



DM240

Digital Video Broadcast Modulator



DM240 Digital Video Broadcast Modulator and PCMCIA Feature Cards

HIGHLIGHTS

- ▶ Features and Software Upgrades Readily Available Through Easy-To-Install PCMCIA Feature Cards
- ▶ Data Rates up to 238 Mbps (In 1 bps Steps)
- ▶ QPSK, 8PSK and 16 QAM Operation
- ▶ Rate 1/2, 2/3, 3/4, 5/6, 7/8, 8/9
- ▶ Reed-Solomon Outer Coding
- ▶ Frequency-Agile 50 to 90, 100 to 180, or 950 to 1750 MHz
- ▶ EN 301-210, DVB and MPEG-2 Compliant; ITU-1294 System B (DSS) (Optional)
- ▶ Low-Profile Chassis - 1 Rack Unit (1.75") High
- ▶ User-Friendly Front Panel Interface
- ▶ Optional Redundancy Configuration Monitor Port Available

THE NEW STANDARD IN DVB PERFORMANCE

Radyne's DM240 High-Speed Video Broadcast Modulator is the ideal choice to meet the exacting standards of high data-rate Video, Internet and Fiber Restoral satellite applications. Meeting the DVB standard EN301-210, the unit supports 8PSK and 16QAM applications with symbol rates up to 68 Msps. Supporting a variety of data and IF interfaces, the DM240 is configurable to meet most high-speed satellite applications.

The powerful onboard Monitor and Control (M&C) processor has the unique capability to download upgraded firmware and enhanced features from a field-changeable PCMCIA card. Offering unprecedented flexibility, this feature represents a new level of Radyne's outstanding Customer Support. Additionally, features are added to the installed equipment base with extreme ease, allowing the equipment to expand with changes in service while lowering initial installation budgets.

The modulator offers a frequency-agile IF output from 50 to 90, 100 to 180, or 950 to 1750 MHz in 100 Hz steps. Variable data rates from 1 Mbps to 238 Mbps can be set in 1 bps steps.

Additional features include the choice of remotely interfacing through one of three onboard connections: Ethernet, RS-485, or RS-232. The familiar Radyne front panel offers push-button control of all features and a backlit LCD display. Menus are specifically designed for ease of use and quick online operation as well as changes in all modulator configuration.

An optional 1:1 Redundancy Control Switch (RCS11) is available to provide the DM240 with superior system reliability.



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SPECIFICATIONS (EN301-210 AND EN300-421 COMPLIANT)

IF INTERFACE

Standard IF Specification

Tx IF:	70/140 MHz
IF Step Size:	100 Hz
Power Output:	+5 to -20 dBm
Power Step Size:	0.1 dB
Power Output Accuracy:	± 0.5 dB
Power Output Stability:	± 0.5 dB
Carrier Mute:	-55 dB, Automatic on Frequency Change
Spurious:	-55 dBc, In-Band
Output:	-45 dBc, Out-of-Band
Output Impedance:	75 Ohm
Return Loss:	20 dB
Phase Noise:	100 Hz, -63 dBc 1 kHz, -73 dBc 10 kHz, -83 dBc 100 kHz, -96 dBc
Output Connector:	BNC Female

L-Band Specification

Tx IF:	950 to 1750 MHz
IF Step Size:	100 Hz
Power Output:	-5 to -30 dBm
Power Output Accuracy:	± 0.5 dB
Power Output Stability:	± 0.5 dB
Step Size:	0.1 dB
Carrier Mute:	-55 dB, Automatic on Frequency Change
Spurious:	-55 dBc, In-Band
Output:	-45 dBc, Out-of-Band
Output Impedance:	50 Ohm
Return Loss:	17 dB
Phase Noise:	100 Hz -63 dBc 1 kHz -73 dBc 10 kHz -83 dBc 100 kHz -96 dBc
Output Connector:	SMA

BASEBAND

Variable Data Rate:	1 to 238 Mbps
Step Size:	1 bps
Symbol Rate:	68 Msps Maximum

Forward Error Correction (FEC) Encoding

Inner Code:	PTCM (8PSK, 16QAM), QPSK (Viterbi)
Code Rates:	QPSK = 1/2, 2/3, 3/4, 5/6, 7/8 8PSK = 2/3, 5/6, 8/9 16 QAM = 3/4, 7/8
Outer Code:	Reed-Solomon (204,188, T = 8)
Interleaving:	Convolutional, I = 12
Data Scrambling:	Per EN 300-421
Terrestrial Framing	
Modes:	204, 188, 187
Internal Clock Source	
Stability:	10 ppm
External Clock Accuracy:	100 ppm

MONITOR AND CONTROL

Interface: Serial RS485 (Remote) and RS232 (Terminal)
10Base-T Ethernet, (SNMP V1, V2, and V3)

Parameters Controlled: IF Frequency
IF Output Level
IF Output On/Off
Data Rate
Symbol Rate
Clock Polarity
Data Polarity
Inner Code Rate
Test Modes

Parameters Monitored: Faults
Stored Faults

OPTIONAL DATA INTERFACES

Serial: G.703, T1, E1, T2, E2, T3, E3, ST S1
DVB ASI
RS422/449 (<16 Mbps)
HSSI
DSS

Parallel: RS422 (M2P, DVB)
LVDS (M2P, DVB)
DSS

ENVIRONMENTAL

Prime Power: 100 to 240 VAC, 50 to 60 Hz, 40 Watts Maximum
Operating Temperature: 0 to 50°C
Humidity: Up To 95%, Non-Condensing
Storage Temperature: -20 to 70°C
Humidity: Up To 99%, Non-Condensing

PHYSICAL

Weight: 10 Pounds (4 Kg)
Size: 19" W x 17" D x 1.75" H
48.3 x 43.2 x 4.45 (cm)

OPTIONS

Output Impedance, 50 Ohm BNC (70/140 MHz)
48 VDC Operation

CONFIGURATION SERIES

Series 100: 1 - 10 Msps, QPSK
Series 200: 1 - 45 Msps, QPSK
Series 300: 1 - 45 Msps, QPSK/8PSK
Series 400: 1 - 68 Msps, QPSK/8PSK/16QAM

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