

Subscriber Networks

Model D9479 Gigabit QAM Modulator

Description

The Model D9479 Gigabit QAM Modulator (GQAM) represents an innovation in video transmission technology. The GQAM contains five input ports including four digital video broadcasting (DVB) standard asynchronous serial interface (ASI) inputs and a Gigabit Ethernet (GbE) port.



The GQAM contains the core functionality of four of our Model D9477 MQAM Modulators. One GQAM frees up a total of *seven* additional rack unit (RU) openings, thereby making the GQAM an exceptional product for mass deployment of video-on-demand (VOD), *anything-On-Demand* (xOD), and other interactive broadcast services.

The four ASI inputs allow for direct connection to current generation video servers, encoders, integrated receiver-decoders (IRDs), and other digital video sources at the headend. The GbE interface allows for connection to the next generation of video servers, either linked locally with the GQAM or remotely through a network.

Features

- Contains the core functionality of the MQAM modulator
- Includes 5 input ports and can provide up to 16 QAM outputs to achieve the broadcast capacity of 4 MQAM modulators or 16 QAM modulators
- Enables direct connect to both DVB ASI and Gigabit Ethernet video sources at the same time and the capacity to create transport streams from any combination of the 5 inputs
- Provides 4 DVB ASI inputs (216 Mbps each) and 1 plug-in Gigabit Ethernet input (GBIC) to multiplex content from any input to any of the 16 outputs (channels)
- Uses an output center frequency range of 91 MHz to 867 MHz
- Incorporates PowerKEY® DES and DVB Common Scrambling Algorithm options
- Enables higher rack density to save space
- Optimizes system management with provisioning and monitoring by the DNCS
- Facilitates deployment in either a headend or a hub

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Back Panel Connectors



Specifications

Digital I/O Performance	
Maximum Input Rate	1.804 Gbps (4 x 216 Mbps [ASI payload rate] plus 952 Mb/s [GbE payload rate])
Maximum Aggregate Output Rate	620 Mb/s (16 x 38.8 Mb/s)

RF	
Block Conversion	Up to four 6 MHz QAM channels within a 24 MHz bandwidth per QAM output
Frequency Range (center frequency)	91 MHz to 867 MHz
Minimum Tuning Step Size	The 24 MHz block of frequencies can be tuned in increments of 250 KHz
RF Output Power Level (per QAM carrier)	+44 dBmV to +54 dBmV (0.1 dB steps) minimum range Note: Noise and spurious performance limits apply with the output power in the range of 44 dBmV to 54 dBmV.
RF Output Power Tolerance Note: Actual output power is within ±2 dB of the value displayed for setpoint, temperature, and frequency variations. Power output adjustment range is from 42 dBmV to 56 dBmV.	± 2 dB
RF Output Impedance	75 ohm
RF Output Return Loss (unswelched)	> 12 dB (within output channel)
Spurious Outputs (50 MHz to 1.1 GHz)	< -60 dB (relative to the average power of the QAM channel with the highest power level)
Noise Floor (out of band)	< -136 dBc/Hz, > 40 MHz from center frequency

Mechanical	
Rack Mount Type	EIA RS-310
Dimensions	1.75 in. x 19 in. x 22.5 in., HWD (44.45 mm x 482.6 mm x 571.5 mm, HWD)
Weight	13.5 lb (5.4 kg)

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Specifications, continued

Environmental	
Operating Temperature Range	0°C (32°F) to 50°C (122°F)
Storage Temperature Range	-10°C (14°F) to 70°C (158°F)
Operating Humidity	5% to 95%, non-condensing

Electrical	
Input Voltage	AC unit: 90 VAC to 130 VAC @ 47 Hz to 63 Hz, or 180 VAC to 264 VAC @ 47 Hz to 63 Hz DC unit: -42 VDC to -57 VDC
Power Required (AC unit)	155 VA (typical)
Power Dissipated	151 Watts (typical)
In Rush Current	35 amps maximum, $V_{in} = 130$ VAC (AC unit) 75 amps maximum, $V_{in} = 264$ VAC (AC unit) 15 amps maximum, $V_{in} = -57$ VDC (DC unit)

Connectors	
RF Outputs	4 total, type F, 75 ohm
ASI Inputs	4 total, BNC, 75 ohm
Gigabit Ethernet	GBIC module connector. Modules are available for single-mode fiber, multi-mode fiber, and copper interfaces
Ethernet 10/100BaseT	RJ-45
Craft Port	DB-9 male
AC Power	IEC 320
DC Power	2-pin removable terminal block

Modulation						
6 MHz Spec	Type	Alpha	Interleaver	Symbol Rate (Msymbols/sec)	Data Rate (megabits/sec)	Bandwidth
ITU-A	DAVIC/DVB 64	12%	I=12, J=17	5.304	29.328 Mb/s	6 MHz
ITU-A	DAVIC 256	12%	I=204, J=1	5.304	39.104 Mb/s	6 MHz
ITU-B	QAM 64	18%	I=128, J=1	5.056941	26.971 Mb/s	6 MHz
ITU-B	QAM 256	12%	I=128, J=1	5.360537	38.811 Mb/s	6 MHz
ITU-C	DAVIC/DVB 64	13%	I=12, J=17	5.274	29.162 Mb/s	6 MHz

Regulatory Compliance	
UL, CUL, and FCC	Listed/Compliant

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Ordering Information

Contact your Sales Representative for product availability in your area.

Gigabit QAM Modulator Chassis	Part Number
Gigabit QAM Modulator Model D9479-1 (110 VAC unit)	740450
Gigabit QAM Modulator Model D9479-2 (48 VDC unit)	4000148

Gigabit Ethernet Interface Options (select one)	Part Number
Multi-mode fiber (MMF) GBIC, 850 nm wavelength, SC-SC connector type	1000839
Single-mode fiber (SMF) GBIC, 1300 nm wavelength, SC-SC connector type	1000127
Copper GBIC, 1000BaseT, RJ-45 connector type	4009446



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