KENWOOD

NEXEDGE®

Two-Way Radio for Every Profession

Gen2

NXDN® **DMR**

Bluetooth® **GPS** **FleetSync**®

The **NX-3000**
Series

Multi-Protocol For Today's Demanding Industries

NXDN® **DMR**

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 — Answering the Needs of Every Profession

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.

Model Lineup

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

Full Keypad

Standard Keypad

Basic

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

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

SMA Antenna Connector: Different antennas can be attached.
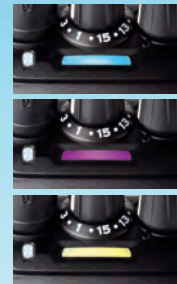
7-color Light Bar Indicator: Each channel can be assigned a different color from the seven available.

Mobile Radios

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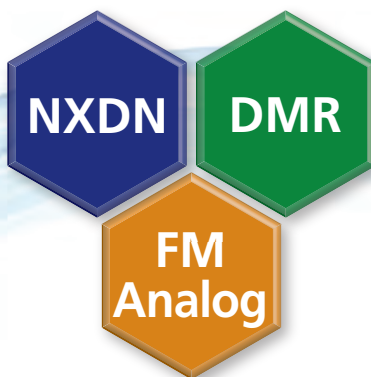
7-color LED Indicator

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

One Radio - Multi-Protocol

NXDN **DMR**

FM Analog

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 2 talk paths within 12.5 kHz bandwidth, effectively doubling the capacity for a single license and/or repeater.

FM Analog
FM analog protocol is offered in 25 kHz[*1] and narrow 12.5 kHz channel spacing. Conventional and LTR systems are available, with QT/DQT, DTMF, 2-tone, MDC-1200, and FleetSync® signaling.

*1 Some limitations apply in certain regions when configuring wide channel spacing.

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-54WD 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.

Location - Hands-free

Integrated GPS for Location Management
Thanks to integrated GPS receiver/antenna, the current location of the radio can be sent to a recipient. 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.

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.

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). FM analog can also be used.

Over-the-Air Programming (OTAP) and Over-the-Air Alias (OAA)
OTAP allows simultaneous writing of configuration data to subscriber units in NXDN mode using wireless communications, which is updated remotely from a base station. Exclusive to NXDN, 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 especially handy when you are roaming and new subscriber units from the system in service are temporarily added.

Secure Radio - Safe Staff

Maintaining Confidentiality
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.

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]
*3 Accessory connectors must be covered.

Detecting the 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.

Conventional and Trunking Systems Compatible with the NX-3000 Series

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 and Gen2 that extend across a campus or plant, even as wide as state/province or nationwide.

Conventional	Conventional IP Network	Multi-site Trunking (NXDN Type-C)	Enhanced Multi-site Trunking (NXDN Gen2)
NXDN/DMR Digital Conventional	NXDN/DMR Digital Conventional IP Site Roaming	NXDN Type-C Trunking	NXDN Gen2 Trunking
Cost & capacity baseline	Cost effective coverage	More capacity and coverage	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) sitess	Up to 48 sites	More than a 1,000 sites

ACCESSORIES

PORTABLES

BATTERY PACKS

■ **KNB-55L/57L/78L**
Li-ion BATTERY PACK
(7.4 V/1480 mAh,
7.4 V/2000 mAh,
7.4 V/2860 mAh,

KNB-55L/57L/78L

■ **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)

CHARGERS

■ **KSC-25LSK/25SK**
RAPID CHARGER
(Li-ion Only/Tri-Chem)

■ **KSC-256AK**
MULTIPLE CHARGER
(6-pocket)

■ **KMB-30A**
MOUNTING BRACKET
(for KSC-256)

■ **KVC-23**
VEHICULAR CHARGER

ANTENNAS

■ **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

HEADPHONES/EARPHONES/MICROPHONES

● For 2-pin connector portables

■ **KMC-45D**
SPEAKER MICROPHONE (IP54/55)

■ **KEP-2**
EARPHONE KIT (3.5mm) FOR
KMC-45D SPEAKER MICROPHONE

■ **KHS-7**
HEADSET (Single Muff)

■ **KHS-7A**
HEADSET (Single Muff & In-line PTT)

■ **KHS-10D**
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-26

■ **KHS-27A**
D-Ring In-line PTT Headset

● For Universal connector portables

■ **KMC-41D**
SPEAKER MICROPHONE (IP54/55)

■ **KMC-42WD**
SPEAKER MICROPHONE (IP54/55/67)

■ **KMC-54WD**
SPEAKER MICROPHONE
(with dual-sided 2-Mic for superior
ANR, IP54/55/67)

■ **KEP-1**
EARPHONE KIT (2.5mm) FOR KMC-41D
OR KMC-54WD SPEAKER MICROPHONE

OTHERS

■ **KBH-11**
BELT CLIP (2.5 in)

■ **KLH-207**
NYLON CASE

■ **KLH-206**
LEATHER CASE

MOBILES

■ **KMC-9C/59C**
DESKTOP MICROPHONE

KMC-9C

■ **KMC-35/36**
IP54/55 MICROPHONE
(without/with 12-keypad)

■ **KES-3**
EXTERNAL SPEAKER
(compact low profile; 3.5 mm plug)

■ **KES-5**
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

GENERAL SOFTWARE APPLICATIONS

■ **KPG-180AP**
OTAP MANAGER

■ **KAS-20**
AVL & DISPATCH SOFTWARE

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

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	12.5/15/25¹/30¹ kHz	12.5/25¹ kHz		12.5/15/25¹/30¹ kHz	12.5/25¹ 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) Projections not included	Radio only	2.20 x 4.71 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)			
	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/8 Ω, 3% Distortion/1000 mW/8 Ω, 5% Distortion (Internal Speaker)			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, 7K60FXE, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D			16K0F3E*, 14K0F3E***,11K0F3E, 8K30F1E, 8K30F1D, 8K30F7W, 7K60FXD, 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.
**25 kHz in 900MHz band not included.
*** 800MHz band only

Analog 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	516.6/ I, IV
	Mobiles	516.2/ I, II, V	516.3/ I, IV, V	516.4/ I, IV, V	516.5/ I, IV, V	516.6/ 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-35 or KMC-36 must be connected to the radio, and all accessory connectors must be covered.

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