IQDMX01/11

4/8 Channel AES demultiplexer and Audio Processor

The IQDMX01 and IQDMX11 are 2/4 x AES/EBU stream demultiplexers with advanced embedded audio handling. All audio manipulation is at the channel-level suiting discreet surround and multi-lingual use. In addition to its tracking audio delay, it also has a bulk audio delay feature. To complete the delay flexibility, it has a built-in video delay that can be used to adjust to match external audio processing delays, such as that from a Dolby E encoder. Its audio firewall capability ensures continuous audio output even when the embedded audio signal fails. A dual SDI input allows this module to take signals from either of two paths thus allowing split operation, with video taken from one input and embedded audio from the other.

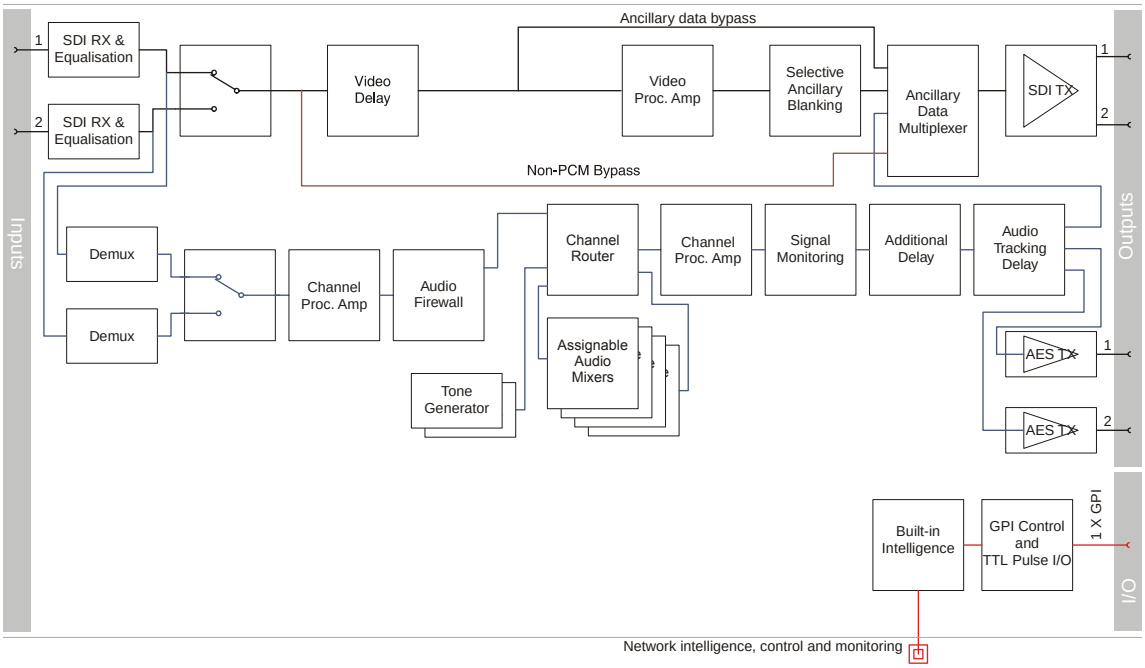
The IQDMX01 and IQDMX11 can also be used as embedded audio processors. Their ability to re-multiplex the audio internally after channel manipulation and processing means that they can be used in this role with the AES outputs used for monitoring feeds.

Does this module suit your application?

- 4/8 channel AES/EBU demultiplexer
- Can de-embed AES/EBU and AC3 digital audio data
- Handles up to 24 bit embedded audio present on the incoming SDI stream, and de-embeds/embeds to 20 bits
- Flexible audio delay including common fixed delay and tracking delay
- A further audio delay of up to 0.5s which seamlessly tracks the video delay or external RollTrack / GPI inputs
- Firewall for processed PCM audio to provide a continuous output
- Transparent to non-PCM audio
- Eight channel audio processor with channel level manipulation
- Channel level (Sub-frame) routing
- 4 off 4 channel audio mixers
- Video proc-amp (gain, saturation, black level)
- Video test pattern generator, 2 channel audio tone generator
- Up to 3 frames of video delay
- RollCall control and monitoring compatible

Why should you choose this module?

