

IQBRK30

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

The IQBRK30 provides 8 channel digital audio de-embedding and re-embedding for 3Gbps SDI, HD-SDI 1.5 Gbit/s or SD-SDI 270 Mbit/s signals. Able to select any of the 16 embedded channels, audio processing features include audio delay, gain, invert and channel level routing, whilst video delay and a video proc. amp are also included in the feature set. Ideal for breaking out embedded audio to AES only devices for processing then re ingesting the resulting feeds back into the SDI domain.

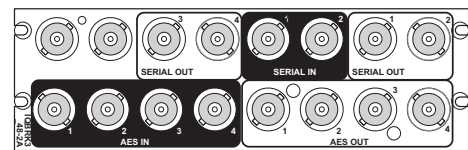
Features

- 8 channel 3G/HD/SD-SDI re-embedder capable of embedding and de-embedding up to 4 AES signals
- Standards supported:
 - 3G-SDI to SMPTE 424M/425M level A & B compatible
 - HD-SDI to SMPTE292M/274M/296M
 - SD-SDI to SMPTE259M-C
- Handles up to 16 channels of embedded audio present on the incoming SDI stream
- Channel level (Sub-frame) routing
- Audio proc-amp features including independent gain, invert and mute control
- Embedding continues on loss of SDI input (silence)
- Auto mute on AES input error
- Adjustable delay for selected audio channels
- Any group of embedded audio may be passed unchanged, processed or blanked
- Embedded Dolby E support – pair routing, delay and Dolby E header alignment
- PCM and non-PCM detection and reporting
- Handles Dolby E and PCM audio present in the same group
- Independent HANC and VANC blanking control
- Input loss detection – default output of black/pattern/freeze
- Up to 9 frames of video delay and 2 seconds of audio delay
- Transparent to all ancillary data inc. VANC metadata
- Input loss detection – default output of black/pattern/freeze
- Video controls including video gain and offset
- In-built test pattern generator and audio tone generator
- 2 SDI inputs and up to 4 active HD/SD-SDI outputs
- 16 x user memories, save/recall/rename
- RollCall control and monitoring compatible

Why should you choose this module?

- Ideal as a re-embedder for stereo, multichannel or Dolby E AES audio applications
- Suitable for multi-lingual audio applications thanks to channel-level control and up to sixteen channel operation
- 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



IQBRK3048-2A3, IQBRK3048-2B3

3G/HD/SD-SDI 16 channel AES Re-embedder.
4 SDI outputs, 4 Unbalanced AES inputs, 4 Unbalanced AES outputs



