

**EQAM-420A (EdgeQAM – 420A)** is designed to allow CATV operators to aggregate multiple SDTV/HDTV programs received in IP format and to deliver them over a standard coaxial distribution network.

The EQAM-420A is capable of accepting unencrypted (clear) 1000Base-T Ethernet (GbE) streams in one of the following two modes:

**Mode 1:** Up to thirty-two (32) MPEG-2/H.264 Single Program Transport Streams (SPTS)

**Mode 2:** Up to eight (8) MPEG-2/H.264 Multi Program Transport Streams (MPTS), each MPTS with maximum six (6) programs and not to exceed 38.8 Mbps.

The input streams are aggregated in up to eight (8) QAM RF channels in the 54-996 MHz range. The EQAM-420A can be configured with one (1) or two (2) QAM output modules, each capable of delivering four (4) adjoining QAM channels. Each QAM channel can contain up to four (4) programs.

The EQAM-420A allows the operator to maintain the QAM RF output unencrypted, or to encrypt it with Pro:Idiom™ against content piracy. To utilize the Pro:Idiom™ encryption feature, the input streams must meet the Pro:Idiom™ requirements. When Pro:Idiom™ encryption is activated, all QAM RF outputs will be encrypted regardless of the number of output modules present or the number of QAM RF channels assigned on each module.

Comprehensive remote monitoring and control is accomplished using any standard Web browser via a front-panel 10/100BaseT Ethernet connection.



## FEATURES

- Mode 1: Accepts up to thirty-two (32) MPEG-2/H.264 Single Program Transport Streams (SPTS)
- Mode 2: Accepts up to eight (8) MPEG-2/H.264 Multi Program Transport Streams (MPTS), each MPTS with maximum 6 programs and not to exceed 38.8 Mbps
- Configurable with one or two modules, each with four (4) adjacent QAM channels, for a total of eight (8) QAM channels
- Comprehensive GUI-based menu for remote monitoring and control via standard Web browsers
- User-selectable QAM 16, 32, 64, 128, and 256 modulation modes
- Provides a front-panel RF test point (at 20dB below primary QAM output)
- Provides SNMPv2 for product and network management
- Accepts variable and constant bitrate streams
- Provides Null packet insertion and deletion

## ORDERING INFORMATION

Model	Stock #	Description
EQAM-420A-1-16	6522A-1-16	EdgeQAM-420A equipped with 1 Quad-QAM output module (accepts 16 unencrypted HD programs)
	6522A-1-16P*	Same as above but with Pro:Idiom™ encrypted output
EQAM-420A-2-32	6522A-2-32	EdgeQAM-420A equipped with 2 Quad-QAM output modules (accepts 32 unencrypted HD programs)
	6522A-2-32P*	Same as above but with Pro:Idiom™ encrypted output
EQAM-420A-PIL	6522-PIL*	Software option to add Pro:Idiom™ encryption

\* Available to Pro:Idiom™ licensees only

# SPECIFICATIONS

## INPUT

<b>IP</b>	<b>Connector:</b> 1x RJ-45 <b>Standard:</b> 1000Base-T Ethernet <b>UDP/RTP:</b> Supported (user-selectable)
<b>Stream Portfolio</b>	<b>SPTS &amp; MPTS:</b> Null Packet Deletion & Addition Muxing of input streams <b>Bitrate:</b> Variable and Constant

## REQUIREMENTS FOR PRO:IDIOM™ OUTPUT

<b>SPTS</b>	<b>No. of programs:</b> 1 program (not to exceed 38.8 Mbps) <b>Null Packets:</b> Required (as per Pro:Idiom™ requirements) <b>Stream ID:</b> User- assigned (as per Pro:Idiom™ requirements) <b>Audio:</b> Dolby® Digital compliant
<b>MPTS</b>	<b>No. of programs:</b> Max. 6 programs per MPTS (not to exceed 38.8 Mbps) <b>Null Packets:</b> Required (as per Pro:Idiom™ requirements) <b>Stream ID:</b> User- assigned (as per Pro:Idiom™ requirements) <b>Audio:</b> Dolby® Digital compliant

## OUTPUT

<b>QAM</b>	<b>No. of Output Modules:</b> 1 or 2 Quad-QAM <b>Connector:</b> 1x "F" Female (rear-panel; for combined outputs) <b>Modulation:</b> QAM 16, 32, 64, 128, and 256 <b>Standards:</b> ITU-T J.83; Annex A and B <b>DVB Symbol Rate:</b> Variable; up to 7 MSymbol/sec (MBAud) <b>Frequency Range:</b> 54 to 996 MHz <b>Tuning:</b> CATV Channel Selectable (CH. 2 to 157) <b>Channels' Bandwidth:</b> 24 MHz (4x Adjacent 6MHz) <b>No. of Programs:</b> Variable (not to exceed 38.8 Mbps) <b>RF Level:</b> +35 dBmV, ± 1 dB increment <b>RF Level Adjustment Range:</b> +30 to +37 dBmV, 1 dB increment <b>Frequency Tolerance:</b> ± 0.5 kHz @ 77 °F (25 °C) <b>Frequency Stability:</b> ± 5 kHz over 32 to 122 °F (0 to 50 °C) <b>Amplitude Flatness:</b> ± 0.25 dB (over 6 MHz channel) <b>Phase Noise:</b> -98 dBc (@ 10 kHz) <b>Spurious:</b> -60 dBc <b>Broadband Noise:</b> -70 dBc (@ +35 dBmV output level, 5.5 MHz bandwidth) <b>Impedance:</b> 75 Ω <b>Spectral Inversion:</b> Auto Recognition <b>Carrier Suppression:</b> 45 dB <b>Return Loss:</b> 14 dB typical <b>Signal-to-Noise Ratio (SNR):</b> 40 dB typical <b>MER:</b> 39 dB typical <b>I/Q Phase Error:</b> Less than 1 degree <b>I/Q Amplitude Imbalance:</b> Less than 1%
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## GENERAL

<b>Dimensions (W x D x H):</b>	19.0 x 18.125 x 1.75 inches (483 x 460 x 44 mm)
<b>Power:</b>	115-230VAC, 60/50Hz
<b>Power Dissipation:</b>	38 W
<b>Weight:</b>	18 lbs (5.9 kg)
<b>Operating Temperature:</b>	32 to 122 °F (0 to 50 °C)
<b>Storage Temperature:</b>	-13 to 158 °F (-25 to 70 °C)
<b>Operating Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensing
<b>Storage Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensing

## ALARMS/MONITORING/CONTROL

<b>Local Monitoring:</b>	2x Output Status Module LEDs 1x "F" Female RF Test Port 1x Power LED
<b>Local Control:</b>	1x IP Reset button
<b>Remote Monitoring/Control Interface:</b>	GUI-based menu via standard Web Browsers (1x RJ45 front-panel connector; 10/100Base-T)
<b>SNMP v2:</b>	Error Log to Remote Server Ambient Temperature QAM Lock

## RELATED PRODUCTS

Model	Description
EQAM-400B	EdgeQAM for DishNetwork's ViP222 applications
EQAM-430A	EdgeQAM for DirecTV's COM23-600 applications
HDE-2H/2S-QAM	MPEG-2 HD Encoder; 2xHDMI + 2xHD-SDI + 2xComponent inputs; 4xQAM + 4xGigE + 4xASI outputs; EAS compatible; 1RU
HDE-4S-QAM	MPEG-2 HD Encoder; 4xHD-SDI + 4xComponent inputs; 4xQAM + 4xGigE + 4xASI outputs; EAS compatible; 1RU

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