

***HD3SS6126 EVM Test Procedure***  
***June 2013***

***EVM Test Procedure***  
***v1.0***

## ABSTRACT

This document describes how to test HD3SS6126 KVM switch EVM.

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## Revision Notes

Version	Date	Notes
1.0	June 27 2013	Birth

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# 1 Overview

## 1.1 What is HDSS6126?

HD3SS6126 is a high speed passive switch that can be used to route USB 3.0, DP, PCIe, SATA, SAS, XAUI data between two destinations. The HD3USB6126 can select USB2.0 independently from the USB3.0. HD3USB6126 can be used in either sink side or source side.

## 1.2 What is the HD3SS6126 EVM?

The HD3SS6126EVM is an evaluation module built to evaluate HD3SS6126 device and shows an application example of USB KVM switch. One of two USB hosts system can be selected for an USB device using this EVM board to facilitate switching between two USB hosts. The HD3SS6126 EVM will support USB3.0 signal switching if both the USB host and USB device/Hub supports USB3.0.

## 1.3 What does this EVM look like?

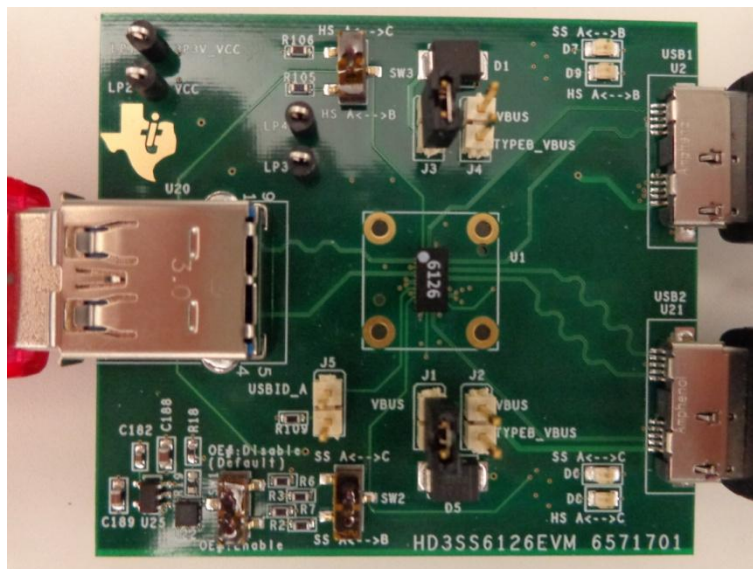
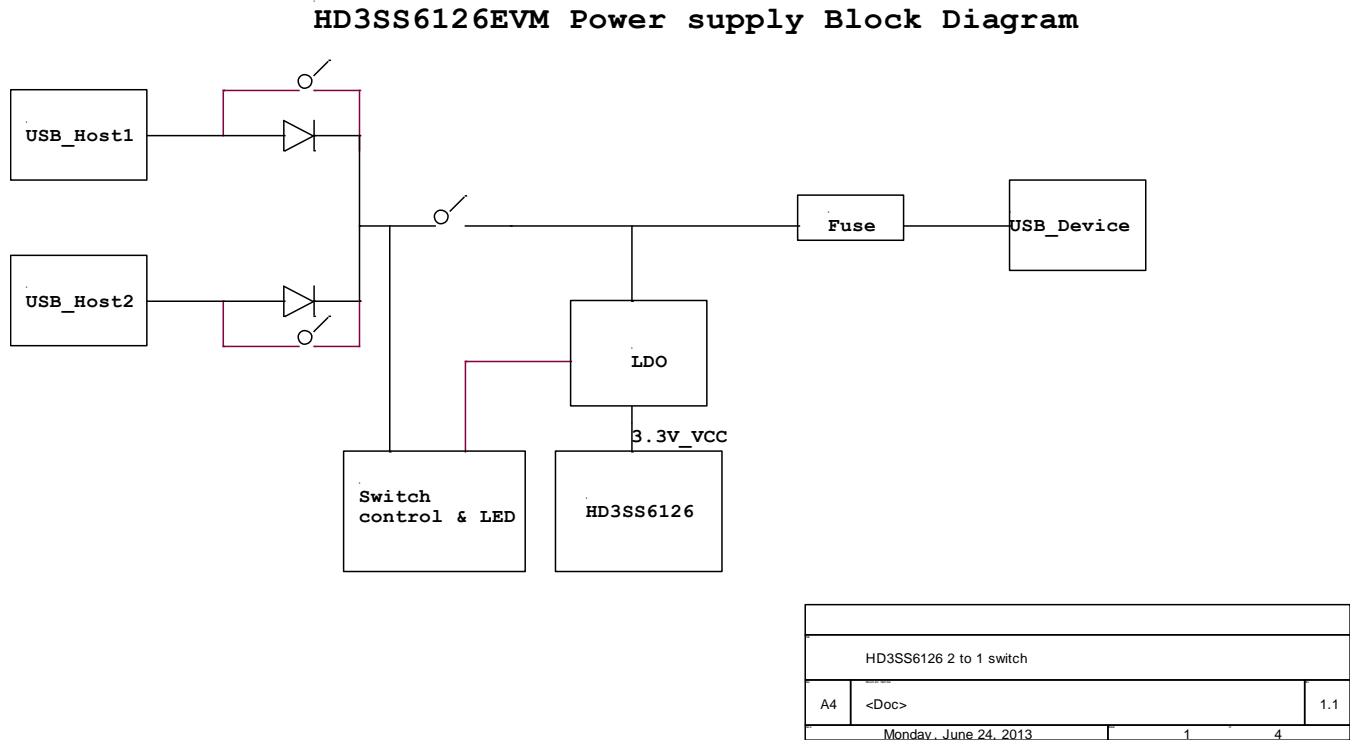


