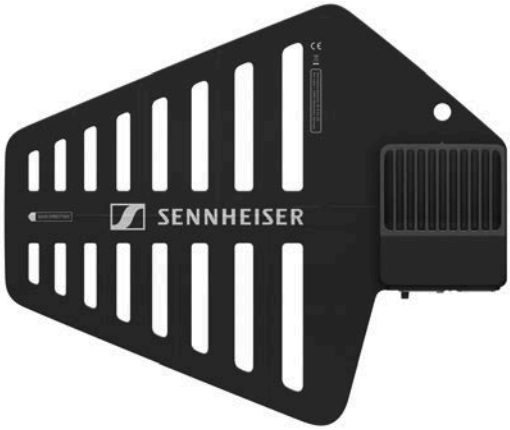
SPECTERA
DAD (UHF) | DAD (1G4)
Digital Antenna Directional



SPECTERA DAD (UHF)

SPECTERA DAD (1G4)

The transceiving Spectera Digital Antenna Directional (DAD) manages IEM signals, mic/line signals and data simultaneously. It provides continuous interference management and remote control, and is equipped with a ruggedized RJ45 connector, IP54 protection, and PoE.

FEATURES

- Transceiving antenna manages IEM signals, mic/line signals, and data simultaneously
- Available variants: UHF (470 – 608 MHz and 630 – 698 MHz) or 1G4 (1350 – 1400 MHz and 1435 – 1525 MHz)
- Integrated RF components eliminate the need for additional dedicated RF gear such as combiners, splitters, or boosters
- Ruggedized RJ45 connector for standard network cable CAT 5e or higher (point to point)
- Continuous interference management and remote control
- IP54 protection
- Optional use as dedicated fast and high-quality scanning device
- Powered over ethernet (standard PoE)

DELIVERY INCLUDES

- SPECTERA DAD (UHF) or SPECTERA DAD (1G4)
- Quick guide
- Safety guide
- Manufacturer declaration sheet

PRODUCT VARIANTS

SPECTERA DAD (UHF)	470 – 608 MHz, 630 – 698 MHz	Art. no. 509169
SPECTERA DAD (1G4)	1350 – 1400 MHz 1435 – 1525 MHz	Art. no. 509170

ACCESSORIES

Antenna cable cat 5e (10 m)	with NEUTRIK® etherCON® connectors	Art. no. 700068
Antenna cable cat 5e (25 m)	with NEUTRIK® etherCON® connectors	Art. no. 700069
Antenna cable cat 5e (50 m)	with NEUTRIK® etherCON® connectors	Art. no. 700070

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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

SPECTERA DAD (UHF) | DAD (1G4)

RF transmission power	up to 100 mW; countrywise limited	
RF channels	1	
Base Station connection	Ruggedized RJ45 including PoE, max. 100 m cable, CAT5e or better, 1 Gbit/s	
Power consumption	PoE class 2 (<6.5 W)	
Apex angle	**vertical** UHF: 65 ° 1G4: 62 °	**horizontal** UHF: 109 ° 1G4: 93 °
Front to back ratio	UHF: 15 dB 1G4: 17 dB	
Gain	UHF: 5 dB 1G4: 6.5 dB	
Threads for tripod mounting	yes / Adapter 3/8" to 5/8"	
Dimensions	UHF: 349 x 292 x 39 mm (13.74" x 11.5" x 1.54") 1G4: 231 x 205 x 39 mm (9.09" x 8.07" x 1.54")	
Weight	UHF: approx. 676 g (1.49 lbs) 1G4: approx. 534 g (1.18 lbs)	
Temperature	Operation: –10 °C to +60 °C (14 °F to 140 °F) Storage: –25 °C to +80 °C (–13 °F to 176 °F)	
Relative humidity	25 % to 95 % (non-condensing)	
IP class	IP54	

