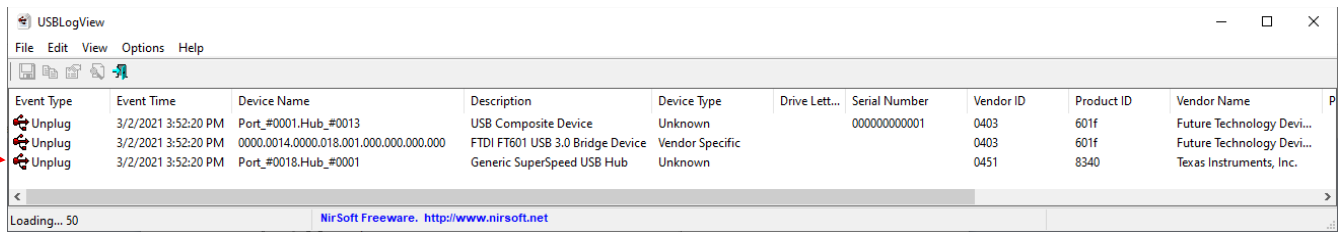


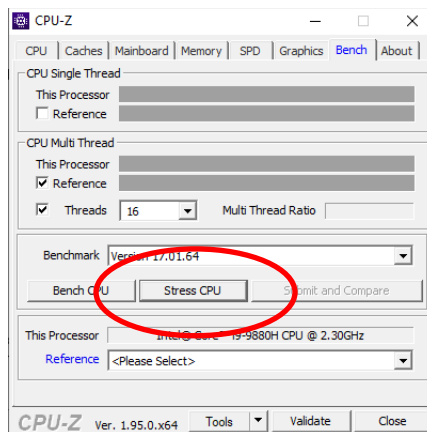
Problem Statement:

The USB 3 Hub inside the USB3 DMD occasionally drops from Windows as shown below:



Event Type	Event Time	Device Name	Description	Device Type	Drive Lett...	Serial Number	Vendor ID	Product ID	Vendor Name
Unplug	3/2/2021 3:52:20 PM	Port_#0001.Hub_#0013	USB Composite Device	Unknown		000000000001	0403	601f	Future Technology Devi...
Unplug	3/2/2021 3:52:20 PM	0000.0014.0000.018.001.000.000.000.000	FTDI FT601 USB 3.0 Bridge Device	Vendor Specific			0403	601f	Future Technology Devi...
Unplug	3/2/2021 3:52:20 PM	Port_#0018.Hub_#0001	Generic SuperSpeed USB Hub	Unknown			0451	8340	Texas Instruments, Inc.

1. This can be replicated on the test bench by running a free program called CPU-Z in "Stress CPU" mode.



2. When tested this way, the problem happens within a few minutes with the BSN0011 Berkcom PC with a K1200 or P1000 GPU card. It also happens without a GPU card with the USB connected to the motherboard but seems less frequent. The USB dropout also occurs with the Dell 3430 with a GPU card, but seems to fail less frequently.
3. The signal VBUS going low usually is what causes an USB Unplug event when the USB cable is disconnected. However, on the test bench, the critical VBUS signal does not go low or have any noise.
4. This also happens when using the TI reference design (PN: TUSB8044AEM) so this indicates a problem with the hub chip.