Figure 1 HD3SS6126 EVM

## 2 Hardware Description



**Figure 2 HD3SS6126 EVM Power Block Diagram**

### 2.1 Power supply

Power supplies for all the devices on the EVM board are derived from VBUS from USB Hosts. Low Ron power switch U22 is a low Ron PMOS Power switch is used to Enable/Disable the EVM and active the USB device during plug in the USB hosts. J1, J2, J3, J4 is used for test mode. R1, R20 together with LP1, LP2, LP3, LP4 are designed for the purpose of testing power consumption of the system devices or downstream USB device if needed.

### 2.2 USB Port connectors

USB3.0 Micro-B receptacles are employed on the host side USB Port but standard type-B receptacle can also be used if desired. On the other hand, USB3.0 standard type-A receptacle is used as device side USB Port. The USB ports can be attached via a standard USB cable to any USB 3.0 or legacy USB host, hub or device. However, a legacy USB cable will force the system to the High-speed operation.

## 2.3 LED Indicators

Table1 shows the function of the switches on the EVM. Note Mode 6 and Mode 7 is not legal per the USB3.0 protocol, so it is only used in lab (Fab test don't need to test these two modes).

Table1. Switchs and LED indicators function table

Mode	SW1	SW2	SW3	D6	D7	D8	D9	Function
1	2,3	1,2	1,2	×	×	×	×	Switch Disabled
2	2,3	1,2	2,3	×	×	×	×	Switch Disabled
3	2,3	2,3	1,2	×	×	×	×	Switch Disabled
4	2,3	2,3	2,3	×	×	×	×	Switch Disabled
5	1,2	1,2	1,2	Light	×	Light	×	AC channel USB3.0 selected
6	1,2	1,2	2,3	Light	×	×	Light	AC channel SS <sup>1</sup> path and AB channel Non-SS <sup>2</sup> path selected
7	1,2	2,3	1,2	×	Light	Light	×	AC channel Non-SS path and AB channel SS path selected
8	1,2	2,3	2,3	×	Light	×	Light	AB channel USB3.0 selected

