

**picoLink Series**

# SDM-271p

Guide to Installation  
and Operation  
M085-9900-200

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Miranda Technologies Inc.  
Specifications may be subject to change.  
Printed in Canada  
August 2002*



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## Composite Encoder

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## **WARRANTY POLICIES**

### **Warranty Statement**

Miranda Technologies Inc. warrants that the equipment it manufactures shall be free from defects in material and workmanship for a period of two (2) years from the date of shipment from the factory. If equipment fails due to such defects, Miranda Technologies Inc. will, at its option, repair or provide a replacement for the defective part or product. Equipment that fails after the warranty period, has been operated or installed in a manner other than that specified by Miranda, or has been subjected to abuse or modification, will be repaired for time and material charges at the Buyer's expense.

All out-of-warranty repairs are warranted for a period of ninety (90) days from the date of shipment from the factory.

Miranda Technologies Inc. makes no other warranties, expressed or implied, of merchantability, fitness for a particular purpose or otherwise. Miranda's liability for any cause, including breach of contract, breach of warranty, or negligence, with respect to products sold by it, is limited to repair or replacement by Miranda, at its sole discretion. In no event shall Miranda Technologies Inc. be liable for any incidental or consequential damages, including loss of profits.

Effective January 1, 2002

### **Warranty Exchange Policies**

Miranda Technologies Inc. warrants that the equipment it manufactures shall be free from defects in materials and workmanship for a period of two (2) years from the date of shipment from the factory. If equipment fails due to such defects, Miranda will provide repair of the failed unit under the terms of the Miranda warranty.

If the equipment has been proven to be defective on arrival, Miranda will ship a new product in exchange, usually within 36 hours of factory notification.

If the equipment to be repaired is essential and the customer so requests, Miranda will, at its option, provide a service replacement or loaner part or product, usually within 36 hours of factory notification, weekends and holidays excluded.

All warranty exchange or loaner parts or products shall be shipped to the Buyer with a packing list clearly describing the items and stating the date of shipment. Repaired parts or products will be shipped to the Buyer with a similar packing list. In the case of exchange, the defective products or parts

must be returned to Miranda within fifteen (15) days from receipt by the customer of the exchange product. In the case of a loaner, the loaned products or parts must be returned to Miranda within fifteen (15) days from receipt by the customer of the repaired equipment.

If the equipment is not returned within fifteen (15) days, as described for either exchanges or loans, A Rental Invoice will be generated. Rental terms will be fifteen (15) percent of the current list price of the products or parts per month or a fraction thereof. Before returning the equipment to Miranda Technologies Inc., for any reason, the Buyer must first obtain a Return Authorization Number from Miranda Technologies Inc. Miranda Technologies Inc will pay freight and insurance charges for the delivery of the loaner or exchange products or parts. Freight and insurance charges for the return of the defective product or part will also be paid by Miranda Technologies.

### **Out-Of-Warranty Repair Policy**

Miranda will repair equipment which is out of Warranty. The current pricing structure for this service is available from the Miranda web site at [www.miranda.com](http://www.miranda.com) or from Miranda Technical Support Services at (514) 333-1772. All out-of-warranty repairs are warranted for a period of 90 days from the date of shipment from the factory. Before returning the equipment to Miranda Technologies Inc., for any reason, the Buyer must first obtain a Return Authorization Number from Miranda Technologies Inc. In the case of a product deemed by Miranda to be beyond repair, the customer must purchase a new product at current retail prices.

The Buyer will pay freight and insurance charges for the return of the defective product or part to the manufacturer for repair. Miranda Technologies will pay freight and insurance charges for the return of the repaired product or part to the Buyer.

### **Out-Of Warranty Equipment Updates and Spare Parts Policy**

Miranda Technologies' current pricing structure for out-of-warranty equipment updates, or the sale of spare parts, is available from Miranda Technical Support Services at (514) 333-1772.

### **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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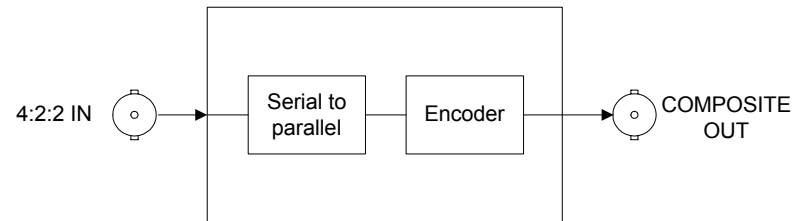
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## 1.0 SDM-271p

### 1.1 Introduction

The SDM-271p is the industry's smallest composite encoder. This product automatically detects 525-line and 625-line 4:2:2 signals conforming to the SMPTE 259M-C standard and provides a NTSC, PAL, PAL-M, or PAL-N composite output signal. An internal test pattern generator provides a color bars test signal. This feature-packed unit delivers ease-of-use, a simplified design, easy installation and operation.



