

NX-5000 Series

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

KENWOOD



An Industry First — Triple-Digital Radios for **Enterprise and Public Safety**











KENWOOD

















The NX-5000 Series – Supporting Digital Protocols plus FM Analog









NXDN, DMR and P25

Radios are a lifeline for those who work on the front lines — crews tackling a raging 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.

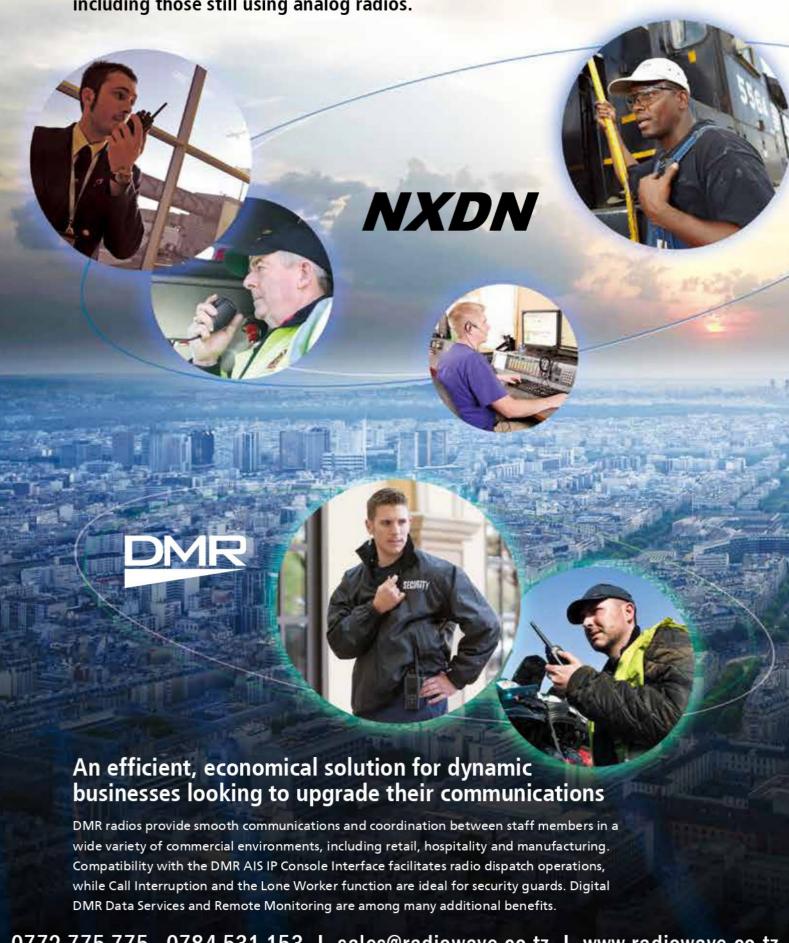
To meet this demand KENWOOD has drawn on its extensive experience, its acclaimed technologies, and an expert analysis of market needs to develop NEXEDGE. This innovative digital solution satisfies the most stringent requirements of today's mission-critical radio users. And now NEXEDGE leaps further ahead of the competition with NX-5000 Series portable and mobile radios, ready to serve in all public sector, commercial and public safety roles with flawless performance and advanced feature sets.

And because these radios are compatible with three different digital protocols — NXDN, DMR and P25 — if you are planning migration from a legacy system, not only can you go on using your current radios, but you can be confident that, when you make the move, your NX-5000 radios will be deployed and ready.

What's more, if you adopt the NEXEDGE Gen2 Multi-Site Digital Trunked Network System, you can enjoy all the benefits of the NX-5000 Series over an extensive network linking all of your sites.

