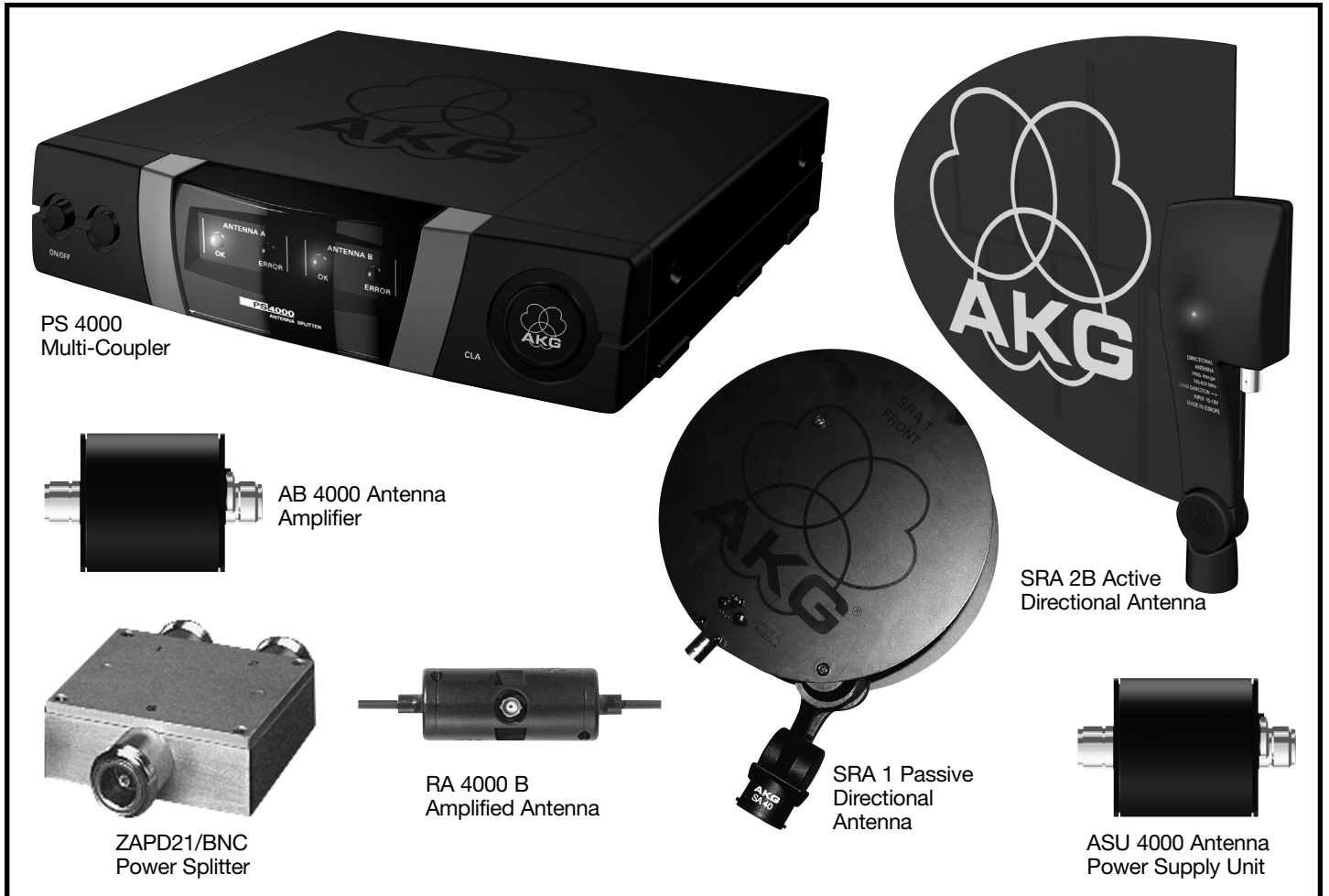




H A Harman International Company

WMS 4000

Antenna System Components



Description

The AKG Model WMS 4000 is an extremely flexible and sophisticated wireless microphone system for multi-user, multi-channel applications. A wide range of accessories is available to customize the system to meet your specific needs and deliver

tremendous operational flexibility and ease of installation. On the following pages, all the available components for setup of a sophisticated antenna distribution scheme for multi-channel systems are described.

Features

- High quality RF components to build up extremely flexible and sophisticated antenna networks with large antenna cable lengths
- ... and to build up distributed antenna networks for room sharing applications
- Cascadeable, PS 4000 Multi-Coupler
- Ultra linear Antenna Amplifier AB 4000 in waterproof housing
- High efficient passive and active directional antennas SRA 1 & SRA 2B
- Discreet omnidirectional Amplified Antenna RA 4000 B for indoor & outdoor use
- Wide range of useful accessories

PS 4000 Multi-Coupler

The PS 4000 multi-coupler combines an antenna splitter and dc power distribution in a chassis that is one EIA standard rack unit high and one-half rack unit wide in a full metal housing. Thus, two multi-coupler units can be placed side by side (Rack Mount hardware kit included) or one PS 4000 side-by-side with e.g. an SR 4000 receiver unit.

