



RCA
Communications Systems

*prodigi*TM SERIES

PROFESSIONAL DIGITAL RADIO PRODUCTS



RDR4220 UHF / VHF

RDR4250 UHF / VHF

RDR4280 UHF / VHF

The Intelligent Choice for
Digital Two-Way Radio Communication



The RCA PRODIGI™ Radio Series is compatible with other DMR Digital radios on the market. Operational in both digital and analog modes, the PRODIGI™ Radio Series delivers crystal clear, dependable communication. RDR4220, RDR4250 and RDR4280 are designed to be used in a wide range of applications. Industries such as oil and gas, manufacturing, construction, facility management, security, hotels and resorts, casinos and more, can benefit from its basic push to talk functionality and advanced security and emergency features.

RDR4220 / RDR4250 / RDR4280 FEATURES

ADVANCED MULTI-MODE FUNCTIONALITY With different operating modes — Conventional Analog, Conventional Digital DMR Tier II, Digital DMR based PRODIGI™ Plus, the portable will truly meet even the most demanding communication needs. The RCA RDR42x0 series digital portables radios are designed to connect your workforce efficiently and provide you with reliable communication allowing you focus on growing your business.

CROSS-BRAND COMPATIBILITY Utilizing the DMR Digital technology according to the ETSI TS 102 361-1,-2,-3 Standards the RDR42x0 series portables are compatible with all RCA two-way radios as well as all other major brands, including digital equipment, such as Motorola, Hytera and Vertex series digital two-way radios and repeaters.

INDUSTRIAL DURABILITY AND RELIABILITY Designed with durability in mind with lightweight and rugged aluminum alloy die-cast chassis, 3.5 mm thick high quality, polycarbonate thermoplastic housing with superior toughness, flame retardancy, scratch and heat resistance and 7x battery locking points to the radio chassis.

WATERPROOF AND DUSTPROOF DESIGN The RDR42x0 series portables are designed and built with the most demanding conditions in mind. Your team needs radios that will not fail them, regardless of the working environment. The radios are designed to the Military 810C, D, E, F, G and the IP67 Waterproof and Dustproof standards.

FEATURE RICH AND VERSATILE The RDR42x0 series portables come in 3 different models, the standard non-display RDR4220 unit; the upgraded RDR4250 with large, 1.8 inch Full Color Display and navigation keys; the advanced RDR4280 unit with a large, 1.8 inch Full Color Display, full keypad. Businesses, Departments and Government Agencies can choose the best model for their needs, taking advantage of advanced features such as Caller ID, Group and Private Call, Radio Check, Radio Monitor, Radio Enable/Disable, Emergency, Man Down, Lone Worker Alerts, Text Messaging, Pre-saved Status Messaging, Encryption and more.

IMPROVED COMMUNICATION RANGE The RDR42x0 Radios utilize the DMR digital technology allowing for the transmissions to stay clear from background noise regardless of the distance between two radio units, providing virtually no deterioration of the voice quality, thus increasing the usable coverage area where analog communication will be very poor or not possible at all.

FULL SHIFT PERFORMANCE The RCA PRODIGI™ RDR42x0 series portables provide up to 40% improved battery performance in digital mode over analog, allowing for longer operating time on a single battery charge. With a typical duty cycle of 5 (Rx) - 5 (Tx) - 90 (Stand By), the RDR4380 color display unit with 2300mAh Lithium Ion battery can provide up to 10 hours of operation in Analog mode and up to 14 hours of operation in Digital mode.

INTRINSICALLY SAFE OPTION Certified to the requirements of UL 913 5th Ed., TIA 4950-A, CSA C22.2 No. 157- 92 | Class I, II, III; Division 1; Groups C-G; Division 2; Groups A-G; Temp T3C (with B4223LIIS IS Approved Battery Only) for use in hazardous locations where flammable gas, vapors or combustible dust may be present. The RDR42x0 Series Intrinsically Safe Certified Radios can be used in a wide range of applications and industries such as Oil and Gas Extraction, Chemical and Paint Manufacturing, Refineries and more.

AVAILABLE ADVANCED OPTIONS When workers safety and communication security are of utmost importance, the RDR42x0 radios offer optional GPS Location tracking service* and advanced 40-bit ARC4 type encryption. Encrypting your radio communications and tracking your asset's location results in improved worker safety, increased productivity and shortened incident response time.

INDUSTRY LEADING WARRANTY The RCA RDR42x0 series portables are backed standard by an industry leading, hassle-free Three (3) Year Warranty.



*Requires compatible dispatch console. Requires outdoor use to access satellite signals. Digital mode only.



*Intrinsically Safe Models Available

RDR4220 / RDR4250 / RDR4280 SPECIFICATIONS

Features and Options

- DMR TII Conventional
- Prodigy™ Plus Mode*
- Analog Conventional
- Group and Private Calling
- PTT ID
- Text Messaging
- Scanning & Priority Scanning
- Radio Check
- Remote Radio Monitor
- Radio Enable/Disable
- Call Alert
- One Touch Access
- Emergency Alarms
- Man Down Alert
- Lone Worker Alert
- Advanced Digital Encryption*
- Roaming*
- GPS*
- DTMF, 2-Tone, 5-Tone and MDC1200 Signalling Options

- Up to 8 Programmable Function Keys
- X-Sound+HD Enhanced Audio
- Large 1.8 inch Full Color LCD Display
- Ergonomic Design with Large Knobs and Keys
- Battery Pack with High Quality Japanese Cells
- IP67 Design
- 3 Year Warranty

