

7736CEM, 7736CEM-A4

Component SDI to Composite Analog Video Encoder with Optional Frame Synchronizer

The 7736CEM line of component serial digital to composite analog video converters are broadcast quality encoders with an extensive list of additional features. An audio de-embedder with high quality audio digital to analog conversion can be packaged with the encoder to create a video/audio frame synchronizer/conversion package.

The 7736CEM product features various video processing functions such as VITC, closed captioning and SID extraction during the encoding process, as well as monitoring video for black and freeze conditions. The modules feature a clean (asynchronous) and a fast (synchronous) input video lock mode to handle upstream switches.

Features & Benefits

- One component serial digital input (525 or 625)
- One re-clocked component serial digital output
- EDH analysis on SDI input
- Four composite analog video outputs WITHOUT OSD text or audio bar graphs
- Internal processing to maintain 10-bit digital video quality
- 12-bit output video digital to analog conversion
- One monitoring quality video output with OSD text and bar graph graphics
- User-adjustable output video processing functions: black level (brightness), gain (contrast), hue, and saturation
- User-selectable luminance and chrominance filters for different applications (i.e. broadcast vs. studio)
- User-selectable horizontal blanking interval width: narrow, normal
- One composite analog reference input (NTSC or PAL-B) on BNC 75Ω or high-Z, jumper configurable input impedance
- One frame video synchronizer (with +S option)
- Infinitely variable output phase
- Freeze modes: black, freeze
- Input video lock mode: clean or fast
- Adjustable free running frequency
- Built-in color bar generator
- VU/PPM bar graph level indicators
- Decodes vertical interval time code (VITC) and "burns" the time code into the picture
- Decodes PESA format Source ID (eight characters) or Evertz format VITC Source ID (five or nine characters) and burns the ID into the picture

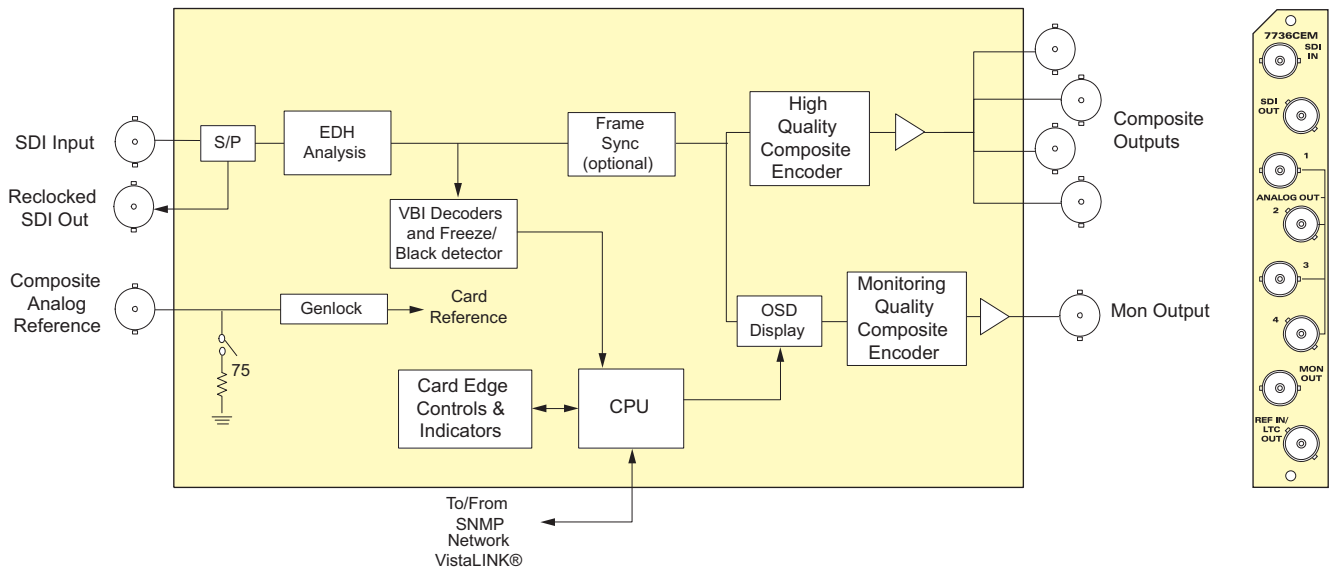
The audio is processed, to extract level information for creating and displaying level and phase bar graphs. In addition, the audio is analyzed for periods of high level, silence, mono, and out-of-phase conditions. All of this status information is displayed on the monitoring analog output via on-screen display (OSD) overlay.

