

**picoLink Series**

# DEC-272p

Guide to Installation  
and Operation

M152-9900-201

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*Specifications may be subject to change.*

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## Composite to S-Video Decoder and ARC

# DEC-272p

## ***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.

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Effective January 1, 2002

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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.

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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.

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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**

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### **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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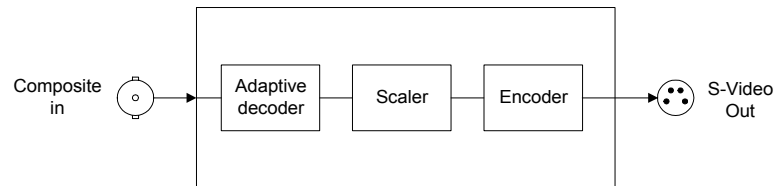
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## 1.0 DEC-272p

### 1.1 Introduction

The DEC-272p is the industry's smallest composite to s-video decoder and aspect ratio converter. This product automatically detects NTSC, PAL, PAL-M, PAL-N, and SECAM standards and provides a s-video output signal. Coupled with an excellent price/performance ratio, decoding is performed by a 3-line adaptive comb filter providing superior Y/C separation. Aspect ratio conversion is available from 16:9 to 4:3 and 4:3 to 16:9. Disabling the aspect ratio converter forces the unit to perform decoding only. The DEC-272p sports an additional feature aimed at converting standards: NTSC to/from PAL-M, PAL to/from PAL-N, or SECAM to PAL or PAL-N. This feature-packed unit delivers ease-of-use, a simplified design, easy installation and operation.



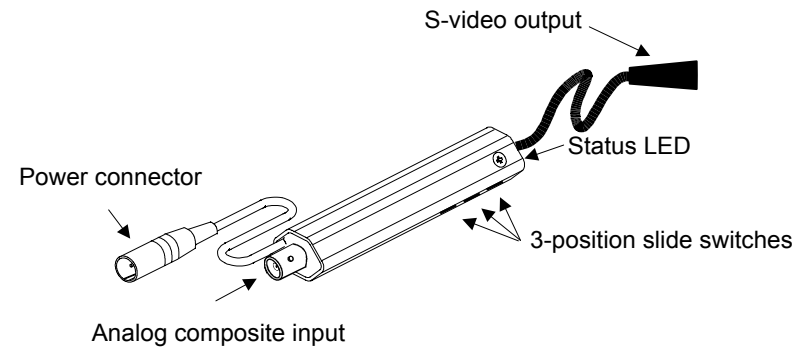
**Figure 1: DEC-272p functional block diagram**

### 1.2 Features

- Automatic NTSC/PAL/PAL-M/PAL-N/SECAM input standard detection
- S-video output
- 3-line adaptive comb filter
- Aspect ratio conversion: 16:9 to 4:3, none, or 4:3 to 16:9
- Chroma modulation conversion: on or off
- Input 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 DEC-272p's major parts and their locations. The video source is connected to the analog composite input and the converted signal is provided by the s-video output. Error status is provided by the status LED and mode settings are configured by three 3-position slide switches. Finally, the power source is connected to the power connector.



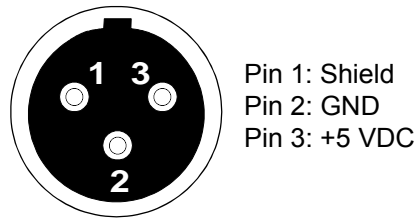
**Figure 2: Overall view of the DEC-272p**

### **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 DEC-272p. Each power supply provides a regulated +5 VDC@750 mA power source. The DEC-272p 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**



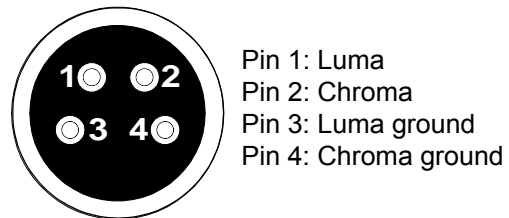
### 3.2 Composite Input

Connect a composite signal to the BNC labeled COMPOSITE IN. The supported sources are NTSC composite signals conforming to the SMPTE 170M standard and PAL/PAL-M/PAL-N/SECAM composite signals conforming to the ITU (CCIR) 624-4 standard. Both stable and non-time base sources are supported.

### 3.3 S-Video Output

A s-video signal conforming to the SMPTE 170M or ITU (CCIR) 624-4 standard is provided by the S-VIDEO OUTPUT connector. Figure 4 provides the s-video connector pinout.

