PI2DBS6212ZHE
PI2DBS6212ZHE Evaluation Board User Guide
Dec. 01, 2010

Contents

Introduction

The PI2DBS6212ZHE Evaluation Board has been designed to allow convenient testing of the operation and features of Pericom's PI2DBS6212ZHE switch. This board is designed to work with readily available SMA Cable connection with the scope's SMA probe.

This board allows the PI2DBS6212ZHE device to be powered in +1.5V to 1.8V directly from external power.

This User Guide describes the connection of PI2DBS6212ZHE Eval Board. Figure1 provides a top view of PI2DBS6212ZHE Eval Board, and Figure2 is bottom view of the board.
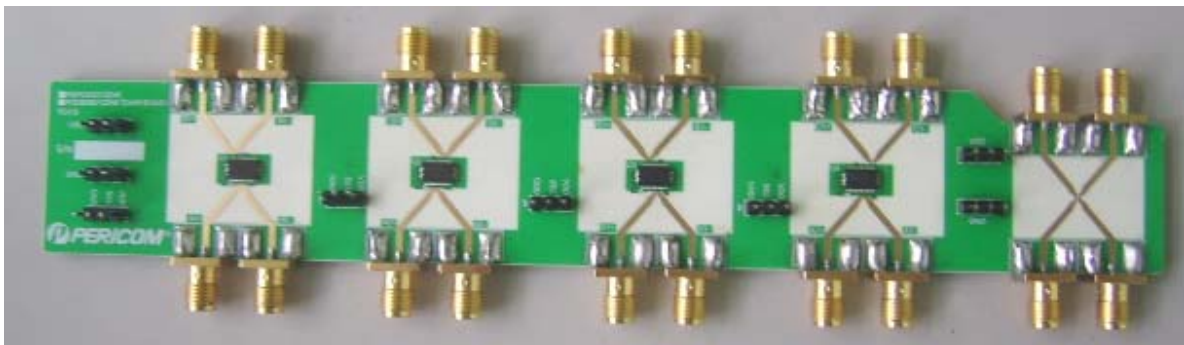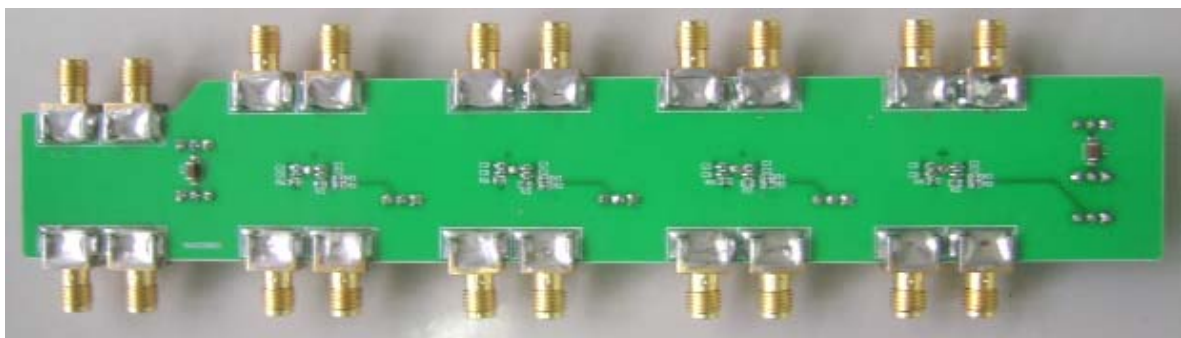

Figure1. Top view of PI2DBS6212ZHE Eval board

Figure2. Bottom view of PI2DBS6212ZHE Eval board

Board Operation

PI2DBS6212ZHE is a 4 to2 bi-directional differential channel multiplexer/demultiplexer switch supporting 6.5Gbps application. Figure3 shows the logical block diagram of PI2DBS6212ZHE. It is ideal for switching two sources to a single receiver, or alternatively one source to two receivers.
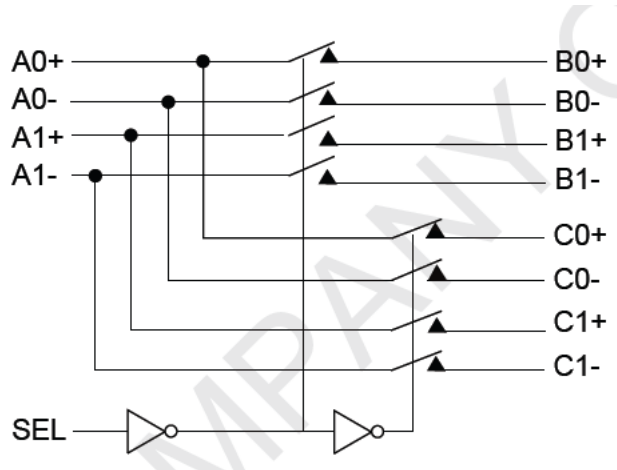

