RDPR-00UM

Rapid Deployment Repeater

Owner's Manual

Digital Version
Revision 05-22

CONTENTS

Introduction **2**
Parts Included 2

Basic Configuration **3**
Available Options 3
Available Accessories 4
Available Cable Assemblies 4
Available Mounting Kits 4

Controls and Connections **5**
LED Indicators 6
Switches 6

Basic Operation **7**

Charging the RDPR-00UM **7**
Wall Charger Adaptor 8
Solar Panel 8
Vehicle Adaptor 8

Mobile Extender **9**

Linking **9**

SINCGARS **10**

Antenna Installation **10**
Duplexer Option 11
Duplexer SWITCH Option 11

Solar Panel Installation **11**

Mode Settings **12**

Service **13**

Quick Reference **14**
Connectors 14
Basic Configuration 14
External Radio Configuration 15
In-Band Linking Configuration 16
Cross-Band Linking Configuration 17
Schematic 18

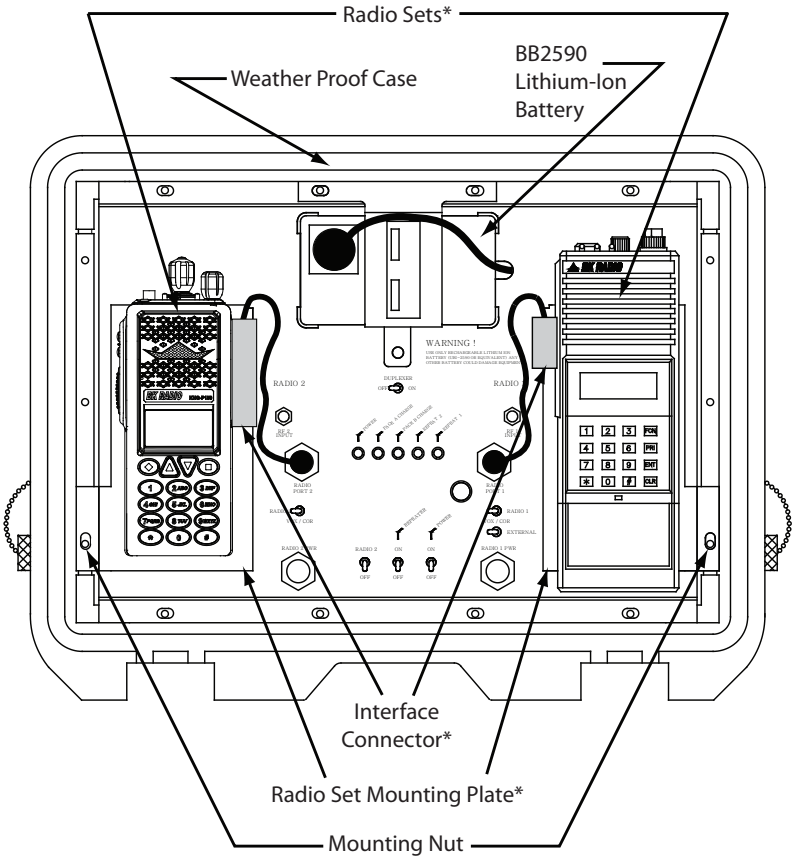
INTRODUCTION

This manual contains information concerning the operation procedures for the BK Radio Rapid Deployment Portable Repeater (RDPR). The RDPR-00UM has been designed to meet the tough requirements of today's communications environment. The portability and ease of use allows it to be easily deployed in the most demanding environments. Please take a moment to read the information in this manual so you can get optimum performance from your new Portable Repeater. Also, please refer to the Owner's Manual of the respective radios that are configured in your portable repeater for safety and operation information.

PARTS INCLUDED

WCRDPRUM	Wall Charger/Power Supply, 19V, 3.1A
SINCGARS_LINK2	Link Cable Assy For SINCGARS

BASIC CONFIGURATION



*Interface connectors and mounting plates are dependant radio set type.
Contact BK Technologies for available radio types.

AVAILABLE OPTIONS	
LZA3015	Internal Duplexer, Factory Installed (VHF)
LZA3017	Internal Duplexer, Factory Installed (UHF)
LZA3050	Duplexer Switch, Factory Installed

AVAILABLE ACCESSORIES

SP60WRDPR-F	60W Foldable Solar Panel
SP90WRDPR-F	90W Foldable Solar Panel
BS4MRDPR	Heavy Duty Tripod, Bluesky
USAT-1	Tripod, Aluminum, 6FT
EBS-RDPR	External Battery System, 40AH, Lithium Ion
BB2590	Li-Ion Battery, 12.4AH, 15V, RDPRUM
MBS	Mounting Base, Antenna
MBS-NTYPE	Mounting Base, Antenna, N-Type
MWV1360S	Mobile Antenna, 136-174MHz, w/Spring
MWU4002S	Mobile Antenna, 406-512MHz, w/Spring

