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Introduction

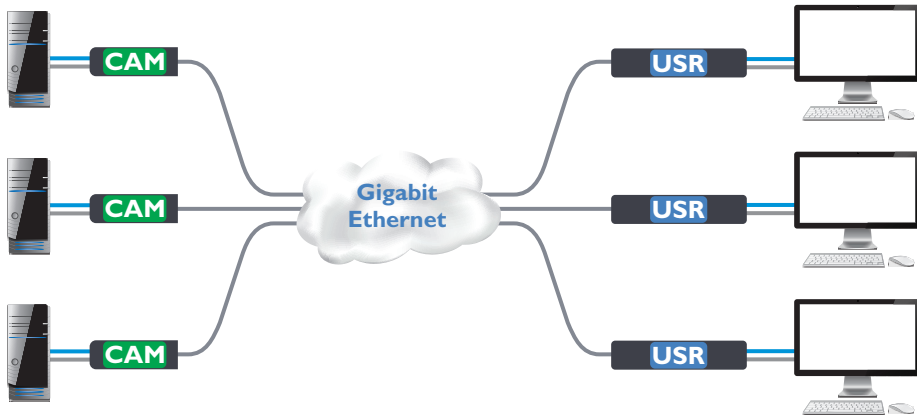


WELCOME

Thank you for choosing ADDERView Matrix, which is perfect for organizations where ease of use and low maintenance are paramount. Typically used in an unmanaged configuration without a KVM management switch, these systems are designed for quick installation, reliable operation and managed with minimal technical knowledge required. ADDERView Matrix is the perfect solution for any organization looking for a simple and powerful IP KVM matrix.

Flexible and Scalable

Each ADDERView Matrix USR is the master controller of its own matrix and can have up to 16 sources programmed into its target list. A Computer Access Module (CAM) can connect to multiple user stations.



Safety

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

Linking

ADDERView Matrix units can be linked in two main ways: Direct or Matrix.

Direct linking

Where CAMs and USRs 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 (see also page 13):

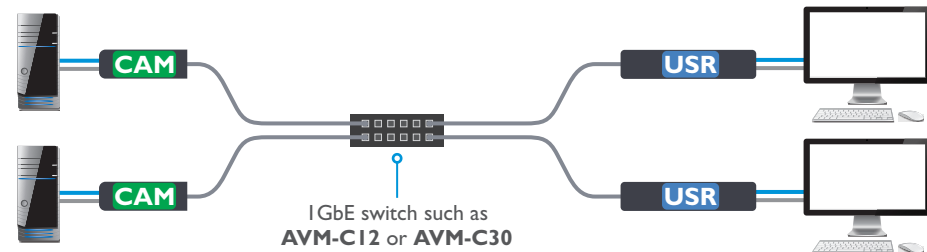


It is also possible to link two CAMs directly to a single USR (see page 13). *Note: an additional SFP network module needs to be installed within the USR:*



Matrix linking

Multiple CAMs and USRs can be connected via a suitable 1GbE network switch to allow cross connections across a matrix (see page 13):

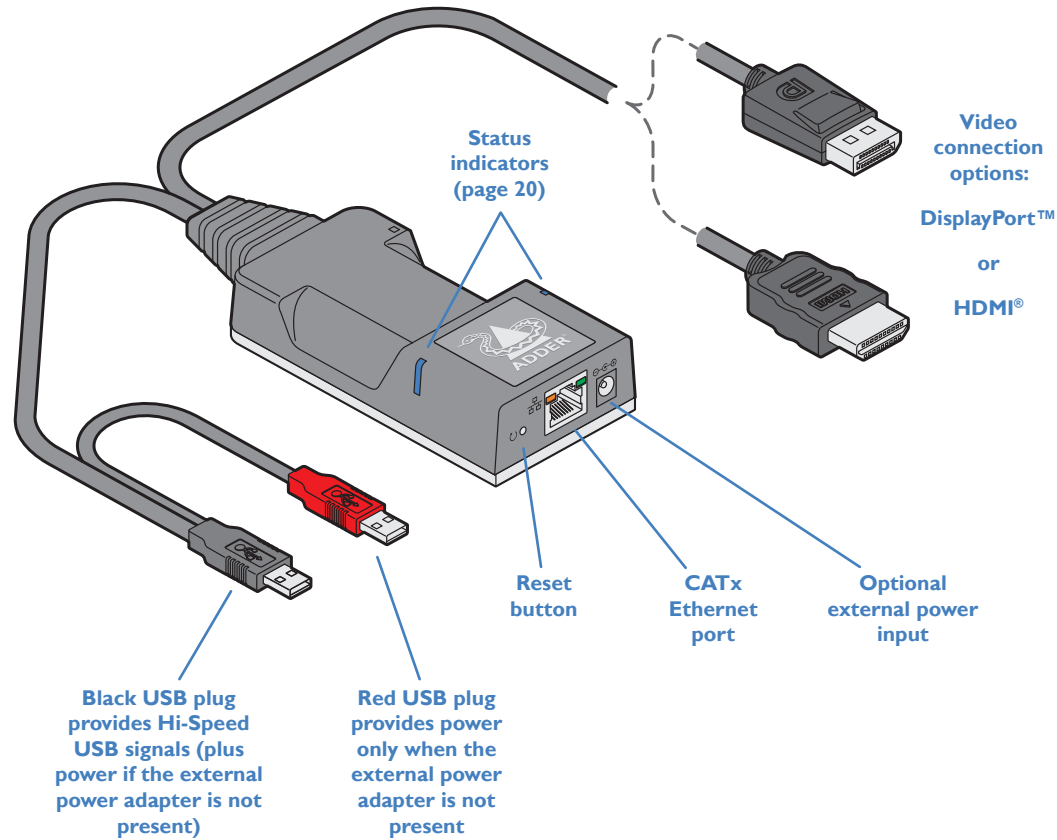


* If the standard settings have been changed in a previous installation, you merely need to perform a manual factory reset on each unit: CAM see page 18; USR see page 19.

CAM AND USR FEATURES

The CAM takes the form of a compact dongle that connects to key ports on the host computer. USRs are housed within vented enclosures with connectors situated on the front and rear panels.

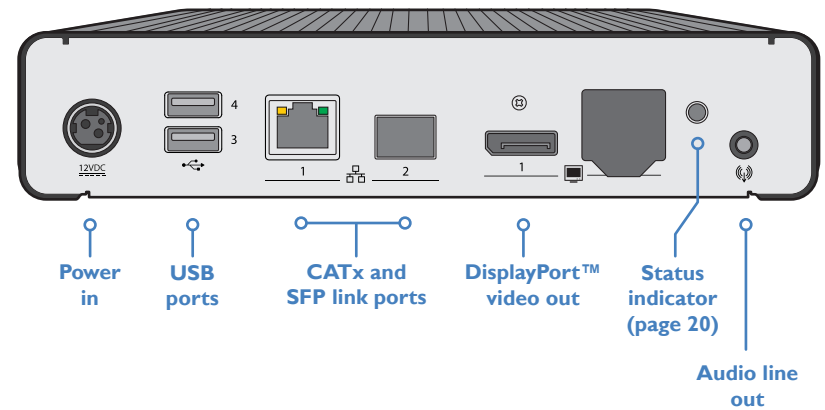
CAM



USR - front



USR - rear



TECHNICAL SPECIFICATIONS

Operating/storage conditions

| | |
|--|--------------------------|
| Operating temperature: | 0 to 40°C / 32 to 104°F |
| Storage temperature: | 0 to 40°C / 32 to 104°F |
| Storage and operating relative humidity: | 10 to 90% non-condensing |
| Altitude: | 0 to 2000m |

Connectors

CAM

Computer: 2x USB Type A for signal and power.

1x 8p8c RJ45 CATx port.

AVM-C110-CAM-DP model:

1x DisplayPort™ video connector.

Note: This model supports dual-mode DP++.

AVM-C110-CAM-HM model:

1x HDMI® video connector.

USR

Desk: 1x 3.5mm socket for analog audio out,
1x 3.5mm socket for headset/microphone,
4x USB Type A.
1x 8p8c RJ45 CATx port plus
1x SFP socket for 1GbE fiber or CATx
network connections,
1x DisplayPort™ video socket.

USB2.0 with class control

Supports USB2.0 devices (low, full and high speed). Security feature allows the blocking of non-HID devices. Isochronous devices are not supported (e.g. USB audio or video devices).

Video resolution

The system supports up to 1x 2560x1600@60Hz (or 1920x1080@120Hz), 8-bpc color depth

Audio

Analog stereo 2-channel 16-bit 48kHz (bi-directional)

Digital stereo 2-channel 16-bit up to 48kHz (uni-directional)

Ethernet

In-built support for 1GbE CATx plus support for second CATx or fiber (up to 1GbE) via SFP modules.

Physical

CAM

Dimensions: 55mm/2.2" (w) x 110mm/4.3" (d) x 25mm/1" (h)

Weight: 0.2kg / 0.4 lbs

USR

Dimensions: 186mm/7.3" (w) x 150mm/5.9" (d) x 39mm/1.5" (h)

Weight: 1.1kg / 2.4 lbs

Power consumption

CAM - 5VDC via USB connection

Maximum power: 5W

Typical power: 3W

USR - 12VDC via external adapter

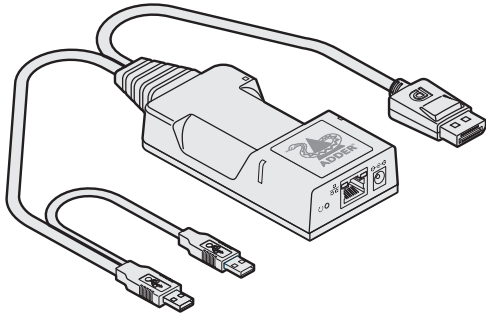
Maximum power: 18W

Typical power: 7W

Materials

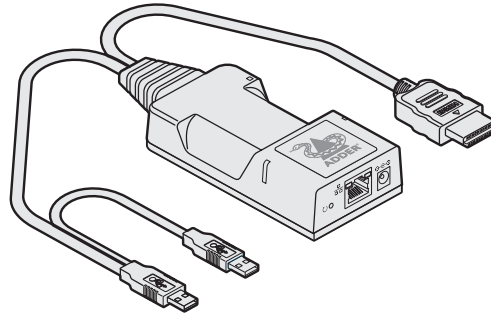
Aluminium, steel and ABS construction

ADDERView Matrix C110 CAM package

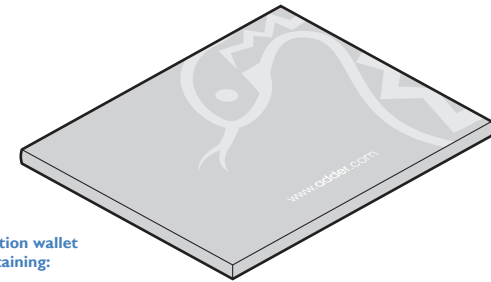


ADDERView Matrix C110 CAM with DisplayPort™ video
Part number:AVM-C110-CAM-DP

OR

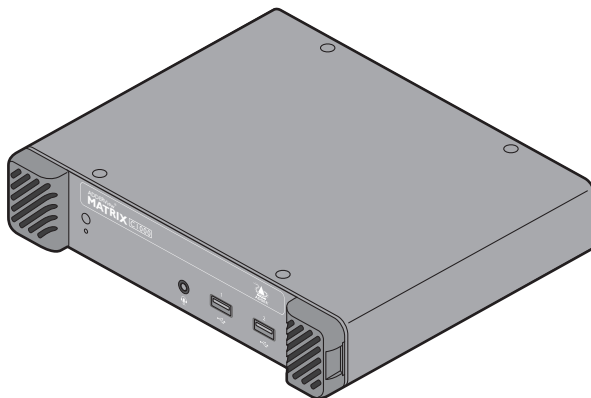


ADDERView Matrix C110 CAM with HDMI® video
Part number:AVM-C110-CAM-HM

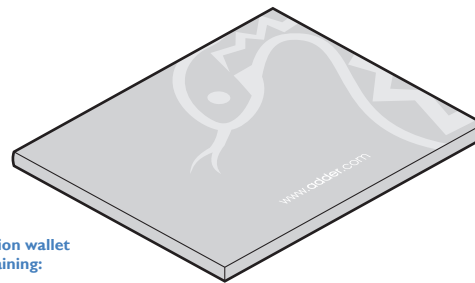


Information wallet containing:
Four self-adhesive rubber feet
Quick start guide
Safety document

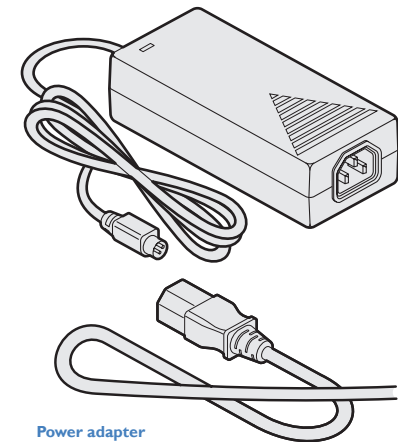
ADDERView Matrix C1100 USR package



ADDERView Matrix C1100 USR

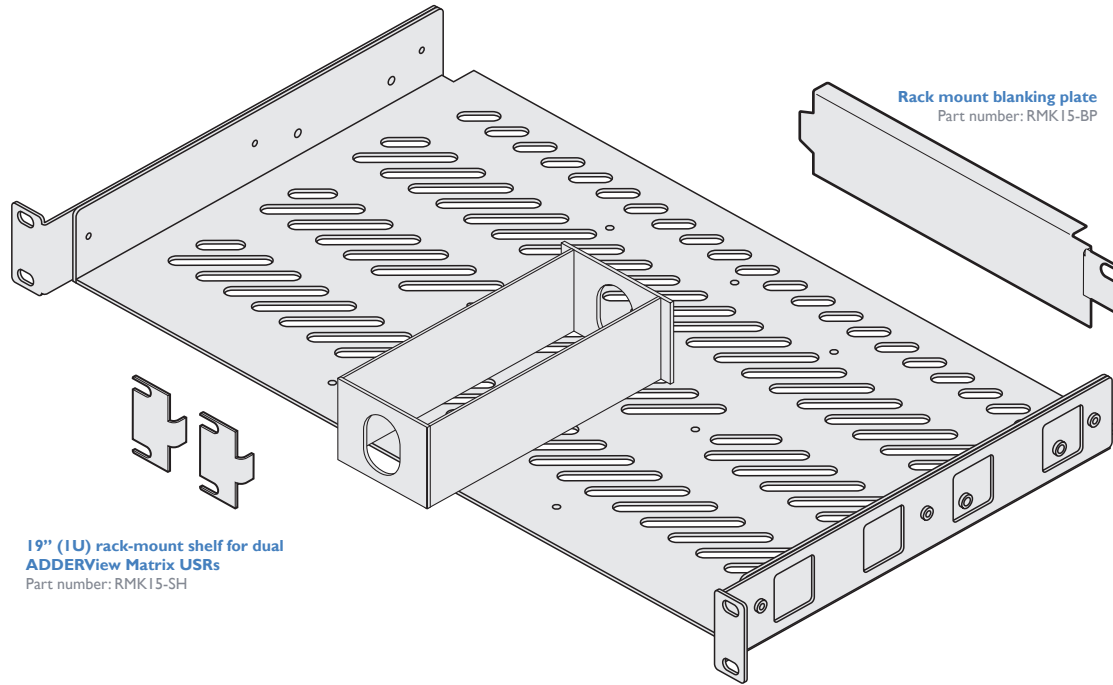


Information wallet containing:
Four self-adhesive rubber feet
Quick start guide
Safety document



