



## evolution wireless G4

ew 500-G4-935 | ew 500-G4-945 |  
ew 500-G4-965 | Vocal Set



The pro's choice. Renowned sound engineers rely on ew 500 G4's flexibility, especially when handling multi-channel settings on the world's music stages. Up to 88 MHz bandwidth, up to 32 channels. Ethernet connection for Wireless Systems Manager (WSM) control software included for advanced frequency coordination in multi-channel setups.

The pinnacle of the evolution series, powered by Sennheiser's renowned e 900 capsules e 935, e 945, and e 965 on a lightweight black aluminum handheld transmitter, ready to take the world's biggest live stages.

### FEATURES

- True diversity half-rack receiver in a full-metal housing with intuitive OLED display for full control
- Easy and flexible wireless synchronization between transmitter and receiver via infrared
- Up to 32 compatible channels
- Up to 88 MHz bandwidth with 3520 selectable frequencies, fully tunable in a stable UHF range
- Ethernet connection for Wireless Systems Manager (WSM) control software for advanced frequency coordination in multi-channel setups
- High RF output power (up to 50 mW, adjustable in three steps 10/30/50) depending on country regulations

### DELIVERY INCLUDES

- EM 300-500 G4 true diversity receiver
- SKM 500 G4 handheld transmitter
- MMD 935-1 microphone head (only 935 variants)
- MMD 945-1 microphone head (only 945 variants)
- MMK 965-1 microphone head (only 965 variants)
- MZQ 1 microphone clamp
- 2 AA batteries
- power supply
- GA 3 rackmount set
- 2 rod antennas
- quick guide
- safety guide
- manufacturer declaration sheet



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## SPECIFICATIONS

### EM 300-500 G4

RF characteristics	
Modulation	Wideband FM
Frequency ranges	Aw+: 470 - 558 MHz AS: 520 - 558 MHz Gw1: 558 - 608 MHz Gw: 558 - 626 MHz GBw: 606 - 678 MHz Bw: 526 - 698 MHz Cw: 718 - 790 MHz Dw: 790 - 865 MHz JB: 806 - 810 MHz K+: 925 - 937.5 MHz
Receiving frequencies	Max. 3520 receiving frequencies, adjustable in 25 kHz steps  20 frequency banks, each with up to 32 factory-pre-set channels, no intermodulation  6 frequency banks with up to 32 programmable channels
Switching bandwidth	up to 88 MHz
Nominal/peak deviation	±24 kHz / ±48 kHz
Receiver principle	True diversity
Sensitivity (with HDX, peak deviation)	< 2.5 µV for 52 dB <sub>A</sub> <small>eff S/N</small>
Adjacent channel selection	Typically ≥ 75 dB
Intermodulation attenuation	Typically ≥ 70 dB
Blocking	≥ 75 dB

Squelch	5 to 25 dBµV in steps of 2 dB
Pilot tone squelch	Can be switched off
Antenna inputs	2 BNC sockets

### AF characteristics

Compander system	Sennheiser HDX
EQ presets (switchable, act on line and monitor outputs)	Preset 1: Flat Preset 2: Low Cut (-3 dB at 180 Hz) Preset 3: Low Cut/High Boost (-3 dB at 180 Hz, +6 dB at 10 kHz) Preset 4: High Boost (+6 dB at 10 kHz)
Signal-to-noise ratio (1 mV, peak deviation)	≥ 115 dBA
Total harmonic distortion (THD)	≤ 0.9 %
AF output voltage (at peak deviation, 1 kHz AF)	6.3 mm jack socket (unbalanced): +12 dBu XLR socket (balanced): +18 dBu
Setting range "AF Out"	48 dB (3 dB steps)
<b>Overall device</b>	
Temperature range	-10 °C to +55 °C
Power supply	12 V DC
Current consumption	350 mA
Dimensions	Approx. 202 x 212 x 43 mm
Weight	Approx. 980 g