Figure3. Logical Block Diagram of PI2DBS6212ZHE

● **Power Connection**

The PI2DBS6212ZHE Evaluation Board provides four pin headers (two VDD pins and two GND pins) for directly supplying external +1.5V to +1.8V power to the board. Figure 4 circles the Power/Ground pin header location.
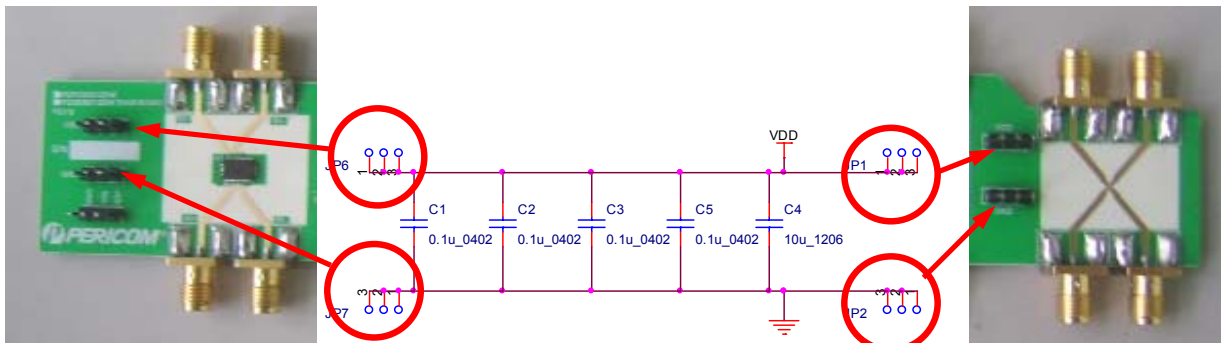

Figure4. Power supply of PI2DBS6212ZHE

● **Measurement Connection**

The PI2DBS6212ZHE Mux/DeMux switch supports two sources to a single receiver or one source to two receivers. So the user can connect SMA headers of U1, U2, U3 and U4 as input or output measurement.
1) For U1, the SEL pin header should be connected to GND.
2) For U2, the SEL pin header should be connected to VDD.
3) For U3, the SEL pin header should be connected to GND.
4) For U4, the SEL pin header should be connected to VDD.

For PI2DBS6212ZHE evaluation, the resistor on the board should be configured as R2 is populated, R1, R3 and R4 are unpopulated.

