

PAM2-IP-3G Quick Start Guide ST-2022-6 and Dante/AES67

Notes:

This document is intended to be a Quick Start Guide for customers looking to use the PAM2-IP-3G with Dante and/or SMPTE 2022-6 Sources and should be read in conjunction with the PAM2-MK2 Handbook

A separate Quick Start Guide is available for customers looking to use the PAM2-IP-3G with ST-2110 sources and/or Dante/AES67 sources.

Version History

Issue	Date	Change Details
1	1/12/17	First Issue
2	5/11/18	Second Issue

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Introduction

Congratulations on your purchase of the PAM2-IP-3G!

This Quick Start Guide will take you through the necessary steps to connect and configure your PAM2-IP-3G to monitor any of the following:

- ST-2022-6
- Dante/AES67 AoIP

To realise the full benefits of your PAM2-IP-3G, including the monitoring of SDI, AES and Analogue audio sources, this Quick Start Guide should be read in conjunction with the PAM2 MK2 Handbook.

Updating your PAM2-IP-3G Software

Before setting up your PAM2-IP-3G for the first time, we recommend you visit our Support portal at www.tslproducts.com.

From here you will be able to download the latest PAM2-IP-3G software and accompanying Release Notes.

As part of TSL Products commitment to the continual improvement of its products, regular software and firmware updates are made available on our Support portal.

Please make sure your PAM2-IP-3G is running the latest software release so that you can benefit from the latest features and functionality offered by the PAM2-IP-3G.

Instructions on upgrading the software on your PAM2-IP-3G can be found later in this Quick Start Guide.

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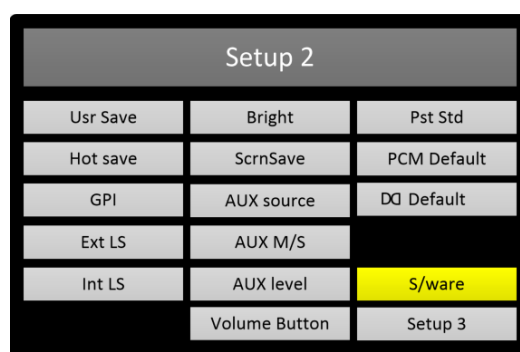
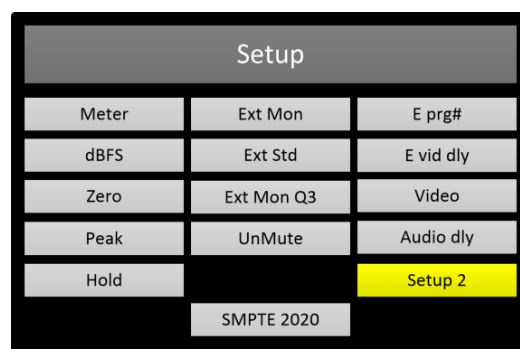
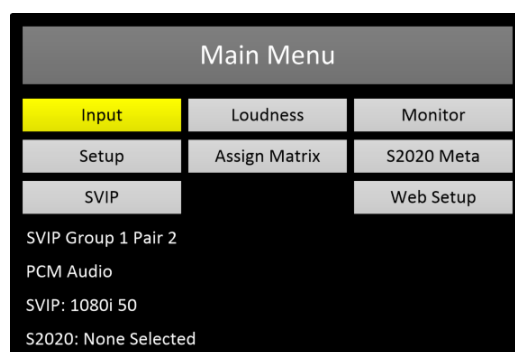
Having downloaded the latest PAM2-IP-3G software release from www.tslproducts.com, you will be presented with a .ZIP file with a file name like the example below:

PAM2-IP_v204_C02_Z26a_v283_20sep2018.zip

Unzip this file and locate the directory named 'PAM2-IP', copy the directory and its contents into the root of a USB thumb drive.

