

**picoLink Series**

# ASD-771p

Guide to Installation  
and Operation  
M308-9900-101

AES/EBU Analog  
To Digital  
Converter

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ASD-771p

## 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.

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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.

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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## **Contents**

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	<i>page</i>
<b>1 ASD-771p AES/EBU Analog to Digital Converter.....</b>	<b>1</b>
1.1 Introduction.....	1
1.2 Features.....	1
<b>2 Overall View.....</b>	<b>3</b>
<b>3 Installation.....</b>	<b>5</b>
3.1 Power Supply.....	5
3.2 Analog Input.....	5
3.3 AES Output.....	6
<b>4 Operation.....</b>	<b>7</b>
4.1 Switch Settings.....	7
4.2 Status LED.....	8
<b>5 Specifications.....</b>	<b>9</b>
<b>6 Schematic Diagrams.....</b>	<b>11</b>



## 1 ASD-771p AES/EBU Analog to Digital Converter

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### 1.1 Introduction

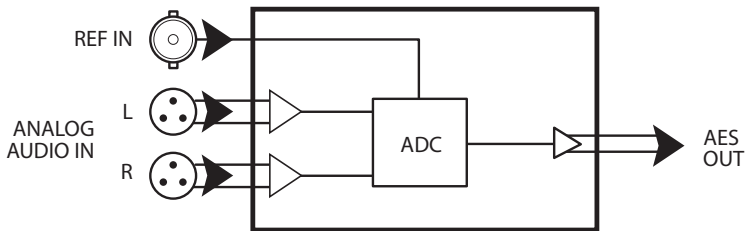
The ASD-771p is the industry's smallest 24 bit/48 kHz analog to digital audio converter. External reference input allows the output to be synchronized to composite video, AES-3id Digital Audio Reference (DARS) or word clock signals.

A choice of three full scale (+20/+22/+24 dBu) of input signal is available. Two test modes configurable by switches are available.

Two versions are offered, to suit the appropriate standard:

- ASD-771p/110: AES3 110- $\Omega$  balanced output (XLR)
- ASD-771p/75: AES-3id 75- $\Omega$  unbalanced output (BNC)

**Figure 1** Functional Block Diagram



### 1.2 Features

- Digital output AES3 (110  $\Omega$  balanced) or AES-3id (75  $\Omega$  unbalanced)
- Analog stereophonic audio input
- Adjustable input level
- Sync input PAL, NTSC, AES-3id or Word clock
- Test mode "Tone" or "Mute"





## 2 Overall view

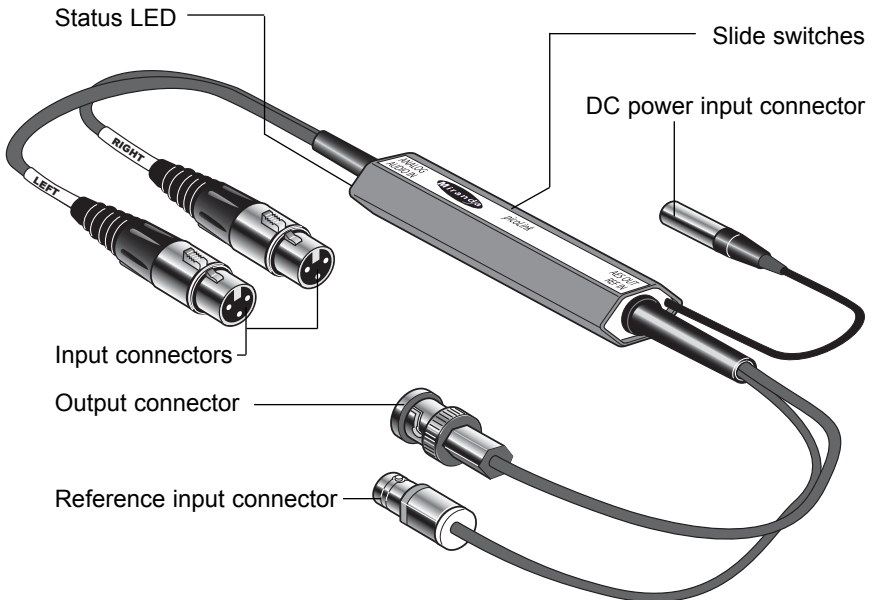
The figures below represents the ASD-771p/75 and the ASD-771p/110. The analog stereo audio source is connected to the two XLR3 input connectors.

