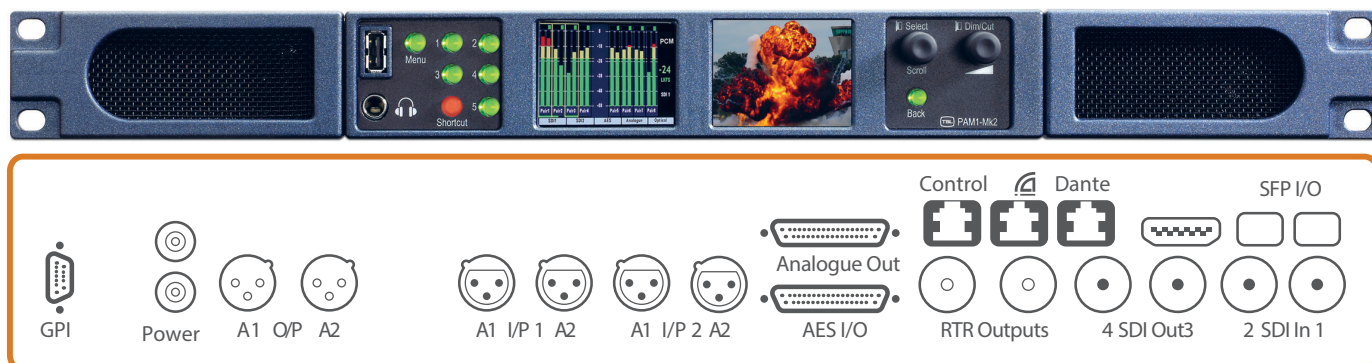# PAM1-IP

SMPTE 2022-6 and SMPTE 2110 Monitoring

The PAM1-IP from TSL Products is a fully comprehensive Audio Monitoring Solution designed for use in SMPTE 2022-6 and SMPTE 2110 environments.

Developed specifically to address the requirements of customers needing to monitor uncompressed SMPTE 2022-6 and SMPTE 2110 sources, the PAM-IP 3G is equipped with 2 x 10Gig/E interfaces for direct connection into COTS IP fabrics.

Proven and Easy to Use Operation

The PAM1 range retains the same front panel user interface and feature set already made popular in TSL's PAM1-IP-3G Audio Monitors.

Engineers and Operators familiar with traditional Audio Monitoring unit operation can now monitor 2022-6 and 2110 uncompressed IP sources without having to re-train or understand IP networks.

As with the PAM1-IP-3G, the following functionality remains possible, even when working with 2022-6 and 2110 uncompressed IP sources:

- Video Confidence monitoring of 2022-6, 2110 uncompressed IP and 3G/HD/SD-SDI sources directly on the front panel.
- Comprehensive Loudness Monitoring, complete with Histogram display.
- Full Monitoring (including Metadata) of Dolby encoded sources.

Future Proof Connectivity

As well as featuring 10Gig/E interfaces, the PAM1 Range is also equipped with Primary and Redundant 1Gig/E Dante/AES67 ports, whilst also maintaining 3G/HD/SD-SDI, discrete AES and Analogue I/O connectivity, making it suitable for use in both IP and non-IP infrastructures and helping customers transition to IP with ease.
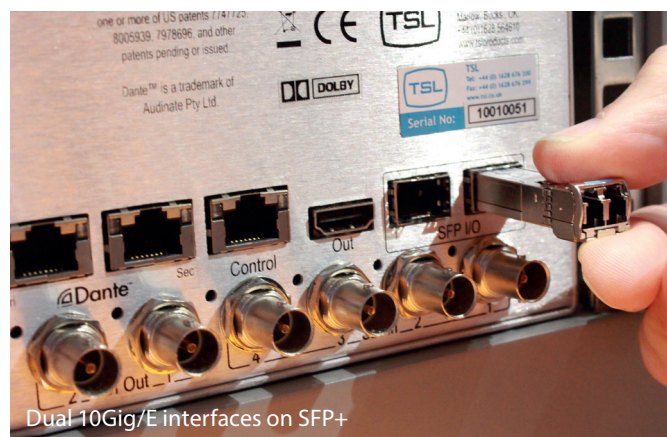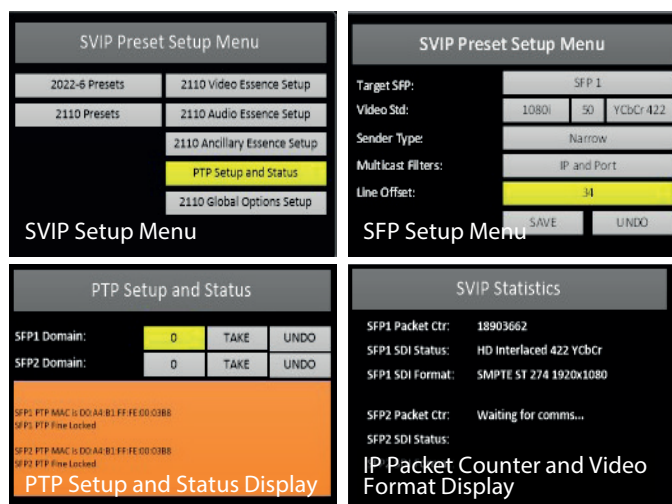
Connection into 2022-6 and 2110 COTS IP networks is made possible through the use of optional SFP+ modules, allowing customers looking to transition to IP, to do so at a pace that suits them without having to replace their entire Audio Monitoring Unit.

