

# BKR 5000 P25 Portable Radio Specification Sheet



## Public Safety Communications

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

- ✓ **LARGE, BRIGHT, COLOR DISPLAY**
- ✓ **ENHANCED NOISE CANCELATION**
- ✓ **3 SIDE PROGRAMMABLE BUTTONS**
- ✓ **LOUD, CRISP AUDIO**
- ✓ **P25 TRUNKING OPTION**
- ✓ **TDMA PHASE II**
- ✓ **IP68 WATER AND DUST PROTECTION**
- ✓ **INTERNAL GPS AND BLUETOOTH HARDWARE**
- ✓ **USB PC PROGRAMMABLE**
- ✓ **NIST-CERTIFIED AES, FIPS 140-2 LEVEL 2, DES-OFB/CFB/XL**
- ✓ **MIL-STD 810 C/D/E/F/G**
- ✓ **ADVANCED SYSTEM KEY**

# BKR 5000 P25 Portable Radio

<b>Color Display</b>	6 Line Bitmap Display 3 customizable display lines of 16 characters 2 Status Icons 1 soft key legend
<b>Keypad</b>	Backlight keypad with 4 customizable softkeys
<b>Channel Capacity Memory</b>	5000
<b>VHF</b>	BKR 5000-P1 50
<b>Buttons and Switches</b>	Oversized PTT, On/Off volume control, orange emergency button, 16 position rotary switch, 4 position concentric zone switch, two 2 position switch, 3 programmable side buttons, programmable collar



## Transmitter Certifications

<b>VHF (FCC/IC)</b>	K95KNGP150 / 2116A-KNG-P150 / JF12-09552 / SPS-18031 / K95SBKR5000-V / 2116A-BKR 5000 V
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## FCC Emission Designators

<b>FCC Emission Designators</b>	11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W
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## Power Supply

<b>Power Supply</b>	Rechargeable Li- Ion or AA-Alkaline Battery Pack
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- ▶ **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 V1.80) for robust performance in noisy environments with advanced noise.
- ▶ **Enhanced Noise Cancellation**  
Dual Microphone noise canceling technology to improve communications in loud environments
- ▶ **6 Line Bitmap Display**  
2 Status Icons, 3 customizable display lines of 16 characters and 1 soft key legend.
- ▶ **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 a programmable option for wireless accessory connectivity.
- ▶ **Scan Modes**  
Dual priority scan, trunked priority scan, and dual mode scan.
- ▶ **NIST FIPS-140-2 Certification Level 2**  
The BKR Series radios employ a NIST Certified Cryptographic module.
- ▶ **Multi-key/Multi-Algorithm**  
Multi-Key/Multi-Algorithm Encryption
- ▶ **Over-the-Air Rekey (OTAR)**
- ▶ **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**  
BKR Series VHF is P25 Phase 2 (TDMA) ready supporting double the voice capacity of Phase 1 trunking systems.
- ▶ **Radio Authentication**  
P25 Radio Authentication per TIA-102-AACE-A is supported
- ▶ **Integrated GPS/Location Services**  
P25 Location Services per TIA-102-BAJB are supported, Tier I Conventional, Tier II Trunking.
- ▶ **Room to Grow**  
Currently uses less than 20% of available memory and processor cycles.

## Portable Radio Features

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

- ▶ **BKR0582** OTAP, Trunking
- ▶ **BKR0570** OTAR (Trunking & Conventional)
- ▶ **BKR0579** P25 FDMA Trunking
- ▶ **BKR0593** P25 TDMA Trunking
- ▶ **BKR5780** Radio Authentication
- ▶ **BKR0574** DES & AES FIPS140-2 Level 2 Encryption w/ "tamper proof"
- ▶ **BKR0581** Multi -Cast Vote Scan Plus

## Receiver Minimum Performance Specifications

		VHF
Frequency Range/Bandsplits		136-174 MHz
Channel Spacing		30/25/12.5 KHz
Max Frequency Separation		Full Band
Audio Output Power		3 Watts
Analog Sensitivity	12dB SINAD	0.200 $\mu$ V
Digital Sensitivity	1% BER	0.277 $\mu$ V
	5% BER	0.200 $\mu$ V
Selectivity	25 KHz	$\geq$ 80dB
	12.5 KHz	$\geq$ 70dB
Intermodulation		$\geq$ 78 dB
Spurious Rejection		$\geq$ 80 dB
FM Hum and Noise	25 KHz	$\geq$ 50dB
	12,5 KHz	$\geq$ 44dB
Audio Distortion		2%

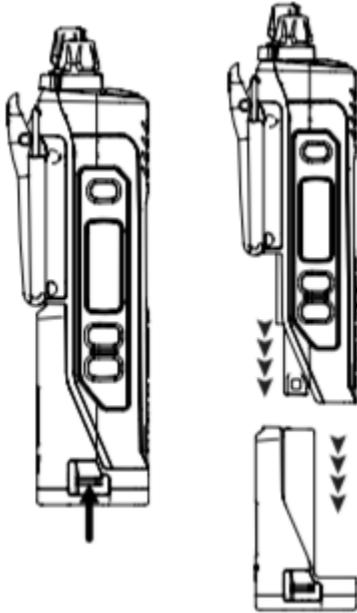
## Transmitter - Minimum Performance Specifications

