

**picoLink Series**

# SDM-277p SDM-277p/U

Guide to Installation  
and Operation  
M694-9900-201

## SDI to NTSC/PAL & Analog Audio Converter

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*Specifications may be subject to change.*

*Printed in Canada*

*January 2005*



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SDM-277p  
SDM-277p/U

## **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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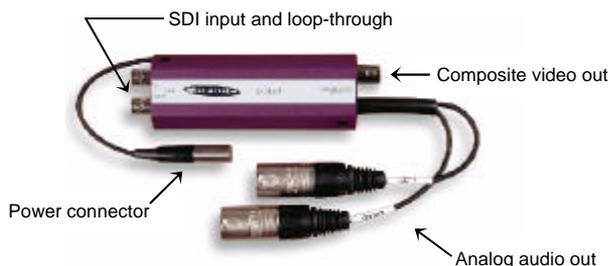
## SDI to Composite and Analog Audio Converter

The SDM-277p and p/U are compact encoders that convert an SDI signal to NTSC, PAL or PAL-M (with optional timecode burn-in) and analog audio. The SDM-277p and p/U provide monitoring of an SDI signal and embedded audio. They automatically detect 525 or 625 line formats from incoming SDI signals and provide a convenient built-in color bar generator. The SDM-277p and p/U provide a reclocked serial digital video output (loop) and are ideal for stand-alone composite video monitoring and DEMUX applications.

The SDM-277p and p/U perform audio extraction with a 20 bit quality D to A conversion. The SDM-277p and p/U can extract either AES pair from any of the 4 embedded audio groups in an SDI stream.

The SDM-277p provides balanced outputs on XLR connectors. The full scale output level (0 dBFS) can be set to +12, 15, 16, 18, 20, 22 or 24 dBu or muted.

The SDM-277p/U provides unbalanced outputs on RCA connectors. The output may be Stereo, L+R on both, L on both, R on both, or Mute.



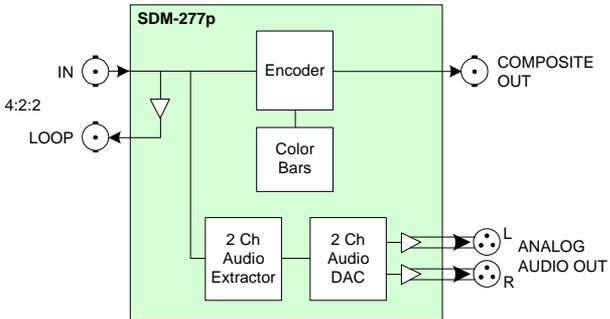
### Device configuration – SDM-277p

**NOTE:** The appearance of the SDM-277p/U is the same except :

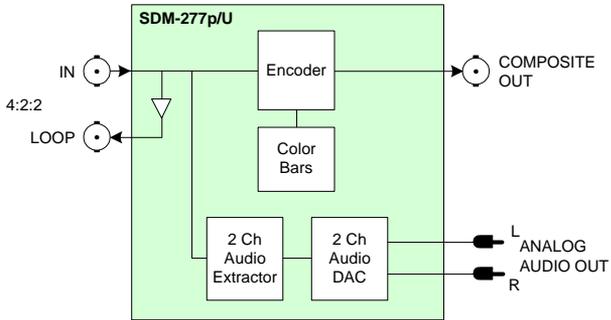
- the analog audio output connectors are RCA plugs
- the composite video out is supplied on a short coax cable with a male BNC connector

*SDM-277p and SDM-277p/U*

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Functional Block Diagram – SDM-277p



Functional Block Diagram – SDM-277p/U

## Installation

Connect the Power connector to the power supply. The SDM-277p and p/U turn ON automatically when power is connected.

Connect the SDI signal to the SDI IN connector. The SDI LOOP connector is available to send the SDI signal on to other devices.

Connect the analog video and audio outputs to their destination equipment.

