

# 7837CD2, 7837CD2-A4, 7837CD2-A8

## Dual Composite Decoder

The 7837CD2 line of composite analog to serial digital video converters are dual broadcast quality video decoders. The 7837CD2-A4 and the 7837CD2-A8 versions offer four (two per decoded channel) or eight (four per decoded channel) high quality analog audio A/D converters. Advanced 3D adaptive comb filtering technology is utilized to eliminate moving artifacts introduced during the decoding process. This makes the 7837CD2 series ideal for use in applications where the signal is destined to enter compression systems. The 7837CD2 series utilizes 12 bit video ADCs for superior precision and image quality.

The 7837CD2 series is fully SNMP enabled when used in conjunction with a 7700FC frame controller card. With full SNMP capabilities, the 7837CD2 series can also be controlled by any SNMP enabled Evertz control panel like the CP-2232E, CP-2116E-H or the CP-2232, amongst others. In addition to SNMP control, the 7837CD2 series can be controlled locally used its internal On-Screen-Display capabilities.

### ►Features & Benefits

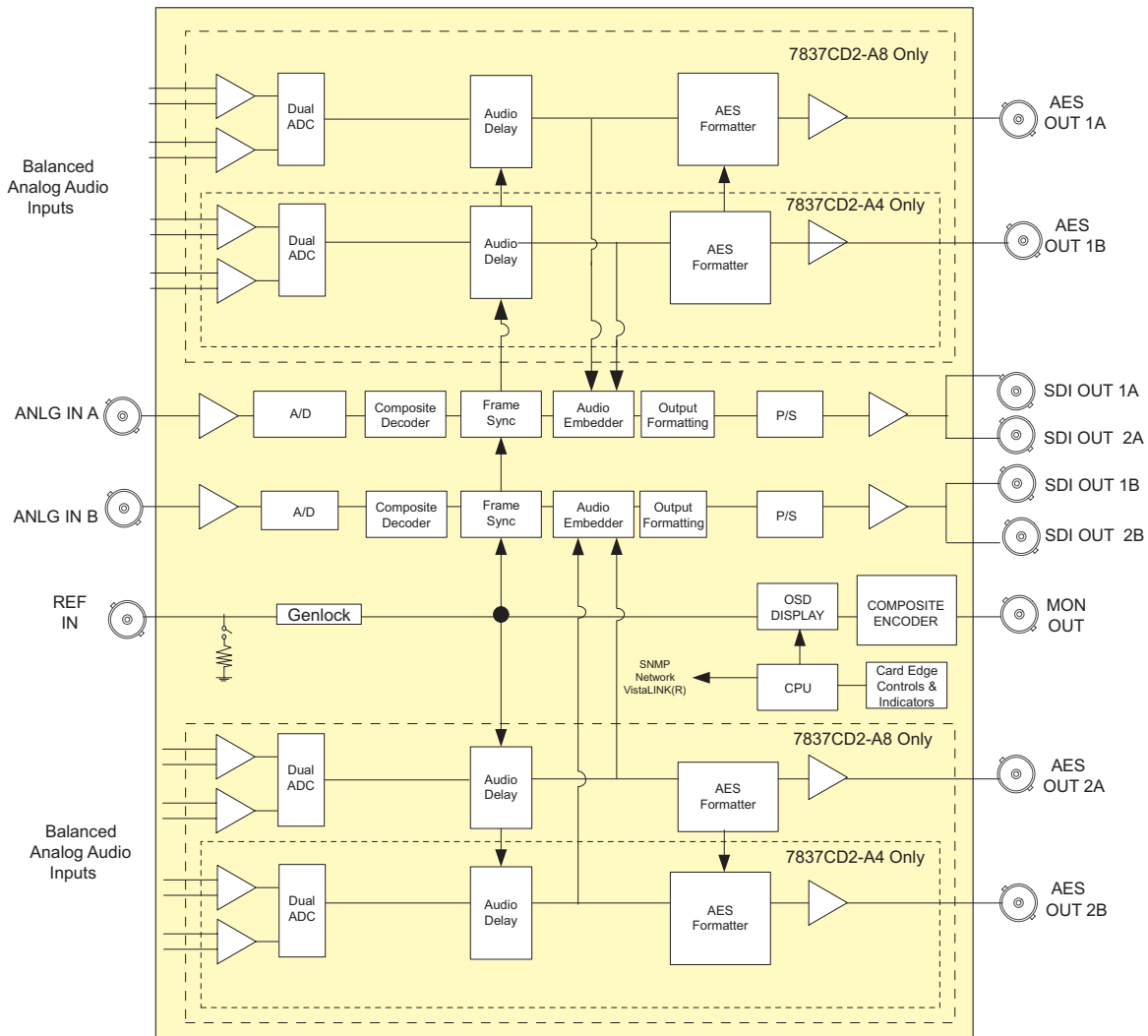
- One input BNC per channel
- 75Ω or Hi-Z input impedance (jumper configurable)
- Two SD-SDI outputs per per channel without OSD text
- One composite analog video output with OSD text for card control
- One composite analog reference input (NTSC or PAL-B) on BNC with 75Ω or Hi-Z input impedance (jumper configurable). One time base for both channels
- Video frame synchronizer
- Infinitely variable output phase (27MHz clock increments)
- Freeze modes: black, freeze
- Comprehensive on screen display for module config

