DVB-ASI is a physical interconnect standard created by the international standardization group known as the DVB Project (www.dvb.org). It is designed to carry MPEG-2 transport streams between devices at a maximum rate of 213 Mbps. The actual signaling rate of DVB-ASI is 270 Mbps, but there is overhead from the data encoding scheme and the maximum payload ends up being approximately 213 Mbps.

Transport streams are essentially packetized MPEG streams with tables embedded every 100 ms or so, which tell the ultimate MPEG decoder how to decode the stream.

Furthermore, transport streams may be combined or multiplexed to create multiprogram transport streams with separate PIDs, or program identifiers, that distinguish them as “channels” do in analog television.

We have incorporated as many features as possible into this low profile card. With all these features, our customers can create very powerful workstations that can process transport streams “on the fly” for applications such as broadcasting, cable TV, satellite links, video servers, and distance learning.

**Features**
- 213 Mbps DVB-ASI transmitter on a PCIe card
- Low jitter rate control with optional interbyte stuffing
- PCI Express 1.1 compliant interface bus
- Low profile PCIe card form factor
- Software-controlled Transmit Clock selection:
  - On-board oscillator (27 MHz)
  - External clock input (black burst) via header
- Mirrored Output (via header)
- Automatic stuffing of null PID packets via firmware
- Windows® XP/Server 2003/Server 2008/ Linux® API
- DirectShow® filter
- Proven third generation design
- Optional High Stability Oscillator (2.5 ppm)
- Silicon serial number
- Advanced Transmit Capabilities:
  - Transmitter Packet Size – 188 or 204 bytes
  - Reed-Solomon Conversion
  - Transmitter Fine Tuning (FT)
  - Fine Control PCR Pacing
  - Null Packet Insertion

**Applications**
- MPEG-2 Transport Stream Video Server/Generator
- MPEG-2 Transport Stream Repurposing
- SI Table Insertion for Private Data Broadcasting
- High Definition HDTV - Servers
- Electronic Program Guide Table Insertion
- IP over MPEG data encapsulation

**Overview**

DVB-ASI is a physical interconnect standard created by the international standardization group known as the DVB Project (www.dvb.org). It is designed to carry MPEG-2 transport streams between devices at a maximum rate of 213 Mbps. The actual signaling rate of DVB-ASI is 270 Mbps, but there is overhead from the data encoding scheme and the maximum payload ends up being approximately 213 Mbps.

**Highlights**
- Optional high stability oscillator with less than 2.5 ppm drift, meeting ATSC specifications.
Specifications

<table>
<thead>
<tr>
<th>Dimensions</th>
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<tbody>
<tr>
<td>Width</td>
<td>2.71 in. (6.89 cm)</td>
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<tr>
<td>Length</td>
<td>4.72 in. (11.99 cm)</td>
</tr>
<tr>
<td>Thickness</td>
<td>0.58 in. (1.47 cm)</td>
</tr>
</tbody>
</table>

| Typical Weight  | 2.4 oz. (68 g) |
| Output Connectors| 75-ohm BNC |
| External Clock Input | Black burst (NTSC or PAL) |
| Data Output     | DVB-ASI Coaxial, 2 kbps to 213 Mbps Data Rate |

<table>
<thead>
<tr>
<th>Power Requirements</th>
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<tbody>
<tr>
<td>1.8 A @ 3.3 V</td>
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<tr>
<td>50 mA @ 12 V</td>
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</tbody>
</table>

| Operating Temperature | 0 to 55ºC |
| Operating Humidity    | To 90%, Non-condensing |

| Status LED Indicators | Tx |
| Transmit FIFO Size    | 8 kilobytes eliminates DMA latency |
| Bus Interface         | Single Lane (x1) PCI Express 1.1 |
| Standard Oscillator Stability | ± 25 ppm |
| Optional High Stability Oscillator | ± 2.5 ppm |

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 2.5 ppm of the target. This method of rate control works with small transmit buffers and gives minimum latency.

Clock Source Options – The transmit clock options include black burst input and an internal clock.

Indicator LEDs – Indicator LEDs are provided on the bracket to show transmitter operation. 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, using software-created time stamps. This method ensures that the transmit rate and PCR timing are the same as the original transport 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.


Customizability – Room in large FPGA for your custom functions.

Block Diagram

Ordering Information

DVB Master III Tx PCIe LP (Model 192)

DVB Master III Tx PCIe LP/HSO High Stability Oscillator

Note: Both ship with long and short brackets