Note: For PI2PCIE2212ZHE evaluation, the resistor on the board should be configured as R2 is unpopulated, R1, R3 and R4 are populated.
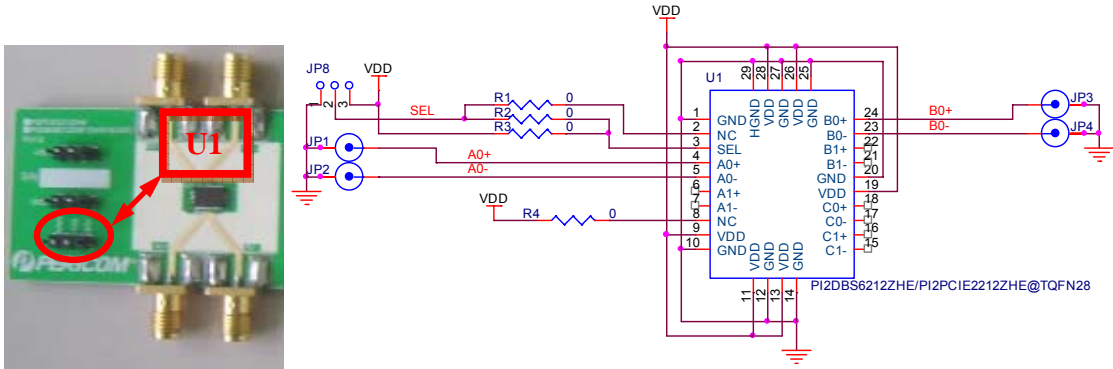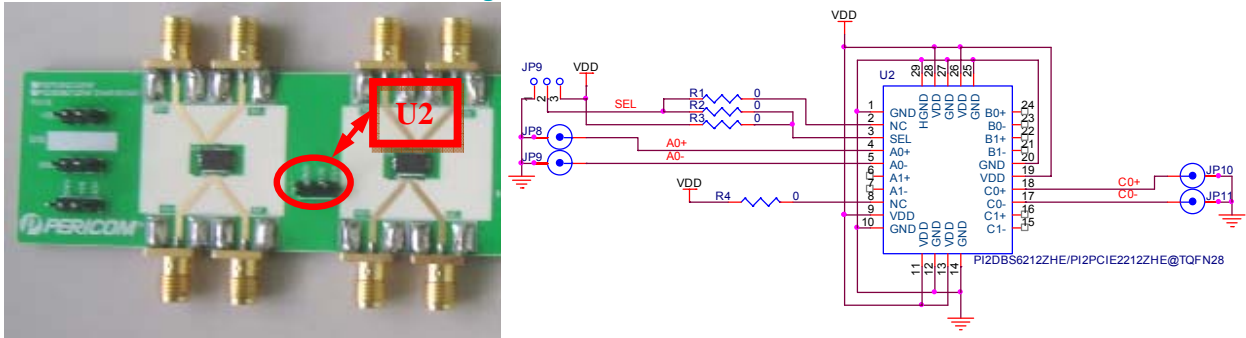