## CONNECTIONS





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## SPECIFICATIONS

### SKM 500 G4

RF characteristics	
Modulation	Wideband FM
Frequency ranges	Aw+: 470 - 558 MHz AS: 520 - 558 MHz Gw1: 558 - 608 MHz Gw: 558 - 626 MHz GBw: 606 - 678 MHz Bw: 526 - 698 MHz Cw: 718 - 790 MHz Dw: 790 - 865 MHz JB: 806 - 810 MHz K+: 925 - 937.5 MHz
Transmission frequencies	Max. 3520 frequencies, adjustable in 25 kHz steps  20 frequency banks, each with up to 32 factory-pre- set channels, no intermo- dulation  6 frequency banks with up to 32 programmable channels
Switching bandwidth	up to 88 MHz
Nominal/peak deviation	$\pm 24$ kHz / $\pm 48$ kHz
Frequency stability	$\leq \pm 15$ ppm
RF output power at 50 $\Omega$	switchable: Low: typ. 10 mW Standard: typ. 30 mW High: typ. 50 mW

## SPECIFICATIONS

### MMD 935-1

Transducer principle	dynamic
Sensitivity	2.5 mV/Pa
Sound pressure level	154 dB SPL
Pick-up pattern	cardioid

### MMD 945-1

Transducer principle	dynamic
Sensitivity	1.8 mV/Pa
Sound pressure level	154 dB SPL
Pick-up pattern	supercardioid

Pilot tone squelch	Can be switched off
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### AF characteristics

Compander system	Sennheiser HDX
AF frequency response	80 – 18,000 Hz
Signal-to-noise ratio (1 mV, peak deviation)	$\geq 115$ dBA
Total harmonic distortion (THD)	$\leq 0.9$ %
Setting range for input sensitivity	48 dB, adjustable in 6 dB steps

### Overall device

Temperature range	-10 °C to +55 °C
Power supply	2 AA batteries, 1.5 V or BA 2015 accupack
Nominal voltage	3 V battery / 2.4 V rechargeable battery
Current consumption	at nominal voltage: typ. 180 mA with transmitter switched off: $\leq 25$ $\mu$ A
Operating time	Typically 8 h
Dimensions	Approx. $\varnothing 50$ x 265 mm
Weight (incl. batteries)	approx. 450 g

### MMK 965-1

Transducer principle	extern polarisiertes Dop- pelmembran-Kondensator- mikrofon
Pick-up pattern	cardioid/supercardioid, switchable
Sensitivity (free field, no load) (1 kHz)	7.0 mV/Pa
with preattenuation	2.2 mV/Pa (factory setting)
Max. SPL at 1 kHz	144 dB
with preattenuation	154 dB (factory setting)
Dynamic range	126 dB(A)
Diameter of diaphragm	2.54 cm (1")
Frequency response	40 to 20,000 Hz
"Equivalent noise level A-weighted (DIN IEC 651)"	18 dB
Weight	162 g