1. SS: Super speed
2. Non-SS: High speed/Full speed/Low speed
3. ×: LED is out

### 3 Test Procedure

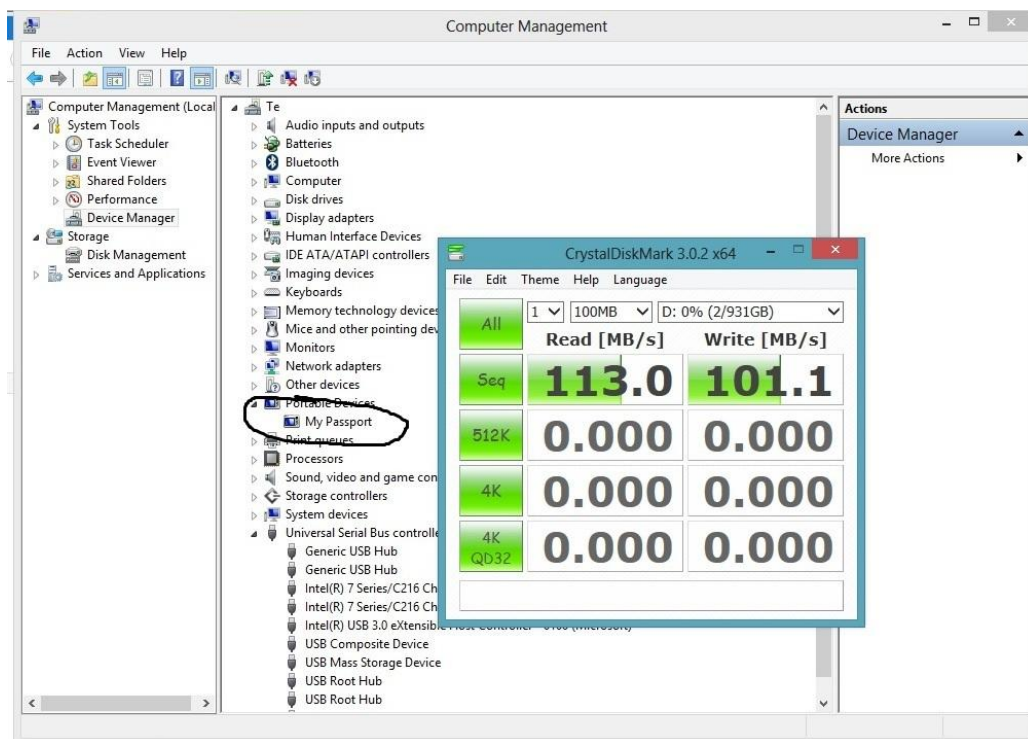
#### HD3SS6126 EVM Operation Test:

Below are the steps to working with the HD3SS6126EVM board:

1. Make sure the SW1 switches from Pin 2 to pin3 (Disable HD3SS6126); J1 and J3 are default shunted while J2 and J4 should be left open (J2 and J4 only used in lab test).
2. Plug in the USB device or USB hosts and then select the channel you want, but with the same SS path and Non-SS path by setting SW2 and SW3 according to Table 1.
3. Enable the HD3SS6126 by shunting the pin 1 and 2 of SW1.
4. After that, you should see the USB device in the device management of the PC selected as showed in Figure 3(In this example, My passport HDD was used as USB3.0 device). Use the CrystalDiskMark software to test the USB write and read speed (For USB3.0, both the write and read speed should be bigger than 50MB/s).
5. If everything goes well, the LEDs that indicate active of the selected channel will be light.
6. If you want to switch to another USB Host then disable the HD3SS6126 by shunting pin 2 and 3 of SW1 firstly and then go to the step 2.

