

**picoLink Series**

# ARC-372p

Guide to Installation  
and Operation  
M401-9900-101

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## S-Video Aspect Ratio Converter

# ARC-372p

## **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

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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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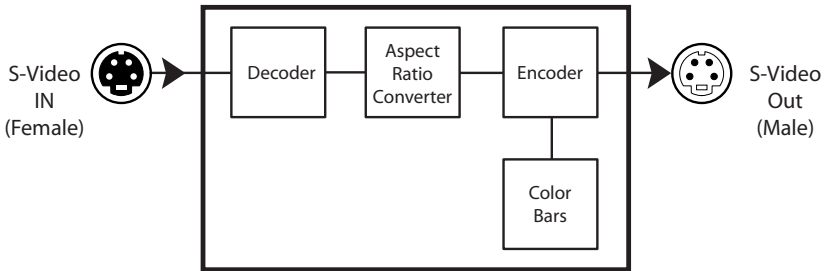


## 1 ARC-372p S-Video Aspect Ratio Converter

### 1.1 Introduction

The ARC-372p is a member of the picoLink family of miniature products. The ARC-372p is a miniature S-Video aspect ratio converter that allows the user to choose between 16:9 Anamorphic→4:3 conversion, 4:3→16:9 conversion or pass-through. This module also provides a color bars generator and can convert NTSC to/from PAL-M, or PAL to/from PAL-N.

**Figure 1** Functional Block Diagram



### 1.2 Features

- Automatic NTSC/PAL input standard detection
- Mode selection: transparent (bypass), 16:9→4:3, or 4:3→16:9
- Input to output standard selection: same or alternate
- Input setup selection: 7.5 or 0 IRE
- Color bars generator
- Tri-color LED providing error status on input S-video signal
- Very small packaging aluminum extruded body





## 2 Overall view

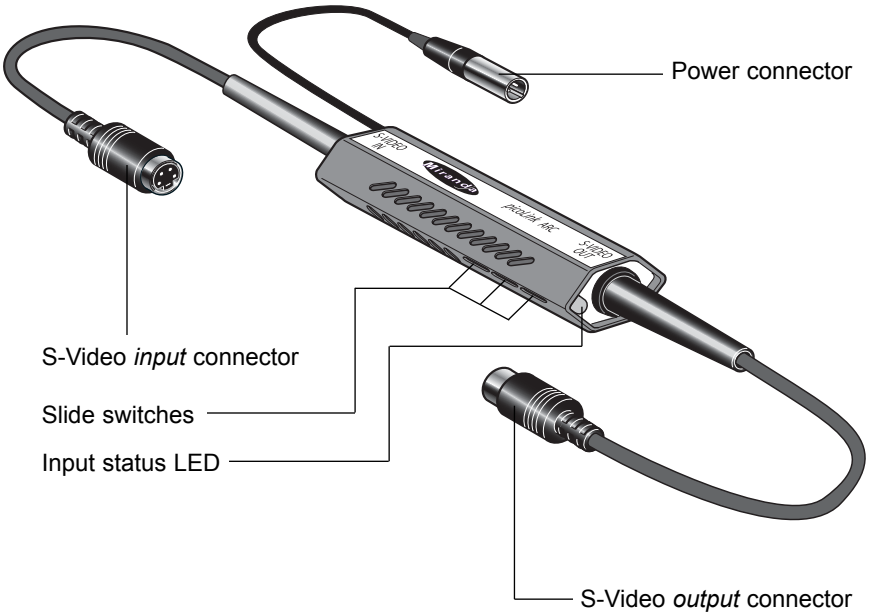
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Figure 2.1 below represents the ARC-372p. The input is connected to the *female* mini-Din 4 (S-Video) connector and the output to the *male* mini-Din 4 (S-Video) connector.

A multicolor LED indicates status.

