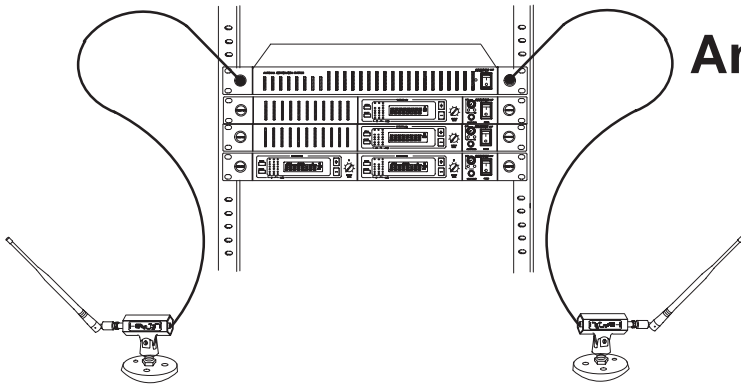


# SHURE®

Shure Brothers Incorporated  
222 Hartrey Avenue  
Evanston IL 60202-3696 U.S.A.

## Model UA840 User Guide



# UA840

## Antenna Distribution System User's Guide

---

## TABLE OF CONTENTS

---

### ENGLISH

MODEL UA840 ANTENNA DISTRIBUTION SYSTEM .....	3
SYSTEM FEATURES .....	3
CONTROLS AND CONNECTORS .....	4
SYSTEM INSTALLATION .....	5
CONNECTING RECEIVERS .....	6
SPECIFICATIONS .....	8
LICENSING AND WARRANTY INFORMATION .....	8

### FRANÇAIS

RÉPARTITEUR D'ANTENNE UA840 .....	9
CARACTÉRISTIQUES DU SYSTÈME .....	9
COMMANDES ET CONNECTEURS .....	10
INSTALLATION DU SYSTÈME .....	11
BRANCHEMENT DES RÉCEPTEURS .....	12
FICHE TECHNIQUE .....	14
INFORMATIONS DE LICENCE ET DE GARANTIE .....	14

### DEUTSCH

ANTENNENVERTEILERSYSTEM MODELL UA840 .....	15
SYSTEMMERKMALE .....	15
BEDIENELEMENTE UND ANSCHLÜSSE .....	16
SYSTEMINSTALLATION .....	17
ANSCHLUSS DER EMPFÄNGER .....	18
TECHNISCHE DATEN .....	20
LIZENZ- UND GARANTIEHINWEISE .....	20

### ESPAÑOL

SISTEMA DE DISTRIBUCION DE ANTENAS MODELO UA840 .....	21
CARACTERISTICAS DEL SISTEMA .....	21
CONTROLES Y CONECTORES .....	22
INSTALACION DEL SISTEMA .....	23
CONEXION DE RECEPTORES .....	24
ESPECIFICACIONES .....	26
INFORMACION RESPECTO A LICENCIA DE USO Y GARANTIA .....	26