The PS 4000 has a wide-band antenna signal amplifier/divider with a 220 MHz-wide UHF bandwidth, making it suitable for all available WMS 4000 channels. The multi-coupler provides 2 BNC antenna inputs. The incoming diversity signal is internally amplified and divided to 4 pairs of diversity outputs, thus the splitter provides 2 x 4 BNC antenna output connectors. Two additional BNC outputs are available on the rear panel for cascading the diversity antenna signal to another multi-coupler. Up to 3 multi-couplers can be cascaded to supply antenna signal to 12 receivers from a single pair of antennas.

The PS 4000 offers the following displays: one blue LED indicator for each antenna input showing that the connected cables, signal amplifier and antennas are fully operational. A red LED indicator will indicate a failure, like a short or loss of power.

A 3 bit dip-switch for compensation of the connected cable length is available on the front panel to optimize the system's performance. On the rear panel of the PS 4000, a DC input can be hooked to either a single PSU 01/4000 or to the optional PSU 4000 central power supply unit, which can be connected to power the antenna splitter and the connected receivers and antennas remotely via the antenna cables.

Specifications

Type: 2 x 1 to 4 SR4000 + 2 x 1 PS (Cascade)

Carrier frequency range: 650 to 870 MHz

Selectable input attenuator: 0, 2, 4, 6, 8, 10, 12, 14 dB,

RF inputs: 2 BNC sockets, 50 ohms

RF outputs: 10 BNC sockets, 50 ohms

Operating voltage: 12 VDC

Dimensions: 7.8 x 5.4 x 1.7 in. (200 x 136 x 44 mm)

Weight: 30 oz. (850 g)

Standard accessories: RMU 4000 rack mounting kit

Optional accessories: MK PS connecting BNC cable
MKA 20 connecting BNC cable
PSU 01/4000 power supply
PSU 4000 power supply

RA 4000 B Amplified Antenna

The RA 4000B is an active omnidirectional antenna. Designed for the WMS 4000 wireless microphone system, it comes with a specially-tuned wideband UHF amplifier, perfectly matched to all WMS 4000 channels. The integrated ultra linear RF amplifier circuit can be remotely powered by the PS 4000 antenna splitter and offers approximately 17 dB of amplification to compensate for the cable attenuation of up to 132 ft. (40 m) of RG58 cable or 278 ft. (85 m) of RG213 cable. If necessary, the RA 4000B can also be cascaded with the optional AB 4000 antenna amplifier to compensate for even more antenna cable length. The antenna provides a BNC connector for connecting a BNC antenna cable.

Specifications

Carrier frequency range: 650 to 870 MHz

Gain: 17 dB

RF input: 1 BNC socket, 50 ohms

RF output: 1 BNC socket, 50 ohms

Operating voltage: 8 VDC from PS 4000 or ASU 4000 via connecting cable

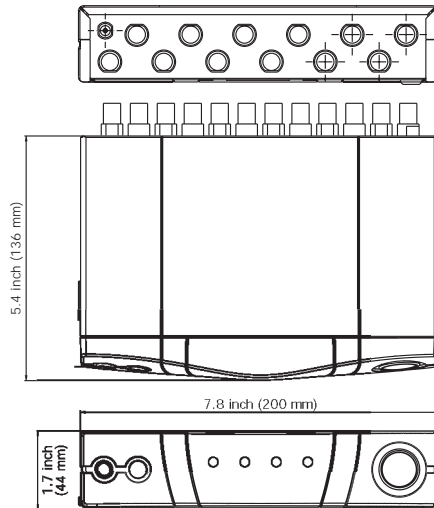
Dimensions: 4.3 x 1.4 in. (110 x 35 mm)

Weight: 2.8 oz. (80 g)

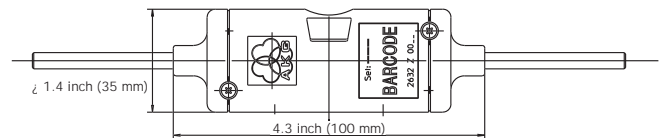
Standard accessories: SA 43 adapter

Optional accessories: LMF1B flange mount w/screws
LGN19B gooseneck

Graphical Data



PS 4000



RA 4000 B

SRA 1 Passive Directional Antenna

The SRA1 is a passive UHF antenna with a hypercardioid polar pattern. The specific design of the antenna provides maximum on-axis gain of approximately 6 dB, which is equivalent to increasing the transmitter's radiated power by four times. The antenna provides a BNC connector for connecting an antenna cable. Use only with MKA 5 or one 16.4 ft. (5 m) RG 58 cable.

