

KENWOOD

NX-3000 SERIES

NEXEDGE® VHF/UHF/800-900 MHz
MULTI-PROTOCOL DIGITAL & ANALOG RADIOS



NEXEDGE® **NXDN™**

DMR

Gen2

KENWOOD 2.5

FleetSync®

Bluetooth®

GPS

TWO-WAY RADIOS FOR EVERY PROFESSION

The NX-3000 Series

From enterprise- to operation-critical applications, the NX-3000 Series will shine in a range of different business categories. In addition to the great convenience afforded by a host of powerful features, optional software upgrades facilitate after-purchase enhancements to create a radio that perfectly matches specific customer requirements. And thanks to the NX-3000's support for multiple protocols, it can be seamlessly integrated into an existing system, where it will instantly become an indispensable communications asset.





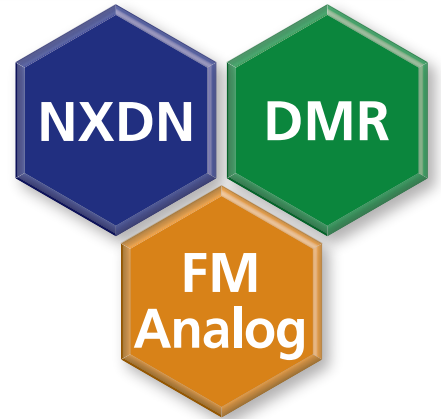
Multi-Protocol for Today's Demanding Industries.

The KENWOOD NX-3000 Series makes it possible to easily upgrade to digital. Select your preferred digital protocol from NXDN or DMR, or choose FM analog until you are ready for digital migration. With the NX-3000 Series, you benefit from world renowned KENWOOD audio, enhanced with Active Noise Reduction (ANR), using optimized DSP for best-in-class audio clarity, assuring clear, crisp voice in high noise environments, and enhanced digital coverage. Innovative features include a user programmable 7-color light bar indicator, built-in GPS and Bluetooth and a suite of remote worker functions.

NX-3000 SERIES FEATURES

ONE-RADIO, MULTI-PROTOCOL SUPPORT

The NX-3000 Series - This versatile handheld radio supports both NXDN™ and DMR digital protocols as well as mixed digital & FM analog operation, enabling it to serve with distinction in a wide range of enterprise and operation-critical applications. Compact yet designed with durability in mind, it's packed with convenient features like Bluetooth® for hands-free operation and built-in GPS. Three different models with 14-pin Universal connector are available: Full Keypad model with LCD, Standard Keypad model with LCD and a large 4-way D-pad, and the Basic Model without LCD or keypad. Additionally, for expansion capability a software license certification system facilitates extensive customization.



Customize at Will

The NX-3000 Series offers future-proof flexibility with support for both NXDN and DMR digital protocols as well as FM analog – all in a single radio. The desired digital protocol may be selected, giving you the freedom to migrate to digital or expand your digital environment.

NXDN Digital Protocol (Conventional & Trunking)

NXDN supports both channel bandwidths of 12.5 kHz and 6.25 kHz bandwidth using FDMA technology. NXDN provides excellent spectrum efficiency, wide coverage and scalability. NXDN Type-C Trunking and Gen2 Trunking offer flexibility and performance, including the ability to link to more than 1,000 sites.

DMR Digital Protocol (Conventional & Trunking)

DMR is a great choice for a simple, cost-effective system where capacity is required. Thanks to 2-slot TDMA, DMR offers two talk paths within a 12.5 kHz bandwidth, effectively doubling the capacity for a single license and/or repeater. The NX-3000 Series supports both DMR Tier II (Conventional) and Tier III (Trunking) operation, as well as DMR-based Trunking 2.5, a flexible trunking solution from KENWOOD designed for the use of shared frequencies.

FM Analog

FM analog protocol is offered in 25 kHz*¹ and narrow 12.5 kHz channel bandwidth.

CLEAR AND CONFIDENT

Active Noise Reduction (ANR)

KENWOOD's ANR can discriminate between voice and noise, making full use of DSP to eliminate ambient noise so that the caller appears to be talking in a noiseless environment. Even more advanced digital noise reduction is offered in KENWOOD microphones, such as the optional Speaker Microphone KMC-70 with its dual-mic system designed to work with portable models featuring the 14-pin Universal Connector.