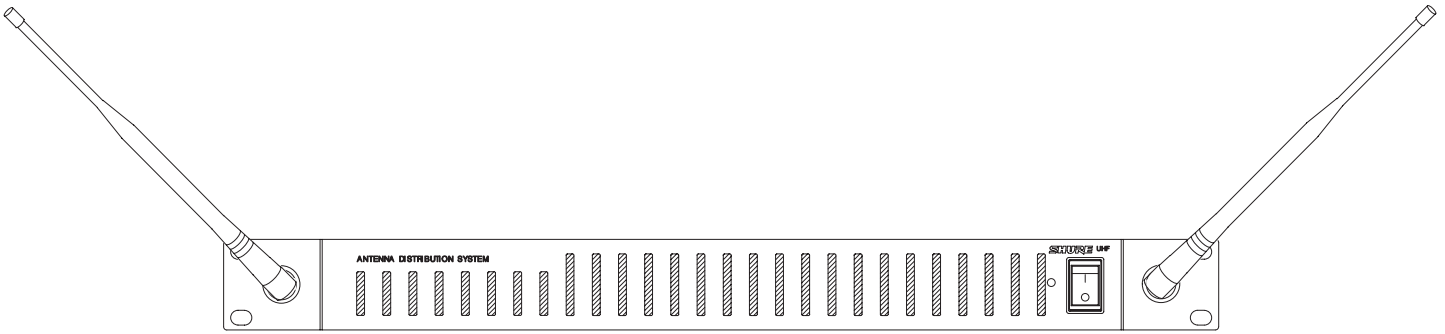
### ITALIANO

SISTEMA DI DISTRIBUZIONE AD ANTENNE MODELLO UA840 .....	27
CARATTERISTICHE DEL SISTEMA .....	27
COMANDI E CONNETTORI .....	28
INSTALLAZIONE DEL SISTEMA .....	29
COLLEGAMENTO DEI RICEVITORI .....	30
SCHEDA TECNICA .....	32
INFORMAZIONI SUL RILASCIO DI LICENZA E GARANZIA .....	32

---

## MODEL UA840 ANTENNA DISTRIBUTION SYSTEM

---



The Shure Model UA840 is an amplified, UHF Antenna Distribution System designed to expand a wireless microphone system by splitting one pair of antennas to multiple receivers. It also amplifies RF signals to compensate for insertion loss due to splitting signal power to multiple output ports. Each UA840 allows up to four receivers to use the same antennas. A CASCADE port allows connections to a fifth receiver or a second UA840.

Each system contains the following items:

- ✓ UA840 Antenna Distribution System
- ✓ Rack-mounting hardware
- ✓ Surface-mounting hardware
- ✓ Antennas and front-mounting hardware
- ✓ 18-in. Power OUTPUT Cord
- ✓ Power Cord

The Shure Model UA840 has been developed to ensure maximum sensitivity and signal processing capability, providing the widest radio range possible for the largest number of wireless receivers. To get the most from this system, follow these guidelines:

- When using long runs of cable for remote-mounted antennas, use the UA830 Active Remote Antenna Kit and the Shure Model UA825 or UA850 Remote Antenna Extension cables (RG-8/X or equivalent), which have low loss at UHF operating frequencies
- Locate multiple transmitters more than 3 m [10 ft] from receiving antennas

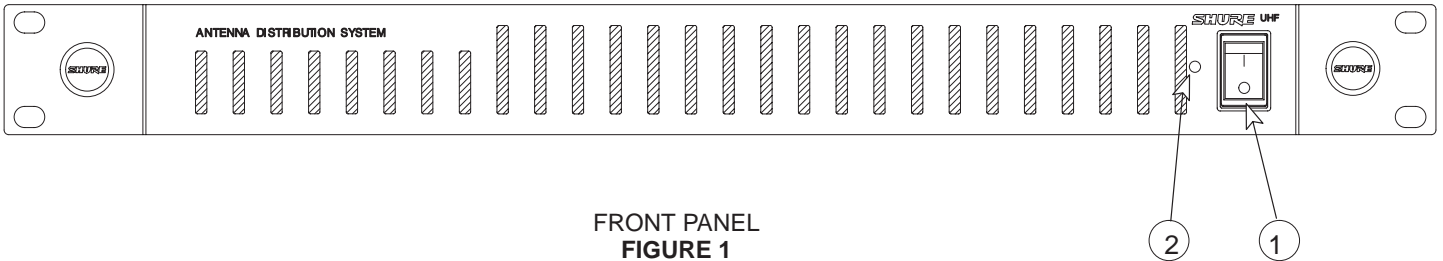
---

## SYSTEM FEATURES

---

- **Expandability.** The UA840 UHF Antenna Distribution System is designed for large UHF wireless systems. Each unit allows up to four wireless receivers to use the same two antennas, and the cascade ports allow connection for up to five (5) more UA840's, for a total of up to 20 UHF wireless receivers.
- **Compatibility.** The UA840 is compatible with all wireless microphone receivers operating within a compatible frequency range (see *UHF Carrier Frequency Ranges* in the Specifications section).
- **CASCADE Ports.** Two 50  $\Omega$ , BNC-type antenna CASCADE ports allow additional UA840 unit or a fifth wireless receiver. A large wireless system can use a single pair of antennas.
- **Power OUTPUT Port.** Up to five (5) receivers can be daisy-chained via the Power OUTPUT ports to a single power source.
- **Low Noise and Intermodulation Distortion.** The UA840 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 UA840 amplifies signals to compensate, ensuring a strong signal to the receivers.
- **Front-Mounted Antennas.** The UA840 comes with hardware to front-mount the antennas, if desired.

