

IQDMX32

Dual 3G/HD/SD-SDI De-embedder for 4 AES/EBU Audio Streams

The IQDMX32 is a dual 8 channel digital audio de-embedder for 3Gbps SDI, HD-SDI 1.5 Gbit/s or SD-SDI 270 Mbit/s signals. Audio processing features include gain, invert, delay and channel level routing, whilst a video proc. amp is also included in the feature set.

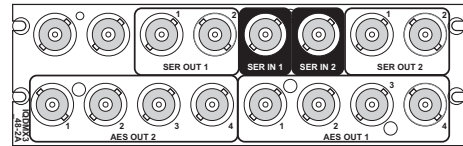
Features

- Dual 8 channel 3G/HD/SD-SDI de-embedder with 4 balanced or unbalanced AES outputs per channel
- Handles up to 16 channels of embedded audio present on each SDI input
- Standards supported:
 - 3G-SDI to SMPTE 424M/425M level A & B compatible
 - HD-SDI to SMPTE292M/274M/296M
 - SD-SDI to SMPTE259M-C
- Channel level (Sub-frame) routing
- Audio proc-amp features including independent gain, invert and mute control
- Adjustable delay for selected audio channels
- Any group of embedded audio may be passed unchanged, processed or blanked
- Embedded Dolby E support – pair routing and delay
- PCM and non-PCM detection and reporting
- Handles Dolby E and PCM audio present in the same group
- Able to pass all ancillary data without corruption inc. VANC metadata
- Independent HANC and VANC blanking control
- Input loss detection – default output of black/pattern/freeze
- Up to 3 frames of video delay and 2 seconds of audio delay per channel
- Video controls including video gain and offset
- In-built test pattern and tone generators for each channel
- Up to 2 active HD/SD-SDI outputs per channel
- 16 x user memories per channel, save/recall/rename
- RollCall control and monitoring compatible

Why should you choose this module?

- Compact multi-channel de-embedder for AES audio applications where space is at a premium, in OB environments for example
- Video delay feature allows this module to be used where a Dolby E decoder, for example, is to be placed downstream of the AES outputs
- Full RollCall and SNMP compatibility allows easy integration with SAM, or third party, network management systems providing an all-inclusive monitoring and control solution

Order codes



IQDMX3248-2A3, IQDMX3248-2B3

3G/HD/SD-SDI Dual 8 channel AES De-embedder. 2 outputs per input, 4 Unbalanced AES outputs per input.