		VHF
Frequency Range/Bandsplits		136-174 MHz
Channel Spacing		30/25/12.5 KHz
Max Frequency Separation		Full Band
Rated RF Output Power		1- 6 Watts
Frequency Stability (-30°C to +60°C, +25°C Reference}		$\pm$ .00005%
Modulation Limiting		$\pm$ 5/2.5 KHz
Emissions (Conducted and Radiated}		$\geq$ 75 dB
Audio Response		+1, -3 dB
FM Hum and Noise	25 KHz	$\geq$ 50 dB
	12,5 KHz	$\geq$ 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	TBD	BKR0120	Depends on Alkaline MFG

**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.

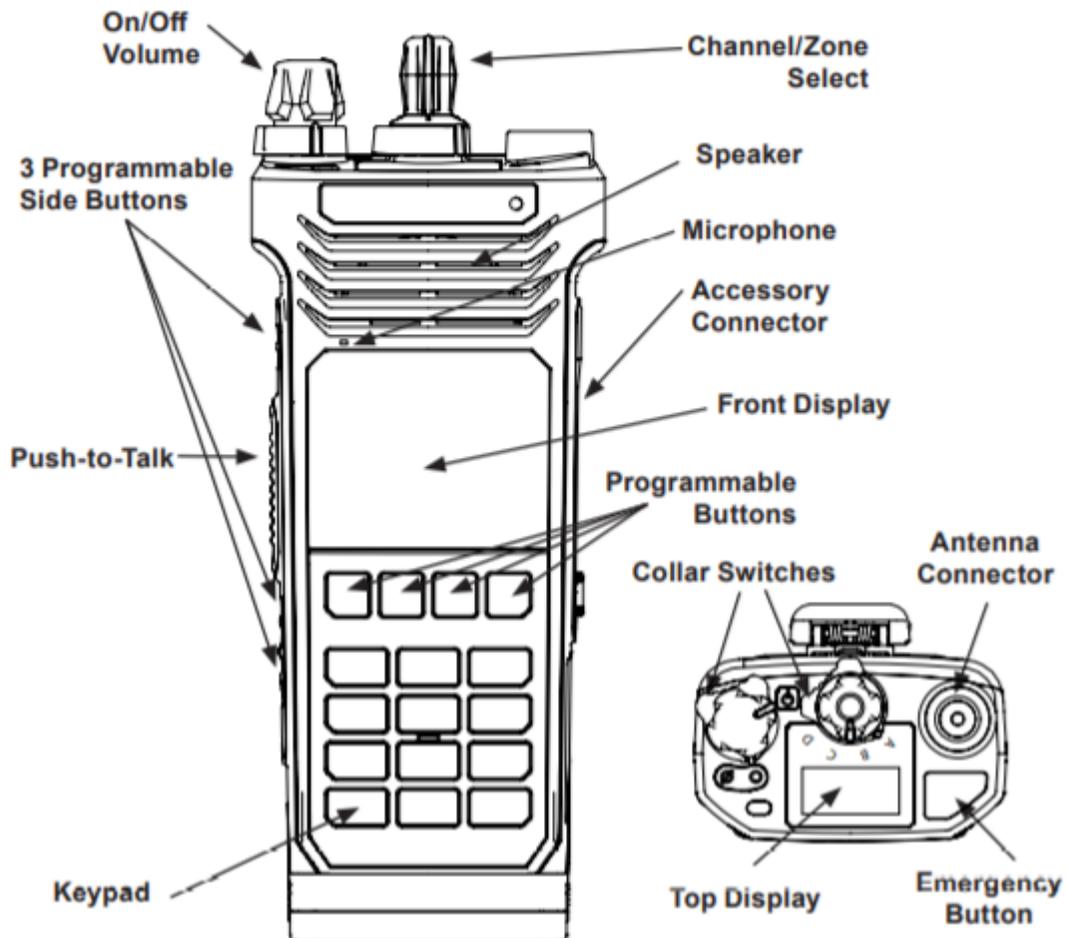
The **BKR 5000** display can be programmed for a variety of options and functionality. Check with your Sales Representative or communications officer for information on the programmed functions of your radio.

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

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**Radio Controls**

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# 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	5025	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
Shock	516.6	VI, I, IV

## Encryption

BKR 5000 Portable 5000 Channel Encryption Capabilities

<b>Supported Algorithms</b>	AES-256, AES-128, DES-OFB, DES-CFB, ADP
<b>Algorithm Capacity</b>	Un limited
<b>Encryption Keys</b>	1024 Storage Location Number (SLN)/ Common Key Reference (CKR)
<b>Frame Re-sync Interval</b>	P25 Common Air Interface 300 mS
<b>Keyloading</b>	IAW TIA-102_AACD (KV L-3000/ 4000}
<b>Synchronization</b>	OFB- Output Feedback or CFB- Cyber Feedback
<b>Vector Generator</b>	National Institutes of Standards
<b>Type</b>	Digital Encryption
<b>Key Storage</b>	Programmable Volatile / Non-Volatile
<b>Key Erasure</b>	Keyboard Command and KM F
<b>Standards</b>	FI PS-140-2 Level 2 FI PS 197

## Dimensions with Battery

	Inches	Millimeters
<b>Width</b>	2.3	59.6
<b>Depth</b>	1.8	45.7
<b>Height</b>	6.5	166.2
	Pounds	Grams
<b>Weight</b>		
<b>Weight (w/o battery)</b>	0.89 lb	404g