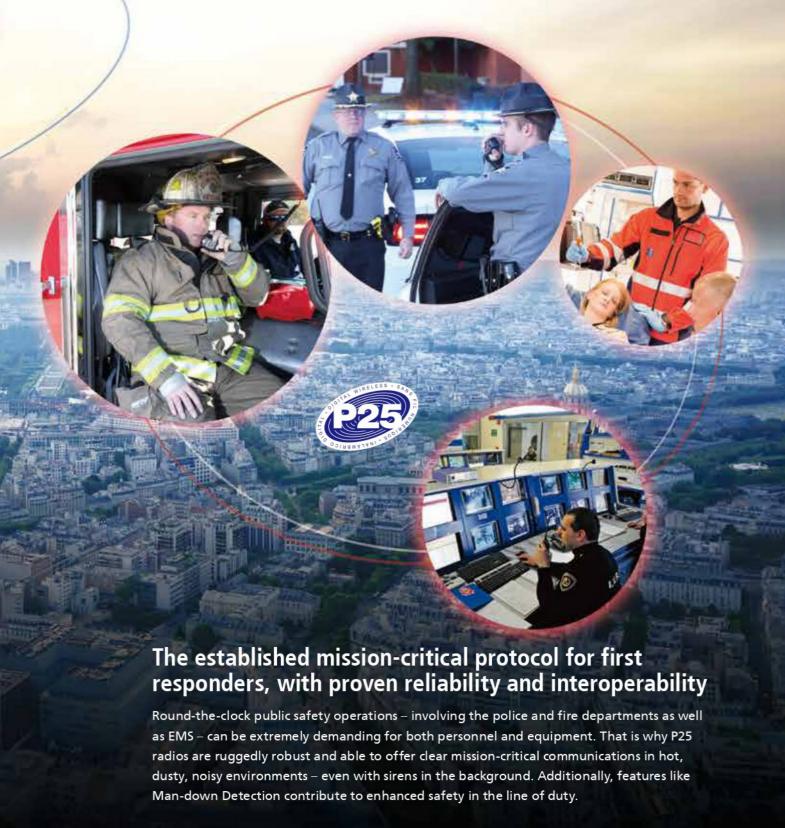
The NX-5000 Series truly sets a new standard.

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.



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

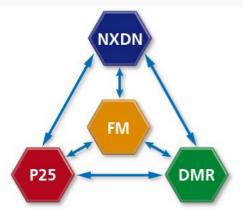
Providing all the benefits of advanced digital technology such as increased effective coverage area and low noise for superior clarity, NXDN has become established throughout the world, serving customers ranging from business & industrial to mission-critical. And now NEXEDGE 2nd Generation (Gen2) delivers 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.



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, Tier III Trunking and DMR-S Trunking 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

COLOR

The 65,000-color TFT display allows the user to check at a glance on operating status, shown in multi-line text to convey more information.

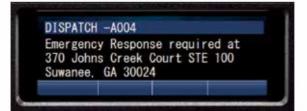
The portables feature a 1.74-inch (240 x 180 pixel) LCD that can be viewed clearly in direct sunlight or in the dark, even while wearing polarized sunglasses. The mobile models feature a 2.55-inch (154×422 pixel) TFT display with integrated

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.



NX-5200/5300/5400 (actual size)

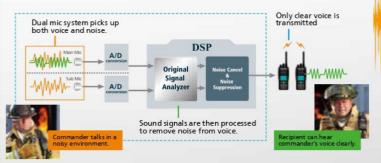


NX-5700/5800/5900 (actual size)

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 Reduction based on leading-edge digital technology. Clear communications are assured.