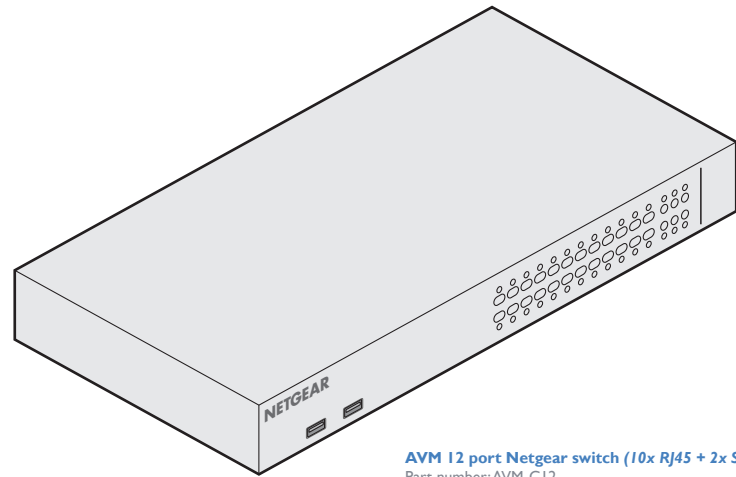
Power adapter with locking connector

OPTIONAL EXTRAS



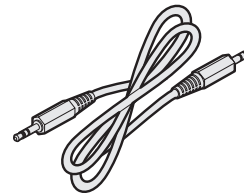
19" (1U) rack-mount shelf for dual ADDERView Matrix USRs
Part number: RMK15-SH

Rack mount blanking plate
Part number: RMK15-BP

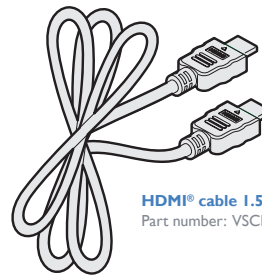


AVM 12 port Netgear switch (10x RJ45 + 2x SFP)
Part number: AVM-C12

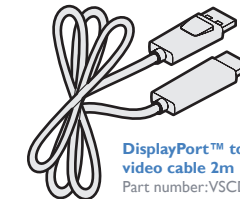
AVM 30 port Netgear switch (26x RJ45 + 4x SFP)
Part number: AVM-C30



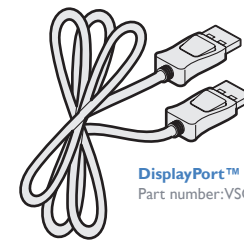
Audio cable 2m (3.5mm stereo jacks)
Part number: VSC22



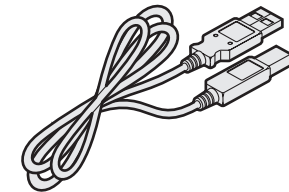
HDMI® cable 1.5m
Part number: VSCD15



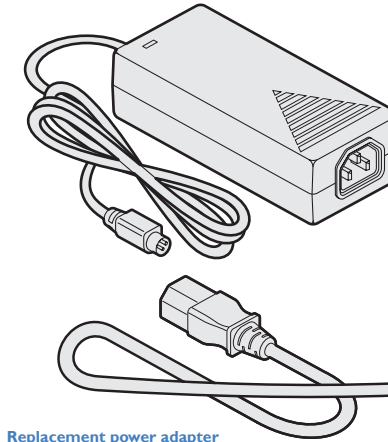
DisplayPort™ to HDMI® video cable 2m
Part number: VSCD19



DisplayPort™ video cable 2m
Part number: VSCD18

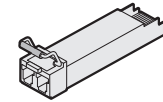


USB cable 2m (type A to B)
Part number: VSC24



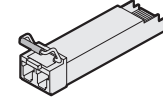
Replacement power adapter with locking connector
Part number: PSU-IEC-12VDC-1.5A

- 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)

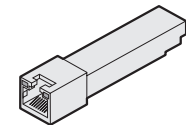


1GbE single mode fiber SFP module
Part number: SFP-SM-LC

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



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



Copper SFP module for 1GbE
Part number: SFP-CATx-RJ45

INSTALLATION

CONFIGURATION

OPERATION

FURTHER INFORMATION

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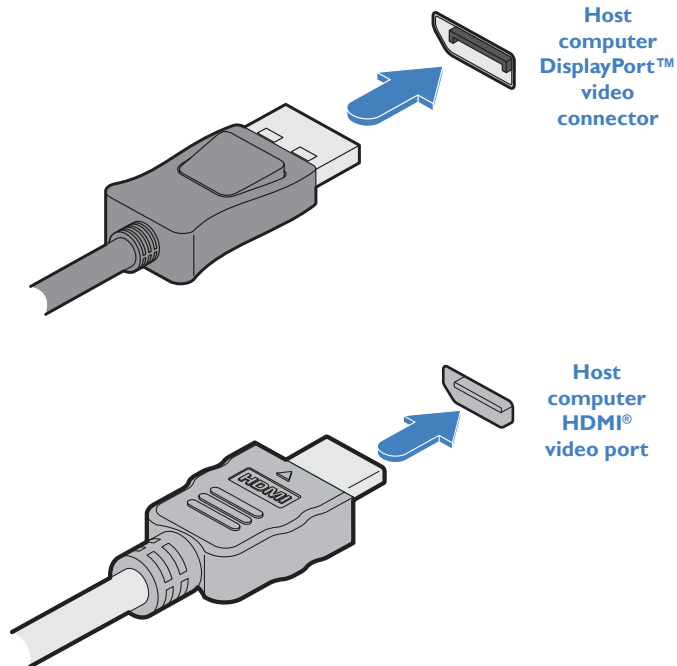
CAM (COMPUTER ACCESS MODULE) CONNECTIONS

CAM video link

The ADDERView Matrix CAM is supplied with a single video connector: either DisplayPort™ or HDMI® depending on the chosen variant. Video resolutions up to 2560x1600 @ 60Hz are supported, the highest frame rate is 1920x1080@120Hz.

To make a video link

- 1 Connect the video connector of the CAM to the video socket of the host computer:

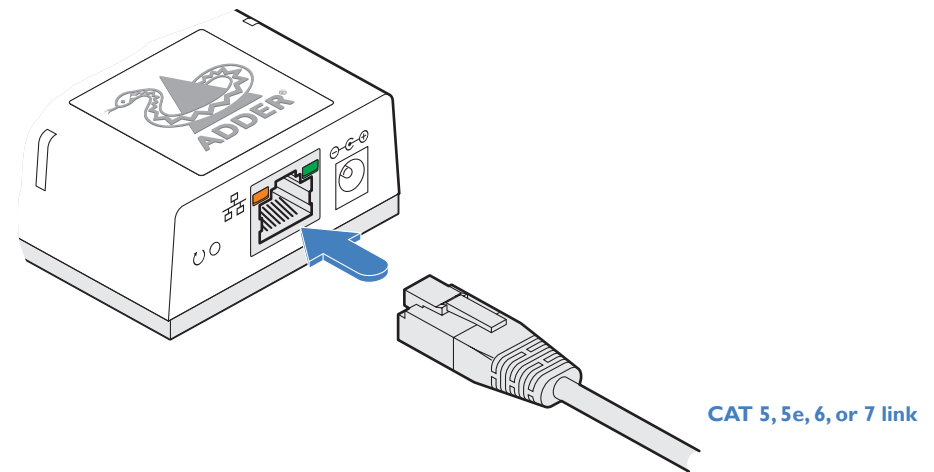


CAM link connection

Use the network port to join the ADDERView Matrix CAM either directly to an ADDERView Matrix USR or via a suitable network switch. It is also possible to connect a computer directly to the network port for configuration purposes.

To make a link connection

- 1 Insert a standard network cable into the socket on the front panel of the CAM.



- 2 Connect the other end of the cable either directly to an ADDERView Matrix USR or a suitable network switch.

CAM USB and power connections

The ADDERView Matrix CAM is designed to be as flexible as possible. It can either operate using an optional external power adapter or derive all of its power from its two USB plugs. The main advantage offered by using an external power adapter is that it allows the CAM to be active before the host computer; thus allowing a remote user to access the host's initial boot up and access the BIOS menu, when required.

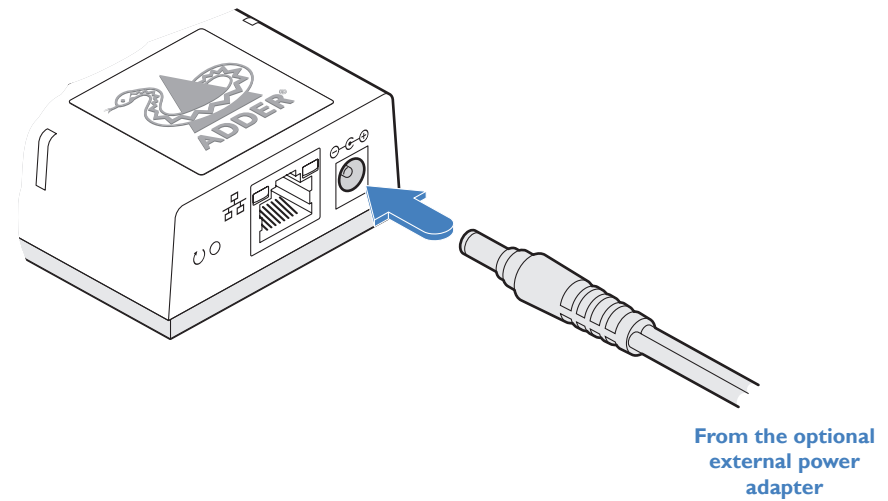
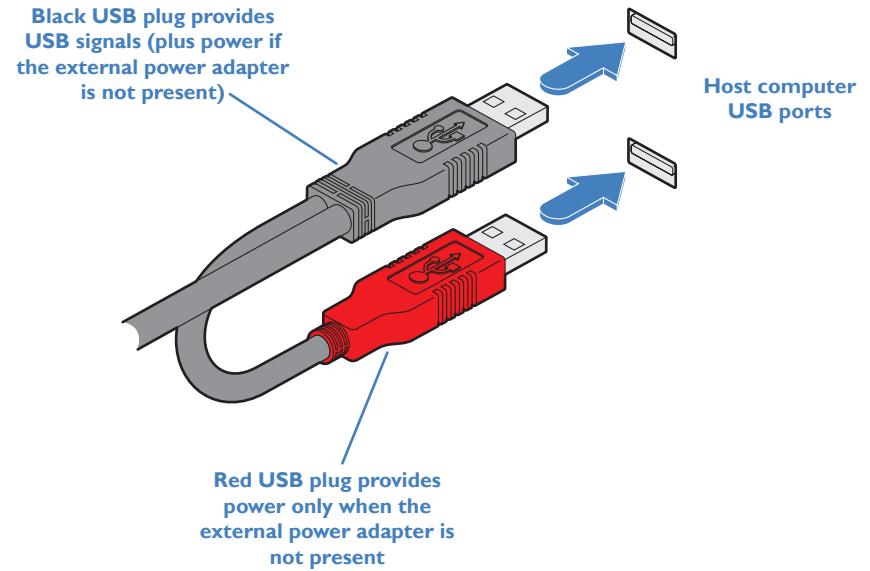
If powered by USB only, then both the black and red USB plugs need to be connected.

If powered by external power adapter, only the black Hi-Speed USB plug needs to be connected, for signal purposes. Whenever, the external power adapter is attached and operating, then power will be taken from it rather than the USB plugs. There is no problem if the red USB plug remains connected while the power adapter is used.

This is summarized as follows:

| Power adapter | Black USB | Red USB | Power sourcing behavior |
|---------------|-----------|---------|---|
| ✗ | ✓ | ✓ | Power taken from both USB plugs. |
| ✓ | ✓ | ✗ | Power taken from power adapter only. |
| ✓ | ✓ | ✓ | Power taken from power adapter only, unless it becomes unavailable, in which case power will be taken from both USB plugs after a short interruption. |

Note: The USB plugs do not operate as a seamless failover for the external power adapter; there will be a short interruption as operation switches from one power source to the other.



USR (USER) CONNECTIONS

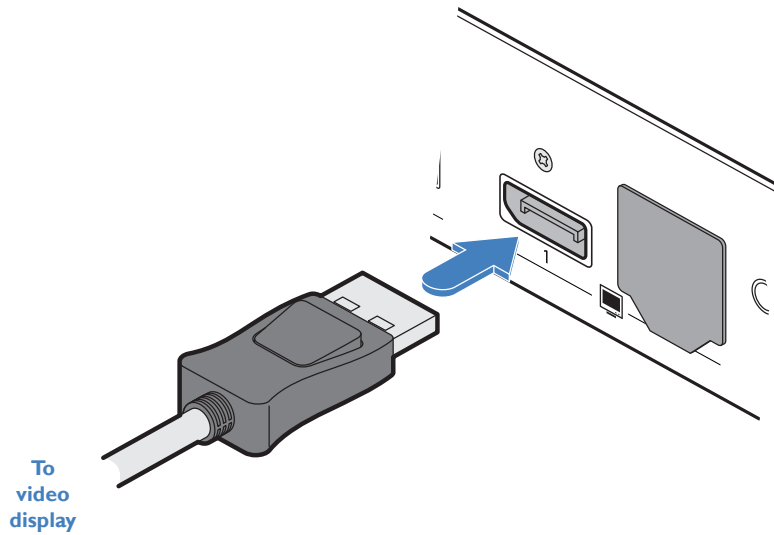
USR video display

The USR supports a single video connection at up to 2560x1600@60Hz.

Note: If required, DP++ to HDMI® or DP++ to DVI passive adapters can be used on the USR video port to allow a HDMI® or DVI monitor to be connected instead of a DisplayPort™ monitor.

To connect a video display

- 1 Connect the lead from the video display to the DisplayPort™ socket marked '1' on the USR rear panel:

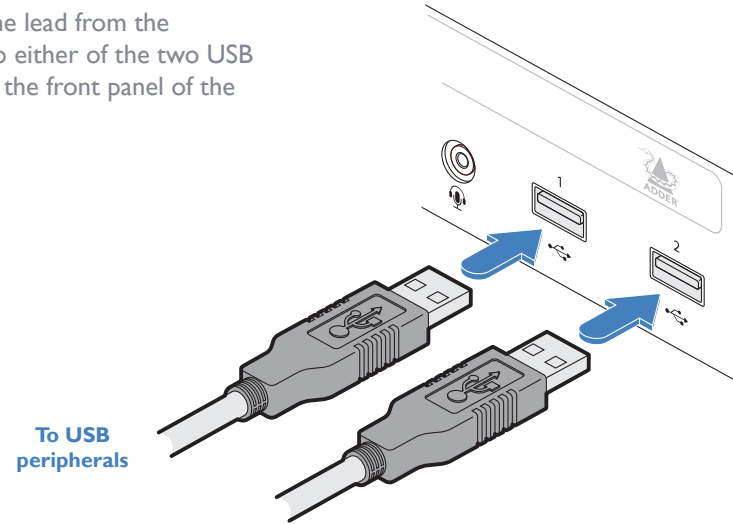


USR USB devices

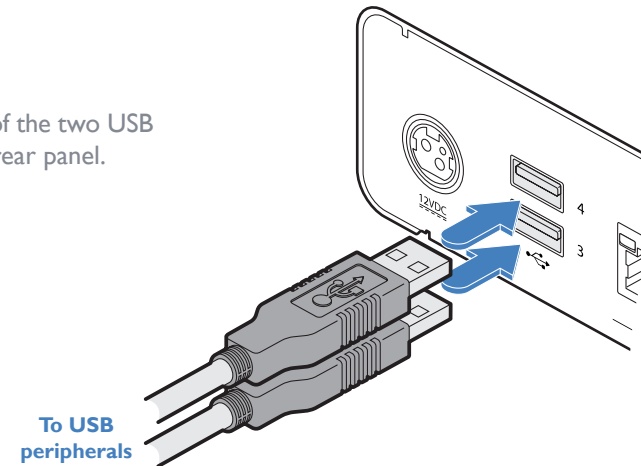
The USR has two USB ports on the front panel and two on the rear panel to which peripherals may be connected.

