



PTC 220 - Locomotive Radio

Model # 63020

Designed for reliable communication with the back office through base stations; and directly with the wayside radio through a 220 MHz RF link.

General

Frequency Range: 217.6-222 MHz

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

Channel spacing: 25 kHz

Temperature range:

- Operating: -40°C to +70°C
- Storage: -55°C to +85°C

Humidity: Operating: 0% to 95%; non-condensing Test per S-5702, clause 3.2.3.2

DC Input Voltage Range:

- 45-100VDC
- Damage limit: 120VDC

DC Current Drain (74VDC input):

- Transmit: 4A (peak) max into 50Ω load
- 1.8A typical
- Receiver: 05A max while receiving

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

Size: LSI rack compatible, 5xMCU max

Weight: 21.2 lbs (9.6 kg)

Antenna Connector: 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: 50Ω | Operating VSWR: <3:1

Modulation Waveforms:

- 16 kbps $\pi/4$ DQPSK (linear)
- 16 kbps $\pi/4$ DQPSK (linear)

Occupied Bandwidth:

- Meets 47CFR90.210(f),
- Five aggregated channels

Conducted Spurious Emissions: -25dBm max

Max Duty Cycle Rating: 30%

Emission Designators:

- 16 kbps $\pi/4$ DQPSK - 8K90DXW
- 16 kbps $\pi/4$ DQPSK - 17K8DXW

Regulatory Approvals:

- FCC IF BIB 63010;
- IC 1300A-63020

Receiver

Maximum Usable Sensitivity, Static BER>10⁻⁴:

- 16 kbps $\pi/4$ DQPSK: -111dBm
- 32 kbps $\pi/4$ DQPSK: -108dBm

Adjacent Channel Sensitivity: 70dB @ 25kHz offset

Spurious Response Rejection: 65dB

Intermodulation Response Rejection: 65dB

High Input Level: (-7dBm): BER>10⁻⁴

Blocking, 1MHz Offset:

- 16 kbps $\pi/4$ DQPSK: 80dBm
- 32 kbps $\pi/4$ DQPSK: 77dBm

Simultaneous Receiver Channels: 16, paired as 8 diversity:

- Seven (7) 16kbps $\pi/4$ DQPSK
- One (1) Auto 16kbps/32kbps $\pi/4$ DQPSK



About Meteorcomm:

Meteorcomm develops train control products as well as radio, messaging and systems management solutions that enable PTC operations and cost effectiveness.

Our technology solutions are currently being used by Class-I railroads, short-line railroads, commuter-line railroads, system integrators and PTC hosting providers. Our company partners with world-class manufacturers, system integrators and software developers to enhance, support, and deploy our solutions.

Contact us to learn more!

We'll be happy to provide information about PTC 220 Locomotive Radio as well as our Base and Wayside radios.

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