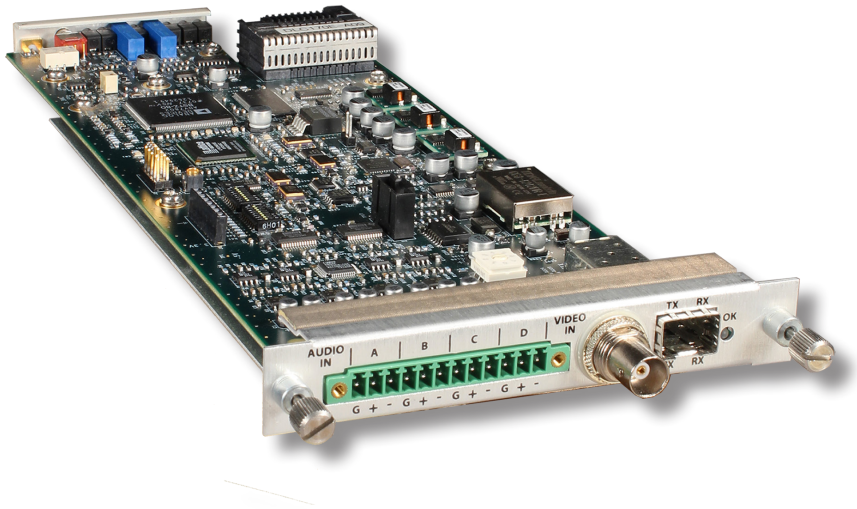
InfinityLink ILC170AD
Analog Video and 4 Ch Audio to SD-SDI

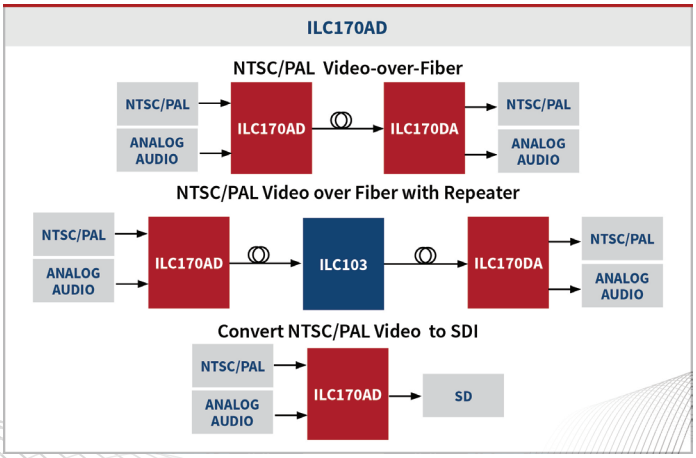


The ILC170AD converts analog video and audio to SDI (SMPTE 259M) and provides optical transport. Used with the ILC170DA, the design insures full TV-1 RS250-C "short haul" analog performance over a true SMPTE 259M SD-SDI optical transport link.

The ILC170AD uses advanced high performance 12-bit video processing with adaptive 3D comb filters to convert NTSC-M /PAL-B/G analog composite video to ITU-R BT.601/656 compliant, 525 or 625 line, 4:2:2 component digital video. Four channels of analog audio are converted to 24-bit digital signals and sampled at 48 kHz and then embedded into the digital video per SMPTE 272M for a total of 4 analog channels. The audio can be inserted into any one of the four groups.

Using the backplane to provide jumper free connections, additional audio channel groups can be added by cascading the ILC170AD digital output to one or more ILC150E audio embedders. An SFP installed into the final module provides the optical output of the combined signals.

A front panel monitor jack can be selected to output either analog or digital video. When set to analog, the incoming analog video can be checked for signal level and quality using conventional analog video equipment. When set to digital, the converted video in 270Mb/s SDI format with embedded audio can be checked using digital video test equipment.



