

DV6000 VIDEO TRANSPORT

SDI/DVB-ASI Interface Cards

Features

- Transports full (uncompressed) 270Mbps standards-based signals including SMPTE 259M-C Serial Digital Interface (SDI), SMPTE 305M-98 Serial Data Transport Interface (SDTI), and ITU-R-601, 656-2 Video
- Transparently passes primary and auxiliary data present in the SDI signal (including embedded audio signals)
- Transports DVB-ASI signals containing up to the full payload of 213Mbps of MPEG-2 compressed video content
- Optionally carries four additional uncompressed analog audio channels within the system overhead (not embedded into the SDI or DVB-ASI streams)
- Remote monitoring and control through Artel element management systems



With dual purpose Serial Digital Interface and Digital Video Broadcast-Asynchronous Serial Interface (SDI/DVB-ASI) cards, the DV6000 Product Family lives up to its reputation for providing universal digital transport with the flexibility for practically all videocentric applications.

The SDI/DVB-ASI cards can interface either uncompressed serial digital video or compressed MPEG-2 video (in a DVB-ASI format) to the DV6000 or DV6400 multiplexed datastream. Once encoded, the signals can be transported, along with any of the other signal types that the DV interfaces (NTSC, PAL, IF, QAM, DS3, etc.), to matching decoders at one or more locations throughout a network.

SDI/DVB-ASI INTERFACE CARDS

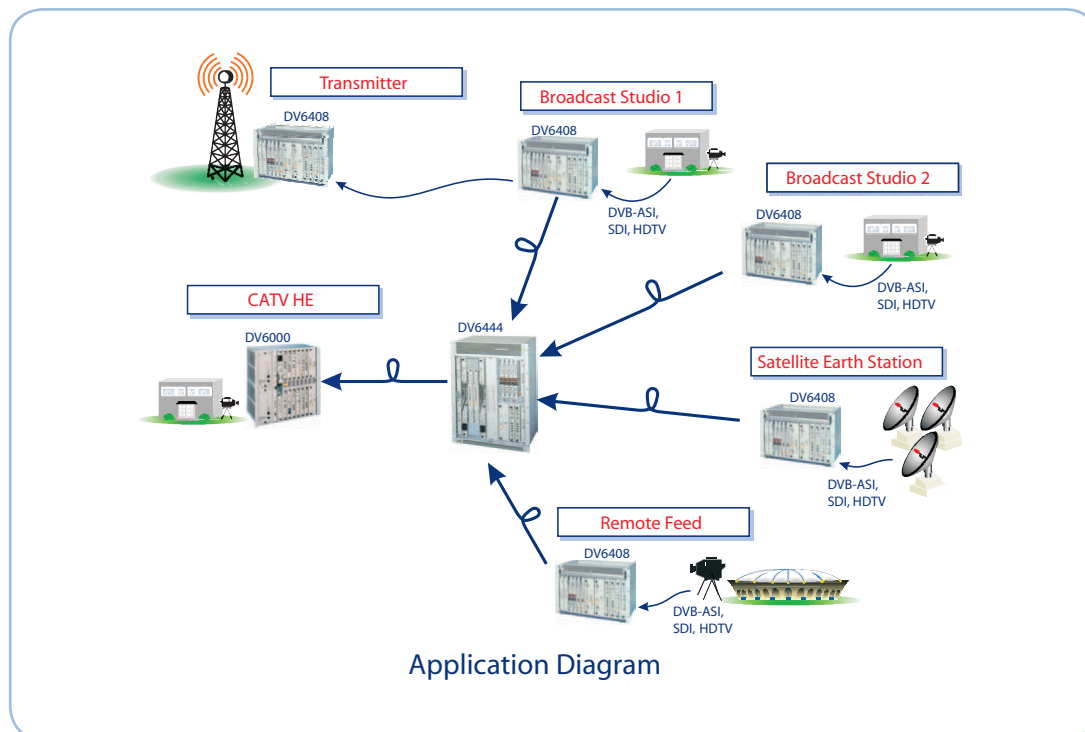
Application

The SDI/DVB-ASI interface cards allow broadcasters, MSOs, and other network service providers the choice of transporting either uncompressed or compressed video signal formats through a single interface card set.

As an uncompressed digital transport system, the DV6000/DV6400 system does not introduce compression-related latency, errors, or artifacts to the signals it transports. In addition, in SDI mode the SDI/DVB-ASI interface cards preserve all timing and control information that may be embedded within an SDI signal (SMPTE 259M-C and SMPTE 305M-98). These features enable the DV6000/DV6400 to provide transport of video in its purest video form and with a level of transparency in the transport essential for editing and post-production processing.

MPEG-2 compression is increasingly being used to enable more efficient distribution of digital video content. The DVB-ASI interface serves as a standardized means to interconnect MPEG-2 information from multiple digital components—such as MPEG-2 encoders, QAM modulators, satellite receivers, MPEG-2 (re)multiplexers, and video servers—making it both convenient and cost-effective for broadcasters migrating toward digital television (DTV and HDTV) and for MSOs looking to provide video on demand (VOD) applications. By using the SDI/DVB-ASI cards, the DV6000/DV6400 can transport this compressed video content as DVB-ASI signals with content payloads of up to the signal maximum of 213Mbps.