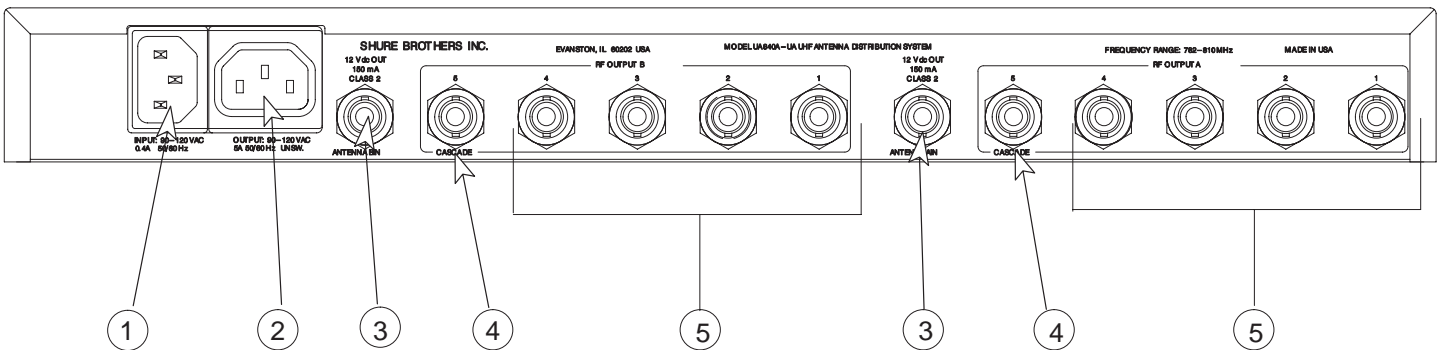
**Front Panel (Figure 1)**



FRONT PANEL  
FIGURE 1

- 1. Power ON/OFF Switch.
- 2. Power Indicator.

**Back Panel (Figure 2)**



BACK PANEL  
FIGURE 2

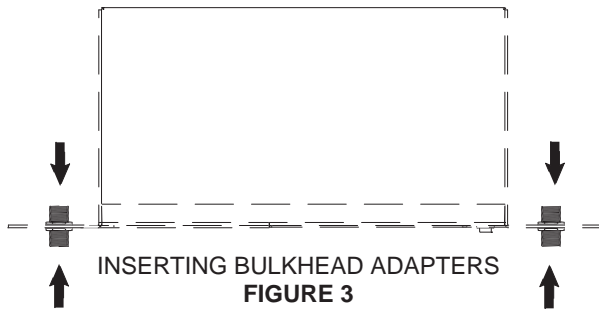
- 1. Power INPUT Port.
- 2. Power OUTPUT Port. Each UA840 has a Power OUTPUT Port for daisy-chaining up to five (5) Shure Model U4 UHF Diversity Single or Dual Receivers to a single power source.
- 3. ANTENNA IN Ports, Channel A & B. Antenna connectors.
- 4. RF CASCADE Ports (Output port 5), Channel A & B. Connect antenna outputs to a fifth receiver, or to additional UA840's, permitting more wireless receivers to be connected.
- 5. RF OUTPUT Ports, Channel A & B. Connectors for up to four wireless receivers.

## SYSTEM INSTALLATION

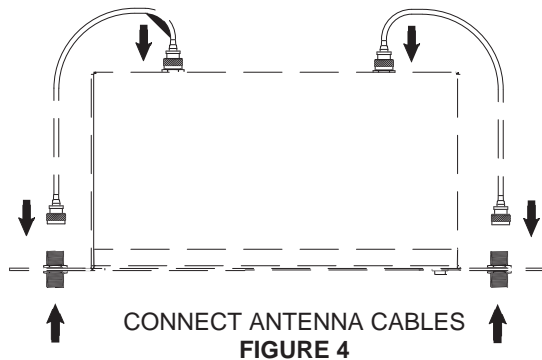
### Installing Front-Mounted Antennas

The UA840 comes equipped for front-mounted antennas. Front-mounting prevents antenna cables from becoming entangled and greatly minimizes RF interference from other cables. When a unit is located in a rack, antennas should be either front- or remote-mounted.

