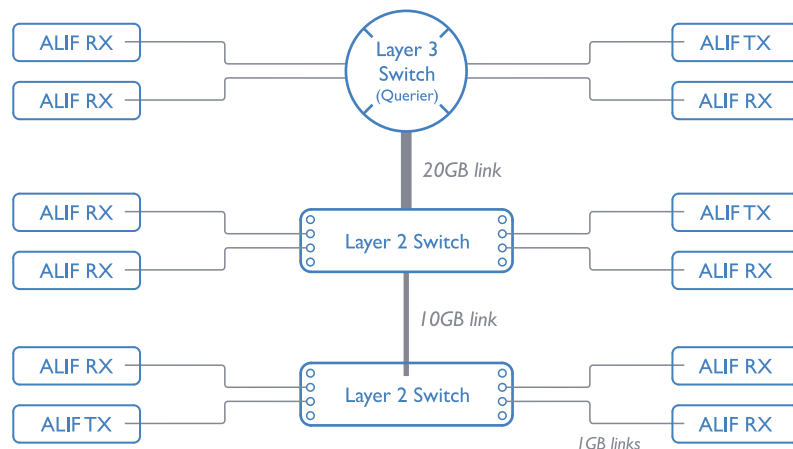
创建高效的网络布局

网络布局至关重要。使用IGMP snooping也会带来某些限制，因此请注意：

- 保持扁平化。使用基本的线级联结构，而不是金字塔或树状结构。
- 尽可能缩短交换机之间的距离。
- 确保交换机之间的带宽足够，以消除瓶颈。
- 如果使用AIM服务器管理多个ALIF收发器，请确保AIM服务器和所有ALIF单元位于同一子网中。
- 请勿使用VGA转DisplayPort转换器，而应在旧系统中用合适的DisplayPort替代品替换VGA显卡。转换器会导致ALIFTX设备的数据输出大幅增加。
- 在可能的情况下，创建一个专用网络。

推荐布局

发现下面的布局在使用IGMP窃听时提供了最有效的网络布局，以实现快速吞吐量：



- 级联级别不得超过两个。
- 确保两个L2交换机之间的带宽很高，且顶部L2与L3之间的带宽非常高。对于48端口L2交换机，通常分别为10GB和20GB。

继续的

Configuring the switches and devices

The layout is vital but so too is the configuration:

- Enable [IGMP Snooping](#) on all L2 switches.
 - Ensure that [IGMP Fast-Leave](#) is enabled on all switches with ALIF units connected directly to them.
 - Enable the L3 switch as an [IGMP Querier](#).
 - Enable [Spanning Tree Protocol \(STP\)](#) on all switches and importantly also enable portfast (only) on all switch ports that have ALIF units connected.
 - If any hosts will use any video resolutions using 2048 horizontal pixels (e.g. 2048 x 1152, 2048 x 2048), ensure that [Jumbo Frames](#) are enabled on all switches.
 - Choose an appropriate forwarding mode on all switches. Use [Cut-through](#) if available, otherwise [Store and forward](#).
 - Optimize the settings on the ALIF transmitters:
 - If moving video images are being shown frequently, then leave Frame Skipping at a low percentage and instead reduce the Peak bandwidth limiter.
 - Where screens are quite static, try increasing the Background Refresh interval and/or increasing the Frame skipping percentage setting.
- Make changes to the ALIF transmitters one at a time, in small steps, and view typical video images so that you can attribute positive or negative results to the appropriate control.
- Ensure that all ALIF units are fully updated to the latest firmware version (at least v2.1).

配置交换机和设备

布局很重要，但配置也很重要：

- 在所有L2交换机上启用IGMP Snooping。
- 确保在所有连接有ALIF单元的交换机上都启用了IGMP快速离开功能。
- 将L3交换机启用为IGMP查询器。
- 在所有交换机上启用横向生成树协议（STP），并且重要的是在所有连接有ALIF单元的交换机端口上启用portfast（仅）。
- 如果任何主机将使用任何采用2048水平像素的视频分辨率（例如2048 x 1152、2048 x 2048），请确保在所有交换机上都启用了Jumbo帧。
- 在所有交换机上选择适当的转发模式。如果可用，请使用直通，否则请使用存储并转发。
- 优化ALIF发送器的设置：
 - 如果频繁显示移动视频图像，则应将帧跳过设置为较低百分比，而应降低峰值带宽限制器。
 - 如果屏幕相当静止，请尝试增加背景刷新闻隔和/或增加帧跳过百分比设置。

一次只对一个ALIF发送器进行更改，分小步操作，并查看典型视频图像，以便将正或负结果归因于相应的控制。

- 确保所有ALIF单元都已完全更新至最新固件版本（至少v2.1）。

APPENDIX D - Troubleshooting

Problem: The video image of the ALIF receiver shows horizontal lines across the screen.

This issue is known as *Blinding* because the resulting video image looks as though you're viewing it through a venetian blind.

When video is transmitted by ALIF units, the various lines of each screen are divided up and transmitted as separate data packets. If the reception of those packets is disturbed, then blinding is caused. The lines are displayed in place of the missing video data packets.

There are several possible causes for the loss of data packets:

- Incorrect switch configuration. The problem could be caused by multicast flooding, which causes unnecessary network traffic. This is what IGMP snooping is designed to combat, however, there can be numerous causes of the flooding.
- Speed/memory bandwidth issues within one or more switches. The speed and capabilities of different switch models varies greatly. If a switch cannot maintain pace with the quantity of data being sent through it, then it will inevitably start dropping packets.
- One or more ALIF units may be outputting Jumbo frames due to the video resolution (2048 horizontal pixels) being used. If Jumbo frames are output by an ALIF unit, but the network switches have not been configured to use jumbo frames, the switches will attempt to break the large packets down into standard packets. This process introduces a certain latency and could be a cause for dropped packets.

Remedies:

- Ensure that [IGMP snooping](#) is enabled on all switches within the subnet.
- Where each ALIF unit is connected as the sole device on a port connection to a switch, enable [IGMP Fast-Leave \(aka Immediate Leave\)](#) to reduce unnecessary processing on each switch.
- Check the video resolution(s) being fed into the ALIF transmitters. If resolutions using 2048 horizontal pixels are unavoidable then ensure that [Jumbo frames](#) are enabled on all switches.
- Check the [forwarding mode](#) on the switches. If *Store and forward* is being used, try selecting *Cut-through* as this mode causes reduced latency on lesser switch designs.
- Ensure that one device within the subnet is correctly configured as an [IGMP Querier](#), usually a layer 3 switch or multicast router.
- Try adjusting the transmitter settings on each ALIF to make the output data stream as efficient as possible. See [ALIF transmitter video settings](#) for details.

continued

附录D-故障排除

问题：ALIF接收器的视频图像显示屏幕上有水平线。

这个问题被称为**眼花缭乱**，因为生成的视频图像看起来就像你透过百叶窗观看一样。

当视频由ALIF单元传输时，每个屏幕的各条线会被分割并作为独立的数据包传输。如果这些数据包的接收受到干扰，则会导致画面模糊。缺失的视频数据包将由线条替代显示。数据包丢失可能有以下几种原因：

- 错误的交换机配置。此问题可能是由多播泛洪引起的，这会造成不必要的网络流量。IGMP窃听正是为了应对这种情况而设计的，但是，造成泛洪的原因可能有很多。
- 一个或多个交换机内的速度/内存/带宽问题。不同交换机型号的速度和功能差异很大。如果交换机不能跟上通过它的数据量，那么它将不可避免地开始丢弃数据包。
- 由于采用了2048水平像素的视频分辨率，某个或多个ALIF单元可能会输出巨型帧。如果ALIF单元生成了巨型帧，而网络交换机未配置为支持这种格式，交换机会尝试将这些大流量数据包拆解为标准数据包。这一过程会产生一定的延迟，并可能导致数据包丢失。

补救措施：

- 确保在子网内的所有交换机上都启用了**IGMP监听**。
- 如果将每个ALIF单元作为端口连接上的唯一设备连接到交换机，则启用**IGMP快速退出（即立即退出）**，以减少交换机上的不必要处理。
- 检查输入ALIF发送器的视频分辨率(s)。如果无法避免使用2048水平像素的分辨率，则确保在所有交换机上启用**Jumbo帧**。
- 检查交换机上的**转发模式**。如果正在使用**存储转发**，请尝试选择**直通**，因为此模式可降低较小交换机设计的延迟。
- 确保将子网中的一个设备正确配置为**IGMP查询器**，通常是第3层交换机或多播路由器。
- 尝试调整每个ALIF的发送器设置，使输出数据流尽可能高效。有关详细信息，请参阅**ALIF发送器视频设置**。

继续的

Problem:The audio output of the ALIF receiver sounds like a scratched record.

This issue is called Audio crackle and is a symptom of the same problem that produces blinding (see previous page).The issue is related to missing data packets.

Remedies:

As per blinding discussed previously.

Problem:AIM cannot locate working ALIF units.

There are a few possible causes:

- The ALIF units must be reset back to their zero config IP addresses for AIM discovery. If you have a working network of ALIF's without AIM and then add AIM to the network, AIM will not discover the ALIFs until they are reset to the zero config IP addresses.
- This could be caused by Layer 2 Cisco switches that have [Spanning Tree Protocol \(STP\)](#) enabled but do not also have *portfast* enabled on the ports to which ALIF units are connected. Without portfast enabled,ALIF units will all be assigned the same zero config IP address at reboot and AIM will only acquire them one at a time on a random basis.

You can easily tell whether portfast is enabled on a switch that is running STP: When you plug the link cable from a working ALIF unit into the switch port, check how long it takes for the port indicator to change from orange to green. If it takes roughly one second, portfast is on; if it takes roughly thirty seconds then portfast is disabled.

Remedies:

- Ensure that the ALIF units and the AIM server are located within the same subnet because AIM cannot cross subnet boundaries.
- [Manually reset](#) the ALIF units to their zero config IP addresses.
- Enable portfast on all switch ports that have ALIF units attached to them or try temporarily disabling STP on the switches while AIM is attempting to locate ALIF units.

Problem:Video performance is affected when using USB storage.

This issue could be related to a relatively slow link connection speed being affected by high bandwidth data transfers to a USB storage device.

Remedies:

Try placing a limit on the bandwidth being used by the transparent USB ports.Via the OSD, link to the [TX - Ports](#) page, change to the *USB Ports* section and adjust the *Rate Limit* option.

Problem: Following a firmware upgrade to 4.xx, the ALIF4000 units still cannot support SDR10 or HDR10 video signals.

When an ALIF4000 unit is upgraded, it may not support the new 30-bits per pixel modes if manual changes had previously been made to the video configuration.This could mean that the Max Bits per Pixel setting may remain set to 24-bits, causing the unit to not support SDR10 and HDR10 signals.

Remedies:

Access the TX Ports configuration page and change the Max Bits per Pixel setting to '30'. See page 43.

问题：ALIF接收器的音频输出听起来像一张刮痕唱片。

此问题称为音频杂音，是产生眩光（请参阅上一页）的同一问题的症状。此问题与数据包丢失有关。

补救措施：

根据之前讨论的盲法。

问题：AIM无法定位正常工作的ALIF装置。

可能的原因有：

- ALIF单元必须重置为零配置IP地址才能进行AIM发现。如果ALIF的网络已正常工作且不包含AIM，然后将AIM添加到该网络中，则在将其重置为零配置IP地址之前，AIM将无法发现ALIF。
- 这可能是由于第2层Cisco交换机启用了**支撑树协议（STP）**，但未在连接ALIF设备的端口上启用 *portfast*。如果没有启用 *portfast*，所有ALIF设备在重新启动时都将被分配相同的零配置IP地址，AIM只能随机逐个获取这些设备。

您很容易判断交换机是否启用了端口保护功能：当您将工作中的ALIF单元的链路电缆插入交换机端口时，检查端口指示灯从橙色变为绿色所需的时间。如果大约需要一秒钟，则端口保护功能已启用；如果大约需要三十秒钟，则端口保护功能已禁用。

补救措施：

- 请确保ALIF单元和AIM服务器位于同一子网内，因为AIM无法跨越子网边界。
- **手动重置**ALIF装置的配置IP地址为零。
- 在所有连接有ALIF单元的交换机端口上启用 *portfast*，或者在AIM尝试定位ALIF单元时，尝试暂时禁用交换机上的STP。

问题：使用USB存储器时，视频性能受到影响。

此问题可能与向USB存储设备传输高带宽数据所导致的链路连接速度相对较慢有关。

补救措施：

尝试对透明USB端口使用的带宽设置限制。通过OSD，链接到**TX端口**页面，转到**USB端口**部分并调整**速率限制**选项。

问题：在固件升级到4.xx之后，ALIF4000设备仍然不能支持SDR10或HDR10视频信号。

升级ALIF4000设备时，如果之前手动更改过视频配置，则可能不支持新的每像素30位模式。这意味着“每像素最大位数”设置可能仍为24位，导致设备不支持SDR10和HDR10信号。

补救措施：

访问TX端口配置页面，并将“每像素最大位数”设置更改为“30”。请参阅第43页。

APPENDIX E - Glossary

Internet Group Management Protocol

Where an ALIF transmitter is required to stream video to two or more receivers, multicasting is the method used.

Multicasting involves the delivery of identical data to multiple receivers simultaneously without the need to maintain individual links. When multicast data packets enter a subnet, the natural reaction of the switches that bind all the hosts together within the subnet, is to spread the multicast data to all of their ports. This is referred to as Multicast flooding and means that the hosts (or at least their network interfaces) are required to process plenty of data that they didn't request. IGMP offers a partial solution.

The Internet Group Management Protocol (IGMP) is designed to prevent multicast flooding by allowing [Layer 3](#) switches to check whether host computers within their care are interested in receiving particular multicast transmissions. They can then direct multicast data only to those points that require it and can shut off a multicast stream if the subnet has no recipients.

There are currently three IGMP versions: 1, 2 and 3, with each version building upon the capabilities of the previous one:

- IGMPv1 allows host computers to opt into a multicast transmission using a Join Group message, it is then incumbent on the router to discover when they no longer wish to receive; this is achieved by polling them (see IGMP Querier below) until they no longer respond.
- IGMPv2 includes the means for hosts to opt out as well as in, using a Leave Group message.
- IGMPv3 encompasses the abilities of versions 1 and 2 but also adds the ability for hosts to specify particular sources of multicast data.

ADDERLink™ INFINITY units make use of IGMPv2 when performing multicasts to ensure that no unnecessary congestion is caused.

IGMP Snooping

The IGMP messages are effective but only operate at [layer 2](#) - intended for routers to determine whether multicast data should enter a subnet. A relatively recent development has taken place within the switches that glue together all of the hosts within each subnet: IGMP Snooping. IGMP snooping means these layer 2 devices now have the ability to take a peek at the IGMP messages. As a result, the switches can then determine exactly which of their own hosts have requested to receive a multicast – and only pass on multicast data to those hosts.

IGMP Querier

When IGMP is used, each subnet requires one [Layer 3](#) switch to act as a Querier. In this lead role, the switch periodically sends out IGMP Query messages and in response all hosts report which multicast streams they wish to receive. The Querier device and all snooping Layer 2 switches then update their lists accordingly (the lists are also updated when Join Group and Leave Group (IGMPv2) messages are received).

IGMP Fast-Leave (aka Immediate Leave)

When a device/host no longer wishes to receive a multicast transmission, it can issue an IGMP Leave Group message as mentioned above. This causes the switch to issue an IGMP Group-Specific Query message on the port (that the Leave Group was received on) to check no other receivers exist on that connection that wish to remain a part of the multicast. This process has a cost in terms of switch processor activity and time.

Where ALIF units are connected directly to the switch (with no other devices on the same port) then enabling IGMP Fast-Leave mode means that switches can immediately remove receivers without going through a full checking procedure. Where multiple units are regularly joining and leaving multicasts, this can speed up performance considerably.

Jumbo frames (Jumbo packets)

Since its commercial introduction in 1980, the Ethernet standard has been successfully extended and adapted to keep pace with the ever improving capabilities of computer systems. The achievable data rates, for instance, have risen in ten-fold leaps from the original 10Mbit/s to a current maximum of 100Gbit/s.

While data speeds have increased massively, the standard defining the number of bytes (known as the Payload) placed into each data packet has remained resolutely stuck at its original level of 1500 bytes. This standard was set during the original speed era (10Mbit/s) and offered the best compromise at that speed between the time taken to process each packet and the time required to resend faulty packets due to transmission errors.

But now networks are much faster and files/data streams are much larger; so time for a change? Unfortunately, a wholesale change to the packet size is not straightforward as it is a fundamental standard and changing it would mean a loss of backward compatibility with older systems.

Larger payload options have been around for a while, however, they have often been vendor specific and at present they remain outside the official standard. There is, however, increased consensus on an optional 'Jumbo' payload size of 9000 bytes and this is fully supported by the ADDERLink™ INFINITY (ALIF) units.

Jumbo frames (or Jumbo packets) offer advantages for ALIF units when transmitting certain high resolution video signals across a network. This is because the increased data in each packet reduces the number of packets that need to be transferred and dealt with - thus reducing latency times.

The main problem is that for jumbo frames to be possible on a network, all of the devices on the network must support them.

附录E-术语表

因特网组管理协议

当需要将视频流传输给两个或更多接收端时，ALIF传输器采用多播技术。这种技术能同时向多个接收端发送相同的数据流，无需维护独立连接。当多播数据包进入网络子网时，作为子网内所有主机组带的交换机会自动将数据分发到所有端口，这种现象称为多播泛洪。这意味着主机（或其网络接口）需要处理大量未请求的数据。IGMP协议为此提供了解决方案——互联网组管理协议（IGMP）通过允许第三层交换机检测其管辖范围内主机是否需要接收特定多播数据，从而防止泛洪现象。交换机会仅向需要接收的节点转发数据流，并在子网内无人接收时自动关闭多播通道。目前有三个IGMP版本：1、2和3，每个版本都基于前一版本的功能：

- IGMPv1允许主机通过加入组消息选择加入多播传输，然后由路由器负责发现它们不再希望接收；这是通过轮询它们（参见下面的IGMP查询器）直到它们不再响应为止。
- IGMPv2包括允许主机选择加入或退出的机制，使用“离开组”消息。
- IGMPv3包括版本1和版本2的功能，同时还增加了让主机指定特定多播数据源的功能。

ADDERLink™INFINITY单元在执行多播时使用IGMPv2，以确保不会造成不必要的拥塞。

IGMP窃听

IGMP消息虽然有效，但仅在第二层（网络层）发挥作用——其作用是帮助路由器判断是否需要将组播数据转发至特定子网。近年来，在连接各子网主机的交换机中出现了一项重要技术：IGMP监听功能。这意味着第二层设备现在能够监听IGMP消息，从而准确识别哪些本地主机请求接收组播数据，并仅将组播内容转发给这些指定主机。

IGMP Querier

当使用IGMP时，每个子网需要一个第三层交换机担任查询器。在此主导角色中，交换机会定期发送IGMP查询消息，所有主机都会响应这些查询并报告它们希望接收的组播流。查询器设备和所有监听的第二层交换机会相应地更新它们的列表（当收到加入组和离开组（IGMPv2）消息时也会更新列表）。

IGMP快速离场（又称即时离场）

当设备或主机不再需要接收组播数据时，可按照上述方式发送IGMP组退出消息。此时交换机会在该端口（即收到退出消息的端口）发出IGMP组专用查询消息，用于检测该连接上是否有其他接收方希望继续参与组播。不过这个过程需要消耗交换机处理器的运行时间和资源。

如果ALIF单元直接连接到交换机（同一端口上没有其他设备），则启用IGMP快速离开模式意味着交换机可以立即删除接收器，而无需经过完整的检查过程。如果多个单元定期加入和离开多播，这可以显著加快性能。

巨型帧（巨型数据包）

自1980年以太网标准正式推出以来，该标准已得到成功扩展和改进，以跟上计算机系统能力的不断进步。

例如，可实现的数据速率从最初的10Mbit/s增长到目前的最大值100Gbit/s，增幅达10倍。

尽管数据传输速率已实现跨越式增长，但定义每个数据包有效载荷（即数据量）的标准却始终固守在最初的1500字节。这项标准诞生于10兆比特/秒的原始传输速率时代，在当时既保证了数据包处理效率，又有效平衡了因传输错误导致重传所需的时间成本，堪称当时的最佳折中方案。

但是现在网络速度更快，文件/数据流更大；所以是时候改变了？不幸的是，对数据包大小的全面更改并不简单，因为这是一个基本标准，更改它将意味着与旧系统的向后兼容性丧失。

更大载荷选项已存在一段时间，但是它们通常都是特定于供应商的，目前它们仍然不在官方标准中。

然而，对于可选的“Jumbo”载荷大小9000字节的共识有所增加，并且完全由ADDERLink™INFINITY（ALIF）装置支持。

在传输高分辨率视频信号时，ALIF设备采用巨型帧（或称巨型数据包）具有显著优势。这是因为每个数据包容量的提升能有效减少需要传输和处理的数据包数量，从而降低网络延迟。但需要注意的是，要实现网络中的巨型帧传输，所有设备都必须支持该技术标准。

Spanning Tree Protocol (STP)

In order to build a robust network, it is necessary to include certain levels of redundancy within the interconnections between switches. This will help to ensure that a failure of one link does not lead to a complete failure of the whole network.

The danger of multiple links is that data packets, especially multicast packets, become involved in continual loops as neighbouring switches use the duplicated links to send and resend them to each other.

To prevent such bridging loops from occurring, the Spanning Tree Protocol (STP), operating at [layer 2](#), is used within each switch. STP encourages all switches to communicate and learn about each other. It prevents bridging loops by blocking newly discovered links until it can discover the nature of the link: is it a new host or a new switch?

The problem with this is that the discovery process can take up to 50 seconds before the block is lifted, causing problematic timeouts.

The answer to this issue is to enable the portfast variable for all host links on a switch. This will cause any new connection to go immediately into forwarding mode. However, take particular care not to enable portfast on any switch to switch connections as this will result in bridging loops.

Forwarding modes

In essence, the job of a layer 2 switch is to transfer as fast as possible, data packets arriving at one port out to another port as determined by the destination address. This is known as data forwarding and most switches offer a choice of methods to achieve this. Choosing the most appropriate forwarding method can often have a sizeable impact on the overall speed of switching:

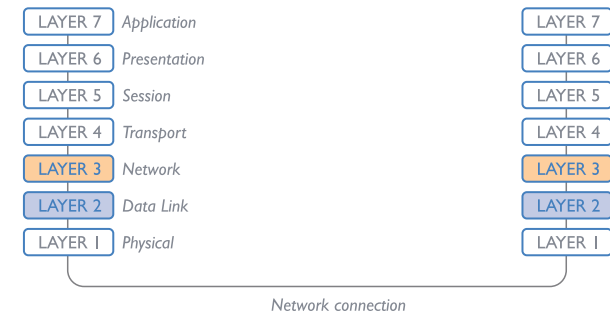
- **Store and forward** is the original method and requires the switch to save each entire data packet to buffer memory, run an error check and then forward if no error is found (or otherwise discard it).
- **Cut-through** was developed to address the latency issues suffered by some store and forward switches. The switch begins interpreting each data packet as it arrives. Once the initial addressing information has been read, the switch immediately begins forwarding the data packet while the remainder is still arriving. Once all of the packet has been received, an error check is performed and, if necessary, the packet is tagged as being in error. This checking 'on-the-fly' means that cut-through switches cannot discard faulty packets themselves. However, on receipt of the marked packet, a host will carry out the discard process.
- **Fragment-free** is a hybrid of the above two methods. It waits until the first 64 bits have been received before beginning to forward each data packet. This way the switch is more likely to locate and discard faulty packets that are fragmented due to collisions with other data packets.
- **Adaptive** switches automatically choose between the above methods. Usually they start out as a cut-through switches and change to store and forward or fragment-free methods if large number of errors or collisions are detected.

So which one to choose? The *Cut-through* method has the least latency so is usually the best to use with ADDERLink™ INFINITY units. However, if the network components and/or cabling generate a lot of errors, the *Store and forward* method should probably be used. On higher end store and forward switches, latency is rarely an issue.

Layer 2 and Layer 3: The OSI model

When discussing network switches, the terms Layer 2 and Layer 3 are very often used. These refer to parts of the Open System Interconnection (OSI) model, a standardized way to categorize the necessary functions of any standard network.

There are seven layers in the OSI model and these define the steps needed to get the data created by you (imagine that you are Layer 8) reliably down onto the transmission medium (the cable, optical fiber, radio wave, etc.) that carries the data to another user; to complete the picture, consider the transmission medium is Layer 0. In general, think of the functions carried out by the layers at the top as being complex, becoming less complex as you go lower down.



As your data travel down from you towards the transmission medium (the cable), they are successively encapsulated at each layer within a new wrapper (along with a few instructions), ready for transport. Once transmission has been made to the intended destination, the reverse occurs: Each wrapper is stripped away and the instructions examined until finally only the original data are left.

So why are Layer 2 and Layer 3 of particular importance when discussing ADDERLink™ INFINITY? Because the successful transmission of data relies upon fast and reliable passage through network switches – and most of these operate at either Layer 2 or Layer 3.

The job of any network switch is to receive each incoming network packet, strip away only the first few wrappers to discover the intended destination then rewrap the packet and send it in the correct direction.

continued

生成树协议（STP）

为了建立一个健壮的网络，有必要在交换机之间的互连中包含某些级别的冗余。这将有助于确保一个链路的故障不会导致整个网络的完全故障。

多重链路的危险是数据包，特别是多播数据包，由于相邻交换机使用重复的链路相互发送和重新发送它们而陷入持续循环。

为防止出现这种桥接循环，每个交换机内部都使用了在**第二层**运行的生成树协议（STP）。STP鼓励所有交换机相互通信并相互了解。它通过阻止新发现的链路直到能够发现该链路的性质：它是新主机还是新交换机？来防止桥接循环。

问题在于，发现过程可能需要长达50秒的时间才能解除锁定，从而导致超时问题。

解决此问题的方法是为交换机上的所有主机链路启用portfast变量。这样，任何新连接都将立即进入转发模式。但是，请特别注意不要在任何交换机上启用portfast来切换连接，因为这将导致桥接环路。

转发模式

从本质上说，第二层交换机的工作是尽可能快地传输数据包，根据目的地址将数据包从一个端口发送到另一个端口。这称为数据转发，大多数交换机都提供多种方法来实现此操作。选择最合适的转发方法通常会对整体交换速度产生相当大的影响：

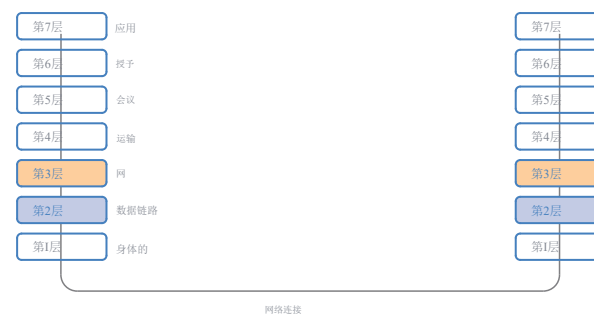
- **存储并转发**是原始方法，要求交换机将每个完整数据包保存到缓冲存储器中，运行错误检查，然后转发（如果没有发现错误，则丢弃）。
- **直通交换技术**的诞生，正是为了解决部分存储转发交换机存在的延迟问题。当数据包抵达时，交换机会立即开始解析。在读取完初始地址信息后，即便后续数据仍在传输中，交换机也会立即启动转发流程。待完整接收所有数据包后，系统会进行错误检查，必要时会对数据包进行错误标记。这种“实时检测”机制意味着直通交换机无法丢弃存在缺陷的数据包。但是，主机在收到标记的数据包后，将执行丢弃过程。
- **Fragment-free**是上述两种方法的混合。它等待直到前64位被接收之后才开始转发每个数据包。这样，交换机更有可能找到并丢弃由于与其他数据包发生碰撞而分片的错误数据包。
- **自适应**交换机自动选择上述方法。它们通常一开始是直通交换机，如果检测到大量的错误或冲突，就改为采用存储转发或无分片方法。

那么该如何选择呢？*直通*方式具有最小的延迟，因此通常是在ADDERLink™INFINITY装置中使用的最佳方式。但是，如果网络组件和/或电缆产生大量错误，则应该使用*存储转发*方式。在高端存储转发交换机中，延迟很少成为问题。

第二层和第三层：OSI模型

在讨论网络交换机时，经常使用第2层和第3层术语。这些术语指的是开放系统互连（OSI）模型的一部分，OSI模型是分类任何标准网络所需功能的标准方法。

OSI模型包含七层架构，这些层级界定了数据传输的完整流程：假设你处于第八层，需要将生成的数据可靠地传输到承载信息的介质（如电缆、光纤或无线电波等）；而作为底层的传输介质则位于零层。总体而言，上层承担的功能较为复杂，随着层级向下递减，功能复杂度会逐渐降低。



当数据从您传输到电缆等介质时，会在每个层级被逐步封装在新的数据包中（同时附带少量指令），准备进行传输。一旦数据成功抵达目标位置，整个过程就会逆向执行：逐层剥离数据包，检查其中的指令，直到最终只剩下原始数据。

那么，为什么在讨论ADDERLink™INFINITY时，第2层和第3层特别重要呢？因为数据的成功传输依赖于通过网络交换机一的快速而可靠的方式，而大多数网络交换机的工作层正是第2层或第3层。

任何网络交换机的工作都是接收每个传入的网络数据包，剥离掉仅有的几个包装器以发现预期的目的地，然后重新包装该数据包并将其发送到正确的方向。

继续的

In simplified terms, the wrapper that is added at Layer 2 (by the sending system) includes the physical address of the intended recipient system, i.e. the unique MAC address (for example, 09:f8:33:d7:66:12) that is assigned to every networking device at manufacture. Deciphering recipients at this level is more straightforward than at Layer 3, where the address of the recipient is represented by a logical IP address (e.g. 192.168.0.10) and requires greater knowledge of the surrounding network structure. Due to their more complex circuitry, Layer 3 switches are more expensive than Layer 2 switches of a similar build quality and are used more sparingly within installations.

