

L1 Junction Card Specification

Purpose:

To provide a transition from the digital jumper cable to the twisted pair cable for D0 Run 2B layer 1 signals.

Number of channels:

The junction card will have 3 channels.

Dimensions:

25mm wide, 8mm thick including components, Length unspecified (using 89 mm)

Signals:

Power

Twisted Pair Half A	Twisted Pair Half B
AVDD	GND
DVDD	GND

High Voltage

Coax Center	Coax Shield
HV (1000V max)	GND

Clock Lines

Coax Center	Coax Shield
CLK	GND
/CLK	GND

Twisted pair signals

Twisted Pair Half A	Twisted Pair Half B
SVXOBDV	/SVXOBDV
SVXD0	/SVXD0
SVXD1	/SVXD1
SVXD2	/SVXD2
SVXD3	/SVXD3
SVXD4	/SVXD4
SVXD5	/SVXD5
SVXD6	/SVXD6

SVXD7	/SVXD7
PRI_OUT	/PRI_OUT
PRI_IN	GND
VCAL	GND
CAL_SR	GND
BE_MOD	GND
FE_MOD	GND
CHG_MOD	GND
TEMPERATURE1	TEMPERATURE2
DVDD_SENSE	GND
AVDD_SENSE	GND
GND_SENSE	GND

Connector:

An AVX connector type 5046 will be used to mate to each digital jumper cable. A minimum of 13.9 mm center to center connector separation is required for digital cable clearance.

Twisted pair pad area:

A pad area will be used to receive signals from the adaptor card ring. The pad area will receive 26 AWG wire for power inputs, 34 AWG wire for signal inputs and 26 AWG wire (**this wire is yet unspecified**) for HV input. 34 AWG wire will be used for the clock line coax inputs.

Impedance control:

A differential impedance of 100 ohms will be maintained where possible between the following differential pairs:

CLK - /CLK

SVXOBDV - /SVXOBDV

PCB Construction:

FR4 laminate will be used for the printed circuit construction. Half ounce copper will be used on all pcb layers. A minimum of 8 copper layers will be needed for the board construction. A .005" minimum clearance will be maintained. A .005" minimum trace width will be maintained.

Voltage levels:

The high voltage input will be designed to withstand 1000V. All other signals will be below 6v.

Mounting:

Mounting holes will be positioned in the corners of the board for a #0 screw and washer. Holes or slots will be provided for twisted pair and coax cable strain relief using a cable tie or similar hardware.