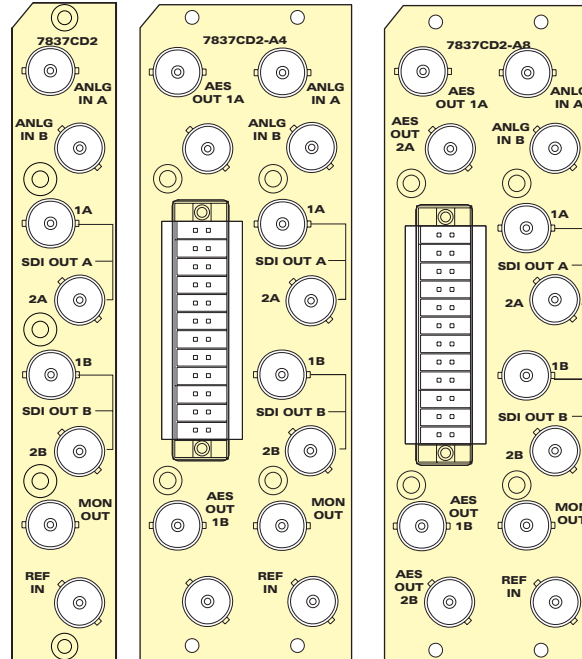
### The Features of the Decoding Process:

- 12 bit sampling of input analog video
- Advanced 3D adaptive video decoding
- Mode for support of non-time base corrected signals
- 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" and "-A8" Option:

- 4 balanced analog audio inputs (two stereo pair) on 7837CD2-A4
- 8 balanced analog audio inputs (four stereo pair) on 7837CD2-A8
- 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 2.5 seconds
- Audio advance of up to 1 frame
- 2 channels (1/2 group) of audio is multiplexed onto each of the outgoing digital video signals (7837CD2-A4)
- 4 channels (one full group) of audio is multiplexed onto each of the outgoing digital video signals (7837CD2-A8)
- 2 unbalanced AES audio outputs using BNC connectors (7837CD2-A4)
- 4 unbalanced AES audio outputs using BNC connectors (7837CD2-A8)





### ► Specifications

#### Analog Video Input:

Standard: NTSC, SMPTE 170M PAL, ITU624-4  
 Number of Inputs: 1 per channel  
 Connector: 1 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

#### Reference Video Input:

Standard: NTSC, SMPTE 170M PAL, ITU624-4  
 Number of Inputs: 1  
 Connector: 1 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 170M PAL, ITU624-4  
 Number of Outputs: 1  
 Connector: 1 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 259M-C - 525 or 625 line.  
 Number of Outputs: 4 (2 per channel)  
 Connector: 1 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 272M-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: <+/-9ns  
 Minimum Delay: 4.5 lines  
 Maximum Delay: 1 frame + 4.5 lines  
 Inter-channel crosstalk: Within noise floor measurement

#### Analog Audio Input (-A4 and -A8 only):

Number of Inputs: 4 (2 per video channel) 7837CD2-A4  
 8 (4 per video channel) 7837CD2-A8  
 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:

Number of Outputs: 2 (1 per channel) 7837CD2-A4  
 4 (2 per channel) 7837CD2-A8  
 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: 2.9ms  
 Maximum I/O Delay: 2.5 seconds

#### Electrical:

Voltage: +12VDC  
 Power: 17 Watts 7837CD2  
 21 Watt 7837CD2-A4  
 21 Watts 7837CD2-A8  
 EMI/RFI: Complies with FCC Part 15, Class A  
 EU EMC directive

#### Physical (number of slots)

7700FR-C 2 for 7837CD2  
 3 for 7837CD2-A4/A8  
 7800FR 1 for 7837CD2  
 2 for 7837CD2-A4/A8

### ► Ordering Information

**7837CD2** Dual Composite Decoder  
**7837CD2-A4** Dual Composite Decoder with 4 analog inputs  
**7837CD2-A8** Dual Composite Decoder with 8 analog inputs

#### Rear Plate Suffix

**+3RU** 3RU Rear Plate for use with 7700FR-C or 7800FR Multiframe  
**+1RU** 1RU Rear Plate for use with 7801FR

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

#### Enclosures

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