

# RELM/BK Radio

## KNG P25 Portable Radio



## Public Safety Communications



The KNG Series radio offers exceptional performance in a lightweight form, incorporating 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
- ✓ IP67 Water and Dust Protection
- ✓ USB PC Programmable
- ✓ NIST-Certified AES & DES/OFB
- ✓ MIL-STD 810 C/D/E/F/G
- ✓ Cloning to KNG & Legacy Series



## KNG Series Portable Radio Models

	 <b>KNG T2</b>	 <b>KNG</b>
<b>Display</b>	5 Line, full bitmapped monochromatic backlight display. 3 lines x 14 characters of customizable text 1 line of status Icons 1 line of Soft Key legends	5 Line, full bitmapped monochromatic display. 3 lines x 14 characters of customizable text 1 line of status Icons 1 line of Soft Key legends
<b>Keypad</b>	Backlight keypad with 4 customizable softkeys	Backlight keypad with 4 customizable softkeys 4 row by 3 column DTMF style keypad
<b>Channel Capacity</b>	2048	2048
<b>Memory</b>	64 MB Volatile 256 MB Non-Volatile (Flash)	64 MB Volatile 256 MB Non-Volatile (Flash)
<b>700/800 MHz</b>	KNG-P800T2	KNG-P800
<b>VHF</b>	KNG-P150T2	KNG-P150
<b>UHF Range 1</b>	KNG-P400T2	KNG-P400
<b>UHF Range 2</b>	KNG-P500T2	KNG-P500
<b>Buttons and Switches</b>	Oversized PTT, On/Off volume Control, Orange emergency button, 16 position rotary switch, 2-postion concentric switch, two 2-position toggle switches, 2 Programmable side buttons	
<b>Transmitter Certifications</b>		
<b>700/800 MHz (FCC/IC)</b>	K95KNGP800C / 2116A-KNGP800C	
<b>VHF (FCC/IC/JF-12/NTIA)</b>	K95KNGP150 / 2116A-KNGP150 / JF12-09552 / SPS-18031	
<b>UHF Range 1 (FCC/IC/JF-12/NTIA)</b>	K95KNGP400 / 2116A-KNGP400 / JF12-09552 / SPS-18031	
<b>UHF Range 2 (FCC/IC)</b>	K95KNGP500 / 2116A-KNGP500	
<b>FCC Emission Designators</b>		
<b>FCC Emission Designators</b>	11K0F3E, 16K0F3E, 8K10F1D,8K10F1E, 8K10F1W, 20K0F1E	
<b>Power Supply</b>		
<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 Project 25 dual rate Vocoder (AMBE+2 V1.60) for robust performance in noisy environments with advanced noise. Background noise cancellation via software preserves situational awareness lost with dual microphone systems.
- **5 Line 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-67 rated.
- **DHS P25 CAP Approved**  
DHS P25 Compliance Assessment Program Tested and Approved Public Safety Grade (TIA Class A).
- **Greater Transmit Power**  
Up to 1 watt more transmit power for increased range and building penetration
- **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.
- **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.
- **Phase 2 Ready**  
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.

## 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** DES OFB / AES Encryption Includes FIPS-140-2 Approved Hardware
- **KZA0578** Project 25 Over the Air-Rekey (OTAR)
- **KZA0579** Project 25 9600 Baud Trunking – 2048 Channel
- **KZA0581** Multi-Cast Vote Scan Plus
- **KZA0582** Over the Air Reprogramming
- **KZA0593** P25 Phase II – 2 Slot TDMA Operation (Requires KZA0578)
- **KZA0595** P25 Radio Authentication (Requires KZA0577)

## Receiver 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
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	0.250µV	0.200µV	0.250µV	0.250µV
Digital Sensitivity	1% BER	0.333 uV	0.277 uV	0.307 uV	0.307 uV
	5% BER	0.250 µV	0.200 µV	0.250 µV	0.250 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		1%	1%	1%	1%

