KENWOOD

NX-3000 SERIES

NEXEDGE VHF/UHF MULTI-PROTOCOL
DIGITAL & ANALOGUE RADIOS

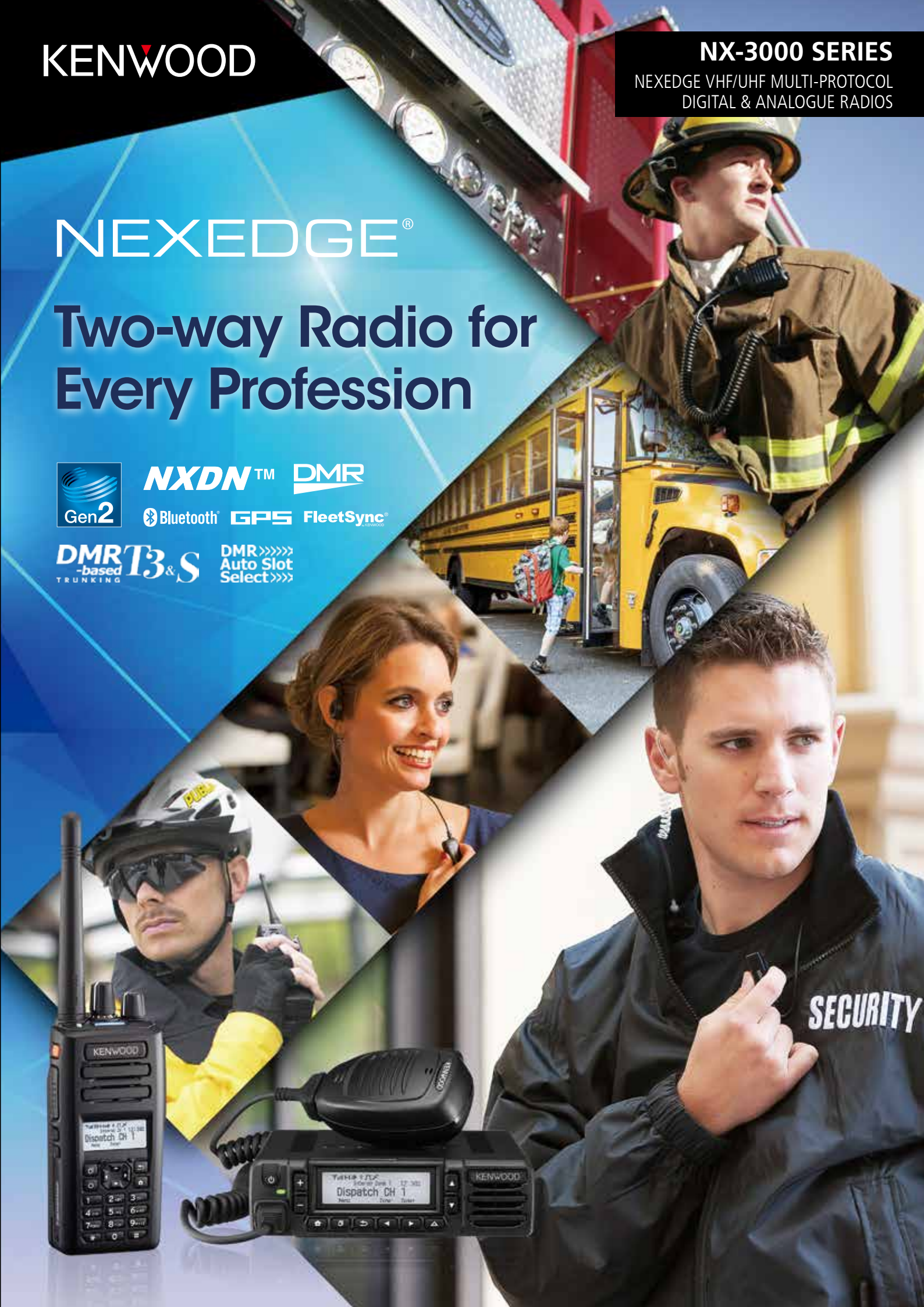
NEXEDGE®

Two-way Radio for Every Profession

Gen2 NXDN™ DMR

Bluetooth® GPS FleetSync®

DMR -based TRUNKING T3&S DMR Auto Slot Select



NX-3000 — Answering the Needs of Every Profession.