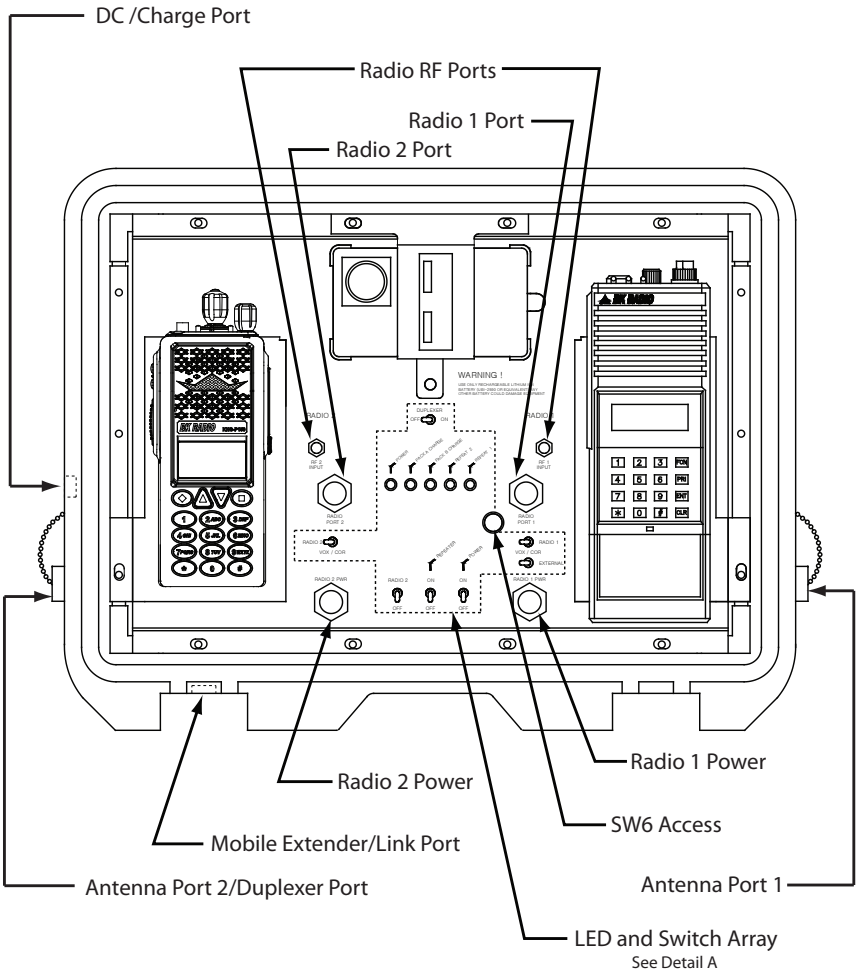
AVAILABLE CABLE ASSEMBLIES

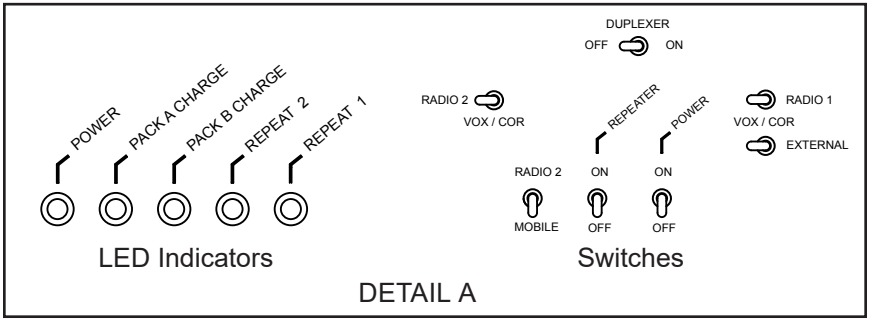
VARDPR-UM	Charging Cable, Vehicle/Solar
CHRGCBLRDPR	EBS to RDPRUM Charging Cable
CABANTRDPR	25FT Antenna Coax Cable
CABANTRDPR50	50FT Antenna Coax Cable, N to UHF
CABANTRDPR50N	50FT Antenna Coax Cable, N to N
MECRDPR2	Mobile Extender Cable, Metal Conn.
LINKCRDPR2	Mobile Extender/Link Cable
VATOUM	Cable Adapter, Solar/Vehicle to RDPR
DCCBLRDPRUM	Unterminated Charging DC Cable
SLRCBLRDPRUM	Solar Cable Assy, 6FT, 18AWG (Connects to Military Solar Panels only.) Use with VATOUM Adapter if using BK Solar Panels.

AVAILABLE MOUNTING KITS

RIKBKR5000	For BKR5000 Radios (Left & Right)
RIKKNG	For KNG-P Radios (Left or Right)
RIKKNG-2	For KNG-P Radios (Left & Right)
RIKDPH	For DPH/GPH Radios (Left & Right)
RIKRP3	For RP3000 Series Radios (Left & Right)
RIKRP7	For RP7000 Series Radios (Left & Right)
RIKXTS	For MOT(XTS)/EFJ Radios (Left & Right)
RIKXTS2500	For MOT(XTS2500) Radios (Left & Right)

CONTROLS AND CONNECTIONS





LED INDICATORS	
Power	**With Detect On** (Refer to the Mode Settings, page 12) Solid - Ready for operation. Blinking - Not ready for operation. **With Detect OFF** (Refer to the Mode Settings, page 12) Solid - Master Power switch is on.
Pack A Charge	Indicates charging conditions for the first pack inside the battery. (Refer to Battery Condition Indicators on page 8).
Pack B Charge	Indicates charging conditions for the second pack inside the battery. (Refer to Battery Condition Indicators on page 8).
Repeat 1	When lit, Radio 2 (left side) is repeating the received signal from Radio 1 (right side).
Repeat 2	When lit, Radio 1 (right side) is repeating the received signal from Radio 2 (left side).
Repeat 1 and Repeat 2	When lit, Radio 1 and Radio 2 are repeating the received signal from the radio connected to the external port. (If configured “Cross-Band Linked Repeater”, page 13)

