AKG
H A Harman International Company

WMS 81

UHF Wireless Microphone System

Description

The WMS 81 wireless microphone system comprises a transmitter (bodypack or handheld), a receiver and optional accessories. The bodypack and handheld transmitters have the same transmission characteristics, with a maximum radiated power of 10 milliwatts. Through signal companding (compression and expansion), a dynamic range greater than 100 dB is attained at the receiver's output. Audio bandwidth extends from 50 Hz to 20 kHz. Through digital diversity reception, the performance of the system is uniform over a wide range in typical performance spaces, extending up to distances of 330 feet (100 meters).

Individual handheld microphone and bodypack transmitters are factory matched to a given receiver. Fifteen frequencies are available in each of twelve UHF channels that occupy the range of 710.2 - 745.6 MHz. Because of some frequency overlap, and the recommendation that adjacent sub-channels not be used in a given installation, the user may expect approximately 14 usable channels in a given multiple receiver installation.

The PT 81 bodypack and HT handheld models are powered by 2 AA batteries, and normal battery life of 8-10 hours can be expected from alkaline 1.5 volt cells. The PT 81 accepts both microphone and line level input signals, and input sensitivity can be selected for optimum transmission.

The PT 81 accommodates a variety of lavalier and headworn microphones as well as electronic instruments such as guitars and keyboards via the MK/GL guitar cable.

The D 880 WL1, D 3800 WL1 and C 535 WL1, three modular versions of AKG's most popular handheld vocal mics, are available as modular heads for the HT 81.

The HT 81 handheld transmitter has the following controls: power on/off, microphone mute, input sensitivity control, and selection of the desired transmitting frequency. Powering of the handheld transmitters is the same as for the bodypack.

The SR 81 receiving unit is one standard rack unit high and one-half rack unit wide. Thus, two receiving units can be placed side by side. Each SR 81 comes from the factory with the chosen UHF bandwidth containing a set of 15 preset operating frequencies. The SR 81 is a digital diversity receiver which uses a microprocessor to monitor signal strength and silently switch between antennae.

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Controls on the SR 81 include: carrier frequency selection, and output level control. Indicators on the unit include: RF mute, audio input level, RF strength, diversity LEDs, and transmitter battery status. Squelching action is made automatic by use of AKG's TCSQ™ (tone code squelch) circuitry. Each SR 81 is provided with two 1/4 wave diversity antennae; however when a number of receivers are used in a single installation it is advised to use the optional powered antenna accessories. Up to ten receivers can be fed by a single pair of powered antennae.

Features

- **Factory matched and optimized transmitter/receiver frequency sets**
- **Digital diversity reception**
- **Dynamic range >100 dB**
- **Simple, foolproof setup procedure**
- **Both bodypack and handheld microphone transmitters available**
- **14 intermodulation-free UHF channels with multiple receivers**

Specifications

PT 81 bodypack transmitter:

Audio bandwidth:	50 Hz to 20 kHz
Modulation method:	FM
Radiated RF power:	10 mW
Frequency stability:	±10 ppm
Antenna:	flexible, quarter-wave wire
Rated deviation:	±30 kHz
Signal-to-noise ratio:	Typical 50 dB (A weighted)
Input impedance:	220 kohms, 600 pF
Audio input:	3-pin mini XLR; 1400 mV for rated deviation at 1 kHz
Phantom powering:	Pin 3: 6 V/6k8 ohms
Current consumption:	170 mA/2.4 V
Power requirement:	2 AA 1.5V batteries
Battery life:	8-10 hours
Dimensions:	3.62 x 2.56 x 0.79 in. (92 x 65 x 20 mm)
Net weight:	3.04 oz. (76 g) without batteries
Pin out:	Pin 1 = gnd, pin 2 = audio, pin 3 = type

HT 81 handheld transmitter:

Type, bandwidth and polar pattern:	See individual microphone specification sheets
Modulation type:	FM
RF radiated power:	10 mW
Rated deviation:	±30 kHz
Signal-to-noise ratio:	Typical 50 dB (A-weighted)
Current consumption:	<150 mA/2.4 V
Power requirement:	2 AA size 1.5V batteries
Battery life:	>10 hours
Dimensions:	1.4 x 9.4 in. (36 mm dia. x 240 mm)
Net weight:	9.8 oz. (245 g)