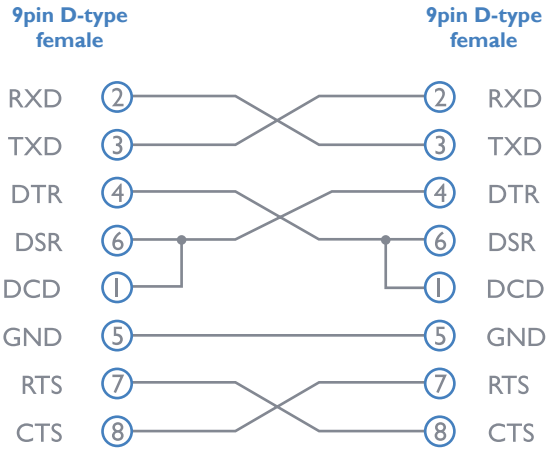


简单来说，发送系统在第二层添加的封装器中包含了目标接收系统的物理地址，即每个网络设备出厂时分配的唯一MAC地址（例如09：f8：33：d7：66：12）。相较于第三层需要解析逻辑IP地址（如**192.168.0.10**）且需掌握更多网络结构信息，这一层级的收件人识别更为直接。由于第三层交换机电路结构更为复杂，其价格比同配置的第二层交换机更高，因此在实际部署中使用频率较低。

APPENDIX F - Null modem cable pinout



RS232 ‘null-modem’ cable pin-out



INSTALLATION

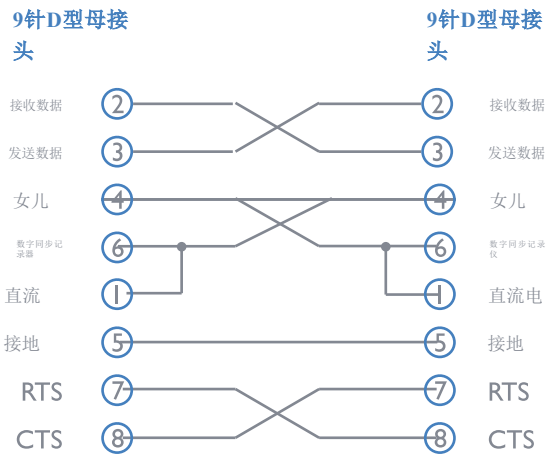
CONFIGURATION

OPERATION

FURTHER
INFORMATION

INDEX

RS232 “null-modem” 电缆引脚排



安装

配置

业务

更多信息

索引

APPENDIX G - Fiber/copper modules and cables

To suit your installation layout, fiber and copper modules are available for the ALIF4000 units to support various fiber optic and CATx cables. The specifications for all are summarized in this table:

Name	Fiber size	Type	Coding		Distance at 1 Gbps	Adder part number for SFP module	Distance at 10Gbps	Adder part number for 10Gbps SFP modules
			Normal applications	Suggested print nomenclature				
OM1	(62.5/125)	Multimode (TIA-492AAAA)	Orange	62.5/125	220m	SFP-MM-LC	2-26m	SFP-MM-LC-10G
OM2	(50/125)	Multimode (TIA-492AAAB)	Orange	50/125	550m	“	2-26m	“
OM3	(50/125)	Multimode (850 nm Laser-optimized) (TIA-492AAAC)	Aqua	850 LO 50 /125	550m	“	2-82m	“
OM4	(50/125)	Multimode (850 nm Laser-optimized) (TIA-492AAAC)	Aqua	850 LO 50 /125	550m	“	2-300m	“
OS1 and OS2	(9/125)	Single-mode (TIA-492C000 / TIA-492E000)	Yellow	SM/NZDS, SM	20km	SFP-SM-LC	10Km	SFP-SM-LC-10G
CATx	n/a	Multi-rate CAT5e and above	n/a	n/a	100m	SFP-CATX-RJ45	See below	SFP-CATX-MR

Speed	Cable type	Distance
10GbE	CAT 6	30m
100MbE to 5GbE	CAT 5e and above	100m

附录G-光纤/铜模块和电缆

为了适应您的安装布局，ALIF4000单元提供了光纤和铜模块，以支持各种光纤和CATx电缆。所有规格汇总在本表中：

姓名	纤维尺寸	类型	编码		距离 在1Gbps时	SFP 模块 的 Ad- der零件号	10Gbps距离	添加剂部件 针对...的数目 10Gbps SFP 模 块
			常规用途	建议的印刷名称				
OM1	(62.5/125)	多模 (TIA-492AAAA)	橘子	62.5/125	220m	SFP-MM-LC	2-26m	SFP-MM-LC-10G
OM2	(50/125)	多模 (TIA-492AAAB)	橘子	50/125	550m	“	2-26m	“
OM3	(50/125)	多模 (850 nm 激 光 优 化) (TIA-492AAAC)	浅绿色	850 LO 50 /125	550m	“	2-82m	“
OM4	(50/125)	多模 (850 nm 激 光 优 化) (TIA-492AAAC)	浅绿色	850 LO 50 /125	550m	“	2-300m	“
OS1和OS2	(9/125)	单模 (TIA-492C000 / TIA-492E000)	黄色的	SM/NZDS, SM	20公里	SFP-SM-LC	10公里	SFP-SM-LC-10G
卡特彼勒叉车	n/a	多速率 CAT5e及以上	n/a	n/a	100m	SFP-CATX-RJ45	请参阅以下内容	SFP-CATX-MR

速度
10GbE
100MbE到5GbE

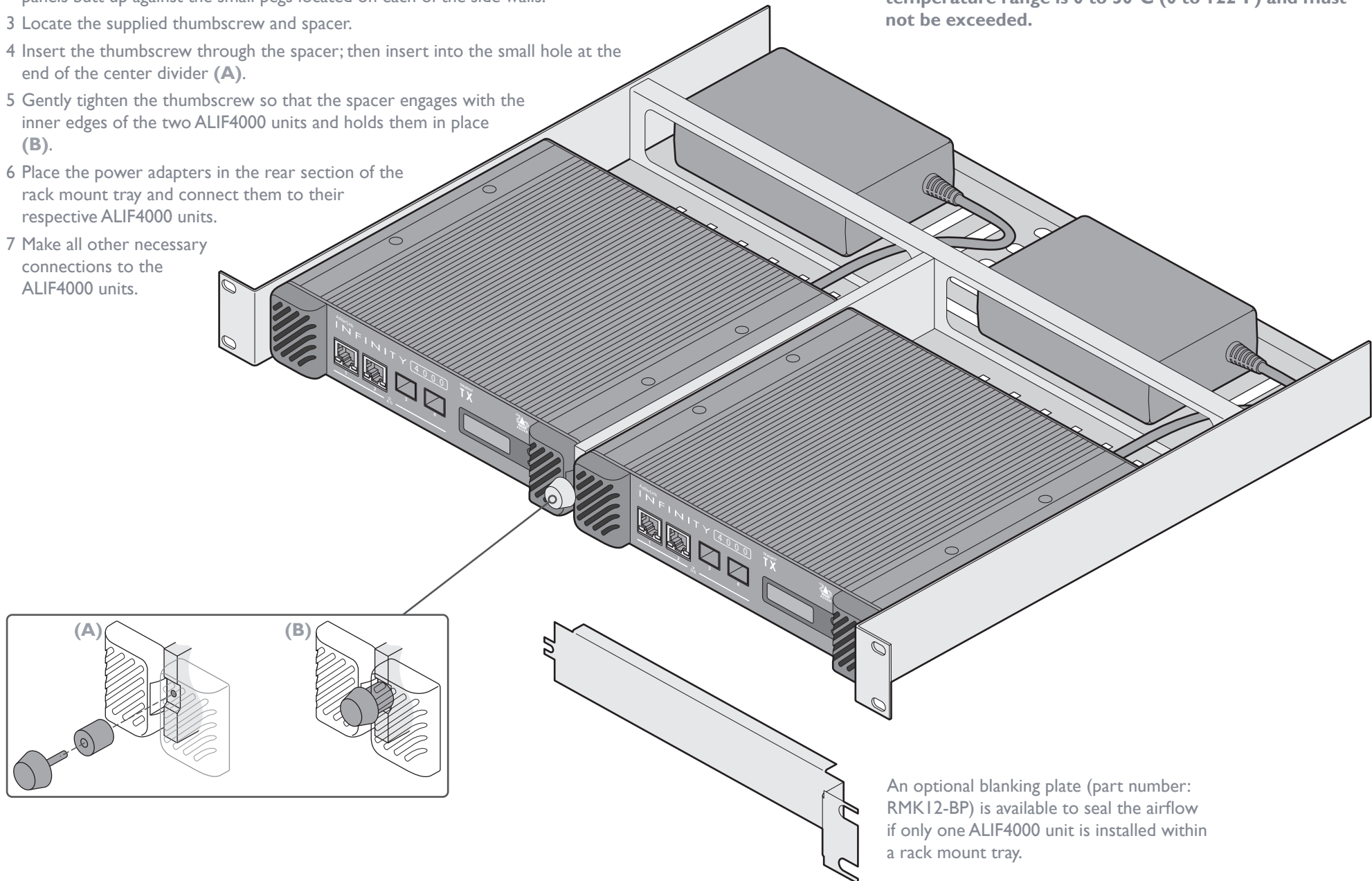
电缆类型
CAT 6
CAT 5e及以上

距离
30m 100
m

APPENDIX H - Using the optional ALIF4000 rack shelf

- 1 Install the empty ALIF4000 rack mount tray into your 19" rack frame and fully secure it.
- 2 Place an ALIF4000 unit into each side of the rack mount tray so that their rear panels butt up against the small pegs located on each of the side walls.
- 3 Locate the supplied thumbscrew and spacer.
- 4 Insert the thumbscrew through the spacer; then insert into the small hole at the end of the center divider (A).
- 5 Gently tighten the thumbscrew so that the spacer engages with the inner edges of the two ALIF4000 units and holds them in place (B).
- 6 Place the power adapters in the rear section of the rack mount tray and connect them to their respective ALIF4000 units.
- 7 Make all other necessary connections to the ALIF4000 units.

IMPORTANT: When mounting the ALIF units (and their power adapters), ensure that the vents are not obscured and that there is sufficient airflow. The operating temperature range is 0 to 50°C (0 to 122°F) and must not be exceeded.

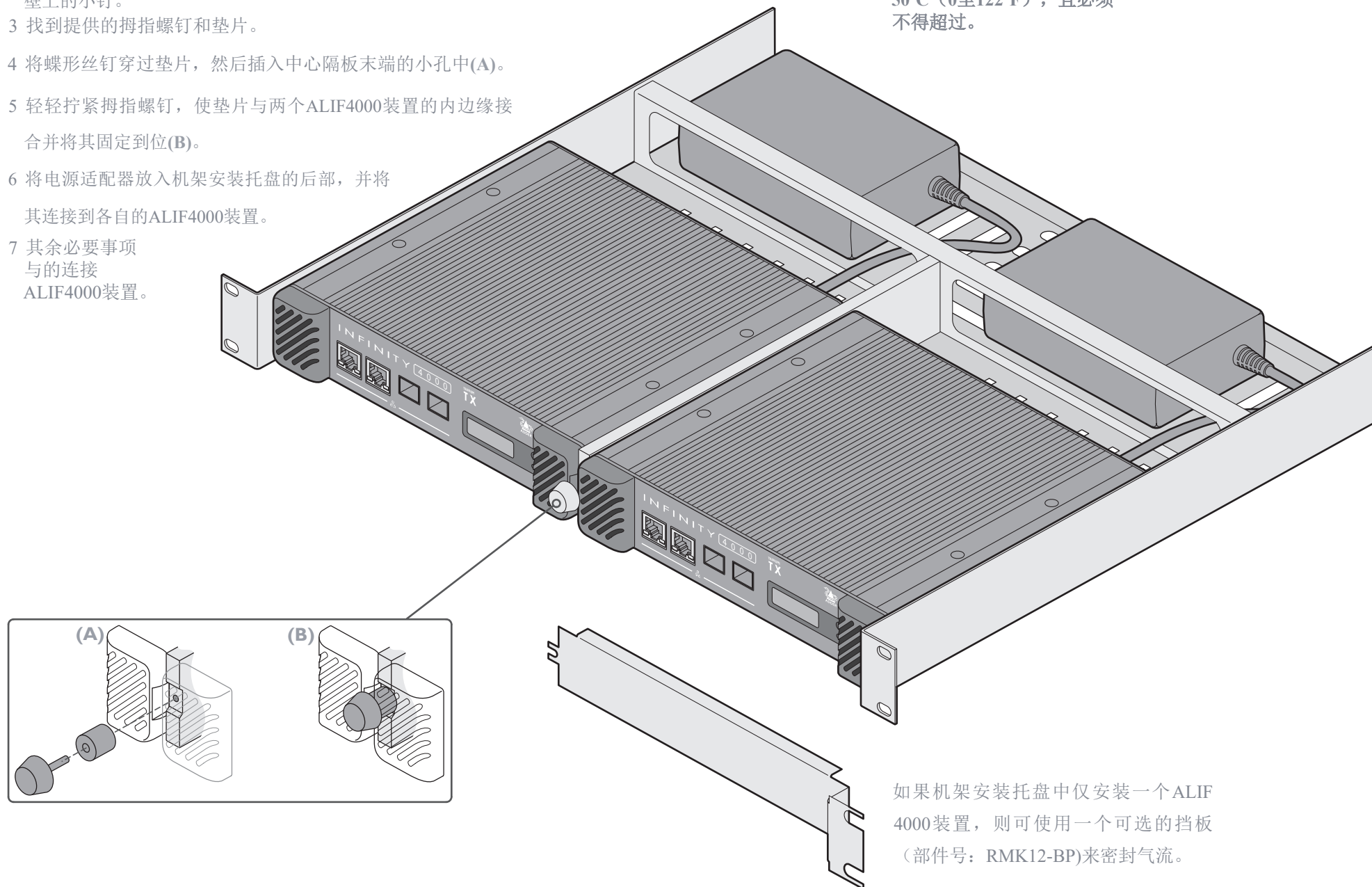


An optional blanking plate (part number: RMK12-BP) is available to seal the airflow if only one ALIF4000 unit is installed within a rack mount tray.

附录H-使用可选ALIF4000机架

- 1 将空的ALIF4000机架安装托盘安装到您的19" 机架框架中，并完全固定。
- 2 将ALIF4000装置放入机架安装托盘的每侧，使其后面板紧贴位于每个侧壁上的小钉。
- 3 找到提供的拇指螺钉和垫片。
- 4 将蝶形丝钉穿过垫片，然后插入中心隔板末端的小孔中(A)。
- 5 轻轻拧紧拇指螺钉，使垫片与两个ALIF4000装置的内边缘接合并将其固定到位(B)。
- 6 将电源适配器放入机架安装托盘的后部，并将其连接到各自的ALIF4000装置。
- 7 其余必要事项与的连接ALIF4000装置。

重要提示：安装ALIF设备（及其电源适配器）时，请确保通风口未被遮挡且具备充足气流。设备工作温度范围为0至50°C（0至122°F），且必须不得超过。



如果机架安装托盘中仅安装一个ALIF 4000装置，则可使用一个可选的挡板（部件号：RMK12-BP）来密封气流。



本产品所含软件包含根据GNU通用公共许可证（GPL）v2授权的版权软件。您可在本产品最后一次发货后的三年内，通过联系support@adder.com或致函以下地址获取完整的对应源代码：

请在主题栏中写上“产品XXXXXX的来源”，其中XXXXXX是型号和版本号。

此优惠适用于任何收到本信息的人。

按成本设计
u-boot-socfpga li-
nux/Linux socfpga
busybox、
termcap、
util-
linux、
libcap、
systemd、
iproute2
e2fs程序
dbus-l
自由式
5分钟
利普贝

本文件的末尾包含GNU通用公共许可证v2的完整副本。

本产品包含从开源社区获取的二进制文件。下列模块根据GNU Lesser General Public License v2.1协议授权，需按要求以源代码形式提供：

kmod syst-
emd libda-
emon avahi
glib libgpg-error
libgcrypt, gn-
utls, libmicro
httpd, strace

本文件的末尾包含GNU较宽松通用公共许可证v2.1的完整副本。

本产品包含从开源社区获取的二进制文件。下列模块均采用GNU Lesser General Public License v3协议授权，必须以源代码形式提供。

要求

libunistring
gmpnettle

本文件的末尾包含GNU较宽松通用公共许可证v3的完整副本。

本产品包含从开源社区获取的二进制文件。下列模块根据Mozilla公共许可证第2.0版授权，需按要求以源代码形式提供：

dhcp
libjwt

Mozilla公共许可证版本2.0的完整副本包含在本文件的末尾。

除列出的GPL模块外，此产品还包括从第三方开源软件派生的二进制文件，这些二进制文件具有自己的许可证要求。下面列出每个模块及其所需的版权声明和分发条件。

```

-----
-模块: freebsd-libc -
-----

```

@复制权 8.2 (伯克利) 1994年3月21日

4.BSD和4.BSD-Lite版本中包含的所有文档和软件的版权归加利福尼亚大学董事会所有。

版权1979、1980、1983、1986、1988、1989、1991、1992、1993、1994
加利福尼亚大学董事会。保留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，只

要满足以下条件:

1. 重新分发源代码时，必须保留上述版权声明、本条件列表以及以下免责声明。
2. 二进制形式的重新分发必须在提供的文档和/或其它材料中复制上述版权声明、此条件列表以及以下免责声明。

3.所有提及本软件功能或用途的广告材料必须显示以下声明:

本产品包含由加州大学伯克利分校及其贡献者开发的软件。

4. 未经事先书面许可, 不得使用本大学的名称或其贡献者的名称来支持或推广从本软件衍生的产品。

本软件由注册人和贡献者“按原样提供，且任何明示或暗示的担保，包括但不限于适

销性和特定用途适用性的暗示担保均不适用。

本文件内容仅供参考。无论何种情况，校董会或贡献者均不承担任何直接、间接、附带、特殊、间接或后果性损害赔偿（包括但不限于采购替代商品或服务、使用损失、数据丢失、利润损失或业务中断），无论损害原因如何，亦不论基于合同、严格责任等何种法律理论。

因使用本软件而产生的责任或侵权（包括过失或其他原因），即使已被告知此类损害的可能性。

电气和电子工程师协会和美国国家标准委员会X3，关于信息处理系统，已经允许我们重印他们的部分文件。

在下面的语句中，短语“本文档”指的是系统文档的某些部分。

本文本部分内容以电子形式重新印刷并复制于第二版BSD网络软件发行版中，该版本源自IEEE标准1003.1-1988——《计算机环境下的IEEE标准可移植操作系统接口（POSIX）》，版权归属电气与电子工程师协会（IEEE）所有（© 1988）。若本版本与原始IEEE标准存在任何差异，以原始IEEE标准为准。

在下面的语句中，短语“**This material**”指的是系统文档的某些部分。

本材料经美国信息处理系统、计算机和商业设备制造商协会 (CBE-MA) X3委员会许可转载, 地址: 311 First St., NW, Suite 500, Washington, DC 20001-2178。C语言的开发工作由X3J11技术委员会完成。

软件和文档中包含的观点和结论是作者的观点，不应被解释为代表加利

福尼亚大学董事会的官方政策，无论是明示还是暗示。

```
-----
-
-模块: openssl -
-----
```

许可证发放

OpenSSL工具包受双重许可的约束，即OpenSSL许可证和原始SSLLeay许可证的条件都适用于该工具包。
请参见下面的实际许可证文本。

OpenSSL许可证

```

==
*版权所有(c) 1998-2019 The OpenSSL Project. 保留所有权利。
*
*以源代码和二进制形式重新分发和使用, 无论是否
*修改, 是被允许的, 只要满足以下条件
*满足:
*
* 1.分发源代码必须保留上述版权
*注意, 此条件列表和以下免责声明。
*
* 2.二进制形式的转授必须复制上述版权
*注意, 此条件列表和以下免责声明
*随附的文件和/或其他材料
*分配。
*
*所有提及本产品功能或用途的广告材料
*软件必须显示以下确认信息:
* “此产品包含由OpenSSL Project开发的软件
*用于OpenSSL Toolkit. http://www.openssl.org/”
*

```

* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
* endorse or promote products derived from this software without
* prior written permission. For written permission, please contact
* openssl-core@openssl.org.
*

* 5. Products derived from this software may not be called "OpenSSL"
* nor may "OpenSSL" appear in their names without prior written
* permission of the OpenSSL Project.
*

* 6. Redistributions of any form whatsoever must retain the following
* acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"
*

* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
* =====
==
*
* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).
*
*/

Original SSLeay License

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
* All rights reserved.
*

* This package is an SSL implementation written
* by Eric Young (eay@cryptsoft.com).
* The implementation was written so as to conform with Netscape's SSL.
*
* This library is free for commercial and non-commercial use as long as
* the following conditions are aheared to. The following conditions
* apply to all code found in this distribution, be it the RC4, RSA,
* lhash, DES, etc., code; not just the SSL code. The SSL documentation
* included with this distribution is covered by the same copyright terms
* except that the holder is Tim Hudson (tjh@cryptsoft.com).
*

* Copyright remains Eric Young's, and as such any Copyright notices in
* the code are not to be removed.
* If this package is used in a product, Eric Young should be given attribution
* as the author of the parts of the library used.
* This can be in the form of a textual message at program startup or
* in documentation (online or textual) provided with the package.
*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

* 1. Redistributions of source code must retain the copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* "This product includes cryptographic software written by
* Eric Young (eay@cryptsoft.com)"
* The word 'cryptographic' can be left out if the routines from the library
* being used are not cryptographic related :-).
* 4. If you include any Windows specific code (or a derivative thereof) from

* the apps directory (application code) you must include an acknowledgement:
* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
*

* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG "AS IS" AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
* GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
*
* The licence and distribution terms for any publically available version or
* derivative of this code cannot be changed. i.e. this code cannot simply be
* copied and put under another distribution licence
* [including the GNU Public Licence.]
*/

Copyright (c) 2001, Andy Ritger <aritger@nvidia.com>
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

o Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
o Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
o Neither the name of NVIDIA nor the names of its contributors
may be used to endorse or promote products derived from this
software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT
NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND
FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL
THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

This program is based on the Generalized Timing Formula (GTF TM)
Standard Version: 1.0, Revision: 1.0

The GTF Document contains the following Copyright information:

Copyright (c) 1994, 1995, 1996 - Video Electronics Standards
Association. Duplication of this document within VESA member
companies for review purposes is permitted. All other rights

reserved.

While every precaution has been taken in the preparation
of this standard, the Video Electronics Standards Association and
its contributors assume no responsibility for errors or omissions,
and make no warranties, expressed or implied, of functionality
of suitability for any purpose. The sample code contained within
this standard may be used without restriction.

-
- Module: libdrm
-

Copyright 1999, 2000 Precision Insight, Inc., Cedar Park, Texas.
Copyright 2000 VA Linux Systems, Inc., Sunnyvale, California.
All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next
paragraph) shall be included in all copies or substantial portions of the
Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
PRECISION INSIGHT AND/OR ITS SUPPLIERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER
DEALINGS IN THE SOFTWARE.

Copyright (c) 2007-2008 Tungsten Graphics, Inc., Cedar Park, Texas.
Copyright (c) 2007-2008 Dave Airlie <airlied@linux.ie>
Copyright (c) 2007-2008 Jakob Bornecrantz <wallbraker@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS
IN THE SOFTWARE.

-
- Module: libpcap
-



*4.不得使用“OpenSSL Toolkit”和“OpenSSL Project”这两个名称
*不支持或推广基于此软件的产品
*事先书面许可。如需书面许可，请联系
* openssl-core@openssl.org.
*
* 5.从该软件派生的产品不得称为“OpenSSL”
*他们的名字中也不得出现“OpenSSL”，除非事先书面
*获得OpenSSL项目的许可。
*
* 6.任何形式的转授必须保留以下内容
*致谢：
* “此产品包含由OpenSSL Project开发的软件
*用于OpenSSL工具包 (<http://www.openssl.org/>>OpenSSLToolkit) 中”
*
*本软件由OpenSSL项目提供“原样”，并且任何
*明示或暗示的保证，包括但不限于
*对适销性和特定用途适用性的默示保证
*目的免责声明。在任何情况下，OpenSSL项目或
*其他方应对任何直接、间接、附带的、
*特别、间接或后果性损害（包括但不限于
*不限于采购替代货物或服务；
*使用、数据或利润损失；或业务中断）
*无论何种责任理论，无论是合同责任、严格责任或侵权（包括过失或其他原因）
*以任何方式因使用本软件而产生的问题，即使已被告知
*关于这种损害的可能性。
* =====
==
*
*该产品包含Eric Young编写的加密软件
* (ey@cryptsoft.com) .该产品包括Tim编写的软件
*哈德森 (tjh@cryptsoft.com) 。
*
*/

原始SSLeay许可证

/*版权所有 (C) 1995-1998 Eric Young (ey@cryptsoft.com)
*保留所有权利。
*
*此程序包是用编写的一个SSL实现
*作者: Eric Young (ey@cryptsoft.com) 。
实现是这样编写的，以便与Netscape SSL兼容。

*这个库可以免费用于商业和非商业用途，只要
*以下条件允许的。以下条件
*应用于此发行版中的所有代码，无论是RC4、RSA、
*hash、DES等代码；而不仅仅是SSL代码。SSL文档
*包含在本发行版中的内容受相同的版权条款保护
除持有人为Tim Hudson (tjh@cryptsoft.com) 外。

*版权仍属于Eric Young，因此任何版权声明在
*代码不能被删除。
*如果该软件包用于产品中，应将Eric Young列为归功者
*作为所用部分库的作者。
*这可以是程序启动时的文本消息形式，或者
在随附该软件包提供的文档（在线或文本）中。

*以源代码和二进制形式重新分发和使用，无论是否
*修改，是被允许的，只要满足以下条件
*满足：
* 1.分发源代码必须保留版权
*注意，此条件列表和以下免责声明。
* 2.二进制形式的转授必须复制上述版权
*注意，此列表中的条件和以下免责声明
*随附的文件和其他材料。
*3.所有提及本软件功能或用途的广告材料
*必须显示以下确认信息：
* “此产品包含由编写的加密软件
* Eric Young (ey@cryptsoft.com) ”
*如果库中的例程，则可以省略“cryptographic”一词
*正在使用的不是与加密相关的：-)。
* 4.如果包含任何Windows专用代码（或其衍生代码）

*必须在应用程序目录（应用程序代码）中包含确认信息：
* “本产品包含Tim Hudson编写的软件（tjh@cryptsoft.com）” **

*本软件由ERIC YOUNG“按原样提供”及
*任何明示或暗示的担保，包括但不限于
*对适销性和特定用途适用性的默示担保

*版权所有。在任何情况下，作者或贡献者均不承担任何责任。
*对于任何直接、间接、附带、特殊、示范或后果性
*损害（包括但不限于采购替代商品
*服务；使用、数据或利润损失；或业务中断）
*然而，无论合同责任、严格责任等任何责任理论如何，原因何在
*以任何方式产生的责任或侵权（包括过失或其他）
*不得使用本软件，即使被告知有此可能性
*损毁。
*
*任何公开可用版本的许可和分发条款或
*该代码的导数不能被更改。即，不能简单地修改该代码
*复制并置于另一份分销许可证下
*[*包括GNU公共许可证。]
*/

-
-模块: libcv -

版权 所有 (c)2001, Andy Ritger aritger@nvidia.com
com保留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，前提是满足以下条件：

- o 重新分发源代码时，必须保留上述版权声明、本条件列表以及以下免责声明。
 - o 二进制形式的重新分发必须复制上述版权声明、此条件列表和以下免责声明
- 在随附的文件和/或材料中。
- o 未经事先书面许可，不得使用NVIDIA的名称或其贡献者的名称来认可或推广从本软件派生的产品。

本软件由版权持有人和贡献者“按原样”提供，包括但不限于任何明示或暗示的保证。
本条款不包含对适销性及特定用途适用性的默示保证。无论何种情况，软件开发
或贡献者均不对任何直接、间接、附带、特殊、示范或后果性损害（包括但不限于
采购替代商品或服务、使用数据/利润损失或业务中断）承担责任。该等责任不受合
同责任、严格责任或侵权责任（包括过失或其他情形）的约束，且与本软件使用无
关，即使已被告知此类损害的可能性亦不例外。

本程序基于通用计时公式（GTFTM）标准版本：1.0，修订版：1.0

GTF文档包含以下版权信息：

版权 所有 (c) 1994、1995、1996 -Video Electronics Standards Association。允许在VESA成员公司内部复制本文档以供审查。
所有其他权利

预订的

尽管在本标准的编制过程中已采取了所有预防措施，但视频
电子标准协会及其贡献者对错误或遗漏不承担任何责任，且
不作任何明示或暗示的功能性或适用性保证。本标准中包含
的示例代码可不受限制地使用。

-
-模块: libdrm -

版权1999,2000, Precision Insight, Inc., Cedar Park, Texas。
版权所有2000 VA Linux Systems, Inc., Sunnyvale, California。
保留所有权利。

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授
予免费许可，以不受限制地处理软件，包括但不限于使用、复制、
修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允
许接收软件的人员这样做，前提是满足以下条件：

上述版权声明和本许可声明（包括下一段）应包含在软件的所有副
本或重要部分中。

本软件以“现状”提供，不附带任何形式的明示或暗示担保，包括但不限于适销性、特定
用途适用性和不侵权等担保。在任何情况下，普瑞斯恩斯洞察公司及其供应商均不承担任
何索赔、损害赔偿或其他责任，无论该等责任源于合同纠纷、侵权行为或其他形式，且与
软件本身或其使用及其他相关事项无关。
软件交易。

版权所有(c) 2007-2008 Tungsten Graphics, Inc., Cedar Park, Texas。
版权所有(c) 2007-2008 Dave Airlie <airlied@linux.ie>
版权所有(c) 2007-2008 Jakob Bornecrantz <wallbraker@gmail.com>

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授
予免费许可，以不受限制地处理软件，包括但不限于使用、复制、
修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允
许接收软件的人员这样做，前提是满足以下条件：

上述版权声明和本许可声明应包含在软件的所有副本或重要部分
中。

本软件以“现状”提供，不附带任何明示或暗示的担保，包括但不限于适销性、特定用途
适用性和不侵权性担保。在任何情况下，
作者或版权持有人应对因软件或其使用或其他交易而产生的任何索赔、损害赔偿或其他
责任（无论是合同纠纷、侵权行为或其他形式）承担全部责任。
在软件中。

-
-模块: libpcap -

Copyright (c) 1999 - 2005 NetGroup, Politecnico di Torino (Italy).
Copyright (c) 2005 - 2010 CACE Technologies, Davis (California).
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
3. Neither the name of the Politecnico di Torino, CACE Technologies
nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written
permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This product includes software developed by the University of
California, Lawrence Berkeley Laboratory and its contributors.
This product includes software developed by the Kungliga Tekniska
H gskolan and its contributors.
This product includes software developed by Yen Yen Lim and North
Dakota State University.