## Other Certifications

<b>P25 Compliance Assessment (P25CAP) Performance</b>	Trunked and Conventional Performance Class A
<b>P25 Compliance Assessment (P25CAP) Interoperability</b>	Motorola, Harris, EF Johnson, Airbus, Daniels

# BKR 5000 PORTABLE RADIO

CHANNEL/ZONE SELECT

POWER/VOLUME

LCD TOP DISPLAY

BKR 5000

SPEAKER

PROGRAMMABLE  
ALPHANUMERIC  
LABELS

PROGRAMMABLE  
BUTTONS

POWER/VOLUME

WE  
BUILD  
RADIOS  
FOR  
HEROES®



# BKR 5000 - PORTABLE RADIO



The BKR 5000 Portable Radio offers exceptional performance in a lightweight form. With our 70 years of reliability, BK Technologies is honored to serve our everyday heroes with a device that brings dependability when every moment counts.

## KEY FEATURES

- Single-Band Configuration
- 5000 MAH LI Smart Battery
- Single Unit Smart Charger
- P25 Conventional
- P25 Phase 1 & 2 Trunking
- Simulcast Operation
- DES & AES FIPS140-2 L2 Encryption
- Internal WI-FI
- Integrated GPS/Location Services
- Meets MIL SPEC 810 G & IP68 Specifications



- Advanced System Key
- Enhanced Noise Cancellation
- Loud, Crisp Audio
- USB PC Programmable
- Ruggedized Design with Large, Enhanced, Gorilla Glass Color Display
- Radio Authentication (LLA)



# BK Radio

## KNG P25 Mobile Radio



## Public Safety Communications

The KNG Series radio offers exceptional performance in a lightweight form. With industry leading RF and electrical specifications in a rugged, submersible housing, the KNG Series platform provides the performance needed for the most demanding applications making this the perfect radio for all aspects of government, public safety and first responder missions.

- ✓ P25 Trunking Option
- ✓ TDMA Phase II Compatible
- ✓ IP54 Water and Dust Protection
- ✓ USB PC Programmable
- ✓ NIST-Certified AES, FIPS 104-2, Level 2, & DES/OFB/CFB/XL
- ✓ MIL-STD 810 C/D/E/F/G
- ✓ Cloning to KNG & Legacy Series



		
	<b>KNG Mobile Radio</b>	<b>KNG Remote Control Head (KAA0660)</b>
<b>Display</b>	Alpha-numeric Touch Screen Display The KNG Mobile's innovative color TFT touch screen display solves many issues seen in existing mobile radio control heads. Day or night, get all the information you need right at your fingertips.	
<b>Channel Capacity</b>	5000	5000
<b>Memory</b>	64 MB Volatile 256 MB Non-Volatile (Flash)	64 MB Volatile 256 MB Non-Volatile (Flash)
<b>VHF</b>	KNG-M150	Compatible
<b>UHF Range 1</b>	KNG-M400	Compatible
<b>UHF Range 2</b>	KNG-M500	Compatible
<b>700/800 MHz</b>	KNG-M800	Compatible

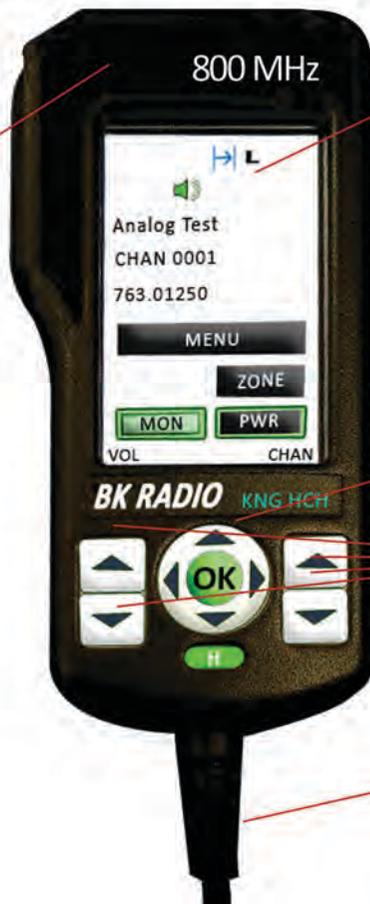
### Power and Current Drain

<b>Power Supply</b>	13.8 V DC ±20% Negative Ground
<b>Transient Protection</b>	Per EIA-374-A
<b>Standby Current @ 13.8 V</b>	0.15A All models
<b>Receive Current Rated Audio @ 13.8 V</b>	2.5A All Models
<b>Transmit Current @ Rated Power</b>	VHF (50 W) 15A, VHF(110 W) 22A, UHF (50W) 15A, 700/800 MHz 10 A

### HCH - Handheld Control Head

Compatible with VHF, UHF, & 800MHz KNG Radios, labels included.

