

3G/HD/SD-SDI Audio Inserter

FEATURES

- Standard 75 Ohm 3G/HD/SD-SDI video input and outputs.
- Supports 3G and all HD & SD video line and frame rate standards.
- Inserts audio signals into 2 selectable groups.
- Eight high quality analogue audio inputs, or
- Four 110 Ohm balanced AES inputs, or optionally four 75 Ohm unbalanced AES inputs.
- 20 bit and 24 bit audio supported.
- Z, C, U data preserved.
- 48 kHz AES resampling.
- Ability to replace existing embedded audio.
- Indicators for presence of SDI input type & audio inputs.
- External alarms for loss of carrier.
- Selectable 3G, HD & SD SDI generator outputs colour black, blue, green or yellow test signal on loss of SDI input.
- Selectable tone generator inserts audio test signals within set audio groups.
- Cascadable - Two SDI outputs for connection to additional units.
- Simple Network Management Protocol (SNMP) capable.

GENERAL

The DAI-4207 is a high performance audio embedder for either 2.97 Gb/s 3G-SDI, 1.485 Gb/s HD-SDI or 270 Mb/s SD-SDI video signals.

A typical SDI signal may contain up to eight audio pairs arranged in four groups. Each DAI-4207 is capable of inserting two audio groups into an existing SDI video stream. Group selection is made via on-board DIP switches.

An audio group consists of either two AES signals or four analogue audio signals, thus four AES signals or eight analogue audio signals, or a combination of both, are capable of being inserted over two audio groups. As well as the inputted audio signals, it is possible to swap existing audio channels between groups within the stream without the need to de-embed and re-insert the audio channels.

A selectable tone generator with multiple frequency test tones and levels, including silence, is provided allowing for audio system setup alignment. These test tones are embedded into the stream on the selected groups.

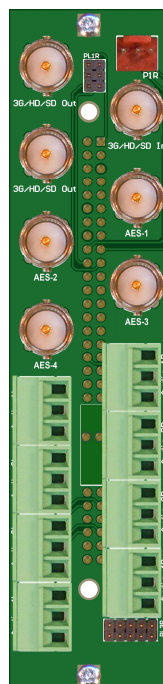
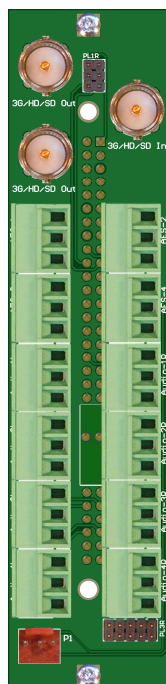
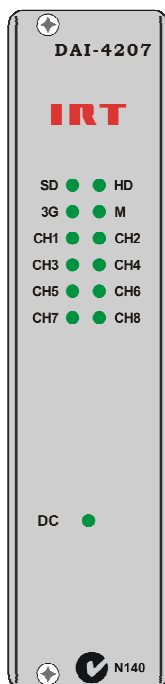
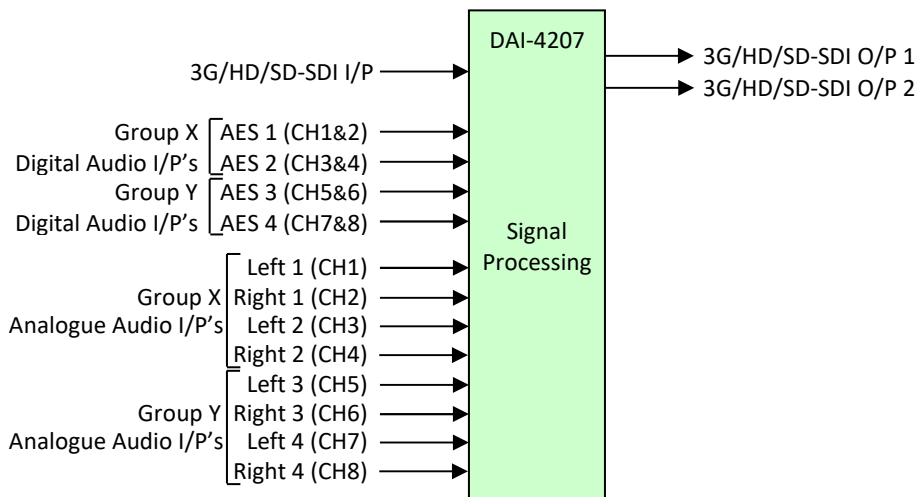
Front panel LED indicators are provided for SDI input rate and embedded audio to selected group input presence.

