

The New RCCR-NXR Digital Clean Cab Radio



The RCCR-NXR includes new user functionality and capabilities made possible by the railroad community's growing application of NXDN™ digital technology. Enhancements to radio firmware and radio-display information make the NXR the ideal digital voice-radio for your locomotive fleet.

The NXR maintains the proven high-performance, railroad-optimized analog and digital capable RF platform, 12VDC to 72VDC PS3 power supply and robust mechanical design and AREMA footprint used in previous RCCR radio models.

- FCC Narrow Band Compliant, IC Approved. Tri-Mode capable. Wideband @25kHz Analog (Outside the US Only), Narrowband Analog @12.5kHz and Super Narrowband NXDN Digital @6.25kHz.
- One-piece (RCCR-151-NXR) and Two-piece (RCCR-152-NXR) models available.
- Splash Resistance, Shock and Vibration per AAR S-5702, Revision 2/1/03, Sections 3.2.4.1 and 3.2.4.2 (Swept sinusoidal vibration, 4 hours per axis, 3 axis. Random vibration, 4 hours per axis, 3 axis.)
- All-metal, rugged enclosure for maximum durability. Side-mount locking tab and swivel rear locking pin.
- Large, easy-to-read LED display with wide viewing angle and polarized, protective anti-glare lens for long viewing distance and ruggedness.
- **New!** Channel information display – Active channel (TX/RX) and RAN Code displayed at all times to the user. An "INVALID" display message indicates an incorrect channel entry.
- **New!** "*" and CHAN Button combination controls display brightness. Automatic or field-settable dimming of display in low light environments.
- Front panel push buttons are large and flush mounted to ensure correct entry and backlit for low light operation.
- **New!** RAN Code Button allows individual entry of up to 64 RAN codes on a per channel basis. Default RAN setting = 01 TX, 00 RX.
- **New!** Dual color LED indicators for improved radio awareness. RX Green=Valid Transmission, same channel and RAN code; RX Yellow=Co-channel/Busy, same channel different RAN code, or analog signal. TX Red=Transmit indicator
- **New!** NXDN Unit ID and Group ID of a transmitting radio appears on the RCCR display - Provides the locomotive engineer with identifying information about the calling radio.

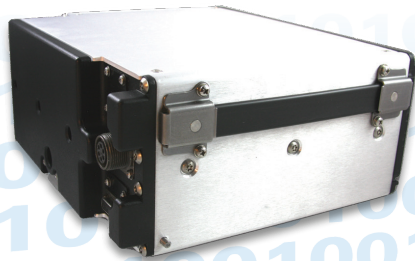
- Use of CHAN or HOME Button allows individual entry of all AAR narrowband or NXDN digital channels and up to 500 "custom" programmed alpha-numeric Home Channels.
- Large speaker provides loud, crisp, easy-to-understand audio.
- Oversized easy-to-grasp carrying handle allows for hassle-free radio transport.
- **New!** Optional Ethernet Connection.
- **New!** Supports optional DVR Hardware Mod – allows the output and capture of both transmit and receive radio audio with an externally connected, railroad provided, communication recording device. See companion Option below.
- **New!** Optional Event-Tagging Firmware Upgrade** – Provides RS-232 output of specific tagged radio events. The recording of tagged radio events requires an externally connected, railroad provided, time-stamping storage device. Tagged events include: received and transmitted radio audio, PTT button activation, channel change buttons and measured RSSI with the event – well suited for safety conformance audit purposes. Contact factory for details. Optional DVR Mod required for the capture of recorded audio.
- Dual front-end design; narrow front-end with dual surface acoustic wave (SAW) filters for AAR channels and wider front-end for Non-AAR VHF operation on frequencies in 150-174MHz band.
- Appropriate front-end is automatically selected for channel/frequency chosen.
- Supports 170 MHz Mexican frequencies via wide front-end.
- Tight RF specifications for urban environments. Frequency stability supports FCC 6.25kHz super-narrowband requirements.
- Internal flash memory and program code make the radio externally upgradeable
- High VSWR Alert: While transmitting, radio automatically shows [ANTENNA] on the display if it detects an antenna VSWR greater than 3:1. Provides quick visibility of a problem due to a faulty antenna connection at the radio, the cable or the antenna itself. Reduces down time and increases safety by ensuring maximum radio performance.
- Special emphasis on easy access and serviceability of all internal PCBs and related electronics. Assembly/disassembly straightforward by service personnel.
- **New!** NXR Upgrade Kit. Permits certain legacy RCCR radios to be upgraded to NXR functionality. Contact factory for details.
- Manufacturer 2 year limited warranty.
- Designed, manufactured, and supported by Ritron's factory in Carmel, IN USA.

