

# GigaQAM<sup>®</sup> 3000

## Broadcast/Narrowcast EdgeQAM with DOCSIS<sup>®</sup> Encapsulator

The GoBackTV GigaQAM 3000 is a versatile, 24-channel edgeQAM with DOCSIS encapsulation capability. When paired with a GigaQAM IP controller unit, it enables the delivery of IP video to IP set top boxes via DOCSIS cable modems on any or all of its QAMs, using GoBackTV's CMTS-bypass technique. In addition, IP video and conventional MPEG2 video can be delivered simultaneously in the same QAM.

The GigaQAM 3000 can also act as a standalone broadcast, narrowcast, or switched broadcast edgeQAM. It has a flexible software-based MPEG2 multiplexer whose functionality includes MPTS passthrough with rate matching, SPTS add/drop, SPTS remultiplexing, PCR correction, and PID remapping. Video input ports are dual Gigabit Ethernet, and QAM RF outputs are modular in increments of 4 channels.

The GigaQAM 3000 gives cable operators the most affordable way to deploy IPTV over cable, and also supports a flexible transition strategy from analog broadcast and digital broadcast/switched digital broadcast to multicast/unicast MPEG2/4 and IPTV services.



### Key Features and Benefits

| Features   | Benefits   |
|--|--|
| DOCSIS encapsulator  | In conjunction with the GigaQAM IP, delivers affordable IPTV over cable using CMTS-bypass technology.  |
| Supports broadcast, narrowcast, and switched digital broadcast   | A single edgeQAM enables a range of applications, from traditional digital broadcast to VoD, time shifting, and nPVR.                        |
| Gigabit Ethernet input   | Allows use of standards-based Gigabit Ethernet for transport economies. Supports both centralized and distributed deployments.               |
| Input smoothing  | Allows use of existing IP networks with jitter. Up to 1000ms dejitter buffer.  |
| 24 QAM-RF channels in 1RU <ul style="list-style-type: none"><li>• Integrated upconverters</li><li>• 51MHz-858MHz frequency range</li><li>• 64/256 QAM modulation</li></ul> | High density in a 1RU form-factor makes efficient use of limited hub or headend rack space.  |
| Modular, independently frequency-agile RF channels (2 F connectors/4 channels per module)  | Flexibility – capacity can be added as needed.<br>Reliability – individual modules can be replaced.<br>Cost effective migration to IP video. |
| MPEG-2 remultiplexing, PCR correction, program routing, PID remapping/add/drop/filtering, SPTS add/drop, PSI generation/insertion.   | Allows maximum flexibility in output channel content. Input transport streams can be combined or passed through.                             |
| QAM rate conversion/correction for MPTS passthrough  | Removes video glitches due to video buffer underflows caused by mismatched MPTS packet rates.  |
| Supports VBR and CBR transport streams, high definition (HD) and standard definition (SD) video rates.   | Reduces need for external rate adjustment.   |
| CLI console and Remote Interfaces  | Local and remote management, control, and status, either via CLI or web-based interface using RetroVue Element Manager System.               |



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## GigaQAM® 3000 - Specifications

|                       |  |
|-----------------------|--|
| Input                 | <ul style="list-style-type: none"> <li>1 port Gigabit Ethernet 1000Base-T (RJ-45) for video</li> <li>1 port Gigabit Ethernet 1000Base-T (RJ-45) for GigaQAM IP DOCSIS® upstream traffic</li> <li>2 ports Dsub25 for GigaQAM IP DOCSIS timing and control information</li> <li>188 byte MPEG-2 MPTS/SPTS packets</li> <li>IP/UDP, IP unicast/multicast, Ethernet multicast</li> <li>Up to 1000 ms input jitter buffer (configurable)</li> </ul>   |
| Output (QAM-RF)       | <ul style="list-style-type: none"> <li>24 QAM-RF channels</li> <li>12 F-type connectors (75 Ω)</li> <li>Dual channel block upconversion</li> <li>High-definition/Standard-definition</li> <li>Frequency range 51-858 MHz (center)</li> <li>6 and 8 MHz bandwidth options</li> <li>ITU-T J.83 Annex A and Annex B QAM encoding</li> <li>64/256 QAM</li> <li>62.5 kHz frequency step size</li> <li>RF mute</li> <li>MPEG-2 MPTS</li> <li>Transmit power levels 45 to 58 dBmV (each channel)</li> </ul>     |
| Control Interfaces    | <ul style="list-style-type: none"> <li>1 Port Gigabit Ethernet (10/100/1000Base-T/RJ-45) : Management</li> <li>Serial (RS232) : Command Line Interface (CLI)</li> </ul>  |
| Management            | <ul style="list-style-type: none"> <li>Web based via RetroVue Element Manager System</li> <li>Local CLI</li> </ul>   |
| Processing            | <ul style="list-style-type: none"> <li>DOCSIS encapsulation</li> <li>Forwarding and replication of GigaQAM IP DOCSIS timing/control information</li> <li>MPEG-2 remultiplexing for VBR and CBR video</li> <li>PID remapping/add/drop/filtering</li> <li>PCR correction</li> <li>QAM rate conversion/correction for MPTS passthrough</li> <li>Program routing, addition, subtraction</li> <li>PSI generation/insertion/modification</li> <li>DVB SI Generation</li> <li>Private Data insertion</li> </ul> |
| Power                 | <ul style="list-style-type: none"> <li>Power Input voltage: 100-240 VAC</li> <li>Power consumption: 280W max</li> </ul>  |
| Environmental         | <ul style="list-style-type: none"> <li>Operating temperature: 0 to 40° C</li> <li>Humidity: Maximum 90% (non-condensing)</li> <li>Storage temperature: -40° to 70° C</li> </ul>  |
| Agency and Regulatory | <ul style="list-style-type: none"> <li>CE Mark</li> <li>Safety: EN60950-1</li> <li>EMC: EN55022, EN55024, EN 61000-3-2, EN 61000-3-3</li> </ul>  |
| Dimensions            | <ul style="list-style-type: none"> <li>1.75" H x 17.25" W x 24" D (4.4cm H x 43.8cm W x 61.0cm D)</li> <li>19" rack-mountable (1RU high)</li> </ul>  |

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### Order Information

GQ3100R: Broadcast/Narrowcast GigaQAM chassis with GigaQAM IP support  
 GQ0004R: GigaQAM upconverter line card - 4 channels, Annex A  
 GQ0005R: GigaQAM upconverter line card - 4 channels, Annex B  
 LIC-GQ0310: GigaQAM 3100 software license

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