The Motorola RPD2000 is an essential component of a local access network configuration. It provides the upstream link that is needed for communications with set-top terminals. The terminals provide essential information such as Aloha interactive data, pay-per-view (PPV) purchases as well as critical status monitoring data. Data is received by burst demodulator modules within the RPD2000. The unit can be equipped with up to six modules, allowing data streams to be received from one to six upstream QPSK modulated RF carriers. Each RF carrier can be tuned to a separate frequency, as would be common in an interactive environment, or the same frequency, as would be more common in a polling only environment. The RPD2000 demodulates, provides forward error correction, and multiplexes this data into a single data packet that is transferred to the controlling processor via an Ethernet port.

Control and configuration of the RPD2000 is accomplished via the headend configuration tool or from the front panel control. RPDs are linked via an Ethernet connection in a local headend LAN. Each demodulator board can be dynamically tuned. For added reliability, demodulators can be daisy chained to allow for back-up capabilities.

- QPSK demodulates up to six upstream channels from digital set-top terminals
- Transfers power, timing, and packet error measurements of set-top terminals to controlling processor
- Performs forward error correction on received data to maintain robust communications with terminals
- Frequency selection from 36 upstream channels
- Configurable locally with the headend configuration tool or with front panel control
- Easy to read 2 x 40 LCD display for front panel configuration and unit status
- Industry standard 10 Base-T ethernet connectivity for status monitoring and network element control
- Demodulator boards can be daisy chained and dynamically provide redundancy
- Tuned to support Aloha Interactive, purchase polling
### INPUT SIGNAL

- **Modulation**: QPSK
- **Data Rate**: 256 kbps, ±50 ppm
- **Transmission Band**: 8 to 15 MHz
- **Carrier Frequency**: 8.096 MHz + (n x 192 kHz), where \( n = 0.1.2...35 \)
- **Channel Spacing**: 192 kHz
- **Channel Tuning Resolution**: 8 kHz
- **Interference and Noise**: 20 dB recommended, 16.5 dB (minimum)
- **Input Level**: 0 dBmV (nominal) ±5 dBmV, +45 dBmV (maximum)
- **Packet Size**: 62 bytes + Unique Word (28 bits)

### PHYSICAL

- **Dimensions**: 17” (W) x 14” (D) x 5.25” (H)
- **Weight**: 28 lbs (with 6 demod boards)
- **Mounting**: 19” rack mount

### ELECTRICAL

- **Input Voltage**: 100 to 240 VAC
- **AC Line Current**: <0.8A @ 120 VAC
- **Input Frequency**: 50 to 60 Hz
- **Fuse**: 2A, slow blow
- **Power**: 85 W (typical, with 6 demods)

### ENVIRONMENTAL

- **Ambient Temperature**: 0 to 50°C
- **Ambient Humidity**: 0 to 55%, non-condensing
- **Storage Temperature**: (-)40 to (+)65°C
- **Cooling**: Convection

### INTERFACES

#### Upstream RF Input

- **Data Rate**: 256 kbps
- **Frequency**: 8 to 15 MHz
- **Impedance**: 75 Ω
- **Connector**: F-type

#### Ethernet

- **Data Rate**: 10 Mbps
- **Messaging**: TCP, SNMP, UDP
- **Interface**: IEEE 802.3
- **Connector**: RJ-45 (10 Base-T)
- **Impedance**: 120 Ω
- **Cable Type**: UTP-5 (shielded)
- **Cable Length**: 150 feet (maximum)

#### PERFORMANCE

- **Demodulator BER**: 5 x10^-6 @ C/(N+1)=16.5 dB at nominal input level
- **Decoding Method**: Differential decoding
- **Error Correction**: Reed Solomon (up to 4 byte errors per packet)
- **Accuracy of Signal Level**: ±2 dB @ input level within ±3 dB of nominal
- **Accuracy of Noise Level**: ±2.5 dB @ input level within ±6 dB of nominal
- **Measurement**: ±6 dB @ input level within ±6 dB nominal

### OTHER

- **Limited Warranty**: One year

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Features and functions subject to change without notice.

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