



SPECTERA

SKM (UHF) | SKM (1G4)



FEATURES

- Stunning Sennheiser audio quality with ultra-low latency down to 1.0 ms
- Compatible with a wide range of Sennheiser and Neumann microphone capsules
- Bidirectional communication with Spectera Base Station, enabling both audio transmission and real-time monitoring and control
- Integrated control channel for continuous synchronization, status reporting and remote management
- Wideband WMAS technology in UHF and 1.4 GHz variants for reliable operation in demanding RF environments
- Real-time monitoring of battery status, RF performance, RSSI, audio levels, interference and link quality
- Remote configuration of microphone gain and filtering directly from the Spectera platform
- Over-the-air firmware updates
- AES-256 encryption for secure audio and control data
- Shared BA 70 batteries platform with up to seven hours operating time
- Rugged metal construction for professional production environments

Engineered for professional live sound, theatre, and broadcast productions, the Spectera SKM handheld gives engineers continuous visibility of RF performance, battery status, audio levels and link quality, while enabling remote configuration and over-the-air firmware updates through the Spectera platform. Performers benefit from natural, detailed Sennheiser audio with compatibility across select Sennheiser and Neumann microphone capsules. Available in UHF (470 – 608 MHz and 630 – 698 MHz) and 1.4 GHz (1350 – 1400 MHz and 1435 – 1525 MHz) variants.

DELIVERY INCLUDES

- Spectera SKM UHF or 1G4
- Microphone clip
- Quick guide
- Safety guide
- Manufacturer declaration sheet

PRODUCT VARIANTS

SPECTERA SKM (UHF)

470 – 608 MHz and 630 – 698 MHz

Art. no. 509166

SPECTERA SKM (1G4)

1350 – 1400 MHz and 1435 – 1525 MHz

Art. no. 509165



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MICROPHONE MODULE COMPATIBILITY

Microphone modules compatible with Spectera SKM

MD 9235 (legacy product)	Dynamic microphone module with cardioid polar pattern
ME 9002	Pre-polarized condenser microphone module with omni-directional polar pattern
ME 9004	Pre-polarized condenser microphone module with cardioid polar pattern
ME 9005	Pre-polarized condenser microphone module with supercardioid polar pattern
MM 435	Dynamic microphone module with cardioid polar pattern
MM 445	Dynamic microphone module with supercardioid polar pattern
MMD 42-1	Dynamic microphone module with omni-directional polar pattern
MMD 835-1	Dynamic microphone module with cardioid polar pattern
MMD 845-1	Dynamic microphone module with supercardioid polar pattern
MME 865-1	Pre-polarized condenser microphone module with supercardioid polar pattern
MMD 935-1	Dynamic microphone module with cardioid polar pattern
MMD 945-1	Dynamic microphone module with supercardioid polar pattern
MMK 965-1	Condenser microphone module with switchable cardioid and supercardioid polar pattern
Neumann KK 104 A	Condenser microphone module with cardioid polar pattern
Neumann KK 105 A	Condenser microphone module with supercardioid polar pattern
Neumann KK 204	Condenser microphone module with cardioid polar pattern
Neumann KK 205	Condenser microphone module with supercardioid polar pattern

ACCESSORIES

Spectera SKM COM	Command adapter with a push button	Art. no. 700701
Spectera SKM Capsule Adapter	Adapter ring for a Shure microphone head	Art. no. 701060
Spectera SKM 58 Adapter	Adapter ring for a Shure SM58 or Shure Beta 58 microphone head	Art. no. 701072
Spectera SKM Color Coding	Colored labels for wireless link identification	Art. no. 701092
BA 70	Rechargeable battery pack	Art. no. 508860
BA 70 2.2	Rechargeable battery pack	Art. no. 700698
L 70 USB	USB charger with dual slots for BA 70	Art. no. 508861
CHG 70N-C	Network enabled charger	Art. no. 700332
L 6000	Charging station with exchangeable charging modules (LM 6070)	Art. no. 507300
LM 6070	Charging module for two BA 70 battery packs	Art. no. 509457



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SPECIFICATIONS

System

Transmission scheme	Multicarrier, TDMA, TDD
RF channel	Bandwidth: 6 or 8 MHz countrywise limited Mobiles devices: up to 128 per RF channel Audio links: up to 128 per RF channel
Radio frequency range	UHF: 470 - 608 MHz, 630 - 698 MHz 1G4: 1350 - 1400 MHz, 1435 - 1525 MHz countrywise limited
Audio frequency response	20 Hz to 20,000 Hz (± 1 dB) (Audio link modes with audio codecs SeDAC and PCM only)
Encryption	AES 256 CTR Mode exp. >10k years