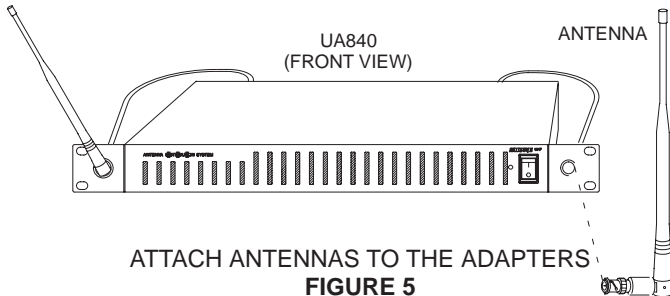
1. Insert the bulkhead adapters through the holes in each bracket, and secure them from each side, using the supplied hardware. See Figure 3.



2. Connect the supplied antenna cables to the receiver antenna inputs and adapters. See Figure 4.



3. Install the antennas onto the bulkhead adapters protruding through the front panel. See Figure 5.



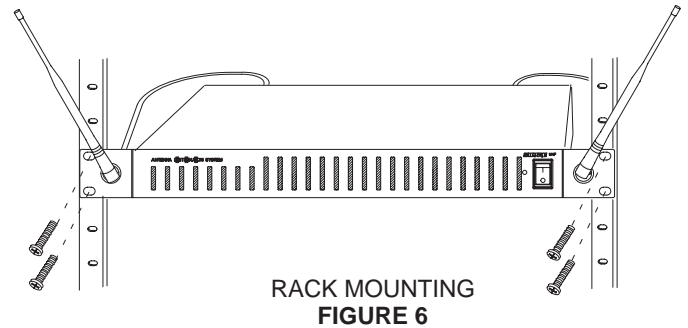
**NOTE:** For the best results, point the antennas up and away from each other at 45° angles. This ensures the best possible reception and greatly reduces the possibility of signal dropout. Always perform a walk-through test of the

system in the performing area before using a wireless system.

### Mounting the UA840 in an Equipment Rack

**NOTE:** If the antennas are to be front-mounted, Shure recommends connecting them before mounting the UA840 in the rack. Once the UA840 is in the rack, it is more difficult to insert the bulkhead adapters and connect the antenna cables.

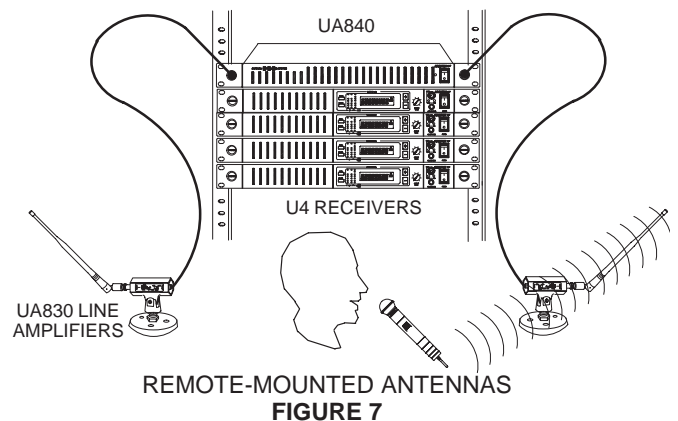
1. Insert the unit into a 19-inch equipment rack.
2. Using the screws supplied, secure the unit to the rack (Figure 6).



3. If the antennas are remote mounted from the back of the rack, insert the supplied plastic plugs into the holes on the front of the brackets.

### Installing Remote Antennas (Figure 7)

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. When remote-mounted antennas are desirable, please ask your Shure dealer for information on the UA830 UHF Active Remote Antenna Kit. Cables are available in UA825 (7.5 m [25 ft]) and UA850 (15 m [50 ft]) versions.