To connect USB devices

- 1 Connect the lead from the device(s) to either of the two USB sockets on the front panel of the USR...



...and/or either of the two USB sockets on the rear panel.

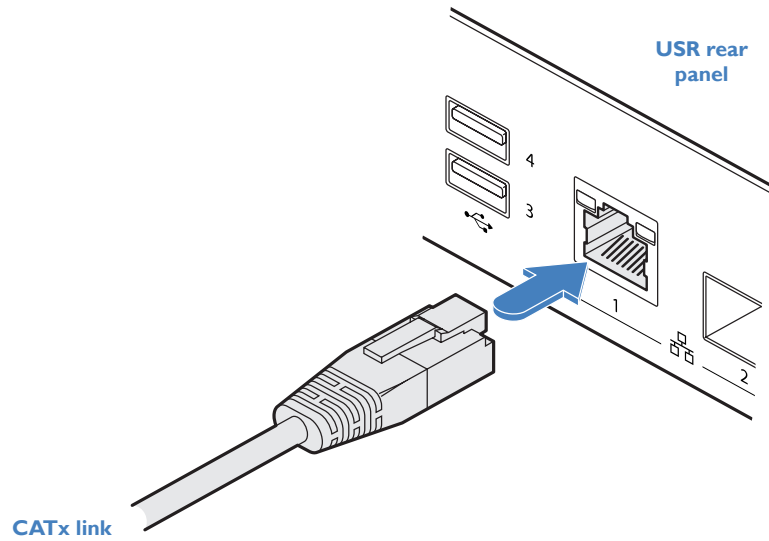


USR link connection

Use the network port (labeled 1) to join the ADDERView Matrix USR either directly to a CAM or via a suitable 1GbE network switch. The adjacent SFP port (labeled 2) allows a second network port to be added, either another CATx port or alternatively, a fiber module to support longer connection lengths.

To make a link connection

1 Insert a standard network cable into the RJ45 (CATx) socket (labeled 1) on the rear panel of the USR.

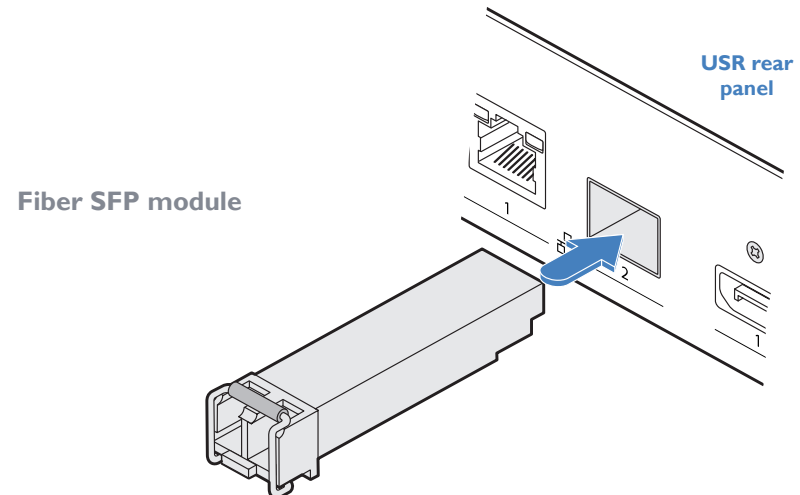
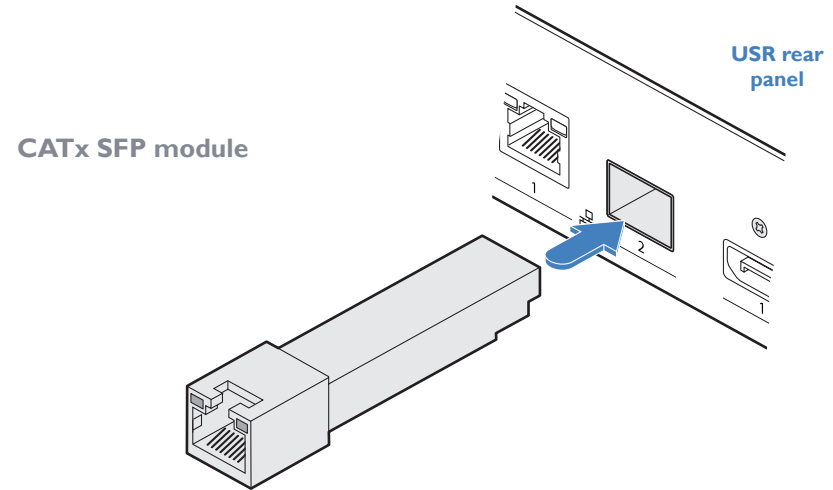


2 Connect the other end of the cable either directly to a CAM or via a suitable network switch.

Optional SFP module types

- SFP-CATx-RJ45 for use with CAT5e (and above) cable.
- SFP-SM-LC modules require OS1 or OS2 single mode fiber.
- SFP-MM-LC modules require OM1, OM2, OM3 or OM4 multi-mode fiber.


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

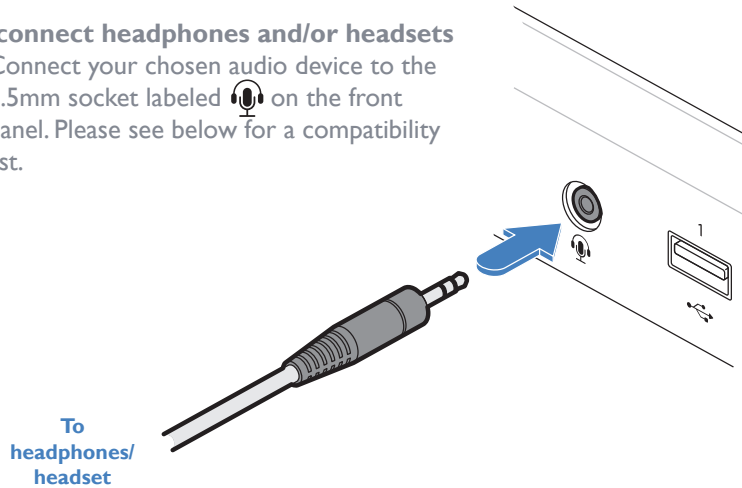


USR audio devices

The USR can support headphones via its front panel jack socket. On the rear panel a line out jack socket can be used to drive powered speakers. The USR derives its audio feeds from two sources: The headset socket on the front panel and the speaker socket on the rear panel are linked via the USB connection of the CAM; while the Digital audio is linked only via the video connectors.

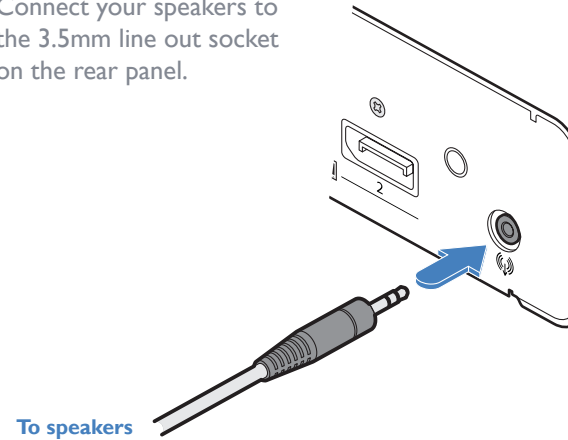
To connect headphones and/or headsets

- 1 Connect your chosen audio device to the 3.5mm socket labeled  on the front panel. Please see below for a compatibility list.






To connect amplified speakers

- 1 Connect your speakers to the 3.5mm line out socket on the rear panel.



Headphone, headset and microphone support

The combined jack socket can accommodate any standard stereo headphones; it can also support headsets which conform to the CTIA/AHJ standard. The lesser-used OMTP standard is not directly supported as its microphone and ground connections are swapped. If used, the audio may be distorted and/or the mic will not operate. Suitable OMTP to CTIA/AHJ converters are available.

| | CTIA/AHJ standard | OMTP standard |
|---|---|---|
|  Tip | Audio left | Audio left |
| Ring | Audio right | Audio right |
| Ring | Ground | Microphone |
| Sleeve | Microphone | Ground |
| TRRS |  Supported |  Not supported |

Supported devices

All standard headphones and some headsets are directly supported, others require a suitable converter. It can be difficult to distinguish different headset standards, however, some (but not all) CTIA/AHJ devices use white dividers on their jack plugs.

Supported

- Stereo headphones - Yes
- Mono microphone – Supported when used with an adapter
- CTIA/AHJ-compliant headset with mic - Yes
- CTIA/AHJ-compliant adapter with mic and headphones plugged in - Yes

Not supported

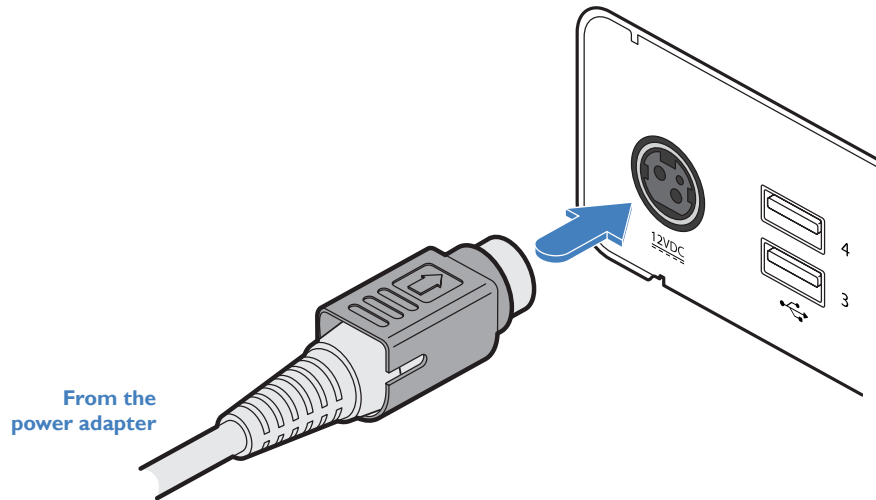
- OMTP-compliant headset with mic – Not supported directly
- OMTP-compliant adapter with headset plugged in – Not supported directly

USR power in

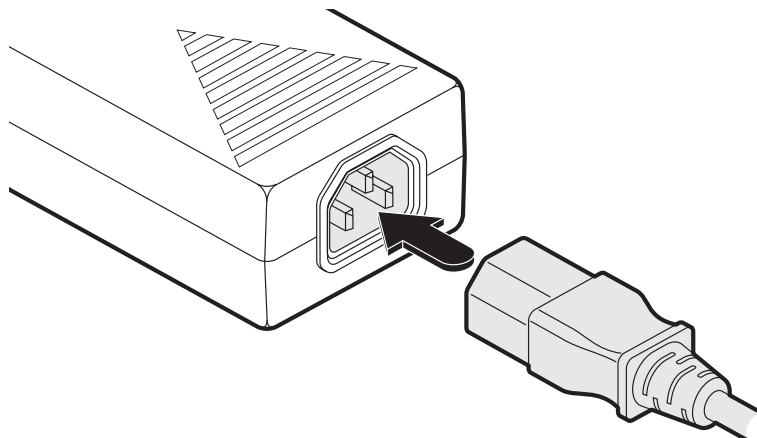
Each USR is supplied with a power adapter and country-specific power cord. The supplied power adapter uses a locking-type plug to help prevent accidental disconnection; please follow the instructions shown on the right when disconnecting a power adapter.

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.



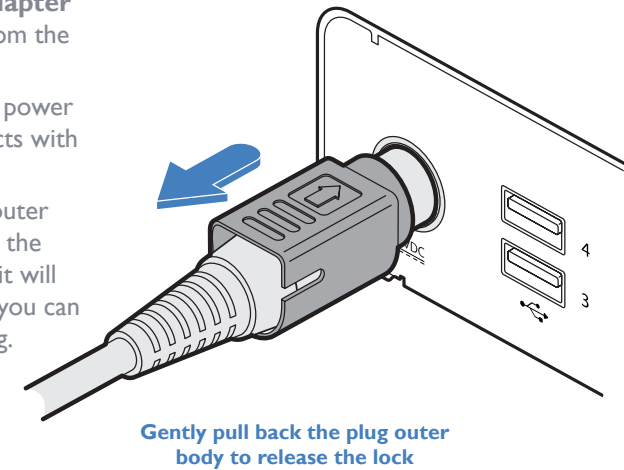
- 2 Insert the IEC connector of the supplied country-specific power cord to the socket of the power adapter.



- 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 40 degrees Celsius. Do not place the products in contact with equipment whose surface temperature exceeds 40 degrees Celsius.

DIRECT LINKING

To streamline initial configuration processes, all ADDERView Matrix 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.

Note: If the standard settings have been changed in a previous installation, you merely need to perform a manual factory reset on each unit: CAM see page 18; USR see page 19.

One to one

Simply link the network ports of the CAM and USR. When powered on, they will use their standard link local IP addresses to locate each other and allow direct access between them:



Note: The units need to be left alone while they perform the zero config which will automatically create a default preset with all the supported port connections in it (video, audio, usb) and automatically select and use the preset without any user interaction required. The preset can subsequently be edited or others added as per the instructions later in this guide. If you provide input to the USR via the USB, the start of life wizard will trigger.

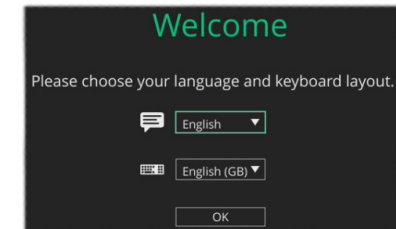
Two to one

It is also possible to link two CAMs directly to a single USR, providing it with access to two separate computers.



