

DENSITÉ series

ADX-1101 **Analog Audio De-Embedder** Guide to Installation and Operation

M678-9600-100

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A **BELDEN** BRAND

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1 ADX-1101 Analog Audio De-Embedder

1.1 Introduction

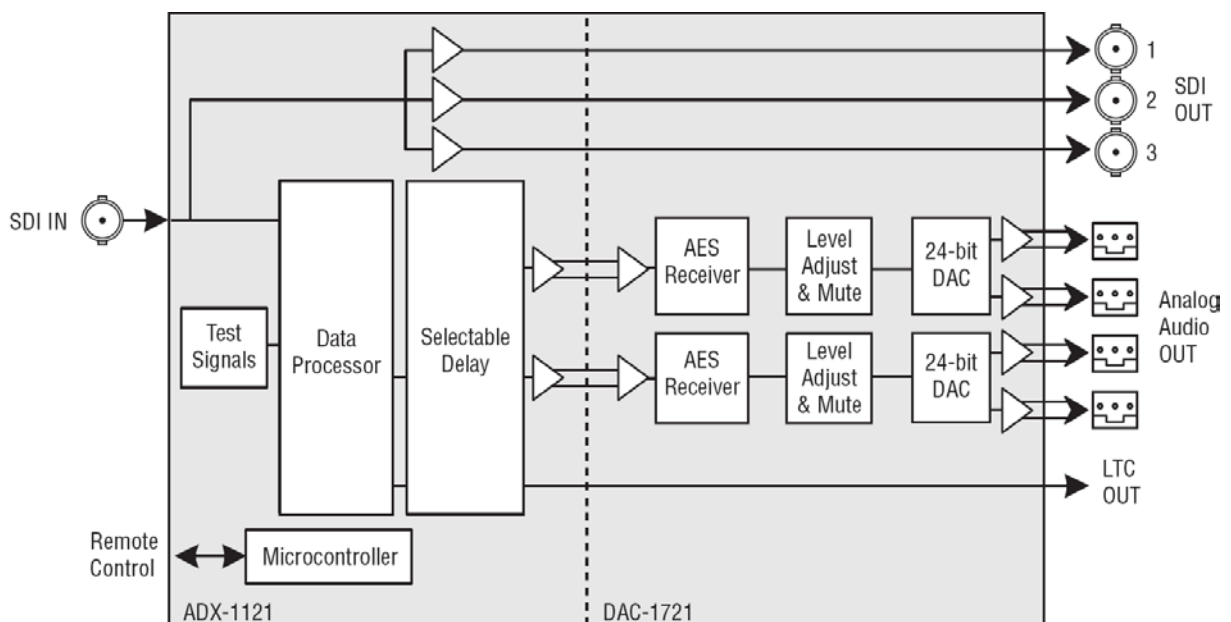
The ADX-1101 is a high-quality, high-performance analog audio de-embedder designed to extract two analog audio stereo signals from a single SDI signal. The ADX-1101 comprises an ADX-1121 card (2 AES De-Embedder) and a DAC-1721 card (AES to Analog Audio Converter). The two cards are bundled via a special rear connector panel that includes the necessary card interconnections, eliminating the need for external AES connections and reducing the number of rear panel connectors.

The de-embedding process of the ADX-1101 includes automatic 525/625 detection, output audio silence generation upon loss of SDI input, automatic equalization for up to 350 meters of Belden 1694A cable at 270 Mbps, and LTC de-embedding. The audio processing includes 24 bit digital-to-analog conversion and individual mute and level adjustment for every channel.

