



**(DENSITÉ) SERIES**

*SDA-1162*

**DESCRIPTION**

The SDA-1162 is a reclocked serial digital video distribution amplifier supporting SMPTE 259M-C (270 Mbps) serial digital video signals with analog audio and video monitoring capability; it has one serial digital video input, 4 reclocked serial digital video outputs, 3 analog video and 2 analog audio monitoring outputs. The SDA-1162 also provides signal presence detection and remote reporting. It has automatic equalization for up to 350 meters of Belden 1694A cable; it also has pre-emphasis on one of the analog video outputs for up to 100 meters. The SDA-1162 is designed to be used in a *DENSITÉ* frame. A "single" or "double" rear connector panel is required.

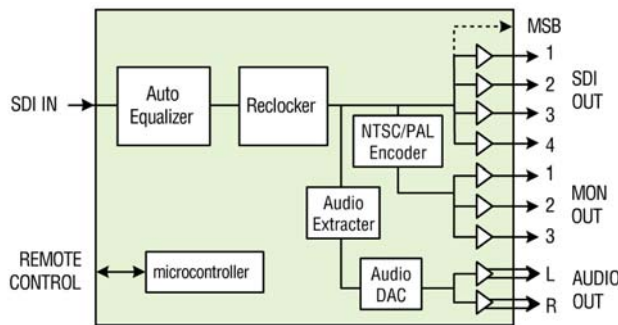
This card operates with the MSB-1121 Monitoring Switching Bridge which allows the output of any module in the Densité frame to be monitored.

Multiple MSB equipped frames may be cascaded to form a large monitoring bus, eliminating the need for dedicated monitoring routers.

**FEATURES**

- SDI isolated input
- 4 reclocked SDI outputs
- 3 NTSC/PAL/PAL-M analog video monitoring outputs
- 1 Stereo / 2 Monaural balanced audio outputs
- Auto-detects 525/625 line format
- Signal presence detection and remote reporting
- Up to 350 m automatic equalization on SDI output
- Monochrome output available
- Pre-Emphasis on 1 analog video output (0-100 m)
- Audio Full Scale adjustment
- GPI inputs for AES pair selection and L/R swap control
- Mute, summation, Mono left / Right and level control.

**FUNCTIONAL BLOCK DIAGRAM**



**SPECIFICATIONS**

**INPUT**

Signal: SMPTE-259M-C (270 Mbps) with Embedded Audio (SMPTE-272M)  
 Cable length: 350 m for Belden 1694A  
 Return loss: > 15 dB up to 270Mbps

**SERIAL DIGITAL OUTPUTS (4)**

Signal: SMPTE-259M-C (270 Mbps) with Embedded Audio (SMPTE-272M)  
 Return loss: > 15 dB up to 270Mbps  
 Jitter (wideband): < 0.2 UI p-p

**ANALOG VIDEO MONITORING OUTPUTS (2)**

Signal: NTSC SMPTE-170 M or PAL/PAL-M ITU-R BT.470-6  
 Return loss: > 35 dB up to 5.75MHz

**SPECIFICATIONS (cont'd)**

**ANALOG VIDEO MONITORING OUTPUT W/ PRE-EMPHASIS (1)**

Signal: NTSC SMPTE-170 M or PAL/PAL-M ITU-R BT.470-6  
 Return Loss: > 35 dB up to 5.75MHz  
 Pre-Emphasis: Match attenuation curves of Belden 8281 to 100 m

**ANALOG AUDIO MONITORING OUTPUTS (2)**

Signal: Analog audio, balanced  
 Impedance: < 55 Ω  
 0dBFS Level: +15,+18,+20,+22,+24 dBu selectable  
 Level adjustment: 1 dB step