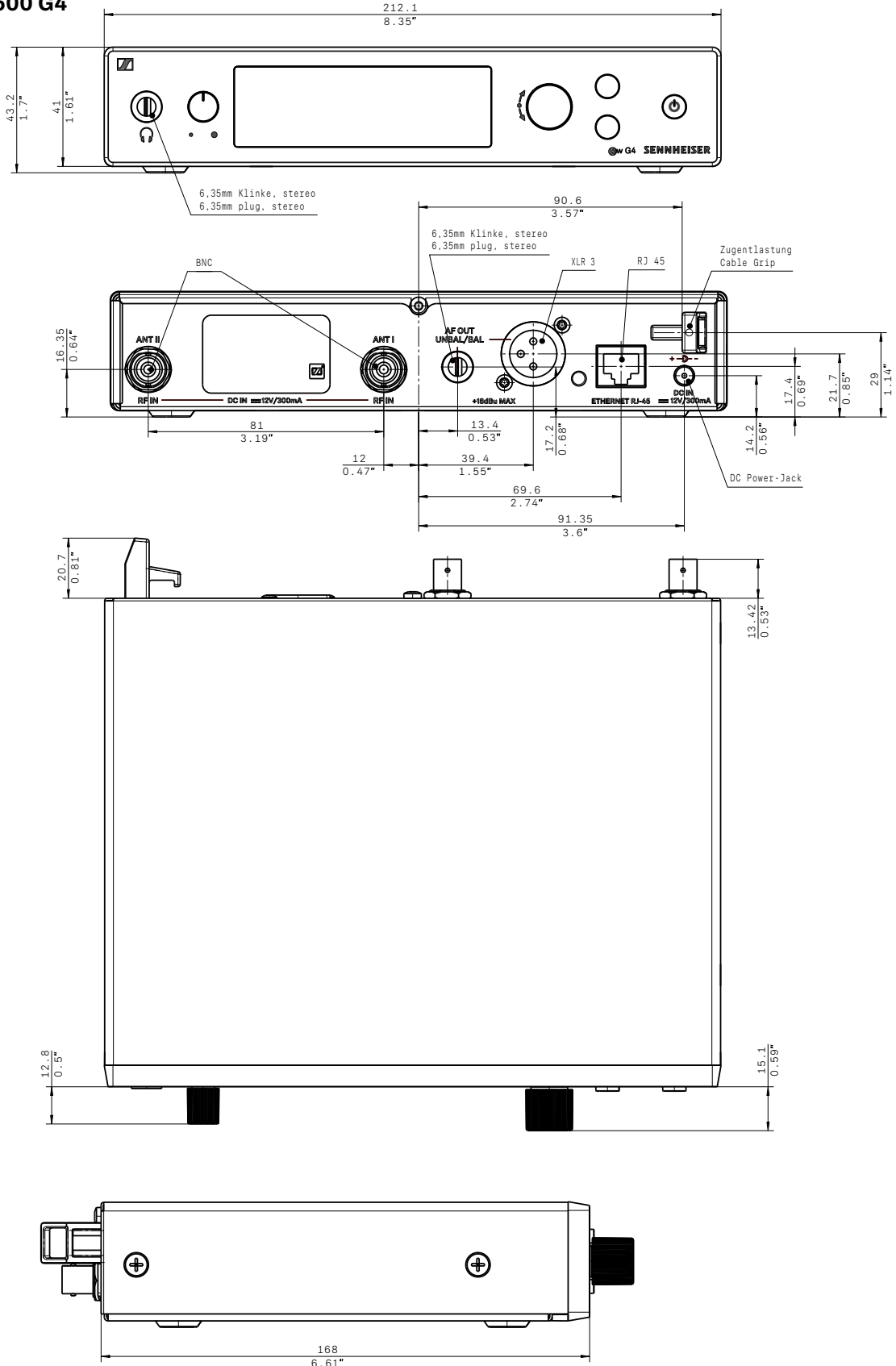


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## DIMENSIONS

### EM 300-500 G4



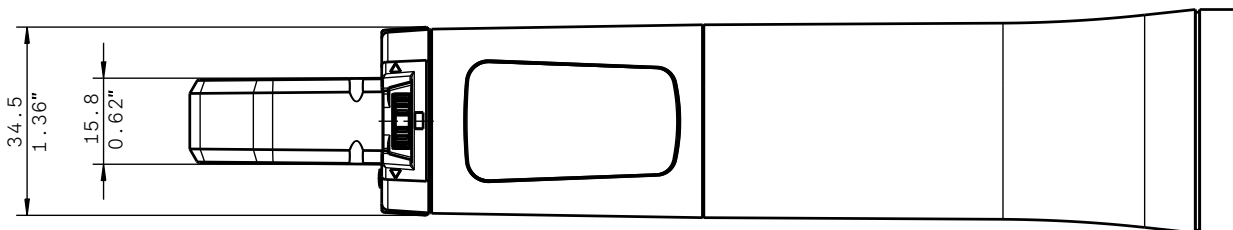
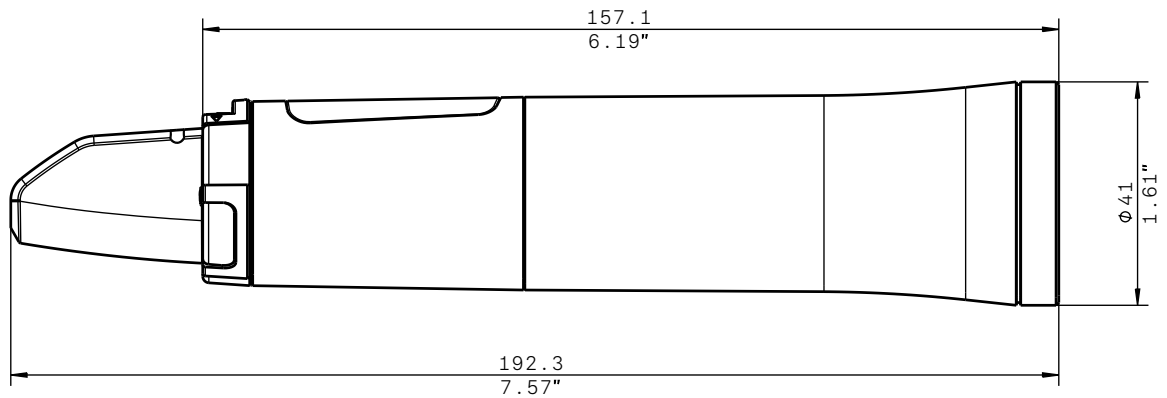
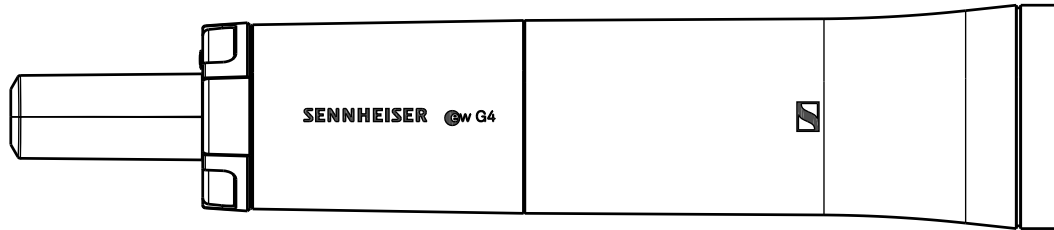


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## DIMENSIONS

### SKM 500 G4





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## PRODUCT VARIANTS

### Made in Germany

<b>ew 500 G4-935-K+</b>	925 - 937.5 MHz	Art. no. 507750
<b>ew 500 G4-935-GBw</b>	606 - 678 MHz	Art. no. 507751
<b>ew 500 G4-935-Gw</b>	558 - 626 MHz	Art. no. 507752
<b>ew 500 G4-935-Bw</b>	626 - 698 MHz	Art. no. 507753
<b>ew 500 G4-935-Cw</b>	718 - 790 MHz	Art. no. 507754
<b>ew 500 G4-935-Dw</b>	790 - 865 MHz	Art. no. 507755
<b>ew 500 G4-935-Aw+</b>	470 - 558 MHz	Art. no. 508410

<b>ew 500 G4-945-K+</b>	925 - 937.5 MHz	Art. no. 507758
<b>ew 500 G4-945-GBw</b>	606 - 678 MHz	Art. no. 507759
<b>ew 500 G4-945-Gw</b>	558 - 626 MHz	Art. no. 507760
<b>ew 500 G4-945-Bw</b>	626 - 698 MHz	Art. no. 507761
<b>ew 500 G4-945-Cw</b>	718 - 790 MHz	Art. no. 507762
<b>ew 500 G4-945-Dw</b>	790 - 865 MHz	Art. no. 507763
<b>ew 500 G4-945-Aw+</b>	470 - 558 MHz	Art. no. 508411