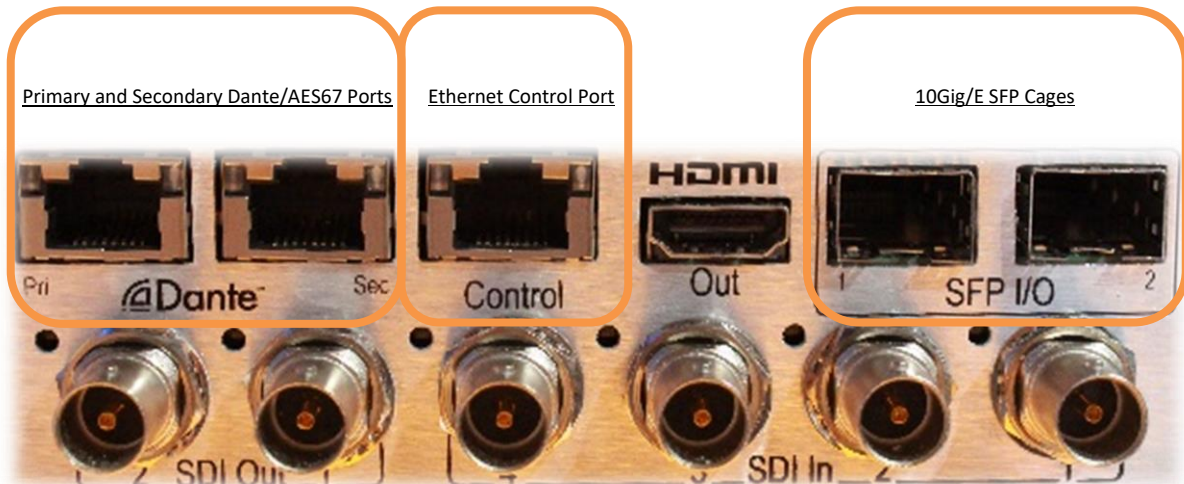
1. Navigate to the **Main Menu** and select **Setup**.
2. Navigate to and select **Setup 2**
3. Navigate to and select **S/ware**
4. Finally, navigate to and select 'Perform Update'.
5. Updating the PAM2-IP-3G can take up to 5 minutes.
6. Once complete, power recycle the PAM2-IP-3G

Note: Further information re: updating your PAM2-IP-3G can be found in the PAM2-MK2 User Manual



Getting Connected

Alongside the more traditional 3G/HD/SD-SDI, AES and Analogue connectivity typically found on TSL Audio Monitoring Units, the PAM2-IP-3G carries the following ports for connection into IP networks.



Note: When connecting your PAM2-IP-3G to a 10Gig/E network, please ensure that you use SFP modules supplied by TSL Products only. SFP modules sourced from other suppliers will not function and may even damage your PAM2-IP-3G.

Understanding Dante/AES67 Ports

In order to use the PAM2-IP-3G within a Dante/AES67 network, you will need to make use of Audinate's Dante Controller.

Dante Controller can be downloaded from Audinate's Website using the following link:

<https://audinate.com/products/software/dante-controller>

If you are connecting your PAM2-IP-3G to a non-redundant network, please make sure to connect the Primary port only on your PAM-2-IP-3G.

If you are connecting your PAM2-IP-3G to a redundant network, then both Primary and Secondary ports should be used.

Note: When connecting your PAM2-IP-3G to a redundant Dante network, please ensure that both Primary and Secondary ports are connected using the same link speed. If the primary interface is connected to a 1 Gbps switch port, the secondary interface must also be connected to a 1 Gbps switch port.

Both PAM2-IP-3G Primary and Secondary 1Gig/E ports are set to default to DHCP. If no DHCP server is present, the ports will auto-assign an IP address.

When auto-assigning IP addresses, the Primary and Secondary ports will adopt an IP address in the following ranges:

Primary Port	169.254.x.x
Secondary Port	172.31.x.x

In cases where no DHCP server is present, both the Primary and Secondary Ports will continue to search for DHCP.

Using Dante Controller, it is also possible to assign a static IP address to the Primary and Secondary Dante/AES67 ports if required.