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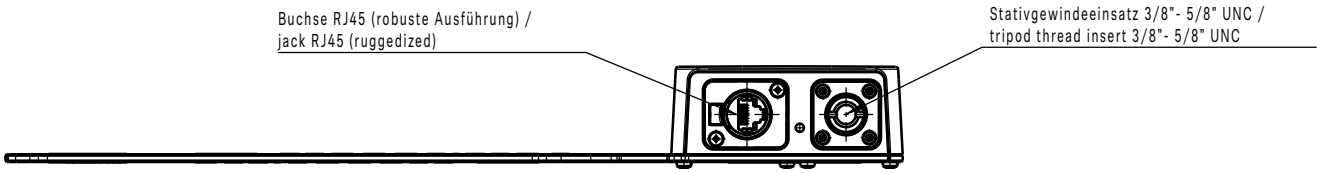
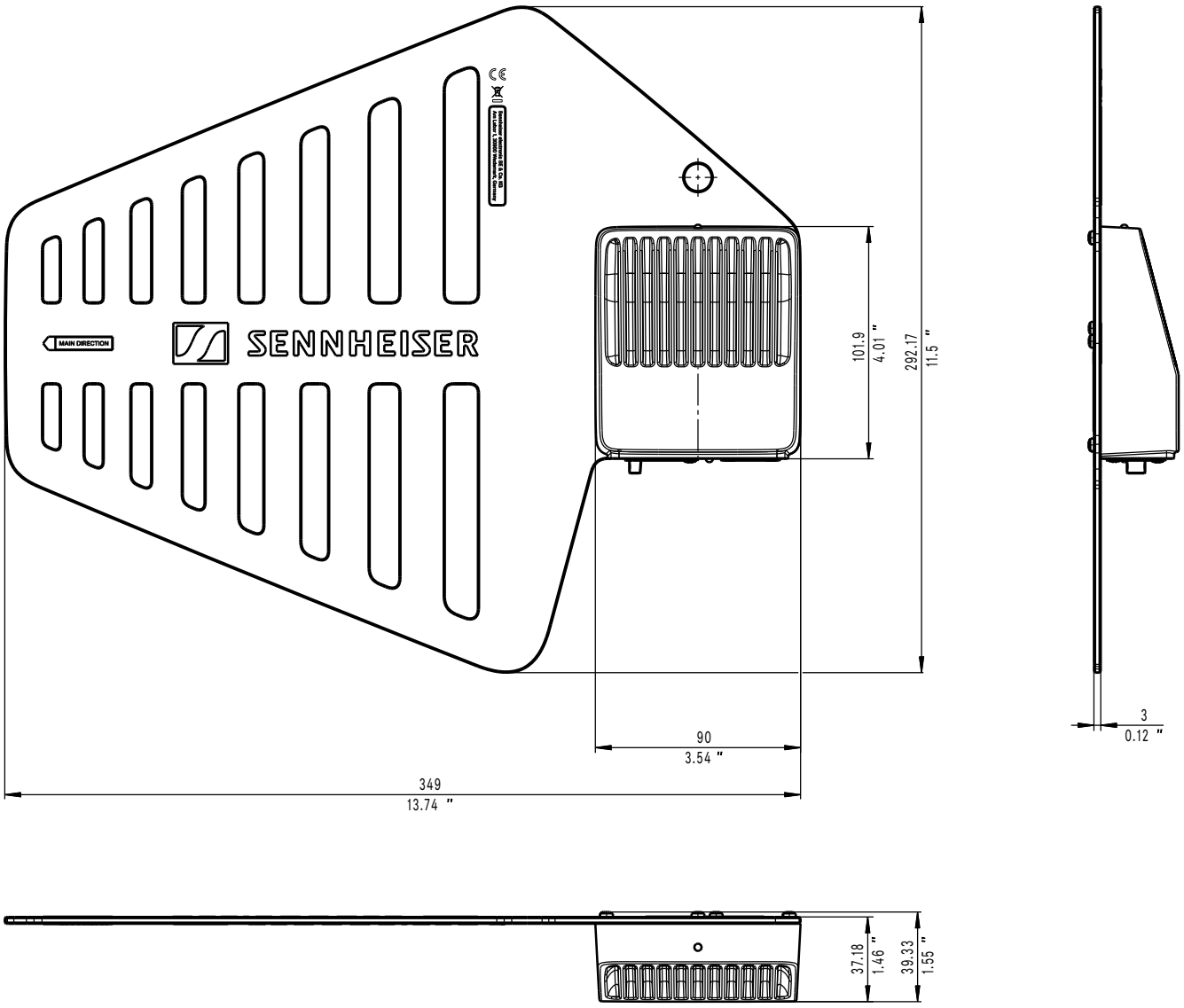
DIMENSIONS

DAD (UHF)