Audio Optimization

Audio processing may be customized by the adjustment of the TX/RX audio equalizer, auto gain control, and the audio profile using ANR. Noise reduction can be set to switch off automatically when the background noise level is sufficiently low that it doesn't impact communications; this Low Noise Level Adjustment function ensures there will be no deterioration in audio quality in these situations.

Auto Recording

When receiving a call there is a chance you could miss a name, number or other key information. In such cases, Auto Recording is handy as it records and plays back past conversations.

Voice Prompts

Voice announcement will keep you informed of a newly selected zone/channel, function and when a PF button is pressed, as well as reception status. Announcements are made in any one of 11 languages, configured in the subscriber unit. Among several user-programmable functions is the ability to prerecord any phrase and add it to the built-in Voice Announcement Library for guidance. Voice guidance includes zone/channel name, button function on/off status, transceiver status, and other phrases registered with the status list.

BUILT-IN BLUETOOTH®

Bluetooth is a means of wireless transfer of audio and data between two Bluetooth-compatible devices. The NX-3000 supports Bluetooth Headset Profile (HSP), which can be used to pair the radio and a Bluetooth-compatible headset to initiate a voice call. The radio is also compatible with Bluetooth Serial Port Profile (SPP) to enable communication with peripheral devices for various applications.



GPS

GPS TO TRANSMIT YOUR POSITION

Thanks to integrated GPS receiver/antenna, the current location of the radio can be sent to a mapping solution or dispatch system. Positional data enables effective management when used with applications like KAS-20 AVL & Dispatch Software. GPS data acquired at set time intervals can be stored in the radio's memory.

TEXT MESSAGING

The NX-3000 Series is capable of sending/receiving text messages when using either digital protocol. These can be simple canned status messages (confirming receipt, etc.) or short text messages (ideal for relaying addresses and phone numbers). Advanced digital functions such as Task Request are also supported to streamline field coordination.

OVER-THE-AIR PROGRAMMING (OTAP) & ALIAS (OAA)

OTAP allows remote management writing of configuration data to subscriber units in NXDN mode using wireless communications, which is updated remotely from a base station. This convenient function can be performed by installing OTAP Manager Software KPG-180AP to a PC, which transfers the configuration to the base station transceiver to distribute the data. OAA is another convenient feature available in NXDN Conventional and trunking systems that displays the caller ID on the radio display even if the ID is not configured for display. This feature is particularly useful when roaming, as it allows temporary subscriber units from the active system to be displayed without prior configuration.

ENCRYPTION EQUIPPED



DES

AES

Hearing clearly is essential. But you don't want your conversation to be heard by others. KENWOOD offers optional 56-bit DES encryption, advanced 256-bit AES encryption^{*2} for both digital protocols, and 40-bit ARC4 encryption for DMR.

*2 Availability of AES encryption may vary depending on the region.

DETECTING STATUS OF REMOTE WORKERS

When you have staff working alone or in remote locations, it can be very important to know how they are doing. NX-3000 Series features a set of functions that help to protect the worker's safety.

- **Emergency Button:** The Prominent orange button on the portable radios can be used by a worker to signal an emergency. This function can be assigned to other buttons, including the speaker microphone's PF button for portables, and the AUX button for both portables and mobiles.
- **Lone Worker:** If a radio is set to Lone Worker mode and not operated for a set period of time, a 2-beep tone is emitted to alert the user. If the user does not respond, then it automatically triggers Emergency Mode to notify the base station.
- **Activity Detection:** Three functions will trigger Emergency Mode: Man-down Detection, when the radio tilts to one side; Stationary Detection, when the radio is left stationary for a length of time; and Motion Detection, which detects abnormal movement for a prolonged period.



TOUGH & ROBUST

All KENWOOD radios go through stringent tests including drop, immersion, splash, key punch, extreme temperature, dust, and heavy rain to simulate the harshest operating conditions experienced in a variety of applications. The portable radios also meet the international ingress protection standards, including IP54, IP55, and IP67. The mobile radios feature IP54 protection. Also, all radios meet the MIL-STD 810 C to G standards set by the U.S. Department of Defense.^{*3}



MIL-810

IPX8

IPX5









*3 Accessory connectors must be covered.