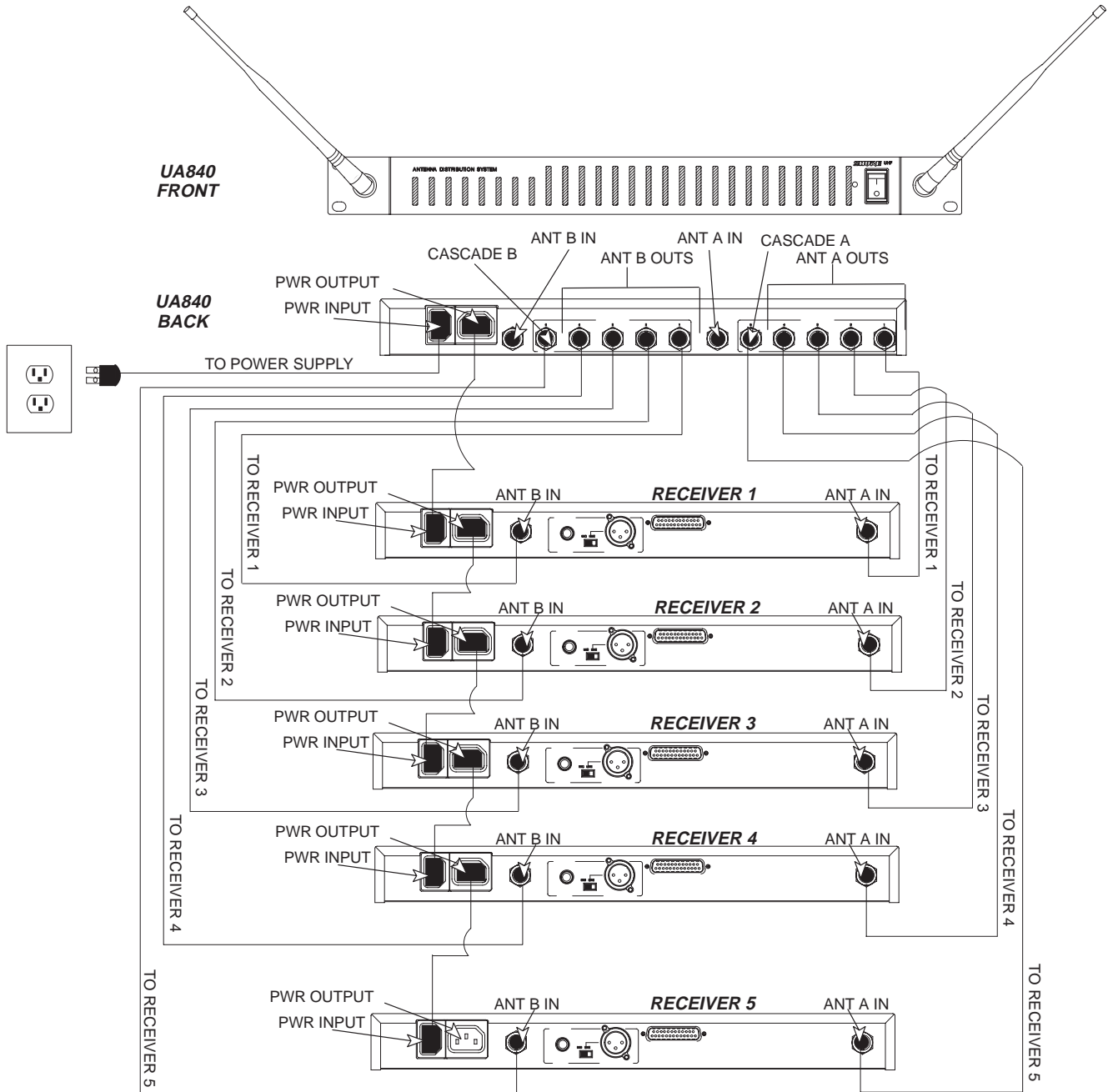


## CONNECTING RECEIVERS

### Single UA840 Setup (Figure 8)

1. Using low-loss, 50  $\Omega$  coaxial cables (RG-58 or equivalent), connect the right and left (Channels 1 through 4, A and B) RF OUTPUT ports on the UA840 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 UA840 to a power outlet.
3. To daisy-chain units together with Power OUTPUT cables, connect the Power OUTPUT port of the UA840 to the Power INPUT port of one receiver. Connect the remaining receivers similarly. Connect the POWER INPUT of the unit to a power supply.