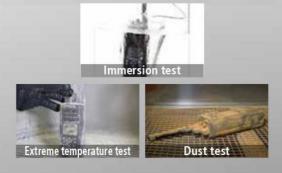


TOUGH & ROBUST



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



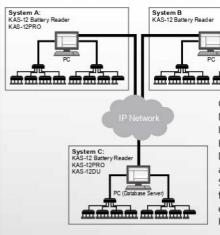
NX-5000 SERIES FEATURES

INTELLIGENT BATTERY MANAGEMENT SYSTEM (Portables: option)

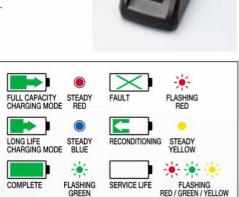
The Intelligent Battery System helps to extend battery lifetime and ensure that the batteries are optimally maintained so as to be ready for mission-critical operations. The system comprises the optional high-capacity Li-ion and Ni-MH Batteries (KNB-L1/L2/L3/N4), Intelligent Charger (KSC-Y32), and Battery 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.

ENCRYPTION EQUIPPED





S AES

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)

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 multiple radios (e.g. VHF, 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

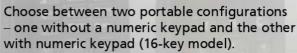
Life-critical detection is built-in. When unusual behavior is detected by the acceleration and tilt sensors, one of three Emergency Modes – Man-down Detection, Stationary Detection, and Motion Detection – will be automatically engaged.

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.







GENERAL FEATURES

- Multi-Digital + FM Analog Operation
 - Gen2 & NXDN Conventional/ Type-C Trunking Protocol
 - DMR Tier II Conventional
 - DMR Tier III Trunking
 - DMR-S Trunking
 - P25 Conventional Trunking (Phase 1/Phase 2) Protocol
 - FM Analog Conventional & LTR
- 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, 5-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)
- RF Output

■ KRA-22

■ KRA-23

- VHF: 6-1 W (NX-5200)
- UHF: 5-1 W (NX-5300)

OPTIONAL ACCESSORIES

■ KNB-L1/L2/L3

Li-ion BATTERY PACK (IP67/68 immersion)



■ KNB-N4

■ KSC-Y32 RAPID CHARGER

■ KSC-32/32S

RAPID CHARGER

■ KSC-326/326S MULTIPLE CHARGER

(6-unit Rapid Rate)

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Dispatch CH

KNB-L1 7.4 V/2000 mAh

Ni-MH BATTERY PACK

(7.2V/2500 mAh)



KNB-L2 7 4 V/2600 mAh







VHF HELICAL ANTENNA (Low Profile)

UHF HELICAL ANTENNA (Low Profile)





■ KRA-41 VHF STUBBY ANTENNA



■ KRA-42 **UHF STUBBY ANTENNA**



■ KMC-42WD SPEAKER

MICROPHONE (IP67)

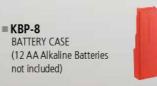


■ KMC-54WD

SPEAKER MICROPHONE

- · 2-mic digital noise cancelling via the radio's DSI
- 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





■ KAS-12/12PRO BATTERY READER/PRO (PC Software)

KWD-AE31

OTAP MANAGER (PC Software)

NX-5700/5800

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

GENERAL FEATURES

- Multi-Digital + FM Analog Operation
 - Gen2 & NXDN Conventional/Type-C Trunking Protocol
 - DMR Tier II Conventional
 - DMR Tier III Trunking
 - DMR-S Trunking
 - 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

- \bullet Speaker Audio: 4 W/4 Ω ; 3 W/4 Ω for the Remote Control Head
- 6 Front PF keys & 4 Up / Down Selectors
- Emergency Button
- FleetSync®/II, MDC-1200, QT/DQT, 5-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)
- RF Output
 - VHF: 50-5 W (NX-5700/5700B)
 - •UHF: 45-5 W (NX-5800/5800B)

OPTIONAL ACCESSORIES

■ NX-5700B/5800B 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)





SECURE CRIPTOGRAPHIC MODU

OTAP MANAGER (PC Software)



■ KPG-180AP

■ KMC-35 MICROPHONE





φ3.5 mm plug)