Note: It is not possible to either set or discover the IP addresses of the Primary and/or Secondary Dante/AES67 ports using the PAM2-IP-3G. TSL Products recommends that customers use Dante Controller for this purpose. More information on how to use Dante Controller can be found on the Audinate Website at the following link:

<https://audinate.com/resources/technical-documentation>

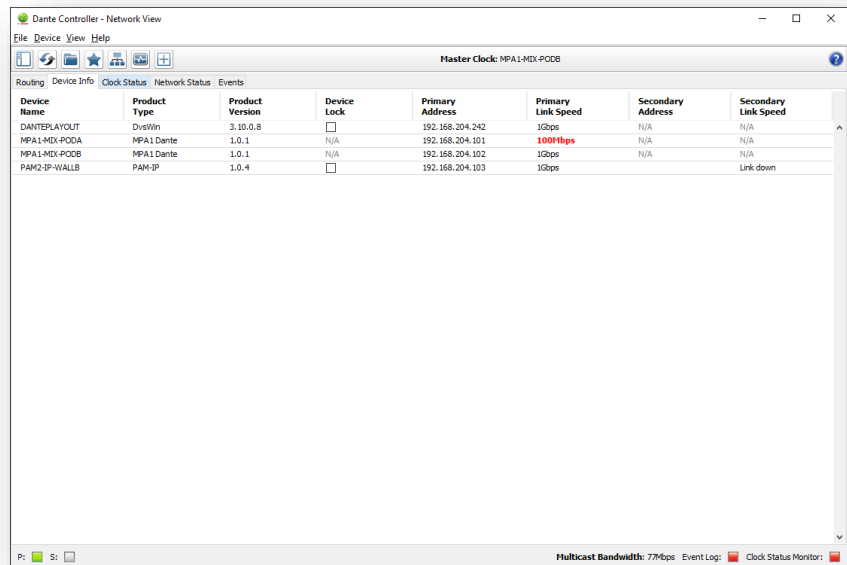
Using the 'Device Info' tab in Dante Controller, it is possible to see the IP addresses currently in use by the Primary and Secondary Dante/AES67 ports on the PAM2-IP-3G.

The example below shows a PAM2-IP-3G being identified on the network (see PAM-IP under the Product Type Column) using an IP address of 192.168.204.103 on the Primary port.

In this example, the Secondary port is not connected.

The 'Device Name' column shows the current user assignable name given to the PAM2-IP-3G.

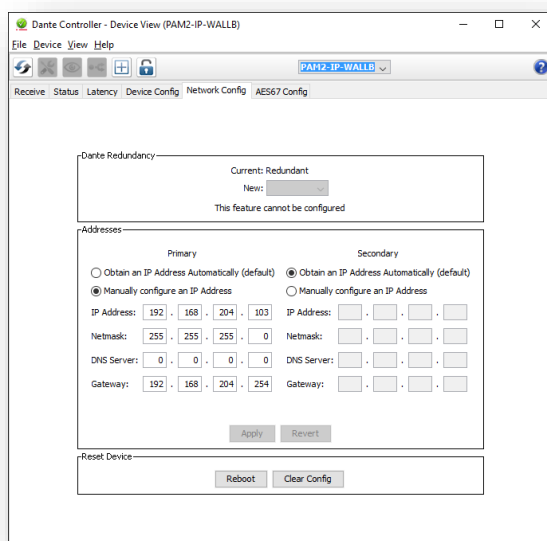
Double clicking on the device in the Device Info window will result in the 'Device View' the pop-up window being shown:



Master Clock: MPA1-MIX-PODB

Device Name	Product Type	Product Version	Device Lock	Primary Address	Primary Link Speed	Secondary Address	Secondary Link Speed
DANTEPLAYOUT	DvsWin	3.10.0.8	<input type="checkbox"/>	192.168.204.242	1Gbps	N/A	N/A
MPA1-MIX-PODA	MPA1 Dante	1.0.1	N/A	192.168.204.101	100Mbps	N/A	N/A
MPA1-MIX-PODB	MPA1 Dante	1.0.1	N/A	192.168.204.102	1Gbps	N/A	N/A
PAM2-IP-WALLB	PAM-IP	1.0.4	<input type="checkbox"/>	192.168.204.103	1Gbps		Link down