**PROCESSING PERFORMANCE**

**SERIAL DIGITAL OUTPUTS (4)**

Signal path: 10 bits  
 Processing delay: <10 ns

**ANALOG VIDEO MONITORING OUTPUTS (3)**

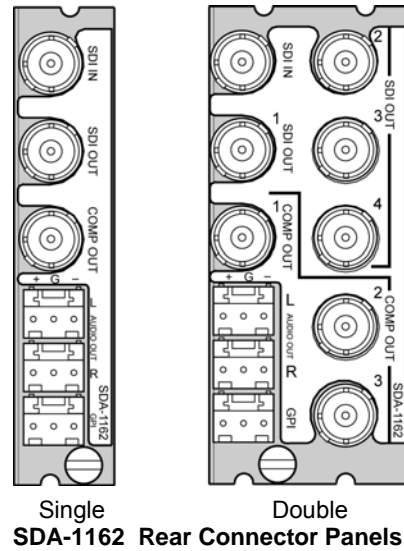
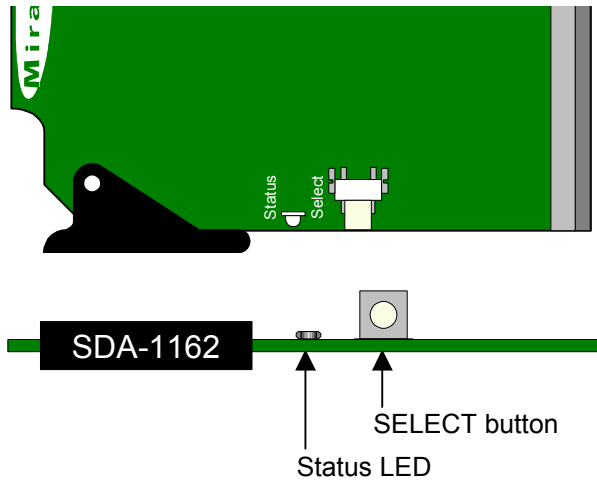
Quantization: 10 bits  
 Signal Path: 8 bits  
 Sampling: 27MHz (2X oversampling)  
 Freq. Response: ± 0.5dB to 5MHz  
 Noise (unweighted): <-54dB to 5.75MHz  
 Processing delay: 1.4 μs  
 Input signal absence: no output signal

**ANALOG AUDIO MONITORING OUTPUTS (2)**

Quantization: 20 bits  
 Sampling: 48 kHz  
 Freq. Response: ± 0.2 dB (20 Hz to 20 kHz)  
 SNR: 90 dB (A weighting) 20Hz to 20

**POWER:** 4 W

# SDA-1162 Reclocked Digital Video DA with A/V Monitoring Guide to Installation and Operation



## INSTALLATION

The SDA-1162 must be mounted in a DENSITÉ frame. The installation includes both the SDA-1162 module, and the rear panel module. Detailed instructions for installing cards and their associated rear panels in the Densité frame are given in the Densité Frame manual. It is not necessary to switch off the power from these frames when installing or removing the SDA-1162.

The SDA-1162 has eleven input/outputs, and making these available on BNC and Weco connectors at the rear of the

frame requires a double-width rear panel. Should the intended use require a smaller number of outputs, a single-width rear panel with three BNC input/output connectors and three Weco connectors is also available.

When a double-width rear panel has been installed, the module must be installed in the right-most of the two slots covered by the panel in order to mate with the rear panel connectors. Should it be installed in the wrong slot, the front panel LED will flash red. Move the card to the other slot for correct operation. No damage will result to the card should this occur.

## OPERATION

### Overview

The SDA-1162 is equipped with an on-board LED status indicator, mounted on the front edge of the card so as to be visible from the front of the card frame, even when the frame door is closed. The functionality of this status monitor is described below.

The DENSITÉ frame incorporates a central controller card, located in the center of the frame, which is equipped with an LCD display. The card handles error reporting and remote control for all cards installed in the frame. The display shows the error status of any card in the frame whose SELECT button has been pushed.

The SDA-1162 is also equipped with the remote reporting and control capabilities of the DENSITÉ series. Fault reporting is carried out on a frame-wide basis. There is no individual rear-panel access to the fault and status reporting port of the SDA-1162. Interfacing to the outside world is handled by the frame's controller card. The fault reporting protocol is standardized across the DENSITÉ series of modules.

### Status Monitor LED

The status monitor LED is located on the front card-edge of the SDA-1162 module, and is visible through the front access door of the DENSITÉ frame. This multi-color LED indicates module status by color, and by flashing/steady illumination according to the following chart. The chart also indicates fault reporting for this card on the DENSITÉ frame's serial and GPI interfaces.

#### Status Indicator

	REPORT		COLOR (F=flashing)			
	SERIAL	GPI	G	Y	R	FR
No errors			★			
Input Signal Error	★				★	
Chroma Disabled				★		
L&R Swap Enabled				★		
Mute Enabled				★		
Summing Enabled				★		

★ : Factory default.