Portions Copyright (c) 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997
The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this
software must display the following acknowledgement: "This product
includes software developed by the University of California, Berkeley
and its contributors."
4. Neither the name of the University nor the names of its contributors
may be used to endorse or promote products derived from this software
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE INSTITUTE AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Portions Copyright (c) 1983 Regents of the University of California.
All rights reserved.

Redistribution and use in source and binary forms are permitted provided
that the above copyright notice and this paragraph are duplicated in all
such forms and that any documentation, advertising materials, and other
materials related to such distribution and use acknowledge that the
software was developed by the University of California, Berkeley. The
name of the University may not be used to endorse or promote products
derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Portions Copyright (c) 1995, 1996, 1997 Kungliga Tekniska H gskolan
(Royal Institute of Technology, Stockholm, Sweden). All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this
software must display the following acknowledgement: "This product
includes software developed by the Kungliga Tekniska H gskolan and
its contributors."
4. Neither the name of the University nor the names of its contributors
may be used to endorse or promote products derived from this software
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE INSTITUTE AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE INSTITUTE OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.

Portions Copyright (c) 1997 Yen Yen Lim and North Dakota State University.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software
must display the following acknowledgement: "This product includes software
developed by Yen Yen Lim and North Dakota State University"
4. The name of the author may not be used to endorse or promote products
derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF

ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Portions Copyright (c) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any
purpose with or without fee is hereby granted, provided that the above
copyright notice and this permission notice appear in all copies, and
that the name of Digital Equipment Corporation not be used in advertising
or publicity pertaining to distribution of the document or software without
specific, written prior permission.

THE SOFTWARE IS PROVIDED "AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL
WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED
WARRANTIES
OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT
CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL
DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR
PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS
ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF
THIS
SOFTWARE.

Portions Copyright (C) 1995, 1996, 1997, 1998, and 1999 WIDE Project.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors
may be used to endorse or promote products derived from this software
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.

Portions Copyright (c) 1996 Juniper Networks, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that:

- (1) source code distributions retain the above copyright notice and this
paragraph in its entirety,
- (2) distributions including binary code include the above copyright
notice and this paragraph in its entirety in the documentation or other
materials provided with the distribution. The name of Juniper Networks
may not be used to endorse or promote products derived from this software
without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Portions Copyright (c) 2001 Daniel Hartmeier All rights reserved.



版权所有(c) 1999 - 2005 NetGroup, Politecnico di Torino（意大利）。
版权所有(c) 2005 - 2010 CACE Technologies, Davis（加利福尼亚州）。
保留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，前提是满足以下条件：

1. 重新分发源代码时必须保留上述版权声明、本条件列表以及以下免责声明。
2. 二进制形式的重新分发必须在提供的文档和/或其它材料中复制上述版权声明、此条件列表和以下免责声明。
3. 未经事先书面许可，不得使用都灵理工大学、CACE Technologies的名称或其贡献者的姓名来认可或推广从本软件派生的产品。

本软件由版权所有者及贡献者以“现状”提供，任何明示或暗示的担保（包括但不限于适销性、特定用途适用性的默示担保）均不承担。无论何种情形，版权方或贡献者均无需对因使用本软件而产生的直接、间接、附带、特殊、后果性损害（包括但不限于采购替代商品或服务、使用数据/利润损失、业务中断等）承担任何责任。无论基于合同责任、严格责任还是侵权责任（包括过失或其他情形），即使已知悉此类损害的可能性，亦不因此产生赔偿义务。

该产品包括由大学开发的软件
加利福尼亚，劳伦斯伯克利实验室及其贡献者。
本产品包含Kungliga Tekniska H gskolan及其贡献者开发的软件。
本产品包含由Yen Yen Lim和北达科他州立大学开发的软件。

部分版权所有(c) 1990、1991、1992、1993、1994、1995、1996、1997
加利福尼亚大学董事会。保留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，前提是满足以下条件：

1. 重新分发源代码时，必须保留上述版权声明、本条件列表以及以下免责声明。
2. 二进制形式的重新分发必须在提供的文档和/或其它材料中复制上述版权声明、此条件列表以及以下免责声明。
- 3.所有提及本软件功能或用途的广告材料必须显示以下声明：
“本产品包含由加州大学伯克利分校及其贡献者开发的软件。”
4. 未经事先书面许可，不得使用本大学的名称或其贡献者的名称来支持或推广从本软件派生的产品。

本软件由研究所及贡献者按原样提供，任何明示或暗示的保证（包括但不限于适销性和特定用途适用性的默示保证）均不承担。无论何种情况，校董会或贡献者均不对任何直接、间接、附带、特殊、示范或后果性损害负责（包括但不限于：采购替代商品或服务；使用损失、数据丢失或利润损失；或商业损害）无论因何种原因，无论基于何种责任理论，无论是合同、严格责任或侵权（包括过失或其他），只要因使用本软件而产生任何损害，即使已被告知可能发生此类损害。

部分版权归加利福尼亚大学董事会所有(c) 1983。保留所有权利。

允许以源代码和二进制形式进行分发和使用，但须确保所有分发形式均完整保留上述版权声明及本条款内容。任何相关文档、宣传材料及其他与分发使用相关的资料，必须明确标注软件由加州大学伯克利分校开发。未经事先书面许可，不得使用本校名称推广或推广基于该软件开发的衍生产品。

本软件按“现状”提供，不附带任何明示或暗示的担保，包括但不限于适销性和特定用途适用性等暗示担保。

部分版权归瑞典皇家理工学院（Kungliga Tekniska H gskolan，斯德哥尔摩，瑞典）所有（1995、1996、1997年）。保留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，只要满足以下条件：

1. 源代码的重新分发必须保留上述版权声明，此条件列表和以下免责声明。
2. 二进制形式的重新分发必须在提供的文档和/或其它材料中复制上述版权声明、此条件列表以及以下免责声明。
- 3.所有提及本软件功能或用途的广告材料必须显示以下声明：
“本产品包含由Kungliga Tekniska H gskolan及其贡献者开发的软件。”
4. 未经事先书面许可，不得使用本大学的名称或其贡献者的名称来支持或推广从该软件派生的产品。

本软件由研究所和贡献者按原样提供”
本协议特别声明：所有明示或暗示的保证，包括但不限于适销性及特定用途适用性的默示保证，均予以免除。无论何种情形，研究所或贡献者均不承担任何直接、间接、附带、特殊、后果性或连带损害赔偿（包括但不限于采购替代商品或服务、使用数据/利润损失、业务中断等），无论损害原因何在，亦不论基于合同责任、严格责任或侵权责任（包括过失或其他情形）的任何理论主张。
因使用本软件而产生的任何问题，即使已被告知此类损害的可能性。

部分版权归Yen Yen Lim和北达科他州立大学所有(c) 1997。
保留所有权利。

重新分发和使用源代码和二进制形式，无论是否修改是被允许的，只要满足以下条件
已连接列：
1. 重新分发源代码时，必须保留上述版权声明、本条件列表以及以下免责声明。
2. 二进制形式的重新分发必须在提供的文档和/或其它材料中复制上述版权声明、此条件列表以及以下免责声明。
3.所有提及本软件功能或用途的广告材料必须显示以下确认：“本产品包含由Yen Yen Lim和北达科他州立大学开发的软件”
4. 未经事先明确书面许可，不得使用作者的姓名来推荐或推广从本软件衍生出的产品。

本软件由作者按原样提供，因此，包括但不限于适销性和特定用途适用性在内的任何明示或暗示担保均被排除。
在任何情况下，作者均不对任何直接、间接、附带、特殊、示范或后果性损害（包括但不限于，购买替代商品或服务；使用、数据或利润的损失；或业务中断）无论由何种原因引起，无论基于何种责任理论，无论是合同责任、严格责任还是侵权责任（包括过失或其他原因），因使用本软件而产生的任何后果，即使

已被告知存在此类损坏的可能性。

版权所有©1993 Digital Equipment Corporation。

特此授予您使用、复制、修改和分发本软件的权限，无论是否收取费用，前提是所有副本中均应包含上述版权声明和本许可声明，以及未经事先明确书面许可，不得在与本文件或软件的分发有关的广告或宣传中使用“Digital Equipment Corporation”名称。

本软件“按原样”提供，数字设备公司否认与本软件有关的所有担保，包括所有暗示的保证
适销性与适用性声明。在任何情况下，数字设备公司均不对因使用、数据或利润损失导致的任何特殊、直接、间接或后果性损害负责，无论该损失是源于合同行为、过失或其他侵权行为，亦不因使用或执行本协议而产生。
软件。

版权所有(C) 1995、1996、1997、1998和1999年，WIDE项目。
保留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，只要满足以下条件：

1. 源代码的重新分发必须保留上述版权声明，此条件列表和以下免责声明。
2. 二进制形式的重新分发必须在提供的文档和/或其它材料中复制上述版权声明、此条件列表和以下免责声明。
3. 未经事先书面许可，不得使用项目名称或其贡献者姓名来认可或推广从该软件派生的产品。

本软件由项目和贡献者按原样提供”
本协议特别声明：所有明示或暗示的保证，包括但不限于适销性及特定用途适用性的默示保证，均予以免除。无论何种情形，项目方或贡献者均不承担任何直接、间接、附带、特殊、后果性或连带责任（包括但不限于采购替代商品或服务、使用数据/利润损失、业务中断等），无论损害由何种原因引起，亦不论基于合同责任、严格责任或侵权责任（包括过失或其他情形）主张之责任。
因使用本软件而产生的任何问题，即使已被告知此类损害的可能性。

版权所有(c) 1996 Juniper Networks, Inc.保留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，前提是：
(1) 源代码分发保留上述版权声明和本段落的全部内容，
(2) 包含二进制代码的分发版本会在随附的文档或其他材料中完整地包含上述版权声明和本段内容。Juniper Networks
未经事先明确书面许可，不得用于认可或推广从本软件派生的产品。

本软件按原样提供，不附带任何明示或暗示担保，包括但不限于适销性和特定用途适用性等暗示担保。

版权所有©2001 Daniel Hartmeier保留所有权利。

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Portions Copyright 1989 by Carnegie Mellon.

Permission to use, copy, modify, and distribute this program for any purpose and without fee is hereby granted, provided that this copyright and permission notice appear on all copies and supporting documentation, the name of Carnegie Mellon not be used in advertising or publicity pertaining to distribution of the program without specific prior permission, and notice be given in supporting documentation that copying and distribution is by permission of Carnegie Mellon and Stanford University. Carnegie Mellon makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

- Module: libunp

Copyright (c) 2000-2003 Intel Corporation
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither name of Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- Module: zliib

Copyright notice:

(C) 1995-2022 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly Mark Adler
jloup@gzip.org madler@alumni.caltech.edu

- Module: pcre2

PCRE2 LICENCE

PCRE2 is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Releases 10.00 and above of PCRE2 are distributed under the terms of the "BSD" licence, as specified below, with one exemption for certain binary redistributions. The documentation for PCRE2, supplied in the "doc" directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also included in the distribution is a just-in-time compiler that can be used to optimize pattern matching. This is an optional feature that can be omitted when the library is built.

THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel
Email local part: Philip.Hazel
Email domain: gmail.com

Retired from University of Cambridge Computing Service,
Cambridge, England.

Copyright (c) 1997-2022 University of Cambridge
All rights reserved.

PCRE2 JUST-IN-TIME COMPILE SUPPORT

Written by: Zoltan Herczeg
Email local part: hzmester
Email domain: freemail.hu

Copyright(c) 2010-2022 Zoltan Herczeg
All rights reserved.

STACK-LESS JUST-IN-TIME COMPILER

Written by: Zoltan Herczeg
Email local part: hzmester
Email domain: freemail.hu

Copyright(c) 2009-2022 Zoltan Herczeg
All rights reserved.

THE "BSD" LICENCE

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notices, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notices, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the University of Cambridge nor the names of any contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

EXEMPTION FOR BINARY LIBRARY-LIKE PACKAGES

The second condition in the BSD licence (covering binary redistributions) does not apply all the way down a chain of software. If binary package A includes PCRE2, it must respect the condition, but if package B is software that includes package A, the condition is not imposed on package B unless it uses PCRE2 independently.

End

- Module: libev

All files in libev are
Copyright (c) 2007, 2008, 2009, 2010, 2011, 2012, 2013 Marc Alexander Lehmann.



重新分发和使用源代码和二进制形式，无论是否修改是被允许的，只要满足以下条件

已连接:

- 源代码的再分发必须保留上述版权
- 注意，此条件列表和以下免责声明。
- 二进制形式的再分发必须在随附的文档和/或其它材料中复制上述版权声明、此条件列表以及以下免责声明。

本软件由版权持有人和贡献者“按原样”提供

以及任何明示或暗示的担保，包括但不限于适销性和特定用途适用性的暗示担保

免责声明。在任何情况下，版权持有者或贡献者均不得

对于因使用本软件而产生的任何直接、间接、附带、特殊、示范或后果性损害（包括但不限于采购替代商品或服务、使用损失、数据丢失或利润损失、业务中断），无论损害原因如何，也不论依据何种责任理论（无论是合同责任、严格责任还是侵权责任，包括过失或其他情形），均需承担赔偿责任。即使已被告知此类损害的可能性，仍需履行上述赔偿义务。

部分版权所有1989卡内基梅隆大学。

特此授予您使用、复制、修改及分发本程序的权限，且无需支付任何费用。但需满足以下条件：所有副本及支持文档中必须包含本版权声明；未经事先明确许可，不得在与程序分发相关的广告或宣传中使用卡内基梅隆大学名称；支持文档中须注明复制与分发行已获得卡内基梅隆大学及斯坦福大学授权。卡内基梅隆大学不对本软件的适用性作出任何声明，本软件以“现状”提供，不附带任何明示或暗示的保证。

-

-模块: libupnp -

版权所有(c) 2000-2003 Intel Corporation
保留所有权利。

重新分发和使用源代码和二进制形式，无论是否修改是被允许的，只要满足以下条件：

- *重新分发源代码必须保留上述版权声明、此条件列表和以下免责声明。
- *二进制形式的转授必须在随附的文档和/或材料中复制上述版权声明、此条件列表以及以下免责声明。
- *未经事先明确书面许可，不得使用英特尔公司或其贡献者的名称来认可或推广从该软件派生的产品。

本软件由版权持有方及贡献者“按原样”提供，任何明示或暗示的担保（包括但不限于适销性及特定用途适用性等默认担保）均不承担。英特尔或贡献者对因使用本软件而产生的任何直接、间接、附带、特殊、示范或后果性损害（包括但不限于采购替代商品或服务、使用数据/利润损失或业务中断等情形）概不负责。无论责任归属基于合同、严格责任还是侵权（包括过失或其他情形），即使已知悉此类损害的可能性，英特尔亦不承担任何赔偿责任。

-

-模块: zlib -

版权声明:

(C) 1995-2022 Jean-loup Gailly和Mark Adler

本软件以“原样”提供，不附带任何明示或暗示的担保。在任何情况下，作者均不对因使用本软件而产生的任何损害承担责任。

允许任何人出于任何目的（包括商业用途）使用本软件，以及修改和自由重新分发本软件，但须遵守下列限制：

- 1.本软件的来源不得被歪曲，您不得声称您编写了原始软件。如果您使用本软件对于产品而言，如果产品文档中有确认信息，用户会很感激，但并非必须。
- 2.改变的源版本必须清楚标明，不得被错误地描述为原始软件。
- 3.不能从任何源分发中删除或修改本通知。

让·卢普·盖利 马克·阿德勒
jloup@gzip.org madler@alumni.caltech.edu

-

-模块: pcre2 -

PCRE2许可证

PCRE2是一个函数库，用于支持正则表达式，其语法和语义尽可能接近于Perl 5语言。

PCRE2 10.00及更高版本的软件是根据BSD许可证条款分发的，具体说明如下，但对某些二进制重新分发有例外。PCRE2的文档在“doc”目录中提供，其分发条款与软件本身相同。测试数据目录中的数据不受版权保护，属于公共领域。

基本库函数是用C语言编写的，是独立的。发行版中还包括一个可以用来优化模式匹配的即时编译器。这是一个可选的功能，在构建库时可以省略。

基本的库函数

撰写人: Philip Hazel
电子邮件本地部分: Philip.Hazel
电子邮件域: gmail.com

从英国剑桥大学计算服务部退休。

版权所有(c) 1997-2022剑桥大学保留所有权利。

PCRE2即时编译支持

撰写人: Zoltan Herczeg
电子邮件本地部分: hzmester
电子邮件域: freemail.hu

版权所有(c)2010-2022 Zoltan Herczeg
保留所有权利。

无堆栈即时编译器

撰写人: Zoltan Herczeg
电子邮件本地部分: hzmester
电子邮件域: freemail.hu

版权所有(c)2009-2022 Zoltan Herczeg
保留所有权利。

BSD许可证

重新分发和使用源代码和二进制形式，无论是否修改是被允许的，只要满足以下条件：

- *源代码的重新分发必须保留上述版权声明、此条件列表和以下免责声明。

- *二进制形式的转授必须在随附的文档和/或材料中复制上述版权声明、此条件列表以及以下免责声明。

- *未经事先书面许可，不得使用剑桥大学的名称或任何贡献者的名称来认可或推广从该软件派生的产品。

本软件由版权持有人和贡献者“按原样”提供

以及任何明示或暗示的担保，包括但不限于适销性和特定用途适用性的暗示担保

免责声明。在任何情况下，版权所有或贡献者均不承担

对于因使用本软件而产生的任何直接、间接、附带、特殊、间接或后果性损害（包括但不限于采购替代商品或服务、使用损失、数据丢失或利润损失、业务中断），无论损害原因如何，也不论依据何种责任理论（包括合同责任、严格责任或侵权责任，包括过失或其他情形），即使已被告知此类损害的可能性，相关方均需承担赔偿责任。

二进制库类程序的例外情况

BSD许可证中的第二个条件（涵盖二进制重新分发）并不适用于整个软件链。如果二进制软件包A包含PCRE2，则必须遵守该条件；但如果软件包B是包含软件包A的软件，则除非软件包B独立使用PCRE2，否则该条件不适用于软件包B。

最后部分

-

-模块: libev -

libev中的所有文件都是
版权所有(c)2007、2008、2009、2010、2011、2012、2013 Marc Alexander Lehmann。

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
-----
-
- Module: libaes
-
-----
```

Copyright (c) 1998-2008, Brian Gladman, Worcester, UK. All rights reserved.

LICENSE TERMS

The redistribution and use of this software (with or without changes) is allowed without the payment of fees or royalties provided that:

1. source code distributions include the above copyright notice, this list of conditions and the following disclaimer;
2. binary distributions include the above copyright notice, this list of conditions and the following disclaimer in their documentation;
3. the name of the copyright holder is not used to endorse products built using this software without specific written permission.

DISCLAIMER

This software is provided 'as is' with no explicit or implied warranties in respect of its properties, including, but not limited to, correctness and/or fitness for purpose.

```
-----
-
- Module: libgcrypt
-
-----
```

Additional license notices for Libgcrypt. *- org -*.

This file contains the copying permission notices for various files in the Libgcrypt distribution which are not covered by the GNU Lesser General Public License (LGPL) or the GNU General Public License (GPL).

These notices all require that a copy of the notice be included in the accompanying documentation and be distributed with binary distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

* BSD_3Clause

For files:
- cipher/sha256-avx-amd64.S
- cipher/sha256-avx2-bmi2-amd64.S
- cipher/sha256-ssse3-amd64.S
- cipher/sha512-avx-amd64.S
- cipher/sha512-avx2-bmi2-amd64.S
- cipher/sha512-ssse3-amd64.S
- cipher/sha512-ssse3-i386.c

##+begin_quote
Copyright (c) 2012, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY INTEL CORPORATION "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL CORPORATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

##+end_quote

For files:
- random/jitterentropy-base.c
- random/jitterentropy.h
- random/rndjent.c (plus common Libgcrypt copyright holders)

##+begin_quote
* Copyright Stephan Mueller <smueller@chronox.de>, 2013
*
* License
* =====
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, and the entire permission notice in its entirety,
* including the disclaimer of warranties.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. The name of the author may not be used to endorse or promote
* products derived from this software without specific prior
* written permission.
*
* ALTERNATIVELY, this product may be distributed under the terms of
* the GNU General Public License, in which case the provisions of the GPL are
* required INSTEAD OF the above restrictions. (This clause is
* necessary due to a potential bad interaction between the GPL and

* the restrictions contained in a BSD-style copyright.)

*
* THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESS OR IMPLIED
* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF
* WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
* USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH
* DAMAGE.
##+end_quote

For files:
- cipher/cipher-gcm-ppc.c

##+begin_quote
Copyright (c) 2006, CRYPTOGAMS by <appro@openssl.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain copyright notices, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the CRYPTOGAMS nor the names of its copyright holder and contributors may be used to endorse or promote products derived from this software without specific prior written permission.

ALTERNATIVELY, provided that this notice is retained in full, this product may be distributed under the terms of the GNU General Public License (GPL), in which case the provisions of the GPL apply INSTEAD OF those given above.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
##+end_quote

* X License

For files:
- install.sh

##+begin_quote
Copyright (C) 1994 X Consortium

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in

允许重新分发和使用源代码和二进制形式，无论是否修改，只要满足以下条件：

*重新分发源代码必须保留上述版权声明、此条件列表和以下免责声明。

*以二进制形式提供的复制必须在随附的文档和/或材料中复制

上述版权声明、此条件列表以及以下免责声明。

本软件由版权持有者及贡献者以“现状”提供，任何明示或暗示的担保（包括但不限于适销性、特定用途适用性的默认担保）均不承担。无论何种情形，版权持有者或贡献者均无需对因使用本软件而产生的直接、间接、附带、特殊、后果性损害（包括但不限于采购替代商品或服务、使用数据/利润损失、业务中断等），无论责任归属如何——无论是合同责任、严格责任还是侵权责任（包括过失或其他形式），即使已知悉此类损害的可能性，亦不承担任何赔偿责任。

```
-----
-
-模块: libaes -
-----
```

版权所有(c) 1998-2008, Brian Gladman, 英国伍斯特。保留所有权利。许可条款

允许重新分发和使用本软件（无论是否修改），无需支付费用或
 特许权使用费，前提是：

- 1.源代码分发包括上述版权声明、此条件列表和以下免责声明；
- 2.二进制分发在其文档中包括上述版权声明、此条件列表和以下免责声明；
- 3.未经书面许可，不得使用版权持有人的名称来认可使用本软件构建的产品。

免责声明

本软件“按原样”提供，不包含关于其属性的任何明示或暗示担保，包括但不限于正确性和/或适用性。

-模块: libgcrypt -

Libgcrypt的其他许可证通知。 -*- org -*-

此文件包含Libgcrypt分发中各种不受GNU较宽松通用公共许可证（LGPL）或GNU通用公共许可证（GPL）涵盖的文件的复制许可通知。

这些通知均要求在随附文档中包含通知副本，并且与二进制代码分发一起分发，因此请确保将此文件与从GNU C库派生的任何二进制代码分发一起分发。

* BSD_3Clause

对于文件：

- cipher/sha256-avx-amd64.S
- cipher/sha256-avx2-bmi2-amd64.S
- cipher/sha256-ssse3-amd64.S
- cipher/sha512-avx-amd64.S
- cipher/sha512-avx2-bmi2-amd64.S
- cipher/sha512-ssse3-amd64.S
- cipher/sha512-ssse3-i386.c

#+开始引用
版权所有(c) 2012, Intel Corporation保

留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，前提是满足以下条件：

*重新分发源代码必须保留上述版权声明、此条件列表和以下免责声明。

*二进制形式的转授必须在随附的文档和/或材料中复制上述版权
声明、此条件列表以及以下免责声明。

*没有事先明确的书面许可, 不得使用Intel Corporation的名称或其贡献者的名称来认可或推广从该软件派生的产品。

本软件由英特尔公司“按原样”提供，包括但不限于以下任何明示或暗示的保证：

对于适销性及特定用途适用性的默示保证，英特尔公司或贡献者概不承担任何责任。无论何种情况，英特尔公司或贡献者均无需就因使用本软件而产生的直接、间接、附带、特殊、示范或后果性损害（包括但不限于采购替代商品或服务、使用损失、数据丢失、利润损失或业务中断）承担任何责任，无论损害源于何种理论（包括合同责任、严格责任或侵权责任，包括过失或其他情形），即使已被告知此类损害的可能性。

#+结束引用

对于文件：

- random/jitterentropy-base.c
- random/jitterentropy.h
- random/rndjcent.c (以及常见的Libgcrypt版权持有者)

*版权所有Stephan Mueller <smueller@chronox.de>, 2013 *

- * 许可证
- * =====
- *
- * 以源代码和二进制形式重新分发和使用，无论是否修改，是被允许的，只要满足以下条件
- * 满足：
- * 1. 分发源代码必须保留上述版权
- * 通知，以及整个许可通知的全部内容，
- * 包括免责声明。
- * 2. 二进制形式的转授必须复制上述版权
- * 注意，此条件列表和以下免责声明在
- * 随附的文件和/或其他材料。
- * 3. 不得使用提交人的姓名进行支持或宣传
- * 未经事先明确许可，不得使用本软件衍生的产品
- * 书面许可。
- *
- * 另一种选择是，本产品可在以下条款下进行分销：
- * GNU通用公共许可证，在这种情况下，GPL的条款
- * 需要替代上述限制条件。（本条款是
- * 由于GPL和之间可能有不良相互作用而必需

包含在BSD风格的版权中的限制。)

- * 本软件”按原样提供，不作任何明示或暗示
- * 保证，包括但不限于默示保证
- * 关于适销性和特定用途适用性的所有内容
- * 特此予以否认。在任何情况下，作者都不应
- * 对任何直接、间接、附带、特殊、示范或
- * 间接损害（包括但不限于采购
- * 供应的商品或服务的损失；使用、数据或利润的损失；或
- * 商业中断）无论由何种原因引起，也不论依据何种理论
- * 责任，无论是合同责任、严格责任还是侵权责任
- * （包括过失或其他原因）因任何方式引起的
- * 使用本软件，即使没有被告知这种可能性
- * 损坏。

#+结束引用

对于文件:
- cipher/cipher-gcm-ppc.c