To create a two-to-one direct link

- 1 Ensure that all three devices are in an unconfigured state (ie have had a factory reset).
- 2 You now need to set a static IP address on one of the two CAMs. Make a temporary connection from a computer to one of the CAMs and use a browser to access it. The Welcome page will be displayed >

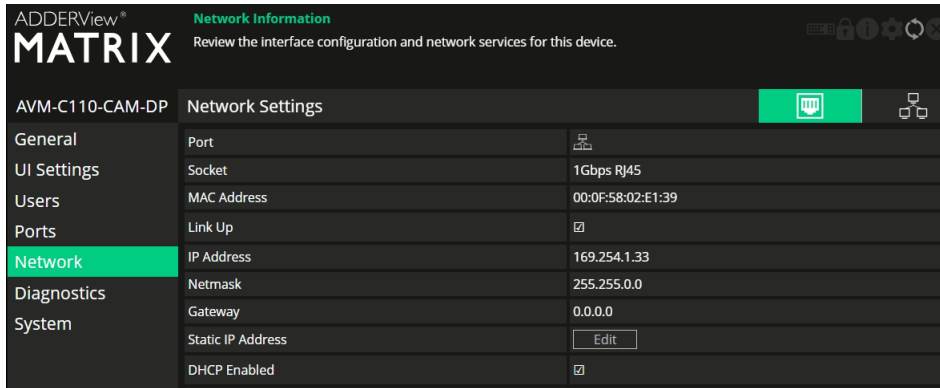


Note: A static IP needs to be set on the second network port of the USR in the same subnet range as chosen for the second CAM. Alternatively, to avoid the need to connect from a computer, it is possible to configure a unit as “one to one” then change the CAMs and USRs network ports to be a different network range via the OSD. Then add a factory default CAM to the other network port of the USR and then create a preset for the new CAM.

- 3 Click OK to progress to the General Settings page for the chosen CAM (see page 35).

continued

- Click the Network option on the left side to view the Network Settings page (see page 40) for the CAM:



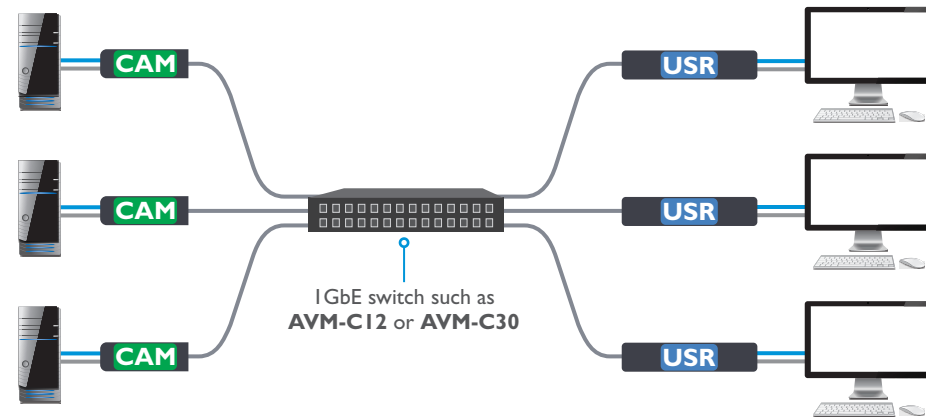
- Untick the *DHCP Enabled* checkbox and then click the *Static IP Address* Edit box to display a popup dialog:



- Enter a new static IP address for the CAM together with a matching Netmask. We suggest a class C address such as 192.168.1.x accompanied by a netmask of 255.255.255.0 (where x can be any address that will not clash with any other device). Click Apply.
- Install an additional CATx network module into the SFP socket on the rear panel of the USR to allow the second CAM to be linked (see page 10).
- Connect the CAMs to the two CATx ports on the rear panel of the USR.
- You now need to create a preset for the second CAM to add it to the preset list. The first CAM will be in the preset list already if it was added in the same method as the one to one (see page 16).

CREATING A MATRIX

You can quickly create a matrix configuration of ADDERView Matrix units, ie multiple CAMs and USRs, which can freely cross-connect. The maximum number of CAM sources that can be made available to any USR is sixteen.



To create a matrix

- Connect ADDERView Matrix CAMs and USRs (with their various hosts and peripherals) to a suitable switch, as described in the Installation section. You now need to perform the following procedure on each ADDERView Matrix USR in turn:
 - Access the Configuration pages - see page 15.
 - Click the Presets option from the list on the left side. Use this page to add a preset for each CAM to the list of presets for the USR that you are editing. See page 16.

To use the matrix


- On each USR, use the OSD to access the required CAMs in the usual manner. See page 15.

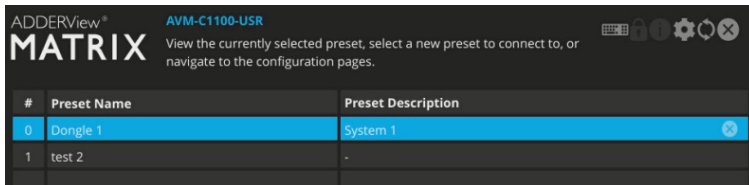
CONFIGURATION VIA THE ON SCREEN DISPLAY


The OSD provides a quick and easy way to configure the whole installation and gain access to the CAMs.

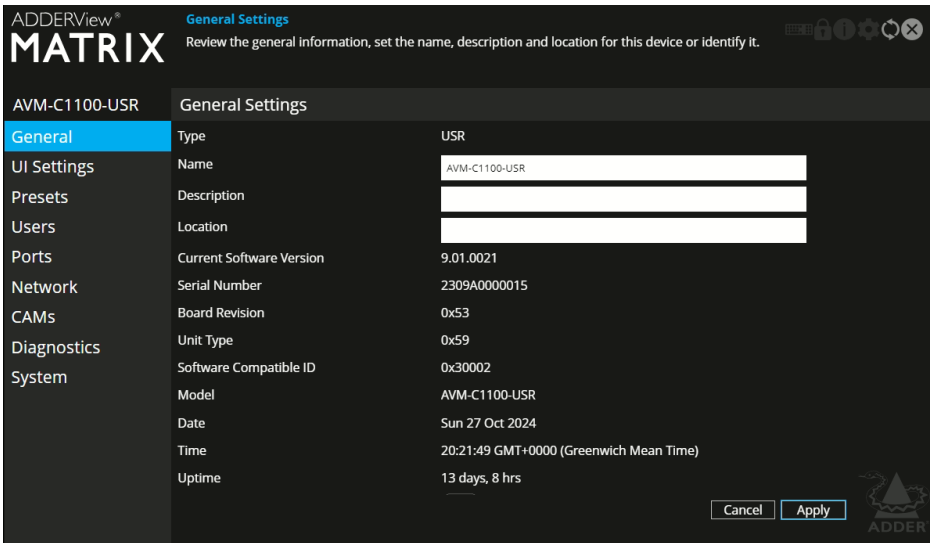
You can also access the CAM and USR configuration pages using a web browser on a computer connected to the same network as the ADDERView Matrix USR. See page 17.

To access the OSD

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




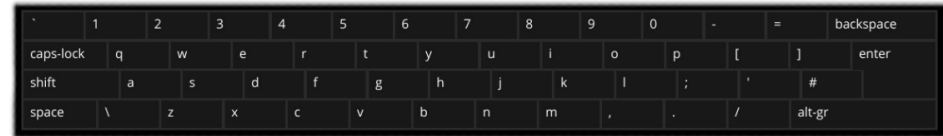
- On the preset page, either
 - Click/tap a preset entry to connect with the required CAM,
or
 - Click/tap the  icon to enter the first Configuration page:



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

To use the OSD keyboard (when using a touchscreen)

- Access the OSD as discussed left.
- Tap the  icon in the top right corner:
- The OSD keyboard will be displayed to assist you when entering text and numerics:




To hide the OSD keyboard

- Tap the  icon in the top right corner.

To exit the OSD

- Either press the Esc key or tap the  icon in the top right corner.

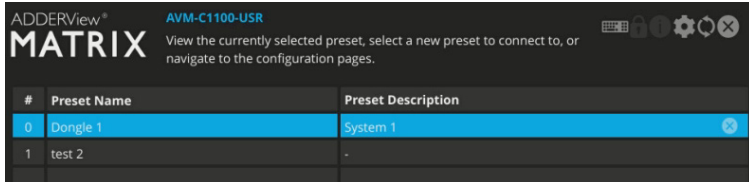
* To move the  icon on your touchscreen, tap and hold it until it changes color and then drag it to the best position.

CREATING AND EDITING PRESETS

Presets allow you to create connections from any ADDERView Matrix USB to any available CAM.

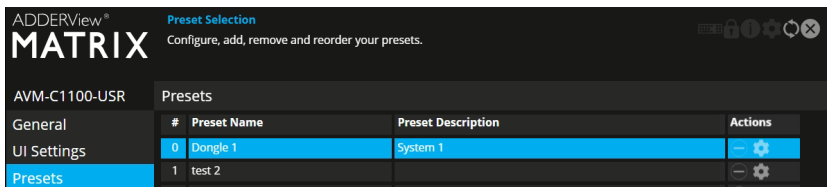
To access the Preset configuration page

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



Note: The number on the left corresponds to the hotkey sequence that will connect to that channel, eg, press Ctrl-Alt-2 to connect to the preset #2.

- 2 Click/tap the icon in the top right corner.
- 3 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 () entries:

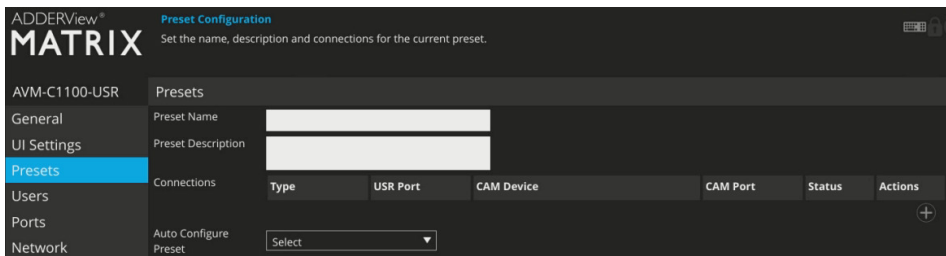


To remove a preset

- 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 of a vacant preset entry to display the configuration page:



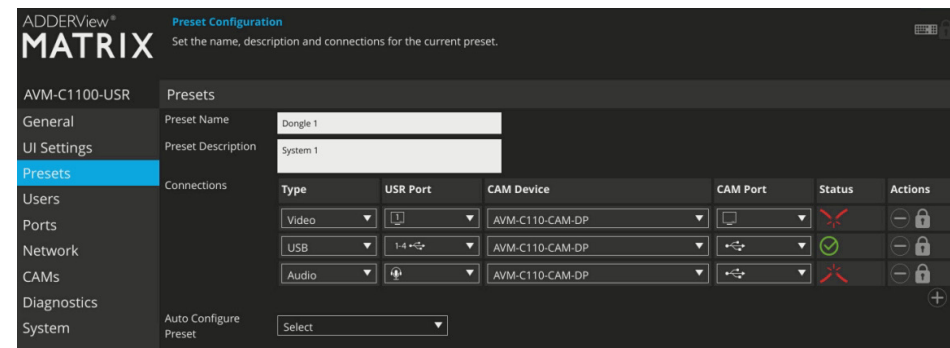
- 3 Enter a name and description for the new preset.

- 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 CAM that you wish to connect with. All of the supported default connections will be configured (on a 1-to-1 basis) between the USB and chosen CAM. Click the Apply button.
- **Custom** - Configure individual connections. This is useful when unusual cross connections are required, such as taking video from one CAM, but audio from another CAM). Custom also allows you to remove unused port connections, such as redundant audio connections to avoid seeing red port status icons (see page 21) or unwanted connection notification messages (see page 26).
 - 1 Click the icon on the right side to add a new connection entry.
 - 2 Check that the correct CAM is shown in the CAM Device column. Click and change this entry, if required.
 - 3 In the Type column, click the Select option and choose the type of connection: Video, Audio or USB. For video and USB links, no further action is required because each dongle has only one video and one USB option.
 - 4 For audio links, click the USB Port drop down and choose the required audio type:
 - audio derived from the USB link, or
 - audio derived from the video link.
 Once chosen, the CAM Port column will change to match the selected audio type.
 - 5 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:



See page 27 for details about the status icons.

- 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.

CONFIGURATION VIA WEB PAGES

Each ADDERView Matrix unit hosts its own internal set of web pages which contain all configuration details and settings. You will need to use a computer connected to the same network as each ADDERView Matrix USR to access the web pages. Additionally, on the console attached to the ADDERView Matrix USR, 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 15.

To manually configure ADDERView Matrix units via their web pages

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

The default addresses are: **CAM:** <https://169.254.1.33>
USR: <https://169.254.1.32>
(the second USR port defaults to <https://169.254.1.42>)

The respective opening pages should be displayed:

ADDERView Matrix CAM

| General Settings | Type | CAM |
|------------------|--------------------------|---|
| General | Name | AVM-C110-CAM-DP |
| UI Settings | Description | |
| Users | Location | |
| Ports | Current Software Version | 9.01.0021 |
| Network | Serial Number | 2409A2407018 |
| Diagnostics | Board Revision | 0x14 |
| System | Unit Type | 0x12D |
| | Software Compatible ID | 0x10000 |
| | Model | AVM-C110-CAM-DP |
| | Date | Sun 27 Oct 2024 |
| | Time | 20:23:08 GMT+0000 (Greenwich Mean Time) |
| | Uptime | 13 days, 8 hrs |

Note: If the CAM is in an unconfigured state, ie a factory reset condition and you are accessing it for the first time, the Welcome page may be displayed first, click OK to continue to the General Settings page.

ADDERView Matrix USR

| General Settings | Type | USR |
|------------------|--------------------------|---|
| General | Name | AVM-C1100-USR |
| UI Settings | Description | |
| Presets | Location | |
| Users | Current Software Version | 9.01.0021 |
| Ports | Serial Number | 2309A0000015 |
| Network | Board Revision | 0x53 |
| CAMS | Unit Type | 0x59 |
| Diagnostics | Software Compatible ID | 0x30002 |
| System | Model | AVM-C1100-USR |
| | Date | Sun 27 Oct 2024 |
| | Time | 20:21:49 GMT+0000 (Greenwich Mean Time) |
| | Uptime | 13 days, 8 hrs |

Note: If the USR is in an unconfigured state, ie a factory reset condition and you are accessing it for the first time, the Welcome page may be displayed first, click OK to continue to the General Settings page.

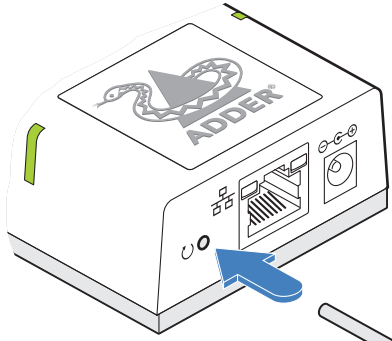
For explanations of the options within each page, please see [Appendix A](#).

CAM - PERFORMING A MANUAL FACTORY RESET

The recessed reset button provides a way to take control of the ADDERView Matrix CAM if normal operation is affected.

To reset the CAM

- 1 Power on the CAM.
- 2 Use a narrow implement (e.g. a straightened-out paper clip) to press-and-hold the recessed reset button for more than 15 seconds until the status indicators turn **blue**:



Use a straightened-out paper clip to press the reset button for more than 15 seconds

- 3 Release the reset switch.

The indicators will remain **blue** for a short while (less than ten seconds) while the CAM configures itself and should then change to **green** if all connections are correct; or **orange** if one or more of the video, USB and/or network links are missing.