Audio link modes

MIC/LINE	Mono	Max links per RF carrier	Utilized % of RF carrier	Audio codec	Latency	Range
Raw Low Latency	Mono	8	12.50 %	PCM	1.0 ms	Reduced
Raw	Mono	16	6.25 %	PCM	1.6 ms	Reduced
Live Low Latency	Mono	8	12.50 %	SeDAC	1.0 ms	Extended
Live	Mono	16	6.25 %	SeDAC	1.6 ms	Extended
Live Link Density	Mono	32	3.13 %	SeDAC	2.7 ms	Standard
Max Range	Mono	16	6.25 %	OPUS	9.9 ms	Maximum
Max Link density	Mono	128*	0.78 %	OPUS	15.2 ms	Reduced

IEM/IFB	Mono/ Stereo	Max links per RF carrier	Utilized % of RF carrier	Audio codec	Latency	Range
Live	Mono	16	6.25 %	SeDAC	1.6 ms	Extended
Live Link Density	Mono	32	3.13 %	SeDAC	2.7 ms	Standard
Max Range	Mono	16	6.25 %	OPUS	9.9 ms	Maximum
Max Link density	Mono	128*	0.78 %	OPUS	15.2 ms	Reduced
Live Ultra Low Latency	Stereo	4 (8 ch)	25 %	SeDAC	0.7 ms	Extended
Live Low Latency	Stereo	8 (16 ch)	12.50 %	SeDAC	1.1 ms	Extended
Live	Stereo	16 (32 ch)	6.25 %	SeDAC	1.6 ms	Standard
Live Link Density	Stereo	32 (64 ch)**	3.13 %	SeDAC	2.7 ms	Reduced

* Base Stations have 32 audio outputs, for 128 links in a single RF channel, 4 Base Stations and firmware update with cascade port function are required (future release)

** Base Stations have 32 audio inputs, for 32 stereo links (64 ch) in a single RF channel, 2 Base Stations and firmware update with cascade port function are required (future release)



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SPECIFICATIONS

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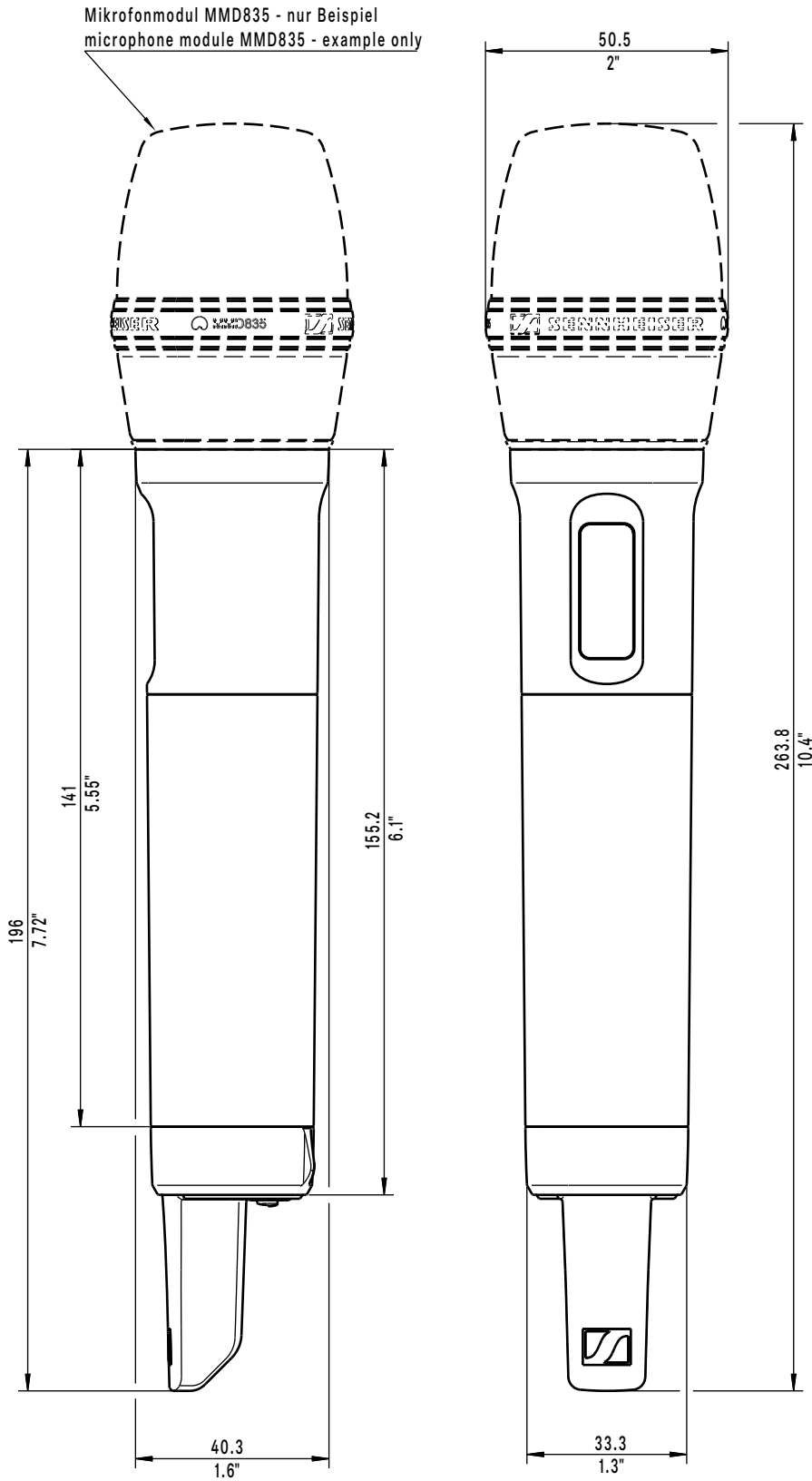
RF transmission power	up to 50 mW; countrywise limited
RF channels	1
Power supply	BA 70 rechargeable battery pack
Battery operating time	> 6 h in live mode
Dimensions	length: 196 mm (7.72") capsule interface: Ø 40 mm (1.57") shaft: Ø 33.3 mm (1.31")
Weight without module	approx. 196 g (0.43 lbs) (without BA 70)
Temperature	Operation: -10 °C to +50 °C (14 °F to 122 °F) Storage: -25 °C to +70 °C (-13 °F to 158 °F)
Relative humidity	25 % to 95 % (non-condensing)