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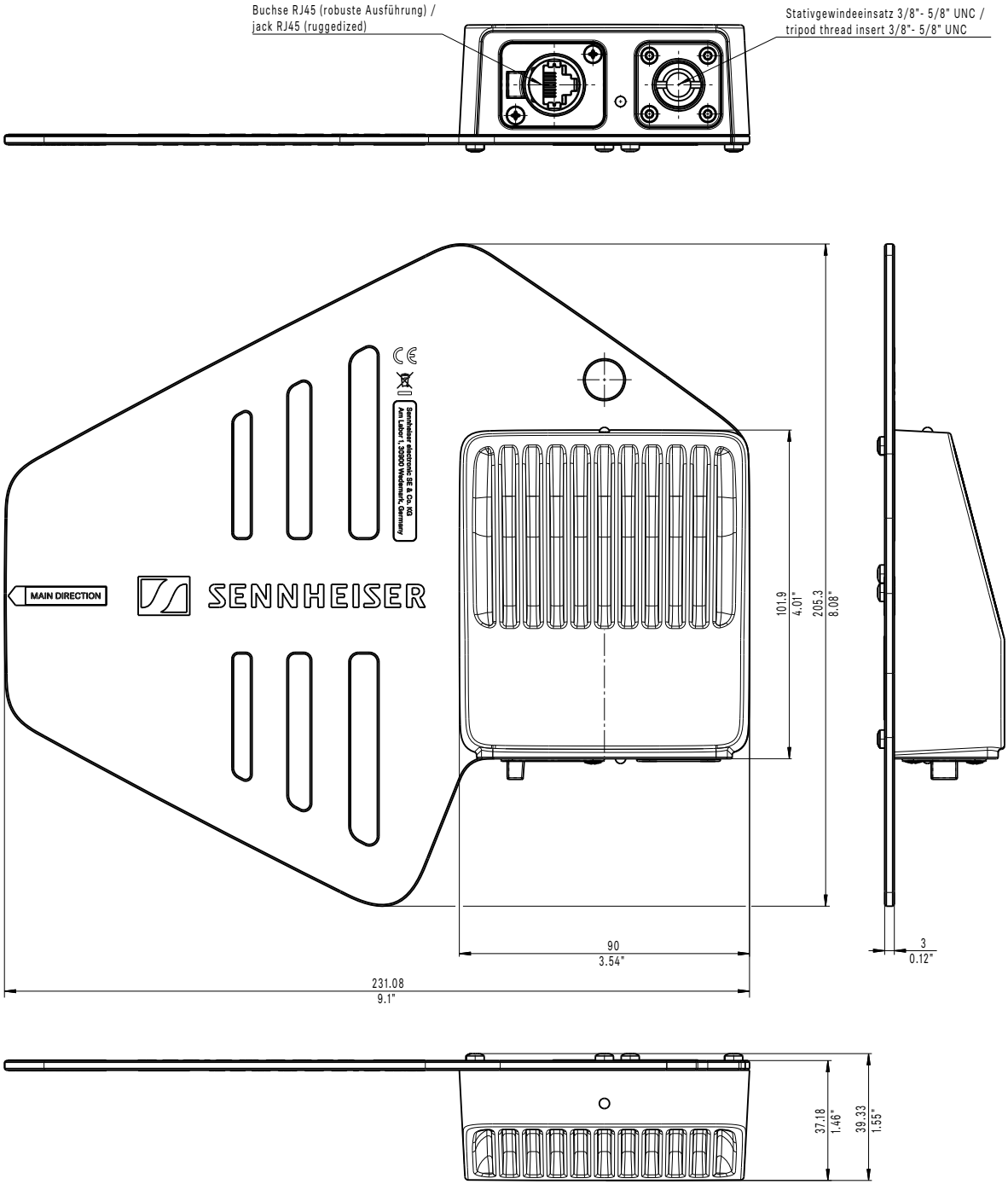
DAD (1G4)



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Digital Antenna Directional

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.
- 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 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 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).

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Digital Antenna Directional

Digital bidirectional antenna (Sennheiser Spectera DAD UHF)

Digital bidirectional transceiver directional antenna for simultaneous wireless transmission of IEM/IFB, Mic/Line, control and monitoring data matching the wireless system described in the system description.

The antenna shall provide continuous interference management for the RF channel in use without interruption or interference with the audio signal; the antenna shall offer the option to be used as a spectrum scanning device for the full bandwidth.

The antenna shall be powered by PoE Class 2.

Technical requirements

Specifications:

- Frequency range: 470 – 608 MHz/ 630 – 698 MHz
- RF power: 10 – 100 mW
- Apex angle (f x h): 65° x 109°

Connections:

- 1 x RJ45
- 1 x thread incl. 3/8" to 5/8" adapter

Physical Properties:

- Dimensions: 349 x 292 x 39 mm
- Weight: 676 g
- Operating temperature: approx. –10 °C – +60 °C
- Relative humidity: 25 % – 95 %
- Power supply: PoE Class 2
- Power consumption: < 6.5 W
- IP Class: IP54

Digital bidirectional antenna (Sennheiser Spectera DAD 1G4)

Digital bidirectional transceiver directional antenna for simultaneous wireless transmission of IEM/IFB, Mic/Line, control and monitoring data matching the wireless system described in the system description.

The antenna shall provide continuous interference management for the RF channel in use without interruption or interference with the audio signal; the antenna shall offer the option to be used as a spectrum scanning device for the full bandwidth.

The antenna shall be powered by PoE Class 2.

Technical requirements:

Specifications:

- Frequency range: 1350 – 1400 MHz/ 1435 – 1525 MHz
- RF power: 10 – 100 mW
- Apex angle (f x h): 62° x 93°

Connections:

- 1 x RJ45
- 1 x thread incl. 3/8" to 5/8" adapter

Physical Properties:

- Dimensions: 231 x 205 x 39 mm
- Weight: 534 g
- Operating temperature: approx. –10 °C – +60 °C
- Relative humidity: 25 % – 95 %
- Power supply: PoE Class 2
- Power consumption: < 6.5 W
- IP Class: IP54