picoLink Series

DEC-291p

Guide to Installation and Operation

M825-9900-100

12-bit NTSC/PAL/SECAM to SDI Encoder

Printed in Canada
May 2006

DEC-291p

Miranda
Technologies inc.
3499 Douglas-B.-Floreani
St-Laurent, Québec, Canada H4S 1Y6
Tel. 514-333-1772
Fax. 514-333-9828
www.miranda.com

CONTACT MIRANDA

For technical assistance, please contact the Miranda Technical Support centre nearest you:

Americas
Telephone:
+1-800-224-7882
e-mail:
techsupp@miranda.com

Asia
Telephone:
+81-3-5730-2987
e-mail:
asiatech@miranda.com

Europe, Middle East, Africa, UK
Telephone:
+44 (0) 1491 820222
e-mail:
eurotech@miranda.com

France (only)
Telephone:
+33 (0) 1 55 86 87 88
e-mail:
francetech@miranda.com

Visit our web site at www.miranda.com

CONTENTS

1.0 DEC-291p 12-bit NTSC/PAL/SECAM to SDI decoder

1.1 Introduction

The Picolink DEC-291p Composite Decoder is the world's smallest NTSC/PAL/PAL-N/PAL-M/SECAM decoder, facilitating the interface between analog composite video and the serial SDI video signal, particularly in monitoring applications. This module automatically detects 525 or 625 line formats from incoming composite video signals and provides the appropriate serial SDI output format. Its simplified design makes it easy to install and operate.

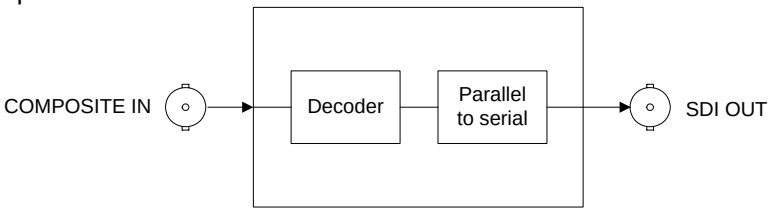


Figure 1: *DEC-291p functional block diagram*

1.2 Features

- Automatic input detection of NTSC, PAL and SECAM composite signals
- SDI output
- Superior quality 12-bit processing
- Input setup selection: 7.5 or 0 IRE
- Input signal stability selection: VTR, Tuner (satellite), and Studio
- Bi-color LED providing error status on input composite signal
- Very small packaging with aluminum extruded body

2.0 Physical Layout

Figure 2 illustrates the DEC-291p's major parts and their locations. The video source is connected to the composite input BNC and the decoded signal is provided by the SDI output. Error status is provided by the status LED and mode settings are configured by two 3-position slide switches. Finally, the power source is connected to the power connector.

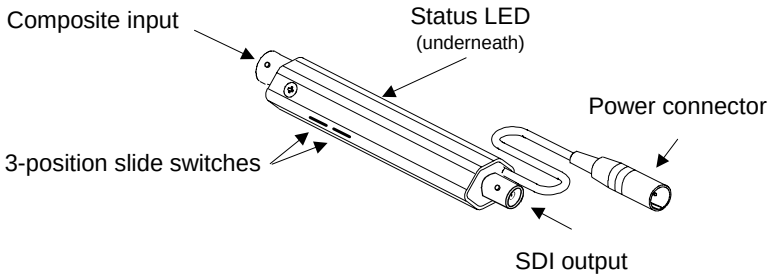


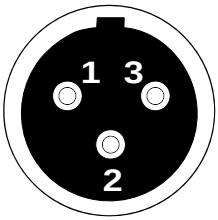
Figure 2: *Layout of the DEC-291p*

3.0 Installation

3.1 Power Supply

The LKS-WSU power supply is used to power the DEC-291p for both 110V and 220V operation. This power supply provides a regulated +5 VDC@1A power source over an input range of 90 – 260 VAC. The DEC-291p employs a mini XLR-3 connector for its power needs. Figure 3 shows a detailed pinout of the male connector.

(male connector-facing)



Pin 1: Shield
Pin 2: GND
Pin 3: +5 VDC

Figure 3: *Power connector pinout*

3.2 Composite Input

Connect an NTSC, PAL, PAL-M, PAL-N or SECAM composite signal conforming to the SMPTE 170M or ITU-R BT.470-6 standard respectively to the BNC labeled COMPOSITE IN.

3.3 SDI Output

The SDI serial digital output signal is available at the BNC labeled SDI OUT. The output signal conforms to the SMPTE 259M-C standard.

4.0 Operation

4.1 Switch Settings

Figure 4 shows the location of the slide switches and the status LED.

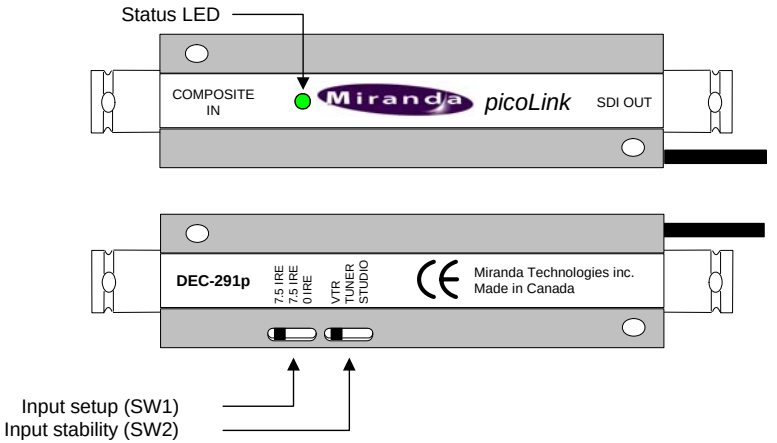


Figure 4: *DEC-291p slide switch and LED locations*

Input setup switch (SW1)

7.5 IRE:	For composite sources with 7.5 IRE setup, set SW1 to this position.
7.5 IRE	(same as above on this 3-position switch)
0 IRE:	For composite sources with 0 IRE setup, set SW1 to this position.

Input stability switch (SW2)

VTR:	Select this position for non-time-base-corrected sources.
Tuner:	Decoding of satellite sources or sources with unpredictable voltage levels is improved with the Tuner setting.

Studio: Select this position when using stable composite sources.

4.2 Status LED

The bi-colored status LED identifies the presence of input errors. Possible indications are:

Green: Indicates the DEC-291p is powered and has detected a valid composite signal at the input.

Red: Indicates that the input is in error:
- no input signal has been detected
- an invalid input signal has been detected.

Off: The DEC-291p is not connected to a power supply.

5.0 Specifications

Input

Signal:	NTSC (SMPTE-170M) PAL (ITU-R BT.470-6), PAL-M (ITU-R BT.470-6) PAL-N (ITU-R BT.470-6) SECAM (ITU-R BT.470-6)
Return loss:	> 35 dB up to 5 MHz
Connector:	75 Ω BNC

Output

Signal:	SDI SMPTE 259M-C (270 Mbps)
Return loss:	> 15 dB up to 270 MHz
Jitter:	< 10 ns p-p
Connector:	75 Ω BNC

Processing performance

Signal Path:	10 bit
Quantization:	12 bits
Processing delay:	3.2 us
Sampling:	54MHz (4x oversampling)

Electrical

Voltage requirement:	+5 VDC
Power consumption:	1.5 W
Power connector:	Mini XLR-3

Mechanical

Overall size:	102 mm x 25 mm x 18 mm (4” x 1” x 0.7”)
Power cable length:	127 mm (5”)
Full spec. temp. range:	0° C (32° F) to 30° C (86° F)