

The IQDLY20/21 provides two channels of analog audio and four channels of AES audio with up to 3 seconds of preset delay, and 0.5 seconds of tracking audio delay. The availability of both analog and AES inputs and outputs also enables it to be used as a two-channel audio ADC and DAC.

IQDLY20/21

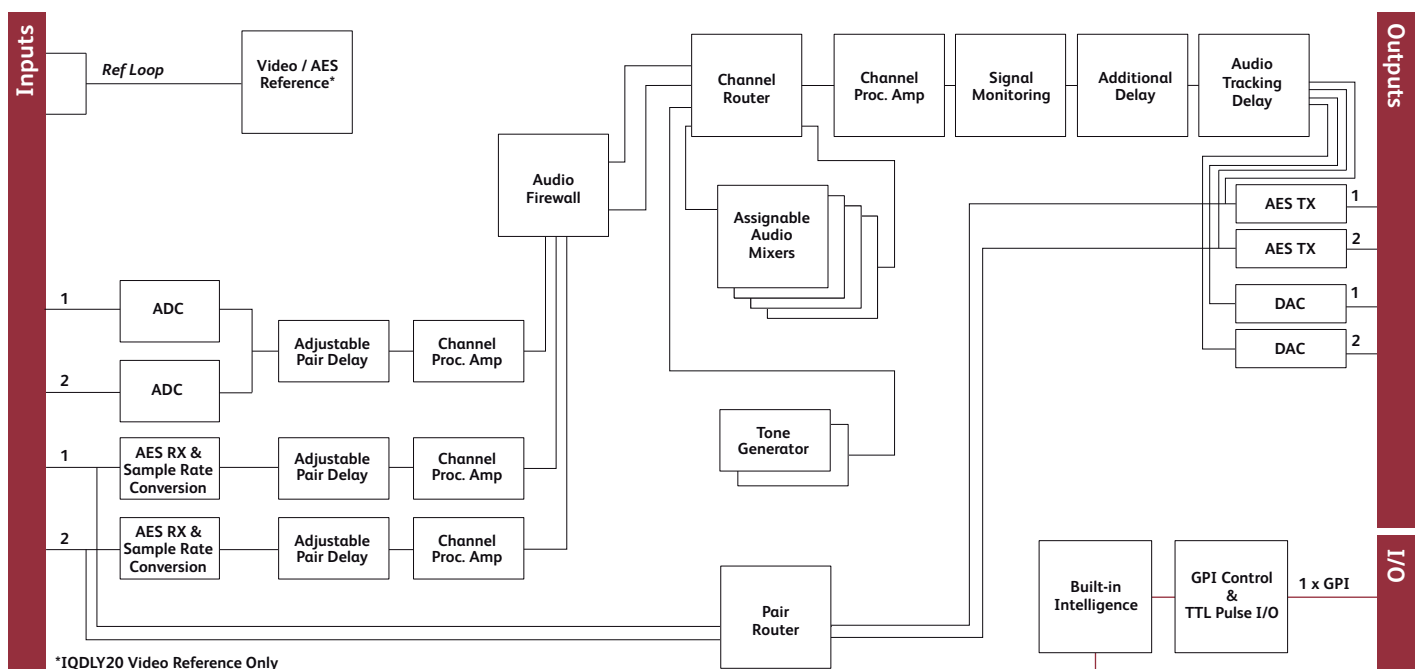
AES and Analog Audio Delay and Shuffler Module

Does this module suit your application?

- 2 x balanced analog audio paths
- 2 x balanced or unbalanced AES paths
- Synchronizes AES/analog inputs
- Proc. amp control of audio channels
- Flexible preset and tracking delay
- Channel-level shuffling
- 4 off assignable 4 input mixers
- References to video or AES signals (IQDLY20 video reference only)
- Professional standard 48kHz operation, sample rate converts non-48kHz signals
- Firewall for processed PCM audio to provide a continuous output regardless of input
- Passes non-PCM AES signals including Dolby E
- Pair-level Dolby E routing Operates at 48 kHz
- 20-bit sampling resolution

Why should you choose this module?

- A complete AES/analog delay solution in one module
- Firewall function makes this an ideal first unit in a signal chain
- Channel-level manipulation and mixing allows detailed control of audio material
- Tracking capability allows the audio to follow a video synchronizer
- Suitable for use as a 2 channel audio ADC and DAC with delay and processing
- Separate per pair and global user adjustable delays



Block Diagram for IQDLY2117-2A

Order codes for IQH3A/1A enclosures

IQDLY2115-1A

AES and Analog Audio Delay.
Balanced Audio connection via 25 way D type. 2 Analog inputs, 2 AES inputs, 2 Analog outputs, 2 AES outputs.

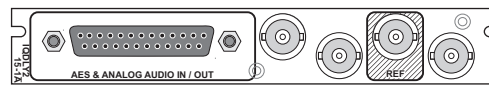
IQDLY2117-2A

AES and Analog Audio Delay.
Balanced Audio connection via 25 way D type. 2 Analog inputs, 2 AES inputs, 2 Analog outputs, 2 AES outputs and 1 x GPI.

