EM 6000 / EM 6000 DANTE

Architect’s Specification

The rack-mountable 2-channel receiver shall be for use with two companion handheld or bodypack transmitters as part of a digital wireless RF transmission system.

The true bit diversity receiver shall operate in the UHF frequency range between 470 and 714 MHz. The receiver shall be usable with active and passive wide range UHF antennas for the entire supported RF spectrum. RF selection filters shall be integrated into the receiver´s frontend.

The receiver shall feature 6 fixed frequency banks with up to 66 compatible frequency presets each and 6 user banks with up to 66 user programmable frequencies each. The receiver shall feature an automatic frequency setup function with spectrum scan functionality in order to establish an equidistant frequency grid. Additionally, the receiver shall feature a frequency bank/channel setup to all associated receivers connected to the same network range.

The receiver shall be menu-driven with an OLED display for each of the 2 channels showing the current frequency or channel name, metering of RF level, a link quality indicator (LQI), metering of AF level, AES 256 encryption status, command mode status and battery status of the associated transmitter. An additional red LED shall indicate warning messages.

The following settings shall be configurable by function buttons and an encoder for each channel in the menu: frequency, channel name, AES 256 encryption, command mode, AF output, test tone, user bank frequencies, wordclock settings, network settings, integrated antenna booster settings, display brightness, auto setup settings for automatic frequency setup.

Some parameters of the associated transmitters such as frequency, channel name, gain, low cut, auto lock and cable emulation shall be adjustable in the receiver and synchronizable to the associated transmitter via an integrated infrared interface.

The receiver shall feature a command mode which allows the audio signal to be routed to a different audio output if a transmitter with a command button is used.

The receiver shall provide a walktest mode for monitoring the RF, LQI and AF signal status in the location over time.

The receiver shall feature one XLR-3 and one 6.3 mm jack analog audio output for each of the 2 channels with a maximum output of +18 dBu. The analog outputs shall be transformer balanced. The receiver shall also feature an AES3-2003 XLR-3 digital audio output. A headphone output with headphone volume control shall be provided and shall utilize a 6.3 mm stereo jack socket. The headphone output shall support audio monitoring of both channels indepently or a mix of both channels.

The receiver shall have an Ethernet port (RJ-45) for remote network-based monitoring and control using the Sennheiser Wireless System Manager software, Wavetool software as well as Yamaha CL/QL and Soundcraft Vi000 consoles.

Two BNC-type input sockets (50 Ω each) shall be provided for connecting the antennas. An integrated antenna splitter with two BNC outputs (50 Ω each) shall be capable of daisy-chaining up to eight receivers. Booster supply voltage shall be 12 V DC, max. 200 mA each via the antenna sockets and shall be switchable.

The receiver principle shall be double superheterodyne. Sensitivity shall be -100 dBm (typical). Image rejection shall be > 100 dB (typical) and blocking shall be > 80 dB (typical). The audio frequency response shall be 30 Hz to 20 kHz (1.5 dB). The audio output level shall be adjustable in steps of 1 dB between -10 dBu and +18 dBu. Latency for both analog and digital audio out shall be 3 ms. Total harmonic distortion (THD) shall be < 0.03 % at 1 kHz.

Supported wordclock sampling rates shall be 48 kHz and 96 kHz internal and external. The sampling rate of the digital audio outputs shall be adjustable between 48 kHz or 96 kHz at 24 bit.

For secure transmission the receiver shall feature AES 256 encryption.

The receiver shall operate on 100 to 240 V power supplied via a mains cable with EU, UK or US plug. Power consumption shall be max. 35 W. The receiver shall have a rugged metal housing; dimensions shall be approximately 44 x 483 x 373 mm (1.75“ x 19“ x 14.69“). Weight shall be approximately 5200 grams (11 lbs 7 oz). Operating temperature shall range from −10 °C to +50 °C (+14 °F to +122 °F).

The receiver shall be the Sennheiser EM 6000.

The Dante™ variant of the receiver shall feature an additional Dante™ interface with an Audinate Brooklyn Card with two RJ-45 sockets (primary and secondary) to support 2 independent redundant Dante™ networks and a daisy-chain mode. The sampling rate shall be adjustable between 48 kHz or 96 kHz internal or external at 24 bit. The Dante RJ-45 network sockets shall be lockable Amphenol™ sockets.

The Dante™ variant of the receiver shall be the Sennheiser EM 6000 DANTE.