```

#开始引用
版权所有(c), 2006, CRYPTOGRAMS, <appro@openssl.org>
保留所有权利。

```

允许重新分发和使用源代码和二进制形式，无论是否修改，只要满足以下条件：

*源代码的重新分发必须保留版权声明、本条件列表和以下免责声明。

上述版权声明、此条件列表以及下列免责声明。

*未经事先书面许可, 不得使用CRYPTOGAMS的名称及其版权所有者和贡献者的名称来认可或推广从该软件派生的产品。

或者，只要完整保留本通知，本产品可以GNU通用公共许可证（GPL）的条款进行分发，在此情况下，GPL的规定将代替上述规定。

本软件由版权持有人及贡献者以“现状”提供，任何明示或暗示的担保（包括但不限于适销性及特定用途适用性的默示担保）均不承担。无论何种情形，版权持有人或贡献者均无需对任何直接、间接、附带、特殊、示范或后果性损害负责（包括但不限于采购替代商品或服务、使用数据/利润损失、业务中断等），无论损害原因如何，亦不论基于合同责任、严格责任或侵权责任（包括过失或其他情形）产生的任何理论，即使已知悉此类损害的可能性。

#+结束引用

*X许可证

对于文件：
-安装程序.安装

#+开始引用
版权所有(C) 1994 X Consortium

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费许可，以不受限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允许接收软件的人士进行上述操作，但须遵守以下条件：

上述版权声明和本许可声明应包含在

all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

##+end_quote

* Public domain

For files:
- cipher/arcfour-amd64.S

##+begin_quote
Author: Marc Bevand <bevand_m (at) epita.fr>
Licence: I hereby disclaim the copyright on this code and place it in the public domain.
##+end_quote

* OCB license I

For files:
- cipher/cipher-ocb.c

##+begin_quote
OCB is covered by several patents but may be used freely by most software. See <http://web.cs.ucdavis.edu/~rogaway/ocb/license.htm>.
In particular license I is suitable for Libcrypt: See <http://web.cs.ucdavis.edu/~rogaway/ocb/licenseI.pdf> for the full license document; it basically says:

License I License for Open-Source Software Implementations of OCB
(Jan 9, 2013)

Under this license, you are authorized to make, use, and distribute open-source software implementations of OCB. This license terminates for you if you sue someone over their open-source software implementation of OCB claiming that you have a patent covering their implementation.

License for Open Source Software Implementations of OCB
January 9, 2013

I Definitions

I.1 Licensor means Phillip Rogaway.

I.2 Licensed Patents means any patent that claims priority to United States Patent Application No. 09/918,615 entitled Method and Apparatus for Facilitating Efficient Authenticated Encryption, and any utility, divisional, provisional, continuation, continuations-in-part, reexamination, reissue, or foreign counterpart patents that may issue with respect to the aforesaid patent application. This includes, but is not limited to, United States Patent No. 7,046,802; United States Patent No. 7,200,227; United States Patent No. 7,949,129; United States Patent No. 8,321,675; and any patent that issues out of United States Patent Application No. 13/669,114.

I.3 Use means any practice of any invention claimed in the Licensed Patents.

I.4 Software Implementation means any practice of any invention claimed in the Licensed Patents that takes the form of software executing on

a user-programmable, general-purpose computer or that takes the form of a computer-readable medium storing such software. Software Implementation does not include, for example, application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), embedded systems, or IP cores.

I.5 Open Source Software means software whose source code is published and made available for inspection and use by anyone because either (a) the source code is subject to a license that permits recipients to copy, modify, and distribute the source code without payment of fees or royalties, or (b) the source code is in the public domain, including code released for public use through a CC0 waiver. All licenses certified by the Open Source Initiative at opensource.org as of January 9, 2013 and all Creative Commons licenses identified on the creativecommons.org website as of January 9, 2013, including the Public License Fallback of the CC0 waiver, satisfy these requirements for the purposes of this license.

I.6 Open Source Software Implementation means a Software Implementation in which the software implicating the Licensed Patents is Open Source Software. Open Source Software Implementation does not include any Software Implementation in which the software implicating the Licensed Patents is combined, so as to form a larger program, with software that is not Open Source Software.

2 License Grant

2.1 License. Subject to your compliance with the terms of this license, including the restriction set forth in Section 2.2, Licensor hereby grants to you a perpetual, worldwide, non-exclusive, non-transferable, non-sublicenseable, no-charge, royalty-free, irrevocable license to practice any invention claimed in the Licensed Patents in any Open Source Software Implementation.

2.2 Restriction. If you or your affiliates institute patent litigation (including, but not limited to, a cross-claim or counterclaim in a lawsuit) against any entity alleging that any Use authorized by this license infringes another patent, then any rights granted to you under this license automatically terminate as of the date such litigation is filed.

3 Disclaimer

YOUR USE OF THE LICENSED PATENTS IS AT YOUR OWN RISK AND UNLESS REQUIRED BY APPLICABLE LAW, LICENSOR MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED PATENTS OR ANY PRODUCT EMBODYING ANY LICENSED PATENT, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NONINFRINGEMENT. IN NO EVENT WILL LICENSOR BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM OR RELATED TO ANY USE OF THE LICENSED PATENTS, INCLUDING, WITHOUT LIMITATION, DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR SPECIAL DAMAGES, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES PRIOR TO SUCH AN OCCURRENCE.

##+end_quote

Copyright (c) 2009-2020 Petri Lehtinen <petri@digip.org>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in

all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-
- Module: mtdev
-

mtdev - Multitouch Protocol Translation Library (MIT license)

Copyright (C) 2010 Henrik Rydberg <rydberg@euromail.se>
Copyright (C) 2010 Canonical Ltd.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-
- Module: libevdev
-

SPDX-License-Identifier: MIT

Copyright 2013 Red Hat, Inc.
Copyright 2013 David Herrmann <dh.herrmann@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL

软件的所有副本或实质性部分。

软件“按原样”提供，不附带任何明示或暗示的担保。

暗示的，包括但不限于适销性保证，
特定用途适用性及不侵权声明。在任何情况下，本

X CONSORTIUM BE对任何索赔、损害赔偿或其他责任，无论是在

因合同、侵权或其他原因产生的行为，源于、超出或涉及连接。

与软件的促成或对软件的使用或其他协议。

除非包含在本通知中，否则未经X Consortium事先书面授权，不得在广告中使用X Consortium的名称，或以其他方式推广本软件的销售、使用或其他交易。

##结束引用

*公共领域

对于文件：
- cipher/arcfour-amd64.htm

##开始引用
作者：Marc Bevand <bevand_m (at) epita.fr>
许可证：我在此放弃对本代码的版权，并将其置于公共领域。
##结束引用

* OCB许可证1

对于文件：
- cipher/cipher-ocb.c

##开始引用
OCB受几项专利的保护，但大多数软件可以自由使用。请参阅<41>~rogaway/ocb/license.htm.
特别说明：许可证1适用于Libgrypt；请参阅<41>~rogaway/ocb/license1.pdf完整版
许可证文件；其中基本上说：

许可证1 OCB开源软件实现许可证
(2013年1月9日)

根据本许可证，您有权制作、使用和分发OCB的开源软件实现。如果您因某人的行为而对其提起诉讼，则本许可证将终止对您的有效。

OCB的开源软件实现，声称你拥有覆盖其实现的专利。

OCB开源软件实现许可证2013年1月9日

1 定义

1.1 许可方指Phillip Rogaway。

1.2 授权专利指所有主张对美国专利申请第09/918,615号（标题为《促进高效认证加密的方法与装置》）享有优先权的专利，以及可能基于上述专利申请产生的实用新型、分案、临时、延续、部分延续、复审、再颁或外国对应专利。具体包括但不限于：美国专利第7,046,802号；美国专利第7,200,227号；美国专利第7,949,129号；美国专利第8,321,675号；以及源自美国专利申请第13/669,114号的任何专利。

1.3 使用是指对授权专利中所要求的任何发明的任何实践。

1.4 软件实施是指以在计算机上运行的软件形式实现许可专利中所要求的任何发明的任何实践

用户可编程的通用计算机，或以存储此类软件的计算机可读介质形式存在的设备。软件实现确实如此
不包括，例如，专用集成电路（ASIC）、现场可编程门阵列（FPGA）、嵌入式系统或IP内核。

1.5 开源软件是指其源代码已公开并可供任何人检查和使用的软件，这源于两种情形：(a)源代码受许可协议约束，允许接收者免费复制、修改和分发；(b)源代码属于公共领域，包括通过CC0豁免协议公开发布的代码。根据2013年1月9日opensource.org开源促进会认证的所有许可证，以及creativecommons.org网站上列出的所有知识共享许可协议（包括CC0豁免协议的公共许可证回退方案），均符合本许可证的适用要求。

1.6 开源软件实现是指包含被许可专利的软件是开源软件的软件实现。开

源软件实现不包括将包含被许可专利的软件与非开源软件组合形成一个较

大程序的任何软件实现。

2 许可证授予

2.1 许可证。在您遵守本许可证条款的情况下，包括第2.2节中规定的限制，许可方特此授予您永久、全球、非排他性、不可转让、不可再授权、免费、免版税、不可撤销的许可，以在任何开源软件实现中实施许可专利中声明的任何发明。

2.2 限制。如果您或您的关联公司针对任何实体提起专利诉讼（包括但不限于在诉讼中提出反诉或反索赔），指控该等实体的任何使用行为侵犯了本许可项下的其他专利，则自提起该等诉讼之日起，您在本许可项下获得的任何权利自动终止。

3 免责声明

您使用被授权专利的风险由您自行承担，除非适用法律要求，否则许可方不做任何声明或保证。

有关授权专利或包含任何授权专利的任何产品的注意事项

专利、明示或暗示、法定权利或其他形式的权利，包括但不限于所有权担保、适销性担保、特定用途适用性担保或不侵权担保。许可方对任何索赔、损害赔偿或其他责任概不负责，无论该责任源于合同、侵权行为或其他原因。

因使用被许可专利而产生的任何责任，包括但不限于直接、间接、附带、后果性、惩罚性或特殊损害，即使许可方在该等损害发生之前已被告知该等损害的可能性。

##结束引用

-
-模块：扬森-

版权所有(c) 2009-2020 Petri Lehtinen <petri@digip.org>

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费许可，以不受限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允许接收软件的人士进行上述操作，但须遵守以下条件：

上述版权声明和本许可声明应包含在

软件的所有副本或实质性部分。

本软件以“现状”提供，不附带任何明示或暗示的担保，包括但不限于适销性、特定用途

适用性和不侵权性担保。在任何情况下，

作者或版权持有人应对因以下原因产生的任何索赔、损害赔偿或其他责任（无论是合同诉讼、侵权行为或其他形式）负责：

与软件或使用或其他协议相关的输出或输入
软件。

-
-模块： mtdev -

mtdev -多点触控协议转换库(MIT许可证)

版权所有(C) 2010 Henrik Rydberg <rydberg@euromail.se>
版权所有(C) 2010 Canonical Ltd.

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费许可，以不受限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允许接收软件的人员这样做，前提是满足以下条件：

上述版权声明和本许可声明（包括下一段）应包含在软件的所有副本或重要部分中。

本软件以“现状”提供，不附带任何形式的明示或暗示担保，包括但不限于适销性、特定用途适用性和不侵权性等担保。在任何情况下，作者或版权持有者均不对任何索赔、损害或其他相关责任承担责任。

因软件或软件的使用或其他交易而产生的、无论是合同行为、侵权行为还是其他形式的责任。

-
-模块： libevdev -

SPDX许可证编号：MIT

版权所有2013 Red Hat, Inc.
版权所有2013 David Herrmann <dh.herrmann@gmail.com>

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费许可，以不受限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允许接收软件的人士进行上述操作，但须遵守以下条件：

上述版权声明和本许可声明（包括下一段）应包含在软件的所有副本或重要部分中。

本软件以“现状”提供，不附带任何明示或暗示的担保，包括但不限于适销性、特定用途适用性和非侵权性担保。在任何情况下，



安装

配置

业务

更多信息

索引

THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The following license is from a Linux kernel header file and there is no GPL code this package links to.

Copyright (c) 1999-2002 Vojtech Pavlik

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 as published by the Free Software Foundation.

```
-----
-
- Module: libinput
-
-----
```

Copyright 2006-2009 Simon Thum
Copyright 2008-2012 Kristian H gsborg
Copyright 2010-2012 Intel Corporation
Copyright 2010-2011 Benjamin Franzke
Copyright 2011-2012 Collabora, Ltd.
Copyright 2013-2014 Jonas dahl
Copyright 2013-2015 Red Hat, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

libinput ships a copy of the GPL-licensed Linux kernel's linux/input.h header file. [1] This does not make libinput GPL.
This copy is provided to provide consistent behavior regardless which kernel version libinput is compiled against. The header is used during compilation only, libinput does not link against GPL libraries.

[1] <https://gitlab.freedesktop.org/libinput/libinput/blob/main/include/linux/input.h>

```
-----
-
- Module: tcpdump
-
-----
```

License: BSD

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some files in this package are licensed under the 4-clause BSD license, the copyright on most of them belongs to The Regents of the University of California. Since the license was retroactively changed in 1999 to remove the advertising clause, they are effectively under the 3-clause license even if the text of the license in the files hasn't been updated. See the following document for more details:

<ftp://ftp.cs.berkeley.edu/pub/4bsd/README.Impt.License.Change>

Other files under the 4-clause BSD license and whose copyright doesn't belong to the The Regents of the University of California are listed below:

- print-802_11.c, Copyright (c) 2001 Fortress Technologies and Charlie Lenahan
- print-aov.c, Copyright (c) 2003 Bruce M. Simpson
- print-ascii.c, Copyright (c) 1997, 1998 The NetBSD Foundation, Inc.
- print-cnfp.c, Copyright (c) 1998 Michael Shalayeff
- print-gre.c, Copyright (c) 2002 Jason L. Wright
- print-mobile.c, Copyright (c) 1998 The NetBSD Foundation, Inc.
- print-sunatm.c, Copyright (c) 1997 Yen Yen Lim and North Dakota State University
- print-telnet.c, Copyright (c) 1997, 1998 The NetBSD Foundation, Inc.
- print-timed.c, Copyright (c) 2000 Ben Smithurst

```
-----
-
- Module: ntp
-
-----
```

The following copyright notice applies to all files collectively called the Network Time Protocol Version 4 Distribution. Unless specifically declared otherwise in an individual file, this entire notice applies as if the text was explicitly included in the file.

```
*****
*
* Copyright (c) University of Delaware 1992-2015
*
* Permission to use, copy, modify, and distribute this software and
* its documentation for any purpose with or without fee is hereby
* granted, provided that the above copyright notice appears in all
* copies and that both the copyright notice and this permission
* notice appear in supporting documentation, and that the name
* University of Delaware not be used in advertising or publicity
* pertaining to distribution of the software without specific,
* written prior permission. The University of Delaware makes no
* representations about the suitability this software for any
* purpose. It is provided "as is" without express or implied
* warranty.
*
*****
```

Content starting in 2011 from Harlan Stenn, Danny Mayer, and Martin Burnicki is:

```
*****
*
* Copyright (c) Network Time Foundation 2011-2017
*
* All Rights Reserved
*
```