SWITCHES	
Power	Master switch to power-up the RDPR-00UM.
Repeater	Switches power to the “Radio 1 PWR” and “Radio 2 PWR” ports to enable/disable repeater function.
Radio 2/Mobile	Switches Radio 2 off when using the external radio port.
VOX/COR	Switches between voice/noise activated (VOX) or carrier activated (COR) repeat function. **NOTE: BK Radio portables must be set for VOX operation.**
Duplexer **(REQUIRES LZA3050)**	Activates and deactivates the duplexer. Refer to Duplexer Switch Option on page 11.
SW6	Refer to the Mode Settings on page 12.

BASIC OPERATION

If needed, program the installed radio sets. The “Power”, “Repeater”, and “Radio 2” switches should be on to supply power to the radio sets being programmed.
See the specific radio’s programming manual for programming details.

1. Switch the “Power”, “Repeater”, and “Radio 2” switch to the “ON” position.
2. Adjust the squelch on receiving radios for desired signal level.
3. Adjust the volume control knob of the receiving radio to the 10 o’clock – 11 o’clock position. This will set the VOX sensitivity as well the transmit deviation level. Do not set volume knob past the 12 o’clock position. Use a service monitor or compatible transmitter and receiver to test the repeat function.

CHARGING THE RDPR-00UM

WARNING

- Do not charge the RDPR-00UM if it is exposed to temperatures less than -20°C (4°F) or temperatures greater than +50°C (+122°F).

NOTE: The Master Power Switch does not have any effect during charging. It can be on or off.

The RDPR-00UM uses the latest MPPT (Maximum Power Point Tracking) Technology to fast charge the battery packs with the solar panel charging configuration. It tracks the intensity of the sun and adjusts the charging current accordingly, even in cloudy conditions.

When charging the RDPR-00UM, the internal charging circuit monitors the battery voltage and detects a full charged condition. When the battery is fully charged, the Charge LEDs will not be lit.

When the battery reaches sufficient operating voltage, the Charge LED will turn to solid Green.

To check battery level, simply look at the built-in battery gauge located on the top of the battery.

The RDPR-00UM can be charged by connecting the RDPR-00UM to the DC wall adaptor (WCRDPRUM), Solar Panel (SP60WRDPR-F or SP90WRDPR-F), or Vehicle Adaptor (VARDPR-UM).

Battery Condition Indicators

- **Wall Charger Adaptor** - Connect the WCRDPRUM AC plug into the AC source and connect the DC plug into the DC/Charge Port of the RDPR-00UM. The WCRDPRUM is intended for indoor use only.

	Fast Charge	90% Charge	Fully Charged	Battery Fault Condition
Charge LED	Solid Red	Solid Green	OFF	Steady Orange

- **Solar Panel** – Locate and position the panel so it gets the maximum exposure to sunlight throughout the day. Connect the DC plug into the DC/Charge Port of the RDPR-00UM.

	Fast Charge	90% Charge	Fully Charged	Very Cloudy	Battery Fault Condition
Charge LED	Solid Red	Solid Green	OFF	Single Pulse Red	Steady Orange

- **Vehicle Adaptor** – Connect the adaptor plug into the vehicle's DC accessory jack. Connect the DC plug into the DC/Charge Port of the RDPR-00UM.

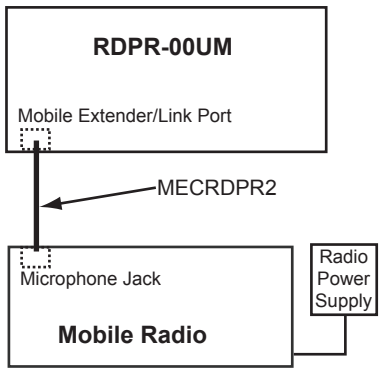
	Fast Charge	90% Charge	Fully Charged	Low Voltage	Battery Fault Condition
Charge LED	Blinking Red	Solid Green	OFF	Double Pulse Red	Steady Orange

NOTE: To prolong the life of the internal battery, it is recommended to store the RDPR-00UM with the battery fully charged. If the RDPR-00UM is not in service and not being charged, make sure the master power switch is in the "OFF" position.

MOBILE EXTENDER (MECRDPR2)

The Mobile Extender Cable (MECRDPR2) allows the use a BK Radio mobile as the transmitting unit to take advantage of the mobile radio's higher RF power output.

1. Connect the modular plug of the MECRDPR2 into the mobile radio's microphone jack.
2. Connect the other end to the Mobile Extender/Link Port of the RDPR-00UM.
3. Switch the RDPR-00UM and mobile radio power on.
4. If the primary transmitting radio within the RDPR-00UM (Radio 2) is not needed, set the "Radio 2" switch to the "OFF" position.



