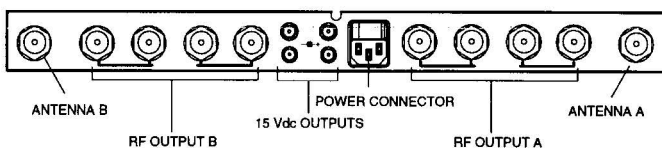
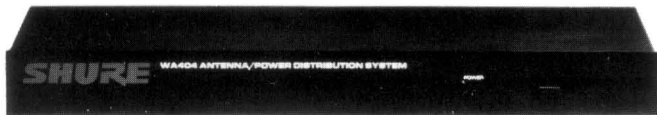


# SHURE®

## WA404 ANTENNA/POWER DISTRIBUTION SYSTEM FOR WIRELESS MICROPHONE SYSTEMS



The Shure Model WA404 is an amplified Antenna Distribution System and dc Power Distribution System combined in one compact unit. The Antenna/Power Distribution system is a two-input, two-channel, eight-output amplified antenna splitter that allows you to use as many as four diversity wireless microphone systems with only two antennas. The WA404 amplifies the wireless transmitter signals to compensate for insertion loss and feeds the signals to their respective wireless microphone receivers.

In addition, four 15 Vdc outputs on the rear of the WA404 provide a combined current of 2 amps to power up to four Shure diversity wireless microphone receivers, eliminating the need for external power supplies. The built-in, high-efficiency switching power supply will accept mains voltages from 100 V to 240 V (with the appropriate ac power cord). The WA404, for use with 100 to 120 V, is furnished with a detachable, 3-conductor power cord with a 3-pin grounded U.S. type ac connector. The WA404E, for use with 220/240 V, is supplied with a power cord that has a Schuko connector at the mains end.

When planning a multiple microphone installation, keep in mind that each microphone must transmit on a different frequency and that frequencies must be selected in accordance with system characteristics. Contact your Shure dealer for further information and assistance.

The WA404 is designed for use with Shure Model WA380 Half-Wave Antennas and Model WA420 Extension Coaxial Cables or other high-quality 50  $\Omega$  coaxial cables. The WA404 can also be used with the Quarter-Wave antennas supplied with the wireless systems.

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## Model WA404 User Guide

### SETUP AND INSTALLATION

#### Selecting the Appropriate Antenna(s):

Three versions of the WA380 Half-Wave Antenna are available for wireless frequency bands:

- WA380A – 169 to 185 MHz
- WA380B – 185 to 200 MHz
- WA380C – 200 to 230 MHz

When multiple WA404's are used, select antennas for each WA404 independently. When more than one frequency band is covered, select antennas as follows:

- If the frequencies span two adjacent bands, select antennas for the lowest frequency band.
- If the frequencies span all three bands, use one WA380A Antenna and one WA380C antenna.

#### Mounting the WA404 in a 19-inch Equipment Rack

1. Remove the single screw from each side of the WA404.
2. Position the supplied mounting brackets over the holes.
3. Attach the brackets using the two screws removed in Step 1 and the two screws included with the brackets.

#### Mounting the WA404 on a Flat Surface

To use the WA404 on a flat surface (table, shelf, work bench, etc.), attach the four supplied adhesive-backed rubber bumpers to the bottom corners of the unit.

#### Connecting Antennas to the WA404

1. Connect each antenna to the WA404 using 6.1 m (20 ft) WA420 Extension Cables.
2. If WA380 antennas are used, locate and mount the antennas remotely as described in the instruction sheet. Use either the mounting brackets supplied with the WA420 extension cables for wall mounting, or a Shure Model WA440 Rack Mount Kit for rack mounting the antennas, or Shure Model A57 Swivel Adapters (or equivalent) if standard microphone stands are used to support the antennas.
3. Fully extend all telescoping sections of the WA380 antennas for optimum reception. Make sure that the extended antennas are vertical.

#### Connecting Receivers to the WA404\*

1. Connect the Antenna Inputs of the receivers to the RF Outputs of the WA404 with the supplied rf cables.
2. Connect the receivers to the 15 Vdc outputs on the rear panel of the WA404 using the Power Interconnect cables furnished. Note that the interconnect cables are furnished with locking plugs that mate with the WA404.

\*Check power requirements before using with receivers made by other manufacturers.

## Connecting Power to the WA404

1. Connect the WA404 to the power mains, using the correct power cable. For a 100 to 120 V power source (WA404), use the standard three-prong grounded cable supplied. For a 220/240 V power source (WA404E), use the cord with the CEE 7/7 ("Schuko") connector at the mains end.

**NOTE:** For systems requiring other mains connectors, procure a power cord having an IEC 320 type mating connector to connect to the WA404 and an appropriate plug at the other end for connection to the mains. The supplied cord uses Harmonized IEC Cordage with color coding as follows:

Brown = Line  
Blue = Neutral  
Green/Yellow = Ground

2. Press the POWER switch to turn the unit ON. The green POWER LED on the front panel will light to indicate that the unit is powered, and that power is being supplied to any receivers connected.

## Checking Operation

Test each microphone/transmitter for optimum operation. Try different antenna locations to achieve the best performance levels. Refer to the system instructions material for additional information.

### PLEASE NOTE

This product is not completely disconnected from the mains supply when the power switch is off.

## SPECIFICATIONS

### RF Carrier Frequency Range

169 to 230 MHz

### Gain

3.5 dB nominal

### Antenna Input Impedance

50  $\Omega$  nominal

### RF Output Impedance

50  $\Omega$  nominal

### Power

100 to 120 Vac (WA404); 220/240 Vac (WA404E); 50/60 Hz; 50W (Typical)

### DC Power Output

15 Vdc, 2 A maximum/4 outlets (center pin is +)

### Overall Dimensions

44.5 mm H x 435 mm W x 187 mm D (1-3/4 in. H x 17-1/8 in. W x 7-3/8 in. D)

### Weight

1.95 kg (4 lb 4.5 oz)

### Certifications

WA404: Listed by U; listed by CSA as Certified. FCC Verified under Part 15 as a Class B digital device.

WA404E: Approved for safety by VDE under DIN VDE 0805/05.90 harmonized with CENELEC EN 60950:1988

**STATEMENT OF CONFORMITY:** This certifies that the Shure Antenna/Power Distribution System, WA404E, meets the specifications and regulations embodied in Vfg 243/1991, amended 1992. The Bundesamt für Zulassungen in der Telekommunikation has been notified that this device has been marketed and has been provided the right to verify the device or system for compliance with the specifications.

**INFORMATION TO USER:** Changes or modifications not expressly approved by Shure Brothers Inc. could void your authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules and as set out in the Radio Interference Regulations of the Canadian Department of Communications. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

## FURNISHED ACCESSORIES

Coaxial Interconnecting RF Cable (8)	
0.6 m (2 ft) .....	95B8217
Interconnecting Power Cables (4) .....	95A8373
Rack Mounting Brackets (2) .....	48A8012
Adhesive Bumpers (4) .....	66A8010
Line Cord, WA404, 100 to 120 Vac .....	95A8389
Line Cord, WA404E, 220/240 Vac .....	95A8247

## OPTIONAL ACCESSORIES

Antenna	
169 to 185 MHz .....	WA380A
185 to 200 MHz .....	WA380B
200 to 230 MHz .....	WA380C
Coaxial Antenna Cable Assembly,	
6.1 m (20 ft) .....	WA420
Antenna Rack-Mount Kit .....	WA440

For additional service or parts information, please contact Shure's Service department at 1-800-516-2525. Outside the United States, please contact your authorized Shure Service Center.