Digital 6000
EM 6000 | EM 6000 DANTE
True bit diversity receiver

FEATURES

- Extremely efficient digital 2-channel receiver with an intuitive, easily configurable user interface and integrated antenna splitter
- Reliable RF performance with equidistant frequency grid and superior audio quality with Long Range mode and proprietary audio codec (SeDAC) from the masterpiece Digital 9000
- Future proof and usable worldwide due to large switching bandwidth, digital and analog interfaces and AES-256 encryption

DELIVERY INCLUDES

- EM 6000 or EM 6000 DANTE receiver
- 3 mains cables (EU, UK and US plug)
- 2 antennas
- 2 BNC antenna cables (50 Ω) for daisy-chaining
- quick guide
- safety guide
- booklet with specifications and manufacturer declarations

No compromises, on any stage: With its large 244 MHz switching bandwidth, the EM 6000 2-channel digital receiver can find reliable transmission paths in absolutely any environment. Its renowned LR mode (shared with the masterpiece Digital 9000) ensures superior quality audio signals, even in the most demanding high frequency scenarios. Link Density Mode (LD mode) with efficiency-optimized Audio Codec (SePAC) ensures up to 5 channels per MHz bandwidth. Error correction and audio error masking recognize and fix problems long before they even become audible. This guarantees a reliable connection where other systems fail.

Through its equidistant frequency grid, Digital 6000 assures the simplest frequency configuration and excellent spectral efficiency. Thanks to the high intermodulation resistance, more channels can now be set up than ever before. Up to eight receivers can be cascaded directly from only one pair of antennas.

Maximum overview, quick setup, shortcuts to important functions: The concept for the new user interface on contrast-rich, white OLED displays comes from practical experience. All vital parameters are summarized at a glance. Important functions can be reached directly via home screens, without lengthy navigation paths. The auto-setup enables scanning and frequency distribution to all connected devices directly via the receiver. Of course, the Digital 6000 can also be monitored and configured via Wireless Systems Manager (WSM) software.

Digital 6000 seamlessly integrates with existing digital or analog infrastructures. The EM 6000 receiver has a digital AES output with word clock in and outputs, high-quality, transformer balanced analog XLR and 6.3 mm TRS jack outputs as well as a 6.3 mm headphone output. The Dante Version with an Audinate Brooklyn II card offers two additional Amphenol RJ-45 connectors for integrating the receiver into a Dante network.

The EM 6000 is compatible with all Sennheiser UHF antennas.

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SPECIFICATIONS

Frequency range	470 to 714 MHz
Transmission scheme	Digital modulation Long Range Mode (LR) Min. frequency spacing for equidistant grid: 400 kHz Link Density Mode (LD) Min. frequency spacing for equidistant grid: 200 kHz
Audio codec	LR Mode: SeDAC (Sennheiser Digital Audio Codec) LD Mode: SePAC (Sennheiser Performance Audio Codec)
Dynamic range	111 dB (A) typ.
Encryption	AES 256
Latency	Analog audio out: 3 ms (LR) / 3.2 ms (LD) Digital audio out (AES/EBU): 3 ms (LR) / 3.2 ms (LD)
Total harmonic distortion (THD)	< 0.03 % (at 1 kHz)
Temperature	Operation: −10 °C to +50 °C Storage: −25 °C to +70 °C
Relative air humidity	Operation: max. 85 % at 40 °C (non-condensing) Storage: max. 90 % at 40 °C (non-condensing)
Dripping and splashing liquids	The product must not be exposed to dripping and splashing (IP2X)
Receiving channels	2
Receiver principle	Double superheterodyne
Diversity	True Bit Diversity
Sensitivity	−100 dBm typical
Image rejection	> 100 dB typical
Blocking	> 80 dB typical
Audio frequency response	LR Mode: 30 Hz to 20 kHz (1.5 dB) LD Mode: 30 Hz to 14 kHz (1.5 dB)

