

PTC 220 Locomotive Radio

Model # 63020

Specifications



General

Frequency range: 217.6 - 222.0 MHz

Channel spacing: 25 kHz

Temperature range:
 - Operating: -40°C - +70° C
 - Storage: -55° C - +85° C

Humidity, Operating: up to 95% non-condensing; Test per S-5702, clause 3.2.3.2

Frequency Stability: ±1.5ppm over operating temperature range (+25° C reference)

DC Input Voltage Range: 45-100VDC

DC Current Drain (74VDC Input)
 • Transmit (into 50 ohm load): 1.8A typ, 4.0A max
 • Receive: 0.5A max

DC Power Connector: MS 3102 A 18-4P or equivalent

Size: LSI rack compatible, 5xMCU max

Weight: 21.2 lbs, (9.6 kg)

Antenna Connectors: 2, Type N female

- TX/RX1 (transmit/primary receive)
- RX2 (diversity - RX only)

External interface: Ethernet (2) 10/100 Mbps
 • Data Network port - M12-8 female
 • Maintenance port - M12-8 female

Configuration Interface Module: SD Card

Display: Activity/Diagnostic LEDs on Front Panel

Transmitter

RF Power Output: 50W PEP
 • Adjustable 15W to 50W PEP

Output Impedance: 50 Ω

Operating VSWR: <3:1

Modulation Waveforms:
 • 16kbps π/4DQPSK (linear)
 • 32kbps π/4DQPSK (linear)

Occupied Bandwidth:
 • Meets 47CFR90.210 (f), five aggregated channels

Conducted spurious emissions: -25dBm max

Max Duty Cycle Rating: 30%

Emission designators:
 • 16 kbps π/4DQPSK - 8K90DXW
 • 32 kbps π/4DQPSK - 17K8DXW

Regulatory Approvals:

- FCC ID BIB63020
- IC 1300A-63020

Receiver

Maximum Usable Sensitivity, Static, BER<10⁻⁴ :

- 16kbps π/4DQPSK: -111dBm
- 32kbps π/4DQPSK: -108dBm

Adjacent channel sensitivity: 70dB @ 25kHz offset

Spurious Response Rejection: 65dB

Intermodulation Rejection: 65dB

High Input Level (-7dBm): BER<10⁻⁴

Blocking, 1 MHz Offset:
 • 16kbps π/4DQPSK: 80dB
 • 32kbps π/4DQPSK: 77dB

Number of Simultaneous Receiver Channels: 16 - paired as 8 diversity
 • Seven (7) 16kbps π/4DQPSK
 • One (1) Auto 16kbps/32kbps π/4DQPSK