EXTERNAL SPEAKER
(40 W max input,



■ KCT-23

DC POWER CABLE M: 3 m / M3: 7 m





■ KMB-10 KEY LOCK ADAPTER



■ KRA-40G GPS ACTIVE ANTENNA

■ KPS-16 DC POWER SUPPLY









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



SPECIFICATIONS

and the same of th		Portable Radios		Mobile Radios	
GENERAL		NX-5200	NX-5300	NX-5700	NX-5800
Frequency Range		136-174 MHz	400-470 MHz	136-174 MHz	400-470 MHz
Max. Channels Per Radio			1024 (Up to 4000 c	hannels with option)	
Number of Zones				28	
Max. Channels Per Zone				12	
Channel Spacing	Analog	12.5/15/20/25/30 kHz	12.5/25 kHz	12.5/15/20/25/30 kHz	12.5/25 kHz
	Digital	6.25/12.5 kHz	6.25/12.5 kHz	6.25/12.5	A STATE OF THE STA
Power Supply		7.5 V DC ±20 %		13.6 V DC ±15 %	
Current Drain	Standby			0.45 A	
	RX	_		2.3 A	
70 00	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 x12)	High Power: Approx. 11 hours / 8 hours, Low Power: Approx. 26 hours / 18 hours			
- · · · - - · · · · · ·	35	Low Power: Approx. 26		5005	
Operating Temperature				to +60 °C ±0.5 ppm	
Frequency Stability (-30°C to +60°C; +25°C Ref.)		±0.5 ppm ±0.5 ppm		±0.5 ppm 170.0 x 48.0 x 176.0 mm	
Dimensions (W x H x D)	Radio w / Control Head (KCH-19) KNB-L1 (2.000 mAh)	E0 0 120 0	26 E mm		
	KNB-L2 (2,600 mAh)	58.0 x 138.9 x 36.5 mm			
Dimensions (W x H x D) Radio w/ Battery,	KNB-L3 (3,400 mAh)	58.0 x 138.9 x 39.5 mm			
rojections Not Included	KNB-N4 (2,500 mAh)	58.0 x 138.9 x 44.9 mm 58.0 x 166.4 x 45.2 mm			
Projections Not included	KBP-8 (w/AA x12)			<u>-</u>	
Voight (Not)	Radio w / Control Head (KCH-19)	67.0 x 218.3 x 53.9 mm			
Weight (Net)	KNB-L1 (2,000 mAh)			1.6 kg	
	KNB-L2 (2,600 mAh)	382 g		<u>-</u>	
Veight (Net)		406 g			
Radio w/ Battery	KNB-L3 (3,400 mAh) KNB-N4 (2,500 mAh)	449 g			
	KBP-8 (w/AA x12)	579 g		<u>-</u>	
	ETSI (EMC)	712 g		EN 301 489-3, EN 301 489-5, EN 301 489-17	
Applicable Standards	ETSI (Spectrum)	EN 301 489-3, EN 301 489-5, EN 301 489-17 EN 300 086, EN 300 113, EN 300 219, EN 300 328, EN 300 440, EN 301 166		EN 301 489-3, EN 301 489-5, EN 301 489-17 EN 300 086, EN 300 113, EN 300 219, EN 300 328, EN 300 440, EN 301	
	ETSI Safety	EN 60065, EN 60215, EN 60950-1		EN 300 086, EN 300 113, EN 300 219, EN 300 328, EN 300 440, EN 301 1 EN 60065, EN 60215, EN 60950-1	
RECEIVER	El Si Salety	NX-5200	NX-5300	NX-5700	NX-5800
ensitivity	NXDN 3 % BER (6.25 kHz/12.5 kHz)	0.25 µV / 0.32 µV			IEX-3000
ensitivity	NXDN 1 % BER (6.25 kHz/12.5 kHz)	0.25 μV / 0.32 μV -4 dB μV (0.32 μV) / -1 dB μV (0.45 μV)			
	DMR 5 % BER	0.3 µV (-117.5 dBm)			
	DMR 1 % BER	0.3 µV (-117.5 dbm) 0.45 µV (-114 dbm)			
	P25 5 % BER	0.45 µV (-114 dbm)			
	Analog 12 dB SINAD (12.5/20&25 kHz)	0.28 µV			
	Analog 20 dB SINAD (12.5/20&25 kHz)			/ -3 dB μV (0.35 μV)	
Selectivity	Analog 12.5 kHz	68 dB		70 dB	
	Analog 20 kHz	74 dB		78 dB	
	Analog 25 kHz	76 dB		80 dB	
ntermodulation (Analog)	2	65 dB		70 dB	
purious Rejection (Analog)		75 dB		80 dB	
Audio Distortion		3 %		2 %	
Audio Output Power		500 mW/8 Ω (3 % Distortion) / 1,0	00 mW /8 Ω (5 % Distortion)	4 W/4 Ω (Remote Conti	rol Head: 3 W/4 Ω)
RANSMITTER		NX-5200	NX-5300	NX-5700	NX-5800
F Power Output Power		6 to 1 W	5 to 1 W	25 to 5	W
purious Emission		1 No. of the last		-30 dBm > 1 GHz	
M Hum & Noise	Analog @ 25/20/12.5 kHz	45/45/40		-30 dBM > 1 GHz 50/50/45 dB	
Audio Distortion		45/45/40 dB 50/50/45 dB 2 %			
Audio Distortion Emission Designator		16K0F3E, 14K0F2D, 14K0F3E, 12K0F2D, 11 8K30F1D, 8K30F7W, 8K10F1E, 8K10F1D, 8K 4K00F1D, 4K00F7	K0F3E, 8K50F3E, 7K50F2D, 8K30F1E, 10F1W, 7K60FXE, 7K60FXD, 4K00F1E,	16K0F3E, 14K0F2D, 14K0F3E, 12K0F2D, 11K0F3E, 8K50F3E, 7K50F2D, 8K30F1E, 8K30F1D, 8K30F7W, 8K10F1E, 8K10F1D, 8K10F1W, 7K60FXE, 7K60FXD, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D	