Multicast Bandwidth: 77Mbps Event Log: Clock Status Monitor:



Dante Redundancy

Current: Redundant
New:
This feature cannot be configured

Addresses

Primary: ☐ Obtain an IP Address Automatically (default) ☒ Manually configure an IP Address

Secondary: ☒ Obtain an IP Address Automatically (default) ☐ Manually configure an IP Address

IP Address: 192 . 168 . 204 . 103 IP Address: . . .

Netmask: 255 . 255 . 255 . 0 Netmask: . . .

DNS Server: 0 . 0 . 0 . 0 DNS Server: . . .

Gateway: 192 . 168 . 204 . 254 Gateway: . . .

Apply Revert

Reset Device

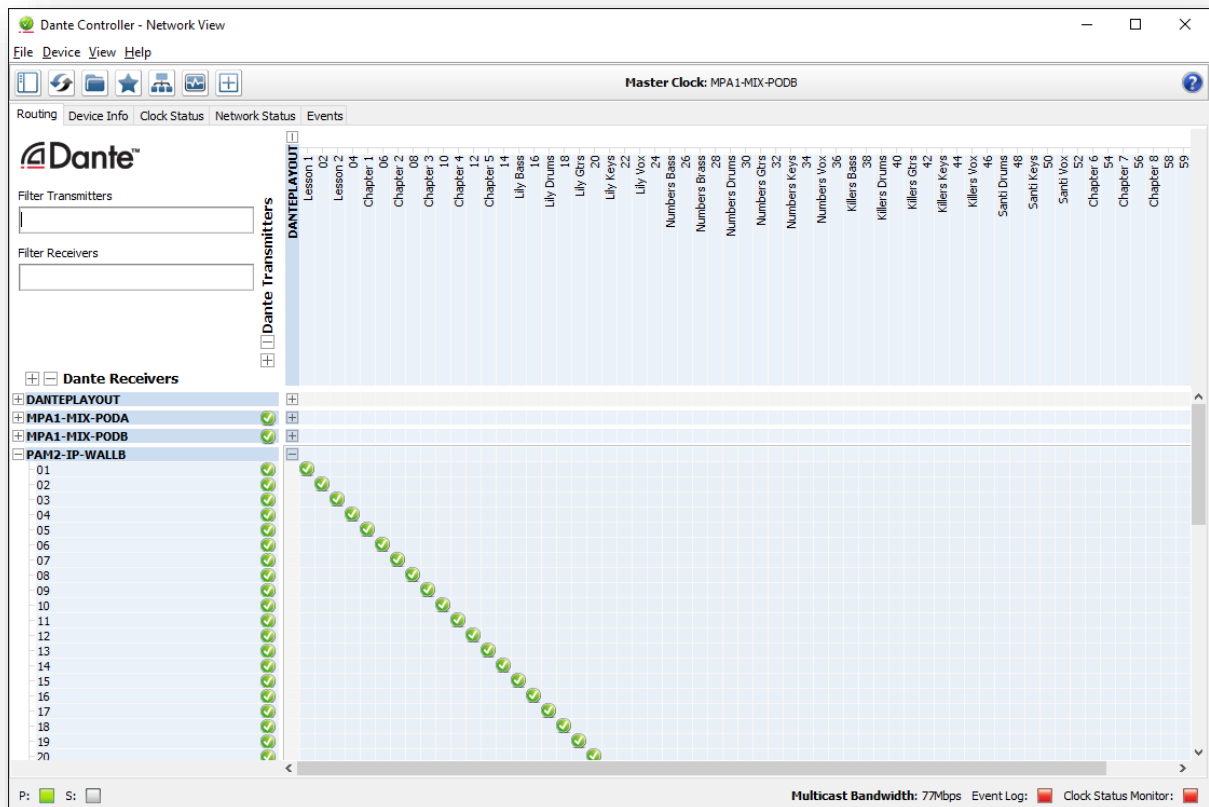
Reboot Clear Config

In the Device Info window, it is possible to switch the Primary and Secondary Ports between DHCP (recommended) or Static IP mode using the 'Network Config' tab.