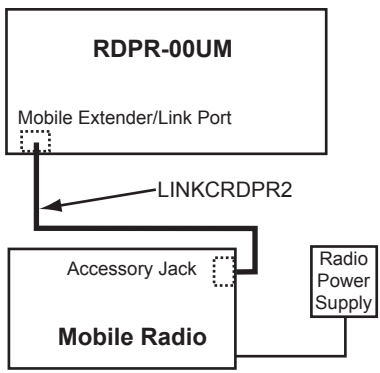
LINKING (LINKCRDPR2)

The RDPR-00UM can be used for Linking using the LINKCRDPR2 cable with a BK mobile or GBH/DBH base station.

When a valid receive signal is received on the primary receiver (Radio 1), the primary transmitter (Radio 2) and the mobile/base station will transmit the received audio.

When a valid receive signal is received on the mobile/base station, the primary transmitter (Radio 2) will be transmitting the received signal.

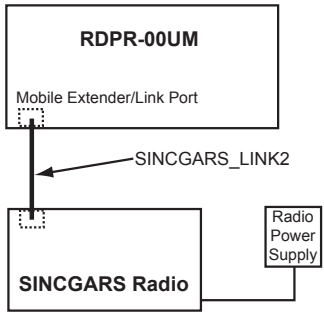
1. Connect the DB15 connector of the MECRDPR2 into the accessory port at the rear of the mobile or base station and connect the other end to the Mobile Extender/Link Port of the RDPR-00UM.
2. Switch the RDPR-00UM main power and repeater power on.
3. Switch the mobile or base station power on.



Refer to the Mode Settings (page 12) for linking options.

SINCGARS (SINCGARS_LINK2)

The SINCGARS Link Cable (SINCGARS_LINK2) is used to connect RDPR-00UM to SINCGARS radios.



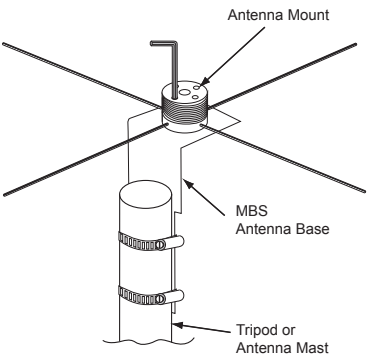
Please refer to Mobile Extender and Linking sections on page 9 for further instructions.

ANTENNA INSTALLATION (MWV1360S)

CAUTION

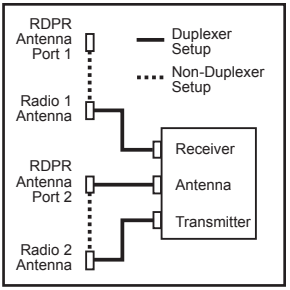
- Make sure there are no overhead power lines that can potentially come in contact with the antenna.

1. Loosen tripod pole lock and fully extend the legs of the tripod.
2. Position the Antenna Base (MBS) with the two hose clamps at the top of the tripod or Antenna Mast. Make sure that the RF connector is positioned away from the pole or mast.
3. Tighten the hose clamps.
4. Insert the 4 radials into the holes located on the antenna base. Using the supplied hex wrench, tighten the set screw for each radial.
5. Screw the antenna to the top of antenna mount.



6. Connect the PL259 connector of the coax cable to the bottom connector of the antenna base.
7. Connect the “N” connector to the appropriate RDPR-00UM Antenna Port.

DUPLEXER OPTION (LZA3015 OR LZA3017)



If the RDPR-00UM is used as a fixed frequency repeater and one antenna is desired, duplexer option LZA3015 (VHF) or LZA3017 (UHF) can be ordered. (Factory install ONLY.)

If a duplexer is installed, the antenna is connected to Antenna Port 2. If no duplexer is installed, the antenna ports on each side of the case are to be used.

To disconnect the duplexer and use the two antenna ports, perform the following steps:

1. Remove the two radio mounting plates.
2. Remove the eight hex screws of the top panel.
3. Carefully tilt the top panel from the front to gain access to the duplexer.
4. Remove the antenna cable from the duplexer and from Antenna Port 2.
5. Remove the “RX” and “TX” antenna connection from the duplexer and re-connect to the respective RDPR-00UM antenna ports.

DUPLEXER SWITCH OPTION (LZA3050)

If the RDPR-00UM comes with duplexer option LZA3015 (VHF) or LZA3017 (UHF), the LZA3050 Duplexer Switch can be ordered. (Factory install ONLY.)

If the duplexer switch is in the on position (activated), the antenna is connected to Antenna Port 2. If the duplexer switch is in the off position (deactivated), the antenna ports on each side of the case are to be used.

SOLAR PANEL INSTALLATION (SP60WRDPR-F and SP90WRDPR-F)

The foldable Solar Panels can be mounted on the ground using the supplied metal stakes.

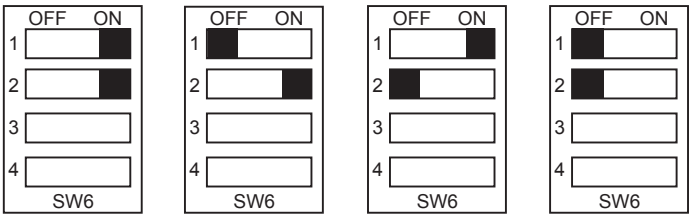
1. Position the Solar Panel flat on the ground and use the four metal stakes to stake the Solar Panel to the ground.
2. Position the panel for maximum exposure to sunlight throughout the day.
3. Connect respective charging cable to RDPR-0UM charging port.

