

IQDLY20/21

AES and Analog Audio Delay and Shuffler Module

The IQDLY20 and IQDLY21 provide a complete analog and AES audio solution in a single module with two channels of analog audio and four channels of AES audio and a built-in firewall function, making it an ideal first unit in a signal chain.

The IQDLY20/21 from Grass Valley 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. The IQDLY20 includes unbalanced AES connections via BNC.

Why should you choose this module?

- A complete AES solution in one module for all common 48 kHz audio signal tasks
- 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

KEY FEATURES

- 4x balanced or unbalanced AES paths
- Synchronizes AES 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
- Professional standard 48 kHz operation, sample rate converts non-48 kHz 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

SPECIFICATIONS**Inputs and Outputs****Signal Inputs**

Unbalanced digital audio: 2x AES/EBU, AC3, Dolby E (BNC)

Balanced digital audio: 2x 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: 2x AES/EBU, AC3, Dolby E (BNC)

Balanced digital audio: 2x AES/EBU, AC3, Dolby E (25-way D-type)

Analog: 2 channels (1 stereo pair)

Control Interface

GPI: 1x closing contact I/O interface (BNC)

Card Edge and RollCall Controls**Card Edge Controls**

NONE

Card Edge Indicators

AES input present: 1x 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: Independent gain,

Mute, and Polarity control over output channels

+18 dB to -18 dB in 0.1 dB steps

Global delay offset: 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

Logging

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

Audio Delay Setup

Delay:

Audio delay: Fixed, RollTrack + fixed, GPI + Fixed

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

General 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)

Digital Audio Input (Balanced)

Connector/format: 25-way D-type

Sample frequency: 25 – 96 kHz (48 kHz for reference)

Input cable length: >150m of AES3 cable

Impedance: 110 Ω

Digital Audio Input (Unbalanced)

Connector/format: BNC

Sample frequency: 25 – 96 kHz (48 kHz for reference)

Input cable length: >500m of RG59 cable

Impedance: 75 Ω

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

Digital Audio Output (Balanced)

Connector/format: 2-way D-type

Level: 3 Vp-p typical into 110 Ω

Digital Audio Output (Unbalanced)

Connector/format: BNC

Analog to Digital Audio

Analog input impedance: 10 k Ω

Frequency response: 20 Hz to 20 kHz (± 0.1 dB)

Distortion (THD+N): Better than -90 dB, 1 kHz @ -1 dBFS

Dynamic range: >106 dB

Audio delay: Equal to video delay + adjustable offset

Digital to Analog Audio

Analog output impedance: 50 Ω

Frequency response: 20 Hz to 20 kHz (± 0.1 dB)

Distortion (THD+N): Better than -92 dB at 23 dBu, 1 kHz @ -1 dBFS

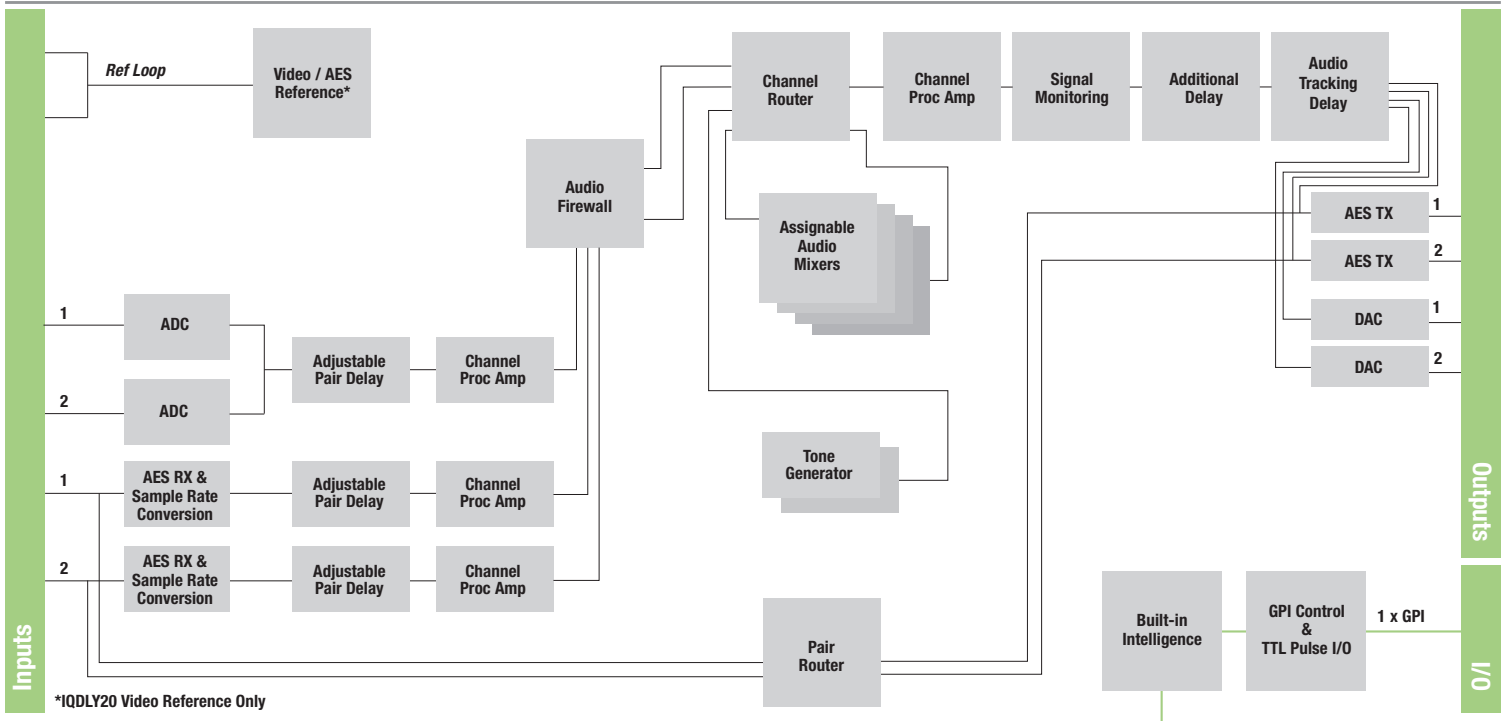
Dynamic range: >106 dB

Power Consumption

Module power consumption:

9 W Max (A Frames)

8 PR (B Frames)



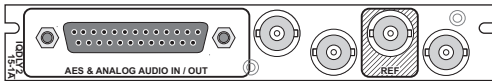
Block Diagram for IQDLY2117-2A

Network Intelligence, Control & Monitoring

ORDERING

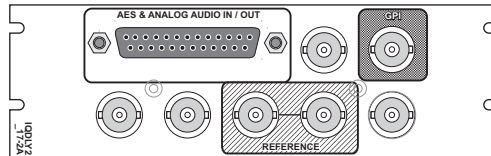
IQDLY2115-1A

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.



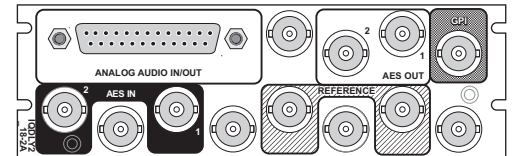
IQDLY2117-2A

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 1x 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 1x GPI.



For more details on enclosure types please refer to the IQ Modular Enclosures datasheet.



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