Advanced Technologies | Datasheet

CALIAN®
Confidence. Engineered.

HydraQAM

Ideal for high-density SC-QAM products

HydraQAM is a 128-channel, high density PCIe SC-QAM modulator card offering compelling value on a per QAM basis. Our modulator design has exceptionally low power per channel and optimal thermal efficiencies to minimize the challenges of implementing our card into your solutions. The design is a small form factor PCIe card, ready to fit in many existing products and ideal for headend DOCSIS and video EdgeQAM applications.

The core of the HydraQAM is an FPGA firmware-based design that allows flexibility for future upgrades and improvements. Advanced DSP algorithms enable us to offer a wideband RF signal that fills the entire cable downstream spectrum. Each QAM channel has individual channel gain and frequency agility providing flexibility to turn off individual channels entirely or setting them to a unique power level or frequency. The HydraQAM's functionality enables it to easily integrate into legacy networks and accommodate existing traffic.

The modulator card supports up to 128 North American J.83 annex B QAM or 96 European J.83 annex A (DVB-C) QAM channels and it complies with DOCSIS DRFI specifications. The platform is based on a flexible architecture that can support legacy standards like NTSC and PAL. The ability for the HydraQAM card to support existing standards and future upgrades enables equipment providers and operators to future-proof their investments.

Our modulator design is scalable to higher channel counts and new specifications to meet CCAP specifications, and it's also scalable to lower channel densities—offering the ultimate in individual channel frequency agility.

We're a flexible business partner with the expertise and manufacturing resources to customize and test a design specific to your requirements. Calian, Advanced Technologies can provide the specific solution to meet your needs, whether it's creating an OEM product, embedded card, or a reference design and logic core.

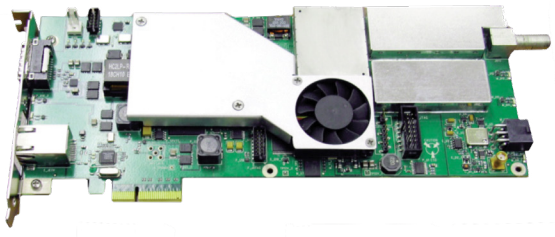
Specifications

Input

Number of inputs	• 128 MPEG2 MPTS streams
Ethernet IP	• 10 GigE Multicast / Unicast UDP/IP (CX4 Connector)
PCIe	• PCIe Gen 2

ITU-T J.83 modulation

Number of RF channels	• 128 (configured in blocks of 16 carriers)
MER (uneuqalized)	• >45 dB
Constellation	• 64 QAM, 256 QAM
Symbol rate range	• 5.0 to 7.0 (user can set)
Interleaver	• All supported
Roll-off factor	• 0.18 (64 QAM), 0.12 (256 QAM), 0.15 (DVB-C)



Output

RF channels	• Individually turnable in power and frequency across the band
Frequency range	• 46 to 1006 MHz
Power range	• 25 – 60 dBmV Composite (42 – 60 dBmV per channel)
Power step size	• 0.1 dB
Power accuracy	• ±1 dB
Frequency step size	• -1 Hz
Amplitude flatness	• 0.25 dB p-p over any 6 MHz slot
Connector	• F-connector (75 ohm)
External freq. ref.	• 10 MHz

Power

Power	• 60 W (typical)

Control interfaces

Ethernet	• 10/100BaseT (RJ45)

Physical

Size	• PCIe form factor (4"x10"). Chassis 19" Wide, 1–U (1.75") High, 11" Deep
Weight	• Approximately 1 pound

Environment

Operating temperature	• Operating 0°C to 40°C, Storage -40°C to 85°C
Humidity	• Operating: 0% to 50% non-condensing (max 80% for temperatures up to 31°C)
Certifications	• Decreasing linearly to 50% at 40°C Non-operating: 10% to 95% non-condensing
Card certification	• Chassis: EN 61000–6–2, EN 55022, FCC and EN 60950, CSA/UL

Chassis also available. Specifications subject to change without notice.

CALIAN
Confidence. Engineered.

For more information, contact: at.cableqammodulators@calian.com

calian.com | info@calian.com | 1.877.225.4264 |