UA845UWB

Antenna Distribution System

The Shure UA845UWB antenna distribution system user guide.
Version: 2 (2019-J)

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General Description

The Shure Model UA845UWB Antenna Distribution System allows up to four receivers to use the same set of antennas. There are also power connectors for distributing power to each receiver. RF signal amplification compensates for insertion loss from splitting the antenna input to multiple outputs. Cascade connectors allow connections to a fifth receiver or a second UA845UWB. A button on the front panel switches between one of five frequency bands from 174 to 1805 MHz.

System Features

The Shure Model UA845UWB ensures maximum sensitivity and signal processing capability, providing the widest radio range possible for the largest number of wireless receivers.

- **5 Selectable Frequency Ranges** The UA845UWB allows more options for avoiding intermodulation artifacts by switching between one of the five frequency bands.
- **RF Power LED Indicators** Front panel LED indicators display red if RF power is overloading.
- **Expandability** The UA845UWB Antenna Distribution System is designed for large wireless systems. Each unit allows up to four wireless receivers to use the same two antennas, and the cascade ports allow connection to a fifth receiver or a second UA845UWB.
- **Compatibility** The UA845UWB is compatible with all Shure wireless microphone receivers operating within a compatible frequency range.
- **Cascade Ports** Two 50 ohm, BNC-antenna cascade ports allow an additional UA845UWB unit or a fifth wireless receiver. A large wireless system can be run off of a single pair of antennas.
- **Power Output and Out Connectors** Multiple receivers can be daisy-chained and powered from a single source via the power output connectors.
- **Low Noise and Intermodulation Distortion** The UA845UWB maintains clean signals with minimal distortion.
- **Insertion Loss Compensation** Whenever a signal is split to multiple output ports, there is a loss in signal strength. The UA845UWB amplifies signals to compensate, ensuring a strong signal to the receivers.
- **Front-Mounted Antennas** The UA845UWB comes with hardware to front-mount the antennas, if desired.

System Components

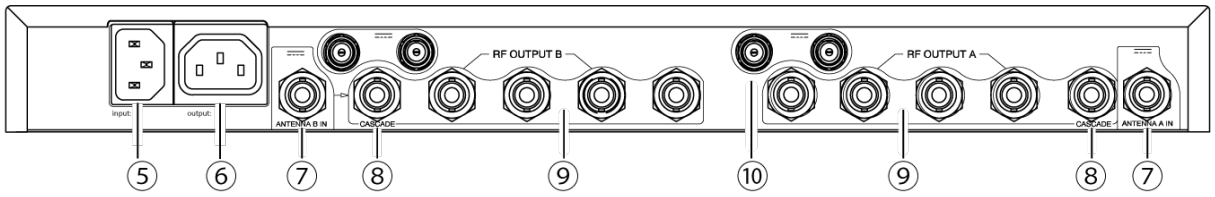
- UA845UWB Antenna/Power Distribution System
- (4) Locking DC power cords (ULXD4)*
- (4) Non-locking DC power cords (QLXD4, SLX4, BLX4R)
- (10) 22 in. BNC cables**
- (2) 6 ft. BNC cables
- (2) Bulkhead adapters for front mounting antennas
- (1) AC daisy-chain cord
- (1) AC power cord
- Rack-mounting hardware

*Not included with Model UA845UWB/LC variant

**Model UA845UWB/LC substitutes (2) 22 in. BNC cables.

Front and Rear Panels

Front Panel



Rear Panel

① Mounts for front-mounted antenna

② RF Power Overload Indicators

Displays RF overload with 2 red LEDs for antenna A and B.

③ Frequency Band Selector

④ Power Switch

⑤ AC Power Input Connector.

⑥ AC Power Output Connector.

Each amplifier has a power output connector for daisy-chaining up to five Shure Diversity Single or Dual Receivers to a single power source.

⑦ Antenna In Ports, Channel A and B.

BNC connectors for antennas.

⑧ RF Cascade Connectors Channel A and B.

BNC connectors for adding a fifth receiver, or an additional UA845UWB, permitting more wireless receivers to be connected.

⑨ RF Output Connectors, Channel A and B.

BNC connectors for up to four wireless receivers.