Built in Microphone



Full Color Touch Screen  
5 Lines: 3 Lines text (14 Characters), 2 Lines Icons, programmable touch keys

Smart phone Style Contextual Display

Built in Speaker (on reverse side)

Easy to use, large back lit menu navigation buttons

Large back lit, programmable menu navigation buttons

Long 6' spring-like power cord



## Some Key Benefits

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- ▶ **Innovative Touch Screen Display**  
Touch screen display provides unparalleled level of end-user customizing, ease of use, and expansion as new technologies are integrated with Project 25 Standards
- ▶ **Enhanced Voice Quality**  
The KNG Series radio uses the Third Generation Enhanced IMBE Project 25 dual rate Vocoder (AMBE+2 V1.80) for robust performance in noisy environments. Software based noise cancellation preserves situational awareness lost with dual microphone systems.
- ▶ **5 Line Color Bitmap Display**  
Status Icons, three customizable display lines of 14 characters and soft key legends.
- ▶ **Environmental Reliability**  
Designed and tested to MIL-STD-810 and IP-54 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 Project 25 for conventional operation.
- ▶ **IP54**  
Water and dust protection
- ▶ **Scan Modes**  
Dual priority scan, trunked priority scan, and dual mode scan
- ▶ **NIST FIPS-140-2 Certification**  
The KNG Series radios employ a NIST Certified Cryptographic module.
- ▶ **Multi-key/Multi-Algorithm**  
Multi-Key/Multi-Algorithm Encryption and Over-the-Air Rekey
- ▶ **Encryption Key Fill**  
TIA-102-AACD compliant and interoperable with commercially available keyfill devices.
- ▶ **Project 25 9600 Baud Trunking**  
The KNG Series radio operates on 9600 baud P25 Compliant Trunking Systems and has been Project 25 Compliance Assessment Program (P25CAP) tested and proven interoperable.
- ▶ **OTAP**  
KNG Series radios support Over-the-Air Programming (OTAP) for operational efficiency.
- ▶ **TDMA Phase 2**  
KNG Series 700/800 MHz platforms are Project 25 Phase 2 (TDMA) ready supporting double the voice capacity of Phase 1 trunking systems.
- ▶ **Radio Authentication**  
Project 25 Radio Authentication per TIA-102-AACE-A is supported.
- ▶ **GPS/Location Services**  
Project 25 Location Services per TIA-102-BAJB are supported.
- ▶ **Room to Grow**  
Currently uses less than 20% of available memory and processor cycles.

## Mobile Radio Options

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

- |                      |  |                      |                                      |
|----------------------|--|----------------------|--------------------------------------|
| ▶ <b>KZA0154</b>     | Option, High Power, 110W                                     | ▶ <b>KAA/KZA0589</b> | GPS Option for KNG Mobiles           |
| ▶ <b>KAA0660</b>     | Remote Control Head  | ▶ <b>KAA/KZA0592</b> | Over the Air Reprogramming           |
| ▶ <b>KAA0670</b>     | Handheld Control Head  | ▶ <b>KAA/KZA0594</b> | P25 Phase II – 2 Slot TDMA Operation |
| ▶ <b>KAA/KZA0569</b> | P25 9600 Baud Trunking                                       | ▶ <b>KAA/KZA0596</b> | P25 Radio Authentication             |
| ▶ <b>KZA0576</b>     | DES-OFB/DES-CFB/DES-XL<br>AES Encryption FIPS-140-2, Level 2 | ▶ <b>KAA0261</b>     | External Speaker 20W, 4 Ohm          |
| ▶ <b>KAA/KZA0580</b> | P25 Over the Air Rekeying (OTAR)                             | ▶ <b>KAA0276</b>     | Standard Handheld Microphone KNG-M   |
| ▶ <b>KAA/KZA0583</b> | Multi-Cast Vote Scan Plus                                    | ▶ <b>KAA0290</b>     | Handheld Programming Microphone      |

		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776, 793-806 MHz 806-824,851-870 MHz	136-174 MHz	380-470 MHz	440-520 MHz
Channel Spacing		25/12.5 KHz	30/25/12.5 KHz	25/12.5 KHz	25/12.5 KHz
Maximum Frequency Separation		Full Band	Full Band	Full Band	Full Band
Audio Output Power at Rated		500 mW	500 mW	500 mW	500 mW
Frequency Stability (-30°C to +60°C, +25°C Reference)		±.00015%	±.00015%	±.00015%	±.00015%
Analog Sensitivity	12dB SINAD	0.25µV	0.20µV	0.25µV	0.25µV
Digital Sensitivity	1% BER	0.32µV	0.27µV	0.32µV	0.32µV
	5% BER	0.25 µV	0.20 µV	0.25 µV	0.25 µV
Selectivity	25 KHz	75 dB	80 dB	78 dB	77 dB
	12.5 KHz	67 dB	70 dB	67 dB	67 dB
Intermediation		-75 dB	-78 dB	-75 dB	-75 dB
Spurious Rejection		-75 dB	-80 dB	-80 dB	-80 dB
FM Hum and Noise	25 KHz	-50 dB	-50 dB	-50 dB	-50 dB
	12.5 KHz	-44 dB	-44 dB	-44 dB	-44 dB
Audio Distortion @ 15 Watts		3%	3%	3%	3%

## Transmitter - Minimum Performance Specifications

		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776, 793-806 MHz 806-824,851-870 MHz	136-174 MHz	380-470 MHz	440-520 MHz
Channel Spacing		25/12.5 KHz	30/25/12.5 KHz	25/12.5 KHz	25/12.5 KHz
Maximum Frequency Separation		Full Band	Full Band	Full Band	Full Band
Rated RF Output Power		10-35 Watts	10-50 Watts 25-100 Watts	10-50 Watts	10-50 Watts
Frequency Stability (-30°C to +60°C, +25°C Reference)		±.00005%	±.00005%	±.00005%	±.00005%
Modulation Limiting		±5/4/2.5 KHz	±5/2.5 KHz	±5/2.5 KHz	±5/2.5 KHz
Emissions (Conducted and Radiated)		-75 dB	-75 dB	-75 dB	-75 dB
Audio Response		+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise	700 MHz 800 MHz	-45 dB	-45 dB	-45 dB	-45 dB
Audio Distortion	700 MHz 800 MHz	1.25%	1.25%	1.25%	1.25%

