



# KENWOOD NX-5000 Series Three Digital Protocols for Enterprise User Manual

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# KENWOOD

**KENWOOD NX-5000 Series Three Digital Protocols for Enterprise**



The NX-5000 Series is a digital radio system that offers three different protocols for the enterprise and public safety use: NXDN, DMR, and P25.

## Features

- One-radio, multi-protocol support
- **NXDN:** Provides wide coverage and scalability with spectrum efficiency
- **DMR:** Offers longer battery life and doubled capacity using 2-slot TDMA
- **P25:** Ensures interoperability among public safety agencies in North America, Australia, and New Zealand
- Automatic call signal identification
- Intuitive display and operability
- Renowned Kenwood audio technology for clear communications even in noisy environments
- Tough and robust design that complies with MIL-STD-810 C/D/E/F/G environmental standards and IP67/68 immersion standards for portable radios and IP54/55 dust/water ingress protection standards for rugged mobile radios

## Usage Instructions

1. Turn on the radio by pressing the power button.

2. Select the desired protocol (NXDN, DMR, or P25) by using the menu button and navigating to the protocol settings.
3. To make a call, press the PTT (Push-To-Talk) button and speak into the microphone.
4. To receive a call, listen for the call signal identification and press the PTT button to respond.
5. Use the display screen to view incoming calls, battery life, and other information.
6. For dispatch operations, connect the radio to the DMR AIS IP Console Interface for compatibility.
7. Use the Lone Worker function for security guards, and take advantage of Digital DMR Data Services and Remote Monitoring for additional benefits.
8. Ensure proper care and maintenance to keep the radio functioning at its best, and refer to the user manual for troubleshooting and technical assistance.

## **NXDN®, DMR and P25**

Radios are a lifeline for those who work on the front lines – crews tackling a four-alarm fire, utility engineers repairing ice-storm damage, or school guards responding to a security alert. They demand and deserve equipment that is truly fit for purpose, and then some. To meet this demand KENWOOD has drawn on its extensive experience, its renowned technologies, and an expert analysis of market needs to develop NEXEDGE®. This innovative digital solution satisfies the most stringent requirements of today's mission-critical radio users. And now NEXEDGE leaps further ahead of the competition with NX-5000 Series portable and mobile radios, ready to serve in all public safety, public sector and commercial roles with flawless performance and advanced feature sets. With a capacity over 1,000 sites, Gen2 is designed for NEXEDGE system operators and users, particularly public safety, utilities and large-scale manufacturing and other facilities with multiple sites and systems distributed over a wide area.

### **The NX-5000 Series truly sets a new standard**



From nationwide enterprises looking to create large-scale digital trunked networks with NXDN® to staff staying in touch via DMR and first responders maintaining vital contact with P25 – the NX 5000 Series can serve everyone, including those still using analog radios.

### **An efficient, economical solution for dynamic businesses looking to upgrade their communications**

DMR radios provide smooth communications and coordination between staff members in a wide variety of commercial environments, including retail, hospitality and manufacturing. Compatibility with the DMR AIS IP Console Interface facilitates radio dispatch operations, while Call Interruption and the Lone Worker function are ideal for security guards. Digital DMR Data Services and Remote Monitoring are among many additional benefits.

### **The Enterprise Network Solution with cutting-edge digital technologies for scalable operation-critical communications**



Providing all the benefits of advanced digital technology such as increased effective coverage area and low noise for superior clarity, NXDN® has become established throughout the world, serving customers ranging from business & industrial to mission-critical. And now NEXEDGE® 2nd Generation (Gen2) delivers a quantum leap in network scale and capability – supporting networks with as many as 1,000 sites or 24 networks for wide area roaming and calling.

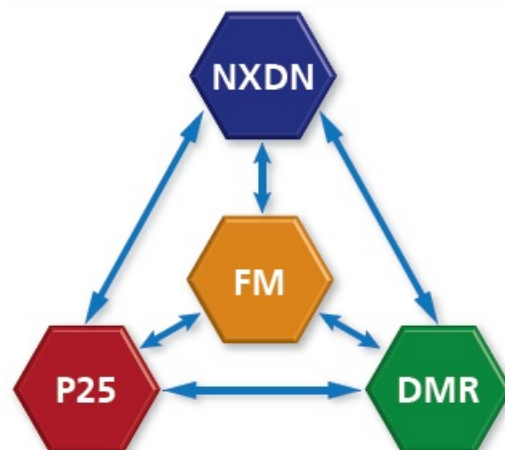
### **The established mission-critical protocol for first responders, with proven reliability and interoperability**

Round-the-clock public safety operations – involving the police and fire departments as well as EMS – can be extremely demanding for both personnel and equipment. That is why P25 radios are ruggedly robust and able to offer clear mission-critical communications in hot, dusty, noisy environments – even with sirens in the background. Additionally, features like Man-down Detection contribute to enhanced safety in the line of duty.

