

ulink Series

SDM-771p

Guide to Installation
and Operation
M190-9900-102

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AES-EBU
Digital to Analog
Converter

SDM-771p

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 SDM-771p AES/EBU Digital to Analog Converter....	1
1.1 Introduction.....	1
1.2 Features.....	1
2 Overall View.....	2
3 Installation.....	4
3.1 Power Supply.....	4
3.2 AES Input.....	4
3.3 Analog Output.....	5
4 Operation.....	6
4.1 Configuring the Switches.....	6
4.2 Indicating the Status of the AES-EBU Carrier.....	6
5 Specifications.....	8

1 SDM-771p AES/EBU Digital to Analog Converter

1.1 Introduction

This picoLink module is a 24-bit digital-to-audio converter.

It converts AES/EBU or SP-Dif signals into analog stereo signals. It has three output levels to optimize the dynamics of the analog circuit.

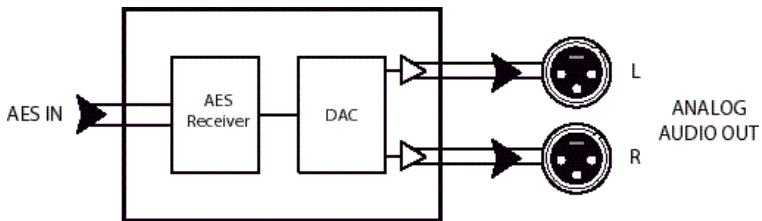
A de-emphasis stage in 50/15 μ s (48 or 44.1 kHz) format accurately restores the signal when it has been emphasized.

This module is available in two versions, depending on the standard selected:

SDM-771p/110: symmetric AES3 110 Ω / XLR input

SDM-771p/75: asymmetric AES3-id 75 Ω or SP-Dif / BNC input

Figure 1 Functional Block Diagram



1.2 Features

- AES3 110 Ω or AES3-id 75 Ω input
- Stereo analog output
- Adjustable output level
- De-emphasis: 50-15 μ s

2 Overall view

The figures below represents the SDM-771P/75 and the SDM-771P/110. The input is connected to the BNC socket over 75 Ω and to a three-point XLR connector over 110 Ω .

A multicolor LED indicates the status of the AES-EBU carrier. A mini DE-EMPH switch is used to configure the de-emphasis circuit. The output level can be adjusted using the two mini LEFT and RIGHT three-position switches.

Power is provided via the power connector

Figure 2.1 *SDM-771p, 75 Ω Version*

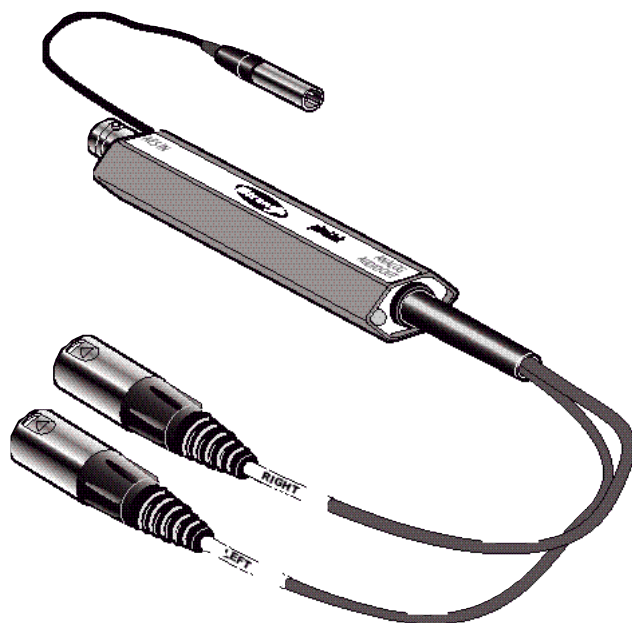
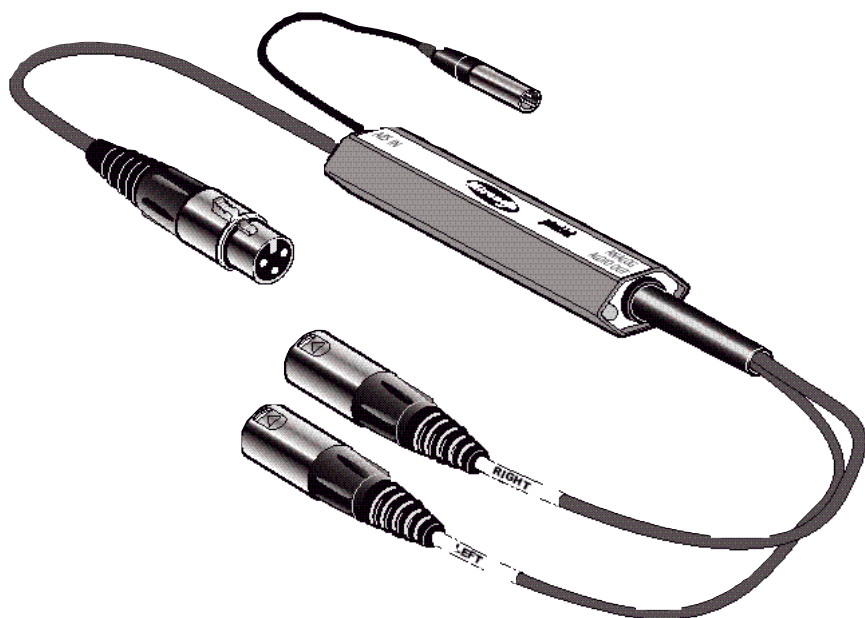


