

B-SERIES

FM Communications System



Introducing the B-Series Communications System by RELM Wireless Corporation

The B-Series provides a feature rich repeater/base station platform to meet a variety of applications in the land mobile radio industry. Packed with 40 Watts of RF power (30 Watt continuous); this dual fan-cooled unit can become a community repeater, a 16 channel base station, and much more. Optional 100 Watt version is also available.

APPLICATIONS

On-Site Communications:

Provides clear, reliable radio communications for many locations such as golf courses, warehouses, office buildings, factories, colleges, and universities.

Community Repeater: Each channel provides for quick and reliable decodes for up to 64 users with 50 CTCSS and 112 DCS codes available.

External Peripherals: Easily connects to your favorite telephone interconnects, DC remotes, external tone panels, and all sorts of signaling products.

Amateur Repeater: Both the VHF and UHF versions operate in their respective amateur region of the spectrum.

Link-Radio Ready: Connect a "Link-Radio" to the repeater for cross-band applications and interoperability.

GMRS Ready: Add a tuned internal duplexer and everything is set to put a GMRS repeater on the air.

Feature Rich Base Station: 16 full duplex channels that can support up to 64 users per channel with 50 CTCSS tones and 112 DCS codes available per channel. Cross tone/code encoding is available.

Customizable: The B-Series uses Flash Memory which permits updates. If you have a need that is not mentioned here, please let us know.

FEATURES

Built-In 10A Power Supply: No need for purchasing a power supply. It's included!

Battery Backup with Built-in Charging Circuit: Automatically switches to external battery when AC-Line fails. Charging circuit keeps battery fully charged. Battery not supplied.

13.8 Volts Output: Perfect for powering peripherals requiring high current and saving valuable site resources.

Dual Cooling Fans: Programmable operation - TX only or continuous operation.

Front Panel Speaker: Ideal for monitoring the channel.

External Speaker Out: Connect an external speaker for 10 Watts output into an 8Ω load. Great for routing received audio to another room.

25-pin Accessory Connector: All the signals are here to connect the B-Series to just about anything:

- RX Discriminator Out
- External PTT In
- TX Audio In
- Broadband Audio In
- +13.8V Out (1A Max)
- COS Output
- Multipurpose I/O

Keypad Lock: Prevent tampering when repeater is in service at site.

Excellent Receiver Sensitivity: 0.25μV

Channel Spacing: 12.5 kHz/25 kHz

Transmitter Fine-Tune Alignment from Front Panel:

- Mic Gain
- Sub-audible Deviation
- Overall TX Deviation
- TX Frequency
- TX Power

Over-the-Air Programming (OTAP) and Maintenance via DTMF Tone Sequences: For example, add a new user or deactivate a non-paying customer. Saves costly trips to the site.

Composite Input: Ideal for handling external peripherals that mix sub-audible and voice information.

TX Timeout Timer: Limit TX time to protect against 'stuck mic' situations.

Per User Features:

- Air Time Logging
- Courtesy Beep Tone: (0, 500, 1000, 1500)
- TX Hang Timer
- Tone-In-Tail Selectable (for quicker decodes)

Built-in CWID: Programmable broadcast interval and transmission rate (11 or 22 wpm).

CSQ Repeat: Channel can be set up to repeat all incoming transmissions regardless of signaling.

B-Series from RELM Wireless

Feature Rich Carrier Operated Switch (COS):

Dedicate one output pin of the accessory connector to become a COS output. Select the COS to toggle based on either carrier or valid signaling. Polarity of the output pin can be either active high or active low. Also, COS can be dedicated to operate for only one user!

Windows Based Programmer:

The B-Series is setup and programmed using the PGM-540 programming software. No expensive programming box or cable required! Uses an off-the-shelf DB9 male-female for the programming cable (Cable included with programming software package.)



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General	B-SERIES UHF	B-SERIES VHF
Number of Channels:	16	
Operating Voltage:	11 V DC Min / 13.8 V DC Nominal / 15 V DC Max	
Channel Spacing:	5kHz/6.25kHz/Splinter	
Current Drain:	10A Max	
Duty Cycle w/o Duplexer:	Transmit: 100 % duty @ 33W output	
Weight:	18.5 lbs.	
Weight w/ Duplexer:	19.5 lbs.	
Frequency Range: *	450-480 MHz	148-174 MHz
Dimensions (W x H x D):	19.0" x 3.5" x 14.0"	
Frequency Stability:	+/-1.0 ppm	+/- 2.5 ppm
Operating Temperature Range:	-22° F to +140° F (-30° C to +60° C)	
Receiver		
Local Oscillator:	Low-side injection	High-side injection
Sensitivity (12 dB SINAD):	< 0.25 μ V @ 12.5 kHz < 0.25 μ V @ 25.0 kHz	
Squelch Threshold:	Open 12dB SINAD/ Close 8dB SINAD	
Selectivity:	62dB @ 12.5kHz 72dB @ 25.0kHz	
Spurious Rejection:	75dB	
Intermodulation Rejection:	72dB @ 12.5kHz	72dB @ 25.0kHz
Antenna Connector:	N-Type	
Antenna Impedance:	50 Ω	
Transmitter		
RF Output (w/o duplexer): Programmable	450-470 @ 0-40W 471-480 @ 0-35W	148-174 @ 0-40W
Modulation:	16K0F3E, 11K0F3E	
Maximum Deviation:	+/- 5kHz (25 kHz) +/- 2.5 kHz (12.5 kHz)	
FM Hum and Noise:	36dB @ 12.5kHz 42dB @ 25.0kHz	
Antenna Connector:	N-Type	
Antenna Impedance:	50 Ω	

* Commercial frequency range listed, however both VHF and UHF versions operate in their respective amateur region of the spectrum.

Specifications per EIA Standards. In our on-going commitment to quality specifications are subject to change without notice.