## **NX-5000 SERIES FEATURES**



## ONE-RADIO, MULTI-PROTOCOL SUPPORT



The NX-5000 Series offers unsurpassed interoperability for a wide variety of users as it supports three digital CAIs — NXDN, DMR and P25 (Phase 1 & 2) — plus FM analog in a single radio. Best of all, a desired CAI can be selected at will, giving you the freedom to migrate at your own pace whether you are intent on going fully digital, undecided about which digital system to pick, or just wanting to maintain both digital and analog for a while. An NX-5000 radio can simultaneously support two digital protocols plus analog, offering the following combinations: FM/DMR/ NXDN, FM/NXDN/P25, and FM/DMR/P25.



- **NXDN:** The NXDN air interface can fit into the very narrow 6.25 kHz bandwidth using FDMA technology. Ensuring spectrum efficiency, wide coverage and virtually unlimited scalability, it provides for nationwide expansion: Type-C Trunking Gen2 offers enhanced features, flexibility and performance, linking up to 1,000 sites or 24 networks.
- **DMR:** For simple conventional communications, making use of existing infrastructure, DMR is an excellent, cost-effective solution. Being energy-efficient, it offers longer battery life. And thanks to 2-slot TDMA, it is possible to obtain 2 talk paths within an analog 12.5 kHz bandwidth, thus doubling the capacity. The NX-5000 Series supports Tier II conventional mode.
- **P25:** This digital CAI ensures interoperability among public safety agencies in North America, Australia and New Zealand. The NX-5000 Series is compatible with Phase 1 (conventional and trunked), and Phase 2 (trunked).

## AUTOMATIC CALL SIGNAL IDENTIFICATION

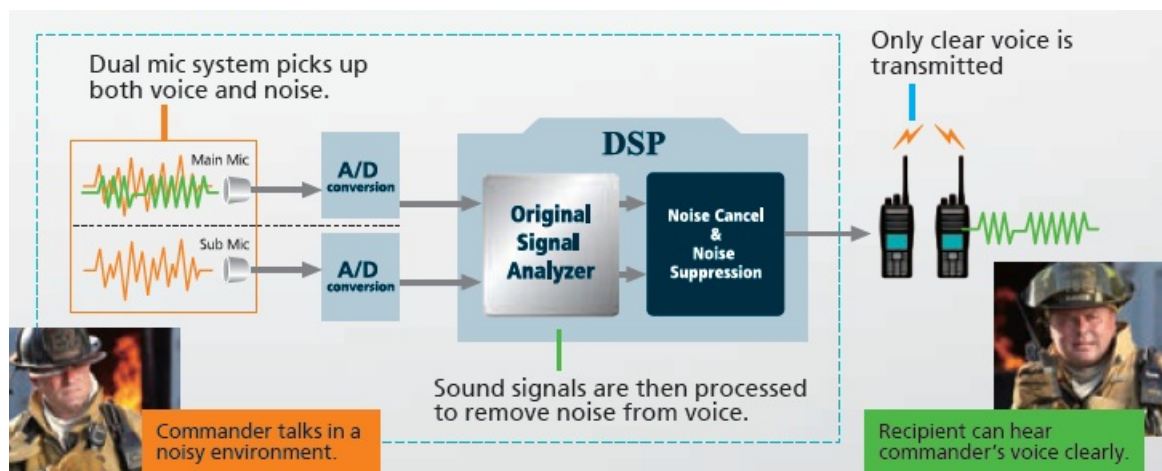
An NX-5000 Series radio automatically identifies a call signal – whether it's NXDN, DMR, P25, or FM analog – and transmits in the same mode received. Setting your radio to Mixed Mode allows the radio to wait for a call in both digital and analog modes in a digital/analog environment. Moreover, the new Geographical Zone function allows these radios to operate in any mode – conventional or trunked – in the same zone.

## INTUITIVE DISPLAY & OPERABILITY



The 65,536-color TFT display allows the user to check at a glance on operating status, shown in multi-line text to convey more information. The portables feature a 1.74-inch (240 x 180 pixel) LCD that can be viewed clearly in direct sunlight or in the dark, even while wearing polarised sunglasses. The mobile models feature a 2.55-inch (154 x 422 pixel) TFT display with integrated luminance sensor that automatically adjusts the brightness of the backlight. What's more, the optional remote control panel (KCH-20R) features a 2.75-inch (240 x 400 pixel) TFT display with Auto LCD Brightness mode to adjust display intensity for round-the-clock operation. Further enhancing operating ease is the 4-way Directional-pad (D-pad) and 2-position lever switch, which offer intuitive control and can be operated with gloves on.

