

Converting AES/EBU Channels To S/PDIF Channels

The standard interface for the Z-Systems pro line of digitaldetanglers is AES/EBU. This means that every input and output is transformer isolated, impedance matched to 110Ω and expects (or delivers) a signal swing of 5V peak to peak. The S/PDIF standard needs to have the signal lines impedance matched to 75Ω and have a signal swing of 1V peak to peak. This application note describes how to change the format of z-16.16 inputs and outputs and can be used as a guide to change the format of any other z-systems router.

The input circuits of the z-16.16 are located on the close side of the main circuit board when facing the front of the unit. The actual input channels run from 1 to 16 **right to left** when viewed in the same way. The outputs of the unit are located at the far side of the circuit board and likewise run from 1 to 16 **right to left**.

In order to convert an AES/EBU input to an S/PDIF input, replace the 110Ω resistor located between the impedance matching transformers of the input side of the circuit board with a 75Ω ¼ watt 1% carbon film resistor. Figure 1 illustrates the location of this resistor. The figure shows three independent inputs. When reconfiguring one of the inputs, change the resistor to the right of the associated transformer.

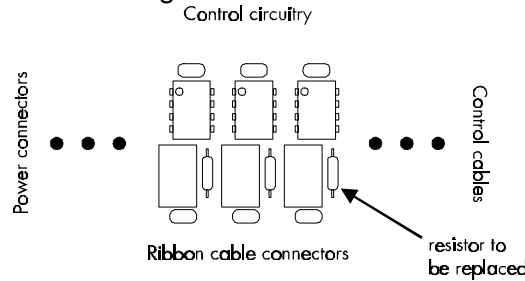


Figure 1: Input circuit section of the z-16.16

To change an output port from AES/EBU to S/PDIF replace the 110Ω resistor that sits to the left of that output’s transformer with a 374Ω ¼ watt 1% metal film resistor. You must also add a 90.9Ω ¼ watt 1% metal film resistor across the bottom two legs of the transformer. Figure 2 should clarify this operation.

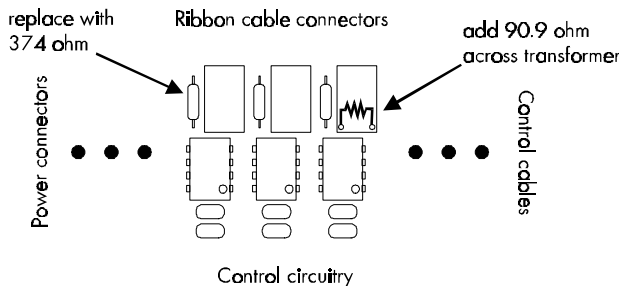


Figure 2: z-16.16 output circuitry section

Use special care to not damage any of the pads on the circuit board when removing these resistors and make sure to have clean, shiny solder joints when you replace these components with the new values.