BKR 5000 P25 Portable Radio Specification Sheet

BK TECHNOLOGIES

Public Safety Communications

The BKR Series Portable Radio offers exceptional performance in a lightweight form factor, incorporating industry-leading RF and electrical specifications in a rugged, submersible housing.

- ✓ Large, Bright, Color Display and Top Display
- ✓ Enhanced Noise Cancellation
- ✓ 3 Programmable Side Buttons
- ✓ Loud, Crisp Audio
- ✓ P25 Trunking Option
- ✓ OTAP, OTAR
- ✓ TDMA Phase II
- ✓ IP68 Water and Dust Protection
- ✓ Internal GPS and Bluetooth Hardware
- ✓ USB PC Programmable
- ✓ AES256, AES128, DES-OFB/CFB
- ✓ MIL-STD 810 C/D/E/F/G
- ✓ Advanced System Key

BKR 5000 P25 Portable Radio

Color Display	6-line display 3 customizable display lines of 16 characters 2 lines of status icons 1 line of soft-keys
Keypad	Back-lit with 4 customizable soft-keys
Channel Capacity Memory	5000
VHF	BKR 5000
Buttons and Switches	Oversized PTT, On/Off Volume control, orange emergency button, 16 position rotary switch, 4 positions concentric zone switch, 3 programmable side buttons, programmable collar switch

Transmitter Certifications

VHF (FCC/IC)	FCC ID: K95BKR5000-V, IC ID: 2116A-BKR5000V

FCC Emission Designators

FCC Emission Designators	11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W

Power Supply

Power Supply	Rechargeable Li-Ion or AA-Alkaline Battery Pack

Key Benefits

➢ Exceptional Battery Life
  Up to 12 hours with standard capacity.
➢ Enhanced Voice Quality
  The BKR Series radio uses the Third Generation Enhanced IMBE P25 dual-rate Vocoder (AMBE+2 VI.80) for robust performance in noisy environments.
➢ 6 Line Display
  2 Status Icons, 3 customizable display lines of 16 characters, and 1 line of soft-keys.
➢ Environmental Reliability
  Designed and tested to MIL-STD-810 and IP-68 rated.
➢ DHS P25 CAP Approved
  DHS P25 Compliance Assessment Program Tested and Approved Public Safety Grade (TIA Class A).
➢ Robust Receiver
  Improved range and less susceptibility to interference.
➢ Simulcast Operation
  C4FM and CQPSK modes for robust performance in simulcast (including LSM) systems.
➢ Conventional Signaling
  Analog MDC-1200 and Digital APCO P25 for conventional operation.
➢ Internal Bluetooth Hardware
  BK Technologies Bluetooth is an optional feature for wireless accessory connectivity.
➢ Dual-mode Bluetooth 4.1 BR/EDR and BLE (128-bit encryption). Up to 7 BR/EDR active devices and 10 simultaneous BLE connections are supported.

➢ Integrated GPS/Location Services
  P25 Location Services per TIA-102-BAJB are supported, Tier I Conventional, Tier II Trunking.
➢ Scan Modes
  Dual priority scan, trunked priority scan, dual-mode scan, channel, zone and vote scan.
➢ Encryption
  The BKR Series radios support AES256, AES128, DES-OFB/CFB encryption and is compatible with Motorola's ADP.
➢ Multi-key/Multi-Algorithm
  Multi-Key/Multi-Algorithm Encryption.
➢ OTAR Project 25 Over-the-Air Rekey
  Allows the encryption key to be changed wirelessly on P25 conventional and P25 trunking systems.
➢ Encryption Key Fill
  TIA-102AACD compliant and interoperable with commercially available key fill devices.
➢ P25 9600 Baud Trunking
  The BKR Series radio operates on 9600 baud P25 Compliant Trunking Systems and has been P25 Compliance Assessment Program (P25CAP) tested and proven interoperable.
➢ OTAP
  BKR Series radios support Over-the-Air Programming (OTAP) for operational efficiency.
➢ TDMA Phase 2 Trunking
  BKR Series VHF is P25 Phase 2 (TDMA) capable supporting double the voice capacity of Phase 1 trunking systems.
➢ Radio Authentication
  P25 Radio Authentication per TIA-102-AACE-A is supported.

Portable Radio Features

The BKR platform meets today's demanding mission-critical voice requirements and is future-ready to expand with changing standards and mission requirements.