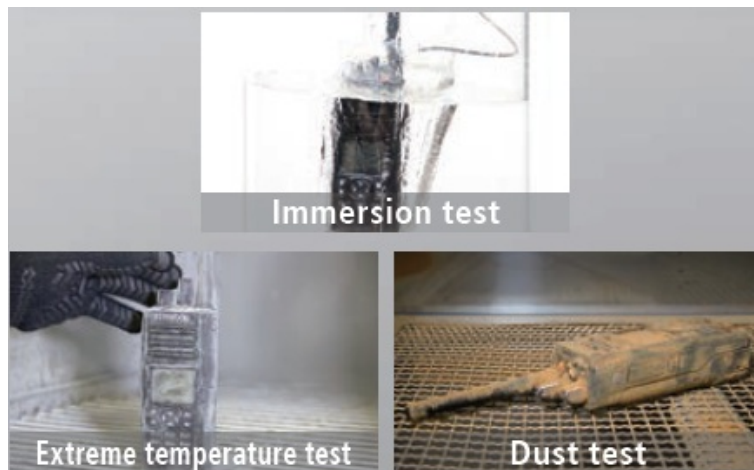
## RENOWNED KENWOOD AUDIO





Benefitting from decades of KENWOOD experience and expertise, the NX-5000 Series offers superb audio quality even in very noisy environments. In addition to sophisticated sound analysis and optimization technologies, these radios feature Active Noise Cancelling based on leading-edge digital technology. Clear communications are assured.

## TOUGH & ROBUST



During the development stage, NX-5000 Series radios go through a number of stringent tests to make sure they can withstand harsh usage. In addition to MIL-STD-810 C/D/E/F/G environmental standards, NX-5000 portable radios comply with IP67/68 immersion standards, offering max. 2 hour protection at a depth of 1 meter\*. The rugged mobile radios comply with IP54/55\*\* dust/water ingress protection standards.

- Applies for IP68
- **IP54:** RF Deck of the mobile radio; **IP55:** Remote Control Head for the mobile radio

## INTELLIGENT BATTERY MANAGEMENT SYSTEM

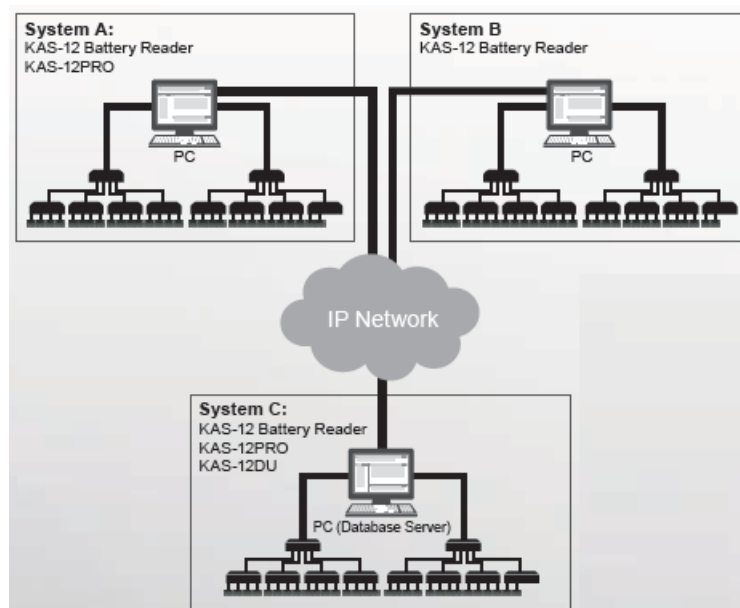
**(Portables: option)**



The Intelligent Battery System helps to extend battery lifetime and ensure that the batteries are optimally maintained so as to be ready for mission-critical operations. The system comprises the optional high-capacity Li-ion and Ni-MH Batteries (KNB-L1/L2/L3/N4), Intelligent Charger (KSC-Y32), and Battery Reader software (KAS-12 or KAS-12PRO, an upgrade option). Up to 60 Rapid Chargers can be chain-connected to a PC installed with the KAS-12 Battery Reader software, which can display and manage information: battery type, model name, voltage, temperature, discharge cycle, expected life, and remaining capacity.