The DAI-4207 is cascadable with two SDI outputs being provided.

Simple Network Management Protocol (SNMP) monitoring is possible when mounted in an IRT frame fitted with SNMP capability.

The DAI-4207 is fabricated in IRT's standard Eurocard format and may be housed in a variety of IRT Eurocard frames alongside other standard modules.

BLOCK DIAGRAM DAI-4207 SIGNAL PATH



Standard Rear Assy. Optional Rear Assy.

Due to our policy of continuing development, these specifications are subject to change without notice.

NOTE: X corresponds to Groups 1, 2 or 3;
Y corresponds to Groups 2, 3 or 4
(X cannot equal Y).

M LED Drop Frame rate indicator.

Corresponds to various 3G and HD frame rates at 23.98, 29.97 or 59.94 frames per second.

TECHNICAL SPECIFICATIONS

SDI Input:

Number	1 (BNC).
Impedance	75Ω terminated.
Equalisation	Automatic, >100 metres at 1.485 Gb/s & 2.97 Gb/s, > 250 m at 270 Mb/s for Belden 8281 or equivalent cable.
Format	270 Mb/s (SD-SDI) video with or without embedded audio serial data to SMPTE 259M; 1.485 Gb/s (HD-SDI) video with or without embedded audio serial data to SMPTE 292M 2.97 Gb/s (3G-SDI) video ¹ with or without embedded audio serial data to SMPTE 424M.

SDI Output:

Number	2 (BNC).
Type	75 Ω sourced.
Format	Regenerated and re-clocked, as per input type.

AES Inputs¹:

Number	4 (2 Groups).
Impedance	110 Ω balanced (standard), or 75 Ω unbalanced (with optional rear assembly).
Signal amplitude	3.5 V ± 1 V _{p-p} . (standard balanced rear assembly); (1 V _{p-p} optional unbalanced BNC rear assembly).
Resampled at	48 kHz, automatic.

Analogue Audio Inputs:

Number	8 (2 Groups).
Impedance (balanced)	10 kΩ.
Input level	+24 dBu at Full Scale.

Front Panel Indicators:

SD	SD-SDI input present.
HD	HD-SDI input present.
3G	3G-SDI ¹ input present.
M	Dropped Frame indicator. 3G/HD-SDI Frame Rate = 23.98, 29.97 or 59.94 fps, varies with line rate and whether interlaced or progressive.
CH1	Channel 1 audio input available for Group X position ² .
CH2	Channel 2 audio input available for Group X position ² .
CH3	Channel 3 audio input available for Group X position ² .
CH4	Channel 4 audio input available for Group X position ² .
CH5	Channel 5 audio input available for Group Y position ² .
CH6	Channel 6 audio input available for Group Y position ² .
CH7	Channel 7 audio input available for Group Y position ² .
CH8	Channel 8 audio input available for Group Y position ² .

Power requirements:

Voltage	28 Vac CT (14-0-14) or ± 16 Vdc.
Power consumption	< 8 VA.

Other:

Temperature range	0 - 50° C ambient.
Mechanical	Suitable for mounting in IRT 19" rack chassis with input output and power connections on the rear panel.
Finish	Grey background, black lettering & red IRT logo.
Front panel	
Rear assembly	Detachable silk-screened PCB with direct mount connectors to Eurocard and external signals.
Dimensions	6 HP mm x 3 U x 220 mm IRT Eurocard.
Related Modules	DAX-4207 audio inserter.

NOTE:	1	Works at 3GA 1080p50 and 1080p60 rates.
	2	X corresponds to Groups 1, 2 or 3; Y corresponds to Groups 2, 3 or 4. X cannot equal Y.