NOTE: A “Flashing Yellow” Status LED indicates that the SELECT button on the front panel has been pushed, and the card is being accessed by the controller. The LED color assignments for the various error conditions can be reconfigured by the user, as shown in the menus.

**User Interface**

Pushing the SELECT button will cause the on-card STATUS LED to flash yellow, and the card identification and the current status will be shown on the controller card’s display. The STATUS LED will revert to it’s normal state upon a second push of the button, or after a short delay otherwise. See the menu chart on page 4 for a description of the SDA-1162 status messages

**Example:**

SELECT button pushed when there is no input signal connected to the rear panel and the LED is steady red:

S	D	A	-	1	1	6	2								
N	O	S	I	G	N	A	L								

SELECT button pushed when Chroma OFF has been selected in the CONFIG VIDEO menu, and the LED is yellow:

S	D	A	-	1	1	6	2								
C	H	R	O	M	A	O	F	F							

The SDA-1162 has operating parameters which may be adjusted using menus operated at the controller card interface. After pressing the SELECT button on the SDA-1162 card, use the keys on the local control panel to step through the menu and adjust these parameters. The

menus, including the parameters which can be adjusted, and the options which are available, are shown on page 4.

**CONFIG VIDEO menu:**

Allows the user to configure the analog video monitoring outputs. Select the output format (NTSC or PAL-M), enable or disable CHROMA and NTSC set-up on the monitoring output, and set the pre-equalization on output 1.

**CONFIG ALARM menu:**

Allows the user to set the Status LED display color and to determine whether a GPI alarm will be triggered, for each of the alarm conditions (NO SIGNAL, CHROMA OFF, L&R SWAP ON, MUTE ON and MONO ON).

**FACTORY DEFAULT** restores the SDA-1162 to the factory set-up conditions, shown as underlined in the menu table on page 4.

The use of the local control panel is described in the controller card manual.

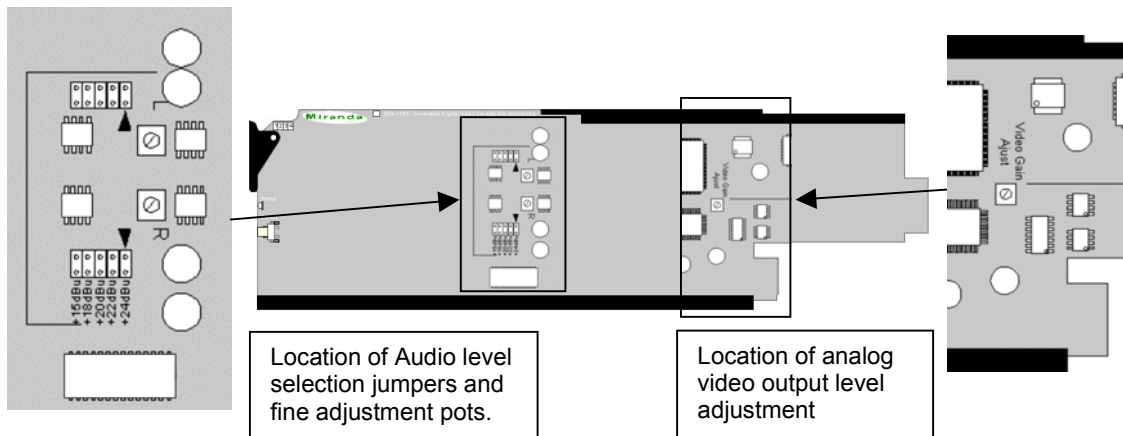
**On-card controls**

Level-adjustment controls are located on the card. See the figure below for their location.

*Analog Audio peak output level* – jumpers are provided to set the peak output level to +15, +18, +20, +22 or +24 dBU. A separate jumper must be set for left and right channels.