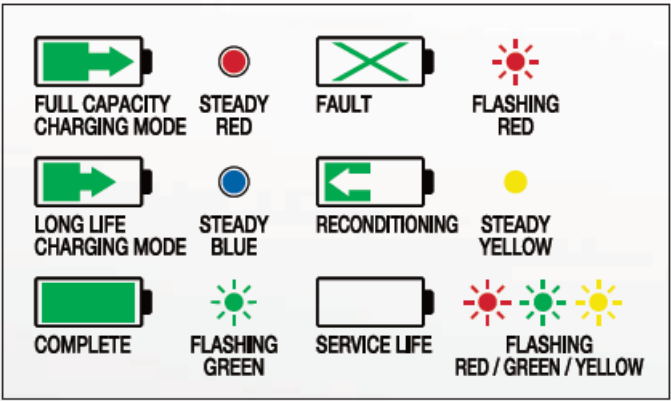
Additionally, with KAS-12PRO (software upgrade license), data can be stored for up to 5,000 batteries for centralized management of their initial date of use, elapsed days, discharge cycle, remaining capacity and deterioration (end-of-life).

- Long Life Charging Mode: stops recharging at 80 % capacity to extend life.
- Up to 5,000 batteries can be managed at a time (requires KAS-12PRO).
- Deterioration (end-of-life) notification (requires KAS-12PRO).





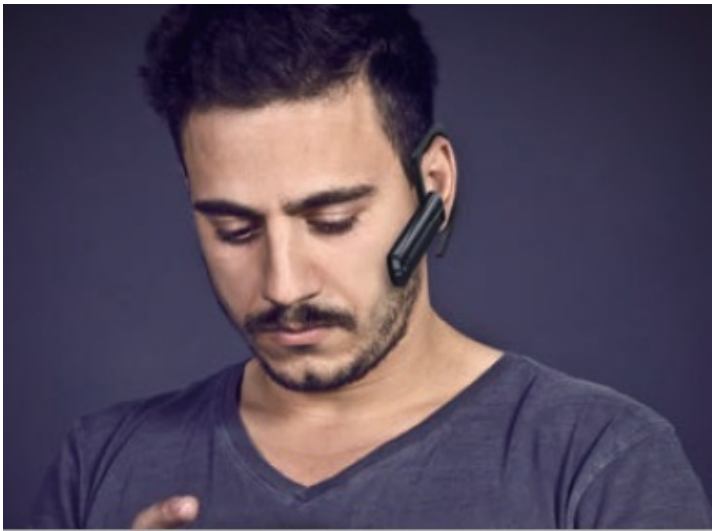
Create Battery Reader Management System over IP networking by installing KAS-12DU Battery Reader Database Utility on a server and authenticating the KAS-12PRO Software Upgrade License for the system. Monitoring is enabled only on a system with KAS-12PRO authentication.



Battery conditions are displayed in color illuminated indicators on the charger, which are also displayed on a connected PC with the same color scheme. Color-coordinated patterns provide users with at-a-glance information for comprehensive battery management.



**BUILT-IN BLUETOOTH®**

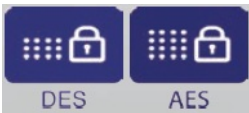


Hands-free operation is vital for many NX-5000 users. The radios' built-in Bluetooth® module is compatible with Headset and Serial Port Profiles (ver. 3.0) and keeps your hands open for other important tasks you are into.



**GPS TO TRANSMIT YOUR POSITION**

Featuring an integrated GPS module and antenna, NX-5000 portable radios can transmit positional data, enabling effective management when used with tracking applications like KAS-10 software. Mobile models can support GPS with the optional KRA-40G GPS Active Antenna.



**ENCRIPTION EQUIPPED**

Secure communications are an essential requirement, especially for public safety applications. NX-5000 radios are equipped with 56-bit key Data Encryption Standard (DES) Encryption. For even higher protection there is the optional KWD-AE31 Secure Cryptographic Module, which supports the 256-bit Advanced Encryption Standard (AES) Encryption.

## MULTIPLE CONFIGURATION

**(Mobiles: option)**

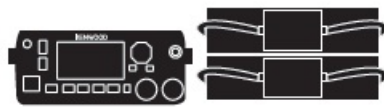
The NX-5000 mobile series allows users to create a variety of configurations to suit diverse requirements by combining different options.

### 1. Single Remote Control Head x Single RF Deck



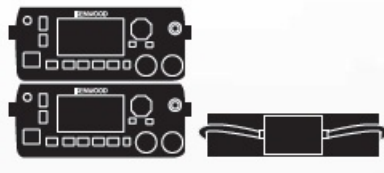
- Suited for distribution and courier services, this is the simplest configuration. The detachable front control panel of the NX-5000 mobile series is used as a Remote Control Head.