⑩ 15 V DC Connectors

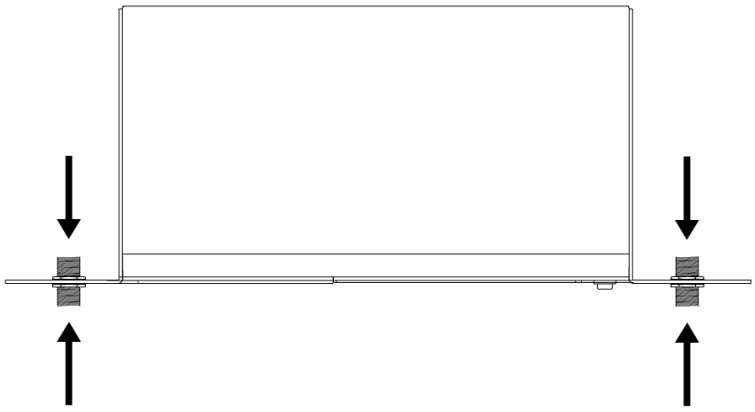
Four connectors for DC power.

Rack Mount Instructions

- If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Keep the rack environment temperature at or below the maximum ambient temperature (Tma) specified by the manufacturer of the installed equipment.
- Provide the proper amount of air flow inside the rack as required for safe operation of the equipment.
- Do not create a hazardous condition by mounting the equipment in the rack with an uneven mechanical load.
- When connecting the equipment to the supply circuit, consider the effect that overloading of the circuits might have on over-current protection and supply wiring. Consider all equipment nameplate ratings when addressing this concern.
- Maintain reliable earthing of rack-mounted equipment. Give particular attention to indirect supply connections to the branch circuit (e.g., power strips).

System Installation

Installing Front-Mounted Antennas

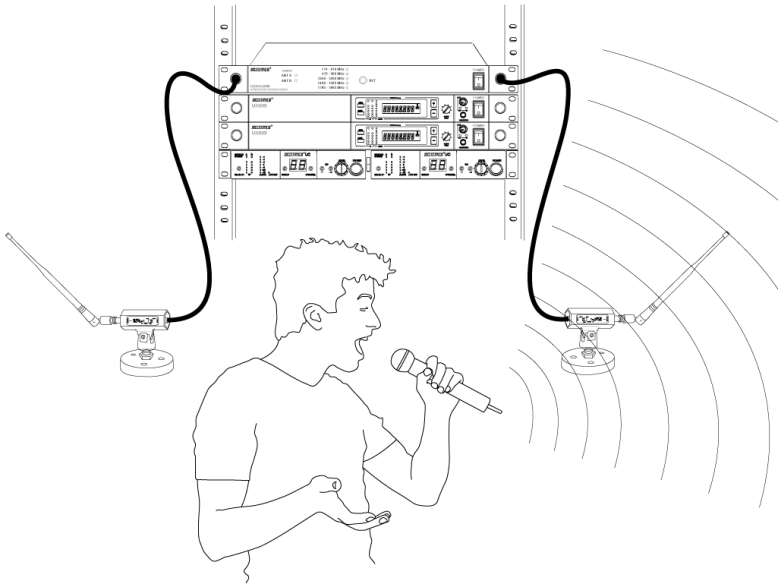


The UA845UWB comes equipped for front-mounted antennas. Front-mounting improves RF performance of the system by moving the antennas to the front of the rack. When a unit is located in a rack, antennas should be either front- or remote-mounted.

1. Insert the bulkhead adapters through the holes in each bracket, and secure them from each side, using the supplied hardware.
2. Connect the supplied antenna cables to the receiver antenna inputs and adapters.
3. Install the antennas onto the bulkhead adapters protruding through the front panel.

Note: *For the best results, point the antennas up and away from each other at 45° angles from vertical. This ensures the best possible reception and greatly reduces the possibility of signal dropout. Always perform a walk-through test of the system in the performing area before using a wireless system.*

Installing Remote Antennas



Remote-mounted antennas have the advantage of being free from the unit and closer to the transmitters. They can be placed anywhere within the recommended cable length, creating a much wider radio reception range and further reducing the possibility of signal dropout. Please ask your Shure dealer for information on in-line RF amplifiers.