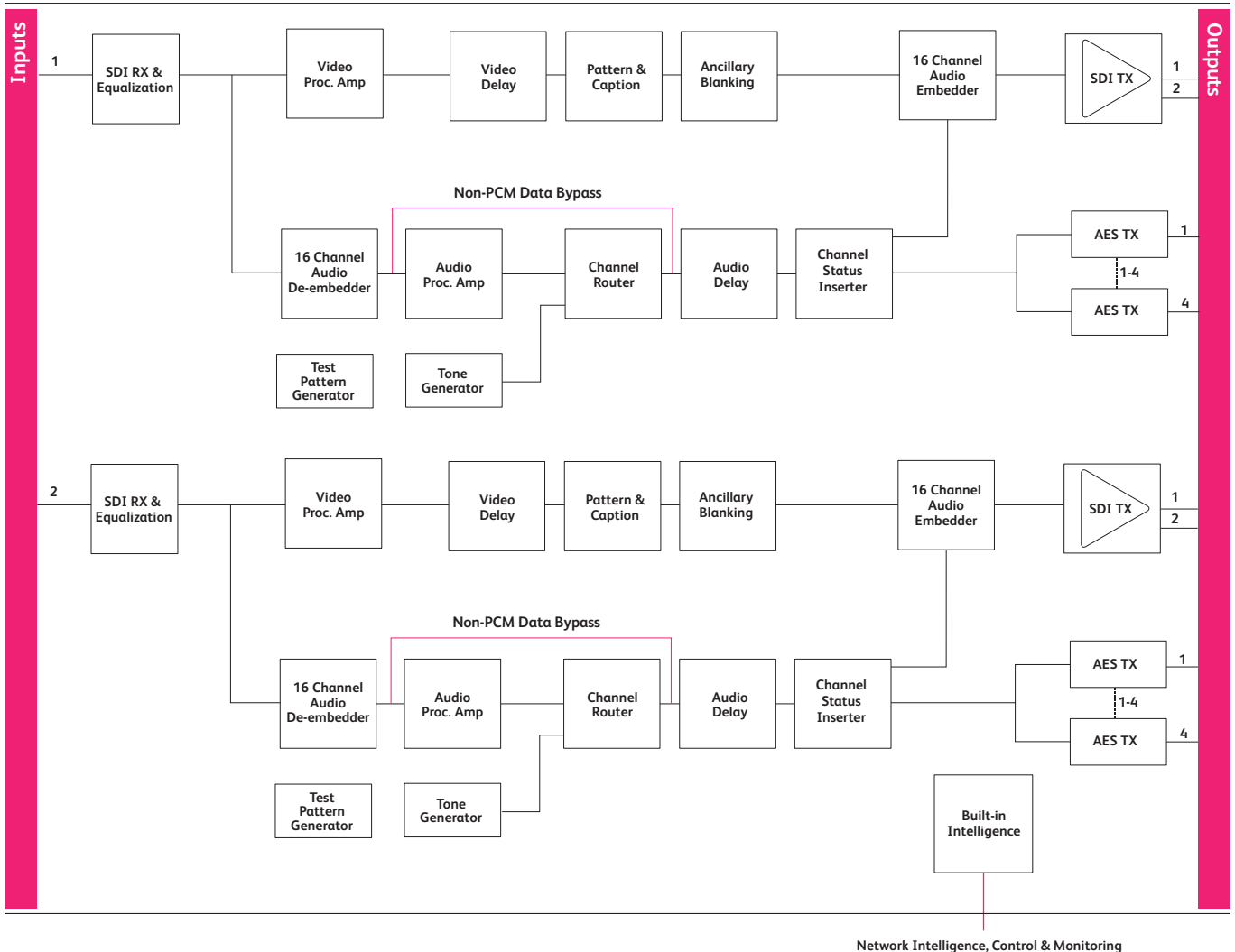
IQDMX3249-1A3, IQDMX3249-1B3

3G/HD/SD-SDI Dual 8 channel AES De-embedder. 1 output per input, 4 Balanced AES outputs per input.

For more details on enclosure types please refer to Frames and Hardware section.

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Dual 3G/HD/SD-SDI De-embedder for 4 AES/EBU Audio Streams



Block Diagram for IQDMX3248-2A3

Technical Specification

Inputs & Outputs

Signal Inputs

SDI Inputs	1 per Channel
Input 1 Cable Length	Up to 70m Belden 1694A @ 3 Gbit/s Up to 160m Belden 1694A @ 1.5 Gbit/s >350m Belden 1694A @ 270 Mbit/s
Input 2 Cable Length	Up to 60m Belden 1694A @ 3 Gbit/s Up to 100m Belden 1694A @ 1.5 Gbit/s Up to 200m Belden 1694A @ 270 Mbit/s

Signal Outputs

SDI Outputs	x2 per Channel
Unbalanced digital audio	4 x AES/EBU, AC3, Dolby E (BNC)
Balanced digital audio	4 x AES/EBU, AC3, Dolby E (25 Way D-Type)

Controls

Indicators

Power	OK (Green)
CPU running	OK (Green flashing)
FPGA running	OK (Yellow flashing)
Status	OK (Green) Warning (Yellow) Error (Red)
Input 1	OK (Green)
Input 2	OK (Green)

Controls

Video Controls

Input Standard	1125(1080)/50P (A & B), 1125(1080)/59P (A & B), 1125(1080)/29i, 1125(1080)/25i, 750(720)/59P, 750(720)/50P, 525(480)/29i, 625(576)/25i
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Technical Specification cont...

Default Video Output Type.	Pattern, Freeze, Black
Default Video Output Standard	Last Known Good,
Default Video Output Type	Pattern, Freeze, Black
Default Video Output Standard	Last Known Good, 1125(1080)/50P (A & B), 1125(1080)/59P (A & B), 1125(1080)/29i, 1125(1080)/25i, 750(720)/59P, 750(720)/50P, 525(480)/29i, 625(576)/25i
Manual Freeze	On/Off
Freeze	Field/Frame
Video Delay Frames	0 - 3 F
VANC Data	Blank VANC
SD VANC Data	Line blanking (6 controls)
ProcAmp Enable	On/Off
Black Level	±100 mV in steps of 0.8 mV
Hue Adjust	±180° in steps of 1°
Master Video Gain	±6 dB in steps of 0.1 dB
Y-Gain	±6 dB in steps of 0.1 dB
Cb/Cr Gain	±6 dB in steps of 0.1 dB
Y/C Timing	±8 pixels in 2 pixel steps (SD) ±16 pixels in 2 pixel steps (HD/3G)
Picture Position	±8 pixels in 2 pixel steps (SD) ±16 pixels in 2 pixel steps (HD/3G)
Pattern On	On/Off
Pattern Select	75% Color Bars, Black
Caption On	On/Off
Edit Caption	19 characters available