(male connector-facing)

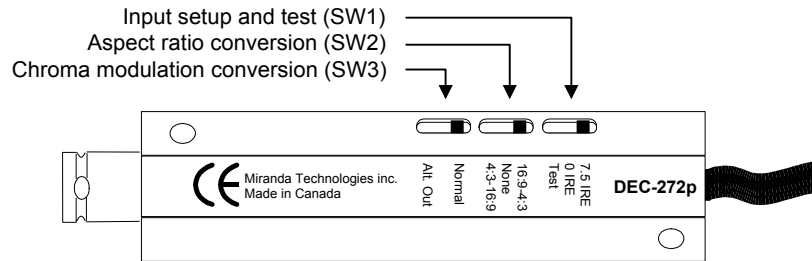


**Figure 4: S-video connector pinout**

## 4.0 Operation

### 4.1 Switch Settings

Figure 5 outlines the slide switch functions.



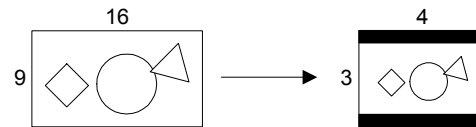
**Figure 5: DEC-272p switch settings**

#### **Input setup and test pattern switch (SW1)**

- 7.5 IRE: This position indicates the input composite signal has a setup of 7.5 IRE. During PAL, PAL-N, and SECAM operation, this setting has no effect.
- 0 IRE: This position indicates the input composite signal has 0 IRE setup. During PAL, PAL-N, and SECAM operation, this setting has no effect.
- Test: Set SW1 to Test in order to enable the test pattern generator. Make sure a valid analog composite signal is installed. NTSC outputs produce a 75% color bars signal whereas PAL, PAL-M, and PAL-N outputs produce a 75% color bars with 100% white bar signal.

### **Aspect ratio conversion switch (SW2)**

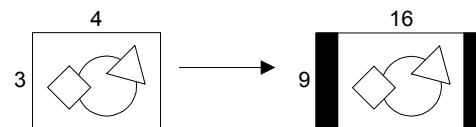
16:9-4:3: Set SW2 to this position in order to convert 16:9 composite signals to 4:3 s-video signals. During this type of aspect ratio conversion, letterbox is the conversion format adopted. The letterbox format performs vertical downscaling in order to permit the addition of black bars on the top and bottom regions of the image. There is no picture loss with this format. Refer to Figure 6.



**Figure 6: 16:9 to 4:3 aspect ratio conversion**

None: Set to this position to disable the aspect ratio converter.

4:3-16:9: Set SW2 to this position in order to convert 4:3 composite signals to 16:9 s-video signals. Converting from 4:3 to 16:9 aspect ratios, black side panels are added to either side of the image very much like the letterbox format used in 16:9 to 4:3 conversion. However, horizontal downscaling is performed in order to allow the addition of black side panels. There is no picture loss with this format. Refer to Figure 7.



**Figure 7: 4:3 to 16:9 aspect ratio conversion**

### **Chroma modulation conversion switch (SW3)**

- Normal: The Normal position disables the chroma modulation converter. Table 1 provides the output formats available for various inputs.
- Alt. Out: Set SW3 to this position to enable the chroma modulation converter. Refer to Table 1 for the output format provided during this setting.

Input	Output	
	SW3=Normal	SW3=Alt. Out
NTSC	NTSC	PAL-M
PAL	PAL	PAL-N
PAL-M	PAL-M	NTSC
PAL-N	PAL-N	PAL
SECAM	PAL	PAL-N

**Table 1: Chroma modulation conversion**

### **4.2 Status LED**

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

- Green: Indicates the DEC-272p is powered and has detected a valid analog composite 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: 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  
SECAM (625/50) ITU (CCIR) 624-4

Aspect ratio: 16:9 or 4:3

Return loss: > 35 dB up to 5 MHz

Connector : 75  $\Omega$  BNC

### Output

Signal: S-video 1 Vpp nominal with sync

Aspect ratio: 16:9 or 4:3

Return loss: > 35 dB up to 5 MHz

Connector : Cable with male mini-Din 4

### Processing performance

Signal path: 8 bits

Quantization: 10 bits

Freq. response:  $\pm 0.5$  dB 100 Hz to 4 MHz

Filtering: Luminance: 3-line adaptive comb  
(NTSC)

Chrominance: 3-line comb

Processing delay: 16:9 to 4:3: 32 lines (NTSC/PAL-M),  
36 lines (PAL/PAL-N/  
SECAM)

4:3 to 16:9: 2 lines

Transparent: 2 lines

VANC: Bypassed to luma channel, chroma  
blanked

### ***Electrical***

Voltage requirement: +5 VDC  
Power consumption: 3.3 W (660 mA @ 5V)  
Power connector: Mini XLR-3

### ***Mechanical***

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

## **6.0 Schematic Diagrams**