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DIMENSIONS





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ARCHITECT'S SPECIFICATION

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 (compander, RF emphasis, etc.).
- Bodypacks for simultaneous use as both in-ear monitoring receiver and transmitter for microphone/line audio signals.
- Handheld transmitter for the wireless transmission of digital audio and control data
- Digital bidirectional antenna with integrated RF components (up to four pieces shall be used simultaneously).
- Proprietary desktop application for comprehensive system management.

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 1 Gb/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 20,000 Hz, the system latency shall be min. 0.7 ms for stereo audio links/ 1 ms 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 MAD1 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 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).



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SKM (UHF) | SKM (1G4)

Digital bidirectional handheld transmitter (Sennheiser Spectera SKM UHF)

Digital bidirectional handheld transmitter for wireless transmission of digital audio and control data via a single antenna within a 6 or 8 MHz RF channel – matching the wireless system described in the system description.

The handheld transmitter provides continuous interference monitoring for the RF channel without interrupting the audio signals. Interference or deterioration of connection quality is indicated via the proprietary software or the WebUI. In addition, permanent remote control and monitoring of audio settings, battery status, and RF channel quality parameters is possible via the software.

The handheld transmitter is made of robust metal and features a single-line OLED display that can show selected information during operation. The capsule interface is compatible with various Sennheiser and Neumann capsules and can additionally be equipped with a push button for extended functionalities.

The AD/DA converters of all connected mobile devices are synchronized via a shared word-clock signal. This also enables immersive on-air 3D audio recording and playback.

Technical requirements

Specifications:

- RF channels: 1 (6 or 8 MHz)
- Transmission scheme: Multicarrier, TDMA, TDD
- Frequency range: UHF 470 – 608 MHz, 630 – 698 MHz
- Audio connections / mobile devices: up to 128 per RF channel
- RF output power: max. 50 mW
- Encryption: AES 256
- Audio frequency response: 20 Hz – 20 kHz (± 1 dB)
- High pass filter: off / 30 / 60 / 80 / 100 / 120 Hz
- Mic gain: –6 to 42 dB, in 1 dB steps
- Battery operating time: > 6 h in live mode

Connections, Displays & Controls:

- 1 x Sennheiser capsule interface
- 1 x Status LED
- 1 x OLED display
- 1 x Power button
- 1 x Function button

Physical Properties:

- Length: 196 mm
- Diameter: 40 mm (capsule interface), 33.3 mm (shaft)
- Weight: approx. 196 g (without battery, without capsule)
- Material: Metal
- Operating temperature: –10 °C to +50 °C
- Relative humidity: 25 % – 95 %
- Power supply: Li ion battery BA 70

Handheld transmitter shall include a microphone clip.



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Digital bidirectional handheld transmitter (Sennheiser Spectera SKM 1G4)

Digital bidirectional handheld transmitter for wireless transmission of digital audio and control data via a single antenna within a 6 or 8 MHz RF channel – matching the wireless system described in the system description.

The handheld transmitter provides continuous interference monitoring for the RF channel without interrupting the audio signals. Interference or deterioration of connection quality is indicated via the proprietary software or the WebUI. In addition, permanent remote control and monitoring of audio settings, battery status, and RF channel quality parameters is possible via the software.

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Technical requirements

Specifications:

- RF channels: 1 (6 or 8 MHz)
- Transmission scheme: Multicarrier, TDMA, TDD
- Frequency range: 1G4 1350–1400 MHz, 1435–1525 MHz
- Audio connections / mobile devices: up to 128 per RF channel
- RF output power: max. 50 mW
- Encryption: AES 256
- Audio frequency response: 20 Hz – 20 kHz (± 1 dB)
- High pass filter: off / 30 / 60 / 80 / 100 / 120 Hz
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