IP Monitoring Tools

Alongside the ability to present Audio Levels, Dolby Metadata, Loudness Histograms and Video directly on the front panel, the PAM-IP-3G also includes diagnostic information to help troubleshoot issues when working with SMPTE 2022-6 and SMPTE 2110 uncompressed sources.

External Control

Support for control protocols such as Ember+ and NMOS allow for 'In-Band' control of the PAM-IP, offering tight integration with a variety control systems. 'Out of Band' control integration is also possible using TSL's RESTful API.

SVIP Setup Menu

SFP Setup Menu

PTP Setup and Status Display

IP Packet Counter and Video Format Display

Dual 10Gig/E interfaces on SFP+

TSL Products

Key Features

- Fully configurable analogue and digital multichannel outputs
- Optional support for Dolby E®, Dolby Digital® and Dolby Digital Plus®
- Dual auto-sensing, 1080p (60, 59, 94 and 50Hz), HD/SDI video inputs
- Dual high resolution 2.4" screens for 16 bargraphs, setup and metadata display
- Downmix of discrete multichannel audio to stereo for compatibility monitoring
- Pushes PAM data to the monitor wall, with use configurable quadrants and HD-SDI output
- Multichannel audio outputs for external stereo or 5.1 loudspeaker system integration

- Hi Resolution Video confidence monitoring
- ITU BS1770/71 loudness measurement and Histogram
- Ability to monitor in sync using the AV off to cater for any inherent delay
- User Programmable 'AssignMatrix'
- Audio Output Delay
- Automatic mode switching - depending on signal type
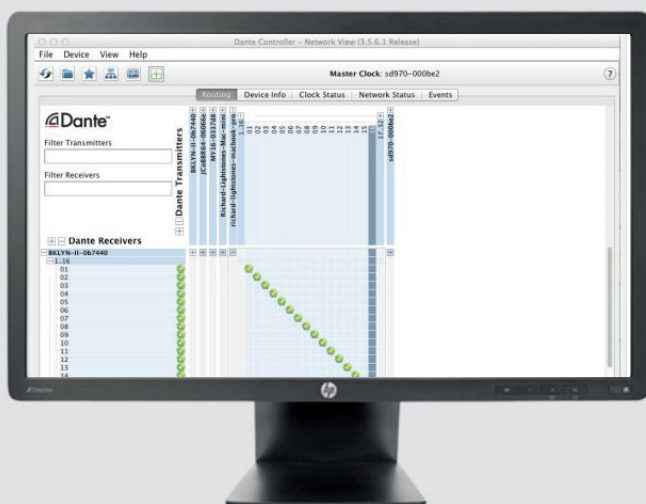- High quality internal full range loudspeaker system

Specifications

PAM1

- 4 AES (4 Pairs/8 Channel) Inputs - 110Ohm Balanced or 75Ohm via optional CAB-D25-BNC cable
- Dual 12V DC inputs
- Serial remote control
- Compact, lightweight (weight tbc) 1RU case, 250mm deep
- 2 Analogue Stereo Inputs
- 1x SD card slot for system updates and preset save/recall 'Scroll To Hear'
- 1x USB connector for system updates and preset save/recall

PAM2

- Fixed or variable analogue multichannel outputs (8 mono)
- Fixed or variable AES multichannel outputs (4 pairs/8 Channels)
- Dual 12V DC inputs
- Compact, lightweight (weight tbc) 1RU case, 250mm deep
- 4 AES (4 Pairs/8 Channel) Inputs - 110Ohm Balanced or 75Ohm unbalanced via optional CAB-D25-BNC cable
- 2 Analogue Stereo Inputs
- 1x USB connector for system updates and preset save/recall

- 1x SD card slot for system updates and preset save/recall 'Scroll To Hear'
- ITU BS1770/71 loudness measurement and Histogram
- SMTPE2020 metadata monitoring

Ordering Information

PAM2-IP-3G	Dante Option	S2022-6 Option	Dolby Option	2110
PAM1-IP-3G	Dante Option	S2022-6 Option	Dolby Option	2110

TSL Products