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

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

Regulatory Approvals:
  • FCC ID BIB63020
  • IC 1300A-63020