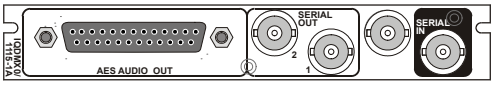
- Superb for a lines input role, with proc-amps on both audio and video signals
- Ideal as a general demultiplexer for audio monitoring
- Video delay feature allows this module to be used where a Dolby E decoder, for example, is to be placed downstream of the AES outputs



IQDMX01/11

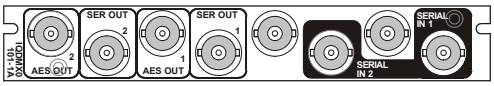
4/8 Channel AES demultiplexer and Audio Processor

Order codes for IQH3A/1A enclosures

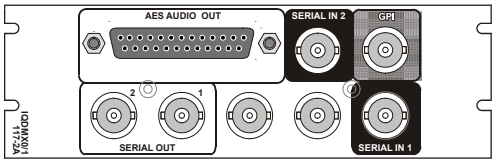


IQDMX0315-1A SDI and 4 channel AES demultiplexer with extended video delay. Balanced AES connection. 1 SDI input, 2 AES outputs, 2 SDI outputs

IQDMX1315-1A SDI and 8 channel AES demultiplexer with extended video delay. Balanced AES connection. 1 SDI input, 4 AES outputs, 2 SDI outputs

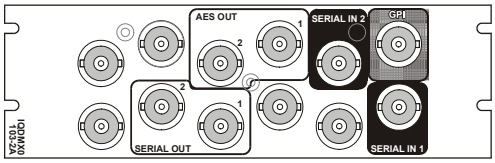


IQDMX0101-1A SDI and 4 channel AES demultiplexer with extended video delay. Unbalanced AES connection. 2 SDI inputs, 2 AES outputs, 2 SDI outputs

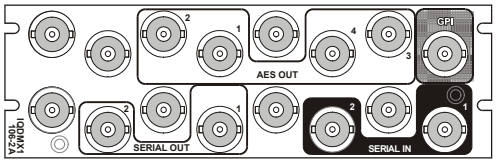


IQDMX0317-2A SDI and 4 channel AES demultiplexer with extended video delay. Balanced AES connection. 2 SDI inputs, 2 AES outputs, 2 SDI outputs, 1 GPI

IQDMX1317-2A SDI and 8 channel AES demultiplexer with extended video delay. Balanced AES connection. 2 SDI inputs, 4 AES outputs, 2 SDI outputs, 1 GPI

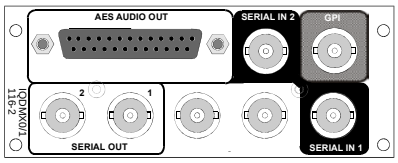


IQDMX0103-2A SDI and 4 channel AES demultiplexer with extended video delay. Unbalanced AES connection. 2 SDI inputs, 2 AES outputs, 2 SDI outputs, 1 GPI



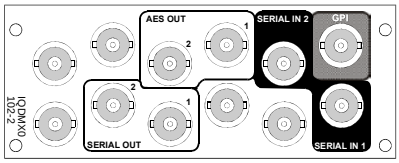
IQDMX1106-2A SDI and 8 channel AES demultiplexer with extended video delay. Unbalanced AES connection. 2 SDI inputs, 4 AES outputs, 2 SDI outputs, 1 GPI

Order codes for other enclosures



IQDMX0316-2 SDI and 4 channel AES demultiplexer with extended video delay. Balanced AES connection. 2 SDI inputs, 2 AES outputs, 2 SDI outputs, 1 GPI

IQDMX1316-2 SDI and 8 channel AES demultiplexer with extended video delay. Balanced AES connection. 2 SDI inputs, 4 AES outputs, 2 SDI outputs, 1 GPI



IQDMX0102-2 SDI and 4 channel AES demultiplexer with extended video delay. Unbalanced AES connection. 2 SDI inputs, 2 AES outputs, 2 SDI outputs, 1 GPI

For more details on enclosure types please refer to the Frames/Enclosures section

Inputs & Outputs

Signal Inputs

Digital Video ..... 2 x SDI (BNC) (1 x SDI – single width versions)

Standards..... SMPTE 259M-C-1997, SMPTE 272M-A-1994

Signal Outputs

Digital Video ..... SDI x 2

Unbalanced digital audio ..... 2/4 x AES/EBU, AC3, Dolby E (BNC)