A multicolor LED provides module statuses. A mini slide switch “Test” configures the test mode. The input level is configurable using two 3-positions slide switches “Left” and “Right”.

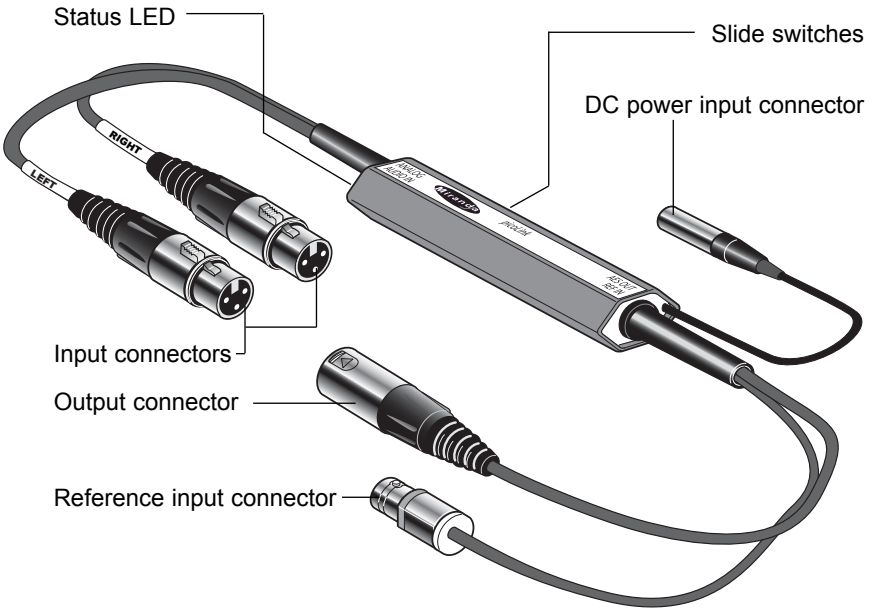
Output is provided by a BNC socket over 75  $\Omega$  and a three-point XLR connector over 110  $\Omega$ .

Power supply is connected to a mini-XLR type connector.

**Figure 2.1** ASD-771p, 75  $\Omega$  Version



**Figure 2.2** ASD-771p, 110 Ω Version



### 3 Installation

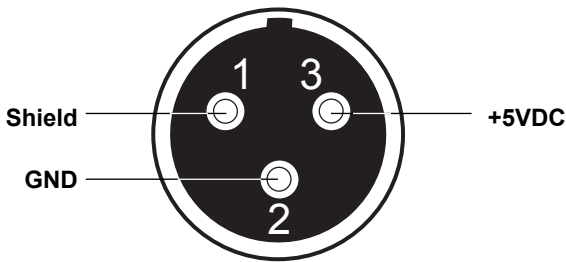
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#### 3.1 Power Supply

The power supplies LKS-WSA and LKS-WSE, for 110V and 220V operation respectively, are used to power the ASD-771p/75/110. Each power supply provides a regulated +5VDC@750mA power source.

Plug the power supply into a wall or power bar outlet. The ASD-771p 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 Analog Inputs

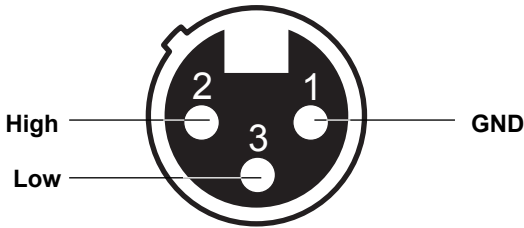
*ASD-771p/75 and ASD-771p/110*

Refer to configuration section for the input level adjustment and test mode configuration.

##### **Analog Audio In**

Connect a balanced analog stereo audio signal to the two female XLR3 connectors labeled LEFT and RIGHT. Refer to figure 3.2 for connector pinout.

**Figure 3.2** *Input (female) XLR connector pinout*



**Ref In**

Connect a reference signal PAL, NTSC, AES-3id 75  $\Omega$  or Word clock signal to the BNC plug (female) connector.