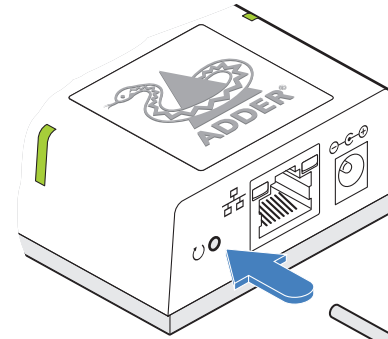
Note: Allow the CAM to fully complete the reset process by waiting for at least 30 seconds after you have released the reset button.

CAM - PLACING THE DEVICE INTO RECOVERY MODE

Recovery mode may allow an ADDERView Matrix CAM 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 CAM.
- 2 Use a narrow implement (e.g. a straightened-out paper clip) to press-and-hold the recessed reset button for roughly ten seconds until the indicators flash **green/red**.
- 3 Release the reset switch.



Use a straightened-out paper clip to press the reset button for roughly 10 seconds

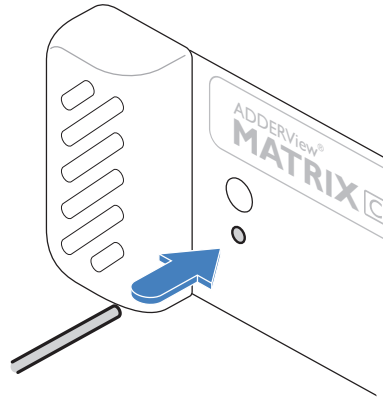
- 4 Once complete, the dongle will then continually flash **green/red** signifying that the device is in recovery mode..
- 5 If necessary, perform a software upgrade or reinstate a backup software version - see page 42.

USR - PERFORMING A MANUAL FACTORY RESET

A factory reset returns an ADDERView Matrix USR to its default configuration.

To perform a manual factory reset

- 1 Power on the ADDERView Matrix USR.
- 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 the ADDERView Matrix USR performs the reset and should then change to an alternative color, usually **orange** initially, signifying that the operation is complete.



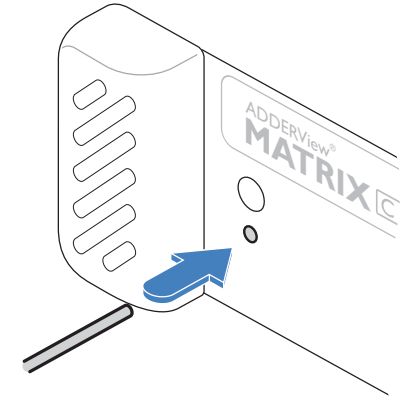
Note: If you are performing a factory reset and intend to disconnect the power immediately after the reset, you must wait at least 30 seconds after you have released the reset button for it to complete the process.

USR - PLACING THE DEVICE INTO RECOVERY MODE

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

To boot the device into recovery mode

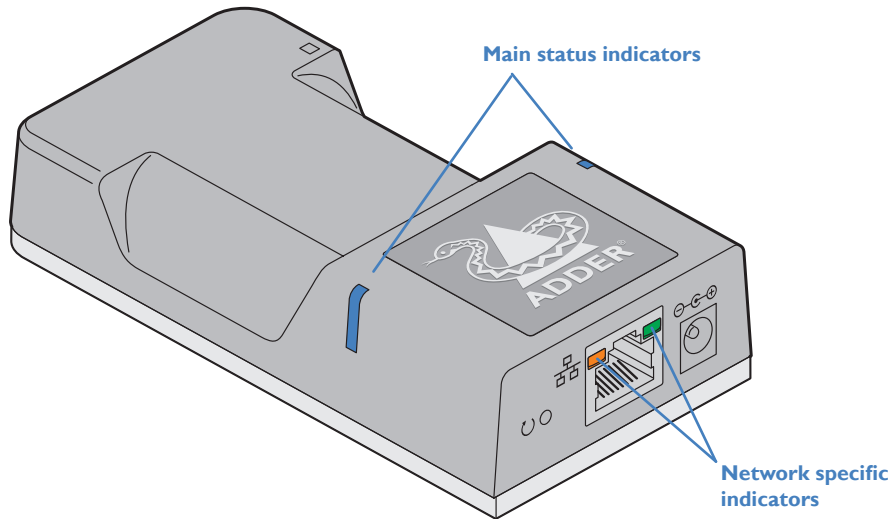
- 1 Power on the ADDERView Matrix USR.
- 2 Use a long narrow implement (e.g. a straightened-out paper clip) to press-and-hold the recessed reset button on the front panel (for less than ten seconds) until the status indicator starts alternating **red/green**. *Note: A solid blue indication will occur 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.*
- 4 If necessary, perform a software upgrade or reinstate a backup software version - see page 34.



In operation, most ADDERView Matrix installations require no intervention once configured. The CAMs and USRs take care of all connection control behind the scenes so that you can continue to work unhindered.

CAM STATUS INDICATORS

The two top panel indicators on the CAM provide a useful guide to operation:



Main status indicators

- Off No power
- Green Operating - Video, USB and network link all present
- Orange Operating - But video, USB and/or network link missing.
- Red (momentarily) Unit is booting up, or (consistently) Unit has failed, try rebooting.
- Red/green flashing Unit is in backup mode.
- Blue Factory reset has been activated.
- Red/blue flashing Unit is in upgrade mode.
- Fast green flash Unit is in identify mode.

Network specific indicators

- Orange Off: No link On: Link established
- Green Off: No link Flashing: Network activity On: Quiescent link

USR STATUS INDICATORS

The front and rear panels of each ADDERView Matrix USR feature an indicator capable of producing numerous color and flash patterns to provide a useful guide to operation. The dual indicators provide the same color and flash patterns.

Indicator color and flash patterns

The front and rear panel indicators use varying color and flashing patterns to signal key status:

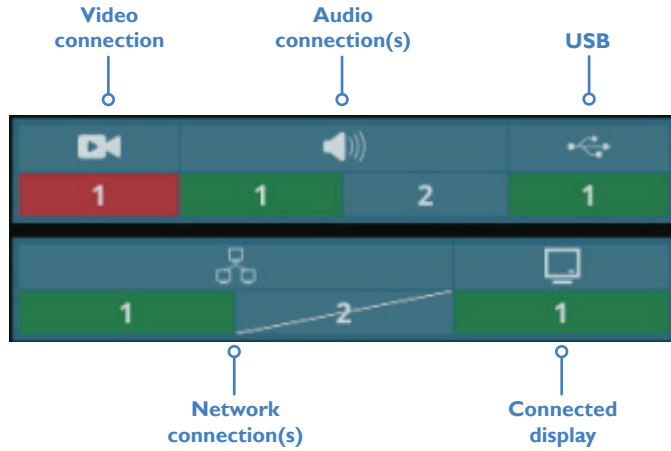
- Off No power.
- Green All services present as compared to the configuration required.
- Amber Running but video, USB or network link missing.
- Red Booting before processor loaded or failed.
- Red rapid flash A critical error has been detected that is preventing the device from being used (a malfunction message will also be displayed within the OSD.)
- 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.

Network specific indicators

Note: The behavior of the USR network indicators are the same as the CAM, however, the colors are swapped:

- Green Off: No Link On: Link established
- Orange Off: No Link Flashing: Network activity On: Quiescent link

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:



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](#) - Fiber/copper modules and cables
- [Appendix D](#) - 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

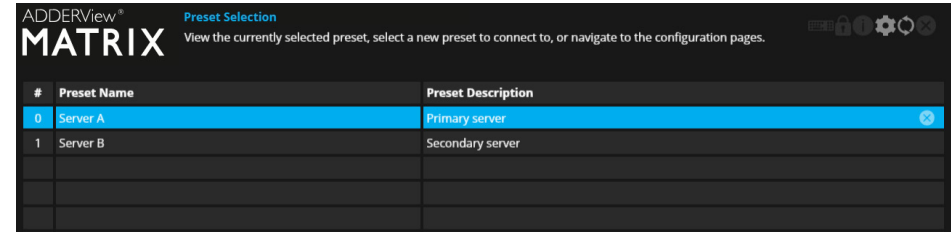
APPENDIX A - Configuration pages


This section covers the web page configuration for the ADDERView Matrix units:

- [USR - General Information](#)
- [USR - UI Settings](#)
- [USR - Presets](#)
- [USR - Users](#)
- [USR - Ports](#)
- [USR - Network](#)
- [USR - CAMs](#)
- [USR - Diagnostics and Statistics](#)
- [USR - System](#)
- [CAM - General Information](#)
- [CAM - UI Settings](#)
- [CAM - Users](#)
- [CAM - Ports](#)
- [CAM - Network](#)
- [CAM - Diagnostics and Statistics](#)
- [CAM - System](#)


To access the OSD

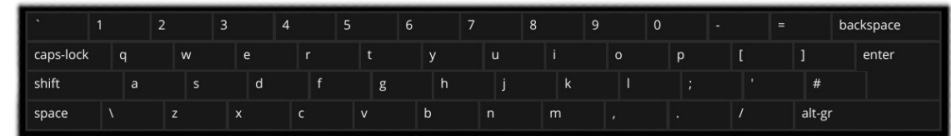
- 1 On the console of your unit, either:
 - Press **CTRL + ALT + C** on the keyboard, or
 - Tap the  icon on the touchscreen.
- 2 The Preset Selection page will be displayed:



- 3 On the preset page, either
 - Click/tap a preset entry to connect with the required CAM, 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 15.
- 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.



To exit the OSD

- 1 Either press the Esc key or tap the  icon in the top right corner.


USR - General Information

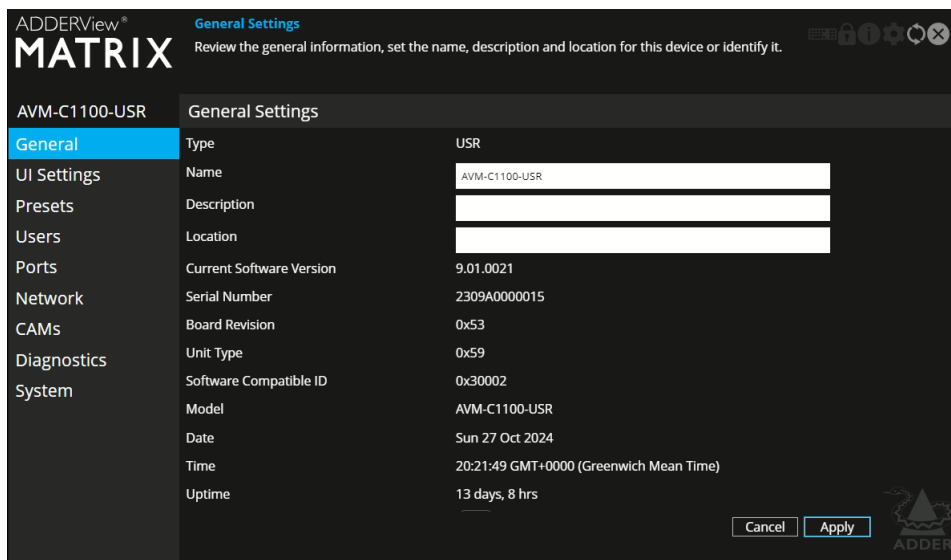
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 USR.
- 2 Run a web browser and enter the IP address of the USR: **https://169.254.1.32** (this is the default address for port 1).
(Note: the second USR network port defaults to **https://169.254.1.43**).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **General** link.



| AVM-C1100-USR | General Settings |
|---------------|---|
| General | Type: USR |
| UI Settings | Name: AVM-C1100-USR |
| Presets | Description: |
| Users | Location: |
| Ports | Current Software Version: 9.01.0021 |
| Network | Serial Number: 2309A0000015 |
| CAMs | Board Revision: 0x53 |
| Diagnostics | Unit Type: 0x59 |
| System | Software Compatible ID: 0x30002 |
| | Model: AVM-C1100-USR |
| | Date: Sun 27 Oct 2024 |
| | Time: 20:21:49 GMT+0000 (Greenwich Mean Time) |
| | Uptime: 13 days, 8 hrs |

General Information

Name - Name details that you can alter to distinguish this unit from all others.

Description - Allows you to optionally add a description of the device. Useful when many units are being used.

Location - Allows you to optionally add a description of the device's location. Useful when many units are being used.

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).


USR - UI Settings

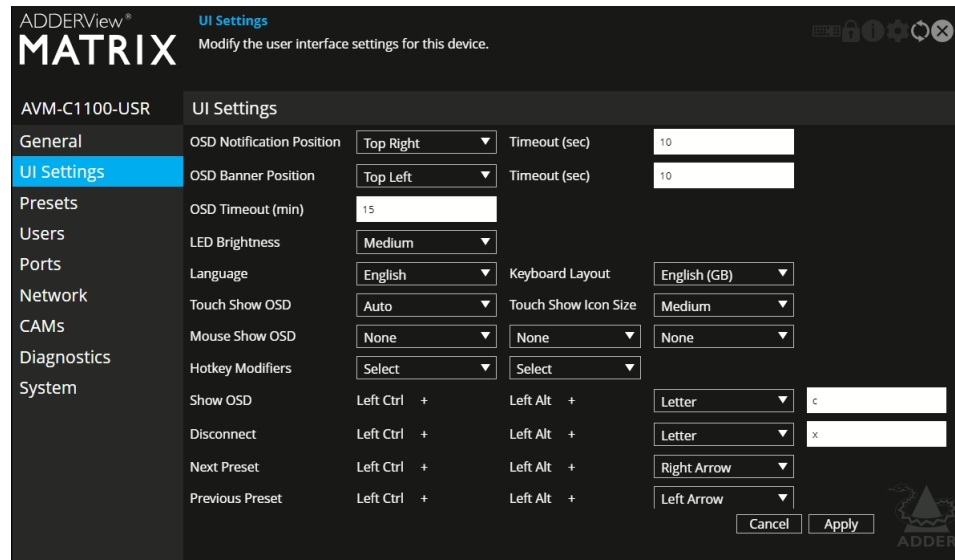
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **UI Settings** link.

OR

- 1 Connect a computer to the same network as the USR.
- 2 Run a web browser and enter the IP address of the USR: **https://169.254.1.32** (this is the default address for port 1).
(Note: the second USR network port defaults to <https://169.254.1.43>).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **UI Settings** link.



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 persistence of the OSD if no interaction has taken place.

LED Brightness - Determines the brightness of the front and rear panel LED indicators.

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.

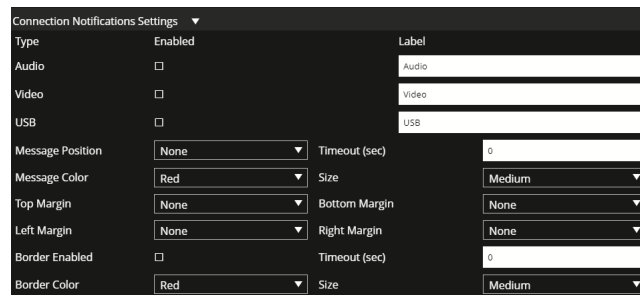
Touch Show OSD - (When touch screens are used) Determines whether the Show OSD icon is displayed continually, not at all or automatically.

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.

Show OSD... ..Last Preset - These entries determine the hotkey letters required (together with the modifier keys selected above) to enact various presets and modes.



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:

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.

Message 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.