## GPS Specifications

Channels	50
Tracking Sensitivity	<-155 dBm
Accuracy	<6 meters (95%)
Cold Start	<32 seconds (95%)
Hot Start	<1 second (95%)
Mode of Operation	Autonomous (Non-Assisted) GPS

## Signaling

Signaling Rate	9.6Kbps(FDMA) / 12Kbps(TDMA) / 1.2Kbps (MDC)
Digital ID Capacity	16,777,216 (Conventional and Trunking)
Network Access Codes	4096 per TIA 102
Project 25 Talk Group IDs	65,535 (Conventional and Trunking)
Error Correction	Soft Decision, Golay, BCH, Reed-Solomon
Modulation	FM, C\$FM, C-QPSK, H-CPM, H-DQPSK



## Standard Control Head

- Full Color Touch screen
- 5 Line display: Status Icons, three customized display lines of 14 characters, 4 programmable touch keys and menu touch key
- 3 x 4 Keypad microphone with navigation keys and 3 programmable function keys  
Dash and Remote Mount Configurations
- Multiple Control Heads supported: Single, dual and triple allow full control of the transceiver from multiple positions
- Dual 15 watt external speak outputs per control head

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc. /Cat.	Method	Proc. /Cat.	Method	Proc. /Cat.	Method	Proc. /Cat.	Method	Proc. /Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.5	I, II
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I, II
Temperature Shock	503.1	—	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I (D)
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I (A1)
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	—	507.5	--
Salt Fog	509.1	—	509.2	—	509.3	—	509.4	—	509.5	--
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I, II
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I (4), II
Shock	516.2	I, II	516.3	I, IV	516.4	I/IV	516.5	I, IV	516.6	I, II, V, VI

## Dimensions

	Inches	Millimeters
Mid Power Transceiver	2.5 x 6.5 x 8.5	63.5 x 165.1 x 215.9
High Power Transceiver	2.5 x 6.5 x 8.5	63.5 x 165.1 x 215.9
Remote Control Head	2.5 x 6.5 x 1.5	63.5 x 165.1 x 38.1
Mid/High Power Transceiver Weight	7.5 lbs	3.4 kg

## Encryption

Supported Algorithms	AES-256, AES-128, DES-OFB, DES-CFB, ADP
Algorithm Capacity	Unlimited
Encryption Keys	1024 Storage Location Number (SLN)/Common Key Reference (CKR)
Frame Re-sync Interval	P25 Common Air Interface 300 mS
Keyloading	IAW TIA-102_AACD (KVL-3000/4000)
Synchronization	OFB- Output Feedback or CFB- Cyber Feedback
Vector Generator	National Institutes of Standards
Type	Digital Encryption
Key Storage	Programmable Volatile / Non-Volatile
Key Erasure	Keyboard Command and KMF
Standards	FIPS-140-2 Level 2 FIPS 197

## Transmitter Certifications

700/800 MHz (FCC/IC)	K95KNG9800C / 2116A-KNGP800C
VHF (FCC/IC/JF-12/NTIA)	K95KNGP150 / 2116A-KNG-P150 / JF12-09552 / SPS-18031
UHF Range 1 (FCC/IC/JF-12/NTIA)	K95KNGP400 / 2116A-KNG-P400 / JF12-09552 / SPS-18031
UHF Range 2 (FCC/IC)	K95KNGP500 / 2116A-KNG-P500

## Other Certifications

P25 Compliance Assessment (P25CAP) Performance	Trunked and Conventional Performance Class A
P25 Compliance Assessment (P25CAP) Interoperability	Motorola, Harris, EF Johnson, Airbus, Daniels
Intrinsically Safe	Intrinsically Safe (IS) Class I/II/III, Division 1, Groups D, F, G

# BK Technologies KNG2 P25 Portable Radio



## Public Safety Communications

The KNG2 Series Portable Radio offers exceptional performance in a lightweight form, incorporating industry leading RF and electrical specifications in a rugged, submersible housing.

- ✓ Large, Bright, Color Display
- ✓ Enhanced Noise Cancellation
- ✓ 3 Side Programmable Buttons
- ✓ Loud, Crisp Audio
- ✓ P25 Trunking Option
- ✓ TDMA Phase II
- ✓ IP67 / IP68 Water and Dust Protection
- ✓ Internal GPS and Bluetooth Hardware
- ✓ USB PC Programmable
- ✓ NIST-Certified AES, FIPS 140-2 Level 2, DES-OFB/CFB/XL/ADP
- ✓ MIL-STD 810 C/D/E/F/G
- ✓ Advanced System Key
- ✓ Radio Authentication (LLA)



# KN<sup>G2</sup> P25 Portable Radio



<b>Color Display</b>	6 Line Bitmap Display 3 customizable display lines of 16 characters 2 Status Icons 1 soft key legend
<b>Keypad</b>	Backlight keypad with 4 customizable softkeys
<b>Channel Capacity Memory</b>	5000 64 MB Volatile 256 MB Non- Volatile (Flash)
<b>VHF</b>	KN <sup>G2</sup> -P150
<b>UHF Range 1</b>	KN <sup>G2</sup> -P400
<b>UHF Range 2</b>	KN <sup>G2</sup> -P500
<b>700/800 MHz</b>	KN <sup>G2</sup> -P800
<b>Buttons and Switches</b>	Oversized PTT, On/Off volume control, orange emergency button, 16 position rotary switch, 3 position concentric switch, two 2 position toggle switches, 3 programmable side buttons