## Status LED

The Status LED is located on the end panel of the SDM-277p and p/U beside the output connectors. It monitors the status of the incoming SDI signal.

<b>LED Color</b>	<b>Significance</b>
Green	Incoming SDI signal status OK
Red	Incoming SDI signal is in error, or no signal is connected
Yellow	Color bars selected at the output using the pushbutton. <i>Note: if the status LED is red indicating a faulty input, no output will be produced, and the color bar selection is inhibited..</i>

## User Controls

### **AUDIO SDM-277p** **ROTARY SWITCHES**

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*The rotary switches are adjusted using a screwdriver.  
The arrow on the switch indicates the selection*

AES1 GROUP: 1/2/3/4:	Selects AES pair and audio group to be extracted
AES2 GROUP: 1/2/3/4:	Selects the analog audio output level which corresponds to 0 dBFS in the embedded audio.
+12 / +15 / +16 / +18 / +20 / +22 / +24 dBu / MUTE:	Selects the analog audio output level which corresponds to 0 dBFS in the embedded audio.

### **AUDIO SDM-277p/U** **ROTARY SWITCHES**

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*The rotary switches are adjusted using a screwdriver.  
The arrow on the switch indicates the selection*

AES1 GROUP: 1/2/3/4:	Selects AES pair and audio group to be extracted
AES2 GROUP: 1/2/3/4:	Selects the analog audio output level which corresponds to 0 dBFS in the embedded audio.
Stereo, L+R, L, R, MUTE:	Selects the analog audio output level which corresponds to 0 dBFS in the embedded audio.

### **VIDEO** **SLIDE SWITCH**

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*The SDM-277p and p/U will auto-select between NTSC and PAL output based on the incoming SDI signal. The user can select whether the NTSC signal will have set-up, and can also force the 525 / 59.94 output to be PAL-M instead of NTSC.*

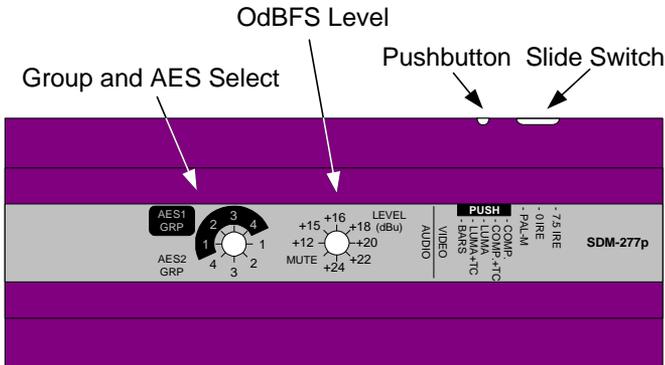
<b>Switch Position</b>	<b>Output Standard</b>
7.5 IRE:	Auto-selects between: <ul style="list-style-type: none"><li>▪ NTSC (525 / 59.94) with 7.5 IRE units of set-up</li><li>▪ PAL (625 / 50).</li></ul>

- O IRE: Auto-selects between:
- NTSC (525 / 59.94) with no set-up
  - PAL (625 / 50)
- PAL-M: PAL-M (525 / 59.94)

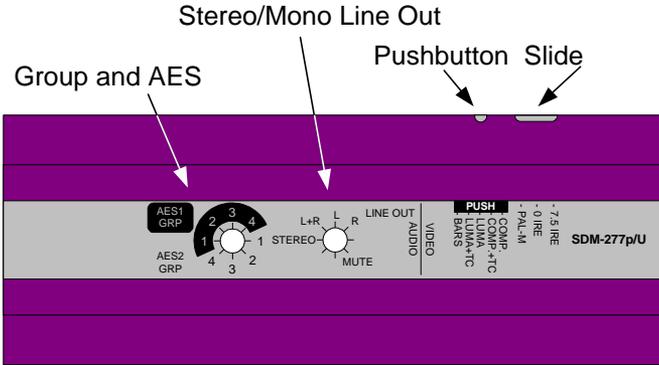
## PUSHBUTTON

The pushbutton selects the output format. Successive pushes cycle through the following options:

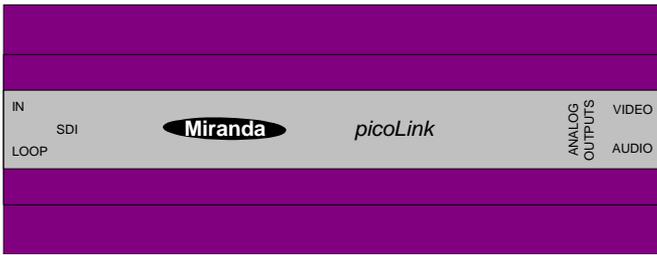
Option	Output Format
COMP:	Composite video.
COMP + TC:	Composite video with time code (extracted from the SDI input) burned into the image
LUMA:	Monochrome video
LUMA + TC:	Monochrome video with time code (extracted from the SDI input) burned into the image.
BARS:	75% color bars with 100% white <i>Note: status LED is yellow when BARS is selected.</i>



Control panel – SDM-277p



Control panel – SDM-277p/U



Top panel – SDM-277p and SDM-

## Technical Specifications

### INPUT

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<b>VIDEO:</b>	SMPTE 259M-C (270 Mbps) with active loop-through embedded audio: SMPTE 272M-A
<b>CABLE LENGTH:</b>	200 m (640') (Belden 8281)
<b>RETURN LOSS:</b>	> 15 dB up to 270 MHz
<b>CONNECTOR:</b>	75 $\Omega$ BNC (2)

### OUTPUT

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<b>VIDEO:</b>	NTSC (525/60) SMPTE 170M or PAL (625/50) or
<b>PAL-M (525/60)</b>	
<b>CONNECTOR:</b>	75 $\Omega$ BNC
<b>RETURN LOSS:</b>	> 20 dB up to 5 MHz

<b>AUDIO (SDM-277p):</b>	1 stereo/2 monaural balanced audio
<b>IMPEDANCE:</b>	< 50 $\Omega$
<b>0 dBFS LEVEL:</b>	+12, +15, +16, +18, +20, +22, +24 dBu, MUTE, selectable
<b>CONNECTOR:</b>	XLR (2)

<b>AUDIO (SDM-277p/U):</b>	1 stereo/2 monaural unbalanced audio
<b>IMPEDANCE:</b>	20K $\Omega$
<b>LINE OUT:</b>	Stereo, L+R, L, R, MUTE, selectable
<b>CONNECTOR:</b>	RCA (2)

### PROCESSING PERFORMANCE

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<b>VIDEO:</b>	
<b>SIGNAL PATH:</b>	8 bits
<b>QUANTIZATION:</b>	10 bits
<b>SAMPLING:</b>	27 MHz (2X oversampling)
<b>FREQ. RESPONSE:</b>	$\pm$ 0.5 dB to 4.2 MHz
<b>PROCESSING DELAY:</b>	1.5 $\mu$ s
<b>TEST SIGNAL:</b>	75% color bars with 100% white
<b>SNR:</b>	>58dB

**AUDIO**

QUANTIZATION: 20 bits  
SAMPLING: 48 kHz  
SNR: > 90 dB (A weighting)  
DISTORTION: < -80 dB  
CROSSTALK: < -80 dB  
FREQ. RESPONSE:  $\pm 0.3$  dB (20 Hz to 20 kHz)  
PROCESSING DELAY: < 450  $\mu$ s

**POWER:** 2.5 W

**Ordering Information**

SDM-277p Converter	SDI To NTSC/PAL and Analog Audio Converter
SDM-277p/U Converter	SDI To NTSC/PAL and Analog Audio Converter
LKS-WSA	Wall Plug-In Power Supply For 110 V
LKS-WSE	Wall Plug-In Power Supply For 220 V
LKS-CPS	Centralized Power Supply For Up To 10 units