## Transmitter - Minimum Performance Specifications

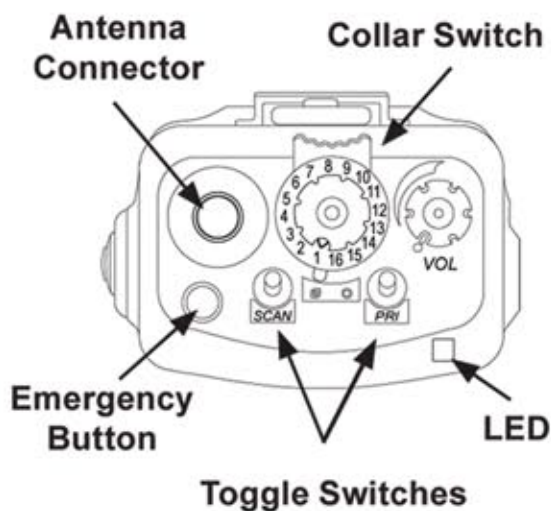
		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776, 793-806 MHz 806-824,851-870 MHz	136-174 MHz	380-470 MHz	440-520 MHz
Channel Spacing		25/12.5 KHz	30/25/12.5 KHz	25/12.5 KHz	25/12.5 KHz
Maximum Frequency Separation		Full Band	Full Band	Full Band	Full Band
Rated RF Output Power		1-3 Watts	1-6 Watts	1-5 Watts	1-5 Watts
Frequency Stability (-30°C to +60°C, +25°C Reference)		±.00015%	±.00015%	±.00015%	±.00015%
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	-49 / -43 dB -49 / -43 dB	-50 / -44 dB	-50 / -44 dB	-50 / -44 dB
Audio Distortion	700 MHz 800 MHz	3%	3%	3%	3%

## KNG Series Batteries

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Part Number	Capacity
Li-Ion Smart 1950 mAh			KAA-0100	1950 mAh - Up to 12 Hours
Li-Ion Smart 3600 mAh			KAA-0101	3600 mAh – Up to 22 Hours
Li-Ion Smart 1950 mAh FM-IS			KAA-0100IS	1950 mAh – Up to 8 Hours
AA Clamshell			KAA-0120	

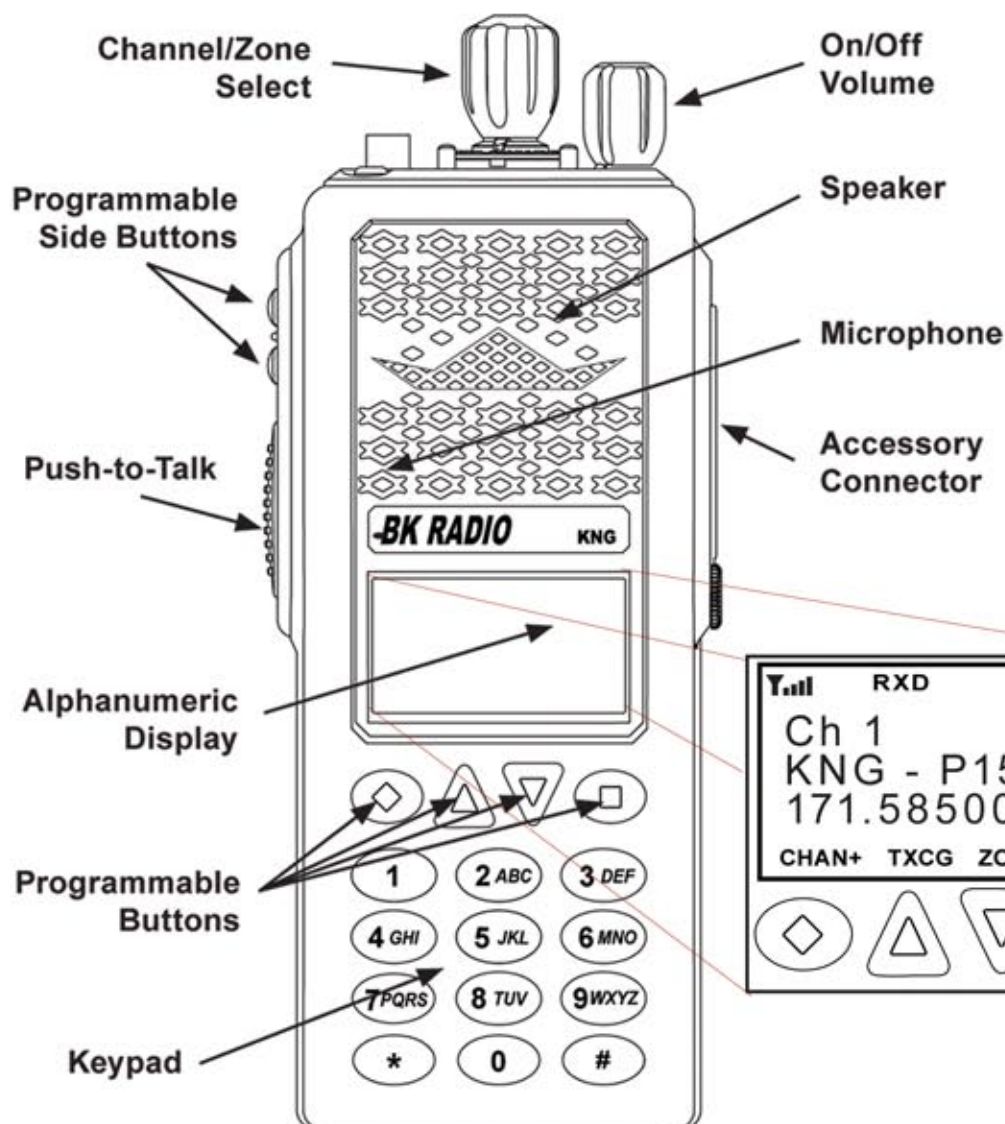
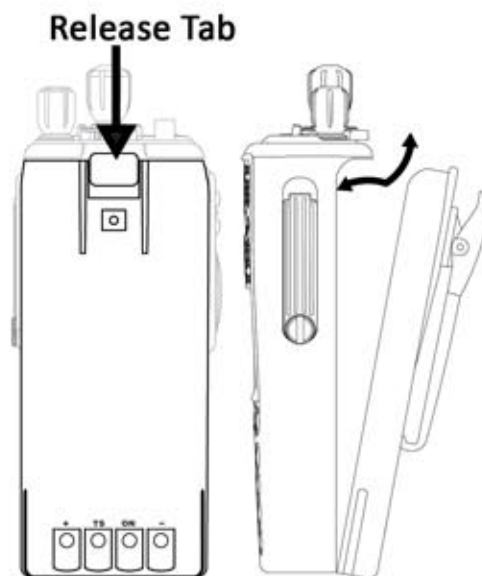