Using the DV6000 Universal Digital Transport System, up to eight SDI/DVB-ASI cards (8 SDI/DVB-ASI signals and 32 analog audio channels) can be housed in a single equipment shelf. Using the DV6408 equipment shelf, up to four SDI/DVB-ASI cards (4 SDI/DVB-ASI signals and 16 analog audio channels) can be housed. Once installed into the equipment shelf, the operator can select either SMPTE or DVB mode from the encoder front panel pushbutton, DV craft and control software, or the IMI-9000 Information & Monitoring System. All decoders receiving the encoder's timeslots will then auto-sense the encoder's mode, thus requiring no further setup. In addition, besides alarm notification via the previously mentioned software programs, normally open and normally closed alarm contact closures are provided for each SDI/DVB-ASI card on the back of every equipment.



Specifications**DV270DVBE Encoder****Signal Input**

Bit Rate	270 ± 0.025Mbps
Signal Format	Bit Serial; DVB-ASI, ANSI/SMPTE 259M-C, SMPTE 305M-98, ITU-R (CCIR)-601, 656-2
Input Impedance	75 Ohms ± 5%, unbalanced
Connector	BNC
Return Loss	15dB @ 10–270MHz
Input Cable	Belden 8281 (or equivalent)
Input Cable Length (Note 1)	0–300 meters (0–30dB attenuation @ 135MHz)

Physical Specifications

Dimensions (W x H x D)	2.5 x 8.75 x 9.5in. (64 x 222 x 241mm) occupies two DV6000, DV6408, or DV6444 interface slots
Power Consumption	< 10 watts
Operating Temperature	0 to 50°C
Storage Temperature	–30 to 70°C

DV270DVBD Decoder**Signal Output**

Bit Rate	270 ± 0.025Mbps (matches input Bit Rate)
Signal Format	Bit Serial; DVB-ASI, ANSI/SMPTE 259M-C, SMPTE 305M-98, ITU-R (CCIR)-601, 656-2
Output level	800mV ± 10%
DC Offset	< ±0.5V
Output Impedance	75 Ohms ± 5%, unbalanced
Connector	BNC
Return Loss	15dB @ 5–270MHz
Output Jitter	0.2 UI p-p, conforms to SMPTE 259M-97
Cable	Belden 8281 (or equivalent)

Physical Specifications

Dimensions (W x H x D)	2.5 x 8.75 x 9.5in. (64 x 222 x 241mm) occupies two DV6000, DV6408, or DV6444 interface slots
Power Consumption	< 8 watts
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	–30 to 70°C (22 to 158°F)

Baseband Audio

Numbers of Audio Channels	0 or 4
Peak Input Level	
600 Ohms (NTSC)	5dBm to 18dBm
600 Ohms (PAL)	0dBm to 12dBm
150 Ohms	5dBm to 12dBm

Full Scale Level

600 Ohms balanced (NTSC) 1	8dBm
600 Ohms balanced (PAL)	12dBm
150 Ohms balanced	12dBm
Input/Output Impedance (balanced)	600 Ohms, 150 Ohms, or high-Z (>50k)/low-Z (20 Ohms) normal factory setting is 600 Ohms

Specifications (cont'd)

Sampling Rate	42.2612 kHz
Encoding Resolution	16 bits/channel
Signal to Noise Ratio	> 80dB (18 dBm input, 30 Hz–19.2 kHz)
SINAD	> 70dB (ref. 18 dBm input, 30 Hz–19.2 kHz)
Total Harmonic Distortion	< 0.035% (ref. 1 kHz @ 18 dBm input)
Intermodulation Distortion (SMPTE)	< 0.15%
Frequency Response (ref. 400Hz)	
30 Hz–15.8 kHz	±0.3 dB
20 Hz–19.2 kHz	+0.3/–1.0dB
10 Hz–19.8 kHz	+0.3/–3.0dB
Channel Separation	
@ 1 kHz	> 90dB
@ 19.2kHz	> 70dB
Amplitude Linearity (–60 dBr to 0dBr)	±0.25 dB
Audio/Video Delay	2.272µs, max.

Note:

1. DV270DVBE includes automatic equalization circuitry that accepts up to 300 meters of Belden 8281 cable to be inserted between SMPTE 259 reference source and the card input.

Specifications subject to change without notice.

Model Options

Part Number	Description
DV270DVBE0	Serial Digital Video and DVB-ASI Encoder Card
DV270DVBD0	Serial Digital Video and DVB-ASI Decoder Card
DV270DVBE4	Serial Digital Video and DVB-ASI Encoder Card with 4 Audio Channels
DV270DVBD4	Serial Digital Video and DVB-ASI Decoder Card with 4 Audio Channels

Notes:

1. The DV270DVBE_x Encoder modules are compatible with DV6274VD_{xx} version SDI Decoder modules for SDI transport only.
2. The DV270DVBE_x Encoder modules are compatible with the DV6102DVBD version DVB-ASI Decoder for DVB-ASI transport only.
3. The DV270DVBD_x Decoder modules are compatible with the DV6101DVBE version DVB-ASI Encoders for DVB-ASI transport only.