MODE SETTINGS

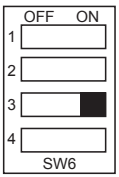
NOTE: Note to access the DIP SW6, remove the plastic cap plug as shown in the diagram on page 5. Use a pencil or a small screw driver to turn on or off the switch.

HANG TIME (S1 and S2)

Switches 1 and 2 are used to set the repeater hang time as follows:

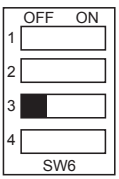


RADIO DETECT (S3)



S3 - “ON”.

If any or all of the radios are turned off or not plugged in the power LED will flash and the repeater function will be inoperable.



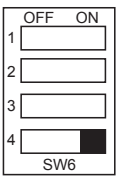
S3 - “OFF”.

The repeater function is operable even if one of the radios is off or unplugged.

NOTE: This setting is used when only one of the RDPR-00UM internal Radio Sets is being used in conjunction with an external radio.

LINKING CONFIGURATIONS (S4)

In-Band Linked Repeater



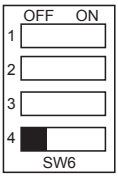
When an external radio is attached via the LINKCRDPR2 link cable it will transmit whenever Radio 1 or Radio 2 receives a signal.

Radio 2 transmits whenever a signal is received by the external radio.

Radio 1 acts as receive only.

S4 “ON”.		Transmitting Radio		
		Radio 1	**Radio 2**	**External**
Receiving Radio	**Radio 1**		X	X
	External		X	

Cross-Band Linked Repeater



When an external radio is attached via the LINKCRDPR2 link cable, whenever a signal is received by one radio set, the other two sets will transmit.

NOTE: When using this option the hang time must be set to zero seconds. (Refer to Hang Time Settings, page 12)

S4 “OFF”.		Transmitting Radio		
		Radio 1	**Radio 2**	**External**
Receiving Radio	**Radio 1**		X	X
	Radio 2	X		X
	External	X	X	

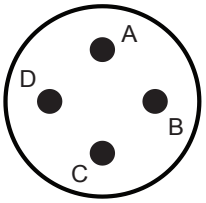
SERVICE

If you need service, contact your local BK Radio dealer equipped to service your radio. If you find it impractical to have service performed by your local dealer, contact BK Radio at the address below:

BK Technologies
ATTN: Customer Service
7100 Technology Drive
West Melbourne, FL 32904
(800) 422-6281

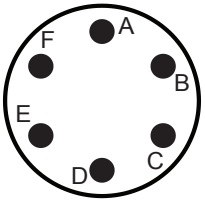
QUICK REFERENCE

DC / Charge Port



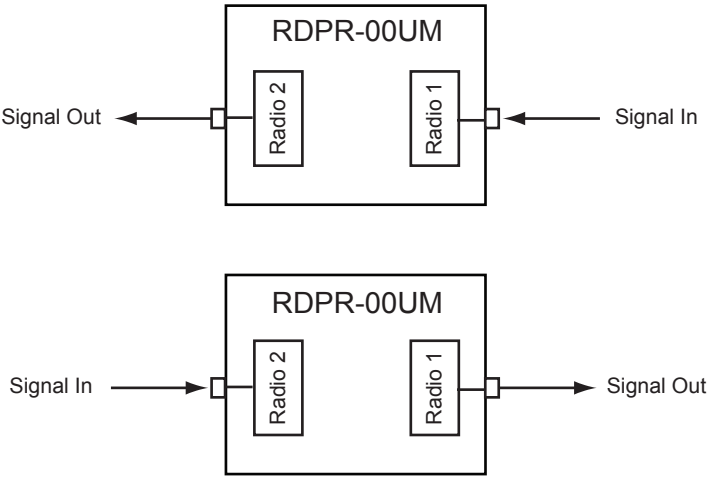
A - B+
B - GND
C - GND
D - B+

Extender / Link Port



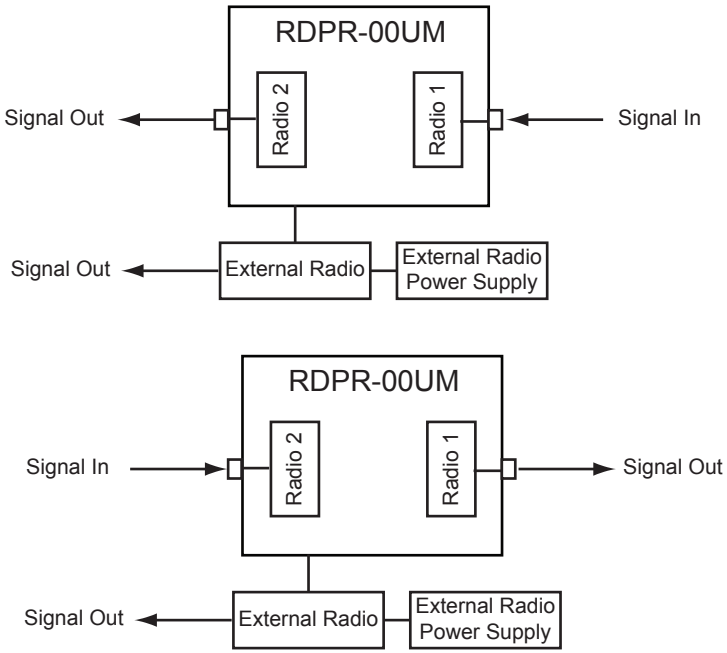
A - SWA+
B - PTT
C - GND
D - MIC_HI
E - SPKR-/COR
F - SPKR+

