Measuring re-driver RX.detect
USB3.0 re-driver debug App Note
By YT Tso and Anne Wu

- **Introduce:**

  Use simple way to check USB3.0 redriver function is work or not.
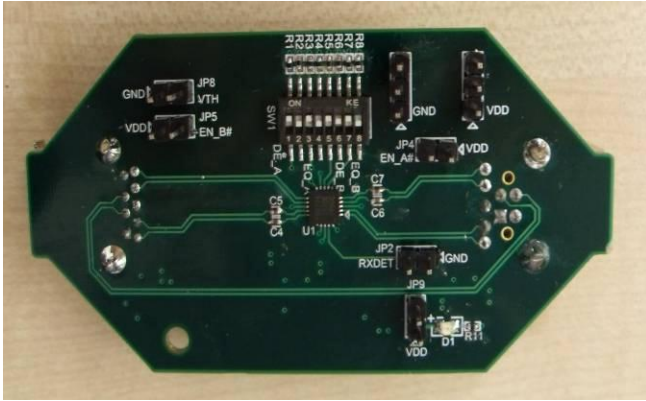 For PI3EQX7xxx, PI3EQX5xx, debug purpose.
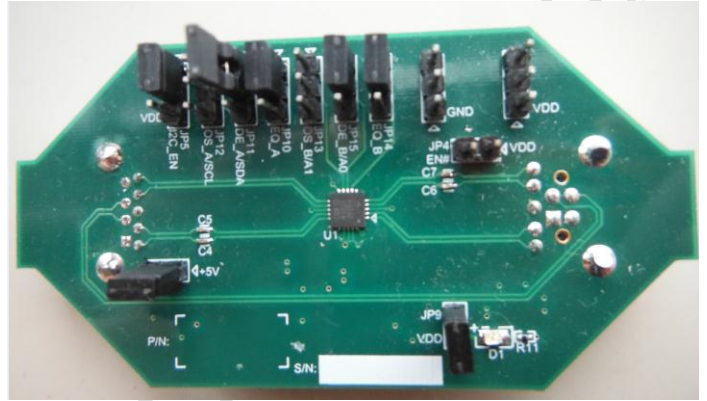

Figure 1(a) top view of PI3EQX7741ST EVB
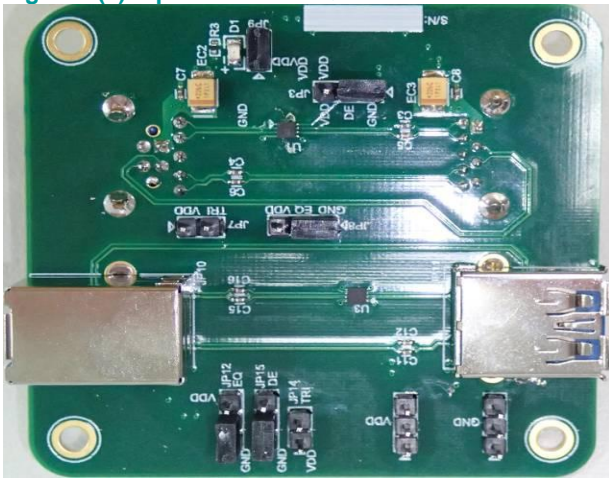

Figure 1(b) top view of PI3EQX7841 EVB

Figure 1(c) Top view of PI3EQX501(I) EVB
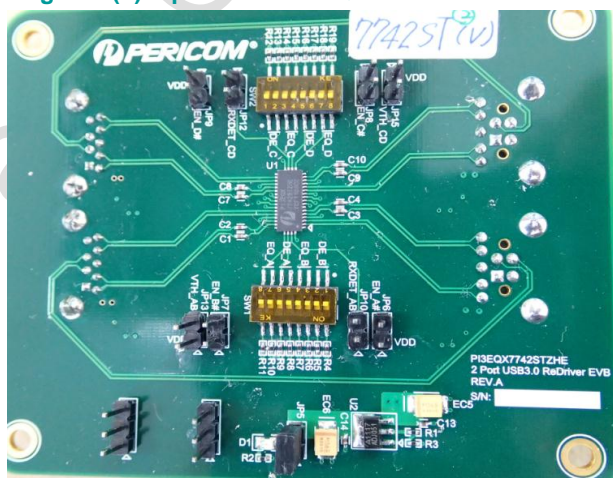
Figure 1(d) Top view of PI3EQX7742ST EVB

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- **Check re-driver function workable:**

  Please check the redriver function as below block diagram first , before start to fine tune the equalizer and De-emphasis setting.

  Step1. Remove AC coupling capacitor as below

  Step2. Measurement the place in redriver output, then you can see the detection pulse without connecting device

How to know re-driver is working

Check can see 500mV CLK, means correct

Block Diagram

Step 2 probe SS+

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Agilent Power Supply

3.3V /1A

CH1

Vdd 3.3V

CHA
Tx

AC coupling cap

Rx
CHB

Pericom USB3.0 redriver EVB

File Edit Vertical Digital Horiz/Acq Trig Display Cursors Measure Mask Math MyScope Analyze Utilities Help   Tek

5ms

~500mV

Vbias~8xxmV

Zoom in

C2 200mV/div   BW:500M   A' C2 ∫ 1.02V   5.0ms/div 2.0MS/s   500ns/pt
                                         Triggered   Auto   Run   Sample
                                                                  334 acqs   RL:100k
                                                                  Auto November 08, 2012 14:15:03

~500mV

C2 200mV/div   BW:500M   A' C2 ∫ 1.02V   20.0µs/div 500MS/s   2.0ns/pt
                                         Triggered   Auto   Run   Sample
                                                                  934 acqs   RL:100k
                                                                  Auto November 08, 2012 14:15:30

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