Details and timing of firmware and software updates are subject to change without notice. Specifications are measured according to applicable standards, and subject to 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	500.1/1	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	502.1/1	502.2/ I, II	502.3/ I, II	502.4/ I, II	502.5/1,11				
Temp. Shock	503.1/1	503.2/1	503.3/1	503.4/ I, II	503.5/1				
Solar Radiation	505.1/1	505.2/1	505.3/1	505.4/ I	505.5/1				
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/ ,	507.3/ II, III	507.4	507.5/ II				
Salt Fog	509.1/1	509.2/1	509.3/1	509.4	509.5				
Dust	510.1/1	510.2/1	510.3/1	510.4/ I, III	510.5/1				
Vibration	514.2/ VIII, X	514.3/1	514.4/1	514.5/ I	514.6/1				
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				
International Protection Stan	dard								
Dust & Water	IP54, IP55*3	IP54, IP55*3							
Immersion*2	IP67, IP68*4	IP67, IP68*4							



Dar es Salaam (Operations Center): Off Mwai Kibaki Road, Block No. 34 Mkuzi Street. Mbezi Beach Rainbow Area. Tel: +(255) 222 617 225 | 783 887 225 Email: sales@radiowave.co.tz GPS Co-ordinates: -6.7229, 39.2286 Dar es Salaam (Sales Center): Ali Hassan Mwinyi, Junction to Ruhinde Street, Mbuyuni, Opposite Don Bosco. Tel: +(255) 222 666 038 | 772 775 775 Email: salescentre@radiowave.co.tz GPS Co-ordinates: -6.7804, 39.2729 Arusha: Kwa Ngulelo Area Baraa, Block 169G Nazareth Street. P.O. Box 15360, Arusha, Tanzania. Tel: +(255) 687 887 225 | 783 064 414 Email: info@radiowave.co.tz GPS Co-ordinates: -3.3685, 36.7288