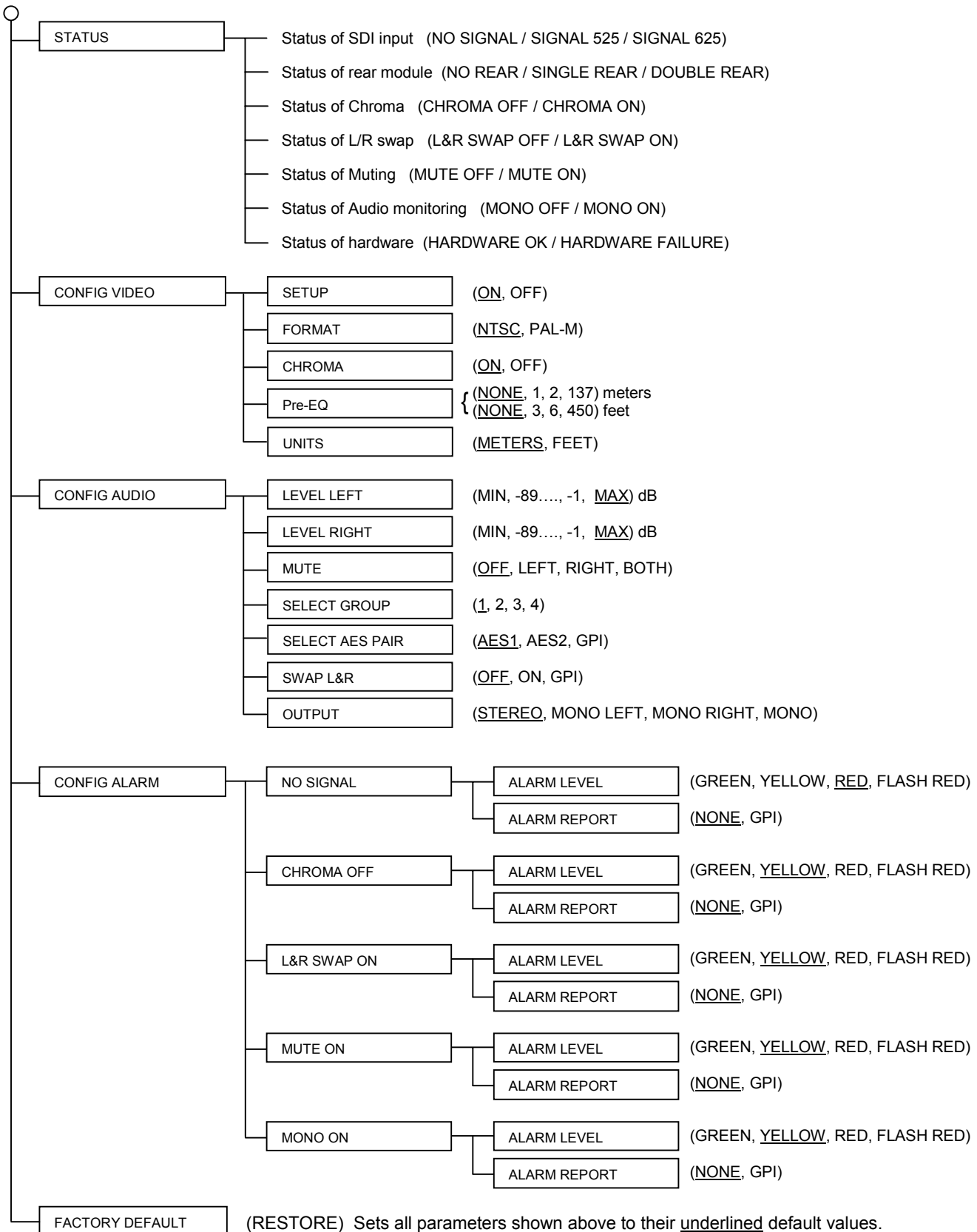
*Analog audio level fine adjust* – potentiometers are provided to set the left and right output levels. These are set at the factory and will not normally require adjustment.

*Analog video output level* – this is set at the factory and will not normally require adjustment.



*SDA-1162 Reclocked Digital Video DA with A/V Monitoring  
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**SDA-1162 Menus**



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**WARRANTIES**

Miranda's Warranty and Warranty Policy are explained in full detail in the Warranty Information Sheet.

**COMPLIANCE**

**Radio Frequency Interference and Immunity**

This unit generates, uses, and can radiate radio frequency energy. If the unit is not properly installed and used in accordance with this guide, it may cause interference with radio communications. Operation with non-certified peripheral devices is likely to result in interference with radio and television reception. This equipment has been tested and complies with the limits in accordance with the specifications in:

- FCC Part 15, Subpart B
- CE EN50081-1:1992
- CE EN50082-1:1992.

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