Transmitter Certifications	
<b>700/800 MHz (FCC/IC)</b>	K95KNG9800C / 2116A-KNGP800C
<b>VHF (FCC/IC/JF-12/NTIA)</b>	K95KNGP150 / 2116A-KNG-P150 / JF12-09552 / SPS-18031
<b>UHF Range 1 (FCC/IC/JF-12/NTIA)</b>	K95KNGP400 / 2116A-KNG-P400 / JF12-09552 / SPS-18031
<b>UHF Range 2 (FCC/IC)</b>	K95KNGP500 / 2116A-KNG-P500
FCC Emission Designators	
<b>FCC Emission Designators</b>	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E
Power Supply	
<b>Power Supply</b>	Rechargeable Li-Ion or AA-Alkaline Battery Pack

## Some Key Benefits

- ▶ **Exceptional Battery Life**  
Up to 12 hours with standard capacity and 22 hours with high capacity battery.
- ▶ **Enhanced Voice Quality**  
The KNG Series radio uses the Third Generation Enhanced IMBE P25 dual rate Vocoder (AMBE+2 V1.80) for robust performance in noisy environments with advanced noise.
- ▶ **Enhanced Noise Cancelation**  
Dual Microphone noise canceling technology to improve communications in loud environments
- ▶ **6 Line Bitmap Display**  
2 Status Icons, 3 customizable display lines of 16 characters and 1 soft key legend.
- ▶ **Environmental Reliability**  
Designed and tested to MIL-STD-810 and rated IP-67/IP-68.
- ▶ **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**  
RELM Wireless Bluetooth is a programmable option for wireless accessory connectivity.
- ▶ **Scan Modes**  
Dual priority scan, trunked priority scan, and dual mode scan
- ▶ **NIST FIPS-140-2 Certification Level 2**  
The KNG Series radios employ a NIST Certified Cryptographic module.
- ▶ **Multi-key/Multi-Algorithm**  
Multi-Key/Multi-Algorithm Encryption
- ▶ **Over-the-Air Rekey (OTAR)**
- ▶ **Encryption Key Fill**  
TIA-102-AACD compliant and interoperable with commercially available keyfill devices.
- ▶ **P25 9600 Baud Trunking**  
The KNG Series radio operates on 9600 baud P25 Compliant Trunking Systems and has been P25 Compliance Assessment Program (P25CAP) tested and proven interoperable.
- ▶ **OTAP**  
KNG Series radios support Over-the-Air Programming (OTAP) for operational efficiency.
- ▶ **TDMA Phase 2**  
KNG Series VHF, UHF, 700/800 platforms are P25 Phase 2 (TDMA) ready supporting double the voice capacity of Phase 1 trunking systems
- ▶ **Radio Authentication**  
P25 Radio Authentication per TIA-102-AACE-A is supported
- ▶ **Integrated GPS/Location Services**  
P25 Location Services per TIA-102-BAJB are supported, Tier I Conventional, Tier II Trunking.
- ▶ **Room to Grow**  
Currently uses less than 20% of available memory and processor cycles.

## Portable Radio Options

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

- ▶ **KZA0577** AES, FIPS-140-2 Level 2 Approved Hardware, DES OFB / DES-CFB / DES-XL / ADP Encryption
- ▶ **KZA0578** P25 Over the Air-Rekey (OTAR)
- ▶ **KZA0579** P25 9600 Baud Trunking
- ▶ **KZA0581** Multi-Cast Vote Scan Plus
- ▶ **KZA0582** Over the Air Programming (OTAP)
- ▶ **KZA0593** P25 Phase II – 2 Slot TDMA Operation (Requires KZA0578)
- ▶ **KZA0595** P25 Radio Authentication LAA (Requires KZA0577)

## Receiver Minimum Performance Specifications

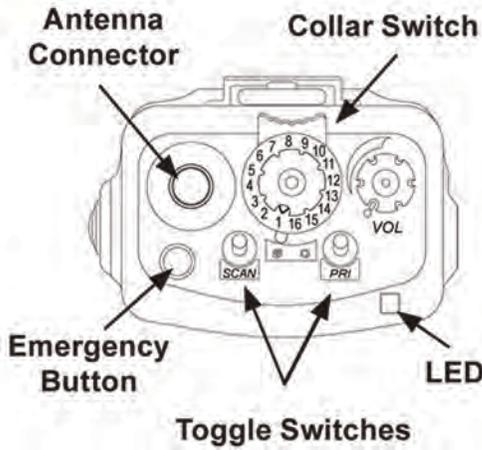
		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits		763-776, 793-806 MHz 806-824,851-870 MHz	136-174 MHz	380-470 MHz	440-520 MHz
Channel Spacing		25/12.5 KHz	30/25/12.5 KHz	25/12.5 KHz	25/12.5 KHz
Max Frequency Separation		Full Band	Full Band	Full Band	Full Band
Audio Output Power		3 Watts	3 Watts	3 Watts	3 Watts
Analog Sensitivity	12dB SINAD	0.250 $\mu$ V	0.200 $\mu$ V	0.250 $\mu$ V	0.250 $\mu$ V
Digital Sensitivity	1% BER	0.333 $\mu$ V	0.277 $\mu$ V	0.307 $\mu$ V	0.307 $\mu$ V
	5% BER	0.250 $\mu$ V	0.200 $\mu$ V	0.250 $\mu$ V	0.250 $\mu$ V
Selectivity	25 KHz	$\geq$ 74 dB	$\geq$ 80 dB	$\geq$ 77 dB	76 dB
	12.5 KHz	$\geq$ 66 dB	$\geq$ 70 dB	$\geq$ 66 dB	66 dB
Intermodulation		$\geq$ 75 dB	$\geq$ 78 dB	$\geq$ 75 dB	$\geq$ 75 dB
Spurious Rejection		$\geq$ 80 dB	$\geq$ 80 dB	$\geq$ 80 dB	$\geq$ 80 dB
FM Hum and Noise	25 KHz	$\geq$ 49 dB	$\geq$ 50 dB	$\geq$ 50 dB	$\geq$ 50 dB
	12,5 KHz	$\geq$ 43 dB	$\geq$ 44 dB	$\geq$ 44 dB	$\geq$ 44 dB
Audio Distortion		1%	1%	1%	1%

