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MODEL

RPD2000

RETURN PATH DEMODULATOR

MOTOROLA

Provides upstream link for communications with set-top terminals

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

RPD2000 SPECIFICATIONS

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 dBc recommended, 16.5 dBc (minimum)
Input Level	0 dBmV (nominal) ±5 dBmV, +45 dBmV (maximum)
Packet Size	62 bytes + Unique Word (28 bits)

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)

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

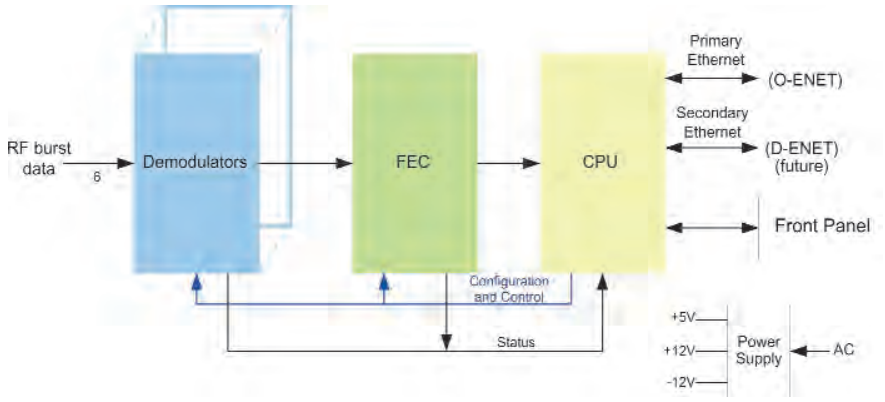
PERFORMANCE

Demodulator BER	5×10^{-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 Measurement	±2 dB @ input level within ±3 dB of nominal
Accuracy of Noise Level Measurement	±2.5 dB @ input level within ±6 dB of nominal ±6 dB @ input level within ±6 dB nominal

OTHER

Limited Warranty	One year

RPD2000 BLOCK DIAGRAM



MOTOROLA

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www.amt.com

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Advanced Media Technologies,® Inc. · 3150 SW 15th Street Deerfield Beach, FL 33442

(888) 293-5856 · (954) 427-5711 · Fax (954) 427-9688