Balanced digital audio ..... 2/4 x AES/EBU, AC3, Dolby E (25 Way D-Type)

Standards..... SMPTE 259M-C-1997, SMPTE 272M-A-1994, AES3-1992

Control Interface

GPI..... 1x Closing contact I/O interface (BNC)

IQDMX01/11

4/8 Channel AES demultiplexer and Audio Processor

Card Edge & RollCall Controls

Card Edge Controls

NONE

Card Edge Indicators

SDI Input Loss..... Loss = Off, Good = Green

SDI Input Error..... Yellow = Unused input not at current operating standard

CPU running / Power..... One green LED, flashing = OK

RollCall Functions

Audio Controls

Audio extraction select ..... SDI input 1/2/Follow Video Control

Set headroom ..... 4 to 24 dB in 1 dB steps

Set audio detector thresholds
High and low levels, time delay

Input side control proc. - audio gain and polarity
Independent Gain, Mute, Polarity control over de-embedded audio. +18 dB to –18 dB in 0.1 dB steps.

Channel routing ..... Output channels routed from test tone, silence or SDI 8 embedded channels from any group

Output side control proc. - gain and polarity
Independent Gain, Mute, & Polarity control over embedded and AES output channels. +18 dB to –18 dB in 0.1 dB steps.

Global delay offset..... up to +1.5 s in 1 ms steps, common to all processed audio.

Variable audio delay control source
Up to 0.5 s from RollTrack + GPI

Tone frequency, amplitude & 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..... 0.5 s interruption every 2 s

Video Controls

Select primary input..... 1/2

Black Level..... ± 100 mV in 0.8 mV steps

Y/C Timing ..... ± 592 ns in 148 ns steps

Picture position ..... ± 592 ns in 148 ns steps

Luminance Gain ..... ± 6 dB

Chrominance Gain..... ± 6 dB

Video Horizontal Delay..... +1 Line in 37 ns steps

Video Vertical Delay..... +1 Frame in 1 line steps

Video Delay Frames..... 0 to +2 frames

Other Controls

Pass vertical data ..... On/Off (lines selectable 7/11 to 23/21 & 320/274 to 335/283)

Preset Unit..... Returns all settings to default

Pattern Select..... 100%/75% Bars, Multiburst, Black, Animated Bars

User Memories ..... Name, clear, save and read 8 user memories

Default Video Output ..... Pattern / freeze/ run through

Default Audio Output ..... Silence

Caption Output ..... On/Off (default and pattern output only)

Caption Generator..... Programmable up to 19 characters

GPI/O set-up ..... May be attached to any memory function/polarity

Reporting (* also Logged)

EDH (for selected input)..... *Presence, *Error-Time, *Error-Seconds

No SDI ..... *No input present

Input ancillary error ..... ANC error, ANC error-seconds

Input error..... Unused input not at current operating standard

Report Embedded Audio Data
Report audio data pairs on input and output SDI

Audio Silence, High Level, Low Level, Overflow
For processed audio channels only

RollTrack Input

Delay ..... Audio delay – Fixed, RollTrack + fixed

RollTrack Output

Delay ..... Current video/audio delay

Input state ..... Selected Input: Input Present, Input Missing, Standard 525, Standard 625
Input 1: Input Present, Input Missing, Standard 525, Standard 625
Input 2: Input Present, Input Missing, Standard 525, Standard 625
GPI 1 Low, High, Inactive

Embedded Audio state..... De-embed 1-8 Lost/Present

IQDMX01/11

4/8 Channel AES demultiplexer and Audio Processor

Specifications

Video Internal Processing .... 4:2:2 with 10 bit data paths

Serial Input Return Loss..... Better than 15 dB to 270 MHz

Maximum Input Cable length
> 200 m (PSF1/2 or equiv. cable)

Serial Output Level ..... 800 mV ±5%

Output Overshoot..... < 70 mV

Output Return Loss ..... Better than 15 dB to 270 MHz

Output Jitter ..... < 0.2 UI (with 10 Hz High pass filter selected on 601 monitor)

Minimum Delay ..... 6 µs

Delay (Delay Mode)..... 6 µs - 3 Frames + 5.5 µs

THD+N..... < -117 dB @ 700 Hz (24 bits) AES to AES

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

Level..... 1 V p-p typical into 75 Ohms

Power Consumption

Module Power Consumption
7.5 W max