BKR0582	OTAP, Trunking	BKR5780	Radio Authentication
BKR0570	OTAR (Trunking & Conventional)	BKR0574	DES & AES Encryption
BKR0579	P25 FDMA Trunking	BKR0581	Multi-cast Vote Scan Plus
BKR0593	P25 TDMA Trunking		

Receiver Minimum Performance Specifications

		VHF
Frequency Range		136-174 MHz
Channel Spacing		25/12.5 kHz
Max Frequency Separation		Full Band
Rated Audio Output Power		3 Watts
Analog Sensitivity	12dB SINAD	0.2 µV / -121.0 dBm
Digital Sensitivity	1% BER	0.277 µV / -118.15 dBm
	5% BER	0.2 µV / -121.0 dBm
Selectivity	25 kHz	≥80 dB
	12.5 kHz	≥70 dB
Intermodulation		≥78 dB
Spurious Rejection		≥80 dB
FM Hum and Noise	25 kHz	≥50 dB
	12.5 kHz	≥44 dB
Audio Distortion		2%

Transmitter Minimum Performance Specifications

		VHF
Frequency Range		136-174 MHz
Channel Spacing		25/12.5 kHz
Max Frequency Separation		Full Band
Rated RF Output Power Frequency Stability (-30°C to +60°C, +25°C Reference}		1-6 Watts ± 1 ppm
Modulation Limiting		± 5/2.5 kHz
Emissions (Conducted and Radiated}		≥75 dB
Audio Response		+1, -3 dB
FM Hum and Noise	25 kHz	≥ 50 dB
	12.5 kHz	≥ 44 dB
Audio Distortion		3%

BKR Series Batteries

| Battery Capacity/Type	Dimensions (HxWxD}	Part Number	Capacity
Li-Ion Smart 4900 mAh	3.0 X 2.3 X 1.8	BKR0101	4900 mAh > 12 Hours
AA Clamshell	5.2 x 2.3 x 2.2	BKR0120	12 cells > 12 Hours

Removing the Battery
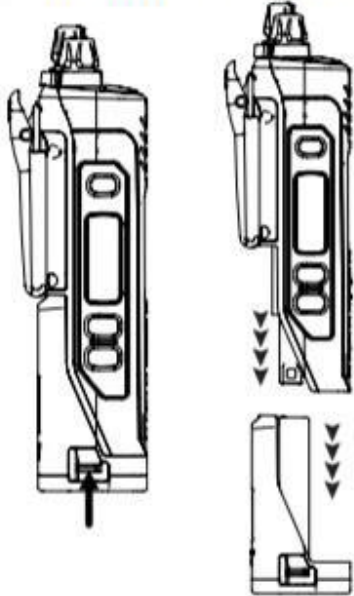
1. Push in the release tabs on each side of the battery.
2. Pull the battery downwards away from the radio.

NOTE: All information programmed into the radio is maintained even when the battery pack is removed.

The BKR 5000 display can be programmed for a variety of options and functionality. Check with your Sales Representative or Communications Officer for information on the programmed functions of your radio.

NOTE: The BKR 5000 display can be programmed to display different information when a trunking or conventional channel is selected.

Radio Controls
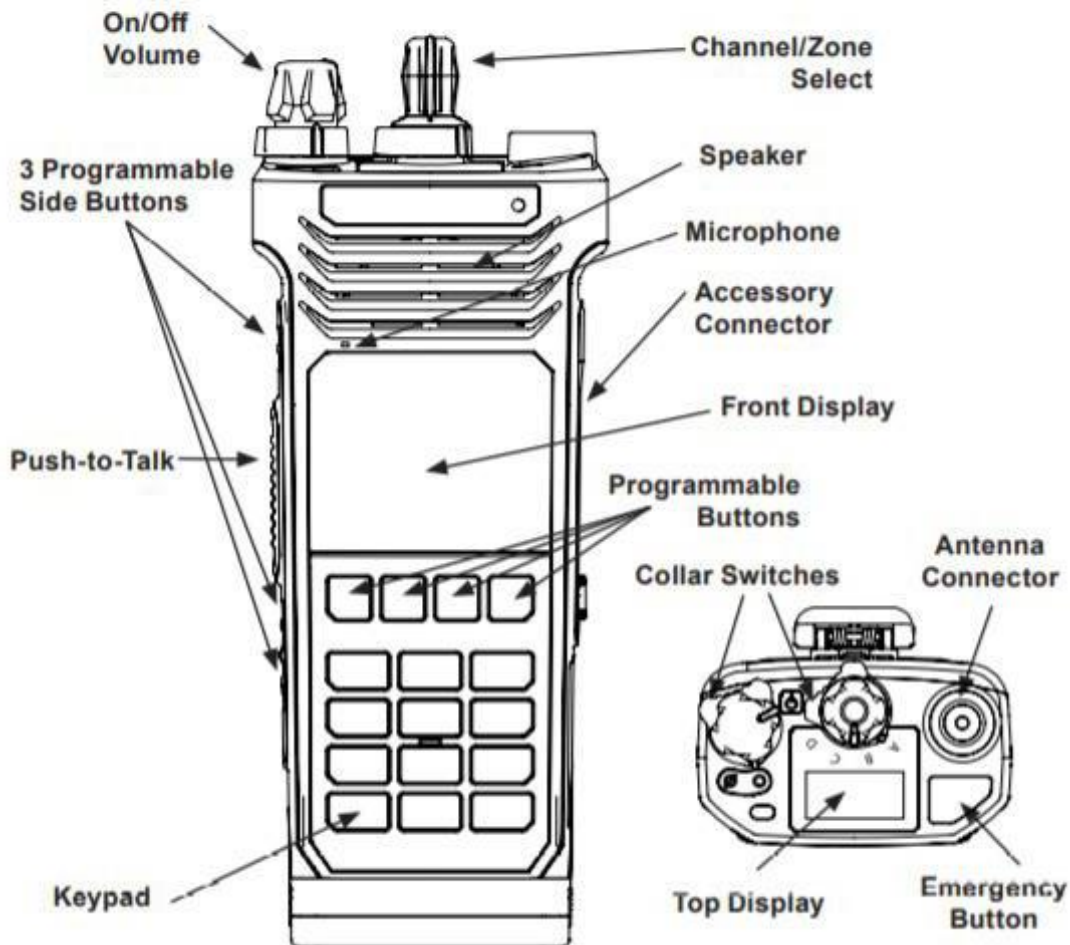
BKR 5000 Portable Military Standards C,D,E, F, & G