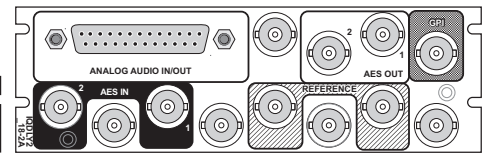
IQDLY2018-2A

AES and Analog Audio Delay.
Balanced Audio connection via 25 way D type, Unbalanced AES connection via BNC. 2 Analog inputs, 2 AES inputs, 2 Analog outputs, 2 AES outputs and 1 x GPI.

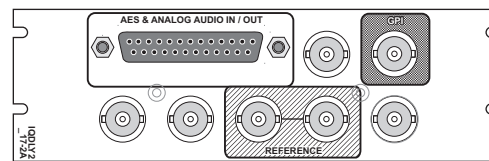
For more details on enclosure types please refer to datasheet IQH3A.



IQDLY2115-1A



IQDLY2018-2A



IQDLY2117-2A

Technical Specification

Inputs and Outputs

Signal Inputs

Unbalanced digital audio	2 x AES/EBU, AC3, Dolby E (BNC)
Balanced digital audio	2 x AES/EBU, AC3, Dolby E (25 Way D-Type)
Analog	2 Channels (1 Stereo Pair)
Reference	IQDLY21: Composite video / AES/EBU (BNC) IQDLY20: Composite video (BNC)

Signal Outputs

Unbalanced digital audio	2 x AES/EBU, AC3, Dolby E (BNC)
Balanced digital audio	2 x AES/EBU, AC3, Dolby E (25 Way D-Type)
Analog	2 Channels (1 Stereo Pair)

Control Interface

GPI	1 x Closing contact I/O interface (BNC)
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Card Edge and RollCall Controls

Card Edge Controls

NONE

Card Edge Indicators

AES input present	1 x LED per pair Reference Present
CPU running / power	One green LED, flashing = OK

RollCall Functions

Audio Controls

Set line up level	+20 to -20 dBu in 1 dB steps
Set headroom	4 to 24 dB in 1 dB steps
Set audio detector thresholds	High and low levels, time delay
Input audio delay	Up to 1.5s additional delay in 1 ms steps

Input side control proc. - audio gain and polarity	Independent Gain, Mute, Polarity control input channels. +18 dB to -18 dB in 0.1 dB steps
Channel routing	Output channels routed from Analog inputs 1-2, AES pairs 1 to 4, test tone and silence

Output side control proc. - gain and polarity

Global delay offset	Independent Gain, Mute, and Polarity control over output channels. +18 dB to -18 dB in 0.1 dB steps Up to +1.5s in 1 ms steps, common to all processed audio
Variable audio delay control source	Up to 0.5s from RollTrack + GPI
Tone frequency, amplitude and ident	2 channel tone generator. 100 Hz to 15 kHz in 100 Hz steps

Tone Setup

Frequency	100 Hz to 15 kHz in 100 Hz steps
Channel ident	0.5s interruption every 2s

Other Controls

User memories	Name, clear, save and read 8 user memories
Default audio output	Silence
GPI/O set-up	May be attached to any memory function/polarity

Reporting (* also Logged)

Audio silence, high level, low level, overflow	For processed audio channels only
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Audio Delay Setup

Delay	Audio delay - Fixed, RollTrack + fixed, GPI + Fixed
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RollTrack Output

Delay	Current audio delay
Reference state	Present, Error, Loss
External audio state	Pair present
AES 1-2	Loss, Present
GPI	Low, High, Inactive

Specifications

Noise floor	Better than -100 dBFs (20 Hz to 20 kHz)
Channel amplitude matching	Better than ±0.15 dBu
Output level accuracy	Better than ±0.2 dBu
Flatness	Better than +0.1 dBu to -0.3 dBu (20 Hz to 20 kHz with reference to 1 kHz)

Technical Specification cont...

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

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
Output sampling	48 kHz frame locked to 48 kHz AES/EBU Reference in AES lock mode

Digital Audio Output (Balanced)

Connector / format	25 W D
Level	3 V p-p typical into 110 Ohms

Digital Audio Output (Unbalanced)

Connector / format	BNC
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Analog to Digital Audio

Analog input impedance	10 k Ohms
Frequency response	20 Hz to 20 kHz (+/- 0.1 dB)
Distortion (THD+N)	Better than -90 dB, 1kHz@ -1 dBFS
Dynamic range	>106 dB
Audio delay	Equal to video delay + adjustable offset

Digital to Analog Audio

Analog output impedance	50 Ohms
Frequency response	20 Hz to 20 kHz (+/- 0.1 dB)
Distortion (THD+N)	Better than -92 dB at 23 dBu, 1kHz@ -1 dBFS
Dynamic range	>106 dB

Power Consumption

Module power consumption	9.5 W
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