AKG ACOUSTICS

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. In the following, all the available components for setup of a sophisticated antenna distribution scheme for multi-channel systems are described:

a) 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. 2 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 of one of the components prior to the PS 4000.

A 10-position 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 DC adapter or to the optional **central power supply unit, which** can be connected to power the antenna splitter and the connected receivers and antennas remotely via the antenna cables.

DATASHEET

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, modular Antenna splitter PS 4000
- Ultra linear Antenna Booster AB 4000 in waterproof housing
- High efficient passive and active directional antennas SRA 1 & SRA 2B
- Discreet omnidirectional booster antenna RA 4000 B for in & outdoor use
- Wide range of useful accessories

b) 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 external AC adapter. Therefore it can be used with up to 90 m (297 ft) of RG58 cable or 220 m (726 ft) of RG213 cable. **In total, 2 AB 4000s can be cascaded** in series without increasing the noise of the wireless microphone system. To **optimize the system's performance**, the AB 4000 comes with a 10-position switch 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.

c) RA 4000 B Amplified Antenna
The RA 4000B is an active omnidirectional antenna. Specially 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 40 m (132 ft) of RG58 cable or 100 m (330 ft) of RG213 cable. If necessary, the SRA 2 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.

d) 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.

e) 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 100 m (330 ft) 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. On request the SRA 2B can be equipped with an **optional laser positioning system** to optimize the antenna placement & positioning.

f) 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 2B 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 see also in Fig. 3 & 4). The ASU 4000 is equipped with 2 BNC connectors, 1 power indicator LED as well as a DC input for connection of the AC adapter. The ASU 4000 is built into a **waterproof metal housing** and therefore is suitable for outdoor use.

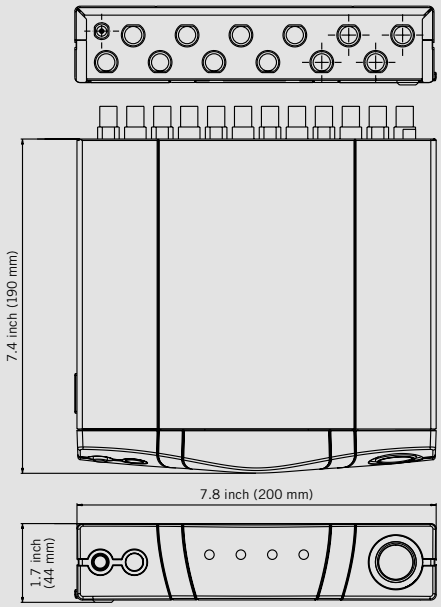
Specifications

PS 4000 Multi-Coupler

Type: 2 x 1 to 4 SR4000 + 2 x 1 PS (Cascade)
Carrier frequency range: 650 to 870 MHz
Cable attenuation compensation: +2, 0 , -2, -4, -6, -8 dB, selectable
RF inputs: 2 BNC sockets, 50 ohms
RF outputs: 10 BNC sockets, 50 ohms
Operating voltage: 10 VDC
Dimensions: 7.8 x 7.4 x 1.7 in. (200 x 190 x 44 mm)
Weight: 2.2 lbs. (970 g)
Standard accessories: power supply, RMU 4000 rack mounting kit
Optional accessories: MK PS connecting cable

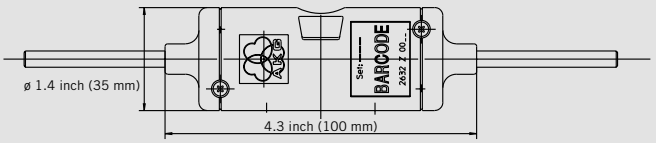
Line Drawings

(us standard and metric measures)



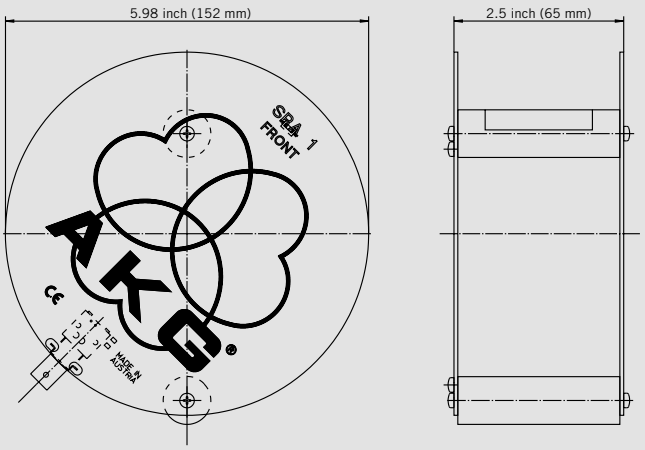
RA 4000 B Omni Booster Antenna

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: 3.5 oz. (100 g)