VistaLINK® enables remote monitoring, control and configuration capabilities via Simple Network Management Protocol (SNMP). This offers the flexibility to manage operations including signal monitoring and module configuration from SNMP - enabled control systems (Manager or NMS) locally or remotely.

- A comprehensive on-screen display is available to configure the various features of the module
- Flexible configuration of the text and audio bar graph information displays
- An extensive list of error conditions can be monitored and fault conditions can be configured from these conditions
- On-screen messages can be triggered by the configured fault conditions
- VistaLINK® - capable for remote monitoring and control via SNMP (using VistaLINK® PRO, 9000NCP or 9000NCP2 Network Control Panel) when installed in 7700FR-C frame with 7700FC VistaLINK® Frame Controller

Features of "-A4" version are:

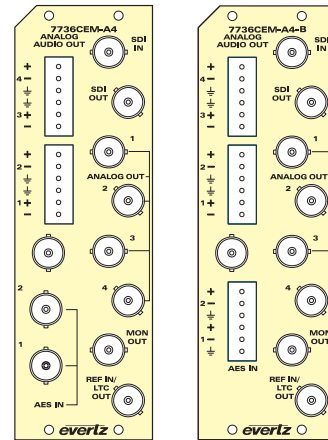
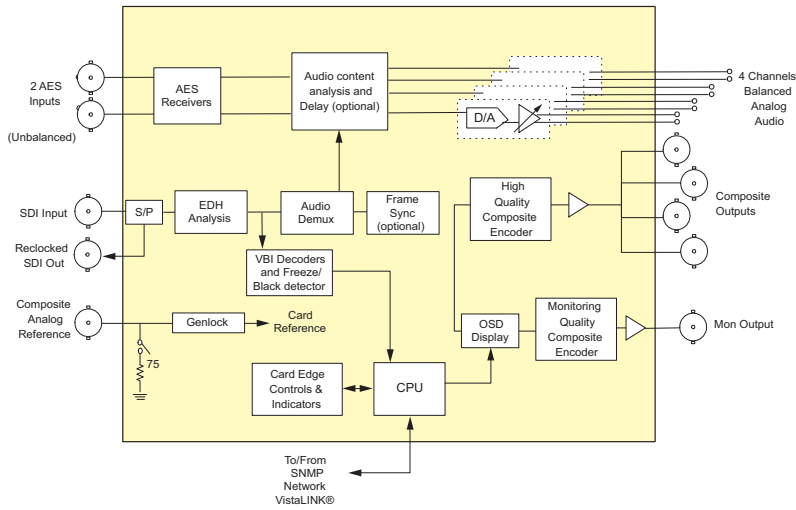
- One group (4 channels) of synchronous 20-bit audio is de-multiplexed from the incoming digital video
- Two unbalanced AES audio inputs (up to 48kHz, 24 bits) on BNC terminal strip
- User selects either the de-embedded audio or the input AES audio
- The selected audio is delayed equivalently to the video delay with the +S option
- Four high quality 24-bit audio channels are output (analog) as balanced on 2 removable barrier strips
- Low impedance outputs (66Ω)
- Analog audio output levels are adjustable
- Additional audio delay of up to five seconds
- Additional audio advance of up to one frame, depending on video delay
- Loss of video modes: pass audio, mute audio
- Optional balanced AES audio inputs (+B option)



The Complete Solution Provider



Component SDI to Composite Analog Video Encoder with Optional Frame Synchronizer



Specifications

Serial Video Input:

Standard: SMPTE ST 259-C - 525 or 625 line component
 Number of Inputs: 1
 Number of Reclocked Inputs: 1
 Connector: BNC per IEC 60169-8 Amendment 2
 Signal Level: 800mV nominal
 DC Offset: 0V ±0.5V
 Rise and Fall Time: 900ps nominal
 Overshoot: < 10% of amplitude
 Return Loss: > 15dB to 270MHz
 Embedded Audio: SMPTE 272M-A
 Frequency Lock Range: ±75ppm from nominal
 Lock up time on a hot switch: None or 7 frames (based on lock mode)

Analog Broadcast Video Output:

Standard: NTSC, SMPTE 170M PAL, ITU624-4
 Number of Inputs: 4
 Connector: BNC per IEC 60169-8 Amendment 2
 Signal Level: 1V nominal
 Output Impedance: 75Ω
 DC Offset: 0V ±50mV
 Return Loss: > 35dB to 10MHz
 Frequency Response: 0.1dB to 4MHz (response will depend on selected filtering)
 Differential Phase: < 0.5° (< 0.3° typical)
 Differential Gain: < 0.5% (< 0.3% typical)
 SNR: > 75dB (black video, 100kHz to 5MHz)
 Output level control range: ±10%
 Black level control range: ±7.5 IRE
 Chroma level control range: ±10%
 Hue control range: ±15° (NTSC only)
 Minimum Delay: 3ms
 Maximum Delay: 1 frame +3ms (+S option only)

Reference Video Input:

Standard: NTSC, SMPTE 170M PAL, ITU624-4
 Number of Inputs: 1
 Connector: BNC per IEC 60169-8 Amendment 2
 Signal Level: 1V nominal (0.5V to 1.5V)
 Frequency Lock Range: ±75ppm from nominal
 Input Impedance: 75Ω or High impedance (jumper selectable)
 Return Loss: > 25dB to 10MHz
 Max Subcarrier Jitter: < 3°
 Free-Running Frequency Control Range: > ±10 ppm (> ±270Hz)

Analog Monitoring Video Output:

Standard: NTSC, SMPTE 170M PAL, ITU624-4
 Number of Outputs: 1
 Connector: BNC per IEC 60169-8 Amendment 2
 Signal Level: 1V nominal
 Output Impedance: 75Ω
 Return Loss: > 35dB to 10MHz
 Analog Audio Outputs (-A4 version only):
 Number of Outputs: 4
 Type: Balanced analog audio
 Connector: Two 6-pin removable terminal strips
 Output Impedance: 66Ω balanced
 Sampling Frequency: 48kHz
 Signal Level: 0dBFS a 12 to 25dBu (user-settable)
 Frequency Response: < ±0.05dB (20Hz to 20kHz)
 Dynamic range: 24 bits when AES inputs selected, 20 bits when embedded audio selected
 THD+N: < 0.001% (> 100dB) @ 1kHz, -1dBFS
 Crosstalk: < -105dB (20Hz to 20kHz)
 DC Offset: < ±30mV
 SNR: > 110dB "A" Weighting
 Inter-Channel Phase Error: < ±1° (20Hz to 20kHz)

Unbalanced AES Audio Inputs (-A4 version only):

Number of Inputs: 2
 Input Standard: SMPTE 276M, single ended synchronous or asynchronous PCM AES
 Connector: BNC per IEC 60169-8 Amendment 2
 Resolution: 24 bits when AES inputs selected, 20 bits when embedded audio is selected
 Input Sampling Rate: 32kHz to 48kHz when AES inputs selected, Synchronous 48kHz when embedded audio is selected
 Minimum I/O Delay: 3.5ms

Balanced AES Audio Inputs (+B option):

Number of Inputs: 2
 Input Standard: AES3-1992, balanced synchronous or asynchronous PCM AES
 Connectors: One 6-pin removable terminal strip
 Impedance: 110Ω
 Resolution: Up to 24 bits
 Sampling Rate: 32kHz to 48kHz
 Input Level: 2V to 7V p-p
 Minimum I/O Delay: 3.5ms

Electrical:

Voltage: +12V DC
 Power: 9.25W CEM + 16.75W (-A4 or +B option)
 Complies with FCC Part 15, Class A
 EU EMC Directive

Physical:

7700FR-C: 2
 7800FR: 2

Ordering Information

7736CEM	Component SDI to composite analog video encoder (optional Frame Synchronizer available)
7736CEM-A4	Component SDI to composite analog video encoder with quad audio DAC (audio source is embedded or from dual unbalanced AES inputs) (optional Frame Synchronizer available)

Accessories

- 7700FC VistaLINK® Frame Controller
- 9000NCP 1RU VistaLINK® General Purpose Network Control Panel
- 9000NCP2 2RU VistaLINK® General Purpose Network Control Panel

Enclosures

- 7700FR-C 3RU Multiframe which holds up to 15 single slot modules
- 7800FR 3RU Multiframe which holds up to 15 single slot modules
- 7800FR-QT 3RU Multiframe which holds up to 15 single slot modules
- 7801FR 1RU Multiframe which holds up to 4 single or 2 dual slot modules
- S7701FR Standalone enclosure

Ordering Options Rear Plate must be specified at time of order (Eg: Model +3RU)

+B Balanced audio on 7736CEM-A4
+S Optional frame synchronizer

Rear Plate Suffix
+3RU 3RU Rear Plate for use with 7700FR-Multiframe
+SA Standalone Enclosure Rear Plate