Figure 2.2 SDM-771p, 110 Ω Version

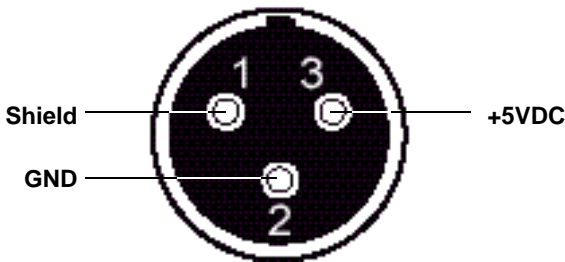


3 Installation

3.1 Power Supply

The power supplies LKS-WSA and LKS-WSE, for 110V and 220V operation respectively, are used to power the SDM-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 SDM-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 AES Input

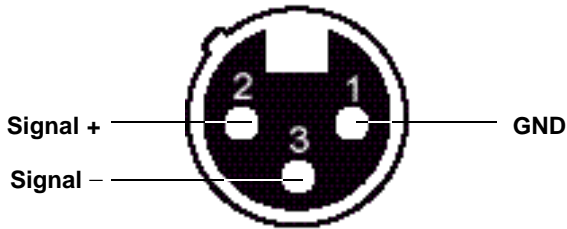
SDM-771p/75:

BNC socket: Connect an asymmetric AES 75 Ω signal to an AES *IN* BNC connector. This signal must comply with the AES3-id or SPDif standard.

SDM-771p/110:

Three-point female XLR connector: Connect a symmetric AES-110 Ω signal to an AES *IN* connector (refer to figure 3.2 for connector pinout). This signal must comply with the AES3 standard (professional or consumer).

Figure 3.2 Female XLR connector pinout



3.3 Analog Output

SDM-771p/75 & SDM-771p/110:

Refer to the Configuration section to set the signal output level and the de-emphasis type.

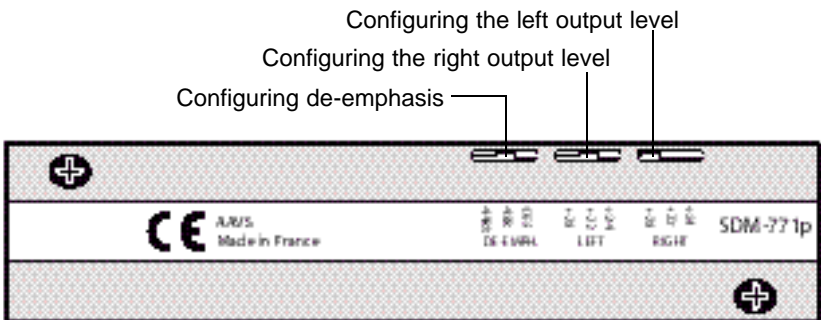
Figure 3.3 Male XLR connector pinout



4 Operation

4.1 Configuring the switches

Figure 5 Switch Location



Level Switches

The level of each stereo output can be set using the two three-position LEFT & RIGHT switches

Position	
+24	0 dBFS = +24 dBu
+22	0 dBFS = +22 dBu
+20	0 dBFS = +20 dBu

De-emphasis Switch

De-emphasis (50-15 μ s) is available for signals sampled at frequencies of 44.1k or 48k. The three-position DE-EMPH switch can be used to select the customized mode of operation. This selection is valid for both channels.

4.2 Indicating Status of the AES-EBU Carrier

A multicolored LED, located beside the output cord, indicates the status of the carrier by changing color.

Green:	The SDM-711p is turned on and the AES-EBU carrier is valid.
Yellow:	The audio signal from the AES-EBU carrier is invalid (validity bit)
Red:	The AES-EBU carrier is invalid (no signal detected, biphasic coding error, parity error)
Off:	The unit is not powered on. Check that it is connected to the power supply, and the power supply is properly connected to a power source.

5 Specifications

Measurement Conditions

AES input, sampling frequency: 48 kHz

outputs 0 dBFS = +24 dBu loaded on 10 k Ω

AES3-110W INPUT

Input impedance:	110 Ω
Maximum level:	10 Vcc
Minimum level:	0.2 Vcc

AES3-75 W INPUT (SP-Dif - COMPATIBLE)

Input impedance:	75 Ω
Return loss:	> 15 dB (0.1 to 6 MHz)
Minimum level:	0.2 Vcc

ANALOG OUTPUTS

Bandwidth 20/20 KHz	± 0.2 dB
Maximum level:	+ 24 dBu
Unbalance:	<-40 dB
Source impedance:	<55 Ω
Crosstalk:	<-100 dB @ 15 kHz
Load impedance:	> 600 Ω

SIGNAL PROCESSING

Resolution:	24 bits
Dynamic range:	> 104 dB (A weighting)
Distortion:	< -90 dB @ 1 kHz
De-emphasis:	± 0.5 dB (digital 50-15 μ s)

MISCELLANEOUS

Allowable sampling frequency:	28 kHz to 54 kHz
Allowable jitter for THD<0.3%	
sine: 200 Hz:	10 UI (1.63 μ s @ 48 kHz)
sine: 100 kHz:	0.25 UI (40.71 ns @ 48 kHz)

Attenuation of sine-shaped jitter 100 kHz:	20 dB
Display:	1 multicolored LED, three functions
Processing time:	670 μ sec. @ 48 kHz
Maximum power consumption:	
10 K load:	1.2 W
600 Ω load:	2 W