

# NXR-1700/1800

## VHF/UHF REPEATER

**NXDN™** **DMR**

### MULTI-MODE, SINGLE-MINDED, SPACE-SAVING SOLUTION

This compact, multi-mode conventional repeater – key digital communications equipment that is a KENWOOD specialty – supports the features and performance to make it a worthy successor to the existing DMR and NXDN repeaters such as the TKR-D710/D810 and NXR-710/810. The digital protocol is digital protocol when ordering to set up individual units for either DMR or NXDN, with the option of keeping the factory default setting of FM analog.

#### GENERAL FEATURES

- 50/40 W – 1 W RF Output Power (Up to 50/40 W@50%, 25 W@100% Duty Cycle)
- Light, Compact and Space-Efficient to Fit 2 Repeaters in a 1U Height, 19-inch Rack
- Large 1.71-inch OLED with Icons and Numeric Displays
- Thermal-Controlled Cooling Fan
- External Power Supply
- Up to 32 Channels
- Selectable Digital Protocol: DMR Tier II / NXDN Conventional (programmable one at a time)
- USB-A Connector for Audio Accessories
- External In/Out Pin from DB25
- Non-repeat Simplex / Semi-Duplex Mode for Analog and NXDN Digital
- Hot Standby System Redundancy
- Built-in IP Network Adapter
- Multicast Routing
- SNMP Protocol for Direct Reporting to a Generic System
- Supports G.711 Audio Codec (for Test Console and Third-party Applications)
- IP Remote Management (Monitor / Control / Programming / Test Console)
- IPIF to External Applications (for IP Console, OTAP) / Voice Logging\*3 for NXDN only
- Built-in SIP IF without External Gateway (Digital Only)\*1, \*2
- IP Remote Control Interface (IPRCI)
- Enhanced Security (HTTPS)
- CW ID
- Hang Timer

- Multi-Site Conventional IP Network up to 16 Sites (for both Digital and Analog)\*2
- Voting Repeater + Up to 15 Receivers (Analog / NXDN / DMR)\*2, \*3
- IP Networking Compatible with NXR-710/810 & TKR-D710/D810 Series Repeaters (Able to Swap/ Add-on as a part of existing digital conventional systems in the field)

#### DIGITAL – COMMON

- Built-in AMBE+2™ Vocoder
- Mixed Analog / Digital Operation
- Site Roaming
- RF-Link: NXDN / DMR\*3
- Repeat Encrypted Voice/Data (AES / DES)
- User List / Site Group Table

#### DIGITAL – NXDN

- FDMA – Very narrow 6.25 kHz & narrow 12.5 kHz bandwidths
- NXDN Conventional Operation\*2
- Radio Access Control\*1

#### DIGITAL – DMR

- TDMA 2-slot 12.5 kHz bandwidth equivalent to 6.25 kHz very narrow bandwidth
- DMR Tier II Conventional Operation\*2
- Repeat Encrypted Voice/Data (DMR Enhanced Encryption)
- Call Interruption

#### FM ANALOG

- FM Conventional Operation
- Multiple QT/DQT

\*1: Requires version upgrade of terminal to obtain compatibility with this model

\*2: Software option

\*3: Later available



## Informative Front OLED Display



A large OLED display featured on the front panel is capable of displaying the following information: MAC/IP Address, RSSI/TX Power Setting Icon, Channel Number/Name, and RF Frequency as well as Firmware/ESN/License/Error information and other statuses.

## Size Comparison with Conventional Repeaters

Volumetric capacity can be reduced even when compared with the NXR-710/810 and TKR-D710/D810 repeaters.



The NXR-1000 Series repeaters require only a quarter of the rack space compared to the NXR-710/810 or TKR-D710/D810 Series models.

In addition, the NXR-1000 Series repeaters take up only half the rack space of other 1U repeaters that are 19-inch wide.

## SPECIFICATIONS

GENERAL	NXR-1700	NXR-1800	
		Type 1	Type 2
Frequency Range	136 - 174 MHz	450 - 520 MHz	400 - 470 MHz
Channel Capacity	32		
Channel Spacing	Analog	30 / 25 / 15 / 12.5 kHz	25 / 12.5 kHz
	Digital	12.5 / 6.25 kHz	12.5 / 6.25 kHz
PLL Channel Step	6.25 / 5 / 3.125 / 2.5 kHz	6.25 / 5 / 3.125 kHz	
Frequency Stability	± 0.5 ppm		
Power Supply	10.8 - 15.6 V DC		
Current Drain	Standby	0.6 A	0.7 A
	Transmitting	12.0 A (Max. power), 9.0 A (25 W)	
Operating Temperature	-30 °C to +60 °C		
Antenna Impedance	50 Ω		
Dimensions (W x H x D)	Incl. Projections	214.5 x 44.0 x 242.9 mm	
	Excl. Projections	208.5 x 44.0 x 211.5 mm	
Weight (net)	1.9 kg		

Specifications are measured according to applicable standards.

Analog measurements made per TIA603.

Specifications shown are typical and subject to change without notice, due to advancements in technology.

Details and timing of firmware and software updates are subject to change without notice.

RECEIVER		NXR-1700	NXR-1800
Sensitivity	DMR (5 % BER)	0.22 μV	
	DMR (1 % BER)	0.28 μV	
	NXDN (3 % BER) 12.5 / 6.25 kHz	0.25 / 0.20 μV	
	Analog (12 dB SINAD)	0.25 μV	
Selectivity	Analog 25 / 12.5 kHz (TIA603)	83 / 77 dB	80 / 74 dB
	Analog 25 / 12.5 kHz (TIA603E)	80 / 50 dB	80 / 50 dB
FM Hum & Noise	Analog 25 / 12.5 kHz	55 / 50 dB	
Intermodulation	80 dB		
Spurious Rejection	90 dB		
TRANSMITTER		NXR-1700	NXR-1800
RF Output Power		50 - 1 W (50 W @ 50% Duty, 25 W @ 100 % Duty)	40 - 1 W (40 W @ 50% Duty, 25 W @ 100 % Duty)
Spurious Emission	-80 dB		
FM Hum & Noise	Analog 25 / 12.5 kHz	55 / 50 dB	
Audio Distortion	1 %		
Digital Protocol (DMR)	ETSI TS 102 361-1, -2, -3		
Emission Designator	16K0F3E, 11K0F3E, 7K60FXD, 7K60F7D, 7K60FXE, 7K60F7E, 7K60FXW, 7K60F7W, 8K30F1E, 8K30F1D, 8K30F7W, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D		

## APPLICABLE ENVIRONMENTAL SPECIFICATIONS

MIL-STD	810F	810G	810H
High Temperature	501.4/Procedure I, II	501.5/Procedure I, II	501.7/Procedure I, II
Low Temperature	502.4/Procedure II	502.5/Procedure II	502.7/Procedure II
Temperature Shock	503.4/Procedure I, II	503.5/Procedure I	503.7/Procedure I

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