Audio Controls**Embedder Assignment**

Group 1 to 4 Enable	On/Off
Pair 1 to 8 Source L / Non-PCM	Dis-embed 1_1 to 8_2, Tone, Silence
Pair 1 to 8 Source R	Dis-embed 1_1 to 8_2, Tone, Silence
Pair 1 to 8 Stereo	Link channel pairs
Pair 1 to 8 Polarity L/R	On/Off
Pair 1 to 8 Gain L/R	+12 dB to -72 dB in 0.1 dB steps
Pair 1 to 8 Non-PCM	On/Off

AES Assignment

AES 1 to 4 Source L / Non-PCM	Dis-embed 1_1 to 8_2, Tone, Silence
AES 1 to 4 Source R	Dis-embed 1_1 to 8_2, Tone, Silence
AES 1 to 4 Stereo	Link channel pairs
AES 1 to 4 Polarity L/R	On/Off
AES 1 to 4 Gain L/R	+12 dB to -72 dB in 0.1 dB steps
AES 1 to 4 Non-PCM	On/Off

Processed Audio Delay Control

Course Manual Delay	Up to 1.75s in 5ms steps
Fine Manual Delay	+/- 0.25s in 0.5ms steps

Tone

Frequency L/R	100Hz to 10kHz in 100Hz steps
Channel Ident	On/Off
HANC Data	Blank HANC (Removes all HANC data. Note audio removed when embedders disabled)

Audio Monitoring

Silence Detect	0 to -80dB in steps of 1dB
Signal Overload Detect	0 to -80dB in steps of 1dB
Warning Timer	1 to 20 seconds in steps of 1 second

Other Controls

User Memories	16 x Save, Recall, Rename
Memory Naming	User configurable naming of memories 1 – 16
RollTrack Sources	Unused, Video Delay (1&2), Input Present (1&2), Input1 Select, (1&2) Input2 Select (1&2), Input Loss (1&2), Output525 (1&2), Output 625 (1&2), Output 720p (1&2), Output 1080i (1&2), Output 1080p (1&2), Output Freeze (1&2), Output Unfreeze (1&2), Output Pattern on (1&2), Output pattern off (1&2), Output Caption on (1&2), Output Caption off (1&2), Disemb (Pairs 1-8) PCM (1&2), Disemb (Pairs 1-8) Data (1&2), Disemb (Pairs 1-8) DolbyE (1&2), Disemb (Pairs 1-8) V bit (1&2), Disemb (Pairs 1-8) Loss (1&2)
Information Window	Video Input Status, Audio Input Status
Factory Default	Resets all module settings to factory specified default values and clears memories
Default Settings	Resets all module settings to factory specified defaults but does not clear memories
Restart	Software restart of the module
Module Information	"Reports following module information: Software version, Serial number, Build number, KOS version, Firmware version, PCB version

Technical Specification cont...

Specifications

Electrical	3Gbit/s SDI, SMPTE 424M 1.5Gbit/s HD-SDI, SMPTE 292M 270 Mbit/s SDI, SMPTE 259M-C /DVB-ASI
Connector / Format	BNC/ 75ohm panel jack on standard IQ connector panel
Return loss	>-15dB (270Mbit/s, 1.5Gbit/s) >-10dB (3Gbit/s)
Output Jitter	SD-SDI 0.2 UI (10Hz) / 0.2 UI (1KHz) 3G/HD-SDI 1.0 UI (10Hz) / 0.2 UI (100KHz)
Video Standards	1125(1080)/50p (A & B), 1125(1080)/59p (A & B) 750(720)/50p, 750(720)/59p, 1125(1080)/25i, 1125(1080)/29i 625(576)/25i, 525(480)/29i
Typical Video Delay	SD: 70us HD: 38us 3G-A: 19us 3G-B: 40us
Embedded audio handling.	HD - 24-bit synchronous 48 kHz to SMPTE 299M SD - 20-bit synchronous 48 kHz to SMPTE 272M-A
Embedded Audio Delay	Minimum (PCM) 2 ms Maximum (non-PCM) SD: 67us HD: 28us 3G-A: 15us 3G-B: 25us

Digital Audio Output (Balanced)

Connector/Format	25 W D
Level	3 V p-p typical into 110 Ohms
Standard	AES3, SMPTE 272M-A-1994, SMPTE 299M

Digital Audio Output (Unbalanced)

Connector/Format	BNC
Level	1 V p-p typical into 75 Ohms
Standard	AES3id, SMPTE 272M-A-1994, SMPTE 299M

Power Consumption

Module Power Consumption	12W Max (A Frames) 11 PR (B Frames)
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