#### **Note:**

**For the USB3.0 speed test, both the USB hosts and USB device should support USB3.0, otherwise, the system will force to a USB2.0 system.**



**Figure 3 HD3SS6126 EVM Function and Speed test**



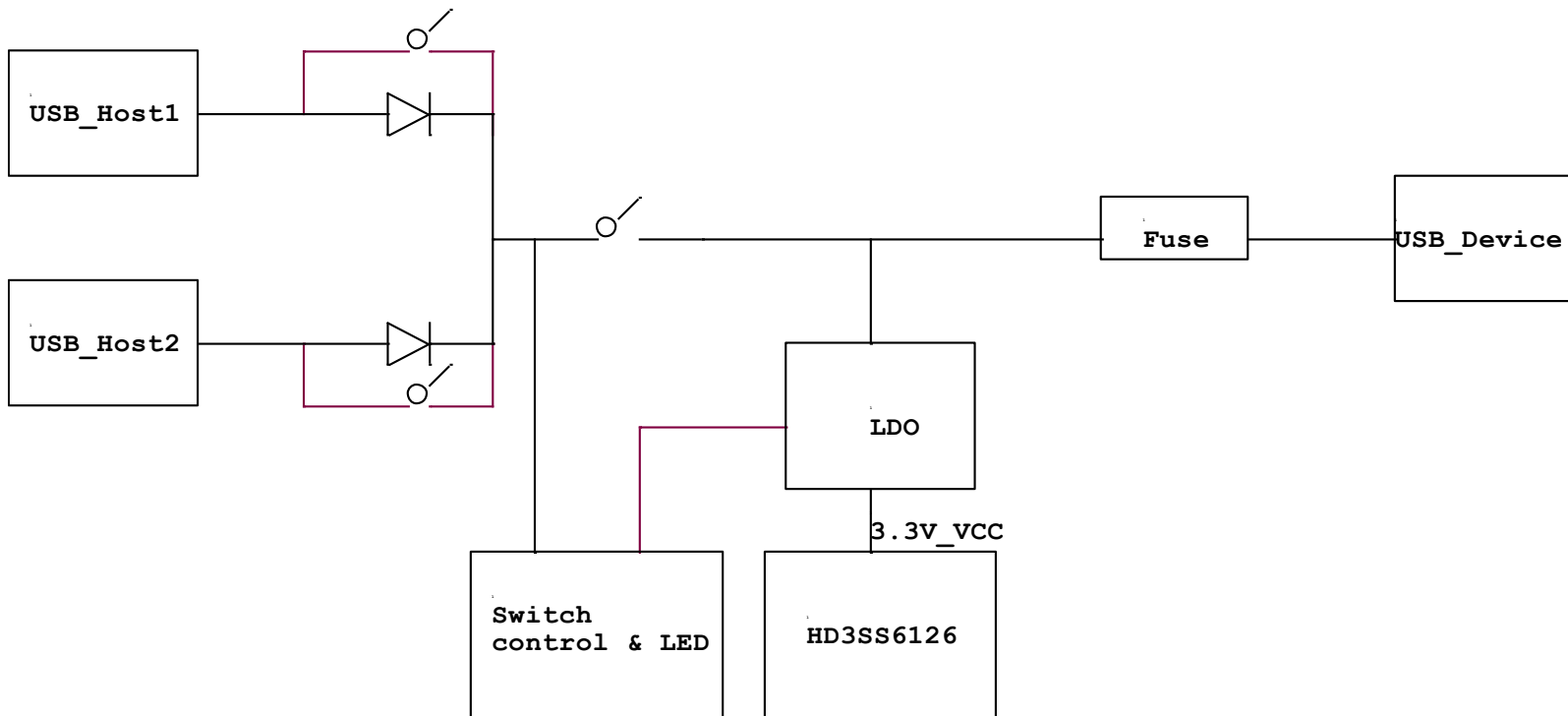