12 intermodulation-free frequencies

US54	710.200 MHz (1)	US58	734.400 MHz (1)
	710.600 MHz (3)		735.200 MHz (5)
	711.200 MHz (6)		737.200 MHz (F)
	713.000 MHz (F)	US59	743.000 MHz (2)
US55	719.200 MHz (2)		743.600 MHz (5)
	721.800 MHz (F)		745.400 MHz (E)

( ) = channel setting on front of SR81

SR 81 receiver:

Receiver type:	Diversity
Antenna inputs:	2 x 50-ohm BNC sockets
Modulation type:	FM
Input sensitivity:	Typical -95 dBm
Squelch threshold:	Automatic, using pilot tone (32.678 kHz)
Audio bandwidth:	50 to 20 kHz
THD at 1 kHz:	<0.4% at rated deviation
Signal-to-noise	Typical 100 dB (A-weighted)
Audio output:	Balanced XLR-M, mic/line level switchable, typical 30 dB unbalanced: 1.4" jack: 0 dBm XLR: 6 dBm
Current consumption:	220 mA typical
Power requirement:	11 to 15 V dc or ac from external power supply
Dimensions:	8.27 x 6.7 x 1.65 in. (210 x 170 x 42 mm)
Net weight:	18.8 oz. (470 g)
Included Accessories:	
	Rackmount Kit
	Miniature screwdriver
SA43	Stand Adapter (with HT)
Optional Accessories:	
PS 81:	Active, wideband antenna splitter for connecting up to 4 SR 81 units or 3 SR 81 units and one additional PS.
RA 81:	External receiver antenna with integrated booster, powered via cable from the PS81 antenna splitter.
PSU 10:	Central power supply unit for support of up to 10 SR 61 and up to 3 PS 61 units.
SRA-1:	External directional antenna
CCS-1:	Color code set for easy channel recognition
CH 60:	Hard Case for carrying a single complete system
MKA 20:	20 meter cable for PS 81 and RA 81 B
UAM 1:	Universal antenna mount for moving antennas to front of rack
MK/GL:	Guitar cable for PT 60, PT 61, PT 80, PT81
MKPS:	BNC connecting cable used to connect PS 81 (antenna splitter) to SR 81 (receiver) - 2 required per receiver

Architects and Engineers Specifications

The wireless microphone system shall operate selectively over the UHF frequency range from 710.2 to 745.6 MHz, providing at least 15 selectable channels channels with transmitter power not exceeding 10 milliwatts. Both handheld and bodypack type transmitters shall be provided. The transmitters shall operate with a companding system that is complemented by the receiver, providing an A-weighted system dynamic range in excess of 100 dB. The transmitters shall provide the following switchable functions: input sensitivity, power on/off, and microphone mute. Handheld transmitters shall have a maximum diameter of 1.4 inches and a length no greater than 9.4 inches.

