

Sennheiser Spectera/ System description / Intro text

Digital bidirectional (uplink/ downlink) multicarrier/ TDMA/ TDD wireless system for simultaneous transmission of up to 32 audio input and output channels. The system shall use digital broadband transmission technology for this purpose. It shall be based on wireless multichannel audio systems technology (WMAS) and its combination of modulation and multiplexing methods.

Data and audio transmission, as well as remote control and monitoring data, shall be carried out via a single RF carrier, avoiding the 2.4 ISM band.

The system shall operate in the TV UHF band or the 1.4/1.5 GHz band. It shall operate with an RF channel bandwidth of 6 or 8 MHz and shall pair up to 128 mobile devices per RF channel.

It shall provide a switching bandwidth of 194 MHz (UHF) or 128 MHz (1.4 GHz), which shall be identical for all RF components in the system; the base station shall be frequency-independent and both frequency bands shall be operated simultaneously by a single base station.

The system shall consist of the following components:

- Base Station in 19"/1U format (shall allow up to two independent wideband RF carriers in UHF or 1G4 band). The base station shall process only digital audio signals without any analog components (componder, RF emphasis, etc.).
- Bodepacks for simultaneous use as both in-ear monitoring receiver and transmitter for microphone/line audio signals.
- Digital bidirectional antenna with integrated RF components (up to four pieces shall be used simultaneously).
- Proprietary desktop application for comprehensive system management.
- Handheld microphone (in development).

The system can be operated with only one antenna. Up to four antennas can be connected to a single base station and operated in multi-zone mode with improved antenna coverage and optimized signal-to-noise ratio. The connection between the base station and antennas shall be a digital 1Gb/s connection via a CAT5e (or higher) cable with a maximum length of 100 m.

For all system components, data and audio shall be transmitted via a single RF carrier. The system shall support up to 128 audio channels per RF channel, with each channel individually configurable (audio codec, latency, operating range).

The audio frequency response of the system shall be 20 Hz to 20 kHz, the system latency shall be min. 0.7 ms for stereo audio links/ 1ms for mono audio links. The system shall offer 11 audio link/transmission modes, including a mode for linear PCM format. Each channel can be operated in a different mode; Modes can be changed at any time and without rebooting. The internal audio processing shall be done in 32-bit float format.

100 – 240 V power supply units, Dante and optional MADI connectors shall be redundant; a total of up to four antennas can be operated simultaneously.

The system shall have AES 256 end-to-end encryption.

The system shall be remotely controlled and monitored via Windows, macOS native software and a WebUI.

The system shall comply with all relevant international standards and regulations for wireless audio transmission. It shall be certified for use in a wide variety of regions (including the EU, USA and Canada).