Specifications

Carrier frequency range: 650 to 945 MHz

Gain: 6 dB

Coverage angle: 70°

Front-to-back ratio (180°): 13 dB min.

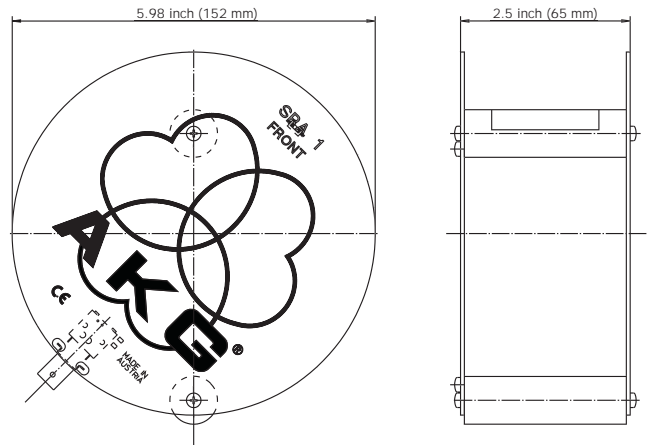
Off-axis attenuation (90° to 110°): 25 dB

Dimensions: diameter: 5.98 in. (152 mm); depth: 2.5 in. (65 mm)

Weight: 7.7 oz. (220 g)

Standard accessories: SA 40 adapter

Graphical Data



SRA 1

SRA 2B Active Directional Antenna

The SRA 2B is an active directional panel antenna. Specially designed for the WMS 4000 wireless microphone system, the SRA 2B comes with custom-tuned wideband UHF tuning, suitable for all WMS 4000 channels. The directional polar pattern offers approximately 70° of pickup with an on-axis amplification factor of approximately 6 dB. The SRA 2B can typically overcome distances of up to 200m (660 ft) on-axis, line-of-sight. The integrated ultra-linear RF amplifier circuit could be powered by the PS 4000 multi-coupler and offers amplification of approx. 17 dB to compensate for cable attenuation of up to 40 m (132 ft) of RG58 cable or 330 ft. (100 m) of RG213 cable. If necessary, the SRA 2B can be cascaded with the optional AB 4000 antenna amplifier for compensation of even greater antenna cable length. The antenna input utilizes BNC connectors for connecting the antenna cable*.

Specifications

Carrier frequency range: 650 to 870 MHz

Antenna gain: 6 dB

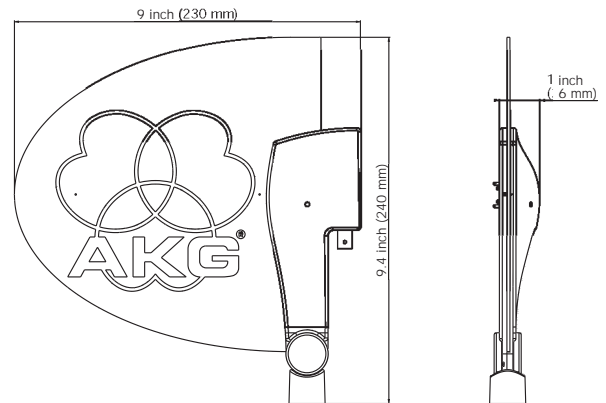
Coverage angle: 70°

Booster gain: 18 dB

Dimensions: 9 x 9.4 x 1 in. (230 x 240 x 26 mm)

Weight: 8.8 oz. (250 g)

Minimum length for RG 58 cable is 32.8 ft. (10 m)



SRA 2B

ZAPD21/BNC Power Splitter

The ZAPD21/BNC power splitter is a passive device with an internal load dissipation of 0.125 watts and a matched power rating of 10 watts. It features BNC type connectors and may be used as a 1 to 2 splitter or as a 2 to 1 combiner. The ZAPD21/BNC passes DC voltage allowing active devices downstream to be remotely powered.