Routing Dante/AES67 Audio Sources

All Dante/AES67 sources routed to the PAM2-IP-3G must be made using Dante Controller.

The example below shows a PAM2-IP-3G named 'PAM2-IP-WALLB' subscribing to audio channels being transmitted from a Dante device named 'Dante Playout'.

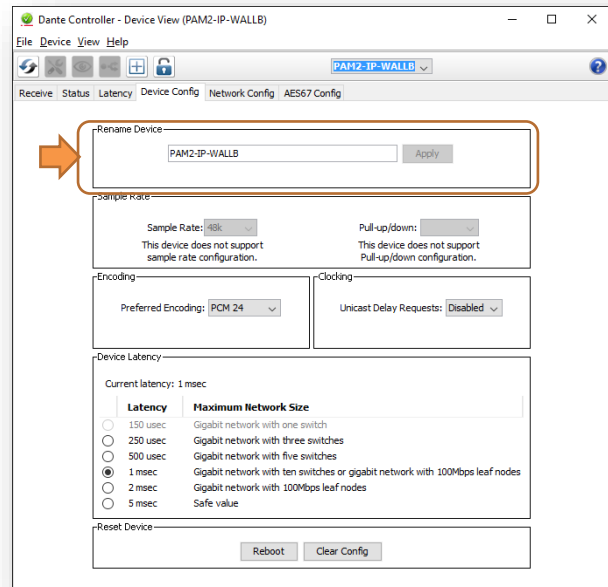


Naming your PAM2-IP-3G

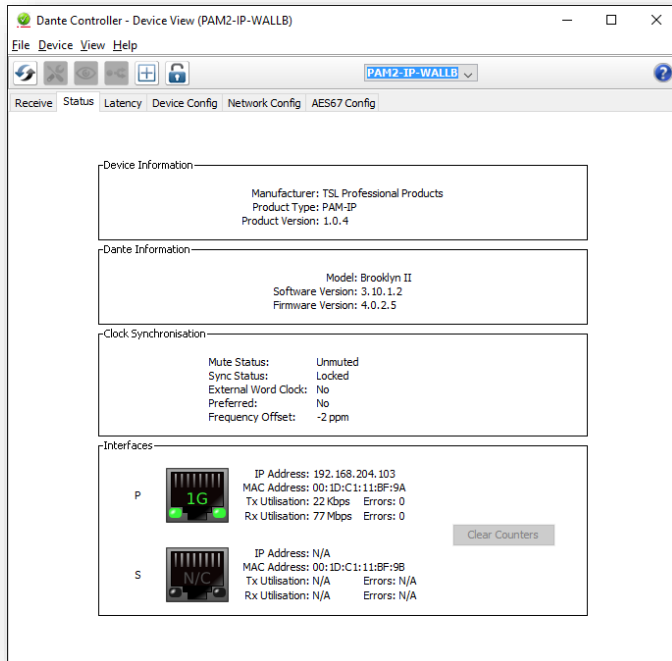
When connecting multiple PAM2-IP-3G Audio Monitoring units to the same network, you can use Dante Controller to assign each of them with unique names based on location, task, owner etc.

This example shows the Device Config tab in the 'Device View' pop up window for the Device named 'PAM2-IP-WALLB'.

You can name your PAM2-IP-3G device as required using the 'Rename and Apply' function shown here.



DANTE/AES67 Port Status on your PAM2-IP-3G



Further details regarding the PAM2-IP-3G Dante/AES67 ports can be found by clicking on the 'Status' tab in the 'Device View' pop-up window.

In this example we can see the Product Type, Product Version, Dante Software and Firmware Versions, Clock Status, IP and MAC address(es).

Note: As the owner of the PAM2-IP-3G, you are entitled to regular free of charge software updates as and when they become available. Software updates and Release Notes for the PAM2-IP-3G are available from the Support portal at www.tslproducts.com.