### 2. Single Remote Control Head x Multi RF Decks



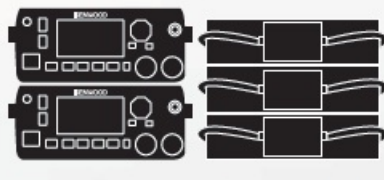
- You can operate multiple radios (e.g. VHF and UHF) as if they were one by adding an NX-5000 mobile series RF Deck. This configuration is recommended for law enforcement agencies.

### 3. Dual Remote Control Heads x Single RF Deck



- One controller can be mounted on the dashboard, with the other at the rear. Useful for EMS applications.

### 4. Dual Remote Control Heads x Multi RF Decks



- This adds the convenience of a dual control head to the multi RF decks (3 max.) configuration. Two operators can control 2 radios (e.g. VHF and UHF) from separate control heads. Best suited for battalion chiefs.

## SD CARD SLOT



- For storing voice and data, memory capacity can be increased by up to a huge 32 GB.
- Purchase a card separately.

## **SENSORS FOR USER SAFETY**



Life-critical detection is built-in. When unusual behavior is detected by the acceleration and tilt sensors, one of three Emergency Modes – Man-down Detection, Stationary Detection, and Motion Detection – will be automatically engaged.

In addition to the built-in motion sensor, these portables feature a Lone Worker function that automatically places the radio in Emergency Mode if it is not operated for a certain period of time. Also the bright orange Emergency Button is located at the top (portables) or front(mobiles) of the radio for high visibility and instant access when needed.

## **NX-5200/5300/5400**

- NEXEDGE VHF/UHF/700-800MHz
- MULTI-PROTOCOL DIGITAL & ANALOG PORTABLE RADIOS



Choose between two portable configurations – one without a numeric keypad and the other with numeric keypad (16-key model).

## GENERAL FEATURES

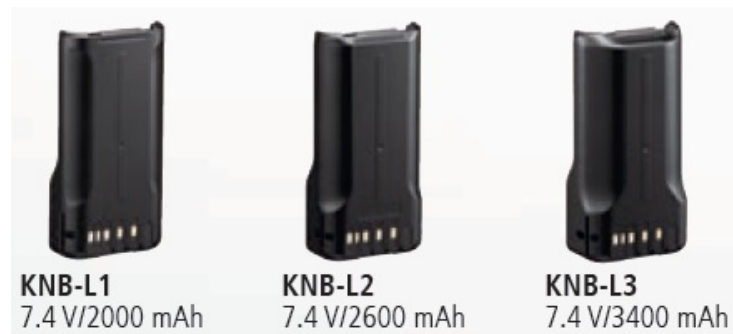
- Multi-Digital + FM Analog Operation
  - Gen2 & NXDN Conventional/ Type-C Trunking Protocol
  - DMR Tier II Conventional
  - P25 Conventional Trunking (Phase 1/Phase 2) Protocol
  - FM Analog Conventional & LTR Zones
- Large, Color 1.74" (240 x 180 pixel) Transflective TFT Display
- Easy-to-follow GUI and Multi-line Text Display
- 1,000 mW Speaker Audio (@8 Ω, 5 % distortion)
- 4-way Directional-pad (D-pad) and 2-Position Lever Switch for intuitive control and operation
- 6 Front & 2 Side PF keys
- 12-Key Keypad Models Available
- Emergency / AUX Key
- FleetSync®/II, MDC-1200, QT/DQT, 2-Tone (Analog mode)
- Maximum of 4,000 CH/Radio capacity, 512 CH/Zone, 128 Zones
- Frequency Range
  - **VHF:** 136-174 MHz (NX-5200)
  - **UHF:** 450-520 MHz, 380-470 MHz, (NX-5300)



- 700-800 MHz:
- **RX:** 763-776, 851-870 MHz
- **TX:** 763-776, 793-806,
- 806-825, 851-870 MHz (NX-5400)
- RF Output
  - **VHF:** 6-1 W (NX-5200)
  - **UHF:** 5-1 W (NX-5300)
  - **700-800MHz:** 3-1 W (NX-5400)

## OPTIONAL ACCESSORIES

- KNB-L1/L2/L3



- Li-ion BATTERY PACK (IP67/68 immersion)

- KNB-N4



- Ni-MH BATTERY PACK (7.2V/2500 mAh)

- KSC-Y32



- RAPID CHARGER

- KSC-32/32S



- RAPID CHARGER

- KSC-326/326S



- MULTIPLE CHARGER (6-unit Rapid Rate)

- KBP-8



- BATTERY CASE

- (12 AA Alkaline Batteries not included)

- KAS-12/12PRO

- BATTERY READER/PRO (PC Software)

- KWD-AE30/AE31

- SECURE CRYPTOGRAPHIC MODULE

- KPG-180AP

- TAP MANAGER (PC Software)