Power is provided via the power connector

**Figure 2.1** ARC-372p overall view



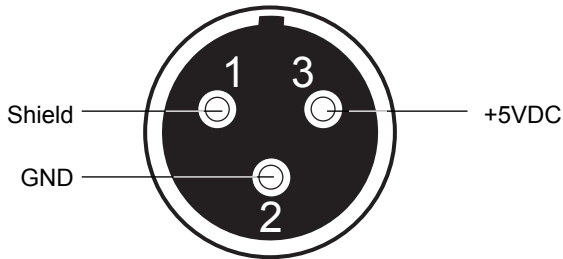


### 3 Installation

#### 3.1 Power Supply

The power supplies LKS-WSA and LKS-WSE, for 110V and 220V operation respectively, are used to power the ARC-372p. Each power supply provides a regulated +5VDC@750mA power source. Plug the power supply into a wall or power bar outlet. The ARC-372p uses a mini XLR-3 connector for its power needs; figure 3.1 provides a detailed pinout of the male connector.

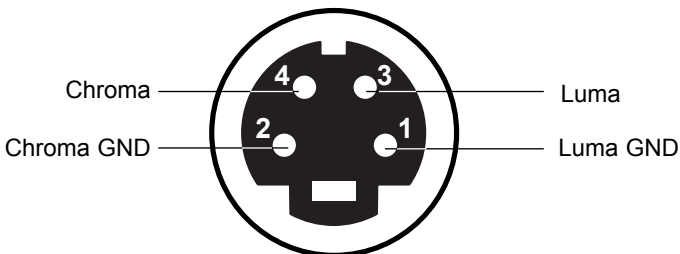
**Figure 3.1** Power connector pinout



#### 3.2 S-Video Input

Connect a NTSC S-video signal conforming to the SMPTE 170M standard or a PAL, PAL-M or PAL-N conforming to the ITU (CCIR) 624-4 standard to the connector labeled S-VIDEO IN. Figure 3.2 provides the S-video connector pinout.

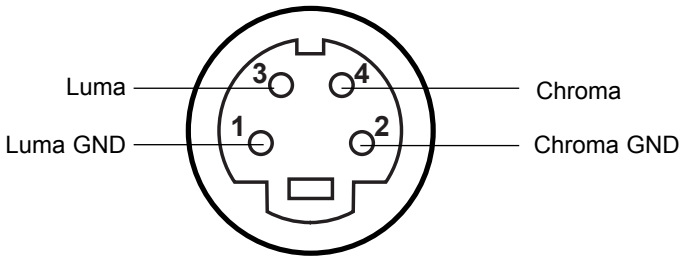
**Figure 3.2** S-Video input (female) connector pinout



### 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 OUT connector. Figure 3.3 provides the S-video connector pinout.

**Figure 3.3** S-Video output (male) connector pinout

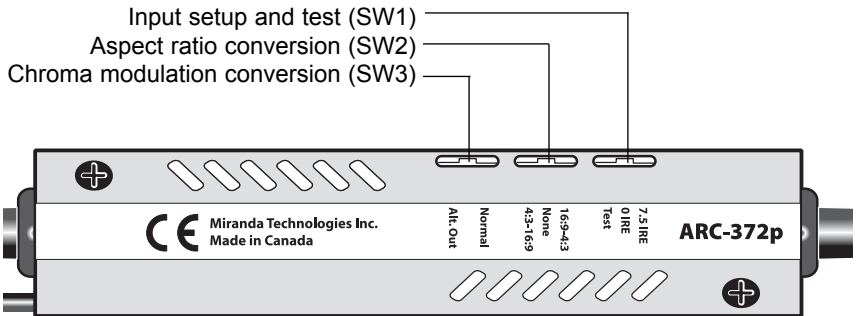


## 4 Operation

### 4.1 Switch Settings

Figure 4.1 outlines the slide switches function.

