

BD5 SERIES



BD502i and BD552i Two-Way DMR Radios

Compact UHF and VHF BD5i Series radios provide cost-effective and easy-to-use radio communications with excellent performance



Excellent Performance

The BD5i Series radios provide high-quality voice communications with an audio equalizer, and long battery life for up to 16 hours of operation. Excellent reception and digital encoding extends the range of operation. Optional Bluetooth (BD552i-BT) supports wireless audio accessories.

Light and Compact

Weighing less than 9 ounces, the light and compact design makes the BD5i Series easy to carry and operate.

Analog and Digital

Supports both analog and digital DMR operation and can automatically switch between the two modes. This provides flexible operation, and provides an easy and cost-effective upgrade path to digital systems.

Rugged and Reliable

The BD5i Series radios meet MIL-STD-810-G for shock and vibration, and are IP54 rated for dust and water resistance to guaranty reliability in harsh environments.



BD502i

UHF 400-470MHz / VHF 136-174MHz
48 Channels, 3 Zones
Audio Channel Announcement

BD552i

UHF 400-470MHz / VHF 136-174MHz
256 Channels, 16 Zones
OLED Display and Optional Bluetooth

Key Features

A/D ANALOG AND DIGITAL DUAL MODES

- Supports both analog and digital modes
- Allows switching between the two operation modes for communication with analog radios

ANALOG AND DIGITAL AUTO DETECT

- Detects the signal type and automatically switches between analog and digital mode
- Enables simple and cost-effective migration path to digital

RELIABLE AND DURABLE

- Compliant with MIL-STD-810-G for shock and vibration
- IP54 rated for water and dust resistance

AUDIO CHANNEL ANNOUNCEMENT

- Voice announcement of channel number for quick and accurate channel switching, even in low visibility (BD502i only)

BUILT-IN BLUETOOTH

- Built-in Bluetooth enables connectivity to earpieces and other wireless accessories (BD552i-BT models only)

OLED DISPLAY

- High contrast display for Channel number, Caller ID, Zone number, battery power, and high/low power (BD552i only)

LONG-LIFE BATTERY

- Powerful 1500mAh Lithium Ion batteries deliver up to 16 hours of operation in digital mode and 12 in analog mode



HIGH QUALITY AUDIO

- Audio equalizer adjusts low, mid, and high frequency gain
- Provides the best audio performance in noisy or quiet environments



ANTI-INTERFERENCE

- Digital encoding and error correcting reduces signal interference on the same frequency



DMR

- DMR signaling enables group call, private call, and all call transmitting with PTT ID
- Supports DMR Tier II repeaters to extend coverage



PSEUDO TRUNKING

- This virtual trunking feature automatically uses whichever digital timeslot is free to improve call connectivity and frequency efficiency



VOX

- Voice activated microphone enables hands free operation
- Also supported on external earpiece and microphone accessories



SCANNING

- Allows listening to communication activities on other channels







Standard Accessories

					
AB0435W09 16cm Whip Antenna 400-470MHz	BL1506 1500mAh Li-Ion Battery	BC08 Belt Clip	CH10L23 Drop-In Single Unit Charger	R003 Nylon Hand Strap	Power Adapter Input: 100-240VAC Output: 12VDC/1A

Optional Accessories

EARPIECES

External earpieces with in-line PTT Mics and a VOX (hands free) switches


		
EHM15-A D-Style Earloop	EHM18 C-Style Earloop	ESM12 Earbud
		
EAM12 Transparent Acoustic Tube Earpiece	EAM13 2-Wire Surveillance Transparent Acoustic Tube Earpiece	ACM-01 ^① PTT and Mic with 3.5mm Jack Connects to a variety of Receive-only Earpieces

BLUETOOTH

BD552-BT models support Bluetooth accessories that enable wireless audio and Push-to-Talk

	
ESW-01 Bluetooth earpiece with charger (requires PS1030 power adapter)	POA121 PTT Bluetooth Ring (attaches to finger or handlebars)

POWER ACCESSORIES

		
BL2018 2000mAh Li-Ion Battery Provides 22 hours operation in Digital Mode (16 Analog)	MCL19 Multi-unit Charger for Six Radios (includes power supply)	CHV09 Vehicle Adapter (Input: 11-25V DC, Output: 12V DC & 1A)

REMOTE SPEAKER MICROPHONES

Remote Speaker Mics provide easy access for audio, are IP rated for water resistance, and have audio jacks for receive-only earpieces.