- KRA-22
  - VHF HELICAL ANTENNA (Low Profile)
- KRA-23
  - UHF HELICAL ANTENNA (Low Profile)
- KRA-26
  - VHF HELICAL ANTENNA (Standard Length)
- KRA-27
  - UHF WHIP ANTENNA (Standard Length)
- KRA-32
  - 700/800 MHz WHIP ANTENNA
- KRA-41
  - VHF STUBBY ANTENNA
- KRA-42
  - UHF STUBBY ANTENNA
- KMC-41D



- SPEAKER

- MICROPHONE (IP54/55)
- KMC-54WD



- SPEAKER MICROPHONE
  - 2-mic digital noise cancelling via the radio's DSP
  - 3.5mm-diameter earphone jack
  - Complies with MIL-STD 810C/D/E/F/G
  - IP65/67 Dust & Water\*
- The earphone jack cap must be closed tightly
- KBH-11



- BELT CLIP

Intrinsically Safe Batteries are also available. Contact your local KENWOOD dealer for details.

## **NX-5700/5800/5900**

- NEXEDGE VHF/UHF/700-800MHz
- MULTI-PROTOCOL DIGITAL & ANALOG MOBILE RADIOS

## **GENERAL FEATURES**

- Multi-Digital + FM Analog Operation
  - Gen2 & NXDN Conventional/Type-C Trunking Protocol
  - DMR Tier II Conventional
  - P25 Conventional/Trunking (Phase 1/Phase 2)
  - FM Analog Conventional & LTR Zones
- Large, Color 2.55" (154 x 422 pixel) TFT Display
- Easy-to-follow GUI and Multi-line Text Display
- **Speaker Audio:** 4 W/4  $\Omega$ ; 3 W/4  $\Omega$  for the Remote Control Head
- 6 Front PF keys & 4 Up / Down Selectors
- Emergency Button
- FleetSync®/II, MDC-1200, QT/DQT, 2-Tone (Analog mode)
- Maximum of 4,000 CH/Radio capacity, 512 CH/Zone, 128 Zones
- Frequency Range



- **VHF:** 136-174 MHz (NX-5700/5700B)
- **UHF:** 450-520 MHz, 380-470 MHz (NX-5800/5800B)
- 700-800 MHz:
- **RX:** 763-776, 851-870 MHz
- **TX:** 763-776, 793-806, 806-825, 851-870 MHz (NX-5900/5900B)
- RF Output
  - **VHF:** 50-5 W (NX-5700/5700B)
  - **UHF:** 45-5 W (NX-5800/5800B)
  - **700 MHz:** 30-2 W (NX-5900/5900B)
  - **800 MHz:** 35-2 W (NX-5900/5900B)

## OPTIONAL ACCESSORIES



- NX-5700B/5800B/5900B
  - RF DECK
- KCH-19
  - BASIC CONTROL
  - HEAD KIT
- KCH-20R

- FEATURED CONTROL
- HEAD
- KRK-14H
  - CONTROL HEAD
  - INTERFACE KIT (Adapter for the Head)
- KRK-15B
  - CONTROL HEAD REMOTE KIT
  - (Adapter for the RF Deck)
- KCT-71
  - REMOTE CONTROL CABLE
  - (Available in 3 lengths of 5.2 m, 7.6 m, 0.5 m)



- KCT-73MIC
  - EXTERNAL MIC KIT
  - (Cable length: 3m)
- KCT-72
  - CONNECTION CABLE
- KWD-AE30/AE31
  - SECURE CRYPTOGRAPHIC MODULE
- KPG-180AP
  - OTAP MANAGER (PC Software)



- KMC-35
  - MICROPHONE
- KMC-36
  - KEYPAD MICROPHONE
- KES-3
  - EXTERNAL SPEAKER
  - (Compact low profile; 3.5 mm plug)
- KES-5
  - EXTERNAL SPEAKER
  - (40 W max input, Requires KAP-2)



- KCT-23
  - DC POWER CABLE
  - **M:** 10 ft (3 m) / M3: 23 ft (7 m)
- KCT-46
  - IGNITION SENSE CABLE
- KLF-2
  - LINE FILTER
- KMB-10
  - KEY LOCK ADAPTER
- KAP-2
  - HORN ALERT/P.A. RELAY UNIT
- KRA-40G
  - GPS ACTIVE ANTENNA
- KPS-15
  - DC POWER SUPPLY (23 A max)
- KPS-16
  - DC POWER SUPPLY



1. Combination of DC Power Supply KPS-16 and Desktop Microphone KMC-53 for the mobile radio. Suitable for applications such as taxi dispatching systems, etc.

