

500DCDA-HD

HD /SD Downconverter & Distribution Amplifier with Closed Caption Monitoring



The 500DCDA-HD is a reclocking 1.5Gb/s digital video distribution amplifier and a high quality downconverter for HDTV signals. It provides 5 reclocked DA outputs and 4 downconverted SDI or composite analog NTSC/PAL outputs (jumper selectable). It accepts all the popular international SMPTE 292M video formats. When the 500DCDA-HD down converts 1080p/23.98s/59.94 with a 3:2 pulldown, the 3:2 pulldown cadence can free run or lock to embedded RP188 time code.

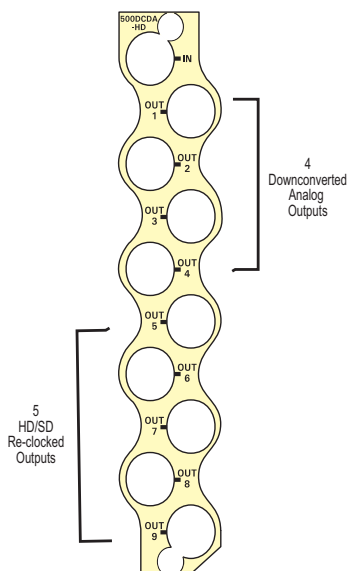
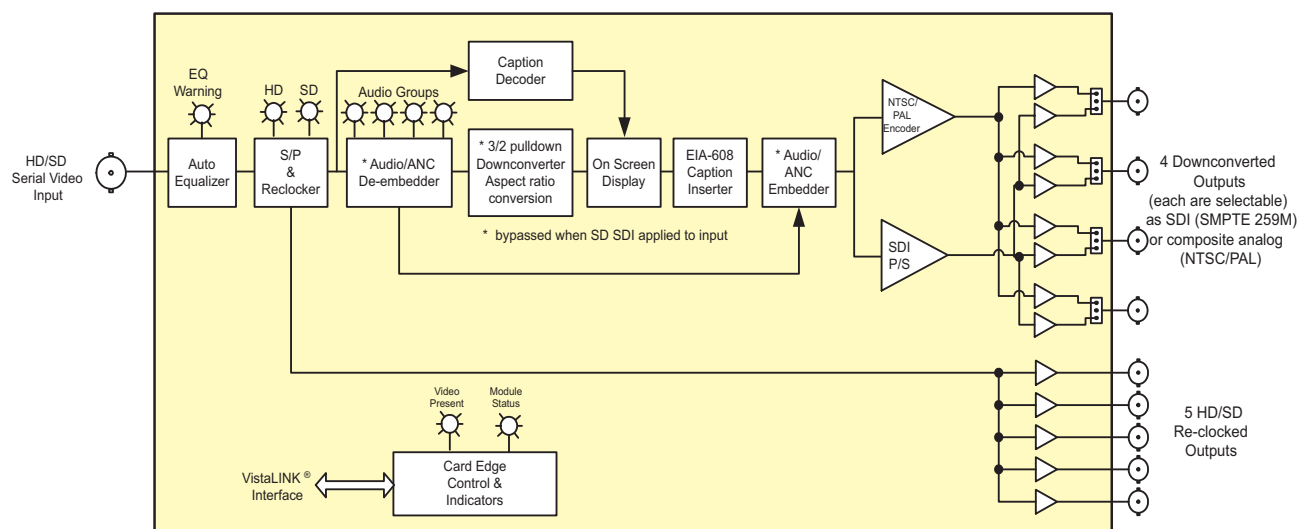
The 500DCDA-HD has color space conversion from ITU rec. 709 to ITU rec. 601, and will provide various down converted formats such as 16:9 letterbox, 14:9 letterbox, 13:9 letterbox, 4:3 center crop, and 4:3 anamorphic squeeze. It supports Widescreen Signaling (WSS).

The module has 10 bit processing and allows for selectable horizontal and vertical filters to control picture sharpness. It also de-embeds two groups of audio and re-embeds the audio on the SDI output in time with the video. All parameters may be controlled by use of the on-screen display menu.

The 500DCDA-HD has a closed caption monitoring capability that decodes CEA-608 or CEA-708 captions that have been encoded into the VANC data space of an HD video input, or CEA-608 captions from a SD video input.