		
SM08M3 ^① IP54 Rated 3.5mm audio jack	SM13M1 ^① Noise Cancelling with High / Low Speaker Volume IP55 Rated, 3.5mm audio jack	SM26M1 ^② IP54 Rated 2.5mm audio jack

OTHER ACCESSORIES

		
PC76 Data Programming Cable	Stubby Antenna ^③	NCN011 Nylon Carrying Jacket

① Features 3.5mm jack for receive-only ES01 Earbud, ES02 Acoustic Tube Surveillance Earpiece, EH01 C-Style Earpiece, and EH02 Swivel C-Style Earpiece

② Features 2.5mm jack for receive-only EAS03 Acoustic Tube Earpiece, EHS18 Earloop Earpiece, and ESS10 Earbud

③ AN0435H13: 400-470MHz, 9cm AN0141H06: 136-147MHz, 17cm AN0167H06: 160-174MHz, 17cm AN0153H08: 147-160MHz/1575MHz, 12cm
AN0435W09: 400-470MHz, 16cm AN0153H07: 147-160MHz, 17cm AN0160H13: 146-174MHz, 15cm AN0167H07: 160-174MHz/1575MHz, 12cm

Specifications

General	
Frequency Range	UHF: 400-470 MHz VHF: 136-174 MHz
Channel Capacity	BD502i: 48 Channels (24 Analog, 24 Digital) BD552i: 256 Channels (128 Analog, 128 Digital)
Zone Capacity	BD502i: 3 Zones with 16 Channels per Zone BD552i: 16 Zones with 16 Channels per Zone
Channel Spacing	25/12.5kHz
Operational Voltage	7.2W
Battery	1500mAh (Li-Ion) Standard, 2200mAh Optional
Battery Life (5/5/90)	1500mAh: 16 hours Digital, 12 hours Analog 2200mAh: 22 hours Digital, 16 hours Analog
Weight	BD302i: 8.5 ounces (240g) BD352i: 8.8 ounces (250g) (with AN0435W09 antenna and BL1506 battery)
Dimensions	BD502i and BD552i: 4 1/4" x 2 1/8" x 1 5/32" (108 x 54 x 29mm)
Frequency Stability	± 0.5ppm
Antenna Impedance	50Ω
Display	BD352i: 0.91" OLED single-line display
Receiver	
Digital Sensitivity	0.22μV (BER 5%)
Analog Sensitivity	0.22μV (Typical) (12dB SINAD) 0.4μV (20dB SINAD)
Adjacent Selectivity	TIA-603: 60dB @ 12.5kHz, 70dB @ 25kHz
Spurious Response Rejection	TIA-603: 70dB @ 12.5/25kHz
Intermodulation	TIA-603: 65dB @ 12.5/25kHz
Hum and Noise	40dB @ 12.5kHz, 45dB @ 25kHz
Rated Audio Power Output	0.5W
Rated Audio Distortion	≤5%
Audio Response	+1 to -3dB
Conducted Spurious Emission	<-57dBm

All specifications are subject to change without notice due to continuous development.



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BD5i-DS-B 4/20

Transmitter	
RF Power Output	VHF High Power: 5W VHF Low Power: 1W UHF High Power: 4W UHF Low Power: 1W
FM Modulation	11K0F3E @ 12.5kHz 16K0F3E @ 25kHz
4FSK Digital Modulation	12.5kHz Data Only: 7K60FXD 12.5kHz Data and Voice: 7K60FXW
Conducted/Radiated Emission	-36dBm <1GHz / -30dBm >1GHz
Modulation Limiting	±2.5kHz @ 12.5kHz ±5.0kHz @ 25kHz
FM Hum and Noise	40dB @ 12.5kHz, 45dB @ 25kHz
Adjacent Channel Power	60dB @ 12.5kHz, 70dB @ 25kHz
Audio Response	+1 to -3dB
Audio Distortion	≤3%
Digital Vocoder Type	AMBE++
Digital Protocol	ETSI-TS102 361-1,-2,-3
Environmental	
Operating Temperature	-22°F to +140°F (-30°C to +60°C)
Storage Temperature	-40°F to +185°F (-40°C to +85°C)
ESD	IEC 61000-4-2 (Level 4) ±8kV Contact, ±15kV Air
Dust and Water Ingress	IP54 Standard
Humidity	Per MIL-STD-810 C/D/E/F/G Standard
Shock and Vibration	Per MIL-STD-810 C/D/E/F/G Standard

Ordering Information

Part Number	Description
BD502i-V1	VHF 136-174MHz, 48 Channels
BD502i-U1	UHF 400-470MHz, 48 Channels
BD552i-V1	VHF 136-174MHz, 256 Channels, OLED display
BD552i-U1	UHF 400-470MHz, 256 Channels, OLED display
BD552i-BT-V1	VHF 136-174MHz, 256 Channels, OLED display, Bluetooth
BD552i-BT-U1	UHF 400-470MHz, 256 Channels, OLED display, Bluetooth