1.2 Features

- SDI input with up to 350m of cable equalization
- 3 reclocked SDI outputs
- Auto-detects 525/625 line format
- Outputs two analog audio stereo signals
- Selectable routing of groups to audio pairs
- Left/right channels swappable
- Selectable audio delay (up to 6 fields)
- 24 bit digital-to-analog conversion
- 0 dBFS selectable (0 to +24 dBu)
- -96 to +12 dB audio level adjustment (0.5 dB steps)
- Audio and video signal presence detection and remote reporting
- Remote configuration and control
- Built-in audio test signal

1.3 Functional Diagram



2 Installation

2.1 Preparation

The following items are required for the installation of your ADX-1101 in a Densité-series frame:

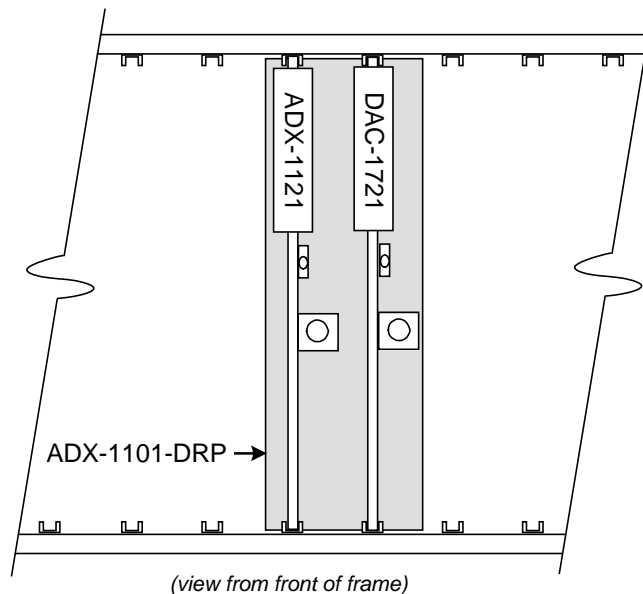
- ADX-1101-DRP Rear Panel (for Densité 2 frames) or ADX-1101-DRP-3RU (for Densité 3 frames)
- ADX-1121 AES Embedder (2RU or 3RU, per frame type)
- DAC-1721 AES-to-Dual Analog Audio Converter (2RU or 3RU, per frame type)

Note that the ADX-1101-DRP rear panel may be ordered separately, if the user already has the two associated cards.

2.2 Installation in the Densité frame

The ADX-1101-DRP rear connector panel must be mounted in a DENSITÉ frame. It is not necessary to switch off the frame's power when installing or removing the panel. See the DENSITÉ Frame manual for detailed instructions for installing cards and their associated rear panels. (These instructions also apply to the ADX-1101-DRP-3RU).

1. Install the ADX-1101-DRP so that it occupies rear panel space covering two adjacent free slots in the Densité frame. *Install the rear panel with the cards out of the frame.*
2. Install the ADX-1121 in the leftmost of the two slots occupied by the ADX-1101-DRP (as seen from the front of the frame)
3. Install the DAC-1721 in the rightmost of the two slots occupied by the ADX-1101-DRP (as seen from the front of the frame).



If a card is placed in the wrong slot, its front panel LED will flash red. Move the card to other slot for correct operation. No damage will result to the card should this occur.

2.3 ADX-1101-DRP / ADX-1101-DRP-3RU Rear Panel

The following diagram shows the signal flow through the ADX-1101-DRP / ADX-1101-DRP-3RU rear panel.

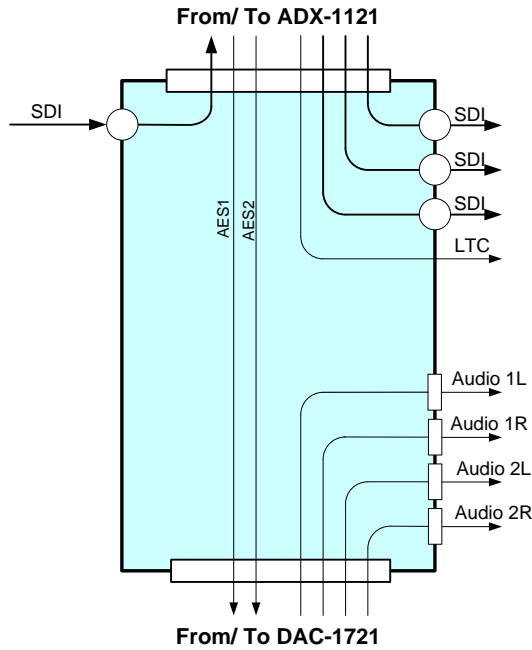


Figure 1.1 Signal flow diagram ADX-1101-DRP / ADX-1101-DRP-3RU

The rear panel connections are as follows:

SDI IN – serial digital input

Connect a serial digital video signal conforming to the SMPTE 259M standard to the BNC labeled **SDI IN**. The ADX-1101 will automatically switch to the detected line format.

SDI OUT – serial digital outputs (3)

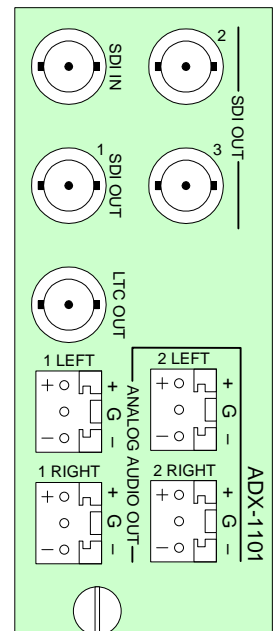
Pass-through from the SDI IN

LTC OUT

LTC extracted from the SDI input in the ADX-11211 card.

ANALOG AUDIO OUT (2 stereo pairs)

Analog audio de-embedded from the input SDI signal.



ADX-1101-DRP

3 Operation

The two cards associated with the ADX-1101 are operated just as if they were individually installed and connected.

- If you are using iControl, they will appear as individual cards, located in adjacent slots in their frame:
 - ADX-1121
 - DAC-1721
- There will be no item identified as ADX-1101 in the iControl system.

The User Manuals for each card are separate documents, and should be consulted for detailed descriptions and operating procedures as required.

- ADX-1121 User Manual (Miranda document M678-9900-xxx)
- DAC-1721 User Manual (Miranda document M698-9900-xxx)

4 Technical Specifications

VIDEO INPUT

Video signal:	SMPTE 259M-C (270 Mbps) SMPTE 272M-C (embedded audio)
Cable length:	Up to 350 m of Belden 1694A
Return loss:	>15 dB 5 MHz to 270 MHz

LTC OUTPUT

Signal:	Reconstructed LTC from sampled input to embedder
Impedance:	<55 ohm source for Hi-Z termination
Level:	1.0 Vp-p

VIDEO OUTPUT

Video signal:	SMPTE-259M-C (270 Mbps)
Return loss:	>15 dB up to 270 MHz
Jitter:	<0.2 UI p-p (wideband)

AUDIO OUTPUTS (2)

Signal:	Balanced analog audio
Impedance:	<50 ohm
Maximum level:	24 dBu / 600 ohm

LTC PROCESSING

Latency:	8 video lines *
LTC delay:	None or tracking of audio delay
Test signals:	Audio - 1k Hz tone (R steady, L pulsed)

PROCESSING PERFORMANCE

Signal path:	10-bit video / 20/24-bit audio
Sampling:	48 kHz
SNR:	>116 dB (a weighted)
Distortion:	< -96 dB
Crosstalk:	< -100 dB (20 Hz to 20 kHz)
Freq. response:	±0.2 dB (20 Hz to 20 kHz)
De-emphasis:	±0.3 dB (50-15 ms)
Video delay:	500 ns
Audio delay:	1.3 ms - up to 6 video fields (one field steps)
Tone generator:	1 kHz sine wave interrupted on left channel (250 ms / 3 s)

ELECTRICAL

Power:	9.3 W
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* Combined embedding and extraction, applicable to combination of AMX-1101 and ADX-1101