

# 7837CDM, 7837CDM-A4

## Composite Analog Video A to D Converter with Frame Synchronizer



The 7837CDM line of composite analog to serial digital converters are broadcast quality decoders with an extensive list of features. High quality analog audio A/D converters can be packaged with the decoder to create a video/audio frame synchronizer with audio embedding.

Within the 7837CDM series, adaptive 3D comb filtering technology is utilized to eliminate moving artifacts typically introduced during the decoding process. This makes the 7837CDM series ideal for use in applications where the signal is destined to enter compression systems. The 7837CDM series utilizes 12 bit video ADCs for superior precision and image quality.

### Features & Benefits

- One input analog video input
- One SMPTE ST 259-C video input
- 75Ω or Hi-Z input impedance (jumper configurable)
- Four SD-SDI outputs without OSD text
- One composite analog video output with OSD text for card control
- One composite analog reference input (NTSC or PAL-B) on BNC
- 75Ω or Hi-Z input impedance (jumper configurable) for REF IN
- Video frame synchronizer
- Infinitely variable output phase (27MHz clock increments)
- Freeze modes: black, freeze
- Comprehensive on screen display for module config

### The Features of the Decoding Process:

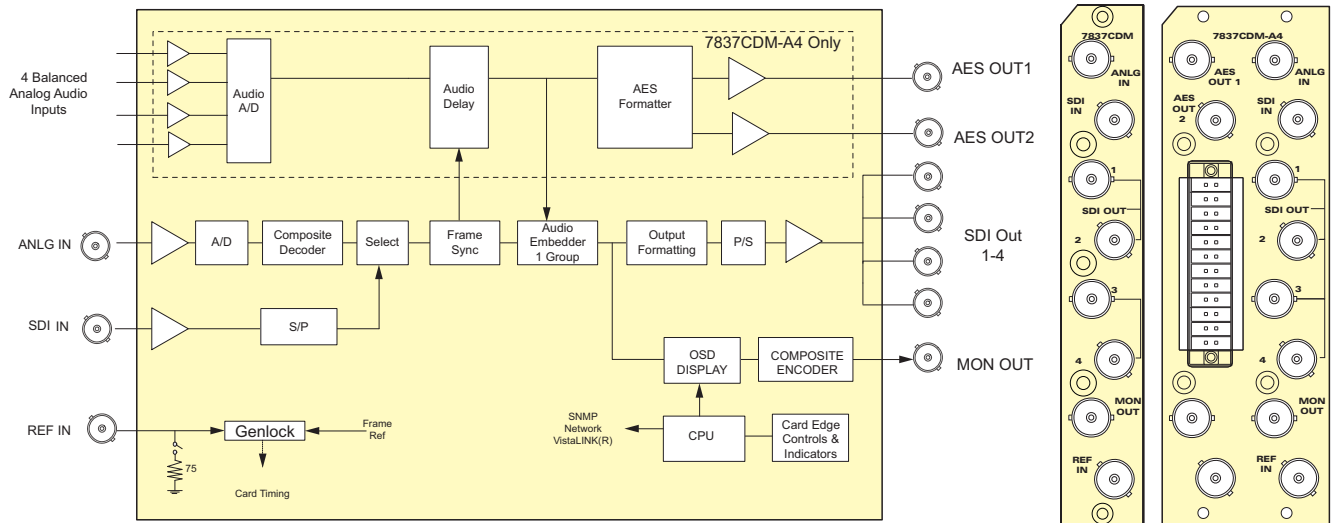
- 12 bit sampling of input analog video
- Advanced 3D adaptive video decoding
- Mode for support of non-time base corrected signals

The 7837CDM series is fully SNMP enabled when used in conjunction with a 7700FC frame controller card. With full SNMP capabilities, the 7837CDM series can also be controlled by any SNMP enabled Evertz® control panel like the CP-2200E or the CP-2232, amongst others. In addition to SNMP control, the 7837CDM series can be controlled locally used its internal On-Screen-Display capabilities.

- User configurable luma detail enhancement
- User selectable noise reduction
- Chroma AGC available, if desired
- User adjustable input video processing functions: black level, gain, hue, and saturation

### The Features of “-A4” Option:

- Four balanced analog audio inputs (two stereo pair) on 7837CDM-A4
- High impedance inputs (user supplies termination resistors for other impedances)
- Analog audio levels are software selectable (separate controls for coarse/fine)
- Audio delay tracks video delay
- Additional audio delay up to 2.5s
- Audio advance of up to 1 frame
- Four channels (one full group) of audio is multiplexed onto outgoing video
- Two unbalanced AES audio outputs using BNC connectors