When remote mounting antennas, follow these guidelines:

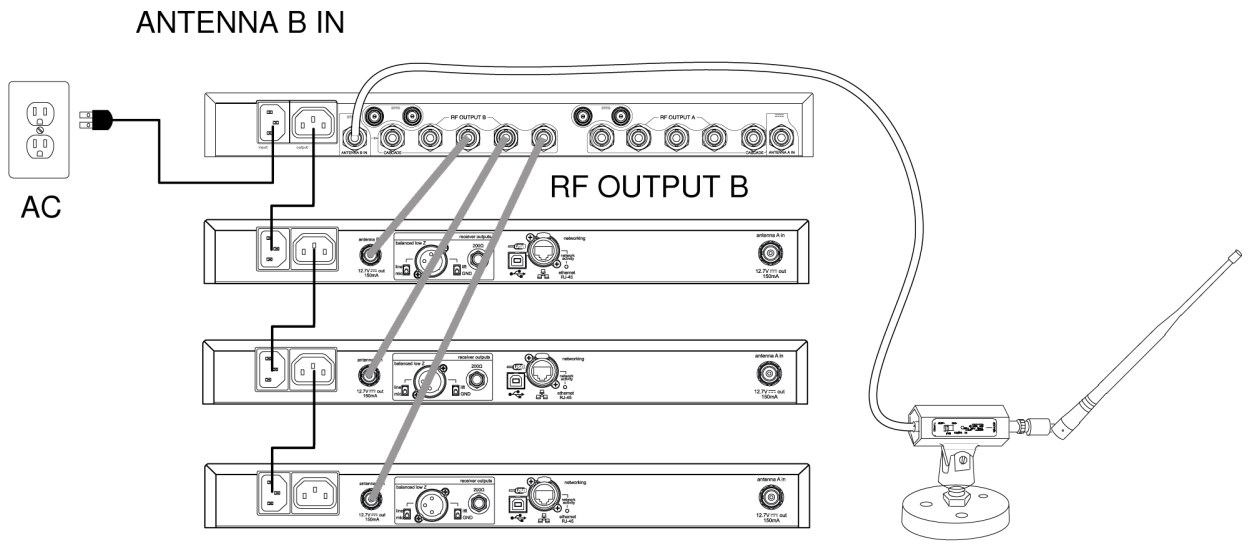
- When using long runs of cable, use Shure low-loss cables that are compatible with the operating frequency. If necessary, use a Shure In-Line RF Amplifier.
- Locate antennas more than 3 m (10 ft) from transmitters.

Connecting Receivers

Single Antenna Distribution Setup

1. Using Shure low-loss, 50 Ω coaxial cables, connect the right and left (channels 1 through 4, A and B) RF output ports on the UA845UWB to the corresponding left and right antenna inputs on each receiver. Use the cascade ports to connect a fifth receiver.
2. Using the supplied power cable, connect the UA845UWB to a power outlet.
3. To daisy-chain receivers together with power output cables, connect the power output connector of the UA845UWB to the power input connector of one receiver. Connect the remaining receivers similarly. Connect the power input of the unit to a power supply.

Note: *No more than five Shure receivers should be powered through a daisy-chain from a single UA845UWB.*

