

picoLink Series

DEC-271p

Guide to Installation
and Operation

M151-9900-201

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Specifications may be subject to change.

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Composite to
CAV Decoder
and ARC

DEC-271p

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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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.

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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.

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 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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CONTENTS

	<i>page</i>
1.0 DEC-271p	1
1.1 Introduction	1
1.2 Features	1
2.0 Overall View	2
3.0 Installation	3
3.1 Power Supply	3
3.2 Composite Input	4
3.3 CAV Outputs	4
4.0 Operation	5
4.1 Switch Settings	5
4.2 Status LED	7
5.0 Specifications	9
6.0 Schematic Diagrams.....	11

1.0 DEC-271p

1.1 Introduction

The DEC-271p is the industry's smallest composite to component analog video decoder and aspect ratio converter. This product automatically detects NTSC, PAL, PAL-M, PAL-N, and SECAM standards and provides SMPTE/EBU or GBR output signals. 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. In addition, this feature-packed unit delivers ease-of-use, a simplified design, easy installation and operation.

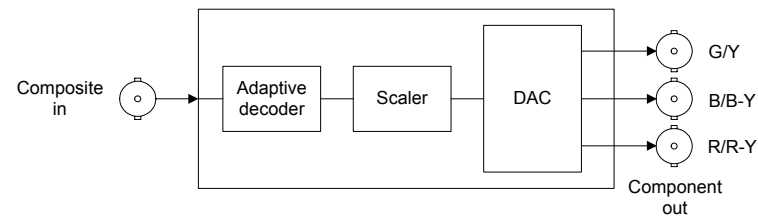


Figure 1: DEC-271p functional block diagram

1.2 Features

- Automatic NTSC/PAL/PAL-M/PAL-N/SECAM input standard detection
- Output standard selection: SMPTE/EBU or GBR with or without setup
- 3-line adaptive comb filter
- Aspect ratio conversion: 16:9 to 4:3, none, or 4:3 to 16:9
- Supports non-time base corrected sources
- 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-271p's major parts and their locations. The video source is connected to the analog composite input and the decoded output signals are provided by the CAV outputs. 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.

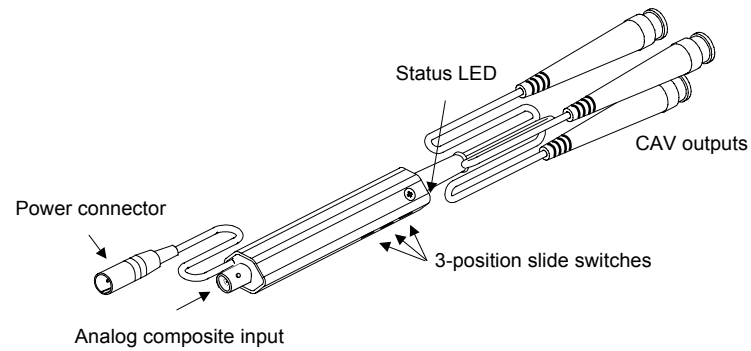


Figure 2: Overall view of the DEC-271p

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 DEC-271p. Each power supply provides a regulated +5 VDC@750 mA power source. The DEC-271p employs a mini XLR-3 connector for its power needs. Figure 3 provides a detailed pinout of the male connector.

(male connector-facing)

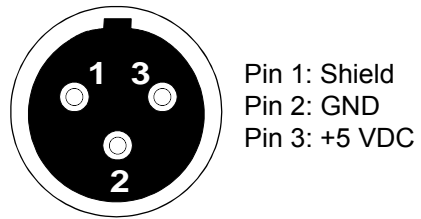


Figure 3: Power connector pinout

3.2 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 CAV Outputs

The CAV outputs consist of green, blue, and red color coded male BNC connectors. Male connectors are provided so as to connect the DEC-271p directly to monitoring equipment. Available CAV output standards are SMPTE/EBU and GBR. The GBR format can be set with or without setup. SMPTE/EBU operation provides Y/B-Y/R-Y signals on the green, blue, and red BNCs respectively.

Refer to section 4.0, Operation in order to select the desired output CAV standard.

4.0 Operation

4.1 Switch Settings

Figure 4 outlines the slide switch functions.

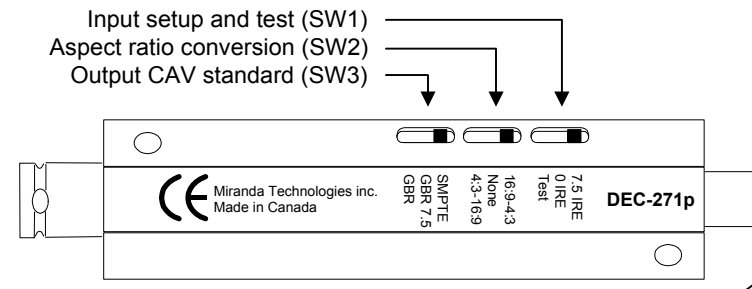


Figure 4: DEC-271p switch settings

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 CAV 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 5.

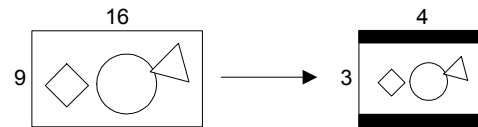


Figure 5: 16:9 to 4:3 aspect ratio conversion

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 CAV 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 6.

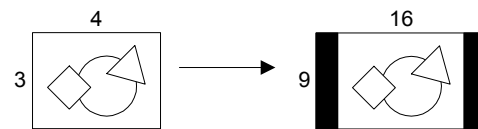


Figure 6: 4:3 to 16:9 aspect ratio conversion

Output CAV standard switch (SW3)

- SMPTE: For SMPTE/EBU CAV outputs, set SW3 to this position. The Y/B-Y/R-Y outputs are provided by the green, blue, and red connectors respectively.
- GBR 7.5: With NTSC and PAL-M inputs, set SW3 to this position for GBR outputs with 7.5 IRE setup. During PAL and PAL-N GBR outputs, there is no setup.
- GBR: For GBR outputs with 0 IRE setup, set SW3 to this position.

4.2 Status LED

The bi-colored status LED, located next to the CAV 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-271p 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 Ω BNC

Output

Signal: G/Y, B/B-Y, R/R-Y 700 mV nominal
with 280 mV sync

Aspect ratio: 16:9 or 4:3

Return loss: > 35 dB up to 5 MHz

Connector: 3 captive cables with 75 Ω male BNCs

Processing performance

Signal path: 8 bits

Quantization: 8 bits

Freq. response: ± 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