OM-1000

MPEG-2/ DIGITAL OUT-OF-BAND MODULATOR

MOTOROLA

Out-of-band modulator used to transmit MPEG-2 data streams to cable terminals

The Motorola out-of-band multiplexer/modulator, OM-1000, provides an out-of-band data stream to the digital settop terminals. It is primarily used as a signaling channel but can also provide for transmission of program guide information, code downloads, InfraRed codes, as well as application information. It is also utilized as the downstream path in an interactive system.

The input to the Motorola OM-1000 can be configured with a mix of both Ethernet and serial inputs. A Quadrature Phase Shift Key Modulator (QPSK) modulates the data on a 1.5 MHz wide carrier. The Motorola OM-1000 is agile across the 71 - 129 MHz band. The transmitted data packets are composed of data that can be multiplexed either in the Motorola OM-1000 or externally. The Motorola OM-1000 uses null packets as necessary to perform rate aggregation between its inputs and the 2.048 Mbps output. Data integrity is protected by

Forward Error Correction encoding and interleaving.

HIGHLIGHTS INCLUDE:

- Transmits MPEG-2 data streams to cable terminals individually or on a broadcast basis
- Data streams consist of authorization information, electronic program guide information, code downloads and interactive traffic
- QPSK modulates data stream in a 1.5 MHz carrier to both IF and RF output ports
- Implements FEC code for cable transmission
- Generates and sends emergency alert packets to cable terminals
- Multiple data accepting ports including RS232, RS530, and Ethernet
- Frequency agile RF output with variable power control
- Industry standard 10 Base-T Ethernet connectivity for status monitoring and network element control
- Supports broadcast messaging
- Supports interactive applications

RF Output

Modulation:	DQPSK
Carrier Symbol Rate:	1.024 Mbaud
Carrier Suppression:	-30 dB (typical)
Center Frequency:	71 to 129 MHz carrier center frequency
Step Size:	50 kHz
Level:	30 to 50 dBmV
Level Steps:	1 dB (maximum)
Spurious Within	
± 1.25 MHz:	-40 dBc in 30 kHz BW in CW test mode
Beyond ± 1.25 MHz:	-45 dBc in 300 kHz BW

IF Output

Center Frequency:	44 MHz ± 0.005% fixed carrier frequency
Level:	26 dBmV nominal (factory set)

Performance

RF Output Level Stability	
vs.Temperature:	± 2dB
Accurancy of RF center:	± 0.01%
Transmit Spectral Density:	± 0.005% (accurancy of IF center frequency)
Shape:	± 650 kHz -3 dB (maximum)
	± 750 kHz -7 dB (minimum)
	± 1 MHz -35 dB (minimum)
	± 1.25 MHz -50 dB (minimum)
Forward Error Correction:	Reed-Solomon (96, 94)
Interleaving:	Convolutional (I=8, J=12)
I/Q Amplitude Imbalance:	± 0.5 dB (typical)
I/Q Phase Imbalance:	± 1.0 (typical)

Electrical

AC Input Voltage:	100 to 240 VA
Frequency:	50 to 60 Hz
Current:	<1 A, 120 V
Power Consumption:	30 W (maximum)

Interconnection (Ethernet Port)

Network Data Rate:	10 Mbps (maximum)
Data Throughput:	2 Mbps (nominal)
Interface:	IEEE 802.3
Impedance:	120 Ω
Cable:	Twisted pair
Connector:	RJ-45 (10BaseT)
Messaging:	UDP, SNMP

RS-232 DB9 Interface (standard)

Connector:	DB9 male
Cable:	Twisted pair
Port 1 Baud Rate:	9,600 bps asynchronous (fixed), 8/N/1
Port 2 Baud Rate:	300, 600, 1,200, 2,400, 9,600 and 19,200 bps

RS-232 DB25 Interface (optional)

Connector:	DB25 male
Cable:	Twisted pair
Baud Rate:	56 K maximum (sync or async)
Async Rates:	300, 600, 1,200, 2,400, 4,800, 9,600, 19,200, 38,400 and 57,600 bps
Sync Rates:	300 through 57,600 bps

RS-530 DB25 Interface

Connector:	DB25 male
Cable:	Twisted pair
Baud Rate:	56 K maximum async / 2 MB sync
Async Rates:	300, 600, 1,200, 2,400, 4,800, 9,600, 19,200, 38,400 and 57,600 bps
Sync Rates:	300 through 2,048,000

Operating Environment

Ambient Temperature:	-20 to 50°C
Ambient Humidity:	0 to 90%
Storage Temperature:	-40 to 75°C
Cooling:	Convection

Mechanical

Dimensions:	1.75" H x 19" W x 17" L
Weight:	10 lbs
Mounting:	Rack mount

Other

Limited Warranty:	One year

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