Basic Configuration

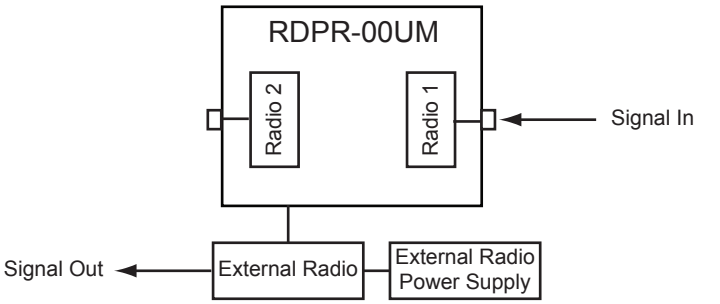


External Radio Configuration

With Radio 2 Switch ON

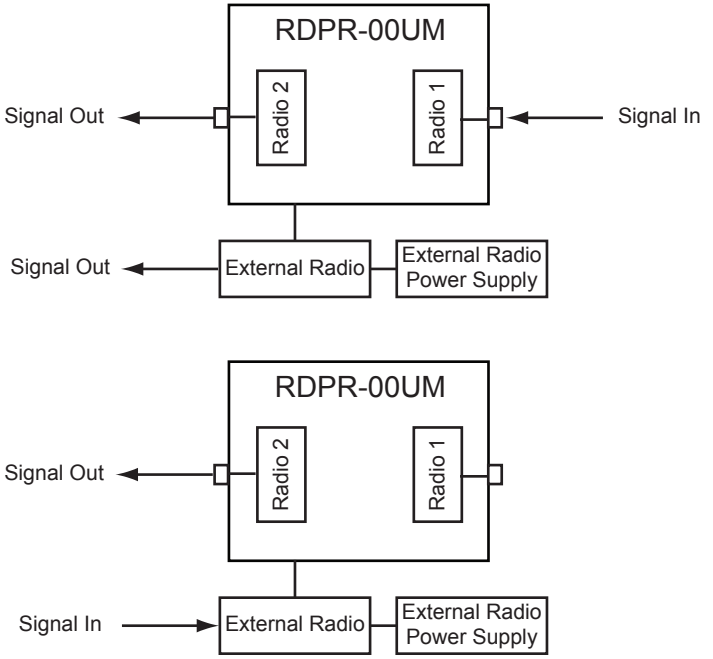


With Radio 2 Switch OFF



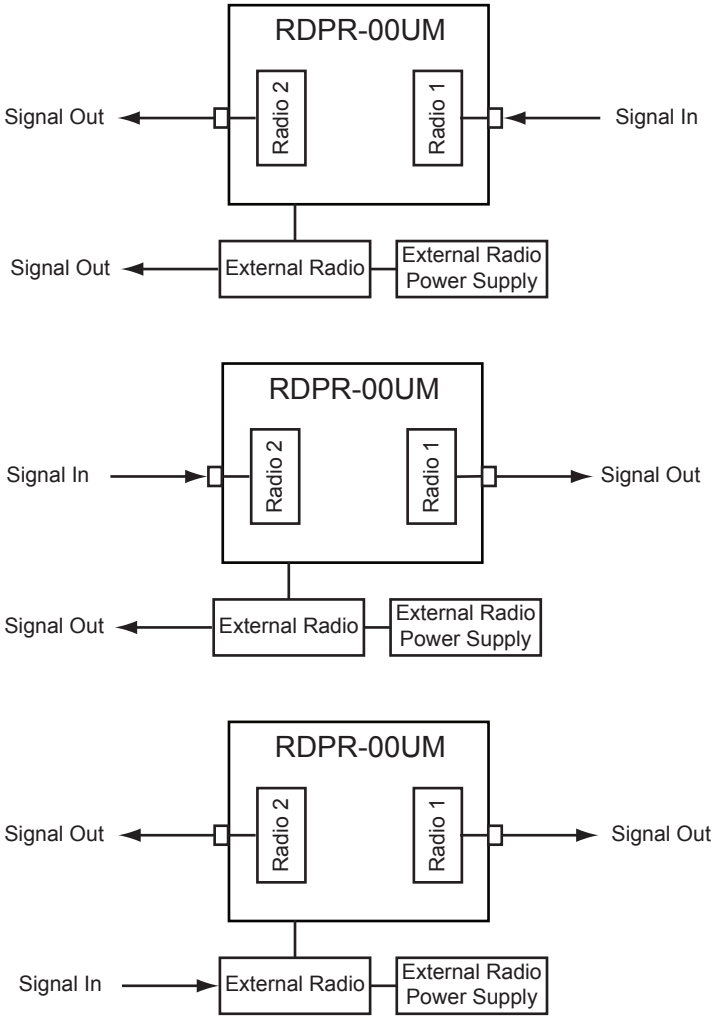