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 <u>RECOVERY</u> 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 USR.
- `%sourceId%` will be replaced by the connection type's CAM source port number.



To get here

You can access this page in two ways:

1 On the console keyboard attached to the USR, 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 USR.

2 Run a web browser and enter the IP address of the USR:

https://169.254.1.32 (this is the default address for port 1).

(Note: the second USR network port defaults to <https://169.254.1.43>).

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 Name | Preset Description | Actions |
|----|-------------|--------------------|------------|
| 0 | Dongle 1 | System 1 | [-] [gear] |
| 1 | test 2 | | [gear] |
| 2 | | | [+] |
| 3 | | | [+] |
| 4 | | | [+] |
| 5 | | | [+] |
| 6 | | | [+] |
| 7 | | | [+] |
| 8 | | | [+] |
| 9 | | | [+] |
| 10 | | | [+] |
| 11 | | | [+] |
| 12 | | | [+] |



Note: The appearance of this page differs slightly differently depending on whether it is accessed from the WebUI or the OSD. The important difference is that presets can only be added or edited when the page is accessed from the OSD and not from the WebUI.

Preset Configuration

This page lists the details and connection status for the current channel/preset which the USR is using.

Each row details one type of connection which has been made. It lists the output port on the USR and the source port from the CAM 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 CAM. In most connections, the access passwords for all the peripherals will be set collectively during the initial linking between the USR and CAM. 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 CAM.

Analog and digital audio

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

• **Analog** audio () at USR only connects to ( or ) at CAM.

• **Digital** audio ( or ) at USR only connect to ( or ) at CAM.


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).


USR - Users

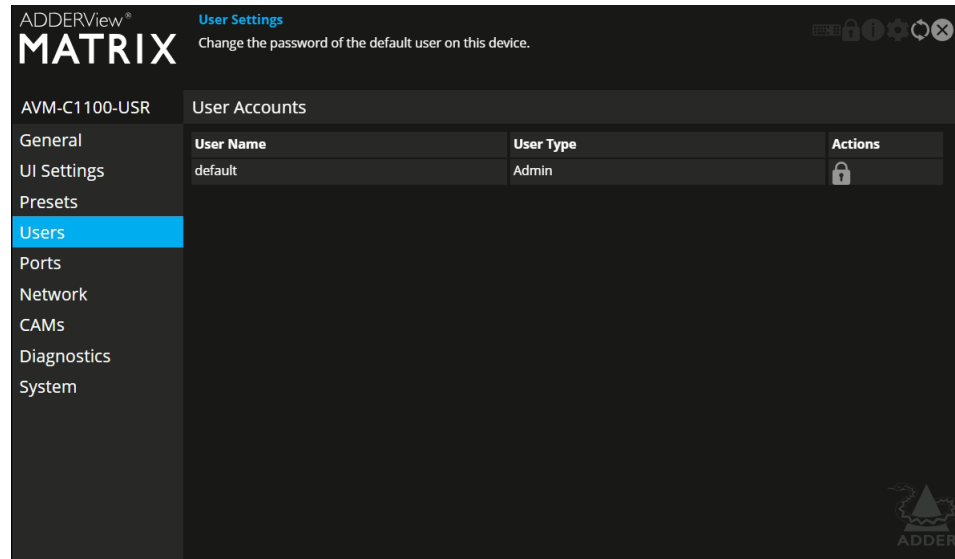
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **Users** link.


OR

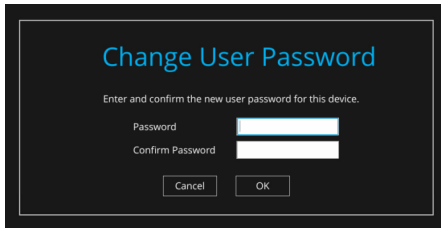
- 1 Connect a computer to the same network as the USR.
- 2 Run a web browser and enter the IP address of the USR: **https://169.254.1.32** (this is the default address for port 1).
(Note: the second USR network port defaults to **https://169.254.1.43**).
- 3 Click the  icon in the top right corner.
- 4 If necessary, 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.


USR - Ports

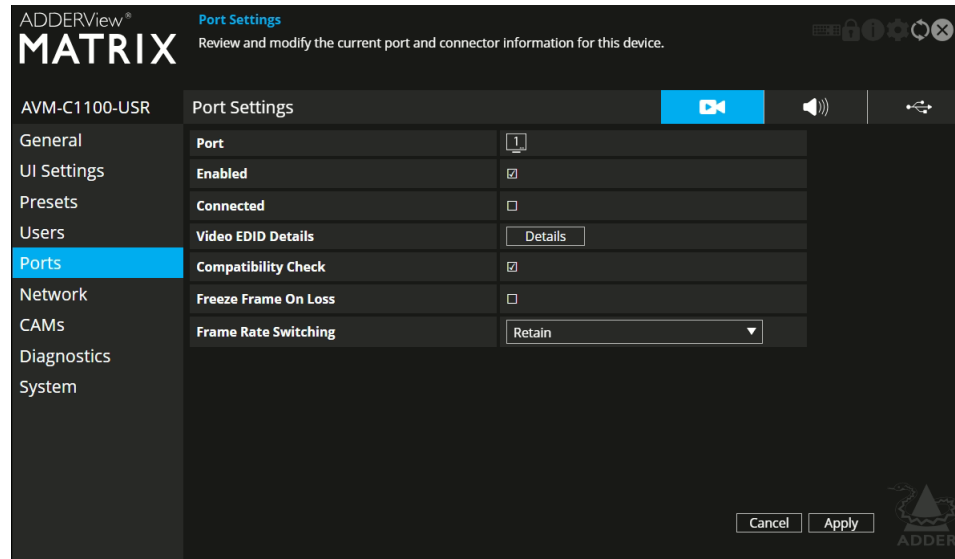
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **Ports** link.

OR

- 1 Connect a computer to the same network as the USR.
- 2 Run a web browser and enter the IP address of the USR: **https://169.254.1.32** (this is the default address for port 1).
(Note: the second USR network port defaults to **https://169.254.1.43**).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **Ports** link.



Video Ports

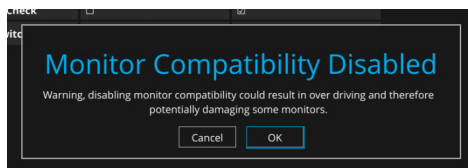
This page provides basic information about the video port located on the USR.

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

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

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, 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:



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 25.

Frame Rate Switching - Determines the strategy to use for the frame rate when switching resolutions.

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 USR.

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 video port. Unsupported formats will be greyed out.

Compatibility Check - When ticked, the USR 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 1 to 4 inclusive, located on the USR.

Type - Identifies the type of the USB port. All AVM ports are Emulated.

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

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

USR - 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.



INSTALLATION

CONFIGURATION



OPERATION

**FURTHER
INFORMATION**


INDEX

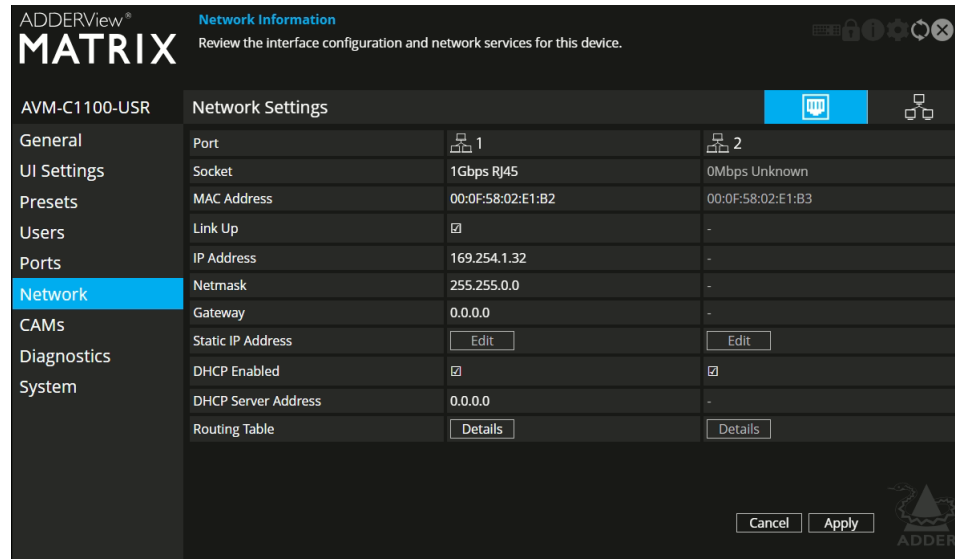
To get here

You can access this page in two ways:

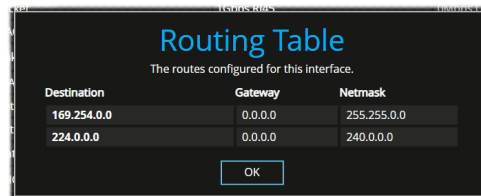
- 1 On the console keyboard attached to the USR, access the OSD by pressing **CTRL + ALT + C** or tap the touchscreen  icon. The Preset Selection page will be displayed.
- 2 Click the  icon in the top right corner.
- 3 If necessary, click the **Network** link.

OR

- 1 Connect a computer to the same network as the USR.
- 2 Run a web browser and enter the IP address of the USR: **https://169.254.1.32** (this is the default address for port 1).
(Note: the second USR network port defaults to **https://169.254.1.43**).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **Network** link.



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.



Port Settings

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

Socket - Details each operational network socket and what connection speeds they have established. Socket 2 is determined by the SFP module plugged into it.

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.



Network Information

Default Domain - Reserved for future use.

Independent Networks - When ticked, the USR will treat its two main network ports as independent routes to the CAM(s) and not attempt to find secondary cross connections, which may not be possible due to the network topology.

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.


USR - CAMs

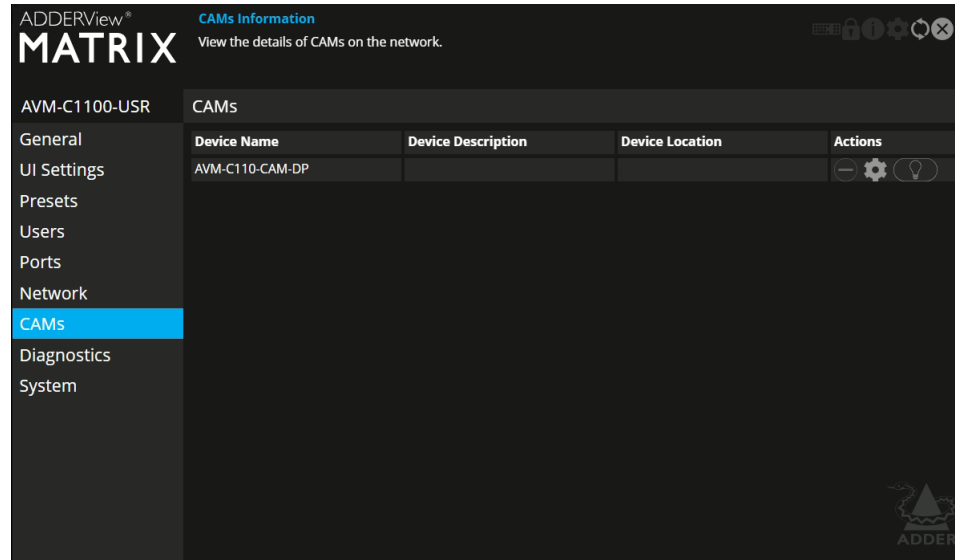
To get here




You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **CAMs** link.

OR

- 1 Connect a computer to the same network as the USR.
- 2 Run a web browser and enter the IP address of the USR: **https://169.254.1.32** (this is the default address for port 1).
(Note: the second USR network port defaults to **https://169.254.1.43**).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **CAMs** link.





| Device Name | Device Description | Device Location | Actions |
|-----------------|--------------------|-----------------|---|
| AVM-C110-CAM-DP | | |    |

CAMs

This page lists the available computer access modules.


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


- Click  to view the configuration page of the CAM. When clicked, you will be directed to the General page for the chosen CAM. See page 35.
- Click  to flash the indicators on the CAM to assist with identification.
- [When viewing CAM pages] Click the X button in the top right corner to return to the USR pages.

USR - Diagnostics and Statistics

To get here

You can access this page in two ways:

1 On the console keyboard attached to the USR, 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 **Diagnostics** link.

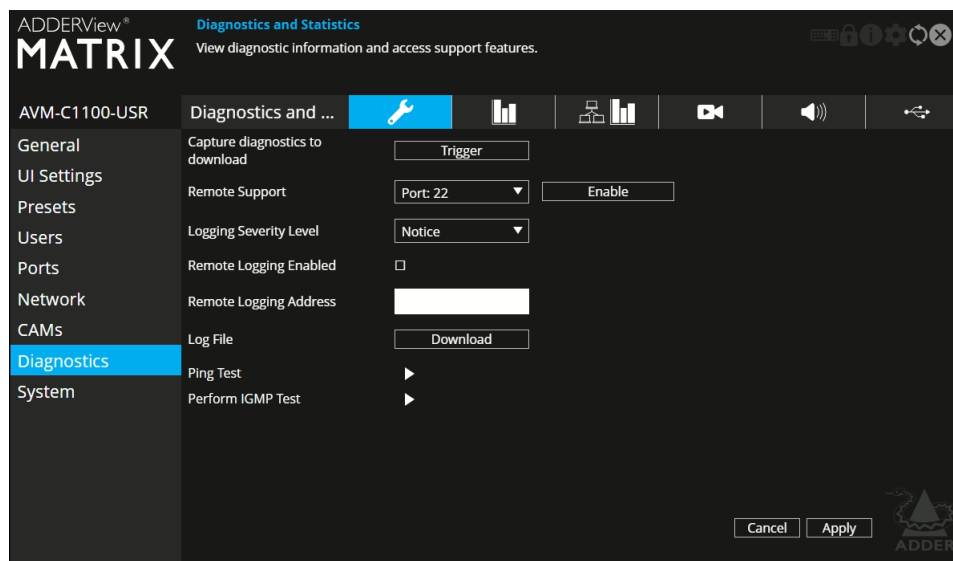
OR

1 Connect a computer to the same network as the USR.

2 Run a web browser and enter the IP address of the USR: **https://169.254.1.32** (this is the default address for port 1).
(Note: the second USR network port defaults to **https://169.254.1.43**).

3 Click the  icon in the top right corner.

4 If necessary, click the **Diagnostics** link.



Log Settings

This page provides numerous key diagnostic log settings.

Capture diagnostics to download - 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 1-4.

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. 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.

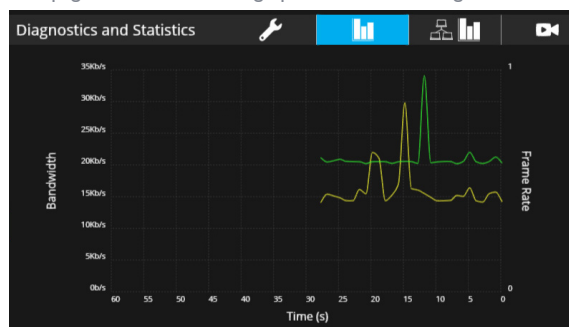
Ping Test - Allows you to conduct a ping test to any selected address or device.