Features & Benefits

- High quality HD $\Rightarrow$ SD downconversion
- Serial digital 1.5Gb/s HD input per SMPTE 292M
- Supports all popular SMPTE 292M formats
- Supports 270 Mb/s SD input in pass-through model (auto-sensing)
- 5 reclocked DA outputs (output follows input)
- 4 Selectable SDI or Composite Outputs (downconverted HD or reclocked SD)
- Supports 16:9 letterbox, 14:9 letterbox, 13:9 letterbox, 4:3 center crop, and 4:3 anamorphic squeeze aspect ratio conversions
- 1080p/23.98sF conversion to 525i/59.94 with 3:2 pulldown sequence
- HD to SD colour space conversion (ITU rec. 709 to ITU rec. 601)
- De-embeds audio from HD and embeds into SD (2 groups)
- Decodes and displays CEA-608 or CEA-708 captions
- Moves ANC data (e.g. captioning, timecode) from HD to SD
- Support for Widescreen Signaling (WSS) on output
- On-screen aspect ratio marker
- VistaLINK® capable offering remote monitoring, control and configuration capabilities via SNMP
- VistaLINK® is available when modules are used with the 3RU 500FR-C frame and a 500FC VistaLINK® Frame Controller module in slot 1 of the frame using the Evertz VistaLINK® PRO or other third party SNMP manager software





Specifications

Serial Video Input:

Standard: SMPTE 259M - Pass through mode
SMPTE 292M (1.5Gb/s), SMPTE
260M, 274M, 296M, 349M 1080i/60,
1080i/50, 1080i/50sF, 1080p/30sF,
1080p/25sF, 1080p/24sF, 1035i/60,
720p/60, 480p/60 and the 1/1.001
divisor versions where applicable
software selectable or autodetect
Connector: BNC per IEC 60169-8 Amendment 2
Input Equalization: Automatic to 100m @ 1.5Gb/s with
Belden 1694A or equivalent cable
Return Loss: > 15dB up to 1.5GHz

Reclocked Serial Video DA Outputs:

Standard: Same as input (SMPTE 259M or
SMPTE 292M)
Number of Outputs: 5 Per Card relocked
Connector: BNC per IEC 60169-8 Amendment 2
Signal Level: 800mV nominal
DC Offset: 0V $\pm$ 0.5V
Rise and Fall Time: 200ps nominal for HD
750ps nominal for SD
Overshoot: < 10% of amplitude
Return Loss: > 15dB at 1.5Gb/s
Jitter: < 0.2 UI

Downconverted Composite Analog Video Outputs:

Standards: Analog composite NTSC (SMPTE
170M) or Analog composite PAL (ITU-R
BT 1700)
Number of Outputs: Up to 4 Per Card (jumper selectable)
Connectors: BNC per IEC 60169-8 Amendment 2
Signal Level: 1V p-p nominal
DC Offset: 0V $\pm$ 0.1V
Return Loss: > 35dB up to 5MHz
Frequency Response: 0.1dB to 4 MHz, 015dB to 5.5 MHz
Differential Phase: < 0.5° (< 0.3° typical)
Differential Gain: < 0.8% (< 0.5% typical)
SNR: > 78dB to 5MHz (shallow ramp)
Impedance: 75 Ω

Downconverted Serial Video Outputs:

Standard: SMPTE 259M-C (270Mb/s)
Number of Outputs: Up to 4 Per Card (jumper selectable)
Connector: BNC per IEC 60169-8 Amendment 2
Signal Level: 800mV nominal
DC Offset: 0V $\pm$ 0.5V
Rise and Fall Time: 750ps nominal
Overshoot: < 10% of amplitude
Return Loss: > 15dB at 270Mb/s
Jitter: < 0.2 UI

Input to Output Processing Delay (HD Input Video):

Video Delay: Just less than 1 to 2 frames depending
on input video format, processing
mode and phase setting (refer to
table 3 in manual)
i.e. with 1080i/59.94 input the delay
is < 1 Frame delay
Audio Delay: Audio is delayed and re-embedded in
time with the output picture

Electrical:

Voltage: +12V DC
Power: 10W
EMI/RFI: Complies with FCC Part 15 Class A
EU EMC Directive

Physical:

Number of slots: 1

Ordering Information

500DCDA-HD HD/SD Downconverter and Distribution Amplifier with Closed Caption
Monitoring

Enclosures

500FR **exponent** Compact High Density Distribution Frame
S501FR Standalone enclosure