```
*
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
*
* 2. Redistributions in binary form must reproduce the above
* copyright notice, this list of conditions and the following
* disclaimer in the documentation and/or other materials provided
* with the distribution.
*
*
* THIS SOFTWARE IS PROVIDED BY THE AUTHORS "AS IS" AND ANY EXPRESS
* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
* USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
* DAMAGE.
*****
```

The following individuals contributed in part to the Network Time Protocol Distribution Version 4 and are acknowledged as authors of this work.

1. [1] Takao Abe <takao_abe@xurb.jp> Clock driver for J1Y receivers
2. [2] Mark Andrews <mark_andrews@isc.org> Leitch atomic clock controller
3. [3] Bernd Altmeier <altmeier@atsoft.de> hopf Elektronik serial line and PCI-bus devices
4. [4] Viraj Bais <vbais@mailman1.intel.com> and [5] Clayton Kirkwood <kirkwood@striderfm.intel.com> port to Windows NT 3.5
5. [6] Michael Barone <michael.barone@lmco.com> GPSPVME fixes
6. [7] Karl Berry <karl@owl.hq.ileaf.com> syslog to file option
7. [8] Greg Brackley <greg.brackley@bigfoot.com> Major rework of WINNT port. Clean up recvbuf and iosignal code into separate modules.
8. [9] Marc Brett <Marc.Brett@westgeo.com> Magnavox GPS clock driver
9. [10] Pietre Brooks <Pietre.Brooks@cl.cam.ac.uk> MSF clock driver, Trimble PARSE support
10. [11] Nelson B Bolyard <nelson@bolyard.me> update and complete broadcast and crypto features in snpt
11. [12] Jean-Francois Boudreault <Jean-Francois.Boudreault@viagenie.qc.ca> IPv6 support
12. [13] Reg Clemens <reg@dwf.com> Oncore driver (Current maintainer)
13. [14] Steve Clift <clift@ml.csiro.au> OMEGA clock driver
14. [15] Casey Crellin <casey@csc.co.za> vxWorks (Tornado) port and help with target configuration
15. [16] Sven Dietrich <sven_dietrich@trimble.com> Palisade reference clock driver, NT adj. residuals, integrated Greg's Winnt port.
16. [17] John A. Dundas III <dundas@salt.jpl.nasa.gov> Apple A/UX port
17. [18] Torsten Duwe <duwe@immd4.informatik.uni-erlangen.de> Linux port
18. [19] Dennis Ferguson <dennis@mrbill.canet.ca> foundation code for NTP Version 2 as specified in RFC-1119
19. [20] John Hay <jhay@icomtek.csiro.co.za> IPv6 support and testing
20. [21] Dave Hart <davehart@davehart.com> General maintenance, Windows port interpolation rewrite
21. [22] Claas Hilbrecht <neoclock4x@linum.com> NeoClock4X clock driver
22. [23] Glenn Hollinger <glenn@herald.usask.ca> GOS clock driver
23. [24] Mike Iglesias <mike.iglesias@uci.edu> DEC Alpha port
24. [25] Jim Jagielski <jim@jagubox.gsfc.nasa.gov> A/UX port
25. [26] Jeff Johnson <jbj@chatham.usdesign.com> massive prototyping overhaul
26. [27] Hans Lambermont <Hans.Lambermont@nl.origin-it.com> or [28] <H.Lambermont@chello.nl> ntpswep
27. [29] Poul-Henning Kamp <phk@FreeBSD.ORG> Oncore driver (Original author)
28. [30] Frank Kardel [31] <kardel(at)ntp(dot)org> PARSE <GENERIC> (driver 14 reference clocks), STREAMS modules for PARSE, support scripts, syslog cleanup, dynamic interface handling
29. [32] Johannes Maximilian Kuehn <kuehn@ntp.org> Rewrote snpt to



THE

作者或版权持有人应对因软件或其使用或其他交易而产生的任何索赔、损害赔偿或其他责任（无论是合同纠纷、侵权行为或其他形式）承担全部责任。

在软件中。

以下许可证来自Linux内核头文件，此软件包链接到的代码中不包含GPL代码。

版权所有(c) 1999-2002 Vojtech Pavlik

本程序是自由软件，您可以根据自由软件基金会发布的GNU通用公共许可证第2版的条款重新分发和/或修改它。

-
-模块: libinput -

版权所有2006-2009 Simon Thum
版权所有2008-2012 Kristian H gsberg
版权所有2010-2012 Intel Corporation
版权所有2010-2011 Benjamin Franzke
版权2011-2012 Collabora, Ltd.
版权所有2013-2014 Jonas dahl
版权所有2013-2015 Red Hat, Inc.

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费许可，以不受限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允许接收软件的人员这样做，前提是满足以下条件：

上述版权声明和本许可声明（包括下一段）应包含在软件的所有副本或重要部分中。

本软件以“现状”提供，不附带任何形式的明示或暗示担保，包括但不限于适销性、特定用途适用性和不侵权性等担保。在任何情况下，作者或版权持有者均不对任何索赔、损害或其他相关责任承担责任。

因软件或软件的使用或其他交易而产生的、无论是合同行为、侵权行为还是其他形式的责任。

libinput附带了GPL许可的Linux内核的linux(input.h头文件。[1]这并不意味着libinput也具有GPL许可。提供此副本是为了确保无论编译时所使用的内核版本如何，libinput都能保持一致的行为。该头文件仅在编译过程中使用，libinput不链接任何GPL许可的库。

[1] <https://gitlab.freedesktop.org/libinput/libinput/blob/main/include/linux/input.h>

-
-模块: tcpdump -

许可证: BSD

允许重新分发和使用源代码和二进制形式，无论是否修改，只要满足以下条件：

1. 重新分发源代码时，必须保留上述版权声明、本条件列表以及以下免责声明。
2. 二进制形式的重新分发必须在提供的文档和/或其它材料中复制上述版权声明、此条件列表以及以下免责声明。
3. 未经事先明确书面许可，不得使用作者的姓名来认可或推广基于此软件的产品。

本软件“按原样提供，不附带任何明示或

默示担保，包括但不限于适销性和特定用途适用性的默示担保。

该软件包中部分文件采用四条款BSD许可证授权，其中大部分版权归属加州大学董事会所有。由于该许可证在1999年被追溯修改以删除广告条款，即使文件中的许可证文本未作相应调整，这些文件实际上仍受三条款许可证约束。

已更新。有关详细信息，请参阅以下文档：ftp://ftp.cs.berkeley.

edu/pub/4bsd/README.Impt.License.Change >

在4条款BSD许可证下，其他版权不属于加州大学董事会的文件也列在其中

在...下面

- print-802_11.c, 版权所有(c) 2001 Fortress Technologies和Charlie Lenahan
- print-aodv.c, 版权所有(c) 2003 Bruce M. Simpson
- print-ascii.c, 版权所有(c) 1997、1998 The NetBSD Foundation, Inc.
- print-cnfp.c, 版权所有(c) 1998 Michael Shalayeff
- print-gre.c, 版权所有(c) 2002 Jason L. Wright
- print-mobile.c, 版权所有(c) 1998 The NetBSD Foundation, Inc.

- print-sunatm.c, 版权所有(c) 1997 Yen Yen Lim和北达科他州立大学

- print-telnet.c, 版权所有(c) 1997,1998 The NetBSD Foundation, Inc.
- print-timed.c, 版权所有(c) 2000 Ben Smithurst

-
-模块: ntp -

以下版权声明适用于统称为“Network Time Protocol Version 4 Distribution”的所有文件。除非个别文件中明确声明了相反的情况，否则整个版权声明应适用，如同文本被明确地包括在该文件中一样。

* * *

* 版权所有(c)特拉华大学1992-2015 * * *

使用、复制、修改和分发此软件的许可以及

* 无论是否收取费用，本文件均用于任何目的*

，前提是上述版权声明出现在所有

副本以及版权声明和本许可

通知出现在支持文档中，且名称为

特拉华大学不用于广告或宣传

与未指定的软件分发有关，

事先书面许可。特拉华大学不提供

*关于此软件是否适合任何*的说明

目的。它“按原样”提供，没有明示或暗示

*保修。 * * *

从2011年开始，Harlan Stenn、Danny Mayer和Martin Burnicki的内容是：

* * *

* 版权所有(c) Network Time Foundation 2011-2017 * * *

*保留所有权利 * *

* * *

以源代码和二进制形式重新分发和使用，无论是否

修改，是被允许的，只要满足以下条件

*满足： * *

* 1. 转让源代码必须保留上述版权*

注意，此条件列表和以下免责声明。

* 2. 二进制形式的分发必须复制上述内容*

版权声明，此条件列表和以下

文档和/或提供的其他材料中的免责声明

*与分销商。 * * *

本软件由作者提供“原样”，且任何明示

或默示担保，包括但不限于默示担保

适销性和特定用途适用性保证

*版权所有。在任何情况下，作者或贡献者均不承担任何责任。

对任何直接、间接、附带、特殊、间接或

间接损害（包括但不限于采购

供应的商品或服务的损失；使用、数据或利润的损失；或

商业中断）无论由何种原因引起，且不论依据何种理论

*责任，无论是合同责任、严格责任还是侵权责任 * *

（包括过失或其他原因）以任何方式引起

使用本软件，即使已被告知此类可能性

*损坏。 *****

以下个人部分地参与了网络时间协议第4版的编制，并被承认为

本工作的作者。

1. [1]Takao Abe<takao_abe@xurb.jp>JJY接收器的时钟驱动程序
2. [2]Mark Andrews <mark_andrews@isc.org> Leitch原子钟控制
- 器
3. [3]Bernd Altmeier <altmeier@atsoft.de> hopf电子串行线路和PCL总线设备
4. [4]Viraj Bais <vbais@mailman1.intel.com> 和 [5]Clayton Kirkwood <kirkwood@striderfm.intel.com> 为WindowsNT 3.5提供支持
5. [6]Michael Barone <michael_barone@lmco.com> GPSVME修复
6. [7]Karl Berry <karl@owl.HQ.ileaf.com> syslog to file选项
7. [8]Greg Brackley <greg.brackley@bigfoot.com> 主要重新修改了WINNT
- 端口。将receivebuf和iosignal代码清理并存入单独的模块。
8. [9]Marc Brett <Marc.Brett@westgeo.com> 马克·布雷特，马格纳沃克斯GPS时钟驱动程序
9. [10]Piete Brooks <Piete.Brooks@cl.cam.ac.uk> MSF时钟驱动程序，Trimble PARSE支持
10. [11]Nelson B Bolyard <nelson@bolyard.me> 更新并完善了sntp
- 中的广播和加密功能
11. [12]让-弗朗索瓦·布德罗 <Jean-Francois.Boudreault@viagenie.qc.ca> IPv6支持
12. [13]Reg Clemens <reg@dwf.com> Oncore驱动程序（当前维护者）
13. [14]Steve Clift <clift@ml.csiro.au> OMEGA时钟驱动程序
14. [15]Casey Crellin <casey@csc.co.za> vxWorks（Tornado）端口和目标配置帮助
15. [16]Sven Dietrich <sven_dietrich@trimble.com> 防火墙参考时钟驱动程序，NT adj.残差，集成的Greg 's Winnt端口。
16. [17]John A. Dundas III <dundas@salt.jpl.nasa.gov> Apple A/UX端口
17. [18]Torsten Duwe <duwe@immd4.informatik.uni-erlangen.de> Li-nux端口
18. [19]Dennis Ferguson <dennis@mrbill.canet.ca> NTP版本2基础代码，如RFC-1119中所规定
19. [20]John Hay <jhay@icomtek.csir.co.za> IPv6支持和测试
20. [21]Dave Hart <davehart@davehart.com> 一般维护，Windows端口插值
- 重写
21. [22]Claas Hilbrecht <neoclock4x@linum.com> NeoClock4X时钟驱动程序
22. [23]Glenn Hollinger <glenn@herald.usask.ca> GOES时钟驱动程序
23. [24]Mike Iglesias <iglesias@uci.edu> DEC Alpha端口
24. [25]Jim Jagielski <jim@jagubox.gsfc.nasa.gov> A/UX端口
25. [26]Jeff Johnson <jbj@chatham.usdesign.com> 大规模原型设计
- 改革
26. [27]汉斯·兰伯蒙特<Hans.Lambermont@nl.origin-it.com>或 [28]<H.Lambermont@chello.nl> ntpswEEP
27. [29]Poul-Henning Kamp <phk@FreeBSD.ORG> Oncore driver（原作者）
28. [30]Frank Kardel [31]<kardel (at) ntp (dot) org> PARSE <GENERIC> (driver 14参考时钟)、用于PARSE的STREAMS模块、支持脚本、sy-slog清理、动态接口处理
29. [32]Johannes Maximilian Kuehn <kuehn@ntp.org> 将sntp重写为

comply with NTPv4 specification, ntpq saveconfig
30. [33]William L. Jones <jones@hermes.chpc.utexas.edu> RS/6000 AIX modifications, HPUX modifications
31. [34]Dave Katz <dkatz@cisco.com> RS/6000 AIX port
32. [35]Craig Leres <leres@ee.lbl.gov> 4.8BSD port, ppsclock, Magnavox GPS clock driver
33. [36]George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port
34. [37]Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
35. [38]Lars H. Mathiesen <thorinn@dku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
36. [39]Danny Mayer <mayer@ntp.org> Network I/O, Windows Port, Code Maintenance
37. [40]David L. Mills <mills@udel.edu> Version 4 foundation, precision kernel; clock drivers: 1, 3, 4, 6, 7, 11, 13, 18, 19, 22, 36
38. [41]Wolfgang Moeller <moeller@gwdg.v1.dnet.gwdg.de> VMS port
39. [42]Jeffrey Mogul <mogul@pa.dec.com> ntptrace utility
40. [43]Tom Moore <tmooore@fielvel.daytonoh.ncr.com> i386 svr4 port
41. [44]Kamal A Mostafa <kamal@whence.com> SCO OpenServer port
42. [45]Derek Mulcahy <derek@toybox.demon.co.uk> and [46]Damon Hart-Davis <d@hd.org> ARCRON MSF clock driver
43. [47]Rob Neal <neal@ntp.org> Bancomm refclock and config/parse code maintenance
44. [48]Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.de> monitoring/trap scripts, statistics file handling
45. [49]Dirce Richards <dirce@zk3.dec.com> Digital UNIXV4.0 port
46. [50]Wilfredo S nchez <wsanchez@apple.com> added support for NetInfo
47. [51]Nick Sayer <mrapple@quack.kfu.com> SunOS streams modules
48. [52]Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory
49. [53]Ray Schnitzler <schnitz@unipress.com> Unixware I port
50. [54]Michael Shields <shields@tembel.org> USNO clock driver
51. [55]Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver
52. [56]Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfigure makeover, various other bits (see the Changelog)
53. [57]Kenneth Stone <ken@sdd.hp.com> HP-UX port
54. [58]Ajit Thyagarajan <ajit@ee.udel.edu> IP multicast/anycast support
55. [59]Tomoaki TSURUOKA <tsuruoka@nc.fukuoka-u.ac.jp> TRAK clock driver
56. [60]Brian Utterback <brian.utterback@oracle.com> General codebase, Solaris issues
57. [61]Loganaden Velvindron <loganaden@gmail.com> Sandboxing (libseccomp) support
58. [62]Paul A Vixie <vixie@vix.com> TrueTime GPS driver; generic TrueTime clock driver
59. [63]Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de> corrected and validated HTML documents according to the HTML DTD

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE

=====

PNG Reference Library License version 2

- * Copyright (c) 1995-2019 The PNG Reference Library Authors.
- * Copyright (c) 2018-2019 Cosmin Truta.
- * Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson.
- * Copyright (c) 1996-1997 Andreas Dilger.
- * Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

The software is supplied "as is", without warranty of any kind, express or implied, including, without limitation, the warranties of merchantability, fitness for a particular purpose, title, and non-infringement. In no event shall the Copyright owners, or anyone distributing the software, be liable for any damages or other liability, whether in contract, tort or otherwise, arising from, out of, or in connection with the software, or the use or other dealings in the software, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this software, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated, but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

PNG Reference Library License version 1 (for libpng 0.5 through 1.6.35)

libpng versions 1.0.7, July 1, 2000, through 1.6.35, July 15, 2018 are Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson, are derived from libpng-1.0.6, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors:

Simon-Pierre Cadieux
Eric S. Raymond
Mans Rullgard
Cosmin Truta
Gilles Vollant
James Yu
Mandar Sahastrabuddhe
Google Inc.
Vadim Barkov

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

Some files in the "contrib" directory and some configure-generated files that are distributed with libpng have other copyright owners, and are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from libpng-0.96, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the

list of Contributing Authors:

Tom Lane
Glenn Randers-Pehrson
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88, and are distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler
Kevin Bracey
Sam Bushell
Magnus Holmgren
Greg Roelofs
Tom Tanner

Some files in the "scripts" directory have other copyright owners, but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger
Dave Martindale
Guy Eric Schalnat
Paul Schmidt
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

-
- Module: libxkbcommon
-

Copyright 2009-2012, 2016 Daniel Stone
Copyright 2012 Ran Benita <ran234@gmail.com>
Copyright 2010, 2012 Intel Corporation

-
- Module: libjpeg
-

This software is based in part on the work of the Independent JPEG Group.

-
- Module: libpng
-



符合NTPv4规范, ntpq saveconfig
30. [33]William L. Jones <jones@hermes.chpc.utexas.edu> RS/6000
AIX改进和HPUX改进
31. [34]Dave Katz <dkatz@cisco.com> RS/6000 AIX端口
32. [35]Craig Leres <leres@ee.lbl.gov> 4.4BSD端口、ppsclock、Ma-
gnavox GPS时钟驱动程序
33. [36]George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1端口
34. [37]Louis A. Mamakos <louie@ni.umd.edu>基于MD5的身份验证
35. [38]Lars H. Mathiesen根据RFC-1305对基础代码的<thorinn@
diku.dk>第3版的改编
36. [39]Danny Mayer <mayer@ntp.org>Network I/O、Windows端口、代码维护

37. [40]David L. Mills <mills@udel.edu>第四版基础，精密内
核：时钟驱动程序：1、3、4、6、7、11、13、18、19、
22, 36
38. [41]沃尔夫冈·莫勒<moeller@gwdgv1.dnet.gwdg.de> VMS端口
39. [42]Jeffrey Mogul <mogul@pa.dec.com> ntptrace实用程序
40. [43]Tom Moore <tmoore@fieval.daytonoh.ncr.com> i386 svr4端口
41. [44]KamalA Mostafa <kamal@whence.com> SCO OpenServer端口
42. [45]Derek Mulcahy <derek@toybox.demon.co.uk> 和 [46]Damon
Hart-Davis <d@hd.org> ARCRON MSF时钟驱动程序
43. [47]Rob Neal <neal@ntp.org> Bancomm refclock和config/parse代码维
护
44. [48]Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.
de>监控/陷阱脚本、统计文件处理
45. [49]Dirce Richards <dirce@zk3.dec.com> Digital UNIX V4.0端口
46. [50]Wilfredo Sanchez <wsanchez@apple.com>增加了对NetInfo的支
持
47. [51]Nick Sayer <mrapple@quack.kfu.com> SunOS流式传输模块
48. [52]Jack Sasportas <jack@innovativeinternet.com>在html/pic子
目录中节省了很多空间
49. [53]Ray Schnitzler <schnitz@unipress.com> Unixware1端口
50. [54]Michael Shields <shields@tembel.org>美国海军天文台时钟驱动程序
51. [55]Jeff Steinman <jss@pebbles.jpl.nasa.gov>Date PTS时 钟
驱动程序
52. [56]Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfigure
makeover, various other bits (see the Changelog)
53. [57]Kenneth Stone <ken@sdd.hp.com> HP-UX端口
54. [58]Ajit Thyagarajan <ajit@ee.udel.edu>IP组播/单播支持
55. [59]Tomoaki TSURUOKA <tsuruoka@nc.fukuoka-u.ac.jp>TRAK 时
钟驱动程序
56. [60]Brian Utterback <brian.utterback@oracle.com> General codeba-
se, Solaris issues
57. [61]Loganaden Velvindron <loganaden@gmail.com> 沙 盒
(libseccomp) 支持
58. [62]PaulA Vixie <vixie@vix.com> TrueTime GPS驱动程序，
通用TrueTime时钟驱动程序
59. [63]Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de>根据HTML
DTD校正和验证HTML文档

-
-模块: libjpeg -

该软件部分基于独立JPEG组的工作。

-
-模块: libpng -

版权声明、免责声明和许可
=====

PNG参考库许可证版本2

*版权所有(c) 1995-2019 The PNG Reference Library Authors。
*版权所有(c) 2018-2019 CosminTruta。
*版权所有(c) 2000-2002,2004,2006-2018 Glenn Randers-Pehrson。
*版权所有(c) 1996-1997 Andreas Dilger。
*版权所有(c) 1995-1996 Guy Eric Schalinat, Group 42, Inc.

本软件以“现状”提供，不附带任何形式的明示或暗示担
保，包括但不限于适销性、特定用途适用性、所有权及不
侵权等保证。无论何种情形，版权方或任何分发软件者均
无需承担因软件本身或其使用/交易引发的损害赔偿責任，
无论该责任源于合同纠纷、侵权行为或其他原因，即使已
知悉此类损害风险亦不例外。

特此授予您使用、复制、修改和分发本软件或其部分的权
限，以任何目的免费使用，但须遵守以下限制：

- 1.不得对软件的来源进行不实陈述，您不得声称自己编写了原
始软件。如果在产品中使用本软件，我们希望您能在产品文
档中注明，但这不是必须的。
- 2.改变的源版本必须清楚标明，不得被错误地描述为原始软
件。
- 3.本版权声明不得从任何来源或经过修改的来源分发中删除
或更改。

PNG参考库许可证版本1（适用于libpng 0.5至1.6.35）

libpng版本1.0.7（2000年7月1日发布）至1.6.35（2018年7月15日发布）的版
权声明：版权所有©2000-2002、2004、2006-2018年，由格伦·兰德斯-佩尔
森（Glenn Randers-Pehrson）开发，其源代码基于libpng-1.0.6协议，并遵循
与libpng-1.0.6相同的免责声明及许可条款。现将以下贡献者加入贡献者名
单：

西蒙·埃皮尔·卡迪厄
埃里克·S·雷蒙德·
曼斯·鲁尔加德
科斯特特鲁塔
吉尔·沃兰
余俊
曼达萨斯特拉布德谷
歌公司。
瓦迪姆·巴尔科夫

并在免责声明中添加以下内容：

对于妨碍您使用图书馆或侵犯版权的情况，我们不提供担
保。对于我们的努力或图书馆是否满足您的特定目的或需
要，我们也不提供担保。本图书馆提供所有故障，用户承担
质量、性能、准确性及努力的全部风险。

“contrib”目录中的某些文件和一些配置生成的文件与libpng一起分
发，它们有其他版权所有，并且是根据其他开源许可证发布的。

libpng版本0.97（1998年1月）至1.0.6（2000年3月20日）的版权归Glenn
Randers-Pehrson所有（版权期1998-2000），这些版本基于libpng-0.96开
发，其分发声明与许可条款与libpng-0.96完全一致，并新增了以下人员
信息：

贡献作者列表：

汤姆·莱恩
格伦·兰德斯-佩尔森
威廉·范·沙伊克

libpng 0.89版本（1996年6月）至0.96版本（1997年5月）的版权
归Andreas Dilger所有（1996-1997），这些版本基于libpng-0.88开
发，分发时遵循与libpng-0.88相同的免责声明和许可协议，并在
贡献者名单中新增以下人员：

约翰·鲍勒凯文·布
雷西·萨姆·布舍尔
马格努斯·霍尔姆
格伦格雷格·罗洛
夫斯汤姆·坦纳

“scripts”目录中的某些文件有其他版权所有，但它们是
根据此许可证发布的。

libpng版本0.5（1995年5月）到0.88（1996年1月）的版权归Guy
Eric Schalinat, Group 42, Inc.所有，版权期限为1995年至1996年。

出于本版权和许可的目的，“贡献作者”
定义为以下个体集合：

安德烈亚斯·迪尔格
戴夫·马丁代尔盖伊·
埃里克·沙尔纳特保
罗·施密特蒂姆·韦格
纳

PNG参考库按“现状”提供。贡献作者及Group 42公司特别声
明放弃所有明示或暗示的担保，包括但不限于适销性担保和适
用性担保。即使已被告知相关风险，贡献作者及Group 42公司
仍不承担因使用PNG参考库而产生的直接、间接、附带、特
殊、示范性或后果性损害赔偿責任。

特此授予您为了任何目的使用、复制、修改和分发本源代码或其
部分的权限，无需支付费用，但须遵守以下限制：

- 1.不能歪曲此源代码的来源。
- 2.改变的版本必须清楚标明，不得被误认为是原始来源。
- 3.本版权声明不得从任何来源或经过修改的来源分发中删除
或更改。

“贡献作者”和Group 42, Inc.特别允许并且鼓励免费使用此源代
码，将其作为支持商业产品中PNG文件格式的组件。如果在产品
中使用此源代码，则不需要致谢，但如果您这样做，我们将不胜感
激。

-
-模块: libxkbcommon -

版权所有2009-2012,2016 Daniel Stone版权所有2012
Ran Benita <ran234@gmail.com>版权所有2010,2012
Intel Corporation

Copyright 2008, 2009 Dan Nicholson
Copyright 2010 Francisco Jerez <currojerez@riseup.net>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 1985, 1987, 1988, 1990, 1998 The Open Group

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the names of the authors or their institutions shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the authors.

Copyright (c) 1993, 1994, 1995, 1996 by Silicon Graphics Computer Systems, Inc.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Silicon Graphics not be used in advertising or publicity pertaining to distribution of the software without specific prior written permission. Silicon Graphics makes no representation about the suitability of this software for any purpose. It is provided "as is" without any express or implied warranty.

SILICON GRAPHICS DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL SILICON

GRAPHICS BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright 1987, 1988 by Digital Equipment Corporation, Maynard, Massachusetts.

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Digital not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

DIGITAL DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL DIGITAL BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (C) 2011 Joseph Adams <joeyadams3.14159@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 1996 by Joseph Moss
Copyright (C) 2002-2007 Free Software Foundation, Inc.
Copyright (C) Dmitry Golubev <lastguru@mail.ru>, 2003-2004
Copyright (C) 2004, Gregory Mokhin <mokhin@bog.msu.ru>
Copyright (C) 2006 Erdal Ronah

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holder(s) not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. The copyright holder(s) makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THE COPYRIGHT HOLDER(S) DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL THE COPYRIGHT HOLDER(S) BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 1996 Digital Equipment Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the Digital Equipment Corporation shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from Digital Equipment Corporation.

Copyright 1996, 1998 The Open Group

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation.

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE OPEN GROUP BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of The Open Group shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from The Open Group.

Copyright 2004-2005 Sun Microsystems, Inc. All rights reserved.



版权所有2008,2009 Dan Nicholson
版权所有2010 Francisco Jerez <currojerez@riseup.net>

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费许可，以不受限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允许接收软件的人员这样做，前提是满足以下条件：

上述版权声明和本许可声明（包括下一段）应包含在软件的所有副本或重要部分中。

本软件以“现状”提供，不附带任何形式的明示或暗示担保，包括但不限于适销性、特定用途适用性和不侵权性等担保。在任何情况下，作者或版权持有者均不对任何索赔、损害或其他相关责任承担责任。

因软件或软件的使用或其他交易而产生的、无论是合同行为、侵权行为还是其他形式的责任。

版权所有1985、1987、1988、1990、1998 The Open Group

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费的、无限制的、包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，以及允许向提供本软件的人这样做的权利，前提是满足以下条件：

上述版权声明和本许可声明应包含在软件的所有副本或重要部分中。

本软件“按原样”提供，不附带任何明示或暗示的担保，包括但不限于适销性、特定用途适用性和非侵权性担保。在任何情况下，

作者对因软件或软件的使用或其他交易而引起的、或与之相关的任何索赔、损害或其他责任负责，无论该诉讼是合同、侵权或其他形式的。

除非包含在本通知中，否则未经作者事先书面授权，不得在广告中使用作者或其所在机构的名称，或以其他方式推广销售、使用或以其他方式处理本软件。

版权所有(c) 1993、1994、1995、1996，由Silicon Graphics Computer Systems, Inc.所有。

在此，我们授予您使用、复制、修改和分发本软件及其文档的权限，用于任何目的且无需支付费用。前提是所有副本中均需包含上述版权声明，并且版权声明和本许可声明都需出现在支持文档中。此外，未经事先书面明确许可，不得在与软件分发相关的广告或宣传中使用Silicon Graphics的名称。Silicon Graphics对于本软件是否适用于任何用途不作任何声明。本软件是“按原样”提供的，不附带任何明示或暗示的担保。

硅图公司特别声明，对于本软件不作任何担保，包括对适销性和特定用途适用性的所有默示担保。在任何情况下，硅图公司均不承担任何责任。

对于因使用、数据或利润损失而产生的任何特殊、间接或后果性损害，或因使用或执行本软件而产生的任何损害，无论该行为是否属于合同行为、过失或其他侵权行为，GRAPHICS均不承担任何责任。

版权1987年和1988年由马萨诸塞州梅纳德市的Digital Equipment Corporation所有。

保留所有权利

在此，我们授予您使用、复制、修改和分发本软件及其文档的权限，且无需支付任何费用。前提是所有副本中均需包含上述版权声明，且版权声明与本许可声明需同时出现在支持文档中。此外，未经事先书面许可，不得在与软件分发相关的广告或宣传中使用Digital的名称。

DIGITAL对本软件不作任何保证，包括对适销性和适用性的所有暗示保证。DIGITAL对因使用、数据或利润的损失而产生的任何特殊、间接或后果性损害或任何其他损害概不负责，无论该等损害是由于合同行为、过失或其他侵权行为引起，还是由于或与本软件的使用或执行有关。

版权所有(C) 2011 Joseph Adams <joeypadams3.14159@gmail.com>

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予无限制地交易本软件的许可，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售本软件副本的权利，并允许向本软件提供者授予本软件的人进行交易，但须遵守以下条件：

上述版权声明和本许可声明应包含在软件的所有副本或重要部分中。

本软件“按原样”提供，不附带任何明示或暗示的担保，包括但不限于适销性、特定用途适用性和非侵权性担保。在任何情况下，

作者或版权持有人应对因以下原因产生的任何索赔、损害赔偿或其他责任（无论是合同纠纷、侵权行为或其他形式）负责：

与软件或其使用或其他协议相关的条款
软件。

-

-模块：xkeyboard-config -

版权所有1996 Joseph Moss
版权所有(C) 2002-2007 Free Software Foundation, Inc.
版权所有(C) Dmitry Golubev <lastguru@mail.ru>, 2003-2004
版权所有(C) 2004, Gregory Mokhin <mokhin@bog.msu.ru>版权所有(C)
2006 Erdal Ronah

特此授予您免费使用、复制、修改、分发及销售本软件及其文档的权限，但须满足以下条件：所有副本必须包含上述版权声明，且版权声明与本授权声明需同时出现在支持文档中；未经书面许可，不得在与软件分发相关的广告或宣传中使用版权持有者名称。版权持有者对本软件的适用性不做任何声明，本软件以“现状”提供，不附带任何明示或暗示的保证。

版权持有人(S)否认与本软件有关的所有保证，

包括对适销性和适用性的所有默示保证，版权持有人(S)在任何情况下均不对因使用损失导致的任何特殊、间接或后果性损害或任何其他损害负责，因使用或执行本软件而产生的或与之相关的违约、过失或其他侵权行为所造成的损失或利润。

版权所有(c) 1996 Digital Equipment Corporation

特此免费授予任何获得本软件和相关文档文件（“软件”）副本的人士不受限制地使用软件的权利，包括但不限于使用、复制、修改、合并、发布、分发、转授权和销售软件副本的权利，并且允许接收软件的人员这样做，但须遵守以下条件：

上述版权声明和本许可声明应包含在软件的所有副本或重要部分中。

本软件“按原样”提供，不包含任何明示或暗示的担保，包括但不限于适销性、特定用途适用性和不侵权担保。在任何情况下，数字设备公司均不对因软件或软件的使用或其他交易引起的、或与之相关的合同、侵权或其他责任的任何索赔、损害赔偿或其他责任负责。

未经Digital Equipment Corporation事先书面授权，不得在广告中使用“Digital Equipment Corporation”名称或以其他方式推广本软件的销售、使用或其他交易，除非包含在本通知中。

版权所有1996,1998 The Open Group

在此，您被授予无用地使用、复制、修改、分发和销售本软件及其文档的权限，以用于任何目的，前提是所有副本中都出现上述版权声明，并且版权声明和此许可通知都出现在支持文档中。

上述版权声明和本许可声明应包含在软件的所有副本或重要部分中。

软件“按原样”提供，不包含任何明示或暗示的担保，包括但不限于适销性、特定用途适用性和非侵权性担保。

在任何情况下，开放群组均不对因软件或软件的使用或其他交易而引起的、源于或与之相关的合同、侵权或其他责任的任何索赔、损害赔偿或其他责任负责。

除非包含在本通知中，否则未经the Open Group事先书面授权，不得在广告中使用the Open Group的名称，或以其他方式推广销售、使用或以其他方式处理本软件。

版权所有2004-2005 Sun Microsystems, Inc.保留所有权利。

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 1996 by Silicon Graphics Computer Systems, Inc.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Silicon Graphics not be used in advertising or publicity pertaining to distribution of the software without specific prior written permission. Silicon Graphics makes no representation about the suitability of this software for any purpose. It is provided "as is" without any express or implied warranty.

SILICON GRAPHICS DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL SILICON GRAPHICS BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 1996 X Consortium

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

Copyright (C) 2004, 2006 var Arnfj r Bjarmason <avarab@gmail.com>

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation.

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE OPEN GROUP BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

Copyright (C) 1999, 2000 by Anton Zinoviev <anton@lml.bas.bg>

This software may be used, modified, copied, distributed, and sold, in both source and binary form provided that the above copyright and these terms are retained. Under no circumstances is the author responsible for the proper functioning of this software, nor does the author assume any responsibility for damages incurred with its use.

Permission is granted to anyone to use, distribute and modify this file in any way, provided that the above copyright notice is left intact and the author of the modification summarizes the changes in this header.

This file is distributed without any expressed or implied warranty.

-
- Module: icu
-

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

See Terms of Use <<https://www.unicode.org/copyright.html>> for definitions of Unicode Inc.'s Data Files and Software.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2022 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <https://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either

(a) this copyright and permission notice appear with all copies of the Data Files or Software, or
(b) this copyright and permission notice appear in associated Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Third-Party Software Licenses

This section contains third-party software notices and/or additional terms for licensed third-party software components included within ICU libraries.

ICU License - ICU 1.8.1 to ICU 57.1

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1995-2016 International Business Machines Corporation and others All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

All trademarks and registered trademarks mentioned herein are the property of their respective owners.

Chinese/Japanese Word Break Dictionary Data (cjdict.txt)

The Google Chrome software developed by Google is licensed under
the BSD license. Other software included in this distribution is
provided under other licenses, as set forth below.
#



在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费许可，以不受限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允许接收软件的人士进行上述操作，但须遵守以下条件：

上述版权声明和本许可声明（包括下一段）应包含在软件的所有副本或重要部分中。

本软件以“现状”提供，不附带任何形式的明示或暗示担保，包括但不限于适销性、特定用途适用性和不侵权性等担保。在任何情况下，作者或版权持有者均不对任何索赔、损害或其他相关责任负责。

因软件本身、软件使用或其他与软件相关的协议行为、侵权行为或其他原因引起的责任。

版权所有(c) 1996由Silicon Graphics Computer Systems, Inc.所有。

使用、复制、修改和分发此内容的权限
软件及其文档用于任何目的，且不得
特此授予费用，前提是上述版权
版权声明出现在所有副本中，而且都是版权
通知和本许可通知出现在支持中
文档，以及不要使用Silicon Graphics的名称
用于与分销相关的广告或宣传
在没有事先书面许可的情况下使用软件。
Silicon Graphics不保证其适用性
本软件不得用于任何目的。它“按原样”提供
不附带任何明示或暗示的担保。

硅图公司特别声明，对于本软件不承担任何担保责任，包括对适销性及特定用途适用性的所有默示担保。在任何情况下，硅图公司均不承担因使用或执行本软件而产生的特殊、间接或后果性损害赔偿，包括但不限于因合同行为、过失或其他侵权行为导致的使用损失、数据丢失或利润损失。

版权所有(c) 1996 X Consortium

在此，向获得本软件和相关文档文件（“软件”）副本的任何人授予免费许可，以不受限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发、转授权和/或销售软件副本的权利，并允许接收软件的人这样做，前提是满足以下条件：

上述版权声明和本许可声明应
包含在软件的所有副本或重要部分中。

本软件“按原样”提供，不包含任何明示或暗示的担保，包括但不限于适销性、特定用途适用性和不侵权担保。

在任何情况下，X联合体均不对因软件或软件的使用或其他交易引起的、或与软件或软件的使用或其他交易相关的合同、侵权或其他行为的任何索赔、损害赔偿或其他责任负责。

除非包含在本通知中，否则未经X Consortium事先书面授权，不得使用X Consortium的名称进行广告宣传或以其他方式促进销售、使用或对本软件进行交易。

版权所有(C) 2004,2006 var Arnf r Bjarnason <avarab@gmail.com>

在此授予您使用、复制、修改、分发和出售此软件及其文档的权限，且无需支付任何费用，前提是所有副本中均出现上述版权声明，并且
版权声明和此许可通知均出现在支持文档中。

上述版权声明和本许可声明应为
包含在软件的所有副本或重要部分中。

本软件“按原样”提供，不包含任何明示或暗示的担保，包括但不限于适销性、特定用途适用性和非侵权性担保。

在任何情况下，开放群组均不对因软件或软件的使用或其他交易而引起的、源于或与之相关的合同、侵权或其他方面的任何索赔、损害或其他责任负责。

除非包含在本通知中，否则未经版权所有者优先书面授权，不得在广告中使用版权持有人的名称或以其他方式推广销售、使用或以其他方式处理本软件。

版权所有(C) 1999年和2000年Anton Zinoviev <anton@lml.bas.bg>

只要保留上述版权和这些条款，就可以使用、修改、复制、分发和销售本软件的源代码和二进制形式。作者对本软件的正常运行不承担任何责任，也不对因使用本软件而造成的损失承担责任。

允许任何人使用、分发和修改
以任何方式提供此文件，前提是上述版权声明
保持完整，修改的作者总结
此标题中的更改。

分发本文件时不附带任何明示或暗示的担保。

-
-模块：icu -

UNICODE, INC.许可协议—数据文件和软件

请参阅使用条款< <https://www.unicode.org/copyright.html> >
for definitions of Unicode Inc.'s Data Files and Software.

用户须知：请仔细阅读以下法律协议。
通过下载、安装、复制或以其他方式使用UNICODE INC.的“数据文件”（“数据文件”）和/或软件（“软件”），
您明确接受并同意受本协议所有条款和条件约束。

如果您不同意，请勿下载、安装、复制、分发或使用数据文件或软件。

版权声明与许可声明

版权所有1991-2022 Unicode, Inc.保留所有权利。
根据<https://www.unicode.org/copyright.html>使用条款进行分发。

特此向获得Unicode数据文件和任何相关文档（“数据文件”）或Unicode软件和任何相关文档（“软件”）副本的任何人授予免费许可，以处理数据文件或软件
不受限制，包括但不限于使用、复制、修改、合并、发布、
分发和/或销售副本的权利
数据文件或软件，以及允许接收数据文件或软件的人这样做，前提是：

(a) 版权声明和许可声明随所有副本一起出现
数据文件或软件的，或者
(b) 此版权声明和许可声明出现在相关联的文件中
文件。

数据文件和软件“按原样”提供，不附带任何明示或暗示的担保，包括但不限于适销

性、特定用途适用性和不侵犯第三方权利的担保。

在任何情况下，版权持有人或本通知中包含的版权持有人均不对任何索赔、任何特殊间接或后果性损害赔偿，或因使用损失而产生的任何损害负责，
因使用或执行数据文件或软件而产生的或与之相关的违约行为、过失或其他侵权行为所造成的损失或利润。

除非本通知中包含的，否则未经版权所有者优先书面授权，不得在广告中使用版权持有人的名称，或以其他方式推广销售、使用或交易这些数据文件或软件。

第三方软件许可证

本节包含第三方软件通知和 / 或ICU库中所包含的授权第三方软件
组件的附加条款。

ICU许可证- ICU 1.8.1至ICU 57.1

版权声明与许可声明

版权所有(c) 1995-2016 International Business Machines Corporation和其他所有
权利保留。

特此授予任何获取本软件及关联文档文件（“软件”）副本的个人免费使用权限，允许其无限制地处理软件，包括但不限于使用、复制、修改、合并、发布、分发和/或销售软件副本的权利，并允许接收软件的人员进行上述操作。前提是所有软件副本中均需包含上述版权声明和本许可声明，且支持文档中也需同时包含上述版权声明和本许可声明。

本软件以“现状”提供，不附带任何形式的明示或暗示担保，包括但不限于适销性、特定用途适用性及第三方权利不受侵害等担保。在任何情况下，版权持有人或本声明中提及的任何权利人均无需为任何索赔负责，亦无需承担任何间接或后果性特殊损害，或因使用、数据或利润损失而产生的任何损害，无论该等损害是由于合同行为、过失或其他侵权行为所导致，或因使用或执行本软件而产生或与之相关。

除非包含在本通知中，否则未经版权所有者优先书面授权，不得在广告中使用版权持有人的名称或以其他方式推广销售、使用或以其他方式处理本软件。

本文中提及的所有商标和注册商标均为其各自所有者的财产。

中文/日文Word Break词典数据（cjdict.txt）

#谷歌Chrome软件由谷歌开发，授权给
#BSD许可证。此发行版中包含的其他软件是
#通过其他许可证提供，如下文所述。#