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** - values are labeled when they change and correspond to the axis on the right.
- **Codec** - this represents the compression used: 1 is better than 4.
- **Dropped Packets** - 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.



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.


USR - System

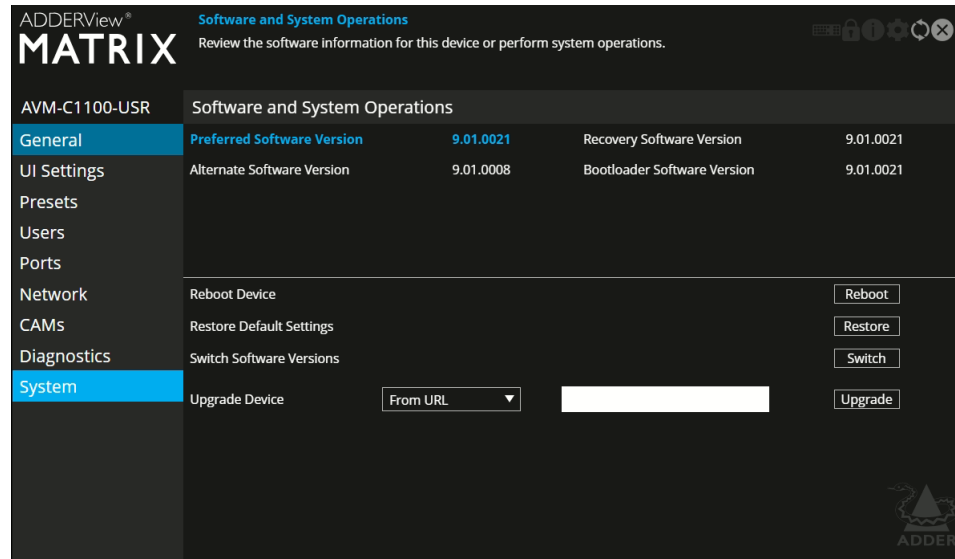
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **System** link.

OR

- 1 Connect a computer to the same network as the USR.
- 2 Run a web browser and enter the IP address of the USR: **https://169.254.1.32** (this is the default address for port 1).
(Note: the second USR network port defaults to **https://169.254.1.43**).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **System** link.



ADDERView[®] **MATRIX** Software and System Operations
Review the software information for this device or perform system operations.

AVM-C1100-USR Software and System Operations

| | | | | |
|-------------|----------------------------|-----------|-----------------------------|-----------|
| General | Preferred Software Version | 9.01.0021 | Recovery Software Version | 9.01.0021 |
| UI Settings | Alternate Software Version | 9.01.0008 | Bootloader Software Version | 9.01.0021 |

Presets
Users
Ports
Network
CAMs
Diagnostics

Reboot Device
Restore Default Settings
Switch Software Versions
Upgrade Device
From URL

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'.

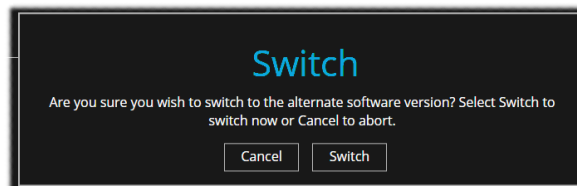
Upgrade Device - If viewing this page using a browser: Allows you to upgrade the firmware either from a trusted URL or from a locally stored file. Use the field to define the source and then click the Upgrade button.

Switching to an alternate software version

If required you can instruct the USR to use a previous (backup) version of its operating software (firmware).

To switch to an alternate software version

- 1 Within the OSD or using a web browser, access the System page for the USR (as detailed above left).
- 2 Click the Switch button in the lower right corner of the page to display the following popup:




- 3 Click the Switch button to confirm.
- 4 After a short delay, reboot the USR to utilize the alternate software.


CAM - General Information

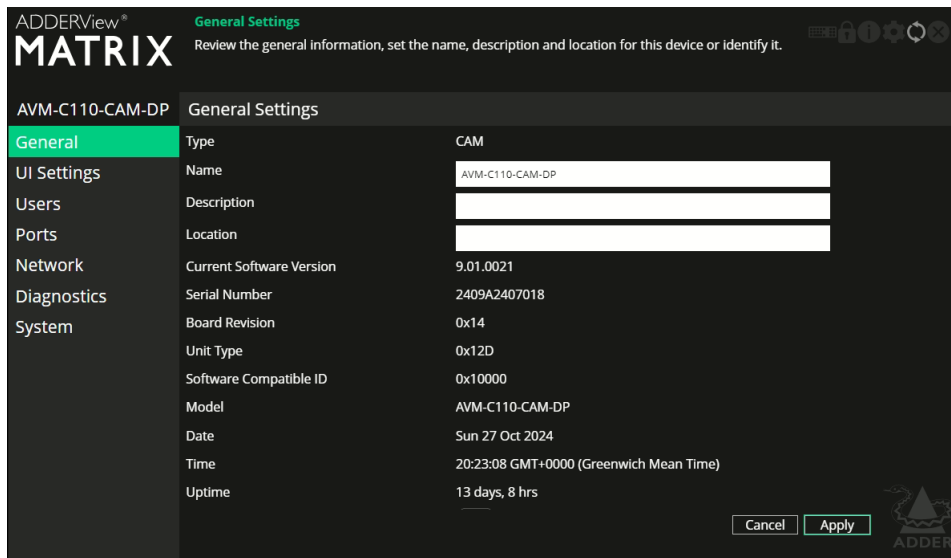
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **CAMs** option and then click the  icon for the required CAM.
- 4 If necessary, click the **General** link.

OR

- 1 Connect a computer to the same network as the CAM.
- 2 Run a web browser and enter the IP address of the CAM: **https://169.254.1.33** (this is the default address).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **General** link.



| General Settings | |
|--------------------------|---|
| Type | CAM |
| Name | AVM-C110-CAM-DP |
| Description | |
| Location | |
| Current Software Version | 9.01.0021 |
| Serial Number | 2409A2407018 |
| Board Revision | 0x14 |
| Unit Type | 0x12D |
| Software Compatible ID | 0x10000 |
| Model | AVM-C110-CAM-DP |
| Date | Sun 27 Oct 2024 |
| Time | 20:23:08 GMT+0000 (Greenwich Mean Time) |
| Uptime | 13 days, 8 hrs |

General Information

Type - CAM - *Computer Access Module*.

Name - Name details that you can alter to distinguish this unit from all others.

Description - Allows you to optionally add a description of the device. Useful when many units are being used.

Location - Allows you to optionally add a description of the device's location. Useful when many units are being used.

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.

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 USR must provide in order to connect (video, audio, etc) to the CAM.


CAM - UI Settings

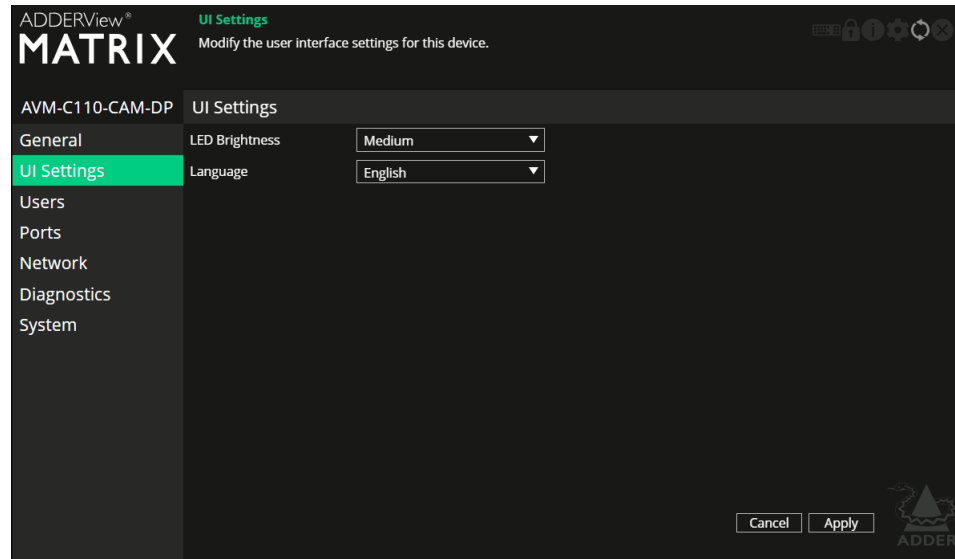
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **CAMs** option and then click the  icon for the required CAM.
- 4 If necessary, click the **UI Settings** link.

OR

- 1 Connect a computer to the same network as the CAM.
- 2 Run a web browser and enter the IP address of the CAM: **https://169.254.1.33** (this is the default address).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **UI Settings** link.



UI Settings




LED brightness - Determines the brightness of the LED indicators.

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


CAM - Users

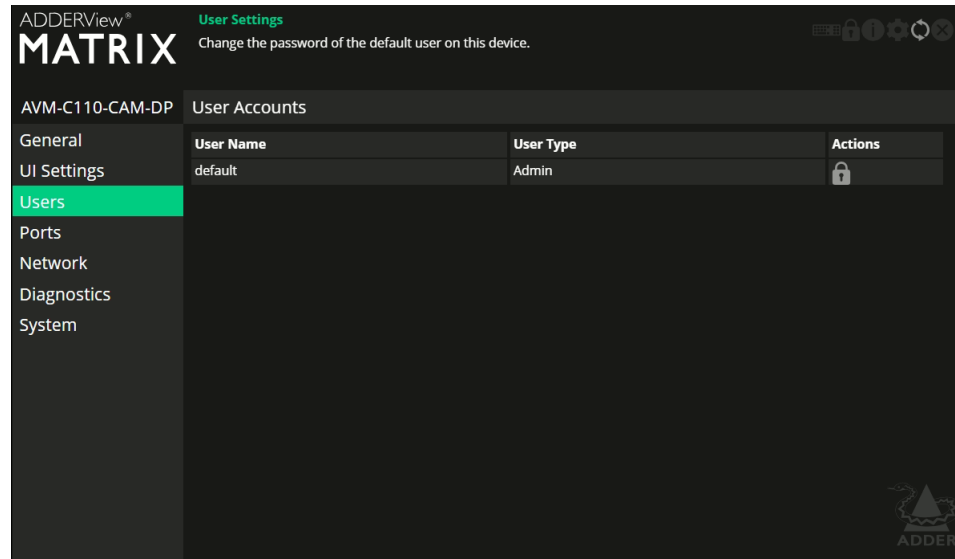
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **CAMs** option and then click the  icon for the required CAM.
- 4 If necessary, click the **Users** link.


OR

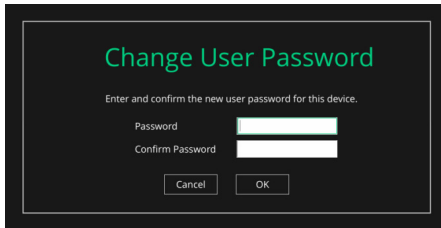
- 1 Connect a computer to the same network as the CAM.
- 2 Run a web browser and enter the IP address of the CAM: **https://169.254.1.33** (this is the default address).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **Users** link.



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.


CAM - Ports

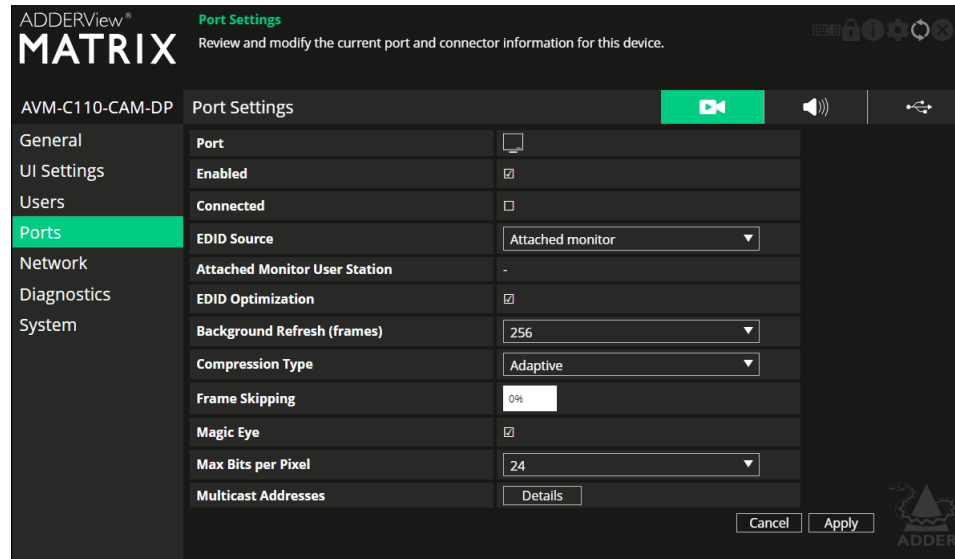
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **CAMs** option and then click the  icon for the required CAM.
- 4 If necessary, click the **Ports** link.

OR

- 1 Connect a computer to the same network as the CAM.
- 2 Run a web browser and enter the IP address of the CAM: **https://169.254.1.33** (this is the default address).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **Ports** link.



Video Port

This page provides basic information about the video port located on the CAM.

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

Connected - Confirms whether functioning host video driver is connected to the video port.

EDID Source - Lists the EDID mode currently being output on the video connector. An option called *Saved attached monitor* is available and will save that first USR'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 CAM and used from now on by the CAM until it is cleared (see below).

To clear the saved monitor EDID, either:

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

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

Attached Monitor User Station - If the 'Attached monitor' option has been selected as the 'EDID Source', then this displays the name of the USR 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 USR, the CAM 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 CAM 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 USR is connected. If this setting is unticked, the CAM 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 CAM. 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 Matrix units are used with host computers that have dithered video output. It also improves performance if the video source is noisy.

Max Bits per Pixel - These settings are fixed at 24bpp (ie, 8bpc) for this model.

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.

CAM - Ports (continued)



Audio Port

This page provides basic information about the audio port located on the CAM.

Enabled - Confirms whether the audio ports (USB and video) 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 CAM and use them until they are cleared (see below).

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

2-Channel - apply a generic stereo audio EDID.

To clear the saved monitor EDID, either:

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

Attached Monitor User Station - If the *EDID source* option is set to ‘Attached monitor’, then this displays the name of the USR 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 USR, the CAM will compare the preferred audio mode of the new monitor with the current audio output from the host PC. Only if they differ will the CAM 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 USR is connected. If this setting is unticked, the CAM will always present a new EDID to the host PC.

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.

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



USB Ports

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

Type - Identifies the type of the USB port.

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

Connected - Confirms whether a USB host is connected to the black USB cable of the CAM. *Note: The red USB cable is only for power.*

Rate Limit - Reserved.

Reserved Ports - Allows USB ports to be optionally reserved for use with particular devices.

Present Boot Keyboard - When ticked, the CAM 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 CAM 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 USR requests it.

