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Shure Axient Digital PSM In-Ear Monitoring System

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Shure has consistently demonstrated its leadership with groundbreaking product innovations. We can look back at the 2010 launch of the flagship Axient wireless system and the PSM 1000 wireless in-ear monitoring system. In 2017, the company further solidified its flagship wireless system with the introduction of Axient Digital, setting new standards for wireless audio technology.

However, while Axient Digital reaffirmed Shure's supremacy in wireless microphones, it sparked curiosity about its commitment to digital in-ear monitoring solutions. Addressing these speculations, Shure has now introduced the Axient Digital PSM system, merging advanced technology with reliability to meet the demands of live performances and broadcast environments.

At its core, Axient Digital PSM integrates expansive features such as Shure's patented Spatial Diversity Transmission, True Digital Diversity, and the groundbreaking Wireless Multichannel Audio System (WMAS). These significantly enhance spectral efficiency and reduce interference, ensuring an exceptional audio experience even in the most challenging RF environments.

The ADXR body-pack receiver, AD8C eight-port antenna combiner, and ADTQ wireless quad transmitter.

Key components and features

Axient Digital PSM represents one of the first digital personal in-ear monitoring systems with WMAS capabilities. The system comprises several components, each engineered to meet the demands of the performer and engineer. Central to it are ADTQ Wireless Quad and ADTD Wireless Dual transmitters, which offer distinct capabilities to suit various monitoring needs.

Accompanying them is the ADXR Wireless body-pack receiver, designed for robust onstage in-ear monitoring with features like a wide tuning range, real-time remote control, and CueMode for versatile stage mix monitoring.

Supporting these core elements are essential accessories such as the AD8C eight-port antenna combiner, AD221 two-way passive combiner/splitter, and the SBC441 four-bay docking charger. Together, these components provide a comprehensive solution that addresses all aspects of in-ear monitoring from signal transmission to power management.

ADTQ Wireless Quad and ADTD Wireless Dual transmitters

Axient Digital PSM components offer two transmitters to a system. The ADTQ is a four-radio digital wireless stereo transmitter, while the ADTD is a two-radio digital wireless stereo transmitter. Axient Digital PSM performance features include patented Spatial Diversity transmission with four available transmission modes: Multichannel Wideband RF, Narrowband RF, Analog FM, and Axient Digital Standard. Also included are ShowLink remote control, networkable monitoring with Wireless Workbench, and support for analog and digital inputs (AES3, AES67, Dante) to enhance its versatility. Both transmitters feature an optional internal antenna with a streamlined setup that reduces or eliminates external combiners.

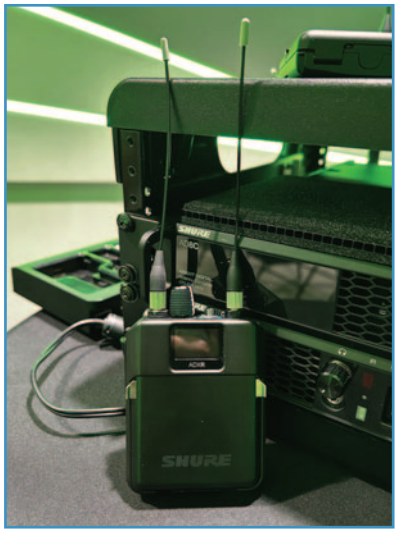
On the physical side of the ADTQ and ADTD transmitters, a five-segment channel quality meter displays RF signal-to-noise on a 6.6" front panel color display. On the rear panel are eight switchable combo connectors for analog or AES3 digital options, four Ethernet ports for network control, and Dante/AES67 digital input options. Output coaxial connectors are also

AD610 Diversity ShowLink access point.

available with four RF antennas. A cascading AC power connector allows for expansion to additional components. A DC module version is available to support systems that require redundant power. The ADTD offers similar physical attributes except for only four switchable combo connectors for analog or AES3 digital options and two coaxial RF antenna output connectors. For both transmitters two BNC cables, BNC assemblies, bulkhead adapters, and half-wave antennas come with the original packaging. Included with them are an Ethernet cable, an Ethernet jumper cable, and a rackmount kit.