The receiver shall operate on the diversity principle, and that action shall be inaudible as such. Total harmonic distortion at 1 kHz for rated deviation shall be no greater than 0.4%. The receiver shall provide automatic squelch adjustment (TCSQTM) for optimum system operation. An output mic/line level adjustment shall be provided, and there shall be both balanced XLR-M output and unbalanced 0.25 in. jack. A rackmounting kit shall be included as a standard accessory and the wireless microphone system shall be the AKG Acoustics Model WMS 81.
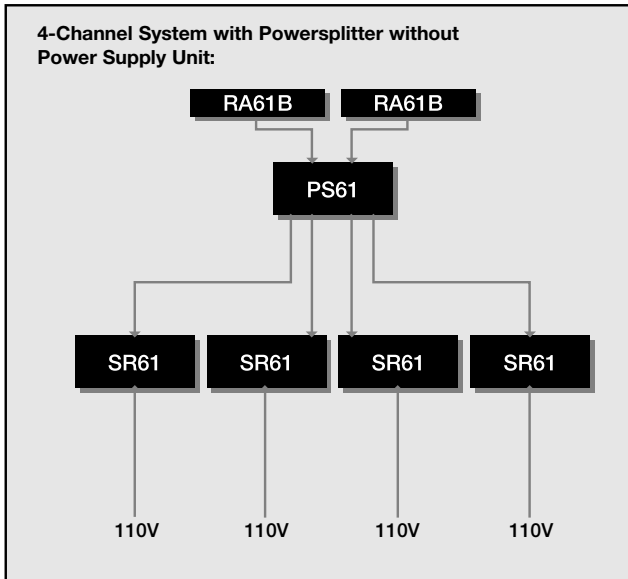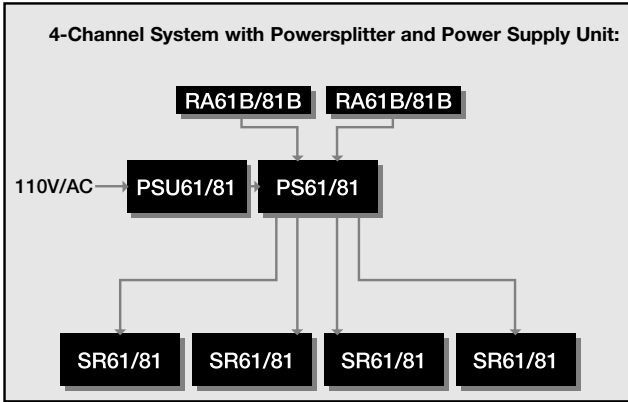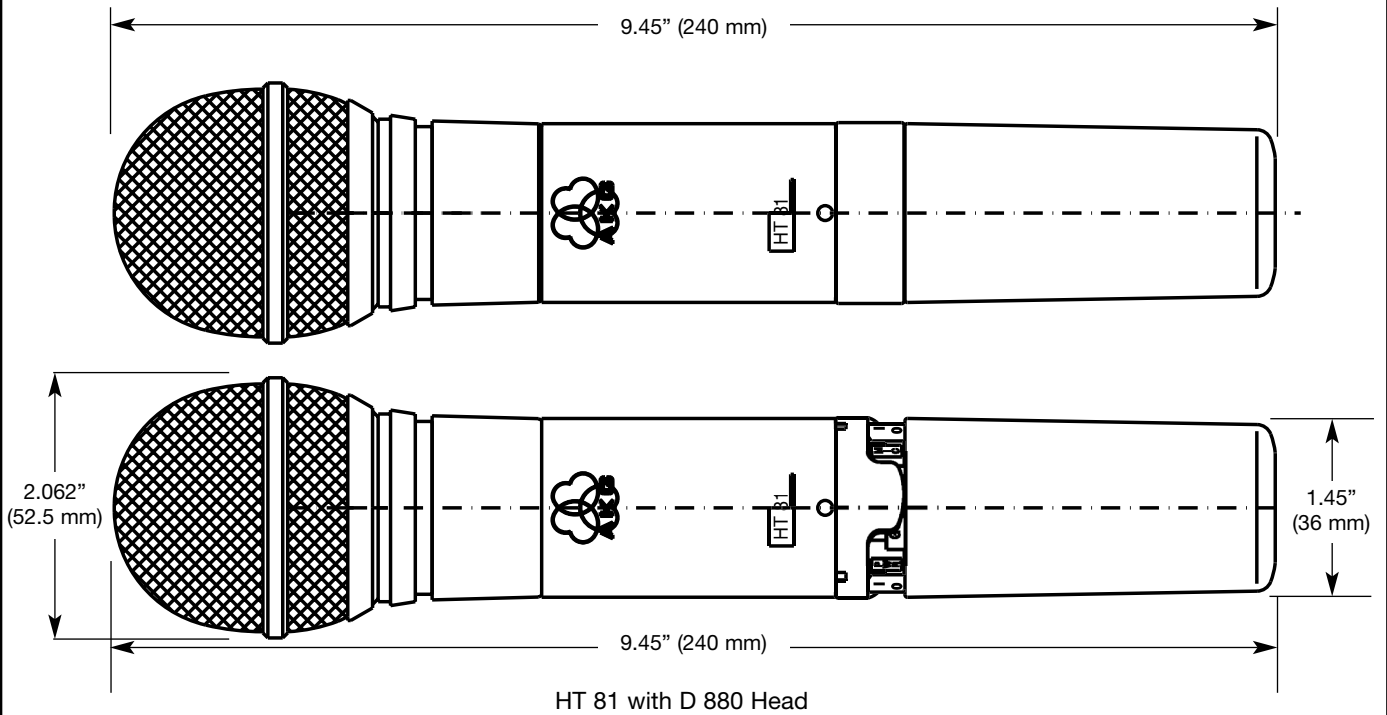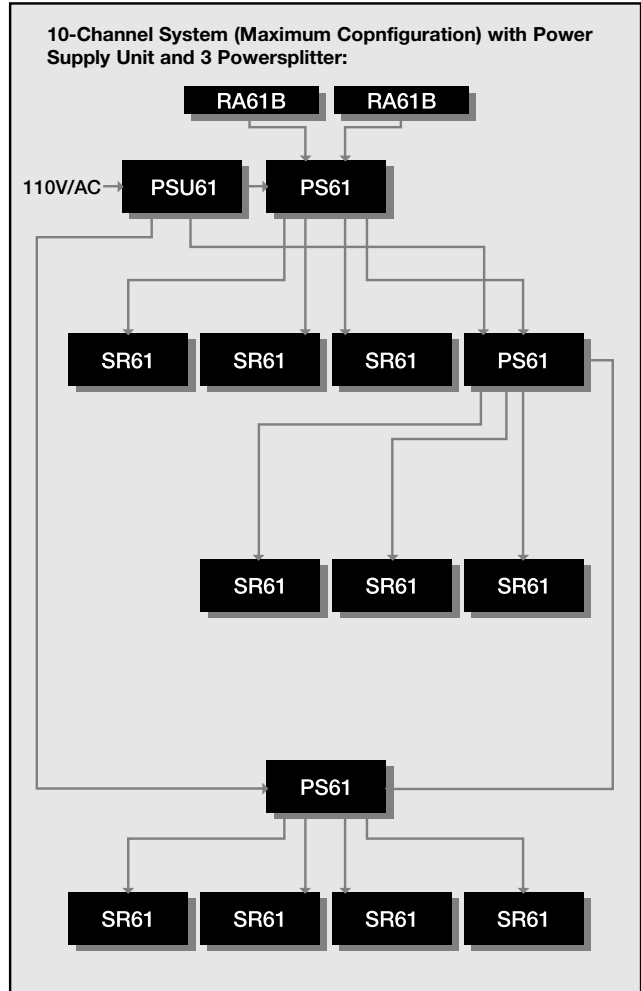
Graphical Data