U 00003
NXDN Unit ID

G 00000
NXDN Group ID

** Requires License Agreement

Heavy Gauge Metal Enclosure for Maximum Durability



Side/Rear View-1
Easy-to-grasp carry handle.



Side/Rear View-2
All side and rear connectors are recessed to protect against damage.



Rear View
Screw Latch, Handset, Programming and Accessory Connector. Optional Ethernet Connection.

RCCR-152-NXR 2-Piece Version (Cable not included)



SPECIFICATIONS

GENERAL

FCC ID:	AIERIT28-150
FCC Rule Parts:	90
Industry Canada ID:	1084A-RIT28150
Industry Canada Specifications:	RSS-119, Issue 9
Frequency Range:	Narrow (AAR) Front End.....159–162 MHz Broad Front-End.....150–174 MHz
Synthesizer Step Size:	2.5 kHz
Channel Step Size:	15kHz (Wide) 7.5 (Narrow) 7.5kHz (Very Narrow)
Frequency Stability:	+/- 1 PPM (-30° to +60°C) TX/RX
RF Channels:	* AAR Wideband Channel 05 – 97 * AAR Narrowband Channels 005–097 * AAR Narrowband Channels 104–197 * AAR Digital Channels 302–488 * Custom Programmed Home Channels 1-500 * 64 NXDN RAN Codes. Front panel selectable. Default 01 TX, 00 RX. * CTCSS * Digital Coded Squelch * Single-Tone Encode (Home channels only) * DTMF Encode
Tone/Code Signaling:	
Environmental:	Splash resistant, shock & vibration as per AAR S-5702, section 3.2.4
Antenna Fitting:	50 ohms, SO-239 connector
Dimensions:	4.4"H x 10.6"W x 9.6"D
Weight:	16.7 lbs.
Enclosure Construction:	Modular case assembly made from precision machined aluminum plate. The case is assembled using corrosion resistant, high strength, stainless steel fasteners.

TRANSMITTER

	ANALOG WIDE	ANALOG NARROW	NXDN™ DIGITAL VERY NARROW
FM Hum and Noise:	50 dB	45 dB	n/a
Audio Distortion:	< 3%	< 3%	< 3%
RF Power Output @ +13.6 VDC (adj.):	10-50 Watts	10-50 Watts	10-50 Watts
Spurious & Harmonics:	< - 25 dBc	< - 25 dBc	< - 25 dBc
Audio Response:Meets FCC and EIA requirements....		
Time-out Timer:60 seconds, programmable.....		

RECEIVER

	ANALOG WIDE	ANALOG NARROW	NXDN™ DIGITAL VERY NARROW
Sensitivity (12 dB SINAD): (3% BER)	0.25 µV (- 119 dBm) typical		0.22uV (-120dBm)
L.O. Injection:	High side (RX frequency + 43.65 MHz)		
Adjacent Channel:	80 dB	70 dB	55 dB
Spurious Rejection			
(AAR Channels):	90 dB	90 dB	90 dB
Image Rejection:	80 dB	80 dB	80 dB
Intermodulation:	80 dB	80 dB	80 dB
CTCSS/DCS Decode			
Deviation:	500–850 Hz	350–500 Hz	n/a
FM Hum and Noise:	50 dB	45 dB	n/a
Noise Squelch Sensitivity:	Programmable, factory set for 0.3-0.35 µV		
Frequency Response:300–3000 Hz, deemphasized.....		
Audio Output:12 Watts into 4 ohms, with < 3 % THD.....		
Receiving System:Dual conversion superheterodyne.....		
IF Frequencies:1st 43.65 MHz.....		
2nd 450 kHz.....		

POWER REQUIREMENTS

	+ 72 VDC IN	+13.6 VDC IN
Minimum Supply Voltage:	+ 58 VDC	+10.9 VDC
Maximum Supply Voltage:	+ 85 VDC	+15.5 VDC
Standby Current:	230 mA	1 A
Receive Current (1/2 volume):	340 mA	1.6 A
Transmit Current:	2.1 A @ 50 Watts	10 A @ 50 Watts



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