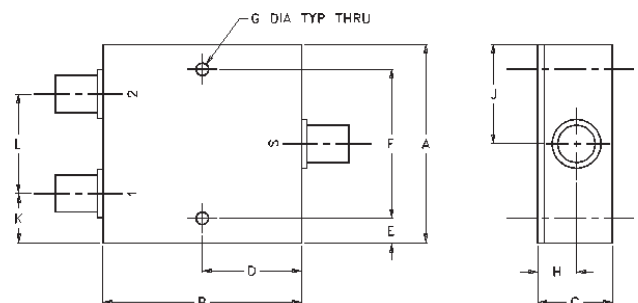
Specifications

Pin connections: Ports 1 and 2 summed to port 3

Dimensions: 2 x 2 x .75 in. (50.8 x 50.8 x 19.05 mm)

Case material: Aluminum alloy

Finish: grey



ZAPD21/BNC

FREQ (MHz)	Insertion Loss (dB) S-1	Insertion Loss (dB) S-2	Amplitude Unbalance (dB)	Isolation (dB) 1-2	Phase Unbalance (Degrees)
650-800	<3.19	<3.14	<0.040	>28.38	<0.77

AB 4000 Antenna Amplifier

The AB 4000 is an in-line antenna signal amplifier used to compensate for the signal loss from cable attenuation in large antenna networks. The amplifier comes with an ultra-linear RF amplifier circuit that offers up to 17 dB of amplification and can be remotely powered by the PS 4000 or by an ASU 4000 Antenna Power Supply Unit. Each AB 4000 can be used with up to 150 ft. (46 m) of RG 58 and up to 300 ft. (92 m) of RG 213 cable. With amplified antennas and 2 AB 4000s the total cable length can be up to 485 ft. (150 m) with RG 58 and up to 950 ft. (292 m) with RG 213. The AB 4000 comes with a 3 bit input attenuator for compensation of the connected cable length. The antenna booster also is equipped with 2 BNC connectors and 1 power indicator LED. The splitter comes in a waterproof metal housing and therefore is even suitable for use outdoors.

Specifications

Carrier frequency range: 650 to 870 MHz

Gain: 17 dB

RF input: 1 BNC, 50 ohms

RF output: 1 BNC, 50 ohms

Operating voltage: 8 VDC from PS 4000 or ASU 4000 via connecting cable

Dimensions: 3.1 x 2 x 2 in. (78 x 50 x 50 mm)

Weight: 5.6 oz. (160 g)

ASU 4000 Antenna Supply Unit

The ASU 4000 is an in-line power supply unit for use in large antenna networks to feed 12 V DC into an antenna line. With the help of the ASU 4000, all connected AKG antenna network components such as the AB 4000, SRA 1 and RA 4000B can be remotely powered even if there is no power coming from the connected PS4000 multi-coupler (e.g. in distributed antenna networks using standard antenna combiners). The ASU 4000 is equipped with 2 BNC connectors, 1 power indicator LED as well as a DC input for connection of the AC/120/500 adapter. The ASU 4000 is built into a waterproof metal housing and therefore is suitable for outdoor use.

The ASU 4000 can power up to 6 active antenna components (e.g. AB 4000, RA 4000B, SRA 2).

Specifications

Carrier frequency range: 650 to 870 MHz

RF input: 1 BNC, 50 ohms

RF output: 1 BNC, 50 ohms

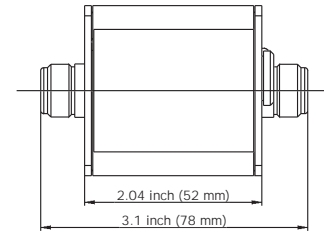
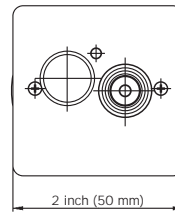
Operating voltage: 12 VDC

Dimensions: 3.1 x 2 x 2 in. (78 x 50 x 50 mm)

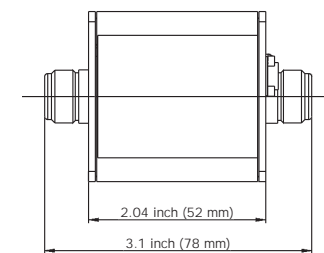
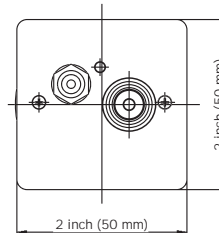
Weight: 5.6 oz. (160 g)

Optional accessories: AC/120/500 power supply

Graphical Data



AB 4000



ASU 4000

Limited Warranty

Valid only in the United States. AKG Acoustics warrants AKG products against defects in material or workmanship for a period of two years from the date of original purchase for use, and agrees to repair or, at our option, replace any defective unit without charge for either parts or labor. Important: This warranty does not cover damage resulting from accident, misuse or abuse, lack of reasonable care, the affixing of any attachment not provided with the product, loss of parts or connecting the product to any but the specified receptacles. This warranty is void unless service or repairs are performed by an authorized service center. No responsibility is assumed for any special, incidental

or consequential damages. However, the limitation of any right or remedy shall not be effective where such is prohibited or restricted by law. Simply take or ship your AKG product prepaid to our service department. Be sure to include your sales slip as proof of purchase date. (We will not repair transit damage under the no-charge terms of this warranty.) Note: No other warranty, written or oral is authorized by AKG Acoustics, Inc. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above exclusions and limitation may not apply to you.

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