From time to time it may prove necessary to upgrade the software and firmware of the Dante Module in order to enable extra functionality. Full instructions for doing so are contained within the PAM2-IP-3G Release Notes.

Using your PAM2-IP-3G with SMPTE 222-6

The PAM2-IP-3G can subscribe to and monitor uncompressed SMPTE 222-6 Multicast IP streams when equipped with optional 222-6 SFP modules purchased from TSL Products.

1 or 2 SMPTE 222-6 10Gig/E SFP modules can be fitted as shown here.

Note: When connecting your SFP modules to your local network, please ensure that only multi-mode fibre cable is used. Single mode cable is not supported at this time.



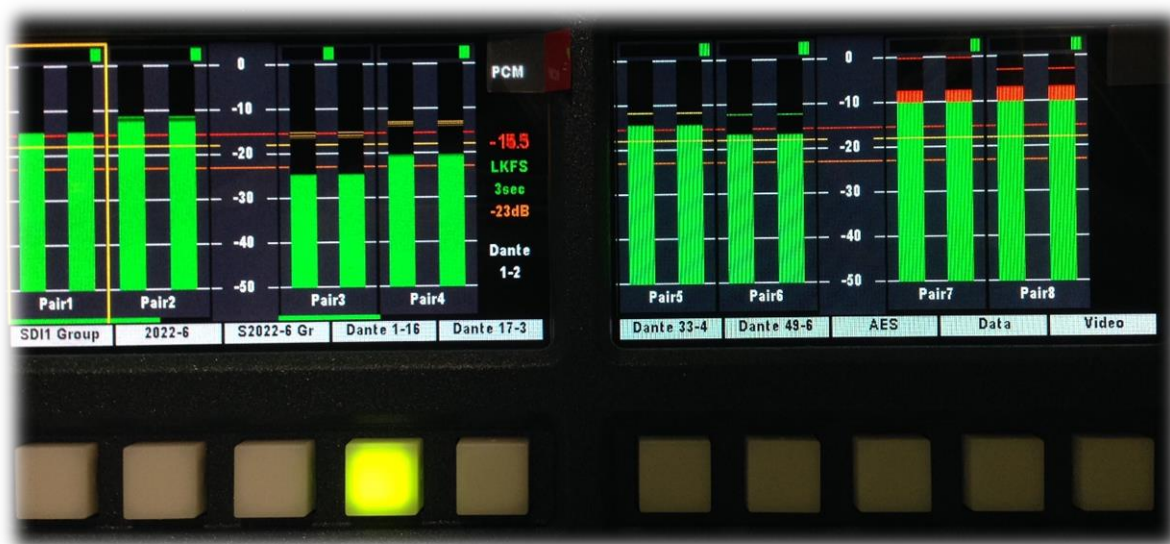
With the SFP modules fitted, attach you PAM2-IP-3G to your network using multimode fibre with LC connectors.

User Presets

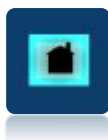
The PAM2-IP-3G can store and recall up to 24 User Presets. User Presets can be recalled directly on the front panel, allowing Operators to quickly switch between the various sources feeding the PAM2-IP-3G.

The picture below shows an example PAM2-IP-3G front panel complete with a number of User Presets that have already been created and named as follows:

- SDI Group
- 2022-6
- 2022-6 Gr
- Dante 1-16
- Dante 17-32
- Dante 33-48
- Dante 49-64



Below the User Presets, are the Hot Keys to enable quick recall of any one of up to 24 User Presets. User Presets can be 'cycled' in banks by repeatedly pressing the Home key on the front panel of the PAM2-IP-3G.



The User Preset currently loaded is identified by the Hot Key currently lit, (Dante 1-16 in this example).

Recalling a User Preset not only recalls the source you wish to monitor (SDI, AES, Analogue, Dante, SMPTE 2022-6) on the front panel but also what is displayed in the right-hand display (Video Source, Metadata or Loudness Histogram).