## 4 References

1. HD3SS6126 Datasheet

## 5 EVM Schematics

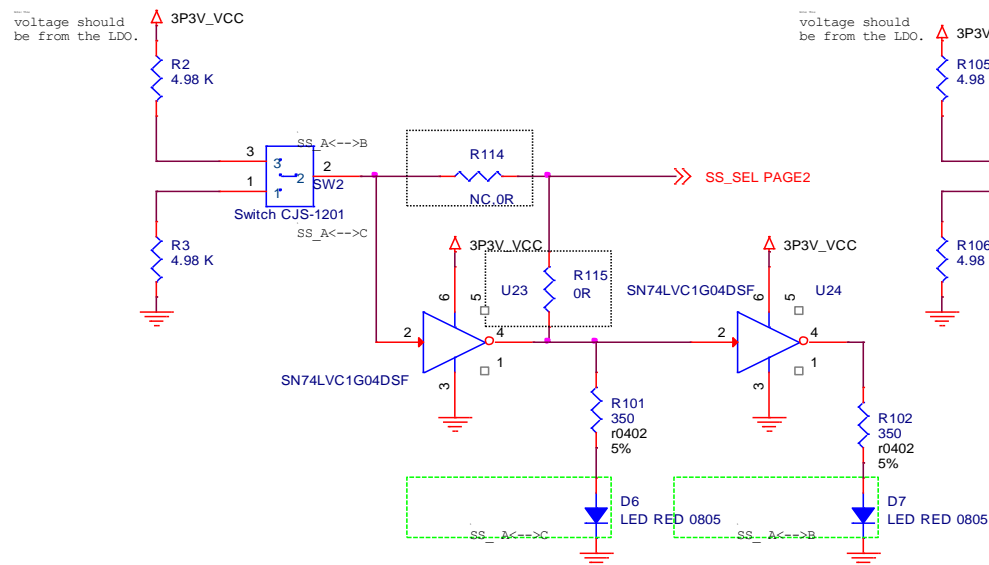
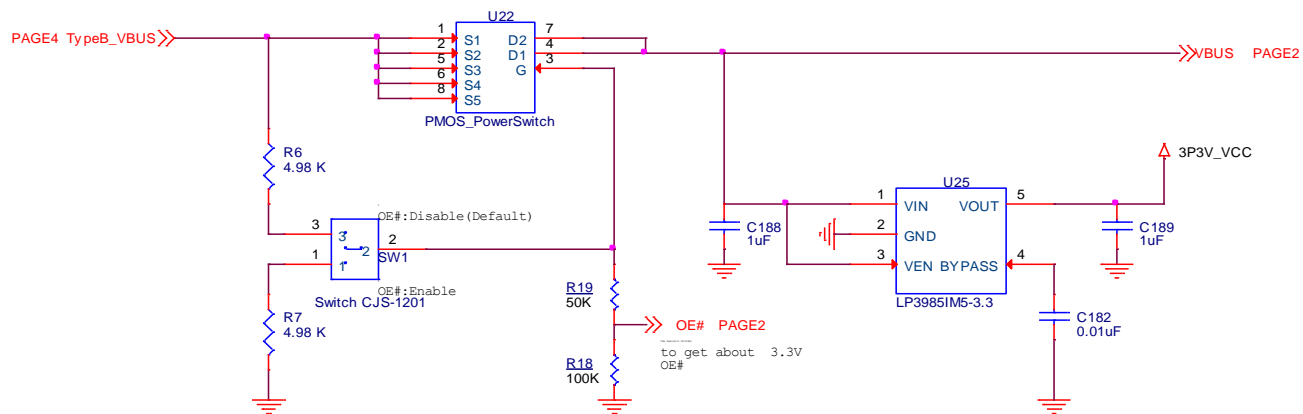
Following pages contain schematics for the HD3SS6126 EVM.