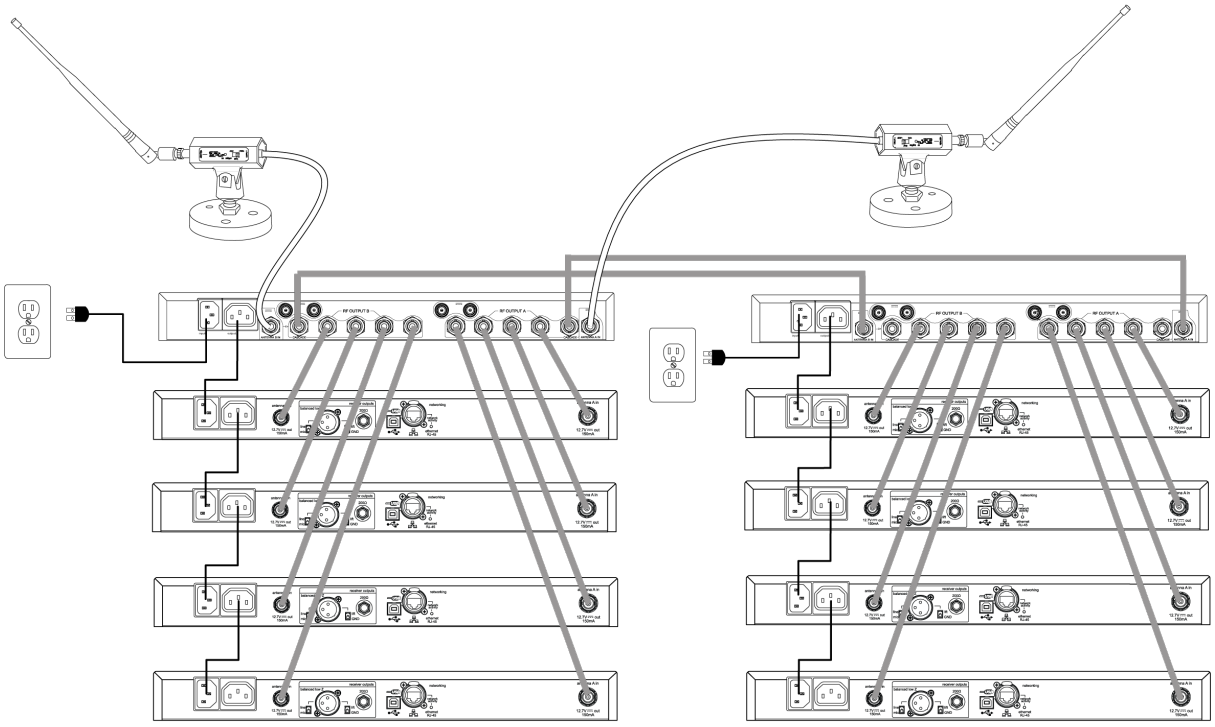


Single UA845UWB Setup

Multiple Antenna Distribution Setup

1. Connect the cascade ports for RF output channels A and B of one UA845UWB to the antenna input, channels A and B, of a receiver or second UA845UWB.
2. If desired, connect additional units in the same manner.
3. To daisy-chain receivers with power output cables, connect the power output connector of the UA845UWB to the power input connector of one receiver. Connect the remaining receivers similarly. Connect the power input of the unit to an AC power source.

Warning: When adding additional UA845UWBs to a system, each UA845UWB should be connected to a separate power supply. No more than five receivers can be powered from a single UA845UWB. Daisy-chaining multiple UA845UWB's through the power output ports will overload a single power supply, possibly causing damage to the equipment.



Multiple UA845UWB Setup

Selecting the Frequency Range

1. Press and hold the *Set* button until the green Frequency Band LED begins to flash.
2. Use the *Set* button to click through the five bands of frequency range options.
3. When the LED stops flashing, the illuminated range is selected.

RF Power Overload

When the Overload Antenna Indicator displays a red LED, it indicates that a strong RF signal is overloading the antenna amplifier. To correct an overload condition, increase the distance between the antenna and transmitter, or lower the antenna gain setting.

Warning: Overloading the antenna amplifier results in reduced channel count and poor system performance.

Optional Accessories

1/2 Wave Omnidirectional Receiver Antenna for improved wireless signal reception	UA8
In-Line RF Amplifier compensates for signal loss over extended cable runs	UA834

UA874 Active Directional Antenna for improved wireless signal reception with greater rejection of unwanted signals	UA874
1/2 Wave Antenna Remote Mount Kit	UA505
Antenna Rack Panel with Cables and BNC Adapters	UA440

Note: *Be sure to select antennas and accessories that are compatible with the operating frequency range of your wireless system. Contact Shure or your local retailer for help with selecting the right wireless accessories.*

Selecting Antenna Cables

Use 50 ohm low-loss coaxial cable, such as RG-8U. Shure offers pre-terminated antenna cables ranging from 6 to 100 feet.

NOTE: *When ordering cables from Shure, select the low-loss "Z" models (available for longer cables) when using frequency bands above 1000 MHz.*

Enable or Disable DC Bias Voltage

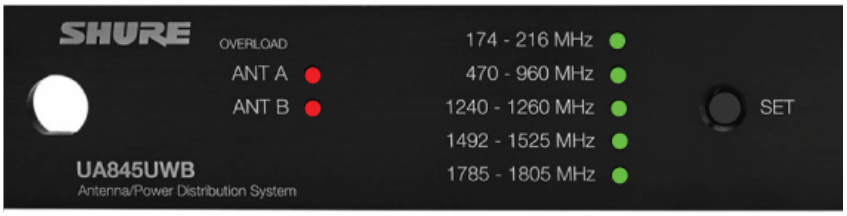
The DC bias voltage can be disabled on UA845UWB units built after August 10, 2018.

