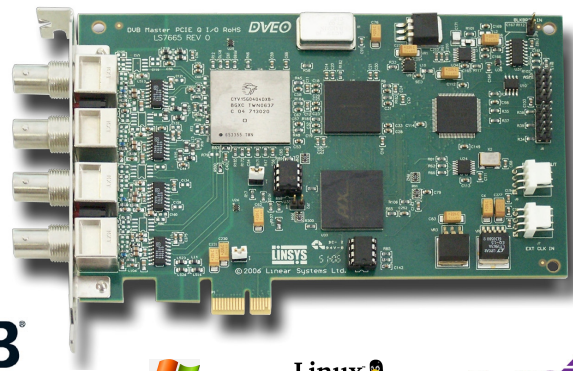


# DVB Master™ Quad/o PCIe

## Quad Channel DVB-ASI PCIe v1.0a Output Card with Enhanced Rate Control and Jitter Management on Each Port



### Features

- Four transmitter channels on the same PCI Express card
- Aggregate data rate to 852 megabits per second
- Multiple boards can be used for more outputs
- Looks like 4 separate DVB Master™ III Tx's
- Uses highly efficient Bus Master Link List DMA for data transform (saving CPU resources)
- Provides an interface for Layer-0 & Layer-1 of the DVB ASI standard
- Uses the proven Cypress™ HotLink® interface chip
- RoHS compliant (2002/95/EC)
- External clock input via NTSC or PAL black burst signal (available from on-board header)
- External clock reference input (available from on-board header)
- Unique silicon serial number
- Drivers for Windows® 7 32 and 64 bit, Server 2003, Server 2008, Windows® 2000, Windows® XP, and Linux®
- Windows® XP/Server 2003/Server 2008/Linux® API
- DirectShow® filter
- Advanced Transmit Capabilities –
  - Enhanced transmit rate “Fine Tuning” control to <2.8ppm granularity
  - Software selectable option to add sixteen – 0x00 bytes to 188 byte packets
  - External transmit clock inputs (black burst or external reference clocks)

### Applications

- DVB VoD (Video on Demand) Servers
- Cable TV
- Broadcast TV

### Overview

Worldwide the television industry is currently in the process of changing from analog to digital technology. MPEG-2 has now been universally adopted as the main standard for video compression. Since MPEG-2 must be decoded at the same rate it was encoded, an information layer needs to be added to the MPEG in order to transmit it to end users. Standards have been created by industry to provide for the methodology of packetizing MPEG-2 streams and adding encoding information in tables via data packets to the video packets. The DVB standard has been approved by the European Community and other industry and government groups as the standard to accommodate the need for satellite and terrestrial originated digital television. This product complies with the DVB-ASI specifications as defined in ETSI TR 101 891 and provides for the ability of computers to capture, process, and transmit DVB-ASI compliant streams.

DVB-ASI streams are routinely used to send and receive transport streams between different brands of equipment. These transport streams can be single program transport streams or multiprogram transport streams. Interestingly, RF modulators determine the maximum size of transport streams. QAM modulators can handle 38 Mbps, 8VSB modulators can handle 19.3 Mbps, and DVB-S2 can handle over 60 Mbps. Of course IP backbones can routinely transfer 100 Mbps transport streams. It is also worthwhile to note that H.264 streams can be embedded into any MPEG-2 stream. Our DVB-ASI interface cards can handle them all.



Computer Modules, Inc.

