

China Central Television Network PAM2-IP Selected for 2018 Winter Games

Keen to remain at the forefront of innovation, CCTV recognised that crucial infrastructure changes were needed to effectively deliver coverage of the Games, including a safe and robust master control and scheduling system that would accommodate multi-format 3G, 4K and IP signal-flows.

The PAM2-IP was selected to provide audio and video signal monitoring within the central control room, as well as for use by the field team, who will be using the unit to support remote IP transmission.

For the team at CCTV, the key purchasing decision was based on TSL Products' commitment to providing products capable of supporting IP delivery and emerging IP standards, such as AES-67, SMPTE 2022-6 and SMPTE 2110. CCTV has also worked with TSL Products for many years, with monitoring devices widely adopted in the master control and transmission systems at its headquarters in Beijing. It is the team's experience with the quality of TSL's products and after-sales service that lead to initial conversations for an IP solution at IBC 2017.

"It's not easy to build a successful product, not to mention a successful and future-proofed product," notes the outside production team at CCTV. "It requires that the manufacturer effectively understands the customers' needs and balance this with technical changes occurring in broadcast environments. As IP becomes more widely adopted, we are confident that TSL Products will be able to support us with solutions that can accommodate these changes."

Additionally, the PAM2-IP retains all the features of TSL's flagship PAM (Precision Audio Monitoring) units, with added functionality that helps to maintain an operational experience that is both simple and intuitive, regardless of the method being used to carry audio through a broadcast facility. Citing the real-world applications and advantages of the PAM2-IP, the unit offers the CCTV team maximum efficiency. Engineers can set the device to recall favourite multicast stream addresses, and operators can use defined pre-sets to switch between multiple IP sources directly on the front panel with a simple button push.

"TSL Products is currently the only manufacturer that can provide both IP transmission and video and audio monitoring capabilities," says Yuhui Wang, TSL Products' Regional Sales Manager for North East Asia. "Our customers are implementing IP infrastructures using SMPTE 2022-6, with a clear upgrade path to SMPTE 2110 soon. We always try to remain cutting edge so that we can supply the best-in-class products to our users."



The PAM-IP-3G is equipped with 10Gig/E interfaces and Primary and Redundant 1Gig/E Dante/AES67 ports. Connection into 2022-6 and 2110 COTS IP networks is achieved 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.

Contact our International Sales Team for more information:

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 **TSL Products**
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PAM-IP-3G - SMPTE 2022-6 and SMPTE 2011 Monitoring

Proven and Easy to Use Operation

The PAM-IP-3G range retains the same front panel user interface and feature set already made popular in TSL's PAM1 MK2 and PAM2 MK2 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 MK2 and PAM2 MK2, the following functionality remains possible, even when working with 2022-6 and 2110 uncompressed IP sources:

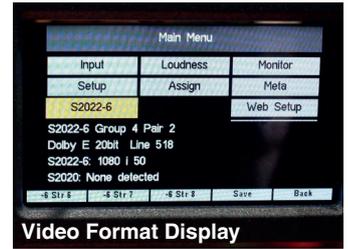
- Video Confidence monitoring of 2022-6, 2110 uncompressed IP and 3G/HD/SD-SDI sources directly on the front panel
- Comprehensive Loudness Monitoring, complete with Histogram display
- Full monitoring (including Metadata) of Dolby encoded sources – PAM2-IP only.

IP Monitoring Tools

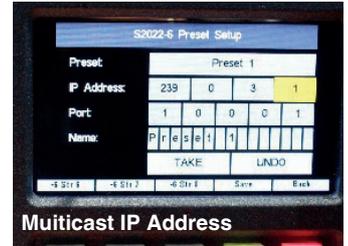
Alongside the ability to present Audio Levels, Dolby Metadata, Loudness Histograms and Video directly on the front panel, the PAM-IP-3G also includes diagnostic information to help troubleshoot issues when working with SMPTE 2022-6 and SMPTE 2110 uncompressed sources.

Control API

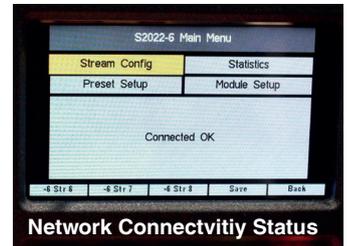
TSL's Control API allows tight integration with control systems, allowing subscriptions to multicast sources to be managed effectively. Support for 3rd party protocols such as Ember + means that the PAM-IP is suitable for use with a variety of control systems.



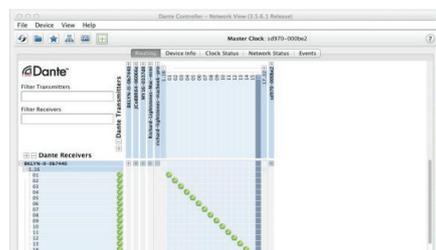
Video Format Display



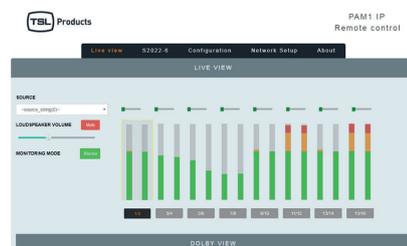
Multicast IP Address



Network Connectivity Status



Dante Controller



Web GUI



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