**Figure 4.1** ARC-372p switches location



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

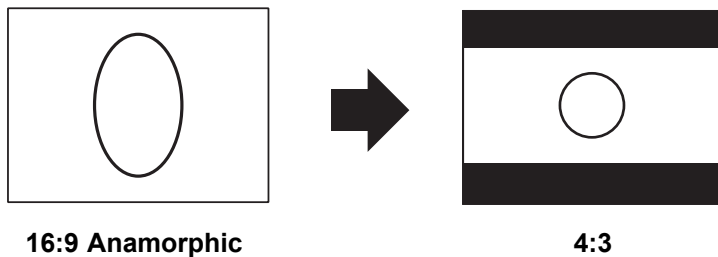
- 7.5 IRE:** This position indicates the S-video input signal has a setup of 7.5 IRE. During PAL and PAL-N operation, this setting has no effect.
- 0 IRE:** This position indicates the S-video input signal has 0 IRE setup. During PAL and PAL-N operation, this setting has no effect.
- Test:** Set SW1 to Test in order to enable the test pattern generator. Make sure a valid S-video input signal is installed. The test pattern produced is a 75% color bars signal with 100% white bar.

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

- 16:9-4:3:** Set SW2 to this position in order to convert 16:9 anamorphic (horizontally compressed to fit in a standard 4:3 video signal) S-video signals to 4:3 S-video signals. During this type of aspect ratio conversion,

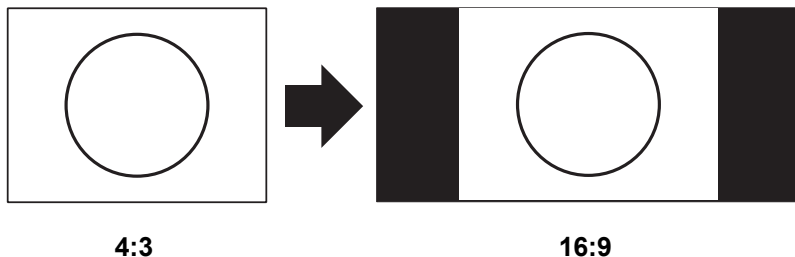
letterbox is the conversion format adopted. The letterbox format performs vertical downscaling in order to display the image to its original aspect ratio and adds black bars at the top and bottom of the image. There is no picture loss with this format. Refer to Figure 4.2.

**Figure 4.2** 16:9 Anamorphic 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 S-video signals to 16:9 S-video signals. During this type of aspect ratio conversion, *pillarbox* is the format adopted. The pillarbox format downscales the image in order to permit the addition of black bars on either side of the image. There is no picture loss with this format. Refer to Figure 4.3.

**Figure 4.3** 4:3 to 16:9 aspect ratio conversion



**Chroma modulation conversion switch (SW3)**

- Normal:** The *Normal* position disables the chroma modulation converter. Table 4.1 provides the output formats available for various inputs.
- Alt. Out:** Set SW3 to this position to enable the chroma modulation converter. Refer to Table 4.1 for the output format provided during this setting.

**Table 4.1** Chroma modulation conversion for SW3 switch position

<b>Input</b>	<b>Output</b>	
	<i>Normal</i>	<i>Alt. Out</i>
NTSC	NTSC	PAL-M
PAL	PAL	PAL-N
PAL-M	PAL-M	NTSC
PAL-N	PAL-N	PAL

**4.2 Indicating Status of the Input Signal**

The tri-color 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 ARC-372p is powered and has detected a valid analog S-video 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 Specifications

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### **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
Aspect ratio:	16:9 or 4:3
Return loss:	> 35 dB up to 5 MHz
Connector :	Cable with female mini-Din 4

### **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:	±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: 36 lines (NTSC/PAL-M) 41 lines (PAL/PAL-N) 4:3 to 16:9: 2 lines Transparent: 2 lines
VANC:	Transparent

### **Electrical**

Voltage requirement:	+5 VDC
Power consumption:	2.7 W (540 mA @ 5 V)
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 Schematic Diagrams**

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