## Transmitter - Minimum Performance Specifications

		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits		763-776, 793-806 MHz 806-824,851-870 MHz	136-174 MHz	380-470 MHz	440-520 MHz
Channel Spacing		25/12.5 KHz	30/25/12.5 KHz	25/12.5 KHz	25/12.5 KHz
Max Frequency Separation		Full Band	Full Band	Full Band	Full Band
Rated RF Output Power		1- 3 Watts	1- 6 Watts	1- 5 Watts	1- 5 Watts
Frequency Stability (-30°C to +60°C, +25°C Reference)		$\pm$ .00005%	$\pm$ .00005%	$\pm$ .00005%	$\pm$ .00005%
Modulation Limiting		$\pm$ 5/4/2.5 KHz	$\pm$ 5/2.5 KHz	$\pm$ 5/2.5 KHz	$\pm$ 5/2.5 KHz
Emissions (Conducted and Radiated)		$\geq$ 75 DB	$\geq$ 75 DB	$\geq$ 75 DB	$\geq$ 75 DB
Audio Response		+1,-3 dB	+1,-3 dB	+1,-3 dB	+1,-3 dB
FM Hum and Noise	25 KHz	$\geq$ 49 dB	$\geq$ 50 dB	$\geq$ 50 dB	$\geq$ 50 dB
	12,5 KHz	$\geq$ 43 dB	$\geq$ 44 dB	$\geq$ 44 dB	$\geq$ 44 dB
Audio Distortion		1.25%	1.25%	1.25%	1.25%

## KNG Series Batteries

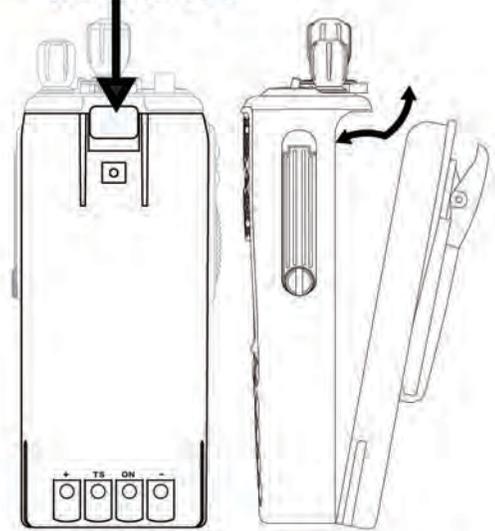
Battery Capacity/Type	Dimensions (HxWxD)	Part Number	Capacity
Li-Ion Smart 1950 mAh	5.2 x 2.3 x 0.68	KAA0100	1950 mAh- Up to 12 Hours
Li-Ion Smart 3600 mAh	5.2 x 2.3 x 0.88	KAA0100	3600 mAh- Up to 22 Hours
Li-Ion Smart 1950 mAh IS	5.2 x 2.3 x 0.68	KAA0100IS	1950 mAh- Up to 8 Hours
Li-Ion Smart 3600 mAh IS	5.2 x 2.3 x 0.88	KAA0101IS	3600 mAh- Up to 14 Hours
AA Clamshell	5.2 x 2.3 x 0.82	KAA0120	Depends on Alkaline MFG



