



RPX Series Repeater Quick Reference Guide – RPU2160

 Important	<p>This Quick Start User Guide Leaflet is meant to give you a quick overview of the repeater parts and functionality. It doesn't intend to replace the full version of the User and Installation Guide. You must read the complete instructions in order to get a proper installation and performance.</p>
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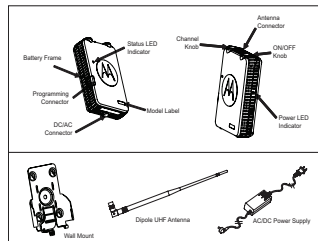
FCC Licensing

This device operates in frequencies that are regulated by the FCC. Therefore you must obtain a license before operating the repeater. Please refer to complete information in the User Guide's FCC section.

Safety Information

 Caution	<p>Before using this product, read the RF energy awareness information contained in the Safety and RF exposure booklet P/N 68007024074 enclosed with your repeater package.</p>
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Repeater Overview



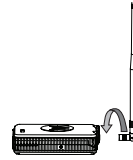
Quick Assembly of the Repeater

Remove the screws on each corner on the back of the repeater and pull out the lid of the alkaline battery frame.



Insert 12 alkaline batteries in each of the compartments in the alkaline battery frame making sure you follow the polarity marks inside. Put back the alkaline battery frame making sure the screws are tightened well.

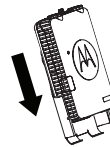
Attaching the Dipole Antenna (P/N HKAE4000)



Align the threaded end of the antenna with the repeater's antenna connector and turn the antenna bushing clockwise to fasten it.

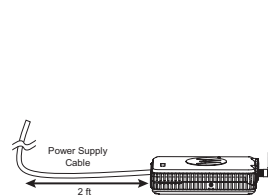
Removing/Installing Wall Mount Holster (P/N 15012009001)

The repeater comes with a wall mount attached on the back. Remove it by pushing down the hook on the bottom of the wall mount holster and pulling out from the repeater. Make sure you install the wall mount on a stable and flat surface (see details in User Guide). Once the wall mount is securely installed, slide down the repeater in the wall mount until it fits securely:



Connecting Power Supply (P/N PMPN4002)

Plug the AC/DC power supply into an AC power source of 110/220 V or a 12 V DC power and route it to the Repeater Jack labeled "AC/DC IN". Make sure the power supply cable doesn't tangle around the repeater or the antenna:



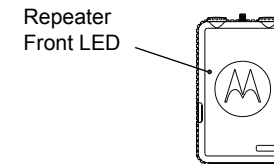
Turning On the Repeater

Turn the ON/OFF knob clockwise to turn ON the repeater. The repeater front LED will blink a red light.

Power Side LED – Repeater with Alkaline Battery Frame

LED Status	Batteries Detection	AC/DC Status	Comments
● Red (Fast)	No Batteries Detected	AC/DC Connected	When the battery frame is empty or the batteries are dead and AC/DC power is connected.
● Steady Red	Batteries Detected	AC/DC Connected	Batteries are good and in place and AC/DC is connected.
○ OFF	See FRONT LED	AC/DC Connected	When AC/DC is disconnected. In this case, check the FRONT LED for battery status.

CX: Connected to AC/DC DX: Disconnected from AC/DC



Status LED (Front LED)

Transmitting/Receiving	● Red	Solid Red
Receiving Only (*)	● Green	Solid Green
Idle	☼ Red	Red (Slow) Blinking
Power Up	● Red	Solid Red 2 – 3 seconds
Transmit Low Power	● Orange	Solid Orange
Low Battery Shutdown	☼ Orange	Orange (Fast) Blinking
Low Battery	☼ Orange	Orange Blinking
Fatal Error at Power Up	☼ Green ☼ Orange ☼ Green	1 Green Blink, 1 Orange Blink, 1 Green Blink, then repeat
Unprogrammed Channel	☼ Red ☼ Red	Double Red (Slow) Blinking
Non-Repeater Channel Mode	☼ Red ☼ Green	1 Red Blink, 1 Green Blink, then repeat

Note: (*) This is an abnormal status, as the repeater is only receiving. Double check your settings to ensure the repeater is working properly.

Choosing a Channel

Your repeater offers 16 different channels from which you can choose ONE channel at a time for the repeater to operate. To select a channel, rotate the Channel Selector Knob until you reach the desired channel. Each channel has its own pre-programmed frequency, Interference Eliminator Code and Bandwidth Settings. Repeater Accessories

Accessories

- Li-Ion Battery Frame (Includes RDX Li-Ion battery packs) P/N HKHM4004.
- Vehicle Adaptor P/N HKPN4003.
- Antenna Magnetic Mount Kit (includes exterior antenna, RF cable and Magnetic Mount P/N HKKN4022).