<b>ew 500 G4-965-K+</b>	925 - 937.5 MHz	Art. no. 507766
<b>ew 500 G4-965-GBw</b>	606 - 678 MHz	Art. no. 507767
<b>ew 500 G4-965-Gw</b>	558 - 626 MHz	Art. no. 507768
<b>ew 500 G4-965-Bw</b>	626 - 698 MHz	Art. no. 507769
<b>ew 500 G4-965-Cw</b>	718 - 790 MHz	Art. no. 507770
<b>ew 500 G4-965-Dw</b>	790 - 865 MHz	Art. no. 507771
<b>ew 500 G4-965-Aw+</b>	470 - 558 MHz	Art. no. 508412

### Assembled in USA

<b>ew 500 G4-935-AS</b>	520 - 558 MHz	Art. no. 508090
<b>ew 500 G4-935-JB</b>	806 - 810 MHz	Art. no. 508091
<b>ew 500 G4-935-Gw</b>	558 - 626 MHz	Art. no. 508092
<b>ew 500 G4-935-Bw</b>	626 - 698 MHz	Art. no. 508093
<b>ew 500 G4-935-Cw</b>	718 - 790 MHz	Art. no. 508094
<b>ew 500 G4-935-Dw</b>	790 - 865 MHz	Art. no. 508095
<b>ew 500 G4-935-Aw+</b>	470 - 558 MHz	Art. no. 508431
<b>ew 500 G4-935-Gw1</b>	558 - 608 MHz	Art. no. 508452

<b>ew 500 G4-945-AS</b>	520 - 558 MHz	Art. no. 508098
<b>ew 500 G4-945-Gw</b>	558 - 626 MHz	Art. no. 508099
<b>ew 500 G4-945-Bw</b>	626 - 698 MHz	Art. no. 508100
<b>ew 500 G4-945-Cw</b>	718 - 790 MHz	Art. no. 508101
<b>ew 500 G4-945-Dw</b>	790 - 865 MHz	Art. no. 508102
<b>ew 500 G4-945-Aw+</b>	470 - 558 MHz	Art. no. 508432
<b>ew 500 G4-945-Gw1</b>	558 - 608 MHz	Art. no. 508453

<b>ew 500 G4-965-AS</b>	520 - 558 MHz	Art. no. 508105
<b>ew 500 G4-965-JB</b>	806 - 810 MHz	Art. no. 508106
<b>ew 500 G4-965-Gw</b>	558 - 626 MHz	Art. no. 508107
<b>ew 500 G4-965-Bw</b>	626 - 698 MHz	Art. no. 508108
<b>ew 500 G4-965-Cw</b>	718 - 790 MHz	Art. no. 508109
<b>ew 500 G4-965-Dw</b>	790 - 865 MHz	Art. no. 508110
<b>ew 500 G4-965-Aw+</b>	470 - 558 MHz	Art. no. 508433
<b>ew 500 G4-965-Gw1</b>	558 - 608 MHz	Art. no. 508454



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## ew 500-G4-935 | ew 500-G4-945 | ew 500-G4-965 | Vocal Set

### ARCHITECT'S SPECIFICATION

A wireless RF transmission system consisting of a stationary receiver and a handheld vocal radio microphone with a microphone head.

The system shall operate within ten UHF frequency ranges, with a switching bandwidth of up to 88 MHz: 470 – 558 MHz, 520 – 558 MHz, 558 – 608 MHz, 558 – 626 MHz, 606 – 678 MHz, 626 – 698 MHz, 718 – 790 MHz, 790 – 865 MHz, 806 – 810 MHz, 925 – 937.5 MHz; receiving frequencies shall be 3520 per range and shall be tunable in 25 kHz steps. The system shall feature 20 fixed frequency banks with up to 32 compatible frequency presets and 6 user banks with up to 32 user programmable frequencies.

The receiver shall be menu-driven with a backlit OLED display showing the current frequency, frequency bank and channel number, metering of RF level, metering of AF level, lock status, pilot tone evaluation, muting function, and battery status of the associated transmitter. An auto-lock feature shall be provided to prevent settings from being accidentally altered. The receiver shall provide a sound check mode.

Some receiver parameters such as receiving frequency, receiver name and pilot tone setting shall be synchronizable with the associated transmitter via an integrated infrared interface.

