

# THE SHURE WIRELESS

## WA400 ANTENNA AMPLIFIER/SPLITTER FOR WIRELESS MICROPHONES

### L SERIES



### GENERAL

The Shure WA400 is a two-input, two-channel, eight-output Antenna Amplifier/Splitter permitting use of only two antennas with as many as four diversity wireless microphone systems or eight non-diversity systems. To compensate for any insertion loss, the WA400 amplifies the wireless transmitter signals, and feeds them to their respective wireless microphone receivers. For applications where multiple wireless microphones are used, the WA400 removes the clutter and extra cabling associated with requirements for one antenna (or antenna pair) per microphone.

The WA400 is designed for rack mounting and is supplied with rack-mount brackets. Eight rf cables are supplied to connect the Splitter to the wireless microphone receivers. Power to the Splitter (120 Vac) is derived from the furnished Shure PS20 Power Supply (optional PS20E for 230 Vac).

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 assistance.

The WA400 is intended for use with the Shure Model WA380 Half-Wave Antennas and Model WA420 Extension Coaxial Cables or other high-quality coaxial cables.

### INSTALLATION AND SETUP

#### I Select the appropriate antenna(s):

A. Three versions of the WA380 Half-Wave Antenna are available, depending on the frequency band in which the selected wireless systems operate. For optimum performance, choose the:

1. WA380A for frequencies from 169 to 185 MHz
2. WA380B for frequencies from 185 to 200 MHz
3. WA380C for frequencies from 200 to 216 MHz.

B. If wireless frequencies in use are not restricted to a single band, use the WA380B. However, when using non-diversity wireless receivers, group receivers into two bands if possible, and choose the antennas suitable for those bands.

#### II Install the system:

A. Locate the WA400 in a rack or on a flat surface.

1. To mount the WA400 in a standard 19-inch equipment rack, remove the single screw on each side of the unit, position the supplied mounting brackets over the holes, and secure the brackets with the two removed screws and the two supplied screws.
2. To mount the WA400 on a surface, attach the four supplied adhesive bumpers to the bottom corners of the unit.

B. Connect the power.

Connect the PS20 Power Supply to an appropriate 120 Vac circuit (or PS20E to 230 Vac) and attach its concentric connector to the power jack on the back panel of the WA400. The green Power LED on the WA400 front panel will illuminate to indicate that the unit is powered.

C. Connect and mount the antennas.

1. Connect each antenna to the WA400 by means of the 6.1 m (20 ft) WA420 Extension Cable.
2. Locate and mount the antennas remotely as described in the instruction sheet for the WA380 Antenna. Use either the mounting bracket supplied with the antenna or a Shure Model A57 Swivel Adapter (or equivalent) for the antenna mount if a standard microphone stand is used to support the antenna.
3. For optimum reception, fully extend all telescoping sections of the antenna, and make sure that the extended antenna is vertical.

D. Connect the receivers.

1. Use the supplied rf cables to connect the Antenna Inputs of the receivers to the RF Outputs of the WA400.
2. When using non-diversity receivers, if the rf frequencies can be grouped into two bands, connect the receivers associated with the antenna chosen for band A to the WA400 Outputs for band A. Do the same for band B.

**III Check out the operation:**

Test each microphone/transmitter for optimum operation. Experiment to find the antenna locations that produce the best level of performance.

**SPECIFICATIONS**

**RF Carrier Frequency Range**

169 to 216 MHz

**Gain**

2 dB nominal

**Antenna Input Impedance**

50 ohms nominal

**RF Output Impedance**

50 ohms nominal

**1 dB Compression Point**

+13 dBm minimum

**3rd Order IMD Intercept Point**

+38 dBm typical

**Output Isolation**

18 dB minimum

**Power Requirements**

12.5 to 18 Vdc (negative ground); 165 mA

External Ac Adapter (furnished with WA400): Model PS20, 120 Vac, 50/60 Hz (UL Listed, CSA Certified)

External Ac Adapter (furnished with WA400E): Model PS20E, 240 Vac, 50/60 Hz (VDE approved)

**Overall Dimensions**

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

**Weight**

1.63 kg (3 lb 9.5 oz)

**OPTIONAL ACCESSORIES**

**Antenna**

169 to 185 MHz ..... WA380A

185 to 200 MHz ..... WA380B

200 to 216 MHz ..... WA380C

Coaxial Antenna Cable Assembly, 6.1 m (20 ft) ..... WA420

**FURNISHED ACCESSORIES**

Coaxial Interconnecting Cable (8), 0.6 m (2 ft) ..... 95B8217

Rack Mounting Bracket (2) ..... 48A8012

Adhesive Bumper (4) ..... 66A8010