

DS50EV401-EVK User Guide

2.5 Gbps / 5.0 Gbps / 8.0 Gbps Quad PCI Express Cable and PC Board Equalizer

Overview

The DS50EV401-EVK evaluation board provides a typical PCIe application for the evaluation of the DS50EV401 2.5 Gbps, 5 Gbps, 8 Gbps x4 Lane Serial PCI Express Equalizer.

Specifications

DC Input Power (JP1): 3.3V \pm 10%, or 2.5V \pm 5%

Serial Data Inputs (IN_[0:3] +/-): High-speed CML inputs. Acceptable data input speed DC – 8 Gbps. *For more details, please refer to the datasheet.*

Serial Data Outputs (OUT_[0:3] +/-): High-speed CML outputs. Each output is matched with its respective input channel. For instance, IN_0+ input routes to OUT_0+. *For more details, please refer to the datasheet.*

CML Input Voltage: -0.5V to 4.0V

CMOS Input Voltage: -0.5V to 4.0V

Jumper Settings

JP5, JP6, JP7, JP8, JP9, JP10, JP11, JP12 (SD[0:3] / EN[0:3]): Leave these jumpers unconnected.

JP3 (BST1/MODE): The jumper controls equalization frequency levels. Please see Table 1.

Table 1. Equalization Boost Controls

6 mil microstrip FR4 trace length (in)	24 AWG Twin-AX cable length (m)	Frequency	Channel Loss	MODE
30	7	8 Gbps	16 dB	0 (Default)
40	10	2.5 Gbps 5 Gbps	14 dB 20 dB	1

JP2, JP4 (BST0, BST2): DO NOT USE THESE JUMPERS

JP13, JP14, JP15, JP16 (CS, SDC, SDA, FEB): DO NOT USE THESE JUMPERS

D1, D2: D1/D2 is a LIST-C155KGJRKT LED lamp. The LED serves as the detecting signaling, when shorting pin 1 and 2 of JP5, JP6, JP7, JP8, JP9, JP10, JP11, and JP12. When LED is green/red, the SD is detecting an input signal, and the data channel is at an active mode.

Bill of Materials

DESIGNATION	QTY	DESCRIPTION
C1, C3, C5, C7	4	0.01uF \pm 10% Ceramic Capacitor 0402
C2, C4, C6, C8, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26	20	0.1uF \pm 10% Ceramic Capacitor 0402
C9	1	4.7uF \pm 10% Ceramic Capacitor 0805
C10	1	22uF +10% Tan Capacitor 7343
D1, D2	2	LIST-C155KGJRKT LED lamp
JP1	1	1 x 4 Pin Header
JP2, JP3, JP4, JP13, JP14, JP15, JP16	7	1 x 3 Pin Header
JP5, JP6, JP7, JP8, JP9, JP10, JP11, JP12	8	1 x 2 Pin Header
JP2, JP4, JP5, JP6, JP12	5	3 Pin Header
JP3	1	3X2 Pin Header
JP7	1	4X2 Pin header
J1, J2, J3, J4, J5, J6, J7, J8, J9, J10, J11, J12, J13, J14, J15, J16,	16	SMA Edge Tab Receptacle 142-0701-851
R1, R2, R3, R4	4	220 ohm Resistors
U1	1	National DS50EV401

Bottom View Layout