From enterprise-to operation-critical applications, the NX-3000 Series will shine in a host 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

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

Portable Radios

NX-3000 Series portables are available in 3 configurations, each of which is available with a choice of 2 different connectors.

NX-3220 (VHF)/NX-3320 (UHF), 2-pin connector
NX-3200 (VHF)/NX-3300 (UHF), 14-pin Universal connector*
*Product releases are not necessarily simultaneous.

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

SMA Antenna Connector:
Different antennas, such as long whip and stubby types, can be attached.

7-colour Light Bar Indicator:
Each channel can be assigned a different color from the seven available.

Mobile Radios

Mobile radios come in 4 configurations;
A base model (NX-3720/NX-3820), base model with built-in GPS and Bluetooth modules (NX-3720G/ NX-3820G), high-powered model (NX-3720H/ NX-3820H), and high-powered model with GPS and Bluetooth modules (NX-3720HG/ NX-3820HG).

7-colour LED Indicator

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

8-pin microphone jack

Programmable function keys with backlighting

One Radio with Multi-Protocol Support

Customise at Will

The NX-3000 Series offers future-proof flexibility with support for both NXDN and DMR digital protocols as well as FM analogue – all in a single radio. A desired digital protocol can be selected at will, giving you the freedom to migrate to digital or expand your digital environment further at your own pace. Also, it offers unique capability to add or delete functions at will.

NXDN Digital Protocol

Along with the narrow 12.5 kHz support, NXDN employs the very narrow 6.25 kHz bandwidth using FDMA technology, NXDN provides excellent spectrum efficiency, wide coverage and scalability. NXDN Type-C Trunking and Gen 2 Trunking offer flexibility and performance, including the ability to link up to 1,000 sites.

DMR Digital Protocol

If you are looking for a small, simple, cost-effective system, DMR is a fine choice. Thanks to 2-slot TDMA, DMR can obtain 2 talk paths within 12.5 kHz bandwidth, effectively doubling the capacity for a single license and/or repeater.
For larger networks, the DMR Tier III Trunking and DMR-S Trunking configurations provide the ideal solution.

FM Analogue

FM analogue 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/5-tone, MDC-1200, and FleetSync® signaling.[*2]

*1 Some limitations apply in certain regions when configuring wide channel spacing. *2 Signaling availability varies depending on the region.

Hearing Clearly and Confidently

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. Moreover, even more advanced digital noise reduction is offered by KENWOOD microphones, such as the optional Speaker Microphone KMC-54WD with its dual-mic system that is designed to work with portable models featuring the 14-pin Universal Connector.

Optimising Audio

It is possible to customise audio processing by adjusting the TX/RX audio equalizer, auto gain control, and audio profile in ANR. Noise reduction can 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 such situations.

Auto Recording

When receiving a call while otherwise occupied, there are 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.

Knowing without Looking

Voice announcement will keep you informed of the new number of a changed zone/channel, function status and transceiver status when the PF button is pressed, as well as reception status. Announcements are made in any one of 11 languages, configured on the subscriber unit. Also, 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 Notification. Hands-free Operation.

Integrated GPS for Location Management
Thanks to the 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 using the mic of the headset. What's more, 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 enables 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 analogue 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 system, 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 only available on the NXDN trunking systems that displays the caller ID name on the radio display even if the ID is not configured for display. This feature is especially handy when you are roaming on a system and new subscriber units from the system in service are temporarily added.

Securing the Radio, Safeguarding 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*3 for both digital protocols, and 40-bit ARC4 encryption for DMR.

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

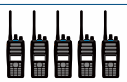
Tough & Robust
All KENWOOD radios go through stringent tests before shipment, including drop, immersion, splash, key punch, extreme temperature, dust, and heavy rain to simulate the harshest operating conditions experienced in a variety of applications. The portable radios also meet international ingress 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.*4

*4 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. The NX-3000 Series features are a set of functions that helps to protect the safety of workers.

- **Emergency Button:** Prominent orange button on the portable radios can be used by a worker to signal an emergency to the base station. 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 radio is still not operated, then it automatically triggers Emergency Mode to notify the base station.
- **Activity Detection:** Three functions will trigger Emergency Mode to notify headquarters or the base station: 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 shaking for a prolonged period.