11409 West Bernardo Court

San Diego, CA 92127

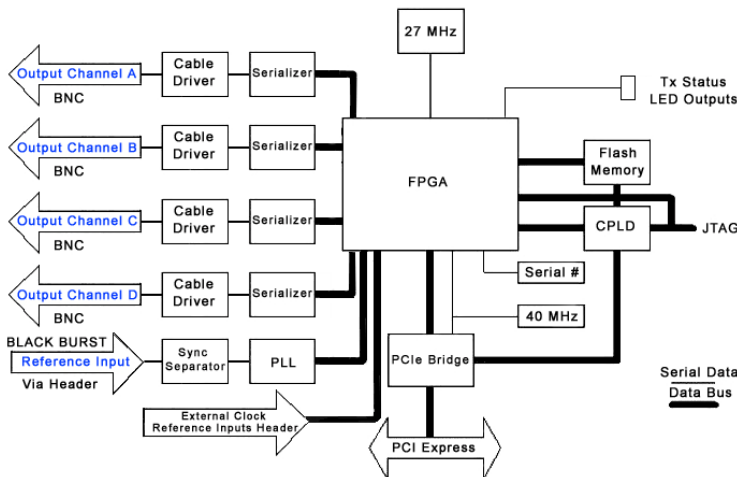
Tel: 858-613-1818 Fax: 858-613-1815

[www.dveo.com](http://www.dveo.com)

## Specifications

<b>Dimensions</b>	
Width:	4.376 in (11.115 cm)
Length:	6.6 in (16.765 cm)
Thickness:	0.6 in (1.51 cm)
<b>Typical Weight</b>	5.2 oz (147 g)
<b>Output Connectors</b>	75 ohm BNC
<b>External Clock Input</b>	75-Ohm DC Blocked ECL
<b>Data Output</b>	DVB ASI Coaxial, DVB Transport Stream
<b>Typical Power</b>	3 V and 12 V
<b>Operating Temperature</b>	0 to 55° C
<b>Operating Humidity</b>	To 90%, Non-condensing
<b>Status LED Indicators</b>	Tx
<b>Transmit FIFO Size</b>	4 KB per channel
<b>Bus Interface</b>	Single Lane (x1) PCIe 1.0a
<b>Driver Support</b>	Windows® 7 – 32 and 64 bit, Server 2003, Server 2008, Windows® 2000, Windows® XP, and Linux®

## Block Diagram



## Ordering Information

DVB Master Quad/o PCIe (Model 133)

Linux® and Windows® SDK available at no charge

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## Capabilities

**Transmitter Fine Tuning** – The normal inter-byte (IB) and inter-packet (IP) stuffing options available with the DVB ASI standard cannot be used for fine rate control. In some applications, such as reading files from a disk, it may be desirable to use stuffing to control the transmission rate of the stream in order to match the rate required by the Program Clock Reference (PCR) of a Transport Stream. Because of this, we have developed the Fine Tuning (FT) feature. Fine Tuning is accomplished by first setting the standard IP and IB to select a rate as close to the desired rate as possible. Then the FT parameter can be set to bring the rate within 2.5ppm of the target. This method of rate control works with small Tx buffers and gives minimum latency.

**Clock Source Options** – The transmit clock options include the Black burst clock, External Clocks and Internal Clock. The black burst input accepts a black burst signal for either NTSC or PAL video and is available as an on-board header. Up to four External Clocks are also available from an on-board header.

**Indicator LEDs** – Indicator LEDs are provided on the bracket to show transmitter operation (one LED per channel). The LED will flash to indicate when valid data is being transmitted on that channel.

**Null Packet Insertion** – Under software control but performed by hardware, "null packets" are automatically inserted into the bit stream.

**PCR Pacing** – Firmware support is available for releasing PCR packets at the correct PCR time. This method ensures that the transmit rate and PCR timing are the same as the original input stream.

**Reed-Solomon Conversion** – The software can be set to have hardware add 16 bytes filled with zeros to 188-byte packets to create a 204-byte packet stream.

**Conformity to DVB Standards** – The DVB Master Quad/o PCIe meets CENELEC EN50083-9: 1998 – Cable distribution systems for television, sound and interactive services – Part 9: Interfaced for CATV/SMATV headends and similar professional equipment for DVB/MPEG-2 transport streams.

**DVEO**  
Broadcast Division

Computer Modules, Inc.

11409 West Bernardo Court

San Diego, CA 92127

Tel: 858-613-1818 Fax: 858-613-1815

[www.dveo.com](http://www.dveo.com)