Default Repeater Values

Repeater Features Default Values		
Feature	Values	Default
TX Timeout	1, 2 or 3 minutes	1 minute
TX Hangtime (or Carrier Delay)	Off to 50 seconds	3 seconds
Courtesy Beep	ON or OFF	OFF
Repeater ID	15 minutes, 30 minutes, after TX hangtime, or OFF	15 minutes
On Battery Back-Up	OFF, 15 minutes, 30 minutes, 45 minutes, 60 minutes	30 minutes
Low Battery TX	0 to 255 minutes	10 minutes
Number of Channels	1 to 16	16
Reverse Burst	180 to 240	180
TX Power	Low (2 W) or High (4 W)	High 4 W (RPU4160) High 2W (RPU2160)
TX BW	12.5 or 25.0 KHz	12.5 KHz
RX BW	12.5 or 25.0 KHz	12.5 KHz

For Customer Support inquiries, please call your Motorola Point of Contact or call:
1-800-448-6686 in the USA
1-800-461-4575 in Canada
1-866-522-5210 on your TTY (Text Telephone)

Repeater Programmability

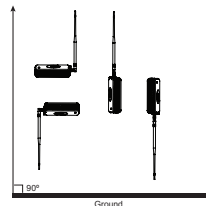
This repeater is a fully programmable device that allows customization. You will require a PC, CPS Software and Programming Cable (P/N RKN4155). Refer to CPS instructions in User Guide for details.

Repeater Installation Tips

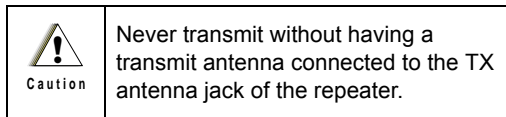
- The repeater may be installed in any location suitable for electronic communications equipment or installed for temporary or permanent applications.
- Do not exceed the equipment specifications for temperature, humidity and air quality according to MIL SPECS 810 and IP55 ruggedness specifications (water/dust resistant). See details in "Appendix A: Repeater Specifications" in the User Guide.
- Location of the repeater should be as centered as possible to the area that is being intended for coverage so the signal strength is at the same level as possible for all points.
- Place repeater away from obstructions, metal structures or any objects or enclosures (i.e. elevators) that can cause any type of shielding.

Note: Look for RF Coverage Test Chapter in User Guide in order to get details on how to find out best location for repeater.

Antenna Orientation



- Make sure the dipole antenna is mounted vertically (90°) in reference to earth ground (either up or down).
- The same positioning principle will apply if you're using an exterior antenna (Antenna Magnetic Mount Kit, P/N HKKN4022).



TX Band: 450 – 455 Mhz
 RX Band: 465 – 470 Mhz
 Band Separation: 10 MHz, Power Output: 2W

Default Channel Settings

Channel ##	Transmit Band 450 – 455 Mhz		Common Parameters			Receive Band 465 – 470 Mhz	
	Freq TX Index #	Freq TX Mhz	Code Index #	Code Value Hz	Band width KHz	Freq RX Index #	Freq RX Mhz
1	65	451.1875	1	67	12.5	34	466.0375
2	66	451.2375	4	77	12.5	35	466.0625
3	67	451.2875	8	88.5	12.5	36	466.0875
4	68	451.3375	29	179.9	12.5	37	466.1125
5	69	451.4375	0	none	12.5	38	466.1375
6	70	451.5375	1	67	12.5	39	466.1625
7	71	451.6375	6	82.5	12.5	40	466.1875
8	72	452.3125	10	94.8	12.5	41	466.2125
9	74	452.4125	29	179.9	12.5	42	466.2375
10	75	452.5125	0	0	12.5	50	467.8625
11	76	452.7625	3	74.4	12.5	51	467.8875
12	77	452.8625	5	79.7	12.5	52	467.9125
13	65	451.1875	7	85.4	12.5	53	469.4875
14	66	451.2375	9	91.5	12.5	54	469.5125
15	72	452.3125	11	97.4	12.5	55	469.5375
16	74	452.4125	13	103.5	12.5	56	469.5625

Programming 2-Way Radios to Work with the RPX Repeater

When programming 2-way radios to work with the RPX repeater, make sure the radio's settings are matching in each channel as the following: RX frequency in the radio must be the same as the TX frequency in the repeater; TX frequency in the radio must be the same as the RX frequency in the repeater; bandwidth, code and scrambling values must be the same for both the repeater and radio in the channel that is being programmed. The Motorola RDX and RPX Series radios use companding at 12.5 KHz to enhance audio quality. Other radios may not have this feature and may not be compatible at 12.5 KHz bandwidth. If the case, use 25 KHz bandwidth.

Note: Don't forget to enable the repeater mode in your radio. For more details, refer to the User Guide.

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