**NOTE:** No more than five (5) receivers should be powered through a daisy-chain from a single UA840.



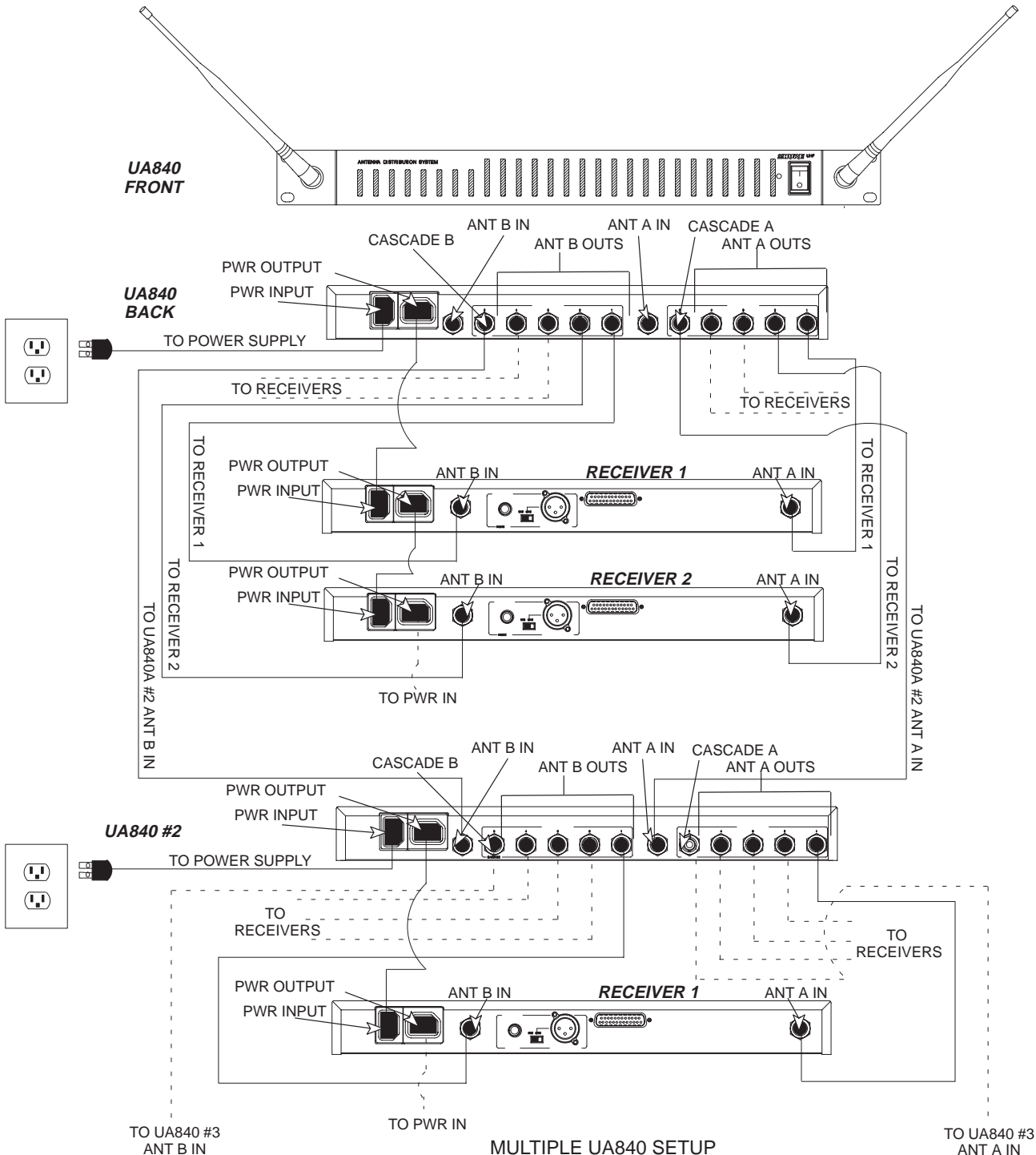
SINGLE UA840 SETUP  
FIGURE 8

## Multiple UA840 Setup (Figure 9)

1. Connect the CASCADE ports (port 5) for RF OUTPUT Channels A and B of one UA840 to the ANTENNA INPUT, channels A and B, of a second UA840.
2. If desired, connect additional units in the same manner.
3. To daisy-chain units together with Power OUTPUT cables, connect the Power OUTPUT port of the UA840 to the Power INPUT port of one receiver. Connect the

remaining receivers similarly. Connect the POWER INPUT of the unit to a power supply.