	MIL-STD 810G	
	Method	Proc. / Cat .
Low Pressure	500.5	I, II
High temperature	501.5	I, II
Low Temperature	502.5	I, II
Temperature Shock	503.5	1-D
Contamination by Fluids	504.1	II
Solar Radiation	505.5	I
Rain/Blown Rain	506.5	I
Humidity	507.5	II
Salt Fog	509.5	I
Dust and Sand	510.5	I, II
Immersion	512.5	I
Vibration	514.6	I/4
Shock	516.6	I, IV, VI

Wireless Connectivity

Bluetooth	Dual-mode Bluetooth 5.1 (BR/EDR and BLE) Secure Connection Compliant (128-bit encryption). Up to 7 BR/EDR active devices and 10 simultaneous BLE connections are supported.
Wi-Fi	802.11 a/b/g/n dual-band, 2.4-GHz and 5-GHz (20 and 40 MHz SISO). Networking Security (WPA2, WPA, WEP), FIPS 140-2 Level 1. Supports pre-provisioning with multiple SSIDs.

Encryption

BKR 5000 Portable 5000 Channel Encryption Capabilities.

Supported Algorithms	AES-256, AES-128, DES-OFB, DES-CFB, ADP
Encryption Keys	1024 Storage Location Number (SLN}/ Common Key Reference (CKR)
Frame Re-sync Interval	P25 Common Air Interface 360 mS
Keyloading	IAW TIA-102_AACD (KVL-3000/ 4000}
Synchronization	OFB- Output Feedback or CFB- Cyber Feedback
Type	Digital Encryption
Key Storage	Programmable Volatile / Non-Volatile
Key Erasure	Keyboard Command and KMF
Standards	FIPS 197

Dimensions with Battery

	Imperial (in)	Metric (mm)
Width	2.3	59.6
Depth	1.8	45.7
Height	6.5	166.2
Weight (with battery)	1.34 lbs	608g
Weight (w/o battery)	0.89 lb	404g

Other Certifications

P25 Compliance Assessment (P25CAP) Performance	Trunked and Conventional Performance Class A
P25 Compliance Assessment (P25CAP) Interoperability	Motorola, L3Harris, Tait/Zetron

BKR Series Portable Radio Standard Features	BKR 5000
Conventional Analog	✓
APCO P25 Digital	✓
5000 Channels	✓
Birdie Free	✓
Alphanumeric Keypad	✓
Tier 2 (No Keypad) Avail.	✓
Programmable Front Buttons	✓
3 Side Programmable Buttons	✓
Priority Scan	✓
Dual Mode Scan	✓
Channel Scan	✓
Group Scan	✓
Emergency Signaling	✓
MIL-SPEC C/D/E/F/G	✓
USB Programmable	✓
Talk Around	✓
Text Messaging	✓
Color LCD Display	✓
Dual Microphones	✓
Noise Cancellation	✓
OTAP	✓
OTAR	✓
Phase II TDMA	✓
DES/AES Encryption	✓
Multi-cast Vote Scan	✓
P25 Trunking	✓
Radio Authentication	✓
GPS	✓
VHF (136-174MHz)	✓
UHF (440-520MHz)	
7/800 (763-870MHz)	
Programmable Toggle Switches	
Top LCD Display	✓
Four Position (A, B, C, D) Switch	✓
Bluetooth	✓