In-Band Linking Configuration

S4 On

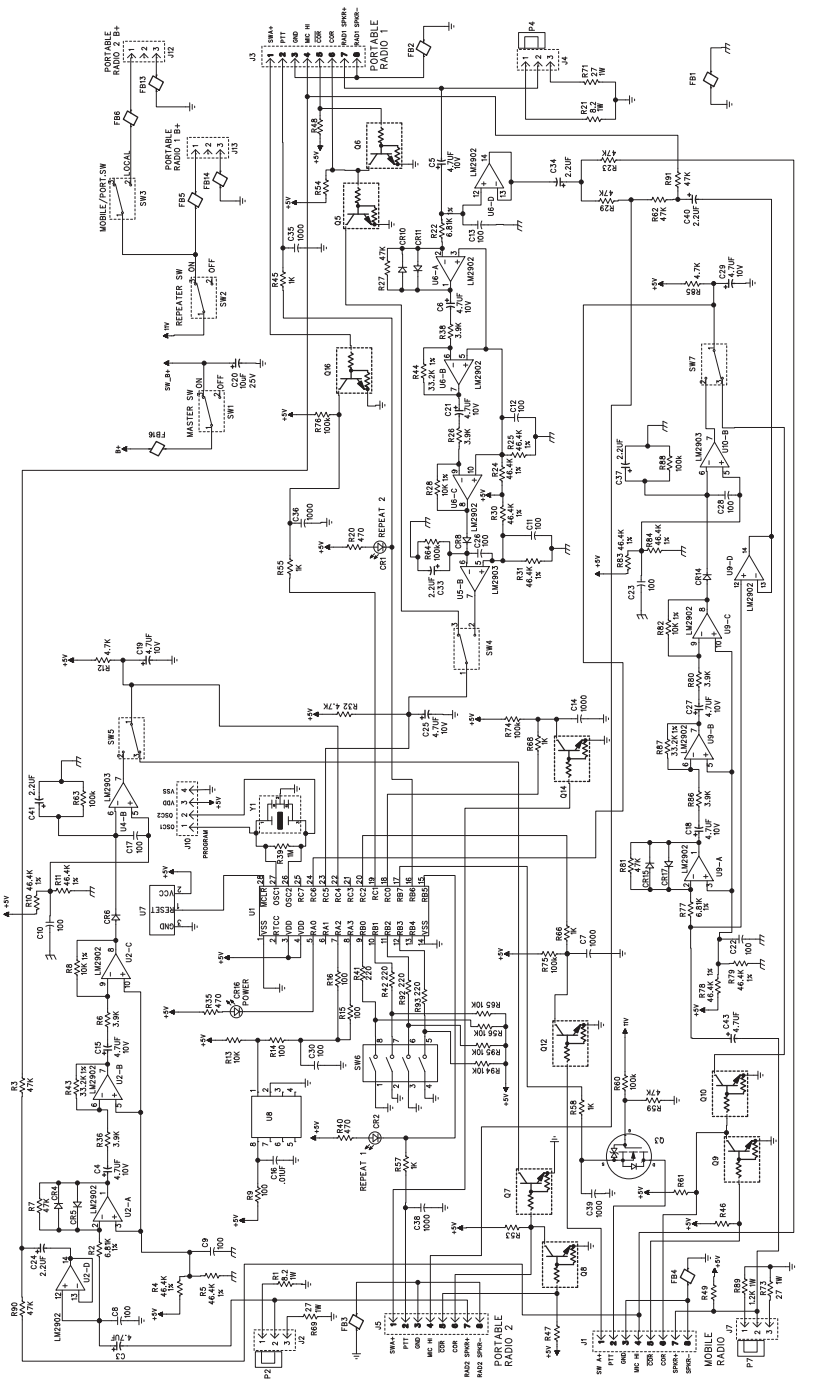


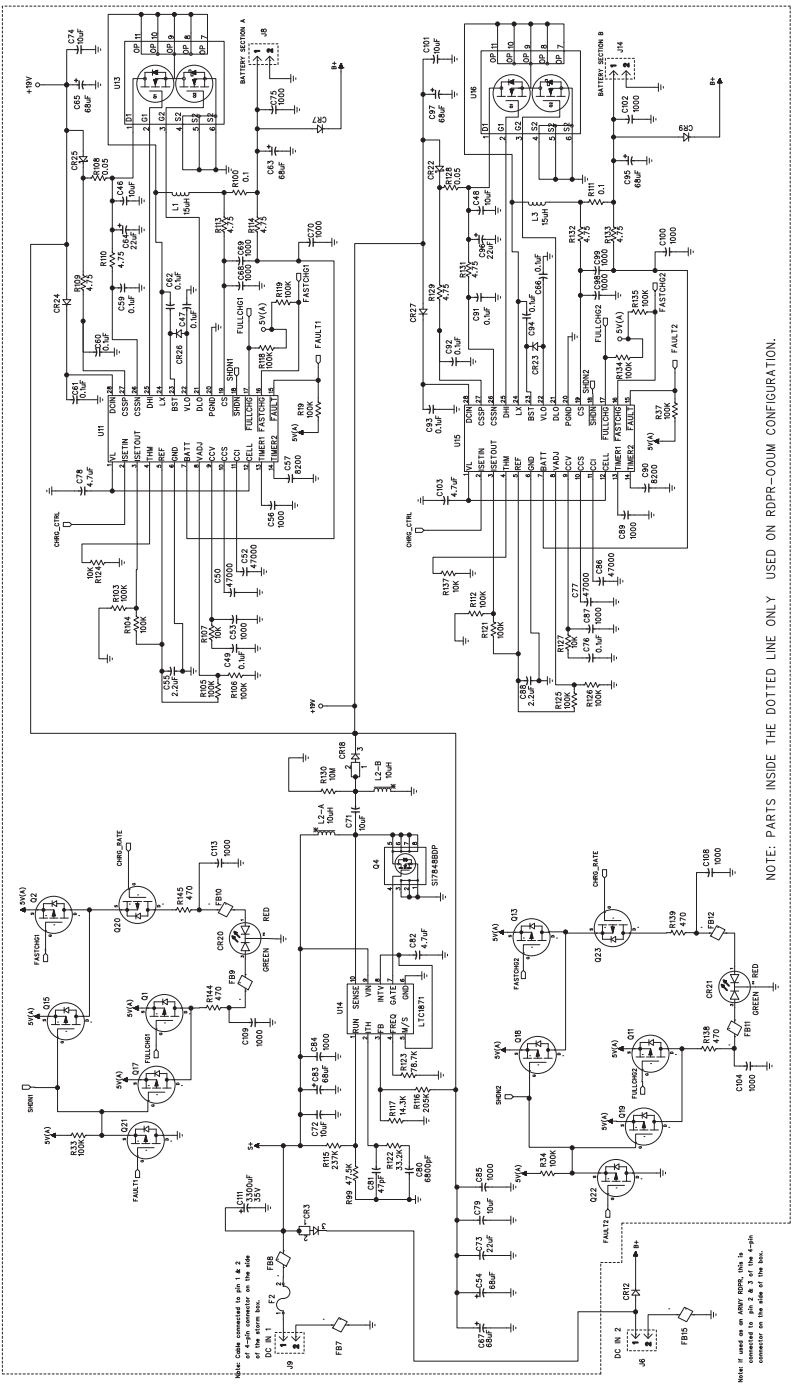
Cross-Band Linking Configuration

S4 Off

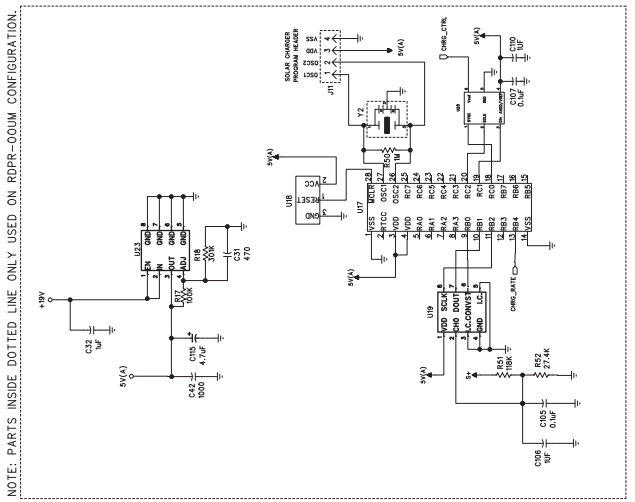