```

# * INCIDENTAL, SPIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
# * (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
# * SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
# * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
# * STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
# * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
# * OF THE POSSIBILITY OF SUCH DAMAGE.
#
#
#
# * Copyright (c) 1999 Computer Systems and Communication Lab,
# * Institute of Information Science, Academia
# * Sinica. All rights reserved.
#
# * Redistribution and use in source and binary forms, with or without
# * modification, are permitted provided that the following conditions
# * are met:
#
# * Redistributions of source code must retain the above copyright
# * notice, this list of conditions and the following disclaimer.
# * Redistributions in binary form must reproduce the above copyright
# * notice, this list of conditions and the following disclaimer in
# * the documentation and/or other materials provided with the
# * distribution.
# * Neither the name of the Computer Systems and Communication Lab
# * nor the names of its contributors may be used to endorse or
# * promote products derived from this software without specific
# * prior written permission.
#
# * THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
# * CONTRIBUTORS
# * "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
# * LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
# * FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
# * REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
# * INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
# * (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
# * SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
# * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
# * STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
# * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
# * OF THE POSSIBILITY OF SUCH DAMAGE.
#
#
#
# Copyright 1996 Chih-Hao Tsai @ Beckman Institute,
# University of Illinois
# c-tsai4@uiuc.edu http://casper.beckman.uiuc.edu/~c-tsai4
#
# -----COPYING.libtabe-----END-----
#
#
# -----COPYING.ipadic-----BEGIN-----
#
# Copyright 2000, 2001, 2002, 2003 Nara Institute of Science
# and Technology. All Rights Reserved.
#
# Use, reproduction, and distribution of this software is permitted.
# Any copy of this software, whether in its original form or modified,
# must include both the above copyright notice and the following
# paragraphs.
#
# Nara Institute of Science and Technology (NAIST),
# the copyright holders, disclaims all warranties with regard to this
# software, including all implied warranties of merchantability and
# fitness, in no event shall NAIST be liable for
# any special, indirect or consequential damages or any damages
# whatsoever resulting from loss of use, data or profits, whether in an
# action of contract, negligence or other tortious action, arising out
# of or in connection with the use or performance of this software.
#
# A large portion of the dictionary entries
# originate from ICOT Free Software. The following conditions for ICOT
# Free Software applies to the current dictionary as well.
#
#

```

```
# Each User may also freely distribute the Program, whether in its
# original form or modified, to any third party or parties, PROVIDED
# that the provisions of Section 3 ("NO WARRANTY") will ALWAYS appear
# on, or be attached to, the Program, which is distributed substantially
# in the same form as set out herein and that such intended
# distribution, if actually made, will neither violate or otherwise
# contravene any of the laws and regulations of the countries having
# jurisdiction over the User or the intended distribution itself.
#
# NO WARRANTY
#
# The program was produced on an experimental basis in the course of the
# research and development conducted during the project and is provided
# to users as so produced on an experimental basis. Accordingly, the
# program is provided without any warranty whatsoever, whether express,
# implied, statutory or otherwise. The term "warranty" used herein
# includes, but is not limited to, any warranty of the quality,
# performance, merchantability and fitness for a particular purpose of
# the program and the nonexistence of any infringement or violation of
# any right of any third party.
#
# Each user of the program will agree and understand, and be deemed to
# have agreed and understood, that there is no warranty whatsoever for
# the program and, accordingly, the entire risk arising from or
# otherwise connected with the program is assumed by the user.
#
# Therefore, neither ICOT, the copyright holder, or any other
# organization that participated in or was otherwise related to the
# development of the program and their respective officials, directors,
# officers and other employees shall be held liable for any and all
# damages, including, without limitation, general, special, incidental
# and consequential damages, arising out of or otherwise in connection
# with the use or inability to use the program or any product, material
# or result produced or otherwise obtained by using the program,
# regardless of whether they have been advised of, or otherwise had
# knowledge of, the possibility of such damages at any time during the
# project or thereafter. Each user will be deemed to have agreed to the
# foregoing by his or her commencement of use of the program. The term
# "use" as used herein includes, but is not limited to, the use,
# modification, copying and distribution of the program and the
# production of secondary products from the program.
#
# In the case where the program, whether in its original form or
# modified, was distributed or delivered to or received by a user from
# any person, organization or entity other than ICOT, unless it makes or
# grants independently of ICOT any specific warranty to the user in
# writing, such person, organization or entity, will also be exempted
# from and not be held liable to the user for any such damages as noted
# above as far as the program is concerned.
#
# -----COPYING.ipadic-----END-----
```

```
# Copyright (C) 2016 and later: Unicode, Inc. and others.
# License & terms of use: http://www.unicode.org/copyright.html
# Copyright (c) 2015 International Business Machines Corporation
# and others. All Rights Reserved.
#
# Project: https://github.com/rober42539/lao-dictionary
# Dictionary: https://github.com/rober42539/lao-dictionary/laoDict.t
# License: https://github.com/rober42539/lao-dictionary/LICENSE.txt
#
# (copied below)
```

```
# Copyright (C) 2013 Brian Eugene Wilson, Robert Martin Campbell.
# All rights reserved.
#
# Redistribution and use in source and binary forms, with or without
# modification, are permitted provided that the following conditions are met:
#
```



#*本软件由版权持有人和贡献者提供
#* “现状” 以及任何明示或暗示的保证, 包括但不限于
#*仅限于适销性和适用性的默示担保
#* **FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN**
#*注册人或贡献者应对任何直接、间接、

#字典条目的大部分
#源自ICOT自由软件。以下为ICOT的适用条件
#自由软件也适用于当前的词典。
#

本文件源自2020年11月22日的上述词典版本

版权所有(C) 2013 Brian Eugene Wilson, Robert Martin Campbell。
保留所有权利。

以源代码和二进制形式重新分发和使用，无论是否
允许修改，但必须满足以下条件：#

```
# Redistributions of source code must retain the above copyright notice, this
# list of conditions and the following disclaimer.Redistributions in binary
# form must reproduce the above copyright notice, this list of conditions and
# the following disclaimer in the documentation and/or other materials
# provided with the distribution.
#
# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
# "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
# LIMITED TO,THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
# FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
# COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
# INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
# (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
# SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
# HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,WHETHER IN CONTRACT,
# STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
# ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
# OF THE POSSIBILITY OF SUCH DAMAGE.
# -----
```

Burmese Word Break Dictionary Data (burmesdict.txt)

```
# Copyright (c) 2014 International Business Machines Corporation
# and others.All Rights Reserved.
#
# This list is part of a project hosted at:
#   github.com/kanyawtech/myanmar-karen-word-lists
#
# -----
# Copyright (c) 2013, LeRoy Benjamin Sharon
# All rights reserved.
#
# Redistribution and use in source and binary forms, with or without
# modification, are permitted provided that the following conditions
# are met:Redistributions of source code must retain the above
# copyright notice, this list of conditions and the following
# disclaimer. Redistributions in binary form must reproduce the
# above copyright notice, this list of conditions and the following
# disclaimer in the documentation and/or other materials provided
# with the distribution.
#
# Neither the name Myanmar Karen Word Lists, nor the names of its
# contributors may be used to endorse or promote products derived
# from this software without specific prior written permission.
#
# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
# CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
# INCLUDING, BUT NOT LIMITED TO,THE IMPLIED WARRANTIES OF
# MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
# DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS
# BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
# EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
# TO,PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
# DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
# ANY THEORY OF LIABILITY,WHETHER IN CONTRACT, STRICT LIABILITY, OR
# TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF
# THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
# SUCH DAMAGE.
# -----
```

Time Zone Database

ICU uses the public domain data and code derived from Time Zone Database for its time zone support.The ownership of the TZ database is explained in BCP 175:Procedure for Maintaining the Time Zone Database section 7.

```
# 7. Database Ownership
#
# The TZ database itself is not an IETF Contribution or an IETF
```

```
# document. Rather it is a pre-existing and regularly updated work
# that is in the public domain, and is intended to remain in the
# public domain. Therefore, BCPs 78 [RFC5378] and 79 [RFC3979] do
# not apply to the TZ Database or contributions that individuals make
# to it. Should any claims be made and substantiated against the TZ
# Database, the organization that is providing the IANA
# Considerations defined in this RFC, under the memorandum of
# understanding with the IETF, currently ICANN, may act in accordance
# with all competent court orders. No ownership claims will be made
# by ICANN or the IETF Trust on the database or the code. Any person
# making a contribution to the database or code waives all rights to
# future claims in that contribution or in the TZ Database.
```

Google double-conversion

Copyright 2006-2011, the V8 project authors. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

File: aclocal.m4 (only for ICU4C)
Section: pkg.m4 - Macros to locate and utilise pkg-config.

Copyright 2004 Scott James Remnant <scott@netsplit.com>.
Copyright 2012-2015 Dan Nicholson <dbn.lists@gmail.com>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

As a special exception to the GNU General Public License, if you distribute this file as part of a program that contains a configuration script generated by Autoconf, you may include it under the same distribution terms that you use for the rest of that program.

(The condition for the exception is fulfilled because ICU4C includes a configuration script generated by Autoconf, namely the `configure` script.)

File: config.guess (only for ICU4C)

This file is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, see <<https://www.gnu.org/licenses/>>.

As a special exception to the GNU General Public License, if you distribute this file as part of a program that contains a configuration script generated by Autoconf, you may include it under the same distribution terms that you use for the rest of that program. This Exception is an additional permission under section 7 of the GNU General Public License, version 3 ("GPLv3").

(The condition for the exception is fulfilled because ICU4C includes a configuration script generated by Autoconf, namely the `configure` script.)

File: install-sh (only for ICU4C)

Copyright 1991 by the Massachusetts Institute of Technology

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

Dropbear contains a number of components from different sources, hence there are a few licenses and authors involved.All licenses are fairly non-restrictive.

The majority of code is written by Matt Johnston, under the license below.

Portions of the client-mode work are (c) 2004 Mihnea Stoenescu, under the same license:

Copyright (c) 2002-2020 Matt Johnston
Portions copyright (c) 2004 Mihnea Stoenescu
All rights reserved.



```
#源代码的再分发必须保留上述版权声明，这
#条件列表及以下免责声明。二进制分发
#表格必须复制上述版权声明、本条件清单和
#文档和/或其他材料中的以下免责声明
#随分发提供。
#
#本软件由版权持有人和贡献者提供
# “现状” 以及任何明示或暗示的担保，包括但不限于
#仅限于适销性和适用性的默示担保
#非特定用途免责。在任何情况下，本
#版权所有者或贡献者应对任何直接、
#间接、附带、特殊、示范性或后果性损害赔偿
#（包括但不限于，采购替代品或
#服务；使用、数据或利润损失；或业务中断）
#
#无论合同、严格责任或侵权（包括过失或其他）等任何责任理论，具体原因何在
#即使已被告知，仍可能因使用本软件而出现问题
#这种损害的可能性之一。
# -----
# -----
# -----
```

```
缅甸语 Word Break 词典数据（burmesdict.txt）

#版权所有(c) 2014 International Business Machines Corporation
#和其他。保留所有权利。
#
#此列表是托管在以下位置的项目的一部分：
#  github.com/kanyawtech/myanmar-karen-word-lists
#
# -----
#版权所有(c) 2013, LeRoy Benjamin Sharon
#保留所有权利。
#
#以源代码和二进制形式重新分发和使用，无论是
#允许修改，前提是满足以下条件
#满足以下条件：源代码的重新分发必须保留上述内容
#版权声明，此条件列表和以下内容
#免责声明。二进制形式的分发必须复制
#上述版权声明、此条件列表和以下内容
#文档和/或提供的其他材料中的免责声明
#与分布有关。
#
#无论是缅甸克伦族Word名单，还是其名称
#贡献者可能被用来认可或推广衍生产品
#
#未经事先书面许可，不得使用本软件的#。#
```

```
#本软件由版权持有人和
#贡献方“按原样”以及任何明示或暗示的保证，
#包括但不限于以下的默示担保：
#适销性与特定用途适用性为
#保密。在任何情况下，版权持有人或贡献者均不得
#承担任何直接、间接、附带、特殊及
#示范性或后果性损害（包括但不限于
#TO，采购替代货物或服务；使用损失，
#数据、利润或业务中断）无论由何种原因引起，且发生在
#任何责任理论，无论是合同责任、严格责任还是
#因任何原因导致的侵权（包括过失或其他原因）
#本软件的使用，即使被告知可能性
#这种损坏。
# -----
# -----
# -----
```

时区数据库

ICU使用公共域数据和从时区数据库派生的代码作为其时区支持。BCP 175：维护时区数据库程序第7节中解释了TZ数据库的所有权。

```
# 7.数据库所有权
#
#TZ数据库本身不是IETF贡献或IETF
```

```
#文档。它是一个预先存在的、定期更新的工作
#是公共领域的，而且打算留在公共领域
#属于公共领域。因此，BCP 78 [RFC5378]和79 [RFC3979]确实
#不适用于TZ数据库或个人做出的贡献
#至此。如果对TZ提出并证实了任何主张
#数据库，提供IANA的组织
#本RFC中定义的注意事项，根据备忘录
#与IETF，目前是ICANN，的理解可能会按照规定制行事
#附有所有有效法院命令。不主张所有
#由ICANN或IETF Trust对数据库或代码的#。任何人
#向数据库或代码做出贡献将放弃所有权利
#该贡献或TZ数据库中的未来索赔。
# -----
# -----
# -----
```

谷歌双转换

版权所有2006-2011，V8项目作者。保留所有权利。

允许重新分发和使用源代码和二进制形式，无论是否修改，前提是满足以下条件：

- *源代码的重新分发必须保留上述版权声明、此条件列表和以下免责声明。
- *二进制形式的转授必须在随附的文档和/或材料中复制上述版权声明、此条件列表以及以下免责声明。
- *未经事先书面许可，不得使用Google Inc.的名称或其贡献者的名称来认可或推广从本软件衍生的产品。

本软件由版权持有者及贡献者以“现状”提供，任何明示或暗示的担保（包括但不限于适销性、特定用途适用性的默示担保）均不承担。无论何种情形，版权方或贡献者均无需对因使用本软件而产生的直接、间接、附带、特殊、后果性损害（包括但不限于采购替代商品或服务、使用数据/利润损失、业务中断等），无论责任归属如何——无论是合同责任、严格责任还是侵权责任（包括过失或其他形式），即使已知悉此类损害的可能性，亦不承担任何赔偿责任。

文件：aclocal.m4（仅用于ICU4C）
章节：pkg.m4 -定位和使用pkg-config的宏。

版权所有2004 Scott James Remnant <scott@netsplit.com>。
版权所有2012-2015 Dan Nicholson <dbn.lists@gmail.com>

本程序是自由软件：您可以根据自由软件基金会发布的GNU通用公共许可证的条款重新分发和/或修改它：可以是该许可证的第2版，也可以（根据您的选择）任何后续版本。

这个程序是分发的，希望它有用，但是不提供任何担保；甚至不提供关于适销性或特定用途适用性的暗示担保。

有关详细信息，请参见GNU通用公共许可证。

您应该已经收到了本程序的GNU通用公共许可证副本；如果没有，请写信给自由软件基金会，地址是：59 Temple Place - Suite 330, Boston, MA 02111-1307, USA。

作为GNU通用公共许可证的特殊例外，如果将此文件作为包含由Autoconf生成的配置脚本的程的一部分进行分发，则可以按照您为该程序的其余部分所使用的相同分发条款将其包括在内。

（满足例外条件，因为ICU4C包含由Autoconf生成的配置脚本，即`configure`脚本。）

文件：config.guess（仅适用于ICU4C）

本文件属于自由软件，您可以根据自由软件基金会发布的GNU通用公共许可证条款重新分发和/或修改它：可以是该许可证的第3版，也可以（根据您的选择）任何后续版本。

这个程序是分发的，希望它有用，但是不提供任何担保；甚至不提供关于适销性或特定用途适用性的暗示担保。有关详细信息，请参见GNU通用公共许可证。

您应该已经收到本程序附带的GNU通用公共许可证副本；如果没有，请参见< <https://www.gnu.org/licenses/> >。

作为GNU通用公共许可证的特殊例外，如果将此文件作为包含由Autoconf生成的配置脚本的程的一部分进行分发，则可以按照该程序其余部分所使用的相同分发条款将其包括在内。此例外是第7节中的附加许可的GNU通用公共许可证，版本3（“GPLv3”）。

（满足例外条件，因为ICU4C包含由Autoconf生成的配置脚本，即`configure`脚本。）

文件：install-sh（仅适用于ICU4C）

版权归麻省理工学院，1991年

特此授予您免费使用、复制、修改、分发及销售本软件及其文档的权限，但需满足以下条件：所有副本必须包含上述版权声明，且支持性文档中须同时包含版权声明和本授权声明；未经事先书面明确许可，不得在与软件分发相关的广告或宣传中使用麻省理工学院（MIT）名称。MIT不对本软件的适用性作出任何保证，本软件以“现状”形式提供。不附带明示或暗示的担保。

Dropbear包含来自不同来源的多个组件，因此涉及一些许可证和作者。所有许可证都相当非限制性的

大部分代码由Matt Johnston编写，使用以下许可证。

客户端模式工作的部分由(c) 2004 Mihnea Stoenescu，根据相同的许可证：

版权所有(c) 2002-2020 Matt Johnston
部分版权所有(c) 2004 Mihnea Stoenescu
保留所有权利。

a copy of the fonts accompanying this license ("Fonts") and associated documentation files (the "Font Software"), to reproduce and distribute the modifications to the Bitstream Vera Font Software, including without limitation the rights to use, copy, merge, publish, distribute, and/or sell copies of the Font Software, and to permit persons to whom the Font Software is furnished to do so, subject to the following conditions:

The above copyright and trademark notices and this permission notice shall be included in all copies of one or more of the Font Software typefaces.

The Font Software may be modified, altered, or added to, and in particular the designs of glyphs or characters in the Fonts may be modified and additional glyphs or characters may be added to the Fonts, only if the fonts are renamed to names not containing either the words "Tavmjong Bah" or the word "Arev".

This License becomes null and void to the extent applicable to Fonts or Font Software that has been modified and is distributed under the "Tavmjong Bah Arev" names.

The Font Software may be sold as part of a larger software package but no copy of one or more of the Font Software typefaces may be sold by itself.

THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL TAVMJONG BAH BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM OTHER DEALINGS IN THE FONT SOFTWARE.

Except as contained in this notice, the name of Tavmjong Bah shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Font Software without prior written authorization from Tavmjong Bah. For further information, contact: tavmjong @ free . fr.

=====

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- You must give any other recipients of the Work or Derivative Works a copy of this License; and
- You must cause any modified files to carry prominent notices stating that You changed the files; and
- You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.



随本许可提供的字体副本（“字体”）及相关文档文件（“字体软件”），用于复制和分发Bitstream Vera字体软件的修改版本，包括但不限于使用、复制、合并、发布、分发和/或销售字体软件副本的权利，并允许接收方人员进行上述操作，但须遵守以下条件：

上述版权和商标声明以及本许可声明应包含在字体软件字体的一个或多个副本中。

只有在将字体重命名为不包含“Tavmjong Bah”或“阿瑞夫”字样的名称时，方可修改、更改或添加字体软件，特别是可修改字体中的字形或字符设计，并可向字体中添加额外的字形或字符。

如果字体或字体软件已被修改，并且以“Tavmjong BahArev”名称进行分发，则本许可证对这些字体或字体软件无效。

字体软件可作为大型软件包的一部分出售，但不得单独销售字体软件中的一种或多种字体。

字体软件以“现状”提供，不附带任何形式的明示或暗示担保，包括但不限于适销性、特定用途适用性以及版权、专利、商标或其他权利的非侵权性担保。TAVMJONG BAH公司对因字体软件使用或无法使用而产生的任何索赔、损害或其他责任（包括一般性、特殊性、间接性、附带性或后果性损害）概不负责，无论该等责任源于合同纠纷、侵权行为或其他形式的诉讼。

未经Tavmjong Bah事先书面授权，不得在广告中使用Tavmjong Bah的名称或以其他方式推广字体软件的销售、使用或其他交易。如需进一步信息，请联系：tavmjong @ free. fr。

=====

Apache许可证
版本2.0,2004年1月
<http://www.apache.org/licenses/>

使用、复制和分发的条款与条件

1. 定义。

“许可”指使用、复制、和本文件第1至第9节定义的分发。

“授权方”指版权所有或经授权的实体授予许可的版权所有人。

“法律实体”是指代理实体和所有实体的联合其他控制、被控制或处于共同状态的实体与该实体的控制。就本定义而言，“控制”是指(i)直接或间接地导致的权力，对该实体的方向或管理，无论是通过合同还是否则，或(ii)拥有50%（50%）或更多的已发行股份，或(iii)该实体的受益所有权。

“您”（或“您的”）指个人或法人实体行使本许可证授予的权限。

“来源”表格是指进行修改的首选表格，包括但不限于软件源代码、文档源文件和配置文件。

“物体”形式是指由机械产生的任何形式

源代码形式的转换或翻译，包括但不限于编译后的对象代码、生成的文档以及转换为其他媒体类型。

“作品”是指根据许可证提供的创作作品，无论源代码形式还是目标形式，如作品中包含或附加的版权声明所示（示例见下文附录）。

“衍生作品”指任何基于（或衍生自）本作品的创作，无论其以源代码或目标代码形式存在。此类作品的编辑修订、注释说明、扩展内容或其他修改，整体而言应视为原创作品。根据本许可协议规定，衍生作品不包含那些能够与本作品分离，或仅通过名称关联（或绑定）到本作品接口的创作及其衍生作品。

“贡献”指任何作品创作，包括作品的原始版本及其修改或补充内容，或衍生作品，该作品由版权所有或其授权代表提交给许可方

以纳入作品。根据本定义，“提交”指发送给许可方或其代表的任何形式的电子、口头或书面通信，包括但不限于通过电子邮件列表、源代码控制系统和问题跟踪系统进行的通信——这些系统由许可方或其代表管理，用于讨论和改进作品，但不包括版权方以明显标记或书面方式指定为“非贡献”的通信。

“贡献者”指许可方以及代表许可方接收了贡献并随后将其纳入到作品中的任何个人或法人实体。

2. 版权许可授予。根据本许可证的条款和条件，每位贡献者特此授予您一项永久、全球性、非独占性、免费、免版税且不可撤销的版权许可，以复制、制作衍生作品、公开展示、公开表演、分许可及以源代码或对象形式分发作品及其衍生作品。

3. 专利许可授予。根据本许可条款，每位贡献者特此授予您一项永久性、全球性、非独占性、免收费用且不可撤销的专利许可（除非本条款另有规定），允许您制造、拥有、使用、出售、销售、进口及以其他方式转让该作品。该许可仅适用于由该贡献者可授权的专利权利要求，且这些权利要求必须因其单独贡献或与所提交作品的组合使用而必然构成侵权。若您对任何实体（包括在诉讼中提出反诉或抗辩）声称工程或工程中包含的贡献构成直接或间接专利侵权，则自提起诉讼之日起，根据本许可证授予您的该工程的任何专利许可应终止。

4. 再分发。您可以在任何媒介中复制和分发本作品或其衍生作品，无论是否修改，并且以源代码或对象形式，前提是您满足以下条件：

- (a) 您必须向作品或衍生作品的任何其他接收者提供本许可证的副本；以及
- (b) 您必须使任何修改过的文件带有突出的说明，说明您已修改了这些文件；以及
- (c) 对于您分发的任何衍生作品，您必须在源代码形式中保留来自作品源代码形式的所有版权、专利、商标和归属通知，但与衍生作品的任何部分无关的通知除外；以及

(d) 若作品包含作为分发组成部分的“版权声明”文本文件，则您分发的任何衍生作品必须包含该声明文件中归属声明的可读副本，但不包括与衍生作品无关的声明。此类副本需至少出现在以下位置之一：作为衍生作品分发的声明文本文件中；随衍生作品提供的源代码或文档中；或由衍生作品生成的展示内容中（若第三方声明通常出现在此类场景）。声明文件内容仅供参考，不会修改许可协议。您可在分发的衍生作品中添加自己的归属声明，这些声明可与作品的声明文本并列或作为补充，前提是此类附加声明不得被视为对许可协议的修改。

您可以在修改中添加自己的版权声明，并且可以针对使用、复制或分发您的修改，或针对作为整体的任何此类衍生作品提供额外的或许不同的许可条款和条件，前提是您对作品的使用、复制和分发遵守本许可证中规定的条件。

5. 贡献提交。除非您明确声明其他情况，否则您有意提交给许可方的任何贡献均应遵循本许可证的条款和条件，不附加任何额外条款或条件。尽管有上述规定，但本协议中的任何内容均不得取代或修改您可能与许可方就此类贡献签订的任何单独许可协议的条款。

6. 商标。本许可证不授予使用许可方的商号、商标、服务标记或产品名称的权限，除非在描述作品来源和复制通知文件内容时出于合理和惯常用途需要。

7. 免责声明。除非适用法律要求或书面同意，许可方提供本作品（以及每位贡献者提供的其贡献）是“按原样”提供的，不提供任何明示或暗示的保证或条件，包括但不限于任何保证或条件

标题、非侵权性、适销性或特定用途适用性。您应自行负责确定使用或重新分发作品的适当性，并自行承担与您根据本许可证行使权限相关的任何风险。

8. 责任限制。在任何情况下，无论依据侵权法（包括过失）、合同或其他法律理论，除非适用法律明文规定（例如故意或重大过失行为）或双方书面协议另有约定，任何贡献者均无需向您承担任何损害赔偿责任。该等责任包括但不限于因本许可协议或使用/无法使用作品所导致的直接、间接、特殊、附带或后果性损害（包括但不限于商誉损失、停工、计算机故障或功能异常等商业损害），即使该等贡献者已知悉此类损害的可能性亦不在此限。

9. 接受担保或额外责任。在重新分发作品或其衍生作品时，您可选择提供并收取费用，接受与本许可协议一致的担保、赔偿或其他责任义务和/或权利。但接受此类义务时，您仅能以自身名义行事并自行承担全部责任，不得代表其他贡献者行事，且仅在您同意为您接受此类担保或额外责任而使任何贡献者遭受的或针对该贡献者的索赔行为，向每位贡献者进行赔偿、辩护并使其免受损害的情况下方可接受。

条款和条件的结束

附录：如何将Apache许可证应用到您的作品。

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets “[]” replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same “printed page” as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the “License”);
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an “AS IS” BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
-----  
-  
- Modules: dtc u-boot-socfpga linux/linux-socfpga busybox termcap  
util-linux libcap systemd iproute2 e2fsprogs dbus-1 freetype qt5 libpbe  
-----
```

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The “Program”, below, refers to any such program or work, and a “work based on the Program” means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term “modification”.) Each licensee is addressed as “you”.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program,

and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the

如果这些内容本身可被视为独立且完整的著作，那么当您将它们作为独立作品分发时，本许可证及其条款并不适用于这些章节。但若您将相同内容作为整体作品的一部分进行分发——而该整体作品是基于本程序创作的——则必须按照本许可证的条款进行分发。本许可证对其他被许可人的授权范围涵盖整个作品，因此无论作者是谁，所有部分均受此授权约束。

因此，本节的目的不是声明权利或质疑您完全由自己创作的作品权利；相反，其目的是行使控制基于本程序的衍生作品或集体作品的分发的权利。

此外，将另一非基于本程序的作品与本程序（或基于本程序的作品）简单地聚集在存储或分发介质的卷上，并不能使该作品纳入本许可证的范围。

3.您可以在上述第1和第2节的条款下，以目标代码或可执行代码形式复制和分发程序（或根据第2节基于程序的作品），前提是您还执行下列操作之一：

- a) 附上完整的对应的机器可读源代码，必须根据第3.1条的条款进行分发
1和2在通常用于软件交换的介质上；或者，
- b) 同时提供一份书面要约，有效期至少为三年，向任何第三方提供完整的机器可读源代码副本，收费不超过您实际分发源代码的成本，并按照上述第1和第2节的条款，通过通常用于软件交换的媒介进行分发；或者，
- c) 同时附上您收到的关于分发相应源代码的要约信息。（根据上文第b小节，此替代方案仅允许用于非商业性分发，并且只有当您以对象代码或可执行形式收到该程序时才允许使用此类要约。）

作品的源代码是指该作品修改时首选的形式。对于可执行作品，完整源代码是指它所包含的所有模块的全部源代码，加上任何相关的接口定义文件，以及用于控制可执行文件的编译和安装。但是，作为特殊例外，分发的源代码不需要包含通常与可执行文件运行的操作系统的主要组件（编译器、内核等）一起分发的内容（无论是源代码还是二进制形式），除非该组件本身随可执行文件一起分发。