**WARNING:** When adding additional UA840's to a system, each UA840 should be connected to a separate power supply. No more than five (5) receivers can be powered from a single UA840. Daisy-chaining multiple UA840's through the Power OUTPUT ports will overload a single power supply, possibly causing damage to the equipment.



MULTIPLE UA840 SETUP  
FIGURE 9

---

## SPECIFICATIONS

---

### UHF Carrier Frequency Range

UA840A	782–810 MHz
UA840B	854–862 MHz
UA840C	800–830 MHz
UA840D	774–782 MHz

### Distributed Output Level (Gain)

3 dB ± 1.5 dB from antenna input (Output ports 1–4)  
0.5 dB ± 1.5 dB from antenna input (Cascade port)

### Input/Output Port VSWR

Less than 1.6:1

### Output Port Isolation

Greater than 25 dB

### Third Order Intercept Point (3 OIP)

Greater than 25 dBm

### Input/Output AC Line Voltage

85 to 120 VAC or 230 VAC.

### Impedance

50 Ω

### Operating Temperature Range

–15 to +50° C

### Overall Dimensions

44.5 mm high x 482.6 mm wide x 295.3 mm deep (1 3/4 x  
19 x 11 5/8 inches)

### Net Weight

3.32 Kg (7 lbs, 5 oz)

### Input/Output Connector Type

BNC-type

### Certification

UA840A: Listed by UL and CUL (U.S. and Canada), IC and FCC; IC Certified (Canada)

UA840: VDE GS-Certified; Eligible for CE Marking; EMC Approved under ETS 300 445



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

### Furnished Accessories

1/2-Wave Antenna	UA820A
2 ft. Coaxial Antenna Cable (RG-58)	UA802

### Optional Accessories

UHF Active Remote Antenna	UA830*
25 ft. Coaxial Cable (RG-8/X)	UA825
50 ft. Coaxial Cable (RG-8/X)	UA850

\* Request compatible frequency range

### Replacement Parts

Hardware Kit	90VL1371
Bulkhead Adapters	95A8647
120 VAC Power Line Cord	95A8389
230 VAC Power Line Cord	95A8247
230 VAC Power Line Cord (U.K.)	95A8713
120 VAC, 18-in. Power-Through Cord	95A8576
230 VAC, 18-in. Power-Through Cord	95A8676

---

## LICENSING AND WARRANTY INFORMATION

---

### Warranty

Shure Brothers Inc. (“Shure”) hereby warrants that these products will be free from defects in material and workmanship for a period of one year from the date of purchase. At its option, Shure will repair or replace the defective product and promptly return it to you, or refund the purchase price. Retain proof of purchase to validate the purchase date and return it with any warranty claim. If you believe this product is defective within the warranty period, carefully repack the unit, insure it, and return it postpaid to:

**Shure Brothers Inc.**  
**Attention: Service Department**  
**222 Hartrey Avenue**  
**Evanston, IL 60202-3696 U.S.A.**

For service outside the United States, return the product to your authorized Shure Distribution Center.

All claims of defects or shortage should be directed to the above address. Please furnish model number, operating frequency, and date, place and proof of purchase (such as a copy of your sales receipt) to establish warranty. Your letter should include all pertinent details including applica-

ble model or part numbers and a brief description of the problem. Do not mail any units or parts to Shure unless requested to do so by Shure’s Service Department. Any returned items must have prior authorization. Unauthorized returns are delayed in handling; these delays can be avoided by contacting Shure in advance and furnishing the necessary information.

Shure reserves the right to make design changes and product improvements on any previously manufactured products. Shure also reserves the right to ship new and/or improved products which are similar to the form, fit and function of the originally ordered products.

### Licensing

Changes or modifications not expressly approved by Shure Brothers Inc. could void your authority to operate the equipment. Licensing of Shure wireless microphone equipment is the user’s responsibility, and licensability depends 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 other than standard frequencies.