*Optional Features



GENERAL SPECIFICATIONS	
Model	RDR4220 / RDR4250 / RDR4280
Communication Protocols & Standards	DMR TII ETSI-TS102 361-1, -2, -3 Analog Conventional
Frequency Bands	136-174MHz* / 400-512MHz
Channel Capacity	16 / 1000 (model dependent)
Channel Spacing	12.5KHz / 25KHz
Operating Voltage	8.4V (Max) 7.4V (Nominal)
Battery Volume	2300mAh (Lithium battery)
Current Drain (Approx.)	Standby: 0.14A TX: 1.4A RX: 0.35A
Working Time (5-5-90 duty cycle, high TX power)	Analog: up to 10h Digital: up to 14h
Dimensions (Standard battery, not including antenna)	5.1 x 2.2 x 1.4 inch (H*W*D) 130.2 x 57 x 35.8 mm (H*W*D)
Weight (Standard battery, including antenna)	With LCD Display- 365gr. (12.8oz) No LCD Display- 340gr. (11.9oz)
Antenna Impedance	50Ω
Antenna Gain	0dBi
LCD Display	1.8 inches, 160x128pixel, Full Color
Digital Voice Vocoder	AMBE+2
Emission Designators	Analog 11K0F3E, 16K0F3E
	Digital 7K60F1D, 7K60F1E

TRANSMITTER	
Power Output	5 Watts VHF / 4 Watts UHF
FM Modulation	11K0F3E@12.5KHz
4FSK Digital Modulation	12.5KHz Data: 7K60F1D 12.5KHz Voice: 7K60F1E
Frequency Stability	±1ppm
FSK Error	≤3%
Conducted / Radiated Emission	-36dBm < 1GHz; -30dBm > 1GHz
Modulation Limiting	±2.5KHz@12.5KHz; ±5.0KHz@25KHz
FM Hum and Noise	40dB@12.5KHz; 45dB@25KHz
Adjacent Channel Power	60dB(12.5kHz); 70dB(25kHz)
Audio Response	+1 dB to -3 dB
Audio Distortion	≤3%

ENVIRONMENTAL SPECIFICATIONS	
Operation temperature/ Storage temperature	-4°F~+140°F (-20°C~+60°C) / -40°F~+122°F (-40°C~+50°C)
ESD	IEC 61000-4-2 (level 4); ±8KV(contact); ±15KV(air)
Designed to meet Environmental Test Standard for Temperature, Fall, Vibration	MIL-STD-810 C; D; E; F; G
IP Rating	IP67

RECEIVER	
Sensitivity	Analog 0.22μV (12dB SINAD)
	Digital 0.2μV (5% BER)
Intermodulation (TIA603D)	70dB
Adjacent Channel Selectivity (TIA603A)	60dB@12.5KHz / 70dB@25KHz
Adjacent Channel Selectivity (TIA603D)	60dB@12.5KHz / 70dB@25KHz
Spurious Rejection (TIA603D)	70dB
Hum and Noise	-40dB@12.5KHz; -45dB@25KHz
RX Max. Audio	0.75W at 3% Distortion / Max 1.5W
Rated Audio Distortion	≤3%
Audio Response	+1 dB to -3 dB
Conducted Spurious Emission (TIA603D)	< -57dBm

INTRINSICALLY SAFE CERTIFICATION	
UL 913 5th Ed., TIA 4950-A, CSA C22.2 No. 157- 92 Class I, II, III; Division 1, Groups C-G; Division 2, Groups A-G; Temp T3C. (*Requires B4223LIIS Battery)	
GPS	
Accuracy is applicable for long time tracking. (95% with -130dBm signal strength, and min. 5 accessible satellites)	
TTFF Cold Start	< 60 sec
TTFF Hot Start	< 10 sec
Horizontal Location Accuracy	< 16.5 ft. (< 5 m.)

* Release Q1 2022

Disclaimer: The above specifications are tested according to the listed standards. Due to continuous technical development, they are subject to changes at any time without a prior notice.

For more information, visit RCACommunicationsSystems.com

ACCESSORIES & OPTIONS

RDR4220 / RDR4250 / RDR4280 ACCESSORIES



**Heavy Duty IP67
Speaker Mic**
SM380WP-X83



**Heavy Duty IP67
Noise Cancelling
Speaker Mic**
SM480WPNC-X83



**2-Wire Surveillance
Kit**
SK28NE-X83



**High Noise Reduction
Noise Cancelling
BTH Headset**
HS780NRNC-X83



**VHF / UHF Whip
Antenna with GPS**
ANH4200V/U-WG



**VHF /UHF Stubby
Antennas**
ANH200V/U-S
VHF/UHF



Standard Battery
B4223LI
Lithium-Ion
7.4V 2300mAh 17.02 Wh



**Intrinsically Safe
Battery**
B4223LIIS
Lithium-Ion
7.4V 2300mAh 17.02 Wh



**Nylon Holsters - Fixed/
Swivel Clip/Belt Loop**
HN4220/80FC/SC/FL/SL



Heavy Duty Belt Clip
BC4200



**Single Unit Desktop
Rapid Charger**
CH4201



**6 Bank Multi Unit
Rapid Charger**
CH4206



www.rcacommunicationssystems.com
products@rcacommunicationssystems.com
(877) 822-2915
Created in U.S.A.

For Sales, Warranty and Customer Support please contact:

Discount Two-Way Radio Corp., U.S.A
555 W. Victoria St., Rancho Dominguez, CA 90220
Toll Free: (800) 895-5122 | Fax: (877) 291-9565
info@dtwr.com
www.dtwr.com