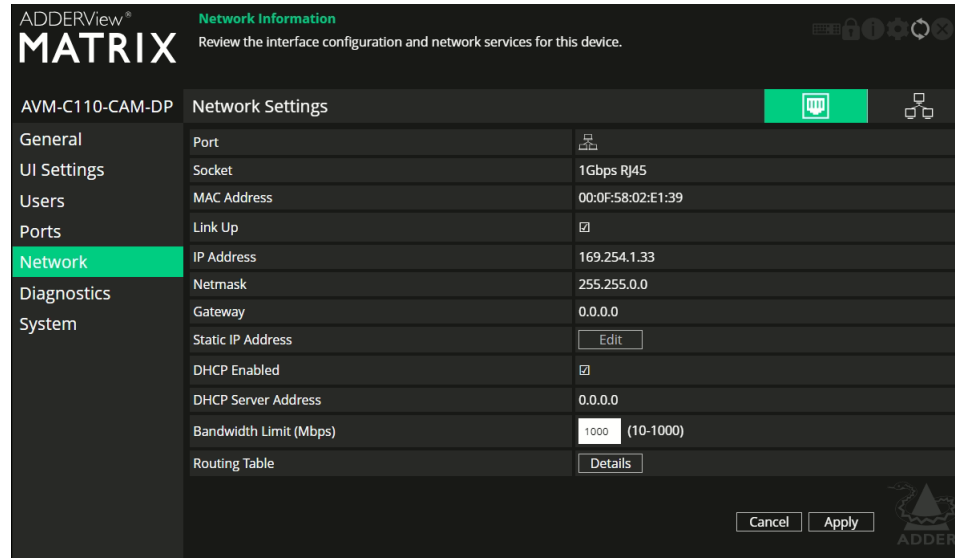
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USR, 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 **CAMs** option and then click the icon for the required CAM.
- 4 If necessary, click the **Network** link.

OR

- 1 Connect a computer to the same network as the CAM.
- 2 Run a web browser and enter the IP address of the CAM: **https://169.254.1.33** (this is the default address).
- 3 Click the icon in the top right corner.
- 4 If necessary, click the **Network** link.



Port Settings

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

Socket - Details the operational network socket.

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 10 and 1000 Mbps aka 1Gbps) 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 |
|-------------|---------|-------------|
| 169.254.0.0 | 0.0.0.0 | 255.255.0.0 |
| 224.0.0.0 | 0.0.0.0 | 240.0.0.0 |



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.


CAM - Diagnostics and Statistics

To get here

You can access this page in two ways:

1 On the console keyboard attached to the USR, 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 **CAMs** option and then click the  icon for the required CAM.

4 If necessary, click the **Diagnostics** link.

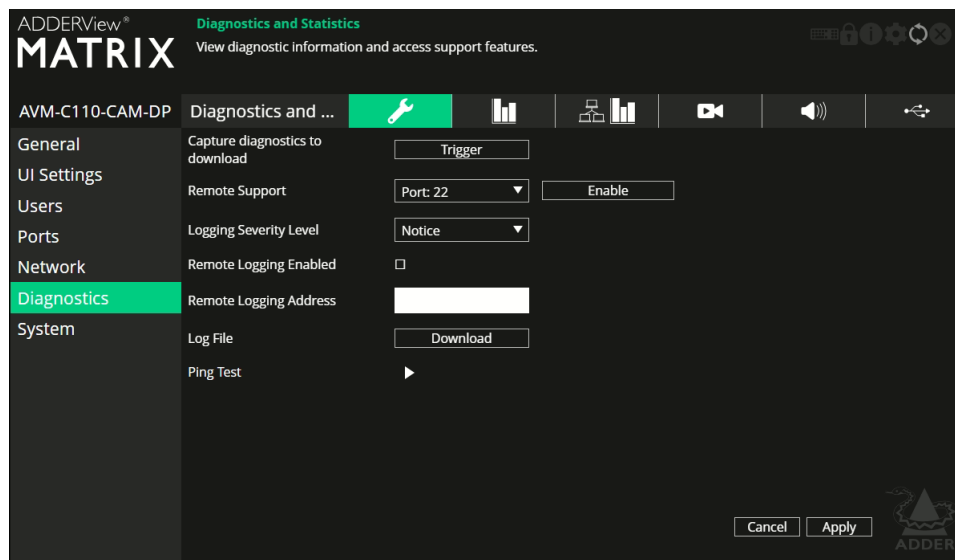
OR

1 Connect a computer to the same network as the CAM.

2 Run a web browser and enter the IP address of the CAM: **https://169.254.1.33** (this is the default address).

3 Click the  icon in the top right corner.

4 If necessary, 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). 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 USR. 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** - values are labeled when they change and correspond to the axis on the right.
- **Codec** - these represent the compression used: 1 is better than 4.



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.


CAM - System

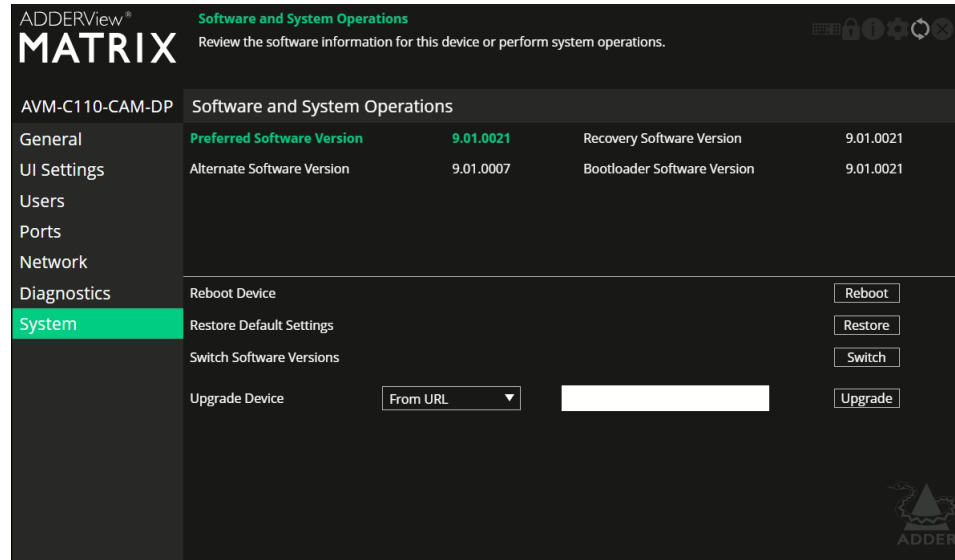
To get here

You can access this page in two ways:

- 1 On the console keyboard attached to the USB, 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 **CAMs** option and then click the  icon for the required CAM.
- 4 If necessary, click the **System** link.

OR

- 1 Connect a computer to the same network as the CAM.
- 2 Run a web browser and enter the IP address of the CAM: **https://169.254.1.33** (this is the default address).
- 3 Click the  icon in the top right corner.
- 4 If necessary, click the **System** link.



| General | Preferred Software Version | 9.01.0021 | Recovery Software Version | 9.01.0021 |
|-------------|----------------------------|-----------|-----------------------------|-----------|
| UI Settings | Alternate Software Version | 9.01.0007 | Bootloader Software Version | 9.01.0021 |

Buttons: Reboot, Restore, Switch, Upgrade

Upgrade Device: From URL [input field] Upgrade

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'.

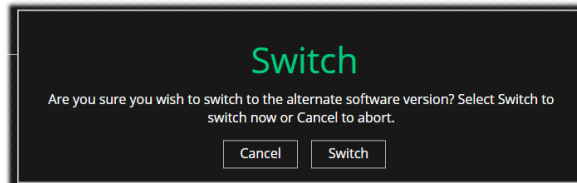
Upgrade Device - Allows you to upgrade the firmware either from a trusted URL or from a locally stored file. Use the field to define the source and then click the Upgrade button.

Switching to an alternate software version

If required you can instruct the CAM to use a previous (backup) version of its operating software (firmware).

To switch to an alternate software version

- 1 Within the OSD or using a web browser, access the System page for the CAM (as detailed above left).
- 2 Click the Switch button in the lower right corner of the page to display the following popup:



- 3 Click the Switch button to confirm.
- 4 After a short delay, reboot the CAM to utilize the alternate software.

APPENDIX B - Support for analog and digital audio

The ADDERView Matrix units benefit from dual digital audio signal streams:

- **Uni-directional digital audio** - via the video connection,
- **Bi-directional digital audio** - via the USB connection (converted to/from analog).

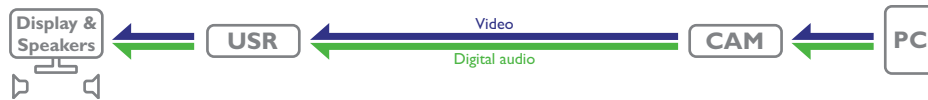
Even though the digital outputs from a particular host PC might be carrying signals that originated from the same audio source, they can never be mixed.

For digital audio derived from the video connection, the host PC needs to know details of the required signal to send out, eg 16-bit, 32, 44.1 or 48kHz sample rate, etc, so 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 ADDERView Matrix USB and CAM to the host PC:



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

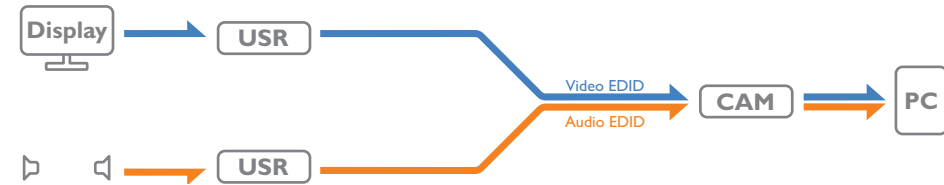


In the above case, the video and digital audio from the host PC are both sent to the same USR. However, the flexibility of the ADDERView Matrix system is such that peripherals and hosts can be mixed as required. For instance, the video feed could be sent to one USR, while the digital audio is used by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



Note: ADDERView Matrix units support only two channel stereo audio and the CAMs will not encode digital audio from a PC with more than 2 channels.

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



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

- **Attached** - ADDERView Matrix will interrogate the attached video/audio device to ascertain its exact capabilities/requirements.
- **Fixed** - ADDERView Matrix will use a fixed definition (e.g 1920x1080p60 and 2-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 ADDERView Matrix CAM, as connections are made to the different devices, using the following rules:

| Video EDID | Audio EDID | Action (taken by the CAM 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.

Digital audio specifications

- **Digital audio** (DisplayPort™ or HDMI®):
 - Up to 2 audio channels,
 - Three choices of sampling frequencies: 32, 44.1 or 48kHz,
 - Linear Pulse Code Modulation: 16bit.

APPENDIX C - Fiber/copper modules and cables

To suit your installation layout, fiber and copper modules are available for the ADDERView Matrix USRs to support various fiber optic and CATx cables. The specifications for all are summarized in this table:

| Name | Fiber size | Type | Coding | | Distance at 1Gbps | Adder part number for SFP module |
|-------------|------------|--|---------------------|------------------------------|-------------------|----------------------------------|
| | | | Normal applications | Suggested print nomenclature | | |
| OM1 | (62.5/125) | Multimode (TIA-492AAAA) | Orange | 62.5/125 | 220m | SFP-MM-LC |
| OM2 | (50/125) | Multimode (TIA-492AAAB) | Orange | 50/125 | 550m | “ |
| OM3 | (50/125) | Multimode (850 nm Laser-optimized) (TIA-492AAAC) | Aqua | 850 LO 50 /125 | 550m | “ |
| OM4 | (50/125) | Multimode (850 nm Laser-optimized) (TIA-492AAAC) | Aqua | 850 LO 50 /125 | 550m | “ |
| OS1 and OS2 | (9/125) | Single-mode (TIA-492C000 / TIA-492E000) | Yellow | SM/NZDS, SM | 20km | SFP-SM-LC |
| CATx | n/a | CAT5e and above | n/a | n/a | 100m | SFP-CATx-RJ45 |

APPENDIX D - OPEN SOURCE LICENSES

The software included in this product contains copyrighted software that is licensed under the GNU General Public License (GPL) v2. You may obtain the complete Corresponding Source Code from Adder for a period of three years after the last shipment of this product, which will be no earlier than 2028, by contacting support@adder.com or writing to:

Attn:ACD/Open Source Request,
Adder Technology Ltd,
Saxon Way, Bar Hill,
Cambridge, CB23 8SL,
United Kingdom

Please write "Source for product XXXXXXXX" in the subject line, where XXXXXXXX is the model and version number.

This offer is valid to anyone in receipt of this information.

CAM licence (v9.01)

This product includes binaries that are derived from the open source community. The modules listed below are licensed under the GNU General Public License v2 and must be provided, in source form, on request:

```
dtc
u-boot-xlnx
linux/linux
busybox
termcap
util-linux
libcap
systemd
iproute2
e2fsprogs
mtd-utils
rng-tools
libftw
libpbe
```

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```
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avahi
gnutls
glib
libgpg-error
libgcrypt
libmicrohttpd
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libjvt
```

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In addition to the GPL modules listed, this product also includes binaries derived from 3rd party open sources that have their own license requirements. Each module is listed below with their required Copyright statement and distribution conditions.

```
-----
- Module: util-linux
-----
```

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- Module: openssl  
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- Module: libcc  
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- Module: zlib

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Jean-loup Gailly Mark Adler
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- Module: jansson

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- Module: libcurl

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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```
-----
-
- Modules: kmod systemd libdaemon avahi gnutls lib libgpg-error libgcrypt
libmicrohttpd
-
-----
```

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-
- Modules: libunistring gmp nettle

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- Modules: dhcp libjvt
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- Module: freedsd-libc
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- Module: openssl
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-
- Module: libcv
-

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- Module: zlib

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Jean-loup Gailly Mark Adler
jloup@gzip.org madler@alumni.caltech.edu

- Module: jansson

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- Module: libcurl

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```
- 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
```

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```
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```

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```
- random/jitterentropy-base.c
- random/jitterentropy-gcd.c
- random/jitterentropy-gcd.h
- random/jitterentropy-health.c
- random/jitterentropy-health.h
- random/jitterentropy-noise.c
- random/jitterentropy-noise.h
- random/jitterentropy-sha3.c
- random/jitterentropy-sha3.h
- random/jitterentropy-timer.c
- random/jitterentropy-timer.h
- random/jitterentropy.h
- random/rndjent.c (plus common Libgcrypt copyright holders)
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- cipher/cipher-gcm-ppc.c
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3. [3] Bernd Altmeier <altmeier@atsof.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 WindowsNT 3.5
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30. [33] Johannes Maximilian Kuehn <kuehn@ntp.org> Rewrote snpt to comply with NTPv4 specification, ntpq saveconfig
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33. [36] Craig Leres <leres@ee.lbl.gov> 4.4BSD port, ppsclock, Magnavox GPS clock driver
34. [37] George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port
35. [38] Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
36. [39] Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
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48. [52] Nick Sayer <mripple@quack.kfu.com> SunOS streams modules
49. [53] Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory
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52. [56] Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver
53. [57] Harlan Stenn <harlan@pfc.com> GNU automate/autoconfigure makeover, various other bits (see the ChangeLog)
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59. [63] Paul A Vixie <vixie@vix.com> TrueTime GPS driver, generic TrueTime clock driver
60. [64] Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de> corrected and validated HTML documents according to the HTML DTD

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```

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curve25519.c:

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```
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```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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```
-----
- Modules: kmod systemd libdaemon avahi gnutls glib libgpg-error libgrypt
libmicrohttpd strace
-----
```

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```
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```

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```
-----
-
- Modules: libunistring gmp nettle
-
-----
```

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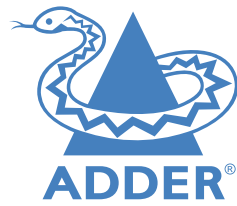
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