ADXR Wireless body-pack receiver

The ADXR is designed for onstage in-ear monitoring and broadcast IFB applications. It features a wide tuning range, True Digital Diversity reception, ShowLink technology for real-time



Wireless body-pack receiver.

remote control, and CueMode, which allows monitoring of up to 64 encrypted stage mixes while a wide tuning range offers flexibility in frequency selection. The ADXR's moisture-resistant design features a lightweight hybrid aluminum/polymer enclosure. A few other physical features include a threaded headphone connector, external charging contacts, an updated volume knob, and the conveniently placed IR window on the pack of the pack. The ADXR includes two SB910 lithium-ion rechargeable batteries. When ordered, two whip antennas and a zippered carrying bag will also be included.

AD8C eight-port antenna combiner

This unit combines RF outputs from up to eight different Axient Digital PSM transmitters into one output to feed a single transmit antenna. It can also combine up to four Axient Digital PSM transmitters to feed two transmit antennas to support Spatial Diversity. In terms of WMAS channels, 8:1 mode combines up to eight RF inputs into a single RF output. The 2x 4:1 mode divides the combiner into two sections; each section combines up to four RF inputs to a single RF output. To help defend against passive signal loss, the AD8C enables automatic transmitter compensation with ADTQ and ADTD Axient Digital PSM transmitters. The AD8C also includes an Ethernet switch for remote control and firmware updates. A DC module version is available to support systems that require redundant power.

When ordered, the AD8C will be delivered with eight BNC cables, one of each Ethernet cable, an Ethernet jumper cable, and a rackmount kit.

AD221 two-way passive combiner/splitter

The AD221 splits an incoming signal into two outgoing signals or combines two incoming signals into one signal. It also enables automatic transmitter

Two-way passive combiner and splitter.

compensation with ADTQ and ADTD Axient Digital PSM transmitters, which helps defend against passive signal loss. The AD221 also features a back plate designed for mounting in various installation settings.

SBC441 four-bay docking charger

The SBC441 supports up to four Axient Digital ADXR wireless body-pack receivers or Shure SB910


Four-bay docking charger.

rechargeable lithium-ion batteries. With the inclusion of dual network ports, network communication between chargers can be daisy-chained to reduce or eliminate the need for additional network switches. There is no limit on network daisy-chaining. Conveniently, a single power supply supports two chargers.

Transmission

There are four transmission modes. Multichannel Wideband, powered by Shure WMAS technology, drives the ADTD and ADTQ to deliver up to four stereo audio channels, not just one, with each ADTD and ADTQ radio. Narrowband is a traditional option that allows users to access more RF output power for greater range. With Analog FM, users can achieve ultra-low 1.29ms latency performance with updated hybrid technology. Axient Digital Standard lets users turn the ADTD and ADTQ into an AD Series Axient Digital transmitter and send high-quality, long-distance wireless audio to any Axient Digital wireless receiver.

Shure WMAS technology

Wireless Multichannel Audio System (WMAS) technology enhances spectral efficiency, crucial for maintaining high-performance standards in crowded RF environments. For the first time, a single radio can deploy multiple wireless channels. With WMAS modes, users can be extra efficient with the limited available spectrum, freeing up radios for channel count scalability or improved RF performance.

Spatial Diversity/True Digital Diversity

The company's patented Spatial Diversity Transmission combats multipath interference, a common issue in wireless audio systems. It transmits a second signal on a second antenna for extended coverage or separate zones, and for further resistance to fading events caused by multipath interference.

When Spatial Diversity transmitters engage with True Digital Diversity body-pack receivers, Axient Digital PSM combines four discrete signal paths per channel to deliver advanced protection against multipath interference and RF noise.

Other features

ShowLink provides real-time remote-control capabilities of the ADXR body pack, allowing engineers to make on-the-fly adjustments during live performances. This feature is invaluable for maintaining optimal audio quality and addressing issues as they arise without accessing the physical body pack.

CueMode with encryption supports monitoring of different stage mixes and storing of up to 64 separate channels on one body pack. Channel quality metering offers real-time assessment of signal-to-noise per receiver channel.

Conclusion

The Axient Digital PSM offers significant benefits for artists and engineers in live concert settings. Its advanced features enhance performance quality by providing clear, reliable audio monitoring, allowing performers to focus on their craft without technical distractions. In broadcast settings, the system is essential for IFB (interruptible foldback) applications, ensuring clear communication between production teams and on-air talent. Its reliability and audio quality make it a preferred choice for television and radio broadcasts.

The Shure Axient Digital PSM sets new benchmarks for in-ear monitoring and wireless audio transmission. Its comprehensive feature set, innovative technologies, and robust design make it an indispensable tool for professionals in live performance and broadcast environments. By delivering exceptional audio quality and reliability, the Axient Digital PSM continues Shure's legacy of excellence in the audio industry.