*Note: The ASD-771p detects automatically a PAL, NTSC, Word clock (48 kHz) or AES-3id 75  $\Omega$  signal. When synchronization is missing, the module delivers an asynchronous AES3 (48 kHz) carrier.*

**3.3 AES Outputs**

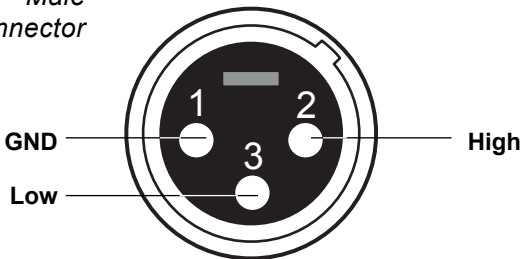
*ASD-771p/75*

Signal is output through a BNC socket (male). Output conforms to AES-3id-1995 (75  $\Omega$ ) (SMPTE 276M) or S/PDIF.

*ASD-771p/110*

Signal is output through a three-point male XLR connector. Output conforms to AES3-1992 (110  $\Omega$ ) (ANSI S4.40-1992). Figure 3.3 shows connector pinout.

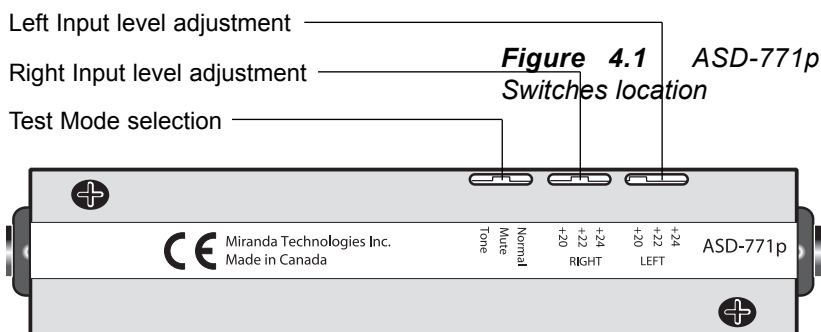
**Figure 3.3** *Male XLR connector pinout*



## 4 Operation

### 4.1 Switch Settings

Figure 4.1 indicates the locations of the miniature switches at the back of the ASD-771p.



#### **a- Input Level Switches**

The adjustment of the stereo analog input level is configurable with a potentiometer ( $\pm 1$  dB) located on the PCB and with two 3-positions slide switches “LEFT” and “RIGHT”. Three levels of attenuation of the full scale output (0 dBFS) are provided: **+20**, **+22** or **+24** dBU.

#### **b- Test Switch**

Two test functions are offered:

##### *Tone*

EBU tone generator: sine wave 1 kHz at -18 dBFS interrupted on left channel (250 ms/3 s)

*Mute*

Absence of audio signal in the AES output carrier (no audio bit activity).

**4.2 Status LED**

A multicolored LED, located beside the input, indicates the status of the module.

**Green:** The ASD-771p is powered and has detected a valid audio signal.

**Yellow:** Test mode is active.

**Red:** Overload or signal absence on input.

A flashing LED indicates the absence of a valid sync signal.

## 5 Specifications

### MEASUREMENT CONDITIONS

Inputs: +24 dBu  
Outputs: AES FS=48 kHz

### ANALOG INPUT

Input impedance: 15 k $\Omega$   
Maximum level: +24 dBu

### REFERENCE INPUT

Input impedance: 75  $\Omega$

### AES3 OUTPUT

#### *AES3*

Level input impedance: 3.4 Vp-p/110  $\Omega$

#### *AES-3id*

Level input impedance: 1.0 Vp-p/75  $\Omega$

### SIGNAL PROCESSING

Quantization: 24 bits, 48 kHz  
SNR: >105 dB (A weighting)  
Distortion: < -95 dB @ 1 kHz  
Crosstalk: < -100 dBFS @ 15 kHz  
Frequency response:  $\pm 0.2$  dB (20 Hz to 20 kHz)  
De-emphasis:  $\pm 0.3$  dB (digital 50-15  $\mu$ s)  
Tone generator: 1 kHz sine wave (-18 dBFS)

### MISCELLANEOUS





## **6 Schematic Diagrams**

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