Figure 3

4-Channel System with Powersplitter and Power Supply Unit:

```
        RA61B/81B      RA61B/81B

110V/AC → PSU61/81 → PS61/81

  SR61/81    SR61/81    SR61/81    SR61/81
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4-Channel System with Powersplitter without Power Supply Unit:

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        RA61B      RA61B

             PS61

  SR61    SR61    SR61    SR61

  110V    110V    110V    110V
```

Figure 5

10-Channel System (Maximum Copnfiguration) with Power Supply Unit and 3 Powersplitter:

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        RA61B      RA61B

110V/AC → PSU61 → PS61

  SR61    SR61    SR61    PS61

           SR61    SR61    SR61


                PS61

  SR61    SR61    SR61    SR61
```

9.45" (240 mm)

HT 81

2.062"
(52.5 mm)

HT 81

1.45"
(36 mm)

9.45" (240 mm)

HT 81 with D 880 Head

Graphical Data

SR 81

5.42"
(139mm)

8.19"
(210mm)

1.68"
(43mm)

2.54"
(65mm)

.79"
(20.3mm)

PT 81

2.77"
(71mm)

.75"
(19.3mm)

AKG is constantly improving and modifying its products, therefore, specifications are subject to change without notice.

Microphones · Headphones · Wireless Microphones · Wireless Headphones · Headsets · Electroacoustical Components

Specifications subject to change without notice.

DS-WMS 81