Conventional and Trunking Systems Compatible with the NX-3000 Series

Conventional	Conventional IP Network	Multi-site DMR-S Trunking	Multi-site Trunking (NXDN Type-C)	Multi-site DMR Tier III Trunking	Enhanced Multi-site Trunking (NXDN Gen2)
NXDN/DMR Digital Conventional	NXDN/DMR Digital Conventional IP Site Roaming	DMR-S	NXDN Type-C Trunking	DMR Tier III	NXDN Gen2 Trunking
Cost & capacity baseline	Cost effective coverage	More capacity and coverage	More capacity and coverage	Most capacity, coverage, and control	Most capacity, coverage, and control
					
					
No trunking	No trunking	Small trunking networks	De-centralised controlled trunking	Large trunking networks	Centralised control with server-based architecture
Single site	Up to 16 (unicast) or 48 (multicast) sitess	Up to 15 sites	Up to 48 sites	Up to 1,000 sites	Up to 1,000 sites

Designed to Go with All Sizes and Shapes
Capability to operate in digital protocol allows extending 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, DMR-S and DMR Tier III that extend across a campus or plant, even as wide as state/province or nationwide.

ACCESSORIES

PORTABLES

BATTERY PACKS

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


KNB-55L KNB-57L

■ **KNB-56N**
Ni-MH BATTERY PACK
(7.2 V/1400 mAh)

■ **KNB-78L***
Li-ion BATTERY PACK
(7.4 V/2860 mAh)
*Available Later

■ **KBP-5**
BATTERY CASE (6 AA)

CHARGERS

■ **KSC-25LS/25S**
RAPID CHARGER
(Li-ion Only/Tri-Chem)

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

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

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-41/42**
VHF/UHF STUBBY
ANTENNA

HEADPHONES/EARPHONES/MICROPHONES

● For 2-pin connector portables

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

■ **KEP-1**
EARPHONE KIT (3.5mm) FOR
KMC-45D SPEAKER MICROPHONE

● For Universal connector portables

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

■ **KMC-54WD**
SPEAKER MICROPHONE
(with dual-sided 2-Mic for superior
ANR, IP67)

■ **KEP-2**
EARPHONE KIT (2.5mm) FOR
KMC-41D OR KMC-54WD
SPEAKER MICROPHONE

OTHERS

■ **KBH-11**
BELT CLIP (2.5 in)

MOBILES

■ **KMC-53**
DESKTOP MICROPHONE
(Tuned for NXDN; no support for TDMA)

■ **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
(40 W max input, requires KCT-60)