## LED Indicator

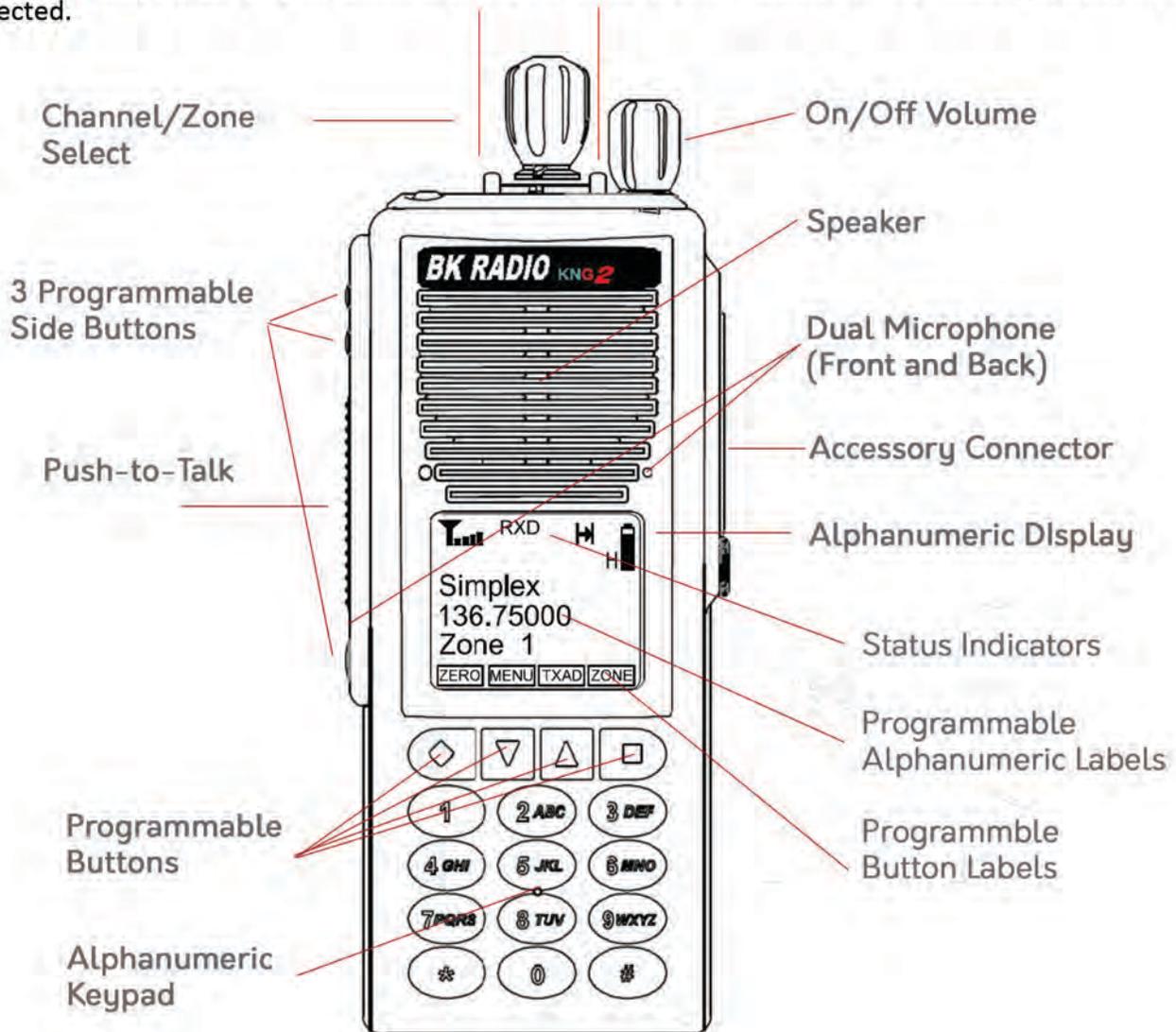
- Receive (green)
- Busy Channel (flash green)
- Transmit (red)
- Flash Mode (blue)
- Low Battery (flash red)

## Release Tab



The KN<sup>G</sup>2 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 KN<sup>G</sup>2 display can be programmed to display different information when a trunking or conventional channel is selected.



	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc. /Cat.	Method	Proc. /Cat.	Method	Proc. /Cat.	Method	Proc. /Cat.	Method	Proc. /Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.5	II
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	II
Temperature Shock	503.1	—	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I-D
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I
Rain/Blown Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I
Humidity	507.1	II	507.2	II	507.3	II	507.4	—	507.5	I
Salt Fog	509.1	—	509.2	—	509.3	—	509.4	—	509.5	NA
Dust and Sand	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Immersion	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I
Shock	516.2	I, II	516.3	I, IV	516.4	I/IV	516.5	I, IV	516.6	VI, V

## Encryption

### KN<sup>G2</sup> Portable 5000 Channel Encryption Capabilities

<b>Supported Algorithms</b>	AES-256, AES-128, DES-OFB, DES-CFB, ADP
<b>Algorithm Capacity</b>	Unlimited
<b>Encryption Keys</b>	1024 Storage Location Number (SLN)/Common Key Reference (CKR)
<b>Frame Re-sync Interval</b>	P25 Common Air Interface 300 mS
<b>Keyloading</b>	IAW TIA-102_AACD (KVL-3000/4000)
<b>Synchronization</b>	OFB- Output Feedback or CFB- Cyber Feedback
<b>Vector Generator</b>	National Institutes of Standards
<b>Type</b>	Digital Encryption
<b>Key Storage</b>	Programmable Volatile / Non-Volatile
<b>Key Erasure</b>	Keyboard Command and KMF
<b>Standards</b>	FIPS-140-2 Level 2 FIPS 197

## Dimensions with Battery

	Inches	Millimeters
Width	2.5	63.5
Depth	1.8	45.7
Height	5.5	139.7
Weight	Pounds	Grams
Weight (w/o battery)	0.6 lb	270 g

## Other Certifications

<b>P25 Compliance Assessment (P25CAP) Performance</b>	Trunked and Conventional Performance Class A
<b>P25 Compliance Assessment (P25CAP) Interoperability</b>	Motorola, Harris, EF Johnson, Airbus, Daniels
<b>Intrinsically Safe</b>	Classes I, II, & III, Division 1, Groups D, F, & G & Non-incendive Class I, Division 2, Groups A-G