SRA 1 Directional Antenna (passive)

Carrier frequency range: 658 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: 6.4 oz. (180g)



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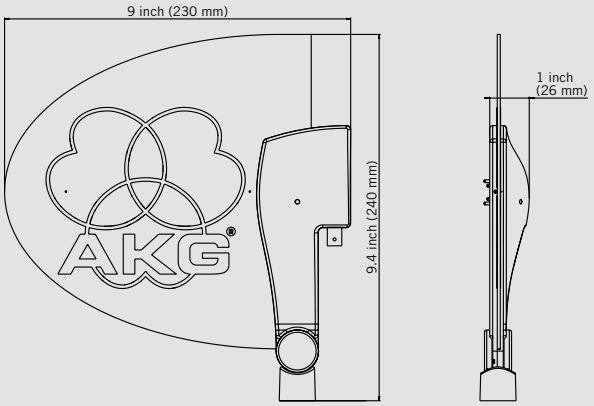
Specifications

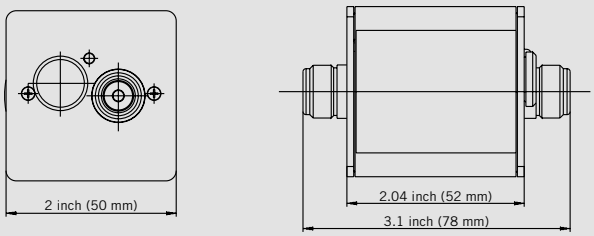
SRA 2B Active Directional Antenna

Carrier frequency range: 650 to 870 MHz
Antenna gain: 6 dB
Coverage angle: 70°
Booster gain: 17 dB
Dimensions: 9 x 9.4 x 1 in. (230 x 240 x 26 mm)
Weight: 8.8 oz. (250 g)



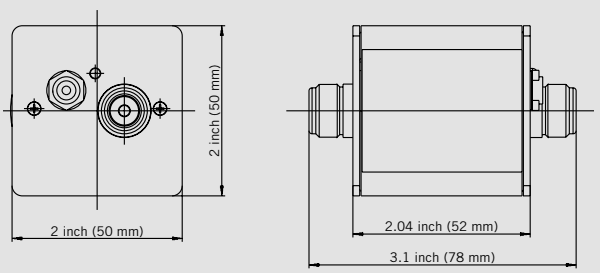
AB 4000 Antenna Amplifier

Carrier frequency range: 650 to 870 MHz
Gain: 17 dB
RF input: 1 BNC or N-socket, 50 ohms
RF output: 1 BNC or N-socket, 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: 5.3 oz. (150 g)



ASU 4000 Antenna Supply Unit

Carrier frequency range: 650 to 870 MHz
RF input: 1 BNC or N socket, 50 ohms
RF output: 1 BNC or N socket, 50 ohms
Operating voltage: 12 VDC
Dimensions: 3.1 x 2 x 2 in. (78 x 50 x 50 mm)
Weight: 5.3 oz. (150 g)



AKG Acoustics GmbH
Lemböckgasse 21–25, P.O.B. 158, A-1230 Vienna/AUSTRIA,
Tel.: (+43 1) 86 654-0*, Fax: (+43 1) 86 654-7516, www.akg.com, e-mail: sales@akg.com
Hotline: (+43 676) 83200 888, hotline@akg.com

AKG Acoustics, U.S.
914 Airpark Center Drive, Nashville, TN 37217, U.S.A.,
Tel.: +1-615-620-3800, Fax: +1-615-520-3875,
www.akgusa.com, e-mail: akgusa@harman.com

For detailed information on WMS 4000 and other products from AKG contact your dealer or visit **www.akg.com**
Specifications subject to change without notice.

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