NX-3000 SERIES FEATURES

CONVENTIONAL AND TRUNKING SYSTEMS COMPATIBILITY

Designed to Go with All Sizes and Shapes

Operation within a digital protocol extends your channel capacity. The NX-3000 radios are designed to fit in different systems, from shopping mall or hospitality setting using conventional digital system in NXDN or DMR, to wider multi-site trunking systems using IP networking such as NXDN Type-C, Gen2, or DMR Tier III that extend across a campus or plant, even as wide as state/province or nationwide.

Conventional Single-site	Conventional IP Network	High Capacity DMR-Based Trunking	Wide Area Trunking
NXDN/DMR Digital Conventional	NXDN/DMR Digital Conventional IP Site Roaming	Trunking 2.5	DMR Tier III / NXDN Gen 2
Cost & capacity baseline	Cost effective coverage	More capacity	Most capacity, coverage, and control
			
			
No trunking	No trunking	Centralized controlled trunking	Centralized control with server-based architecture
Single site	Up to 16 (unicast) or 48 (multicast) sites	Single site	Up to 1,152 sites

▼ NX-3200/3300/3400/3220/3320/3420

NEXEDGE VHF/UHF/800-900MHz MULTI-PROTOCOL DIGITAL & ANALOG PORTABLE RADIOS

Portable Radios

NX-3000 Series portables are available in three configurations, each of which is available with a choice of two different connectors.

NX-3220 (VHF)/NX-3320 (UHF)/NX-3420 (8&900), 2-pin connector

NX-3200 (VHF)/NX-3300 (UHF)/NX-3400 (8&900), 14-pin Universal connector

SMA Antenna Connector:

Different antennas can be attached.



Full Keypad

Standard Keypad

Basic



2-pin Connector (left) and 14-pin Universal Connector (right) Models



7-color Light Bar Indicator:

Each channel can be assigned a different color from the seven available.

Multi-line LCD with white backlighting:

The channel name, status, and text message appear on the LCD display.

▼ NX-3720HG/3820HG/3920G/3921G

NEXEDGE VHF/UHF/800-900MHz MULTI-PROTOCOL DIGITAL & ANALOG
MOBILE RADIOS

Mobile Radios

Mobile radios come in with 50W high power, built-in GPS, and Bluetooth.

7-color LED Indicator

Multi-line Full Dot Matrix LCD with white backlighting:
The channel name, status, and text message appear on the LCD display.



8-pin microphone jack

Programmable function keys with backlighting

OPTIONAL ACCESSORIES

PORTABLES

■ KNB-55L/57L/78L

Li-ion Battery Pack
(7.4 V/1480 mAh,
7.4 V/2000 mAh,
7.4 V/2860 mAh,



■ KNB-56N

Ni-MH Battery Pack
(7.2 V/1400 mAh)



■ KNB-79LCM

Li-Ion CSA US
Intrinsically Safe Battery
(7.2 V/1400 mAh)



■ KBP-5

Battery Case (6 AA)



■ KSC-25LSK/25SK

Rapid Charger
(Li-ion Only/Tri-Chem)



■ KSC-526K

Multiple Charger
(6-pocket)



■ KMB-526K

Mounting Bracket
(for KSC-526K)



■ KVC-23

Vehicular Charger



■ KRA-22/23

VHF/UHF Helical Antenna
(Low Profile)



■ KRA-26

VHF Helical Antenna
(Standard Length)



■ KRA-27

UHF Whip Antenna
(Standard Length)



■ KRA-25

High Gain (Whip)
Antenna



■ KRA-28

Broadband VHF (Whip)
Antenna



For 2-pin connector portables

■ KMC-45D

Speaker Microphone (IP54/55)



■ KEP-2

Earphone Kit (3.5mm) FOR
KMC-45D Speaker Microphone



■ KHS-7C

Headset (Single Muff)



■ KHS-7AC

Headset (Single Muff & In-line PTT)



■ KHS-10DC-BH

Headset (Heavy Duty)



■ KHS-22A

Headset (Behind-the-Head)



■ KHS-8BL

Palm Microphone with Earphone
(2-wire)



■ KHS-9BL

Palm Microphone with Earphone
(3-wire)



■ KHS-26/31C

Headset (with Ear Bud In-line PTT /
with D-Ring In-line PTT / with C-Ring)