Analog audio outputs	XLR-3 and 6.3 mm jack per channel (transformer balanced), −10 dBu to +18 dBu in steps of 1 dB (2 kΩ)
Digital audio outputs	AES3-2003, XLR-3: 48 kHz, 96 kHz, 24 bit Dante™, RJ-45 (only EM 6000 DANTE): 48 kHz, 96 kHz, 24 bit Can be externally synchronized using WCLK loop-through with BNC sockets
Headphone output	6.3 mm jack, 2 × 100 mW at 32 Ω
Antenna inputs	2 × BNC (50 Ω)
Daisy chain outputs	2 × BNC (50 Ω) 0 dB +/− 0.5 dB amplification relative to antenna inputs
Daisy-chained receivers (RF)	Max. 8 EM 6000 units
Booster supply voltage	12 V DC, max. 200 mA each via antenna sockets, short circuit proof
Word clock input	BNC, 75 Ω
Word clock output	BNC, 75 Ω
Word clock sampling rates	48 kHz, 96 kHz
Network	IEEE 802.3-2002 (10/100 Mbit/s), shielded RJ-45 connection
Dante™ (only EM 6000 DANTE)	IEEE 802.3 (1000 Mbit/s), 2 × shielded RJ-45 connection
Power supply	100 to 240 V AC, 50/60 Hz
Power consumption	Max. 35 W
Power plug	3-pin, protection class I as per IEC/EN 60320-1
Dimensions (H × W × D with mounting elements)	44 × 483 × 373 mm
Weight	Approx. 5.2 kg

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PRODUCT VARIANTS

| EM 6000 | Art. no. 506657 |
| EM 6000 DANTE | Art. no. 508475 |

COMPATIBLE WITH

- SKM 9000 in Long Range mode
- SK 9000 in Long Range mode

SYSTEM COMPONENTS

- SKM 6000
- SK 6000
- SK 6212
- L 6000
- L 60

ACCESSORIES

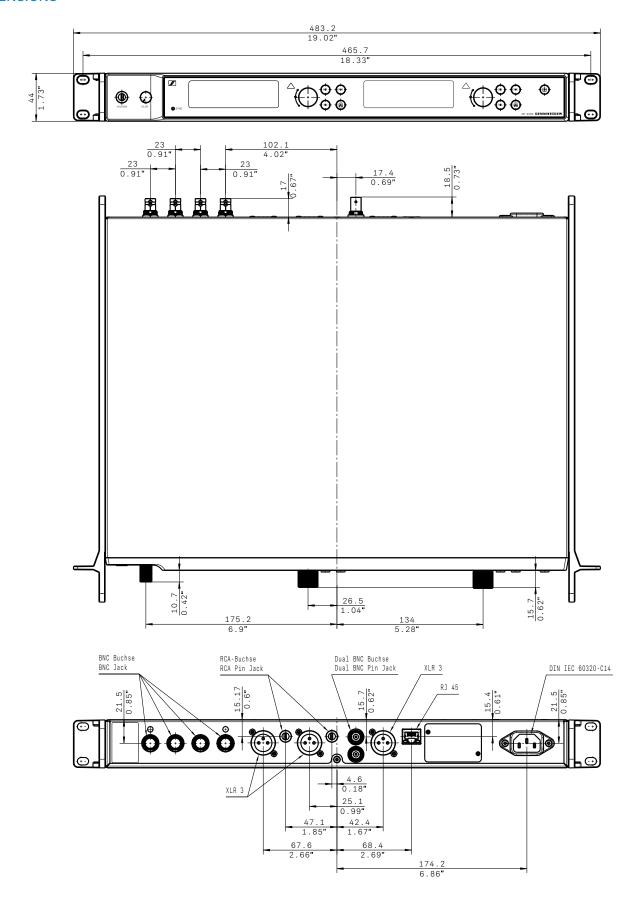| A 2003 UHF | passive directional antenna | Art. no. 003658 |
AD 3700	active directional antenna	Art. no. 502197
A 1031-U	passive omni-directional antenna	Art. no. 004645
A 3700	active omni-directional antenna	Art. no. 502195
AB 3700	broadband antenna booster	Art. no. 502196
A 5000-CP	passive circular polarization antenna	Art. no. 500887

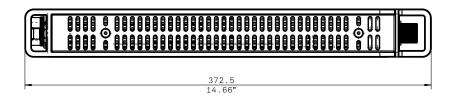## CONNECTIONS
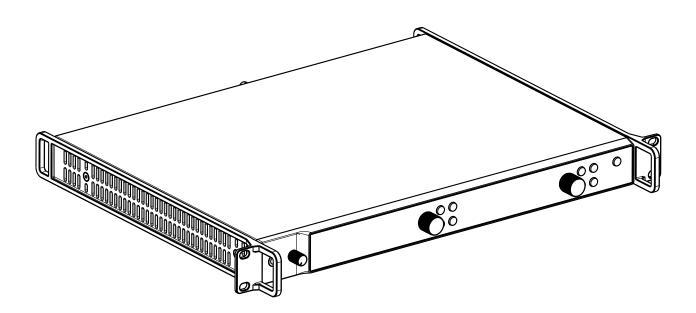
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DIMENSIONS

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DIMENSIONS

372.5
14.66"

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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 Systems 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.