2.



All accessories and options may not be available in all markets. Contact an authorized KENWOOD dealer for details and a complete list of all accessories and options.



## SPECIFICATIONS

		Portable Radios			Mobile Radios	
GENERAL	NX-5200	NX-5300	NX-5400	NX-5700	NX-5800	NX-5900
Frequency Range	136-174 MHz	Type 1: 45 0-520 MHz Type 2: 38 0-470 MHz	RX: 763-776, 851-870 MHz TX: 763-776, 793-806, 806-825, 851-870 MHz	136-174 MHz	Type 1: 45 0-520 MHz Type 2: 38 0-470 MHz	RX: 763-776, 851-870 MHz TX: 763-776, 793-806, 806-825, 851-870 MHz

Max. Channels Per Radio		1024 (Up to 4000 channels with option)					
Number of Zones		128					
Max. Channels Per Zone		512					
Channel Spacing	Analog	12.5/15/20 /25*/30* k Hz	12.5/25* k Hz	12.5/25 kHz z	12.5/15/20 /25/30 kHz	12.5/25 kHz z	12.5/25 kHz z
	Digital	6.25/12.5 kHz	6.25/12.5 kHz	12.5 kHz ( 6.25 kHz)	6.25/12.5 kHz		
Power Supply		7.5 V DC ±20 %			13.6 V DC ±15 %		
Current Drain	Standby	—			0.45 A		
	RX				2.3 A		
	TX				13 A		
Battery Life	KNB-L1 (2,000 mAh)	10 hours / 6.5 hours			—		
(5-5-90/10-10 -80 duty cycle )	KNB-L2 (2,600 mAh)	12.5 hours / 8.5 hours					
	KNB-L3 (3,400 mAh)	17 hours / 11 hours					
	KNB-N4 (2,500 mAh)	12 hours / 8.5 hours					
	KBP-8 (w/AA x 12)	High Power: Approx. 11 hours / 8 hours,  Low Power: Approx. 26 hours / 18 hours					
Operating Temperature		-22° F to +140 °F (-30 °C to +60 °C)					
Frequency Stability		±2.0 ppm	±1.0 ppm	±1.5 ppm	±1.0 ppm		

Dimensions (W x H x D)	Radio w / Control Head (KCH-19)	—			6.69 x 1.89 x 6.93 in (170.0 x 48.0 x 176.0 mm)		6.73 x 1.89 x 7.72 in (171.0 x 48.0 x 196 mm)
Dimensions (W x H x D) Radio w/ Battery, Projections Not Included	KNB-L1 (2,000 mAh)	2.28 x 5.47 x 1.44 in (58.0 x 138.9 x 36.5 mm)			—		
	KNB-L2 (2,600 mAh)	2.28 x 5.47 x 1.56 in (58.0 x 138.9 x 39.5 mm)			—		
	KNB-L3 (3,400 mAh)	2.28 x 5.47 x 1.77 in (58.0 x 138.9 x 44.9 mm)			—		
	KNB-N4 (2,500 mAh)	2.28 x 6.55 x 1.78 in (58.0 x 166.4 x 45.2 mm)			—		
	KBP-8 (w/AA x 12)	2.64 x 8.59 x 2.12 in (67.0 x 218.3 x 53.9 mm)			—		
Weight (Net)	Radio w / Control Head (KCH-19)	—			3.53 lbs (1.6 kg)		
Weight (Net) Radio w/ Battery	KNB-L1 (2,000 mAh)	13.5 oz (382 g)			—		
	KNB-L2 (2,600 mAh)	14.3 oz (406 g)			—		
	KNB-L3 (3,400 mAh)	15.8 oz (449 g)			—		
	KNB-N4 (2,500 mAh)	20.4 oz (579 g)			—		
	KBP-8 (w/AA x 12)	25.1 oz (712 g)			—		
FCC ID	Type 1	K44431400	K44431500	ALH442000	K44471100	K44471200	K44478500
	Type 2	—	K44431501	—	—	K44471201	—

IC Certification	Type 1	282F-431400	—	282D-442000	282F-471100	—	282F-478500
	Type 2	—	282F-431501	—	—	282F-471201	—
RECEIVER		NX-5200	NX-5300	NX-5400	NX-5700	NX-5800	NX-5900
Sensitivity	NXDN 6.25 kHz Digital (3 % BER)	0.20 μV					
	NXDN 12.5 kHz Digital (3 % BER)	0.25 μV					
	DMR Digital (5 % BER)	0.25 μV					
	DMR Digital (1 % BER)	0.40 μV					
	P25 Digital (5 % BER)	0.25 μV					
	P25 Digital (1 % BER)	0.40 μV					
	Analog (12 dB SINAD)	0.25 μV					
Selectivity	Analog @ 12.5 kHz	67 dB		64 dB	71 dB		70 dB
	Analog @ 25 kHz	73 dB			81 dB		78 dB
Intermodulation		73 dB	75 dB		80 dB		
Spurious Rejection		80 dB	75 dB		85 dB		
Audio Distortion		3 %			2 %		
Audio Output Power		500 mW/8 Ω (3 % Distortion) / 1,000 mW /8 Ω (5 % Distortion)			4 W/4 Ω (Remote Control Head: 3 W/4 Ω)		