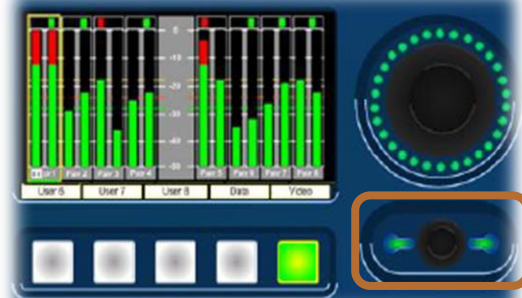
Note: Further information regarding the creation and recall of User Presets can be found in the PAM2MK2 Handbook.

Creating 2022-6 Presets

When using the 24 User Presets to recall a SMPTE 2022-6 Multicast source, the PAM2-IP-3G must understand exactly which 2022-6 Multicast Stream you wish to monitor.

To this end, the PAM2-IP-3G can store a maximum of 8 Multicast stream addresses that can then be recalled as part of the 24 User Presets available.

1. Press the Rotary Encoder identified here.
2. This will bring you to the Main Menu.
3. Now rotate the rotary encoder until the S2022-6 Menu is highlighted and press again.
4. Next, rotate the rotary encoder to highlight the Preset Setup Menu and press again.
5. This will bring you to the 2022-6 Preset Setup Menu.
6. Using the rotary encoder, you can now navigate to the Preset field shown at the top of the screen and Press once more to activate the field and navigate through the 8 'factory default' 2022-6 Multicast Presets.
7. Select a 2022-6 Multicast Preset that you are happy to replace or overwrite and press once more.



8. Having selected the 2022-6 Multicast Preset you wish to replace, press the encoder and navigate through to the IP Address field as shown here.
9. Using the rotary encoder, enter the Multicast IP address of the 2022-6 Source you wish to store.
10. Repeat this process for the remaining 'Port' and 'Name' fields in the 2022-6 Preset Setup Menu.
11. When all fields are complete highlight the 'Take' field and press the rotary encoder once more.
12. Continue this process for every 2022-6 Multicast source you wish to store as a 2022-6 Multicast preset. Remember that a maximum of 8 presets are available to be stored.



Assigning 2022-6 Presets to User Presets

Having created up to 8 individual 2022-6 Presets, you can now assign them for recall by any one of the 24 User Presets available on the PAM2-IP-3G.

1. In the 2022-6 Main Menu, select the 'Stream Config' field and press the rotary encoder.
2. In the 2022-6 Stream Configuration Menu, use the Rotary encoder to select the SFP Port (SFP1 Primary or SFP2 Primary) you wish to use to subscribe to the 2022-6 Multicast Stream.
3. Next, select one of the Multicast presets you created in the previous chapter.
4. Using the rotary encoder, navigate to the 'Take' field and press the rotary encoder. This will cause the PAM2-IP-3G to subscribe to the Multicast stream address you stored against the preset name in the previous chapter.
5. Press the 'Save' button highlighted in Red on the front panel of the PAM2-IP-3G.
6. The User Preset Menu will now appear, allowing you to select any one of the 24 User Presets, assigning a friendly name that will be displayed on the front panel of the unit. The 2022-6 Multicast Preset subscribed to in Step 4 above will now be recalled every time your User Preset is recalled.



Diagnostics

The PAM2-IP-3G provides some basic Diagnostic information to help identify possible system issues. From here you can determine if a valid 2022-6 multicast stream is being received successfully.

1. In the Main Menu, a summary of the current selected source, audio and video format is displayed in white text. In this example, the information displayed shows that the currently selected source is 2022-6 and the Video and Audio formats carried therein. If the signals are present and valid, the text displayed here will be white, if absent or invalid, the text displayed here will be red.
2. Selecting 2022-6 in the Main Menu will display diagnostic information regarding the status of the two SFP ports and which one is currently selected.
3. In the 'Statistics' Menu, the PAM2-IP-3G presents packet counters for each of the two SFP ports as well as reporting metadata re: the video format currently subscribed to.

