ULXD-GV Digital Wireless Systems

Architect’s and Engineer’s Specifications

The digital wireless system shall operate in the VHF, UHF, ISM (900 MHz), 1.2 GHz, 1.5 GHz, or 1.8 GHz band with the specific range being dependent on the user's locale. The system shall include the option of changing the operating frequency in order to avoid RF interference. Preconfigured group, channel and frequency setups shall be available to ensure that multiple systems in use do not interfere with one another.

Available transmitters shall include: a bodypack for use with lapel or headworn microphones, guitars, and other electric instruments; a handheld microphone for vocals; a boundary microphone; and a gooseneck base transmitter for use with gooseneck microphones.

All transmitters shall be powered by either a Lithium Ion rechargeable battery or 2 AA batteries and shall have a power on/off switch with LED status indicator. When operated with the rechargeable battery, the system shall display remaining run time in hours and minutes (accurate to within 15 minutes), percentage health, percentage charge, charge cycles, and temperature. The system shall offer optional networked charging stations with two, four, or eight charging bays for transmitters, as well as tabletop and rackmount chargers for individual batteries.

The transmitter front end shall optimize itself for standard inputs without requiring transmitter gain adjustments thus allowing all gain changes to be made at the receiver, which shall provide a 60 dB range of system gain. Overall system signal to noise ratio shall be >120 dB.

The system shall offer a choice of single-channel, dual-channel, and quad-channel rackmount receivers. Dual- and quad-channel receivers shall include DanteTM digital audio networking in addition to analog audio outputs. All receivers shall include DC power on the RF inputs for use with directional antennas and antenna distribution components.

The receiver shall include an RF level meter, an audio level meter, and a Networking Interface connector for computer control and monitoring. The system shall detect RF interference and indicate such to the user via the LCD and RF meters. The system shall use technology such as digital predictive diversity to optimize RF stability.

The system shall include always-on AES-256 encryption that cannot be disabled. The encryption scheme shall conform to the US Government National Institute of Standards and Technology (NIST) publication FIPS-197. The encryption mechanism shall utilize a randomized key that is not transmitted via RF.

The system shall be the Shure ULXD-GV Digital Wireless System.