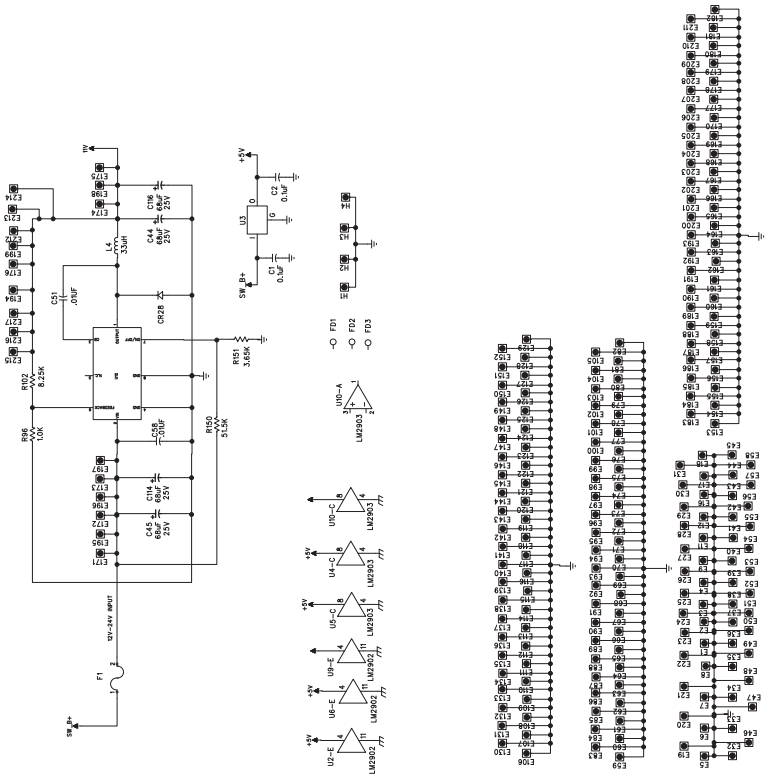


SCHEMATIC




3333-31015-600 ver A. Sheet 2 of 3
NOTE: PARTS INSIDE THE DOTTED LINE ONLY USED ON RDPR-OOUM CONFIGURATION.

SCHEMATIC



3333-31015-600 ver A. Sheet 3 of 3