The Complete Solution Provider



# 7837CDM, 7837CDM-A4

## Composite Analog Video A to D Converter with Frame Synchronizer

### ► Specifications

#### Analog Video Input:

Standard: NTSC, SMPTE ST 170 PAL, ITU624-4  
 Number of Inputs: 1  
 Connector: BNC per IEC 61169-8 Annex A  
 Signal Level: 1V nominal  
 Frequency Lock Range: +/-50 ppm from nominal  
 Input level control range: >+/-4dB  
 Black level control range: >+/-5 IRE  
 Chroma level control range: >+/-20%  
 Hue control range: >+/-20 degrees (NTSC only)  
 Input Impedance: 75Ω or High impedance (jumper selectable)  
 Return Loss: >35dB to 5 MHz

#### Serial Video Input:

Standard: SMPTE ST 259-C - 525 or 625 line  
 Number of Inputs: 1  
 Number of Re-clocked Outputs: 0  
 Connector: BNC per IEC 61169-8 Annex A  
 Return Loss: > 15 dB to 300 MHz  
 Embedded Audio: SMPTE 272M-A  
 Frequency Lock Range: +/-50 ppm from nominal

#### Reference Video Input:

Standard: NTSC, SMPTE ST 170 PAL, ITU624-4  
 Number of Inputs: 1  
 Connector: BNC per IEC 61169-8 Annex A  
 Signal Level: 1V nominal  
 Frequency Lock Range: +/-50 ppm from nominal  
 Input Impedance: 75Ω or High impedance (jumper selectable)  
 Return Loss: >35dB to 5 MHz

#### Analog Monitoring Video Output:

Standard: NTSC, SMPTE ST 170 PAL, ITU624-4  
 Number of Outputs: 1  
 Connector: BNC per IEC 61169-8 Annex A  
 Signal Level: 1V nominal  
 Output Impedance: 75Ω  
 Return Loss: >35dB to 5 MHz

#### Serial Video Output:

Standard: SMPTE ST 259-C - 525 or 625 line  
 Number of Outputs: 4  
 Connector: BNC per IEC 61169-8 Annex A  
 Signal Level: 800mV nominal  
 DC Offset: 0V +/-0.5V  
 Rise and Fall Time: 900ps nominal  
 Overshoot: <10% of amplitude  
 Return Loss: >15dB to 270MHz  
 Jitter: <0.20 UI (all outputs)  
 Embedded Audio: SMPTE ST 272-A

#### Decoder Performance (SDI outputs only):

Frequency Response: <+/- 0.1dB (100kHz to 4.2MHz)  
 Differential Gain: <+/-0.5% typical  
 Differential Phase: <+/-0.5 degrees typical  
 Noise Floor: <-60dB rms (black video VBI lines, 15kHz to 5MHz)  
 C/L Gain: <+/- 0.5%  
 C/L Delay: +/- 9 ns  
 Minimum Delay: 4.5 lines  
 Maximum Delay: 1 frame + 4.5 lines

#### Analog Audio Input (-A4 only):

Number of Inputs: 4  
 Type: Balanced analog audio  
 Input Impedance: 20kΩ minimum (differential)  
 Sampling Frequency: 48kHz  
 Signal Level: 0dB FS => 18 or 24dBu (Software selectable)  
 Level Control Range: +/- 10dB  
 Frequency Response: +/- 0.1dB (20Hz to 20kHz) (broadcast quality)  
 SNR: 100 dB  
 THD+N: <0.001% (>100dB) @ 1kHz, -0.5 dB FS  
 <0.001% (>100dB) @ 20Hz to 20kHz, -0.5 dB FS (input video locked to genlock video)  
 CMRR: >90dB @ 1kHz

#### AES Audio Outputs (-A4 only):

Number of Outputs: 2  
 Output Standard: SMPTE 276M, single ended synchronous AES  
 Connectors: BNC per IEC 61169-8 Annex A  
 Resolution: 24 bits  
 Sampling Rate: Synchronous 48kHz  
 Minimum I/O Delay: 4.5 lines  
 Maximum I/O Delay: 2.5 seconds

#### Electrical:

Voltage: +12VDC  
 Power: 17 Watts 7837CDM  
 21 Watts 7837CDM-A4  
 Complies with FCC Part 15, Class A  
 EU EMC directive

#### Physical (number of slots)

7700FR-C: 2 for 7837CDM  
 2 for 7837CDM-A4  
 7800FR: 1 for 7837CDM  
 2 for 7837CDM-A4

### ► Ordering Information

<b>7837CDM</b>	Composite Analog Video A to D Converter with Frame Synchronizer
<b>7837CDM-A4</b>	Composite Analog Video A to D Converter with Frame Synchronizer with 4 analog inputs

#### Enclosures

**7700FR-C**  
**7800FR**  
**7800FR-QT**  
**7801FR**

3RU Multiframe which holds up to 15 single slot modules  
 3RU Multiframe which holds up to 15 single slot modules  
 3RU Multiframe which holds up to 15 single slot modules  
 1RU Multiframe which holds up to 4 single or 2 dual slot modules

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

**Rear Plate Suffix**  
**+3RU** 3RU Rear Plate for use with 7700FR-C or 7800FR Multiframe