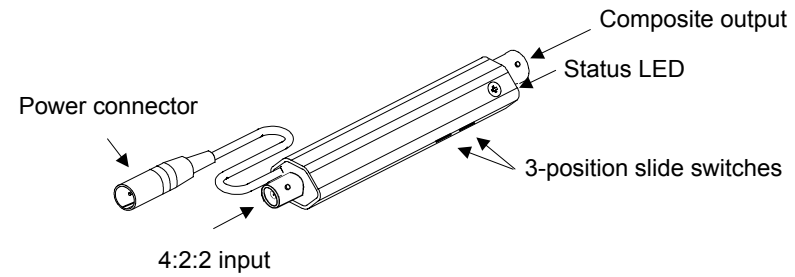
**Figure 1: SDM-271p functional block diagram**

### 1.2 Features

- Automatic 525-line and 625-line format input detection
- NTSC or PAL-M composite output for 525-line input and PAL or PAL-N composite output for 625-line input
- Y-only (monochrome) output selection
- Output setup selection: 7.5 or 0 IRE
- Color bars generator
- Bi-color LED providing error status on input composite signal
- Very small packaging aluminum extruded body

## 2.0 Overall View

Figure 2 illustrates the SDM-271p's major parts and their locations. The video source is connected to the 4:2:2 input BNC and the encoded signal is provided by the composite 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.



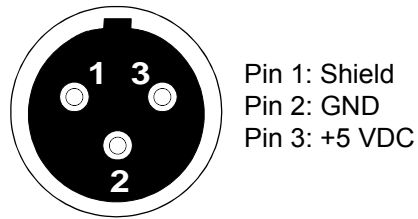
**Figure 2: Overall view of the SDM-271p**

### **3.0 Installation**

#### **3.1 Power Supply**

The power supplies LKS-WSA and LKS-WSE, for 110 V and 220 V operation respectively, are used to power the SDM-271p. Each power supply provides a regulated +5 VDC@750 mA power source. The SDM-271p employs a mini XLR-3 connector for its power needs. Figure 3 provides a detailed pinout of the male connector.

(male connector-facing)



**Figure 3: Power connector pinout**



### **3.2 4:2:2 Input**

Connect a 4:2:2 serial digital signal to the BNC labeled 4:2:2 IN. The 4:2:2 input signal must conform to the SMPTE 259M-C standard.

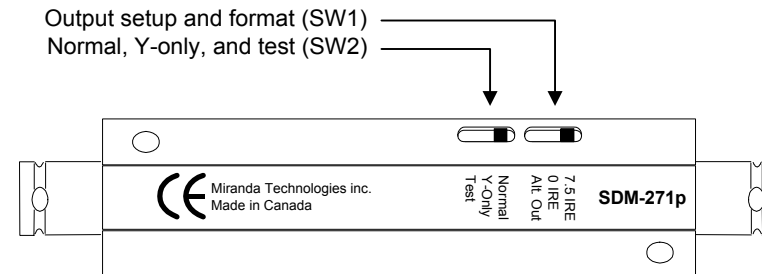
### **3.3 Composite Output**

A composite signal conforming to the SMPTE 170M or ITU (CCIR) 624-4 standard is provided by the composite output BNC.

## 4.0 Operation

### 4.1 Switch Settings

Figure 4 outlines the slide switch functions.



**Figure 4: SDM-271p switch settings**

#### **Output setup and format switch (SW1)**

- 7.5 IRE:** To add a 7.5 IRE setup to the output NTSC composite signal, set SW1 to this position. There is no setup for PAL, PAL-M, and PAL-N output signals.
- 0 IRE:** For no setup on the output composite signal, set SW1 to this position.
- Alt. Out:** To enable PAL-M and PAL-N outputs during 525-line and 625-line input formats respectively, set SW1 to this position. Refer to Table 1 for the output format provided during this setting.

4:2:2 input	Output	
	SW1=7.5 IRE or 0 IRE	SW1=Alt. Out
525-lines	NTSC	PAL-M
625-lines	PAL	PAL-N

**Table 1: Output format conversion**

### ***Normal, Y-only, and test pattern switch (SW2)***

- Normal: For normal operation, set SW2 to this position.
- Y-Only: Setting SW2 to this position provides a monochrome output signal by forcing the output chroma to 0.
- Test: Set SW2 to Test in order to enable the test pattern generator. Make sure a valid 4:2:2 input signal is installed. NTSC and PAL-M outputs produce a 75% color bars signal whereas PAL and PAL-N outputs produce a 75% color bars with 100% white bar signal.

### ***4.2 Status LED***

The bi-colored status LED, located next to the composite output BNC, is provided to identify any input errors and the selection of the test pattern. The following lists all possible situations.

- Green: Indicates the SDM-271p is powered and has detected a valid 4:2:2 serial digital signal.
- Red: Indicates an error with the input signal has been detected or simply, there is no input signal installed.
- Yellow: The test pattern is selected.

**If, during a test pattern selection, an error is detected with the input signal, the status LED will remain red.**

## **5.0 Specifications**

### ***Input***

Signal: 4:2:2 SMPTE 259M-C (270 Mbps)  
Cable length: 250 m (850')  
Return loss: > 15 dB up to 270 MHz  
Connector : 75  $\Omega$  BNC

### ***Output***

Signal: NTSC-M (525/60) SMPTE 170M or  
PAL (625/50) ITU (CCIR) 624-4  
PAL-M (525/60) ITU (CCIR) 624-4  
PAL-N (625/50) ITU (CCIR) 624-4  
1 Vpp nominal  
Return loss: > 35 dB up to 5 MHz  
Connector : 75  $\Omega$  BNC

### ***Processing performance***

Signal path: 8 bits  
Quantization: 10 bits  
Sampling: 27 MHz (2X oversampling)  
Freq. response:  $\pm 0.5$  dB to 5 MHz  
Processing delay: 1.5  $\mu$ s

### ***Electrical***

Voltage requirement: +5 VDC  
Power consumption: 3 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)