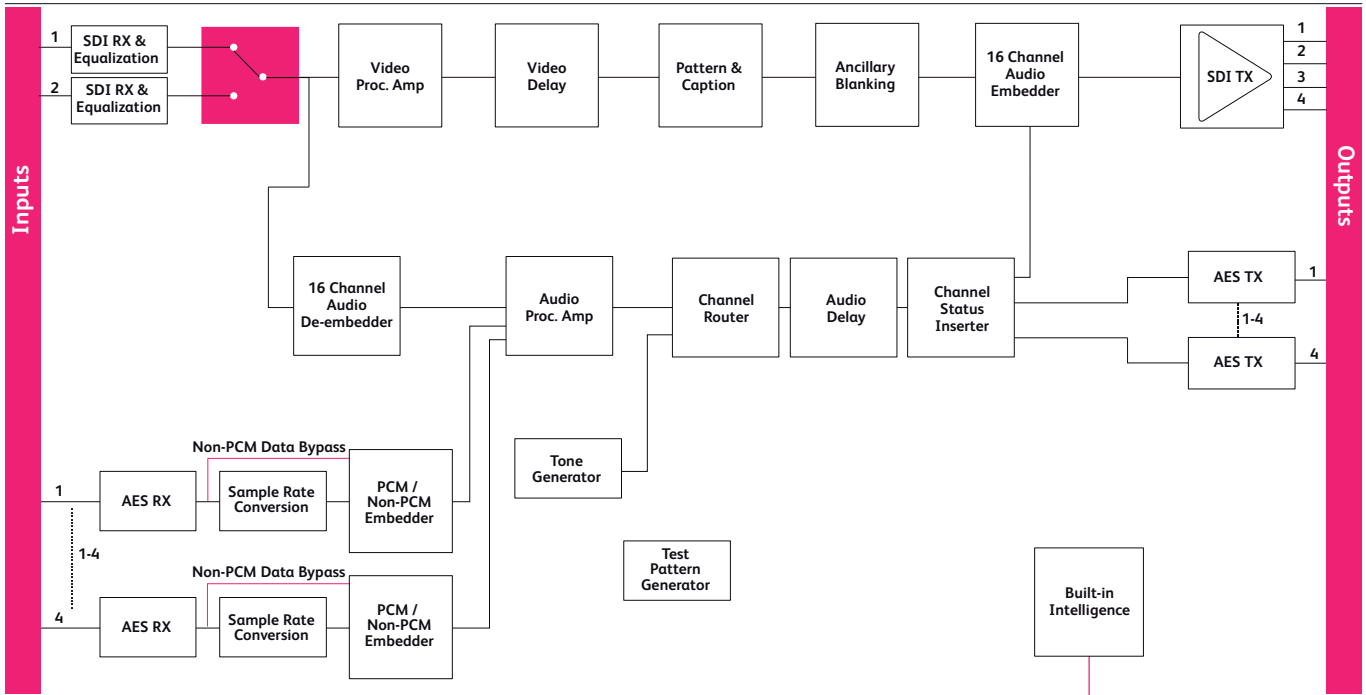
IQBRK3049-1A3, IQBRK3049-1B3

3G/HD/SD-SDI 16 channel AES Re-embedder.
2 SDI outputs, 4 Balanced AES inputs, 4 Balanced AES outputs

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

IQBRK30

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



Block Diagram for IQBRK3048-2A3

Network Intelligence, Control & Monitoring

Technical Specification

Inputs and Outputs

Signal Inputs

SDI Inputs	2x
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 100m Belden 1694A @ 270 Mbit/s
Unbalanced digital audio	8 x AES/EBU, AC3, Dolby E (BNC)
Balanced digital audio	8 x AES/EBU, AC3, Dolby E (25 Way D-Type)

Signal Outputs

SDI Outputs	x 2 (4)
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

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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Default Video Output Type .

Default Video Output Standard

Video Select
Audio Select
Manual Freeze
Freeze
Video Delay Frames
VANC Data
SD VANC Data
ProcAmp Enable
Black Level
Hue Adjust
Master Video Gain
Y-Gain
Cb/Cr Gain
Y/C Timing

Picture Position

Pattern On
Pattern Select
Caption On
Edit Caption

Pattern, Freeze, Black

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

Input 1, Input 2

Video Input 1, Video Input 2, Follow Video

On/Off
Field/Frame
0 - 9 F
Blank VANC
Line blanking (6 controls)

On/Off

±100 mV in steps of 0.8 mV

±180° in steps of 1°

±6 dB in steps of 0.1 dB

±6 dB in steps of 0.1 dB

±6 dB in steps of 0.1 dB

±8 pixels in 2 pixel steps (SD)

±16 pixels in 2 pixel steps

(HD/3G)

±8 pixels in 2 pixel steps (SD)

±16 pixels in 2 pixel steps

(HD/3G)

On/Off

75% Color Bars, Black

On/Off

19 characters available

Technical Specification cont...

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, AES 1 to 8, Tone, Silence
Pair 1 to 8 Source R	Dis-embed 1_1 to 8_2, AES 1 to 8, 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

Dolby-E

Dolby-E Auto

Alignment	On/Off
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, Input Present, Input1 Select, Input2 Select, Input Loss, Output525, Output 625, Output 720p, Output 1080i, Output 1080p, Output Freeze, Output Unfreeze, Output Pattern on, Output pattern off, Output Caption on, Output Caption off, AES (Pairs 1-8) PCM, AES (Pairs 1-8) Data, AES (Pairs 1-8) DolbyE, AES (Pairs 1-8) V bit, AES (Pairs 1-8) Loss, Disemb (Pairs 1-8) PCM, Disemb (Pairs 1-8) Data, Disemb (Pairs 1-8) DolbyE, Disemb (Pairs 1-8) V bit, Disemb (Pairs 1-8) Loss
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

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 Input (Balanced)

Connector/Format	25 W D
Sample Frequency	25 – 96 kHz (48 kHz for Reference)
Input Cable Length	>150 m of AES3 cable
Impedance	110 Ohms
Standard	AES3, SMPTE 272M-A-1994, SMPTE 299M

Digital Audio Input (Unbalanced)

Connector/Format	BNC
Sample Frequency	25 – 96 kHz (48 kHz for Reference)
Input Cable Length	>500 m of RG59 cable
Impedance	75 Ohms
Standard	AES3id, SMPTE 272M-A-1994, SMPTE 299M
Output Sampling	48 kHz frame locked

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	8.5 W Max (A Frames) 8.5 PR (B Frames)
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