如果通过提供对指定地点副本的访问来分发可执行代码或对象代码，则提供对同一地点源代码副本的等效访问也视为源代码的分发，即使第三方没有被强制要求将源代码与对象代码一起复制。

4.未经本许可证明确许可，您不得复制、修改、转授权或分发程序。任何其他形式的复制、修改、转授权或分发行为均属无效，并将自动终止您在本许可证下的权利。但根据本许可证从您处获得副本或权利的各方，在其完全遵守许可条款的前提下，其许可不会被终止。

5.由于您尚未签署本许可协议，因此无需接受其约束。但请注意，任何其他条款均不得授予您修改或分发程序及其衍生作品的权限。根据法律规定，若未接受本许可协议，则此类行为将被禁止。因此，当您对程序（或基于该程序的任何作品）进行修改或分发时，即视为已接受本许可协议及其所有条款和条件，包括复制、分发或修改程序及基于该程序作品的相关规定。

6. 每次您重新分发程序（或基于该

此外，为了每位作者和我们的权益保护，我们希望确保所有人都明白：这款免费软件并不包含任何担保。如果有人修改了软件并传播出去，我们希望接收者知道他们获得的并非原版，这样他人引入的问题就不会影响原作者的声音。

最后，任何自由软件都时刻面临着软件专利的威胁。我们希望避免自由软件的再分发者各自单独获取专利许可，这实际上会使软件变成专有软件。为防止这种情况发生，我们明确要求：任何专利必须授权所有人免费使用，否则就完全不授予许可。

复制、分发和修改的具体条款和条件如下。

GNU通用公共许可证
复制、分发和修改的条款与条件

0.本许可证适用于包含版权声明的任何程序或其他作品，该版权声明表明该作品可以按照本通用公共许可证的条款进行分发。下文中的“程序”指代任何此类程序或作品，“基于程序的作品”指程序或版权法下的任何衍生作品：即包含程序或其部分的作品，不论是逐字或修改后的，和/或翻译成另一种语言的。（下文将翻译包括在“修改”一词中，不限于该含义。）每个被许可人被称为“您”。

复制、分发和修改之外的活动不在本许可证的范围内；它们不在其范围之内。运行程序的行为不受限制，而程序的输出仅在其内容构成基于程序的作品时（与是否通过运行程序制作无关）才受保护。这是否属实取决于该方案的作用。

1.您可以以任何媒介复制和分发程序源代码的逐字副本，前提是您必须在每个副本上显著且恰当地发布适当的版权声明和免责声明；完整保留所有提及本许可证及无担保条款的通知；并随程序一并向其他接收者提供本许可证副本。

您可以对传输副本的物理操作收取费用，您也可以选择提供担保保护以换取费用。

2.您可以修改您拥有的程序或其任何部分，从而形成基于该程序的作品，并且可以按照以上第1节的条款复制和分发此类修改或作品，前提是您还满足所有这些条件：

- a) 您必须使修改后的文件带有醒目的通知，说明您更改了这些文件以及更改的日期。
- b) 您所发布或发布的任何作品，无论整体还是部分包含或派生自本程序或其任何部分，都必须根据本许可证的条款向所有第三方免费授予整体许可。
- c) 如果修改后的程序在常规运行时通常以交互方式读取指令，那么在以最普通方式启动并用于此类交互操作时，必须确保其打印或显示包含以下内容的公告：适当的版权声明、声明不存在担保（或说明您提供担保）以及允许用户在这些条件下重新分发程序，并告知用户如何查看本许可证副本。（例外情况：若程序本身具有交互性但通常不打印此类公告，基于该计划的工作不需要打印公告。）

这些要求适用于整个修改后的工作。如果该工作中的可识别部分不是从程序中衍生出来的，

要将Apache许可证应用于您的作品，请附加以下标准声明，其中的字段用括号“[]”括起来
替换为您的识别信息。（不要包含括号！）文本应以适当的注释语法格式封装在文件中。我们还建议将文件或类名及用途描述与版权声明放在同一“打印页面”上，以便在第三方档案中更容易识别。

版权所有[yyyy][版权所有所有者名称]

根据Apache许可证，版本2.0（“许可证”）获得许可：
除非遵照许可证，否则不得使用此文件。
您可以在 <http://www.apache.org/licenses/>

LICENSE-2.0下列地址获得许可证副本：

除非适用法律要求或书面协议另有规定，否则根据本许可证分发的软件均按“原样”分发，不附带任何明示或暗示的保证或条件。

有关许可证中权限和限制的具体语言，请参见许可证。

-
模块：dtc、u-boot-socfpga、linux/linux-socfpga、busybox、termcap、util-linux、libcapp、systemd、iproute2、c2fsprogs、dbus-1、freetype、qt5、libpbe

GNU通用公共许可证
版本2,1991年6月

版权所有(C) 1989,1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA 每个人都可以复制和分发此许可证文档的逐字副本，但不允许对其进行更改。

序言

大多数软件的许可证都设计成限制用户分享和修改的自由。而GNU通用公共许可证（GPL）的宗旨，正是要保障你分享和修改自由软件的权利——确保所有用户都能自由使用这些软件。该许可证适用于自由软件基金会开发的绝大多数软件，以及任何承诺采用它的程序。（自由软件基金会的其他部分软件则适用GNU较宽松通用公共许可证。）你也可以将它应用到自己的程序中。

当我们谈论自由软件时，我们强调的是自由而非价格。我们的通用公共许可证旨在确保您拥有以下权利：自由分发自由软件副本（如需收费亦可），获取或随时调取源代码，修改软件内容或将其片段用于新的自由程序开发；同时您也清楚自己完全有权行使这些权利。

为了保护您的权利，我们需要制定限制，禁止任何人拒绝您这些权利或要求您放弃这些权利。如果分发软件副本或修改软件，这些限制意味着您需要承担某些责任。

例如，如果您分发此类程序的副本，无论是免费还是收费，您必须将您拥有的所有权利授予接收者。您必须确保他们也可以获得或得到源代码。并且您必须向他们展示这些条款，以便他们知道自己的权利。

我们通过以下两个步骤来保护您的权利：(1)对软件进行版权保护，以及(2)向您提供此许可证，该许可证赋予您复制、分发和/或修改软件的法律权限。

Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER

EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

-
- Modules: kmod systemd libdaemon avahi glib libgpg-error libgcr gnutls
libmicrohttpd strace
-

GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a

本通用公共许可证不允许将您的程序包含在专有软件中。如果您的程序是一个子例程库，您可能认为允许将专有应用程序与该库链接会更有用。如果您希望这样做，请使用GNU较少公共许可证。使用公共许可证，而非本许可证。

```
-----
-
-模块：kmod、systemd、libdaemon、avahi、glib、libgpg-error、libgrypt、
gnutls、libmicro、httpd、strace
-
-----
```

GNU较宽松的公共许可证2.1版，1999年2月

版权所有(C) 1991,1999 Free Software Foundation, Inc.
51 地址：美国马萨诸塞州波士顿市富兰克林街5楼，邮编：02110-1301。允许任何人复制和分发本许可文件的逐字副本，但不允许修改。

这是Lesser GPL的第一个发布版本。它也是GNU库公共许可证第2版的继承者，因此版本号为2.1。

序言

大多数软件的许可证都是为了剥夺你分享和修改它的自由。相比之下，GNU通用公共许可证旨在保证你分享和修改自由软件的自由——确保软件对所有用户都是免费的。

本许可证（即《较小通用公共许可证》）适用于自由软件基金会及其他授权方指定的特定软件包——通常为程序库。您也可选择使用该许可证，但我们建议您首先仔细考量：根据下文说明，在具体应用场景中究竟选择本许可证还是常规通用公共许可证更为合适。

当我们谈论自由软件时，指的是使用自由而非价格自由。我们制定的通用公共许可证旨在确保：您有权分发自由软件副本（如需收费亦可）；有权获取源代码或随时调取；有权修改软件并在新自由程序中使用其组件；同时确保您清楚知晓这些权利的存在。

为了保护您的权利，我们需要制定限制，禁止发行商拒绝授予您这些权利或要求您放弃这些权利。如果您分发了库的副本或修改了它，这些限制将转化为对您的某些责任。

举个例子，如果你分发这个库的副本——不论是免费还是收费——都必须向接收者授予我们赋予你的全部权利。你必须确保他们也能获取或获得源代码。如果将其他代码与库链接使用，必须向接收者提供完整的对象文件，以便他们在修改库并重新编译后，能够将修改后的代码与库重新链接。同时，你必须向他们明确说明这些条款，确保他们清楚自己的权利。

我们通过以下两步方法保护您的权利：(1)我们为图书馆申请版权，(2)我们为您提供此许可证，该许可证赋予您复制、分发和/或修改图书馆的法律权限。

为了保护每位发行者，我们明确声明：免费软件库不提供任何保修服务。此外，若该软件库被他人修改并传播，接收者应当清楚他们获得的并非原始版本，这样原作者的声誉才不会因他人可能引入的问题而受损。

最后，软件专利对任何自由程序的存在构成了持续的威胁。我们希望确保公司无法通过获得软件专利来有效限制自由程序的用户。

已表达
包括但不限于对适销性和特定用途适用性的默认担保。您需自行承担与程序质量和性能有关的一切风险。如果程序被证明存在缺陷，您将自行承担所有必要的维护、修理或纠正费用。

12. 除非适用法律要求或书面协议另有约定，否则任何版权持有人或任何其他可能根据上述许可修改和/或重新分发本程序的第三方，均无需向您承担任何损害赔偿責任，包括但不限于一般性、特殊性、附带性或后果性损害赔偿。

程序的使用或无法使用（包括但不限于数据丢失、数据失真、您或第三方遭受损失，或程序无法与其他任何设备配合运行）

（计划），即使此类持有人或其他方已被告知此类损害的可能性。

条款和条件的结束

如何将这些术语应用于您的新程序

如果你开发了一个新程序，你想让它对公众尽可能有用，实现这一点的最好方法就是制作它免费软件，每个人都可以根据这些条款重新分发和修改。

为此，请将以下通知附加到程序中。最安全的做法是将它们附加到每个源文件的开头，以最有效地传达排除担保；并且每个文件应至少有“版权”行和指向完整通知的位置的指针。

<用一行文字给出程序的名称和它所做事物的简要说明。>版权所有(C)
<year> <name of author>

本程序是自由软件；您可以根据自由软件基金会发布的GNU通用公共许可证的条款重新分发和/或修改它；可以是该许可证的第2版，也可以（根据您的选择）是任何后续版本。

本程序的分发是出于希望它有用，但没有任何保证；甚至没有关于适销性或特定用途适用性的暗示保证。有关详细信息，请参见GNU通用公共许可证。

您应该已经收到了本程序的GNU通用公共许可证副本；如果没有，可以写信给自由软件基金会，地址是：51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA。

还要提供如何通过电子和纸质邮件联系您的信息。

如果程序是交互式的，则使其在以交互模式启动时输出如下所示的简短通知：

Gnomovision版本69，版权所有(C)年份作者姓名
Gnomovision附带绝对无保修；有关详细信息，请键入`show w`。
这是免费软件，欢迎您在某些条件下重新分发它；有关
详细信息，请键入`show c`。

假设命令`show w`和`show c`应该显示通用公共许可证的适当部分。当然，你使用的命令可能不叫`show w`和`show c`；它们甚至可以是鼠标点击或菜单项——无论什么形式都适合你的程序。

如果有必要，您还应该让您的雇主（如果您是程序员）或学校签署一个“版权免责声明”给该程序。这里有一个示例：请修改名称：

Yoyodyne, Inc.特此声明放弃对本程序的所有版权利益
`Gnomovision`（由James Hacker编写，可以访问编译器）。

<泰·库恩的签名>，1989年4月1日
泰·库恩，副总裁

程序），接收者自动从原始许可人处获得许可证，以复制、分发或修改程序，但须遵守这些条款和条件。您不得对接收者行使本协议授予的权利施加任何进一步的限制。
您不负责强制第三方遵守本许可证。

7. 如果因法院判决、专利侵权指控或其他原因（不限于专利问题），您被施加了与本许可证条款相抵触的限制条件（无论是通过法院命令、协议或其他方式），这并不构成对您遵守本许可证条款的豁免。若您无法同时履行本许可证义务及其他相关义务而进行分发，则可能完全无法分发程序。例如，若专利许可禁止所有通过您直接或间接接收副本的人免费分发程序，那么您要同时满足这两项要求，唯一可行的方式就是完全停止分发该程序。

如果本节的任何部分在任何特定情况下被认定为无效或不可执行，则本节的其余部分应适用，且在其他情况下应适用整个章节。

本节内容并非旨在诱导您侵犯任何专利或其他财产权主张，亦不涉及对相关权利主张有效性的质疑；其唯一目的是维护通过公共许可协议实现的自由软件分发系统的完整性。众多开发者基于该系统的一致性应用，已慷慨贡献了大量软件资源。作者/捐赠者有权自主决定是否通过其他系统分发软件，被许可方不得强加此类选择权。

本节旨在清楚阐明本许可证其余部分所导致的后果。

8. 如果程序的分发和/或使用在某些国家受到专利或受版权保护的接口的限制，那么将程序置于本许可证下的原始版权所有者可添加明确的地理分布限制，排除这些国家，以便仅允许在未被排除的国家或国家之间进行分发。在这种情况下，本许可证将该限制视为已写入本许可证正文。

9. 自由软件基金会可能会不时发布修订和/或新的通用公共许可证。此类新版本在精神上与当前版本类似，但可能在细节上有所不同，以解决新的问题或关注。

每个版本都有一个独特的版本号。如果程序指定了适用于该许可证的版本号，并且“任何”“以后的版本”，您可选择遵守该版本或自由软件基金会发布的任何以后版本中的条款和条件。如果本程序未指定此许可证的版本号，您可以选择自由软件基金会发布的任何版本。

10. 若您希望将本计划部分内容整合到其他分发条款不同的免费软件中，请致函作者申请授权。对于自由软件基金会版权保护的软件，请直接联系该基金会，我们有时会对此类软件破例。我们的决策将遵循两大目标：一是保持所有自由软件衍生品的自由状态，二是促进软件共享与通用再利用。

无担保

11. 由于本程序采用免费授权模式，因此在适用法律允许的范围内，我们不对该程序提供任何担保。除非另有书面声明，版权方及/或其他相关方均以“现状”形式提供本程序，且不附带任何形式的担保。

restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the “Lesser” General Public License because it does less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a “work based on the library” and a “work that uses the library”. The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called “this License”). Each licensee is addressed as “you”.

A “library” means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The “Library”, below, refers to any such software library or work which has been distributed under these terms. A “work based on the Library” means either the Library or any derivative work under copyright law; that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term “modification”).

“Source code” for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- The modified work must itself be a software library.
- You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a “work that uses the Library”. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a “work that uses the Library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a “work that uses the library”. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a “work that uses the Library” uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a “work that uses the Library” with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one

来自专利持有人的限制性许可。因此，我们坚持认为，为该库的版本获得的任何专利许可必须与本许可证中指定的完全使用自由相一致。

大多数GNU软件，包括一些库，都受普通GNU通用公共许可证的约束。该许可证，即GNU较小的通用公共许可证，适用于某些指定的库，并且与普通通用公共许可证有很大不同。我们使用此许可证来允许将某些库链接到非自由程序中。

当程序与库进行链接时，无论是静态链接还是共享库链接，从法律层面而言，这种组合都构成衍生作品——即原始库的衍生版本。因此，普通通用公共许可证仅允许符合其自由标准的完整组合。而较小通用公共许可证则对将其他代码与库链接设定了更为宽松的标准。

我们将这种许可证称为“次等”通用公共许可证，因为它对用户自由的保护力度比普通通用公共许可证要弱。它还让其他自由软件开发者相比非自由程序的竞争者处于劣势。这些劣势正是我们选择在许多软件库中采用普通通用公共许可证的原因。不过，次等许可证在某些特殊情况下确实能提供优势。

例如，偶尔可能需要鼓励尽可能广泛地使用某个特定库，使其成为事实上的标准。为此，非自由程序必须被允许使用该库。更常见的情况是，某个自由该库与广泛使用的非自由库具有相同功能。在此情况下，将自由库仅限于自由软件几乎没有什么好处，因此我们使用较小的通用公共许可证。

在其他情况下，允许在非自由程序中使用特定库使更多的人能够使用大量的自由软件。例如，允许在非自由程序中使用GNU C库使更多的人能够使用整个GNU操作系统，以及它的变体GNU/Linux操作系统。

虽然较小的通用公共许可证对用户自由的保护较少，但它确实确保了与库链接的程序的用户有自由和能力使用修改版本的库运行该程序。

复制、分发和修改的精确术语和条件如下。请仔细阅读“基于库的作品”与“使用库的作品”之间的区别。前者包含从库派生的代码，而后者必须与库结合才能运行。

GNU较宽松的通用公共许可证
复制、分发和修改的条款与条件

0.本许可协议适用于包含版权持有人或其他授权方发布的声明的任何软件库或其他程序，该声明表示其可以按照本较小公共许可证（也称为“本许可证”）的条款进行分发。每个被许可人被称为“你”。

“库”是指为方便与应用程序（使用其中一些功能和/或数据）链接而准备的软件功能和/或数据集合，以形成可执行文件。

下文所述的“库”指根据本条款分发的任何此类软件库或作品。“基于该库的作品”指该库本身或受版权法保护的衍生作品，即包含该库或其部分内容的作品，无论是逐字复制还是经过修改，或是直接翻译成其他语言。（下文将“修改”一词不限定地包含翻译行为。）

“源代码”对于一个作品来说是指对它进行修改的首选形式。对于一个库来说，完整的源代码是指它所包含的所有模块的所有源代码，加上任何相关的接口定义文件，加上用于控制库的编译和安装脚本。

本许可证不涵盖除复制、分发和修改之外的其他活动，这些行为均不在许可范围内。使用该库运行程序的行为不受限制，但此类程序的输出内容仅在其内容构成基于该库的作品时（即独立于使用该库编写工具的情况）才受保护。是否符合此条件取决于库的功能特性以及使用该库的程序功能。

1.您可以复制并分发您收到的库完整源代码的逐字副本，使用任何媒介，前提是：在每个副本上显著且恰当地发布适当的版权声明和免责声明；完整保留所有提及本许可证及无任何保证的声明；以及随库一起分发本许可证的副本。

您可以对传输副本的物理操作收取费用，您还可以选择提供担保保护以换取费用。

2.您可以修改您的图书馆副本或其任何部分，从而形成基于图书馆的作品，并根据以上第1节的条款复制和分发此类修改或作品，前提是您还满足所有这些条件：

- a) 修改后的作品本身必须是一个软件库。
- b) 您必须使修改的文件带有醒目的通知，说明您更改了文件以及更改的日期。
- c) 您必须根据本许可证的条款，将整个作品免费授权给所有第三方。
- d) 如果修改后的库中的某个函数或数据表是使用该函数或数据表的应用程序提供的，而不是作为调用该函数时传递的参数，则必须尽最大努力确保：如果应用程序没有提供该函数或数据表，该函数或数据表仍然可以运行，并执行其剩余功能。

（例如，库中用于计算平方根的函数具有完全独立于应用程序的明确定义目的。因此，第2d小节要求任何应用程序提供的函数或表格都必须是可选的：如果应用程序没有提供它，平方根函数仍然必须计算平方根。）

这些要求适用于修改后的整体作品。若该作品中可辨识的部分并非源自本库，且能合理视为独立完整的独立作品，则当您将这部分作为独立作品分发时，本许可证及其条款不适用于这些部分。但若您将相同部分作为基于本库创作的整体作品的一部分进行分发，则整个作品的分发必须遵循本许可证条款。本许可证对其他被许可人的授权范围涵盖整个作品，因此无论由谁创作，每个部分都需遵守相关条款。

因此，本节的目的不是主张权利或质疑您完全由自己创作的作品权利；相反，其目的是行使控制基于图书馆的衍生作品或集体作品分发的权利。

此外，将另一非基于本图书馆的作品与本图书馆（或基于本图书馆的作品）简单地聚集在存储或分发介质的卷上，并不能使该作品纳入本许可证的范围。

3.您可以选择将普通GNU通用公共许可证的条款而不是本许可证的条款应用到给定的库副本上。为此，您必须更改所有引用本许可证的通知，以便他们引用的是普通GNU通用公共许可证第2版，而不是本许可证。

（如果出现比普通GNU通用公共许可证第2版更新的版本，则可以指定使用该更新版本。）请勿对这些通知做任何其他更改。

一旦在给定制本中进行了此更改，对于该副本来说，它是不可逆的，因此，普通GNU通用公共许可证适用于所有后续副本和从该副本制作的衍生作品。

如果希望将库的部分代码复制到非库的程序中，此选项很有用。

4.您可以复制和分发库（或部分或根据第2节）在目标代码或可执行形式下衍生的，前提是您随附完整的对应的机器可读源代码，该源代码必须按照上述第1和第2节的条款以通常用于软件交换的媒介进行分发。

如果通过提供对指定位置的副本的访问来分发对象代码，则提供对同一位置的源代码副本的等效访问满足了分发源代码的要求，即使第三方没有被迫要求将源代码与对象代码一起复制。

5.一个不包含库的任何部分的任何衍生部分，但通过与库一起编译或链接而设计成与库一起工作的程序称为“使用库的工作”。这样的单独的作品不是图书馆的衍生作品，因此不在本许可证的范围内。

但是，将“使用该库的作品”与该库链接创建的可执行文件是该库的衍生品（因为它包含该库的部分），而不是“使用该库的作品”。因此，该可执行文件受本许可证的约束。第6节规定了此类可执行文件的分发条款。

当“使用该库的作品”使用了作为该库一部分的头文件中的材料时，该作品的对象代码可能是该库的衍生作品，即使源代码不是。如果这项工作可以在没有图书馆的情况下进行链接，或者如果这项工作本身就是一座图书馆，那么这是否真实就显得尤为重要。法律并没有对这一真实性的门槛作出明确界定。

如果此类对象文件仅使用数值参数、数据结构布局和访问器，以及小的宏和小的内联函数（长度不超过十行），那么使用该对象文件不受限制，无论其是否合法地构成衍生作品。（包含此对象代码及库部分的可执行文件仍需遵守第6条。）

否则，如果作品是图书馆的衍生品，您可以根据第6节的条款分发作品的物体代码。任何包含该作品的可执行文件也属于第6节，无论它们是否与库本身直接链接。

6.作为对以上条款的例外，您还可以将“使用了该库的作品”与该库结合或链接，以生成包含该库部分的作品，并根据您选择的条款分发该作品，前提是这些条款允许为了客户的自用目的对作品进行修改，并允许为了调试这些修改而进行逆向工程。

您必须在每份作品副本中显著标注使用了该库，并且本许可证涵盖库及其使用。您必须提供本许可证的副本。如果作品在执行过程中显示版权声明，您必须将库的版权声明包含其中，并附上指向本许可证副本的引用。此外，您必须执行以下操作

of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable “work that uses the Library”, as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the “work that uses the Library” must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not

signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and “any later version”, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status

of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY; TO THE EXTENT PERMITTED BY APPLICABLE LAW, EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the “copyright” line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a “copyright disclaimer” for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library “Frob” (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

-



关于这些事情：

- a) 在使用本作品时，需提供包含所有修改内容的完整机器可读源代码库（这些修改必须按照上述第1和第2条款进行分发）；若作品是以可执行文件形式与库链接，则需提供完整的机器可读“使用该库的作品”，包括目标代码和/或源代码，以便用户修改库后重新链接生成包含修改后库的可执行文件。（需注意的是，修改库中定义文件内容的用户可能无法重新编译应用程序以使用修改后的定义。）
- b) 使用合适的共享库机制进行程序链接。理想的方案应满足以下条件：(1)运行时直接调用用户计算机系统中已存在的库文件副本，而非将库函数复制到可执行文件中；(2)当用户安装修改版库文件时，只要该版本符合要求，就能正常运行。与工作所用的版本具有接口兼容性。
- c) 同时提供一份书面要约，有效期至少为三年，向同一用户提供上文第6a小节中规定的材料，收费不超过执行此分发的成本。
- d) 如果通过提供从指定地点获取副本的方式进行作品的分发，则应提供从同一地点获取上述指定材料的同等方式。
- e) 验证用户是否已经收到这些材料的副本，或者您是否已经向该用户发送了副本。

对于可执行文件而言，“使用该库的工作”所需形式必须包含从该库中复现可执行文件所需的所有数据和实用程序。但作为特殊例外，待分发的材料无需包含通常随操作系统主要组件（编译器、内核等）一起分发的内容（无论是源代码还是二进制形式），除非该组件本身随可执行文件一同分发。

这种情况可能会发生：此要求与其他通常不随操作系统一起提供的专有库的许可证限制相矛盾。此矛盾意味着您不能在要分发的可执行文件中同时使用它们和该库。

7. 您可以将基于该库的并行工作设施与其他不受本许可证覆盖的库设施共同放置于同一库中，并分发此类组合库，前提是：
- (1) 单独分发基于该库的工作设施和其它库设施的许可已获批准；(2) 您必须同时满足以下两项要求：

- a) 在联合图书馆内，应放置一份基于该图书馆的同一作品副本，且不得与其他图书馆设施合并。该副本必须按照上述条款的规定进行分发。
- b) 通过将部分基于图书馆的作品整合到图书馆中，并加以说明，从而获得显著的注意在哪里可以找到同一作品的未组合形式。
8. 除非本许可证另有明示规定，您不得复制、修改、转授权、链接或分发本库。任何其他形式的复制、修改、转授权、链接或分发行为均属无效，并将自动终止您在本许可证下的权利。但根据本许可证从您处获得副本或权利的各方，在其完全遵守许可条款的前提下，其许可权不会被终止。
9. 您不需要接受本许可，因为您还没有

已签署。但未经许可，任何其他行为均不得修改或分发本库及其衍生作品。根据法律规定，若未接受本许可证，上述行为将被禁止。因此，您若对本库（或基于本库的任何作品）进行修改或分发，即表示接受本许可证及其所有条款和条件，包括复制、分发或修改本库及其衍生作品的相关规定。

10. 每次重新分发本库（或基于本库的任何作品）时，接收方将自动获得原始许可方授予的复制、分发、链接或修改本库的许可，但须遵守本条款和条件。您不得对接收方行使本许可授予的权利施加任何额外限制。您无需负责强制第三方遵守本许可证。

11. 如果由于法院判决、专利侵权指控或其他原因（不限于专利问题），您被施加了与本许可证条款相矛盾的条件（无论是通过法院命令、协议或其他方式），这并不免除您遵守本许可证条款的责任。若您无法同时履行本许可证项下义务及其他相关义务，则可能完全丧失分发该软件库的权利。例如，若某项专利如果许可证不允许通过您直接或间接获得副本的所有人免费重新分发库，那么您满足该许可证和本许可证的唯一方法就是完全停止分发库。

如果本节的任何部分在任何特定情况下被认定为无效或不可执行，则本节的其余部分应适用，而在其他情况下，本节应整体适用。

本节内容并非旨在诱导您侵犯任何专利或其他财产权主张，亦不涉及对相关权利主张有效性的质疑。本节的唯一目的是维护通过公共许可协议实现的自由软件分发系统的完整性。众多开发者基于该系统的一致性应用，已慷慨贡献了大量软件资源。作者/捐赠者有权自主决定是否通过其他系统分发软件，被许可方不得强加此类选择。

本节旨在清楚阐明本许可证其余部分所导致的后果。

12. 如果图书馆的分发和/或使用受到限制某些国家/地区通过专利或受版权保护的接口，原版权持有人在将图书馆置于本许可证下时，可以添加明确的地理分布限制，排除这些国家/地区，使得分发仅限于未被排除的国家/地区之间或内部。在这种情况下，本许可证将该限制视为已写入本许可证正文。

13. 自由软件基金会可能会不时发布修订和/或新版本的较小公共许可证。这种新版本的精神与当前版本类似，但可能在细节上有所不同，以解决新的问题或关注的问题。

每个版本都会被赋予一个独特的版本号。如果库指定了适用于该许可证及其“任何后续版本”的版本号，您可以选择遵循该版本或自由软件基金会发布的任何后续版本的条款和条件。如果库未指定许可证版本号，则您可以选择自由软件基金会发布的任何版本。

14. 若您希望将本库部分内容整合到其他自由软件中，但这些软件的分发条款与我们的协议存在冲突，请直接联系作者申请授权。对于自由软件基金会版权保护的软件，请直接联系该基金会，我们有时会对此类情况予以例外处理。我们的决策将遵循两大核心目标：维护自由软件的开放属性，以及确保社区资源的可持续发展。

我们自由软件的所有衍生品，以及促进软件共享和重用。

无担保

15. 由于本库是免费授权的，因此在适用法律允许的范围内，本库不提供任何担保。除非另有书面规定，版权所有者和/或第三方以“现状”提供本库，不作任何形式的明示或暗示担保，包括但不限于适销性及特定用途适用性的默示担保。您需自行承担本库质量与性能风险。若本库存在缺陷，您须自行承担所有必要维护、维修或修正费用。

16. 除非适用法律要求或书面协议，否则不得向任何版权持有人或任何可能修改的其他方授予

若根据上述条款允许重新分发本软件库，您需对因使用或无法使用本软件库（包括但不限于数据丢失、数据失真、您或第三方遭受的损失，或软件库无法与其他软件兼容运行）所导致的任何一般性、特殊性、附带性或后果性损害向我们承担责任，即使相关持有方或其他已知悉此类损害可能性的第三方已被告知该风险。

条款和条件的结束

如何将这些术语应用于您的新库

如果您开发了一个新的库，并希望它能最大程度地为公众所用，我们建议将其作为免费软件，任何人都可以自由分发和修改。您可以通过允许在以下条款（或替代地，根据普通通用公共许可证的条款）下分发来实现这一点。

要应用这些条款，请将下列通知附加到库中。最安全的做法是将它们附加到每个源文件的开头，以最有效地传达排除担保；并且每个文件应至少有“版权”行和指向完整通知位置的指针。

<用一行文字给出图书馆的名称和它所做的工作的简要说明。>版权所有(C) <year> <name of author>

该软件库是自由软件，您可以根据自由软件基金会发布的GNU较小公共许可证的条款重新分发和/或修改它；可以是许可证的2.1版，也可以（根据您的选择）任何后续版本。

这个库是分发的，希望它能有用，但不作任何担保；甚至不作关于适销性或特定用途适用性的暗示担保。有关详细信息，请参见GNU较宽松通用公共许可证。

您应该已经收到了本软件库附带的GNU Lesser General Public License副本；如果没有收到，请致信自由软件基金会。Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301

USA还应添加如何通过电子和纸质邮件联系您的信息。

如果有必要，您还应该让您的雇主（如果您是程序员）或您的学校签署一份“版权免责声明”给图书馆。这里有一个示例；请修改名称：

Yoyodyne, Inc., 特此放弃对本公司的所有版权library'Frob'（一个用于调整旋钮的库），由James Random Hacker编写。

<泰·库恩的签名>, 1990年4月1日
泰·库恩，副总裁

这就是全部！

-

- Modules: libunistring gmp nettle

-

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

"The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an
Application with the Library. The particular version of the Library
with which the Combined Work was made is also called the "Linked
Version".