■ KHS-27A

D-Ring In-line PTT Headset



For Universal connector portables

■ KMC-72W

Noise-cancelling Speaker Microphone
(IP54/55/67)



■ KMC-70M

Speaker Microphone with Active
Noise Reduction (IP54/55/67)



■ KEP-1

Earphone Kit (2.5mm) for KMC-41D
OR KMC-54WD Speaker Microphone



■ KBH-11

Belt Clip (2.5 in)



■ KLH-207

Nylon Case



■ KLH-206

Leather Case

■ KPG-180AP

OTAP Manager

■ KAS-20

AVL & Dispatch Software

MOBILES

■ KMC-9C/59C

Deaktap Microphone



■ KMC-65M/66M

IP54/55 Microphone
(without/with 12-keypad)



■ KES-8K

External Speaker
(compact low profile; 3.5 mm plug)



■ KES-5A

External Speaker
(requires KCT-60 option)



■ KCT-23

DC Power Cable



■ KCT-60

Connection Cable
(D-sub 15 to Molex 15 Pin Connector)



■ KCT-18

Ignition Sense Cable
(requires KCT-60)



■ KLF-2

Line Filter



■ KMB-10

Key Lock Adapter



■ KRA-40G

GPS Active Antenna



■ KMB-34

Mounting Case for KPS-15
and Mobile Radios



SPECIFICATIONS

GENERAL	Portables			Mobiles			
	NX-3200/NX-3220	NX-3300/NX-3320	NX-3400/NX-3420	NX-3720HG	NX-3820HG	NX-3920G	NX-3921G
Frequency Range	136-174 MHz	400 - 520 MHz	TX/RX: 851-870, 935-941 MHz TX:806-825, 896-902 MHz	136-174 MHz	Type 1: 450 - 520 MHz Type 2: 400 - 470 MHz	TX/RX: 851-870 MHz TX:806-825 MHz	TX/RX: 935-941 MHz TX: 896-902 MHz
Max. Channels per Radio	Up to 1000 channels with option			Up to 1000 channels with option			
Number of Channels	Universal Connector: 512 (64 for no LCD models) 2pin Connector: 260 (64 for no LCD models)			512			
Number of Zones	128 (4 for no LCD models)			128			
Channel Spacing	Analog	12.5/15/25/30 [*] kHz	12.5/25 [*] kHz	12.5/15/25/30 [*] kHz	12.5/25 [*] kHz	12.5/25 kHz	12.5 kHz
	Digital	6.25/12.5 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	—		12 A			
Battery Life 5-5-90	(FDMA Conventional / Trunking, TDMA Conventional / Trunking)			—			
	With KNB-55L (1,480 mAh)	8.5 / 6.5 hours, 12.5 / 9 hours	9 / 7 hours, 12 / 9 hours	—			
	With KNB-56N (1,400 mAh)	7.5 / 6 hours, 11 / 8 hours	8 / 6 hours, 10.5 / 8 hours	—			
	With KNB-57L (2,000 mAh)	12.0 / 9.5 hours, 17.5 / 13 hours	13 / 10 hours, 17 / 13 hours	—			
	KNB-78L (2,860 mAh)	17.5 / 13.5 hours, 25 / 18.5 hours	18.5 / 14 hours, 24 / 18.5 hours	—			
	KNB-79LC (2,860 mAh)	15 / 11.5 hours, 21.5 / 16 hours	15.5 / 12 hours, 20.5 / 16 hours	—			
	Operating Temperature	-22°F to +140°F (-30°C to +60°C)		-22°F to +140°F (-30°C to +60°C)			
Frequency Stability	±0.5 ppm (-30°C to +60°C; +25°C Ref.)			±0.5 ppm (-30°C to +60°C; +25°C Ref.)			
Antenna Impedance	—			50 Ω			
Dimensions (W x H x D)	Radio only	2.20 x 4.71 x 1.43 in (56 x 119.6 x 36.4 mm)		6.30 x 1.69 x 6.30 in (160 x 43 x 160 mm)			
Projections not included	With KNB-55L	2.20 x 4.71 x 1.43 in (56 x 119.6 x 36.4 mm)		—			
	With KNB-56N	2.20 x 4.71 x 1.68 in (56 x 119.6 x 42.7 mm)		—			
	With KNB-57L	2.20 x 4.71 x 1.53 in (56 x 119.6 x 39.0 mm)		—			
	With KNB-78L, KNB-79LC	2.20 x 4.71 x 1.77 in (56 x 119.6 x 44.9 mm)		—			