# KNG Buttons and Functions



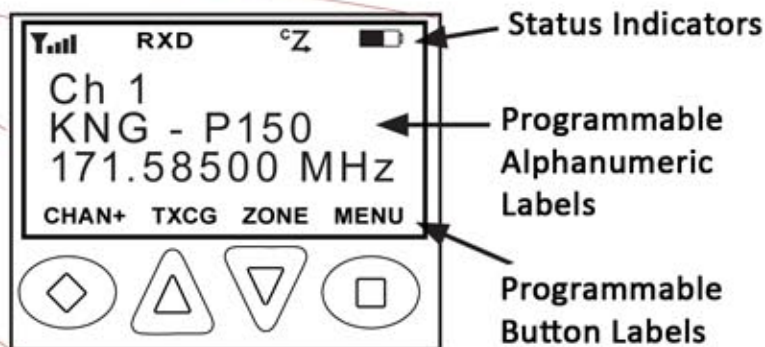
## LED Indicator

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



The KNG display can be programmed for a variety of options and functionality. Check with your RELM/BK Radio dealer or communications officer for information on the programmed functions of your radio.

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



## KNG Portable Military Standards C,D,E, & F

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F	
	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
High temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1
Temperature Shock	503.1	–	503.2	I/A1C3	503.3	I/A1C3	503.4	I
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	–
Salt Fog	509.1	–	509.2	–	509.3	–	509.4	–
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I
Blowing Sand								
Immersion	512.1	I	512.2	I	512.3	I	512.4	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24
Shock	516.2	I, II	516.3	I, IV	516.4	I/IV	516.5	I, IV
Shock (Drop)								

## Dimensions with Battery

	Inches	Millimeters
Width	2.5	63.5
Depth	1.8	45.7
Height	5.5	139.7
Weight (w/o battery)		

## Encryption

Supported Algorithms	AES-256, AES-128, DES
Algorithm Capacity	Unlimited
Encryption Keys	64 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
Vector Generator	National Institutes of Standards and Technology (NIST) approved random number generator
Type	Digital Encryption
Key Storage	Non-Volatile
Key Erasure	Keyboard Command and KMF
Standards	FIPS-140-2 FIPS 197

## Other Certifications

P25 Compliance Assessment (P25CAP) Performance	Trunked and Conventional Performance Class A
P25 Compliance Assessment (P25CAP) Interoperability	Motorola, Harris, EFJohnson, Tait/Cassidian and Daniels
National Interagency Fire Certification (VHF and UHF)	KNG-P150 and KNG-P400
Factory Mutual – Intrinsically Safe	Safe (IS) Class I / II / III, Division 1, Groups D, F and G.