The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:

a) under this License, provided that you make a good faith effort to
ensure that, in the event an Application does not supply the
function or data, the facility still operates, and performs
whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of
this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from
a header file that is part of the Library. You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

a) Give prominent notice with each copy of the object code that the
Library is used in it and that the Library and its use are
covered by this License.

b) Accompany the object code with a copy of the GNU GPL and this license
document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

a) Give prominent notice with each copy of the Combined Work that
the Library is used in it and that the Library and its use are
covered by this License.

b) Accompany the Combined Work with a copy of the GNU GPL and this license
document.

c) For a Combined Work that displays copyright notices during
execution, include the copyright notice for the Library among
these notices, as well as a reference directing the user to the
copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this
License, and the Corresponding Application Code in a form
suitable for, and under terms that permit, the user to
recombine or relink the Application with a modified version of
the Linked Version to produce a modified Combined Work, in the
manner specified by section 6 of the GNU GPL for conveying
Corresponding Source.

1) Use a suitable shared library mechanism for linking with the
Library. A suitable mechanism is one that (a) uses at run time
a copy of the Library already present on the user's computer
system, and (b) will operate properly with a modified version
of the Library that is interface-compatible with the Linked
Version.

e) Provide Installation Information, but only if you would otherwise
be required to provide such information under section 6 of the
GNU GPL, and only to the extent that such information is
necessary to install and execute a modified version of the
Combined Work produced by recombining or relinking the
Application with a modified version of the Linked Version. (If
you use option 4d0, the Installation Information must accompany
the Minimal Corresponding Source and Corresponding Application
Code. If you use option 4d1, you must provide the Installation
Information in the manner specified by section 6 of the GNU GPL
for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based
on the Library, uncombined with any other library facilities,
conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it
is a work based on the Library, and explaining where to find the
accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.

-
- Modules: dhcp libjvt
-

Mozilla Public License Version 2.0

=====

1. Definitions

1.1. "Contributor"
means each individual or legal entity that creates, contributes to
the creation of, or owns Covered Software.

1.2. "Contributor Version"
means the combination of the Contributions of others (if any) used
by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"
means Covered Software of a particular Contributor.

1.4. "Covered Software"
means Source Code Form to which the initial Contributor has attached
the notice in Exhibit A, the Executable Form of such Source Code
Form, and Modifications of such Source Code Form, in each case
including portions thereof.

1.5. "Incompatible With Secondary Licenses"
means

(a) that the initial Contributor has attached the notice described
in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of
version 1.1 or earlier of the License, but not also under the
terms of a Secondary License.

1.6. "Executable Form"
means any form of the work other than Source Code Form.

1.7. "Larger Work"
means a work that combines Covered Software with other material, in
a separate file or files, that is not Covered Software.

1.8. "License"
means this document.

1.9. "Licensable"
means having the right to grant, to the maximum extent possible,
whether at the time of the initial grant or subsequently, any and

-模块: libunistring gmp nettle -

GNU较宽松的公共许可证
版本3,2007年6月29日

版权所有 (C) 2007 Free Software Foundation, Inc. < <https://fsf.org/> > . 允
许复制和分发此许可证文档的逐字副本, 但不允许对其进行更改。

此版本的GNU较宽松通用公共许可证包含GNU通用公共许可证
第3版的条款和条件, 并补充了下列附加权限。

0.其他定义。

如本文所用, “本许可证” 指GNU Lesser 3.0版本
通用公共许可证, “GNU GPL” 指的是GNU的第3版
通用公共许可证。

“图书馆” 指受本许可证管理的受保护作品, 但下列定义的
应用程序或组合作品除外。

“应用程序” 是指任何利用了库提供的接口, 但并非基于库的
其他工作。
定义由库定义的类的一个子类被视为使用库提供的接口的一种方式。

“组合作品” 是指通过将应用程序与库结合或链接而产生的作
品。制作组合作品所使用的特定版本的库也称为 “链接版
本” 。

组合作品的 “最小对应源” 是指组合作品的对应源, 不包括任何部
分, 这些部分单独考虑时基于应用程序, 而非基于链接版本。

“对应应用程序代码” 指应用程序的物体代码和/或源代码, 包括再
现应用程序中的组合作品所需的任何数据和实用程序, 但不包括组
合作品的系统库。

1. 对GNU GPL第3条款的例外。

您可以在不受GNU GPL第3条约束的情况下, 根据本许可证第3和
第4条的规定传播受保护的作品。

2. 传送修改后的版本。

如果修改了库的一个副本, 并且在修改过程中, 某个函数引
用了由使用该函数的应用程序提供的函数或数据 (但不包括作
为调用该函数时传递的参数), 则可以传递修改版本的副本:

a) 根据本许可, 前提是您做出真诚努力以确保, 如果应用程序
不提供功能或数据, 则该设施仍可运行, 并执行其目的的任何
剩余部分, 或者

b) 在GNU GPL下, 该副本不适用本许可证中的任何附加权
限。

3. 对象代码包含来自库头文件的材料。

应用程序的对象代码形式可能包含来自库中头文件的内容。您可
选择以自定义条款分发此类对象代码, 但若所包含内容不涉及数值
参数、数据结构布局及访问器、小型宏、内联函数和模板 (长度不
超过十行), 则需同时满足以下两项要求:

a) 在每个对象代码副本中都应突出显示该信息
其中使用了图书馆, 且本许可证涵盖图书馆及其使
用。

b) 随对象代码附上一份GNU GPL和本许可证文档。

4. 联合工程。

如果您还执行下列操作, 则可以按照您选择的条款提供组合作
品, 其组合后实际上不会限制对组合作品中所包含的库部分的修
改以及对这些修改进行调试的逆向工程:

a) 在每份合并作品副本中, 应显著注明使用了该图书馆, 并且该
图书馆及其使用受本许可证的约束。

b) 随附一份GNU GPL和本许可证文档。

c) 对于运行期间显示版权声明的组合作, 应在这些声明
中包括该库的版权声明, 以及一个引用, 该引用将用户指
向GNU GPL和本许可证文档的副本。

d) 执行以下操作之一:

0) 以某种形式传达本许可证条款项下的最小对应源代码和对应应
用程序代码
适合于用户, 并在允许用户的条件下
以GNU GPL第6节规定的传送方式, 将应用程序与修改后的
链接版本重新组合或重新链接, 以生成修改后的组合作品。
对应来源。

1) 使用合适的共享库机制与该库链接。合适的机制是(a)在
运行时使用用户计算机系统中已存在的该库的副本, 以及

(b)将与接口兼容的修改后的该库版本一起正确操作。

e) 提供安装信息, 但仅在您根据GNU通用公共许可证第6条需
提供此类信息时, 且仅限于为安装和运行通过重新组合或重新
链接应用程序与修改版链接版本所生成的组合作品所需的信
息。(若选择选项4d0, 则安装信息必须随附最小对应源代码
及对应应用代码; 若选择选项4d1, 则须按照GNU通用公共许
可证第6条规定的对应源代码传达方式提供安装信息。)

5. 联合库。

如果您同时满足以下两个条件, 您可以在单个库中将基于该
库的并行工作设施与其他非应用程序且不受本许可证涵盖的
库设施一起放置, 并根据您选择的条款转让此类组合库:

a) 随附一个基于相同作品的合并库副本
与任何其他图书馆设施无关的图书馆, 根据本许可证
的条款转让。

b) 通过合并后的库给予显著的注意, 其中一部分是基于库的
作品, 并解释在哪里可以找到同一作品的未合并形式。

6. GNU较少通用公共许可证的修订版本。

自由软件基金会可能会不时发布修订和/或新的GNU较小公共许可
证版本。此类新
版本在精神上将与当前版本类似, 但可能在细节上有所不
同, 以解决新的问题或关注的问题。

每个版本都有一个独特的版本号。如果您收到的库文件中指定
了某个编号版本的GNU较小公共许可证 “或任何后续版本”
适用条款时, 您可以选择遵循该发布版本或自由软件基金会发布的
任何后续版本中的条款和条件。如果您收到的库文件未指定GNU
较小公共许可证的版本号, 您可以选择自由软件基金会发布的任何
版本的GNU较小公共许可证。

如果您收到的Library规定代理可以决定是否应用GNU较宽松公共
许可证的未来版本, 则该代理公开声明接受任何版本即表示永久授
权您为Library选择该版本。

-模块: dhcp libjvt -

Mozilla公共许可证版本2.0

1. 定义

- 1.1."Contributor"
指创建、促成创建或拥有 “受保护软件” 的个人或法人实
体。
- 1.2. “贡献者版本”
指贡献者使用的其他贡献 (如有) 与该特定贡献者的贡献的组
合。
- 1.3."Contribution"
指特定贡献者的涵盖软件。
- 1.4. “受保护的软件”
指初始贡献者在附件A中附上通知的源代码表格、该源代码表格的
可执行表格以及该源代码表格的修改版本, 在每种情况下均包括其
部分。

1.5. “与二级许可证不兼容” 是指

- (a) 初始贡献者已将附件B所述的通知附加到覆盖软件中; 或
- (b) “受保护软件” 是根据许可证的1.1版或更早版本的条款提供
的, 但不是根据次级许可证的条款提供的。

1.6. “可执行形式” 指除源代码形式以外的任何工作形式。

1.7. “大型工程”
指将受保护软件与其他材料结合在一起的工作, 这些材料单独存
放在一个或多个文件中, 且不属于受保护软件。

1.8. “许可证” 指本文件。

1.9. “可许可”
意味着有权在最初授予时或之后, 在最大程度上授予任何和

all of the rights conveyed by this License.

1.10. "Modifications"
means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor
means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"
means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"
means the form of the work preferred for making modifications.

1.14. "You" (or "Your")
means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and

(b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1 (b) above, no patent license is granted by a Contributor:

(a) for any code that a Contributor has removed from Covered Software; or

(b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or

(c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

(a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

(b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered

Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

```
*                                     *
* 6. Disclaimer of Warranty          *
* -----                          *
*                                     *
* Covered Software is provided under this License on an "as is" *
* basis, without warranty of any kind, either expressed, implied, or *
* statutory, including, without limitation, warranties that the *
```



本许可证所授予的所有权利。

1.10. "Modifications"
指下列任何情形：

- (a) 因对“受保护软件”内容进行添加、删除或修改而产生的源代码形式的任何文件；或
- (b) 源代码形式中包含任何受保护软件的任何新文件。

1.11. 贡献者的“专利权利要求”
指任何专利权利要求（包括但不限于方法、工艺和装置权利要求），该等权利要求可由该贡献者许可，若未授予许可，则该等权利要求将因制造、使用、销售、提供出售、拥有、进口或转让其贡献或其贡献者版本而被侵犯。

1.12. “二级许可证”
指的是GNU通用公共许可证，版本2.0，GNU Lesser General Public License，版本2.1、GNU Affero General Public License，版本3.0或这些许可证的任何后续版本。

1.13. “源代码表”
指进行修改时首选的工作形式。

1.14. “您”（或“您的”）
指根据本许可证行使权利的个人或法人实体。对于法人实体，“您”包括任何实体，控制、受控或与您处于共同控制之下的实体。就本定义而言，“控制”指(a)通过合同或其他方式直接或间接地对实体进行指导或管理的权力，或(b)拥有该实体超过百分之五十（50%）的已发行股份所有权或实际控制权。

2. 许可证授予和条件

2.1. 基金

各贡献者特此向您授予全球范围内的免版税、非排他性许可：

- (a) 在知识产权（专利或商标除外）下，该贡献者可许可使用、复制、提供、修改、展示、执行、分发和以其他方式利用其贡献，无论是未经修改的原始版本、经过修改的版本，还是作为大型作品的一部分；以及
- (b) 该贡献者的专利声明规定，不得制造、使用、销售、提供销售、已制造、进口或以其他方式转让其贡献或其贡献者版本。

2.2. 生效日期

第2.1条授予的与任何出资有关的许可证在出资人首次分发该出资之日对每一出资生效。

2.3. 授予范围的限制

本第2节授予的许可证是本许可证中授予的唯一权利。通过根据本许可证分发或授权使用“受保护软件”，不得隐含任何其他权利或许可证。尽管存在上述第2.1(b)条的规定，但贡献者并未授予任何专利许可：

- (a) 对于贡献者已从覆盖软件中删除的任何代码；或

- (b) 因以下原因造成的侵权行为：(i)您和任何其他第三方对“覆盖软件”的修改，或(ii)其贡献与其他软件的组合（除非作为其“贡献者版本”的一部分）；或

- (c) 在没有贡献的情况下，受保护软件侵犯了专利声明。

本许可证不授予对任何贡献者的商标、服务标记或徽标（除遵守第3.4节中通知要求所必需的外）的任何权利。

2.4. 后续许可证

如果用户选择根据本许可证的后续版本（参见第10.2节）或根据次级许可证的条款（如果第3.3节的条款允许）分发“受保护软件”，则没有贡献者会因此而获得额外的授权。

2.5. 表

每位贡献者声明，该贡献者认为其贡献是其原创作品，或拥有授予本许可证所授予的贡献权利的充分权利。

2.6. 公平使用

本许可证不打算限制您根据适用的版权合理使用原则、公平交易原则或其他类似原则所拥有的任何权利。

2.7. 条件

第3.1、3.2、3.3和3.4节是第2.1节中授予的许可证的条件。

3. 职责

3.1. 源表的分发

所有以源代码形式分发的受保护软件，包括您创建或贡献的任何修改内容，必须遵守本许可证条款。您必须告知接收方，受保护软件的源代码形式受本许可证条款约束，并说明如何获取本许可证副本。您不得试图更改或限制接收方对源代码形式的权利。

3.2. 可执行文件形式的分布

如果以可执行形式分发受保护软件，则：

- (a) 如第3.1条所述，上述软件还必须提供源代码形式，并且您必须告知可执行形式的接收者如何能够及时通过合理方式获得该源代码形式的副本，收费不得超过向接收者分发的成本；以及
- (b) 您可以根据本许可证的条款分发该可执行形式，或者根据不同的条款对它进行再许可，前提是该可执行形式的许可证不试图限制或改变接收者在本许可证下的源代码形式的权利。

3.3. 大型工程的分布

您可根据自身选择的条款创建并分发大型作品，但需同时遵守本许可证对覆盖软件的相关要求。若该大型作品由覆盖软件与受一个或多个次级许可证约束的作品组合而成，并且覆盖软件与次级许可证兼容，则本许可证允许您根据相关次级许可证的条款额外分发此类覆盖软件，从而使接收方可根据自身意愿进一步分发覆盖软件。

根据本许可证或该等次级许可证(s)的条款提供的软件。

3.4. 说明

您不得删除或更改“受保护软件”源代码形式中包含的任何许可证通知（包括版权声明、专利声明、担保免责声明或责任限制），但您可更改任何许可证通知，以纠正已知的事实错误。

3.5. 额外条款的适用

您可选择为“受保护软件”的一个或多个接收方提供担保、支持、赔偿或责任义务，并收取相应费用。但您只能以自身名义进行此类行为，不得代表任何贡献者行事。您必须明确声明：所有担保、支持、赔偿或责任义务均由您单独承担，且您同意为每位贡献者因您提供的担保、支持、赔偿或责任条款而产生的任何责任提供赔偿。您可针对特定司法辖区添加额外的担保免责声明和责任限制条款。

4. 因法规或条例而无法遵守

若因法律、司法命令或法规限制，您无法遵守本许可协议中涉及部分或全部受保护软件的条款，则须履行以下义务：(a)尽最大可能遵守本许可协议条款；(b)详细说明相关限制及其影响的代码。此类说明必须以文本文件形式随附于本许可协议项下所有受保护软件的分发版本中。除法律或法规明文禁止的情形外，该说明必须足够详尽，使具备普通技术水平的接收方能够理解其内容。

5. 终止

5.1. 若您未能遵守本许可协议的任何条款，您将自动丧失所有授权权利。但若您开始遵守协议，则特定贡献者授予的权限将恢复(a)临时性恢复，除非该贡献者明确且最终终止您的授权；(b)持续性恢复，若该贡献者未提前通知您相关情况。若在您恢复合规后的60天内，通过合理方式发现违规行为。此外，若您首次收到该贡献者关于违反本许可证的违规通知，并且您在收到通知后的30天内完成合规，那么您将获得该贡献者对您特定授权的持续恢复。

5.2. 如果您通过主张专利侵权索赔对任何实体提起诉讼（不包括宣告性判决行动，如果反诉和交叉诉讼声称贡献者版本直接或间接侵犯了任何专利，则根据本许可证第2.1条授予您的有关覆盖软件的所有贡献者的权利应终止。

5.3. 如果根据以上第5.1或5.2条终止本许可，则您或您的经销商在终止前有效授予的所有最终用户许可协议（分销商和转售商除外）应继续有效。

* *
* 6. 保证免责声明 *
* ----- *
* *
* 本许可证中提供的覆盖软件是“按原样” *
* 基础，不作任何形式的担保，无论是明示的、暗示的或 *
* 法定的，包括但不限于保证 *

* Covered Software is free of defects, merchantable, fit for a
* particular purpose or non-infringing. The entire risk as to the
* quality and performance of the Covered Software is with You.
* Should any Covered Software prove defective in any respect, You
* (not any Contributor) assume the cost of any necessary servicing,
* repair, or correction. This disclaimer of warranty constitutes an
* essential part of this License. No use of any Covered Software is
* authorized under this License except under this disclaimer.

*
* 7. Limitation of Liability *
* ----- *
* *
* Under no circumstances and under no legal theory, whether tort *
* (including negligence), contract, or otherwise, shall any *
* Contributor, or anyone who distributes Covered Software as *
* permitted above, be liable to You for any direct, indirect, *
* special, incidental, or consequential damages of any character *
* including, without limitation, damages for lost profits, loss of *
* goodwill, work stoppage, computer failure or malfunction, or any *
* and all other commercial damages or losses, even if such party *
* shall have been informed of the possibility of such damages. This *
* limitation of liability shall not apply to liability for death or *
* personal injury resulting from such party's negligence to the *
* extent applicable law prohibits such limitation. Some *
* jurisdictions do not allow the exclusion or limitation of *
* incidental or consequential damages, so this exclusion and *
* limitation may not apply to You. *
* *

8. Litigation

Any litigation relating to this License may be brought only in the
courts of a jurisdiction where the defendant maintains its principal
place of business and such litigation shall be governed by laws of that
jurisdiction, without reference to its conflict-of-law provisions.
Nothing in this Section shall prevent a party's ability to bring
cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject
matter hereof. If any provision of this License is held to be
unenforceable, such provision shall be reformed only to the extent
necessary to make it enforceable. Any law or regulation which provides
that the language of a contract shall be construed against the drafter
shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section
10.3, no one other than the license steward has the right to modify or
publish new versions of this License. Each version will be given a
distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version
of the License under which You originally received the Covered Software,
or under the terms of any subsequent version published by the license
steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to

create a new license for such software, you may create and use a
modified version of this License if you rename the license and remove
any references to the name of the license steward (except to note that
such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With
Secondary Licenses under the terms of this version of the License, the
notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public
License, v. 2.0. If a copy of the MPL was not distributed with this
file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular
file, then You may include the notice in a location (such as a LICENSE
file in a relevant directory) where a recipient would be likely to look
for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as
defined by the Mozilla Public License, v. 2.0.



```

*所涵盖的软件没有缺陷, 适销, 适合于*
*特定用途或不受侵权。整个风险在于*
*软件的品质和性能与您同。*
*如果任何受保护软件在任何方面被证明有缺陷, 您*
*（非任何贡献者）承担其必要服务的成本,*
*修复或更正。本免责声明构成一项保证。
*是本许可证的重要组成部分。不得使用任何受保护软件*
*除非本免责声明另有规定, 否则根据本许可证授予。**
*
*****
*****
*
*
* 7. 责任限制
*
*
*
*
*（在任何情况下和任何法律理论上, 无论是侵权行为
*（包括过失）、合同或其他原因, 应由任何*
*贡献者, 或任何以*分发受保护软件的人
*上述允许的, 您有权要求其承担任何直接或间接的责任。
*特别、附带或间接的任何性质损害赔偿金*
*包括但不限于利润损失、损失*
*意外损失、停工、计算机故障或失灵, 或任何*
*以及所有其他商业损害或损失, 即使该方*
*应被告知此类损害的可能性。此*
*责任限制不适用于死亡或*
*因该方的过失造成的人身伤害*
*适用法律禁止此类限制的程度。一些
*
*
*管辖区不允许排除或限制*
*附带或间接损害, 因此, 这一排除和*
*
*
*限制可能不适用于您。
*
*****
*****

```

8. 诉讼

与本许可有关的任何诉讼只能在被告主要营业地所在司法辖区的法院提起,且此类诉讼应受该司法辖区的法律管辖,而不考虑其法律冲突规定。

本节中的任何内容均不得妨碍一方提出反诉或反辩。

9. 其他

本许可证构成对本协议标的事项的完整协议。如果本协议的任何条款被认定为不可执行, 则该条款应仅在必要范围内进行修改以恢复其可执行性。任何规定合同语言应解释为不利于起草方的法律或法规, 不得用于解释本协议对贡献者的不利影响。

10.许可证的版本

10.1. 新版本

Mozilla基金会是许可证管理人。除非第10.3节另有规定，否则只有许可证管理人有权修改或发布本许可证的新版本。每个版本都将具有唯一的版本号。

10.2. 新版本的影响

您可以按照最初获得Covered Software时所使用的许可证版本的条款分发Covered Software，或者按照许可证管理人发布的任何后续版本的条款分发Covered Software。

10.3. 修改后的版本

如果您创建的软件不受本许可证约束，并且您希望

为该软件创建新许可证时，如果重命名许可证并删除对许可证管理人名称的所有引用（但注明修改后的许可证与本许可证不同），则可以创建并使用此许可证的修改版本。

10.4. 分发与次级许可证不兼容的源代码形式

如果您选择根据本许可证版本中的条款分发与次级许可证不兼容的源代码形式，则必须附上本许可证附件B中所述的通知。

附件A-源代码表格许可证声明

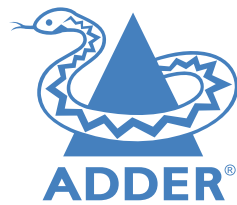
本源代码表受Mozilla公共许可证v. 2.0条款约束。如果未随本文件一起分发MPL副本，您可以在<http://mozilla.org/MPL/2.0/>处获取一份。

如果不可能或不希望将通知放在特定文件中，那么您可以将通知放在一个位置（如相关目录中的许可证文件），收件人可能会查看该位置。

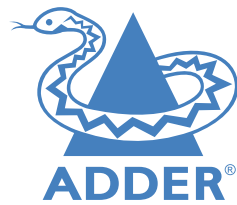
您可以添加其他准确的版权所有通知。

附件B- “与二级许可证不兼容” 通知

此源代码表与Mozilla公共许可证v. 2.0中定义的“二级许可证不兼容”。



www.adder.com



www.adder.com

文件编制人:



www.ctxd.com

©2024 Adder Technology Limited

所有商标均被认可。

部件号: MAN-ALIF4000-ADDER•版本4.6

A

- Adaptive 54
- addresses
 - default 18
- AIM mode 18
- Audio
 - analog and digital 48
- Audio EDID 48

C

- Cable
 - null-modem 56
- CATx 13
- Configuration
 - browser-based utility 18
- Connections
 - network link 13
 - overview 9
 - RX audio 15
 - RX USB devices 16
 - RX video display 15
 - TX audio links 10
 - TX AUX port 11
 - TX power in 12
 - TX USB link 11
 - TX video link 10
- Connectors
 - overview 6
- Cut-through 54

D

- Default address 18

E

- EDID 48
- Extras 8

F

- Factory reset 19
- Fast-Leave 53
- FCoE 13
- Forwarding modes 54
- Fragment-free 54
- Front panel 6
- Front panel indicators 24

H

- HDR10 4
- High Dynamic Range 4

I

- IGMP 53
 - fast-leave 53
 - querier 53
 - snooping 53
- Indicators 24
- IP addresses
 - default 18

J

- Jumbo frames (packets) 53

L

- Layers 2 and 3 54
- Local feed through 3
- LPCM 48

M

- Matrix
 - unmanaged 22
- Mounting 9

N

- Network address 18
- Network layout 49
- Network switch
 - choosing 49
- Null-modem cable
 - pin-out 56

O

- OSI model 54

P

- P2P mode 18
- Point to Point mode 18
- Presets
 - creating and editing 23

Q

- Querier 53

R

- Rear panel 6
- Recovery mode 20
- Reset 19
- RS232 serial 16

S

- SDR 4
- SDR8/SDR10 4
- SFP port 13
- Snooping 53
- SoL 18
- Spanning Tree Protocol 54
- Specifications 5
- Start of Life 18
- Store and forward 54
- Switch
 - choosing 49
 - configuring 50

T

- Touchscreen
 - dual configuration 21
 - OSD access 23,25,28
- Troubleshooting 27,51

U

- USB-to-serial adaptor 16

V

- Video EDID 48

A

自适应54
地址默认
值18
AIM模式18
音频
模拟和数字48 音频
EDID 48

C

电缆
无调制解调器56
CATx 13
配置
基于浏览器的实用程序18
Connections

网络链接13概述9

RX 音频15
RX USB设备16 RX 视
频显示15 TX 音频链
路10
TX 端口11
TX 电源12
TX USB链接11
TX 视频连接器10

概述6
已剪切54

D

默认地址18

E

身份证48
其他8

F

出厂设置19
快速离开53
光纤到城域网13
转发模式54无54片段

前面板6

前面板指示灯24

H

高动态范围10 4
高动态范围4

I

IGMP 53
快速离开53
查询器53
窃听53
指标24
IP地址默认
值18

J

巨型帧（数据包）53

L

第2层和第3层54局
部馈通3 LPCM 48

M

矩阵未受管理22
装载9

N

网络地址18网络布局
49
网络交换机选
择49
空调制解调器电
缆引脚排56

O

OSI模型54

P

P2P模式18
点对点模式18预设
创建和编辑23

Q

渴求53

R

后板6
恢复模式20
重置19
RS232串行16

S

SDR 4
SDR8/SDR10 4 SFP
端口13
偷听53
SoL 18
生成树协议规范5使 54
用期限18存储和转发
54交换机
选择49配置50

T

触屏
双配置21 OSD 访问23,
25, 28故障排除27, 51

U

USB转串口适配器16

V

视频EDID 48

安装

配置

业务

其他
资料

索引