## HD3SS6126EVM Power supply Block Diagram

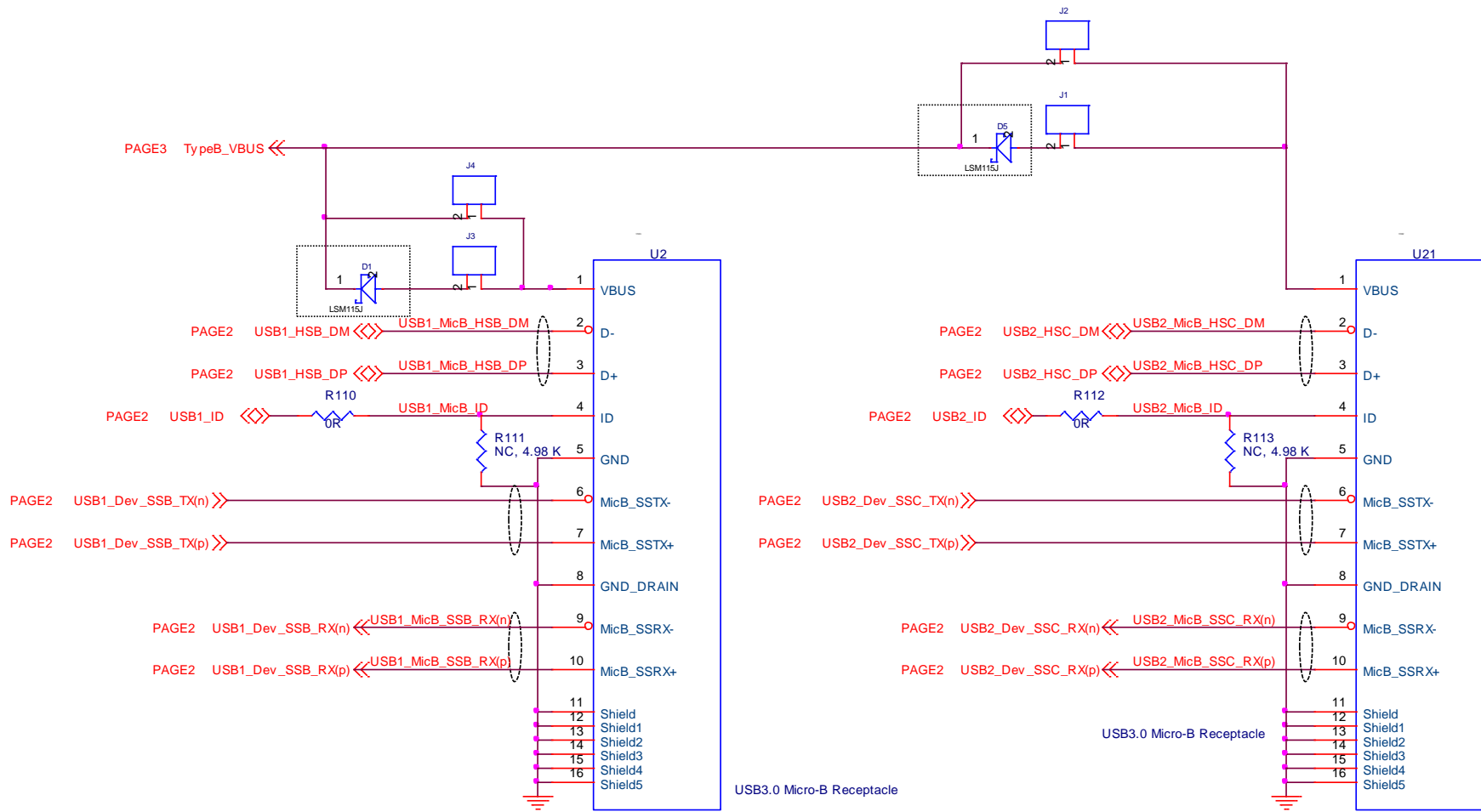


HD3SS6126 2 to 1 switch		
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