TRANSMITTER		NX-5200	NX-5300	NX-5400	NX-5700	NX-5800	NX-5900
RF Power Output Power		6 to 1 W	5 to 1 W	3 to 1 W	50 to 5 W	45 to 5 W	30 to 2 W ( 700 MHz) 35 to 2 W ( 800 MHz)
Spurious Emission		-70 dB			-73 dB	-75 dB	-80 dB
FM Hum & Noise	Analog @ 12.5 kHz	40 dB			45 dB		40 dB
	Analog @ 25 kHz	45 dB			50 dB		45 dB
Audio Distortion		2 %					
Emission Designator		16K0F3E, 14K0F3E*, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W, 8K30F1E, 8K30F1D, 8K30F7W,  7K60FXE, 7K60FXD, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D			16K0F3E, 14K0F3E*, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W, 8K30F1E, 8K30F1D, 8K30F7W,  7K60FXE, 7K60FXD, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D		

- 25 and 30 kHz are not included in the models sold in the USA or US territories.
- 800MHz band only for NX-5400 and NX-5900.

P25 Digital measurements made per TIA 102CAAA, analog measurements made per EN Standards or TIA 603 and specifications shown are typical. Specifications are subject change without notice, due to advancements in technology.

## APPLICABLE MIL-STD & IP

MIL Standard	810C Methods/ Procedures	810D Methods/ Procedures	810E Methods/ Procedures	810F Methods/ Procedures	810G Methods/ Procedures
Low Pressure	500.1/ I	500.2/ I, II	500.3/ I, II	500.4/ I, II	500.5/ I, II
High Temperature	501.1/ I, II	501.2/ I, II	501.3/ I, II	501.4/ I, II	501.5/ I, II
Low Temperature	502.1/ I	502.2/ I, II	502.3/ I, II	502.4/ I, II	502.5/ I, II
Temp. Shock	503.1/ I	503.2/ I	503.3/ I	503.4/ I, II	503.5/ I
Solar Radiation	505.1/ I	505.2/ I	505.3/ I	505.4/ I	505.5/ I
Rain	506.1/ I, II	506.2/ I, II	506.3/ I, II	506.4/ I, III	506.5/ I, III
Humidity	507.1/ I, II	507.2/ II, III	507.3/ II, III	507.4	507.5/ II
Salt Fog	509.1/ I	509.2/ I	509.3/ I	509.4	509.5
Dust	510.1/ I	510.2/ I	510.3/ I	510.4/ I, III	510.5/ I
Vibration	514.2/ VIII, X	514.3/ I	514.4/ I	514.5/ I	514.6/ I
Shock	516.2/ I, II, V	516.3/ I, IV, V*1	516.4/ I, IV, V*1	516.5/ I, IV, V*1	516.6/ I, IV, V*1
Immersion*2	—	—	—	512.4/I	512.5/I
<b>International Protection Standard</b>					
Dust & Water	IP54, IP55*3				
Immersion*2	IP67, IP68*4				

1. Shock (Crash Hazard) standard for 810D/E/F/G Method/Procedure V applies only for the mobile radios
2. Immersion standard applies only for the portable radios
3. **IP54:** RF Deck of the mobile radio; IP55: Remote Control Head for the mobile radio
4. **Conditions:** Portable radio immersed for 2 hours at a depth of 1 meter

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## Documents / Resources

The image shows the cover of a Kenwood user manual. It features a black and white photograph of a Kenwood NX-5000 Series Three Digital Protocol radio. The text on the cover includes 'KENWOOD', 'NX-5000 Series', 'American Communication Systems', and 'NX-5000 Series Three Digital Protocols for Enterprise'. The Kenwood logo is also visible.	<p><b><a href="#">KENWOOD NX-5000 Series Three Digital Protocols for Enterprise</a></b> [pdf] User Manual NX-5000, NX-5000 Series Three Digital Protocols for Enterprise, Series Three Digital Protocols for Enterprise, Three Digital Protocols for Enterprise, Protocols for Enterprise, for Enterprise, E nterprise</p>
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