The receiver shall feature a balanced XLR-3M audio output with a maximum output of +18 dBu along with an unbalanced ¼" (6.3 mm) audio output with a maximum output of +12 dBu. A headphone output with headphone volume control shall be provided and shall utilize a ¼" (6.3 mm) stereo jack socket. The receiver shall have an Ethernet port (RJ-45) for remote network-based monitoring and control using the Sennheiser Control Cockpit or the Sennheiser Wireless System Manager software. Two BNC-type input sockets shall be provided for connecting the antennas.

Nominal/peak deviation shall be  $\pm 24$  kHz/ $\pm 48$  kHz. Squelch threshold shall be defeatable (off) or adjustable from 5 - 25 dB $\mu$ V in steps of 2 dB.

The receiver shall incorporate the Sennheiser HDX compander system and a defeatable pilot tone squelch. Sensitivity shall be  $< 2$   $\mu$ V for 52 dBA eff S/N with HDX engaged at peak deviation. Adjacent channel rejection shall be  $\geq 75$  dB (typical). Intermodulation attenuation shall be  $\geq 70$  dB (typical); blocking shall be  $\geq 75$  dB. Four selectable equalizer presets shall be provided: "Flat", "Low Cut" (-3 dB at 180 Hz), "Low Cut/High Boost" (-3 dB at 180 Hz/+5.5 dB at 10 kHz) and "High Boost" (+5.5 dB at 10 kHz). Signal-to-noise ratio at 1 mV and peak deviation shall be  $\geq 115$  dBA. Total harmonic distortion (THD) shall be  $\leq 0.9$  %. The audio output level shall be adjustable within a 48 dB range in steps of 3 dB.

The receiver shall operate on 12 V power supplied from the NT 2-3 CW mains unit (for 100 – 240 V AC, 50/60 Hz). Power consumption shall be 350 mA. The receiver shall have a rugged metal housing; dimensions shall be approximately 202 x 212 x 43 mm (7.95" x 8.35" x 1.69"). Weight shall be approximately 980 grams (2.16 lbs). Operating temperature shall range from -10 °C to +55 °C (+14 °F to +131 °F).

The receiver shall be the Sennheiser EM 300-500 G4.

The radio microphone shall be menu-driven with a backlit LC display showing the current frequency, frequency bank and channel number, metering of AF level, transmission status, lock status, pilot tone transmission, muting function, and battery status. An auto-lock feature shall be provided to prevent settings from being accidentally altered.

The radio microphone parameters shall be programmable in the radio microphone menu. Receiver parameters such as receiving frequency, receiver name and pilot tone setting shall be synchronizable with the radio microphone via an integrated infrared interface.

Nominal/peak deviation shall be  $\pm 24$  kHz/ $\pm 48$  kHz. Frequency stability shall be  $\leq \pm 15$  ppm. RF output power at 50  $\Omega$  shall be switchable between 10 mW (typical, low) and 30 mW (typical, standard) and 50 mW (typical, high).

The radio microphone shall incorporate the Sennheiser HDX compander system and a defeatable pilot tone squelch. Audio frequency response shall range from 80 – 18,000 Hz. Signal-to-noise ratio at 1 mV and peak deviation shall be  $\geq 115$  dBA. Total harmonic distortion (THD) shall be  $\leq 0.9$  %. Input sensitivity shall be adjustable within a 48 dB range in steps of 6 dB.

Power shall be supplied to the radio microphone by two 1.5V AA size batteries or by one Sennheiser BA 2015 rechargeable accupack. Nominal voltage shall be 2.4 V, current consumption shall be typical 180 mA at nominal voltage;  $\leq 25$   $\mu$ A when radio microphone is switched off. Operating time shall be typical 8 hours. The radio microphone shall have a rugged metal housing; dimensions shall be approximately 50 mm (1.97") in diameter and 265 mm (10.43") in length. Weight including the batteries shall be approximately 450 grams (0.99 lbs). Operating temperature shall range from -10 °C to +55 °C (+14 °F to +131 °F). A range of microphone heads shall be available for the radio microphone.

The radio microphone shall be the Sennheiser SKM 500 G4.