MDM-1 SPDIF COMPATABILITY

This application note details the construction of an adapter that enables the MERLIN™ Digital Module to receive SPDIF signals.

Introduction

The MDM-1 was designed to receive SPDIF format digital signals through the use of an easily constructed adapter. The adapter is necessary due to differences in the physical and electrical specifications of the AES/EBU and SPDIF standards.

Materials, Tools, and Test Equipment Required

The construction of the adapter requires the following materials and tools:

- Switchcraft 324 RCA female to XLR male adapter or equivalent
- Electronic grade solder
- 237 Ohm 1% or 240 Ohm 5% resistor ($^1/_4$ or $^1/_8$ watt)
- Soldering Iron
- Needle nose pliers
- Diagonal cutters
- Small slotted screwdriver
- VOM or DMM

An RCA female connector, XLR Male connector, and appropriate shielded cable can be substituted for the adapter.

Construction

Construct the adapter as depicted in Figure 1.

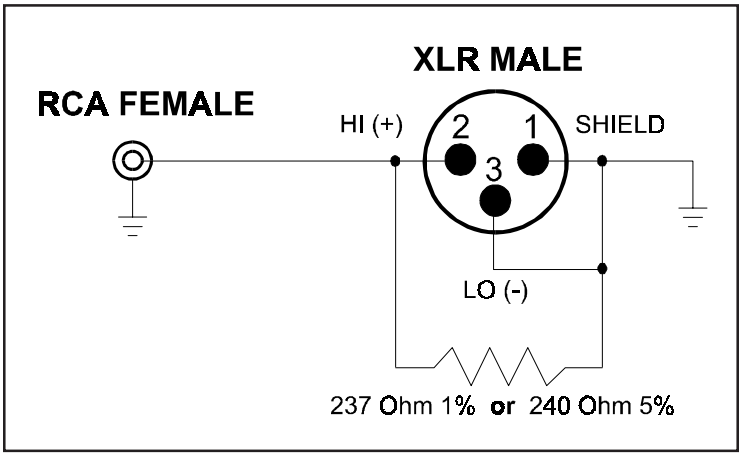

Figure 1 *– Adapter Schematic*

The $^1/_4$ watt resistor should just fit inside the hood of the XLR. If you are concerned about the size of the resistor, you can use a $^1/_8$ watt resistor.

The use of this adapter creates an unbalanced line. Unbalanced digital lines suffer from the same problems as unbalanced audio lines. Therefore, the installation rules that apply to unbalanced audio lines apply to unbalanced digital lines. If a cable run is long (i.e. outside a rack), then the adapter can be built into the cable. The use of cable, such as RG–59, with a characteristic impedance of 75 Ohms is recommended for all cable runs.

Test

The finished adapter should present the following readings upon test with a VOM or DMM.

TP1	to	TP2	Measurement
RCA center pin		RCA shield	237 Ohm
XLR pin 2		RCA center pin	short
XLR pin 1 or 3		RCA shield	short
XLR pin 1		XLR pin 3	short
XLR pin 2		XLR pin 1 or 3	237 Ohm

Software Configuration

The ISP-100 will automatically detect the incoming SPDIF data stream and configure itself appropriately.

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