■ **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

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

		Portables		Mobiles	
GENERAL		**NX-3200*/NX-3220**	**NX-3300*/NX-3320**	**NX-3720(G)**	**NX-3820(G)**
Frequency Range		136-174 MHz	400 - 520 MHz	136-174 MHz	400 - 470 MHz
Max. Channels per Radio		Up to 1000 channels with option		Up to 1000 channels with option	
Number of Channels		512/260 (64 for no LCD models)		512	
Number of Zones		128 (4 for no LCD models)		128	
Channel Spacing	Analogue	12.5/20/25 kHz		12.5/20/25 kHz	
	Digital	6.25/12.5 kHz		6.25/12.5 kHz	
Power Supply		7.5 V DC ±20 %		13.2 VDC (10.8 ~ 15.6 VDC)	
Current Drain	Standby	—		0.45 A	
	RX	—		2.3 A	
	TX	—		9 A	
Battery Life (FDMA/TDMA) 5-5-90	With KNB-55L (1,480 mAh)	Approx. 8 hours/Approx. 9.5 hours		—	
	With KNB-56N (1,400 mAh)	Approx. 8 hours/Approx. 9 hours		—	
	With KNB-57L (2,000 mAh)	Approx. 11 hours/Approx. 13.5 hours		—	
	Operating Temperature	-30°C to +60°C		-30°C to +60°C	
Frequency Stability (-30°C to +60°C; +25°C Ref.)		±0.5 ppm	±0.5 ppm	±0.5 ppm	
Antenna Impedance		—		50 Ω	
Dimensions (W x H x D) Projections not included	Radio only	56 x 119.6 x 36.4 mm*1		160 x 43 x 160 mm*3	
	With KNB-55L	56 x 119.6 x 36.4 mm*1		—	
	With KNB-56N	56 x 119.6 x 42.7 mm*1		—	
	With KNB-57L	56 x 119.6 x 39 mm*1		—	
Weight (net)	Radio only	220 g*2		1.2 kg*3	
	With KNB-55L	315 g*2		—	
	With KNB-56N	410 g*2		—	
	With KNB-57L	340 g*2		—	
Applicable Standards	ETSI (EMC)	EN 301 489-3, EN 301 489-5, EN 301 489-17		EN 301 489-3, EN 301 489-5, EN 301 489-17	
	ETSI (Spectrum)	EN 300 086, EN 300 113, EN 300 219, EN 300 328, EN 300 440, EN 301 166		EN 300 086, EN 300 113, EN 300 219, EN 300 328, EN 300 440, EN 301 166	
	ETSI Safety	EN 60065, EN 60215, EN 60950-1		EN 60065, EN 60215, EN 60950-1	
RECEIVER		**NX-3200*/NX-3220**	**NX-3300*/NX-3320**	**NX-3720(G)**	**NX-3820(G)**
Sensitivity	NXDN 3 % BER (6.25 kHz/12.5 kHz)	0.20 µV / 0.25 µV		0.20 µV / 0.28 µV	
	NXDN 1 % BER (6.25 kHz/12.5 kHz)	-4.0 dBµV (0.32 µV) / -1 dBµV (0.45 µV)		-5.0 dBµV (0.28 µV) / -2 dBµV (0.40 µV)	
	DMR 12.5 kHz Digital, 5 % BER	-6 dBµV (0.25 µV)		-4.5 dBµV (0.30 µV)	
	DMR 12.5 kHz Digital, 1 % BER	-1 dBµV (0.45 µV)		-2 dBµV (0.40 µV)	
	Analogue, EIA 12 dB SINAD (12.5/20 & 25 kHz)	0.25 µV		0.25 µV	
	Analogue, EN 20 dB SINAD (12.5/20 & 25 kHz)	-1 dBµV (0.45 µV) / -3 dBµV (0.35 µV) / -3 dBµV (0.35 µV)s		-1 dBµV (0.45 µV) / -3 dBµV (0.35 µV)	
Selectivity	Analogue 12.5 kHz	68 dB		70 dB	68 dB
	Analogue 20 kHz	74 dB		78 dB	76 dB
	Analogue 25 kHz	76 dB		80 dB	78 dB
Intermodulation		65 dB		70 dB	
Spurious Rejection		65 dB		80 dB	
Audio Distortion		3%		2%	
Audio Output		500 mW/8 Ω, 3% Distortion (Internal Speaker)		4 W/4 Ω	
		1000 mW/8 Ω, 5% Distortion (Internal Speaker)		—	
TRANSMITTER		**NX-3200*/NX-3220**	**NX-3300*/NX-3320**	**NX-3720(G)**	**NX-3820(G)**
RF Power Output		5 W/4 W/1 W		25 W / 5 W	
Spurious Emission		-36 dBm ≤1 GHz, -30 dBm >1 GHz		-36 dBm ≤1GHz, -30dBm >1GHz	
FM Hum & Noise	Analogue 12.5 kHz	45 dB		50 dB	
	Analogue 20 kHz	45 dB		50 dB	
	Analogue 25 kHz	40 dB		45 dB	
Audio Distortion		3%		2%	
Digital Protocol		ETSI TS 102 361-1, -2, -3		ETSI TS 102 361-1, -2, -3	
Emission Designator		16K0F3E, 14K0F2D, 14K0F3E, 12K0F2D, 11K0F3E, 8K50F3E, 8K30F1E, 8K30F1D, 8K30F7W, 7K50F2D, 7K60FXE, 7K60FXD, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D		16K0F3E, 14K0F2D, 14K0F3E, 12K0F2D, 11K0F3E, 8K50F3E, 8K30F1E, 8K30F1D, 8K30F7W, 7K50F2D, 7K60FXE, 7K60FXD, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D	

*Product releases are not necessarily simultaneous.

*1 Full Keypad/Std Keypad Models *2 Full Keypad Model *3 Radio with Control Head

Specifications are measured according to applicable standards.
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.

JVCKENWOOD U.K. Limited

www.kenwoodcommunications.co.uk