Note: *The build date is printed on the bottom of the unit.*

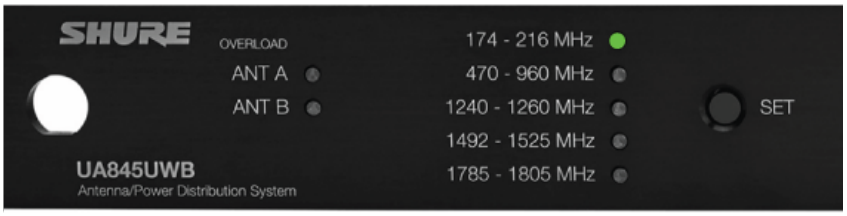
To **disable** the DC bias voltage:

1. Hold the *SET* button down and turn the unit on.

2. Release the *SET* button when all LEDs on the front panel turn on.

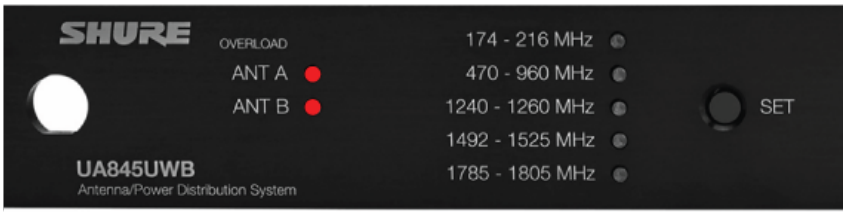


3. Power cycle the unit.
4. DC bias voltage is **disabled** when all green LEDs flash briefly and the one matching the selected frequency range remains on.



To **enable** the DC bias voltage:

1. Hold the *SET* button down and turn the unit on.
2. Release the *SET* button when the 2 red LEDs turn on.



3. Power cycle the unit.
4. DC bias voltage is **enabled** when the frequency range LED illuminates. (LEDs do *not* flash after power cycle when *enabling* the DC bias voltage.)

Specifications

Carrier Frequency Range

Band 1	174 to 216 MHz
Band 2	470 to 960 MHz
Band 3	1240 to 1260 MHz
Band 4	1492 to 1525 MHz
Band 5	1785 to 1805 MHz

Distributed Output Level (Gain)

0 dB, typical

Receiver Antenna Input, Output Ports1 to 4	-2 dB to +2 dB
Receiver Antenna Input, Cascade Output	-1 dB to +1 dB

Output Connector Isolation

>25 dB, typical

Third-order Overload Intercept Point (OIP3)

24 dBm, typical

Input-Output AC Line Voltage, Switched

100 to 240 V AC, 50/60 Hz

DC Output

15 V DC, 4 Connectors

Output Current

Combined total from all DC outputs

2.5 A, maximum

Impedance
50 Ω

Operating Temperature Range
-18°C (0°F) to 63°C (145°F)

Dimensions
44.5 x 482.6 x 295.3 mm H x W x D (1.75 x 19 x 11.6in.)

Net Weight
3.32 kg (7.3 lbs)

Connector Type
BNC

Power Consumption V AC
Typical without powered antenna attached or receivers connected to the DC outputs

14.1 W per unit

Certifications

The CE Declaration of Conformity can be obtained from Shure Incorporated or any of its European representatives. For contact information please visit www.shure.com

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

Authorized European representative:
Shure Europe GmbH
Headquarters Europe, Middle East & Africa
Department: EMEA Approval
Jakob-Dieffenbacher-Str. 12
75031 Eppingen, Germany
Phone: +49-7262-92 49 0
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Email: info@shure.de

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

Important Product Information

LICENSING INFORMATION

Licensing: A ministerial license to operate this equipment may be required in certain areas. Consult your national authority for possible requirements. Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate the equipment. Licensing of Shure wireless microphone equipment is the user's responsibility, and licensability de-

pends on the user’s classification and application, and on the selected frequency. Shure strongly urges the user to contact the appropriate telecommunications authority concerning proper licensing, and before choosing and ordering frequencies.

NOTE: *This Radio equipment is intended for use in musical professional entertainment and similar applications. This Radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies and RF power levels for wireless microphone products.*