



The Motorola OM 2000 Out-of-Band Multiplexer/Modulator generates an out-of-band (OOB) data stream from the headend to digital cable set-top devices, either individually or on a broadcast basis. The OM 2000 can be configured to receive data over Ethernet using UDP/IP, or as serial data over RS-530 or RS-232 communications links. The OOB data stream is used primarily as a signaling channel, but is also used to transmit electronic program guide (EPG) information and code download data. The out-of-band data stream is also the downstream path in an interactive system.

A Quadrature Phase Shift Key Modulator (QPSK) modulates the data on a 1.8 MHz-wide carrier. The center frequency is agile across the 71 to 129 MHz band. The OM 2000 uses null packets as necessary to perform rate aggregation between its inputs and the 2.048 Mbps output. Forward Error Correction (FEC) encoding and interleaving protect data integrity.

### SPECIFICATION SHEET

#### BENEFITS

- Receives UDP/IP Ethernet and RS-530 or RS-232 serial data from multiple external devices
- Provides FEC encoding of the output bitstream, interleaving, and randomization
- Maintains a contact closure connection with an EAS generator, and transmits EAS messages when triggered by the contact closure
- Combines multiple sources of data into one MPEG-2 output transport stream
- Provides QPSK-modulated output in a 1.8 MHz carrier in RF (71 to 129 MHz) or IF (44 MHz)
- Performs periodic insertion of internally stored messages
- Transmits an MPEG-2 data stream (authorization information, EPG data, code downloads, interactive data, and emergency alert packets) to cable terminals, individually or on a broadcast basis
- Provides variable RF power control
- Front-panel display indicates chassis IP address and RF output frequency
- Provides status and alarms via SNMP traps

## SPECIFICATIONS

### INPUT DATA

Ethernet	10/100Base-T Fast Ethernet
Number of Ports	2 on rear panel
Network Data Rate	10 to 100 Mbps (maximum)
Data Throughput	2 Mbps (nominal)
Interface	IEEE 802.3
Connector	RJ-45
Messaging	UDP/IP, SNMP
Serial RS-232 Interface	1 port on rear panel
Connector	DB9 male
Baud Rate	300, 600, 1200, 2400, 9600, and 19,200 bps
Serial RS-530 Interface	1 port on rear panel
Connector	DB25 male
Baud Rate	56 Kbps maximum (asynch), 2 Mbps maximum (sync)

### RF OUTPUT

Modulation	DQPSK
Forward Error Correction	Reed-Solomon (96,94)
Interleaving	Convolutional (I=8,J=12)
Carrier Symbol Rate	1.024 Msps
Channel Bit Rate	2.048 Mbps (2 bits/symbol)
Information Bit Rate	2.00533 Mbps
Carrier Suppression	50 dB (typical)
Output Signal BW	1.8 MHz
Center Frequency	71 to 129 MHz (configurable)
Frequency Step Size	50 KHz
Level	30 to 50 dBmV (configurable)
Level Step Size	0.5 dB
In-Band Spurious	-60 dBc minimum
MER	30 dB minimum
Return Loss	14 dB in channel, 10 dB outside channel
RF Output Level Stability vs. Temperature	± 2 dB
Accuracy of RF Carrier	15 PPM

### IF OUTPUT

Center Frequency	Fixed at 44 MHz
Output Signal BW	1.8 MHz
Level	Fixed at 26 dBmV

### ELECTRICAL (AC POWER)

Input Voltage	100 to 240 VAC (50 to 60 Hz)
Current	< 1 A, 120 V
Power Consumption	48 W (typical), 60 W (maximum)

### ELECTRICAL (DC POWER)

Input Voltage	-40 to -60 VDC
Current	0.9 A Max
Power Consumption	36 W (typical), 60 W (maximum)

### OPERATING ENVIRONMENT

Ambient Temperature	32 °F to 122 °F (0 °C to 50 °C)
Ambient Humidity	5% to 90%
Storage Temperature	-40 °F to 158 °F (-40 °C to 70 °C)
Cooling	2 fans

### MECHANICAL

Dimensions	1.75 in H x 19 in W x 18 in D (4.45 cm x 48.26 cm x 45.72 cm)
Weight	10 pounds (4.5 kg)
Mounting	Rack mount

### CONFIGURATION AND CONTROL

Local Element Manager

Motorola SDM

### OTHER

Limited Warranty	1 year
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Part Number	Description
531564-001-00	OM2000,MODULATOR,AC POWER
531564-002-00	OM2000,MODULATOR,DC POWER



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