FEATURES

Convert composite (NTSC/PAL) to SDI (SMPTE 259M)

- Analog composite 75 Ohm video input BNC
- Automatic NTSC-M / PAL-B/G format detection
- 12-bit video composite to 10-bit component digital processing
- Advanced, adaptive 3D comb filter
- Comprehensive VBI data handling
- MPTE 259M SD-SDI 270Mb/s output
- Automatic and manual gain and equalization (100 m)

Convert analog audio to AES and embed into SDI

- Balanced 600 Ohm analog audio inputs (4)
- SMPTE 272M 24-bit, 48 kHz audio embedding

Use with ILC170DA for optical transport of analog video and audio

- Exceeds TV-1 and ANSI T1.502 "short haul" specification

Externally accessible SFP transceiver optics

- Optical budget to 33dB
- WDM (1310nm, 1550nm)
- CWDM ITU G.694.2 (channels 27-61)
- DWDM ITU G.694.1 (channels 21-60)

Additional audio groups can be added using the ILC150E

Multiple monitoring options

- Front panel monitor (mini 75 Ohm SMB) selectable between:
  - NTSC or PAL (pre-conversion)
  - SDI (Post-conversion)
- Front and rear panel status LEDs

Remote management via InfinityLink Manager

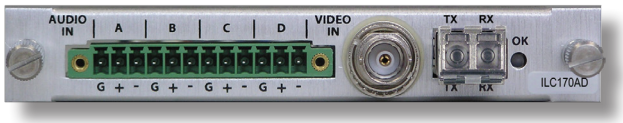
- No external software required
- HTTP or SNMPv2
- Monitor
- Configure
- Upgrade firmware

SPECIFICATIONS

Analog Video to SDI Conversion [6]	
Output format	SMPTE 259M via optical interface or backplane
Input format	SMPTE-170M NTSC-M or ITU-R BT.624-4 PAL-B/G composite video
Input amplitude	1.0 V p-p nominal
Input gain range	± 3 dB (1)
Input common mode range	±10 V
Input common mode rejection (0 to 5.5 MHz)	>30 dB
Input impedance	75 Ohm or Hi-Z
Input return loss (0 to 5.5 MHz)	>30 dB, 75 Ohm
Freq amplitude response	
NTSC to 4.5 MHz	<0.10 dB
NTSC to 5.0 MHz	<0.10 dB
PAL to 4.8 MHz	<0.10 dB
PAL to 6.0 MHz	<0.10 dB
Differential gain	<1.0%
Differential phase	<0.7 degrees
Line time distortion	<1.0%
Chroma-luma gain	<±2%
Chroma-luma delay	<5 nS
Signal to noise, weighted	>67 dB

Analog Audio to AES and Embed [6]	
Channels	4[2]
Input	Balanced Analog
Input impedance	600 Ohm or >100K Ohm
Input common mode range	±30V
Input common mode rejection	>60 dB
Nominal (test) level	18 dBm[3]
Maximum level (0 dBFS clipping)	+10 to +24 dBm[4]
Insertion gain	±0.25 dB[5]
Freq amplitude response (20 Hz to 20 kHz)	±0.3 dB
THD+N (20-20k @ +18 dBm)	0.01%
SNR (weighted)	>95 dBA
Crosstalk @10kHz	70 dB
Audio to video lead/lag	<2 ms

Front panel monitoring and status displays



Real panel includes electrical video input, analog or AES audio inputs and SFP transceiver cage

AR206-006070-C00_B

Environmental	
Operating temperature	0 to 50°C
Ambient storage temperature	-40 to 80°C
Relative humidity	10 to 95% (non-condensing)
Power dissipation	8 Watts

Physical	
Dimensions	0.8" x 5" x 10.8"
	1 slot in InfinityLink chassis

Optical Interface	
Artel Video SFP	See SFP Specification

Regulatory Conformance	
Compliance:	CSA 60950, EN60950, EN55022 FCC Part 15 (Class A), CISPR 22

(1) Automatic or manual control.
(2) Specifications are with 48 kHz, 24-bit audio.
(3) Nominal level is +20 dBm for 0 dBFS (clipping) with performance specifications based on a +18 dBm test level.
(4) User selectable maximum (0 dBFS) level in eight 2 dB steps.
(5) Each end set to the same nominal 0 dBFS level.
(6) Analog specifications based on end-to-end performance with ILC170DA

Made in the USA

GSA Schedule Contract GS-03F-016CA

UPDATED 11/04/2016
All specifications subject to change without notice. ©2016

Ordering Information

ILC170AD Function Module

Model	Description	Part #
ILC170AD	Analog Video and 4 Ch Audio to SD-SDI	390-006070-00

SFP Options *See SFP/SFP+/XFP compatibility chart*

Monitor Cable

Model	Description	Part#
DL100MC-72	Monitor cable, 75 Ohm mini-SMB to BNC, 72"L	396-001001-00

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