



Gateway: Digital Radio to IP RDRG-1 Series



The RDRG-1 Series Digital Radio Gateway operates as an interface between the Digital Radio Management System and a digital radio such as a MotoTRBO mobile or a P25 base. For interfacing to different digital radio systems such as : VHF, UHF, P25, Tetra, or a combination of them. The RDRG-1 Series translates voice and data into the *same* digital protocol, so different radios and protocols will all be able to connect to the one network. Users are no longer restricted in their choice of one protocol. True interoperability is now possible. This provides organizations with a number of benefits:

- Phased Network Upgrades
- Ability to choose the protocol most appropriate for each part of the network
- Best possible flexibility

Allows digital radios to be remotely controlled over any IP network. It is a single-channel device with a local handset port with the ability to:

- Create back-to-back IP links between several radios using point-to-point or point-to-multipoint communications
- Provide remote access to a single radio from an operator's handset using the handset port on the front panel
- Connect a radio channel to a VoIP-based radio-dispatch system

Features:

- Powered from a 12 volt DC plug pack
- Connects to both transceivers and operator handsets
- Multicast addressing support
- VoIP technology and multi-drop capability for operator handsets
- Multiple voice codecs for best compression
- 10/100-BaseT Ethernet port via RJ-45 connector
- 4-wire plus E&M signals on Transceiver port
- Isolated PTT control using relay contacts and isolated COS input using an opto-coupler
- Voice Activity Detection (VAD) with silence suppression for bandwidth efficiency
- Software attenuation of Radio port levels
- Status and diagnostic LED indicators on front panel
- Software configurable and firmware upgradeable via web interface
- Static or dynamic IP address configuration
- Optional voice encryption with user configurable key
- Supports incoming SIP connections
- Interfaces to radios that do not provide a COS output

Supported Protocols:

- MotoTRBO
- P25
- DMR**
- dPMR
- IDAS (NXDN)
- NEXEDGE (NXDN)
- Tetra
- PMR

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Specifications

Power

Operating Supply Voltage: 12VDC nominal (11.5VDC to 13.8VDC)
Operating Current: (12V) 300mA (regulated) if no USB current is drawn, and 700 mA (regulated), if current is drawn, from the external USB connector

Radio Ports

Connector 8-way US modular
Configuration 4-wire transformer coupled
Input Impedance 600Ω / 10 k Ω (software selectable)
Output Impedance 600Ω
Input Levels -30dBm to +10dBm (-10dBm nominal).
Output Levels -30dBm to +10dBm (-10dBm nominal)
Audio Level Adjustment (software configurable) -10dB to +10dB
Frequency Response 50Hz to 3000Hz
E-Input Lead Input DC Voltage Opto-coupled @ 3.3Vdc to 30Vdc.
Software configurable for voltage, contact, switched ground or switched power.
M-Output Lead Contact Power Limit Relay contacts limited to 30W (30Vdc @ 100mA).
Software configurable for voltage, contact, switched ground or switched power.

Handset Port

Connector 6-way US Modular
Configuration 2-wire, balanced half-duplex, 50 Hz to 3000 Hz
Impedance Input: 50 k Ω, Output: 600 Ω
PTT and COS (Busy) levels PTT input: contact to 0Vdc, Busy Output: +12Vdc

Network Interface

Connector 8-way US Modular (RJ45)
Interface 100BASE-TX Ethernet with auto detect (also supports 10 BASE-T)
Protocol RTP, Google Protocol and other digital dispatch protocols.
Radio Codec AMBE+2
Radio over IP Codec G.711, G.726 ADPCM, GSM (13kbps)

Front Panel Indicators

System Power OK
RS-232 Activity
Radio Port PTT output active, COS (Busy) input active
Ethernet Link and Activity

Physical, Environmental, Reliability

Dimensions: 220mm (W) x 35mm (H) x 230mm (D).
Weight: 0.7 kg (1.54 Lbs)
Interfaces: 10/100Mbit Ethernet; USB Host; 4WE&M analog audio; Handset; Serial RS232
Operating Temperature: 0 to 60°C (32 to 140°F)
MTBF (Mean time between failure): 15.6 years