Weight (net)	Radio only	7.8 oz (220 g)		2.65 lb (1.2 kg)			
	With KNB-55L	11.1 oz (315 g)		—			
	With KNB-56N	14.5 oz (410 g)		—			
	With KNB-57L	12.0 oz (340 g)		—			
	With KNB-78L / KNB-79LC	13.6 oz (385 g) / 13.9 oz (395 g)		—			
FCC ID	K44479000	K44479100	K44502500	K44479200	Type 1: K44479300 Type 2: K44479301	K44502600	K44502601
IC Certification	282F-479000	282F-479100	282F-502500	282F-479200	Type 1: — Type 2: 282F-479301	282F-502600	282F-502601
RECEIVER	NX-3200/NX-3220	NX-3300/NX-3320	NX-3400/NX-3420	NX-3720HG	NX-3820HG	NX-3920G	NX-3921G
Sensitivity	NXDN 6.25 kHz Digital, 3 % BER	0.20 μV		0.20 μV			
	NXDN 12.5 kHz Digital, 3 % BER	0.25 μV		0.25 μV			
	DMR 12.5 kHz Digital, 5 % BER	0.30 μV		0.30 μV			
	DMR 12.5 kHz Digital, 1 % BER	0.45 μV		0.45 μV			
	Analog 12 dB SINAD	0.25 μV		0.25 μV			
Selectivity	Analog @ 12.5 kHz / 25kHz	65 dB / 72 dB	60 dB / 70 dB	70 dB / 80 dB		60 dB / 70 dB	
Intermodulation	70 dB			70 dB			
Spurious Rejection	70 dB			80 dB			
Audio Distortion	3%			2%			
Audio Output	500 mW/8Ω (3% Distortion) / 1,000 mW/8Ω (5% Distortion)			4 W/4 Ω			
TRANSMITTER	NX-3200/NX-3220	NX-3300/NX-3320	NX-3400/NX-3420	NX-3720HG	NX-3820HG	NX-3920G	NX-3921G
RF Power Output	5 W/4 W/1 W		3 W/1 W	50 W/30 W/5 W	45 W/30 W/5 W	15 W/5 W	
Spurious Emission	-70 dB			-73 dB	-75 dB	-70 dB	
FM Hum & Noise	Analog @ 12.5 kHz / 25kHz	40 dB / 45 dB		40 dB / 45 dB			
Audio Distortion	3%			2%			
Digital Protocol	ETSI TS 102 361-1, -2, -3			ETSI TS 102 361-1, -2, -3, -4			
Emission Designator	16K0F3E*, 14K0F3E**, 11K0F3E, 8K30F1E, 8K30F1D, 8K30F7W, 7K60FXD, 7K60FXW, 7K60FXE, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D			16K0F3E*, 14K0F3E**, 11K0F3E, 8K30F1E, 8K30F1D, 8K30F7W, 7K60FXD, 7K60FXW, 7K60FXE, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D			

*25/30 kHz in VHF/UHF Bands (except T-Band) are not included in the models sold in the USA or US territories.
**800MHz band only

Analogue measurements made per TIA603. Specifications are measured according to applicable standards. Battery Life is measured by Battery Save ON, GPS/Bluetooth OFF, 4 W for VHF/UHF and 3 W for 800/900MHz Bands. Specifications shown are typical and subject to change without notice, due to advancements in technology.

APPLICABLE MIL-STD/IP

MIL Standard	Methods / Procedures				
	810C	810D	810E	810F	810G
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 ^{1,2}	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	Portables	516.2/I, II, V	516.3/I, IV	516.4/I, IV	516.5/I, IV
	Mobiles	516.2/I, II, V	516.3/I, IV, V	516.4/I, IV, V	516.5/I, IV, V
International Protection Standards					
Dust & Water	Portables ¹	IP54, IP55, IP67			
	Mobiles ²	IP54 (Radio unit itself)			

¹ Audio accessory connector must be covered. ² Microphone KMC-65M or KMC-66M must be connected to the radio, and all accessory connectors must be covered.

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