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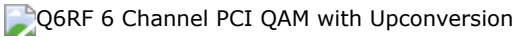
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The Wayback Machine - https://web.archive.org/web/20071124033101/http://videopropulsion.com:80/products/q6rf/

Q6RF 6 Channel PCI RF QAM


Q6RF 6 Channel PCI QAM with Upconversion

The *Q6RF* PCI Quadrature Amplitude Modulator (QAM) Host Bus Adapter (HBA) is the newest member of the Company's VDOPro™ family of high performance, low cost MPEG delivery appliances for open system Video on Demand (VoD) servers.

The VideoPropulsion *Q6RF* provides 6 QAM outputs in two sets of 3 adjacent channels. Each channel is capable of up to ten 3.8 Mbps SDTV or two 19.4Mbps HDTV streams when configured to use Annex B. Integral upconversion to RF output provides the ultimate in flexibility. An onboard JAVA engine substantially reduces host CPU overhead. Software drivers are available today for Sun Solaris, Windows, FreeBSD, and Linux operating systems.

Product Highlights

- Six RF QAM channels with 6 MHz or 8 MHz bandwidth
- User selectable QPSK, 16QAM, 32QAM, 64QAM, 128QAM, or 256QAM modes
- Upconversion to 50 - 860 MHz RF output (also available without upconversion)
- API compatible with VDOPro DVB-ASI multiplexing products
- Patented JAVA micro-engine architecture
- Two PCI short form factor variants available
  - Q6RFe: PCI Express Version 1.0a
  - Q6RF: PCI Version 2.2, compatible with 32 bit and 64 bit PCI systems
- Full power-up and service diagnostics

VideoPropulsion engineers, specialists in delivering supercomputer quality, high speed, high density, storage and networking solutions, have created a matchless product to meet requirements for the next generation of digital video deployments.

The *Q6RF* hardware and device drivers collect and multiplex MPEG-2 transport streams directly from host memory. The resulting multiple program transport streams are modulated and transmitted with upconversion. The *Q6RF* supports QPSK, 16QAM, 32QAM, 64QAM, 128QAM,and 256QAM with variable symbol rates up to 7 Msymbols/second. 512QAM and 1024QAM are available on request. Forward Error Correcting (FEC) encoding complies with ITU-T J.83 Annex A (DVB/DAVIC/EuroDOCSIS/IEEE802.14), Annex B (DigiCipherII/SCTE/DOCSIS/IEEE802.14), and Annex C (Japan).

VPiTV™ Libraries, VideoPropulsion's standardized application interfacing software, enables developers to build interactive VoD applications across a multi-vendor server environment. Customers can select from a broad range of interconnect hardware and use a common application program interface (API) which supports a fully heterogeneous server environment for the most popular operating systems: Sun Solaris on SPARC, Sun Solaris x86 in Intel, Linux, Windows NT/2000/XP, and FreeBSD.

Q6RF Detailed Specifications	
PCI Bus:	Q6RF: PCI-64/66 PCI Version 2.2 Q6RFe: PCI Express Version 1.0a
Environmental:	5C to 60C Operating Temperature Range 0% to 95% Humidity, non-condensing
Device Drivers and API:	Linux Solaris on SPARC Solaris x86 on Intel

	Windows NT/2000/XP FreeBSD
Power Requirements:	Q6RF: 3.3V @ 1.5 Amps 5 Volts @ 2 Amps Q6RFe: 3.3V @ 2 Amps 12 Volts @ 1 Amps
Output carrier frequency range:	50 MHz to 860 MHz
Channel plan:	Any Tuned by center frequency, not channel number 12.5KHz resolution
Frequency stability:	ą12 ppm 0-60 degrees C
RF Output Level (Min/Max):	45 dBmV min, >55 dBmV Max
Output level accuracy:	ą1 dB Based on internal power detector's accuracy Pout = 45 dBmV to 61 dBmV Fout = 50 MHz to 860 MHz
Output Level Step Size:	0.1 dB typical, 0.3 dB Max
Output Impedance:	75 Ohms
Output Connectors:	F type RF connector (2)
RF Output Return Loss:	14 dB Min, 16 dB typical 50 MHz to 860 MHz
In-band Spurious Outputs:	-48 dBc Max Fout ą3 MHz Pout = 58 dBmV Noise within ą50 kHz of the carrier is excluded
Broadband noise:	-12 dBmV Typical, -10 dBmV Max 47 MHz to 860 MHz Pout = 58 dBmV Integrated over 6 MHz
Phase noise:	0 kHz offset 50 MHz = Fout < 100 MHz: -90 dBc/Hz Typical, -85 dBc/Hz Max 100 MHz < Fout < 400 MHz: -91 dBc/Hz Typical, -85 dBc/Hz Max 400 MHz < Fout < 800 MHz: -90 dBc/Hz Typical, -85 dBc/Hz Max 800 MHz < Fout = 860 MHz: -88 dBc/Hz Typical, -85 dBc/Hz Max

Functional Specifications

Input:

- MPEG-2 Transport streams collected by the card from host memory
- Data can be any combinations of single program transport streams (SPTS)

Output:

- MPEG-2 multiple program transport stream (MPTS) modulated with QPSK, 16QAM, 32QAM, 64QAM, 128QAM, or 256QAM
- 512QAM or 1024QAM available on special request
- Variable symbol rates up to 7 Msymbols/second
- ITU-T J.83 FEC encoder
    - Annex A (DVB/DAVIC/EuroDOCSIS/IEEE802.14)
    - Annex B (DigiCipherII/SCTE/DOCSIS/IEEE802.14)
    - Annex C (Japan)
- Output carrier: 50 - 860 MHz RF with 12.5KHz resolution
- Ouput impedance: 75 Ohms
- Output connector: F connector (2)

Primitives:

- Mux initialization, open, close
- Program stream initialization, open, close, stop immediately or stop after stream rundown
- Output stream priming
- PAT/PMT/SDT/NIT/SID table support
- PID remapping and PID drop support

- PCR restamping
- Bandwidth management
- Packet size support: 188 byte (204 byte support on request)
- Dynamic Buffer Control

Driver Support

The VideoPropulsion Mux Drivers for the *Q6RF* use a highly efficient patent pending architecture for precise timing. Designed to automatically detect and configure to the hardware, these drivers offer numerous options to users. The driver accepts any combination of single program transport streams (SPTS) and multiplexes them into a single, multiple program transport stream (MPTS). The streams must be Constant Bit Rate (CBR) encoded and may contain embedded PAT, PMT and PCR data. The product is capable of remapping PIDs and restamping PCRs as needed for the multiplexing. Included with the driver are sample programs and their sources for guidance in using the API to interface with higher level applications. The *Q6RF* API is compatible with the API used on other VideoPropulsion products providing integrators with the flexibility to solve a myriad of customer needs with a minimum of effort.

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