Figure5. Location and circuit of U1

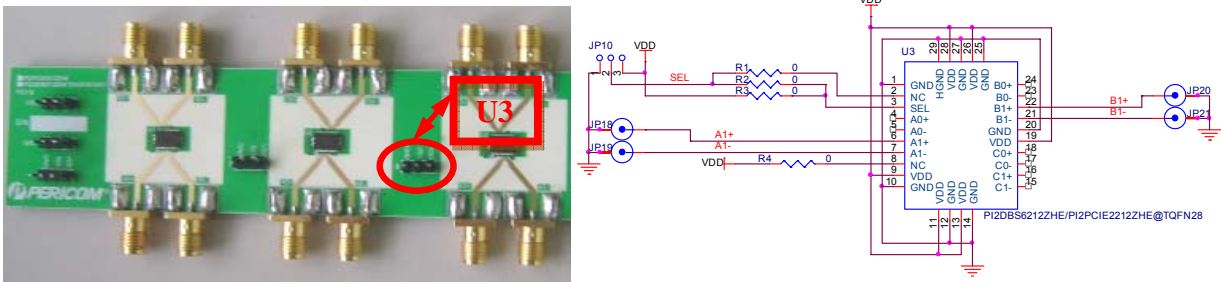

Figure6. Location and circuit of U2
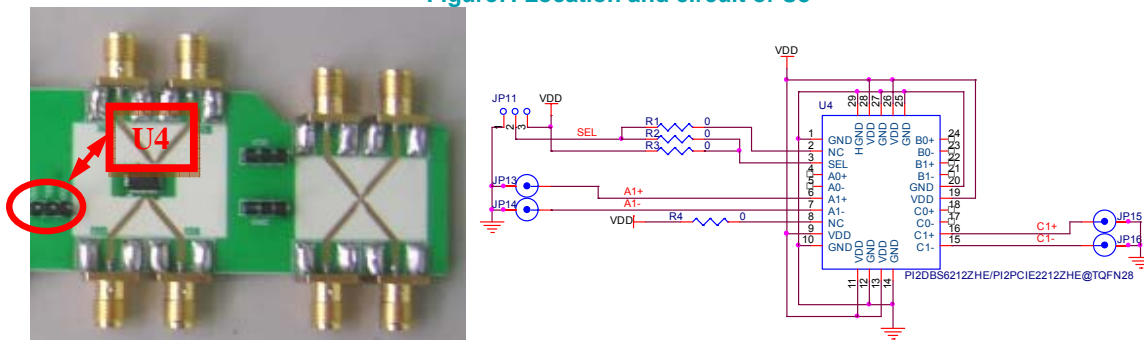

Figure7. Location and circuit of U3

Figure8. Location and circuit of U4

Figure9 is directly connection with same PCB trace just as comparison for PI2DBS6212ZHE performance.
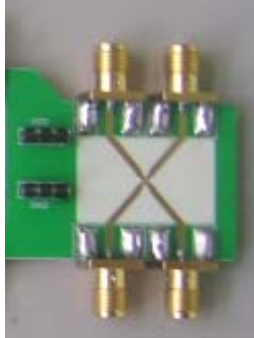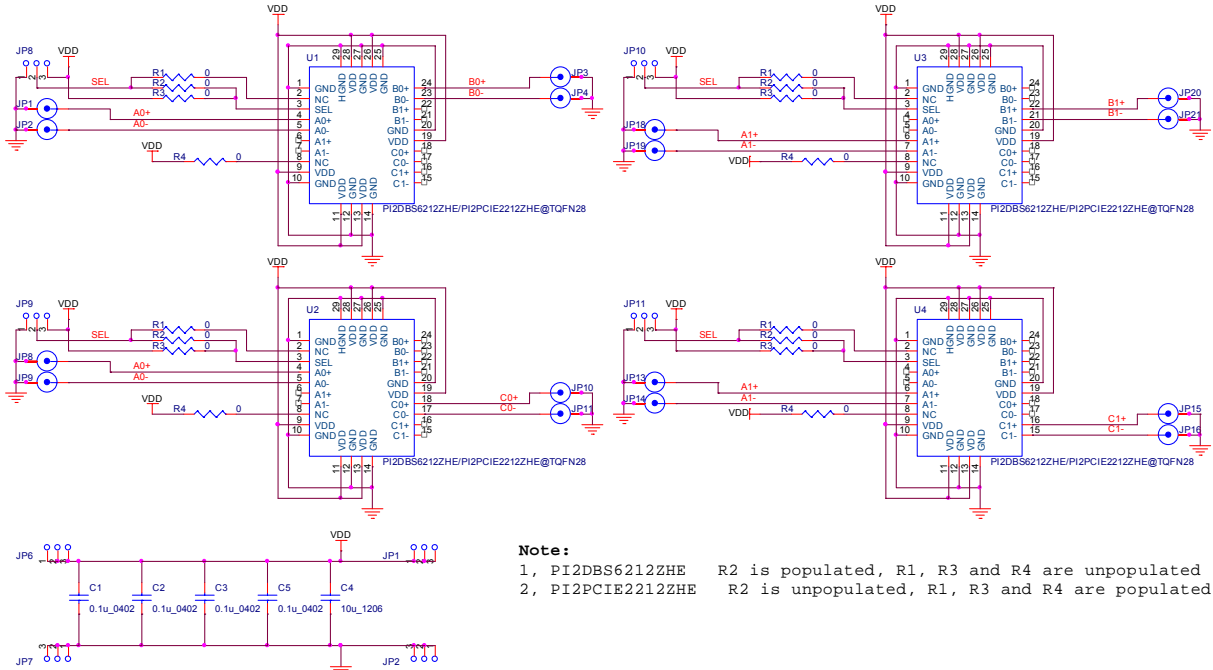

Figure9. Directly connection with same PCB trace

Board Design Information

● **PCB Schematic**

Note:
1, PI2DBS6212ZHE   R2 is populated, R1, R3 and R4 are unpopulated
2, PI2PCIE2212ZHE   R2 is unpopulated, R1, R3 and R4 are populated

● **PCB Layout Reference**
  a. Stack Up:

Layer #	Plane	Material Type	Unitl: mil ReferThickness
	Solder Mask		0.4
Layer 1/2	Signal/GND	RO4350	21
	Prepreg	Prepreg 2116 Prepreg 7628 Prepreg 2116	16.26
Layer 3/4	Power/Signal	RO4350	21
	Solder Mask		0.4

  b. Width of 50Ω SingleTrace = 43mil

● **PCB BOM List**

Reference	Description	Package	Qty
U1, U2, U3, U4	PI2DBS6212ZHE	TQFN28-ZH	4
R1, R2, R3, R4	0ohm resistor	0402	16
3 pin Header			8
SMA Header		Straight	20

History

Version 1.0   Original Version   Dec. 01, 2010