

Instructions to Run Data Pattern Test (USB 3.2 Tunneling) on a USB4 Host

Test Topology:

USB4 Host (UUT: Unit Under Test) -----USB4 Hub (Satechi USB4 Hub-TYPE A) -----
SuperMUTT

Cable: From UUT to USB4 Hub -->use 0.8m ACCELL cable (USB4 cable)

Step 1: Check Link after connecting the Topology.

- Check the Link to ensure **USB4 Mode** between USB4 Host and USB4 Hub.
- Check the link between DFP of USB4 Hub and SuperMUTT is **SuperSpeed**.

Step 2: Download MUTT Software Package and Install it on USB4 Host (UUT) System.

Download MUTT Software Package and install package from Microsoft website.

<https://learn.microsoft.com/en-us/windows-hardware/drivers/usbcon/mutt-software-package#download-mutt-software-package>

Download MUTT Software Package

The Microsoft USB Test Tool (MUTT) software package contains test tools for hardware test engineers to test interoperability of their USB controller or hub with the Microsoft USB driver stack. The included documentation provides a brief overview of the different types of MUTT hardware and suggests topologies for controller, hub, device, and BIOS/UEFI testing. The documentation also contains procedural information about how to run the tests, trace events in the USB driver stack, and capture information in the kernel debugger.

[Download the mutt software package.](#)

Step 3: Check location of USBTest Folder.

For x86→ it will be installed in “Program Files\USBTest”

For x64→ it will be installed in “Program Files (x86)\USBTest”

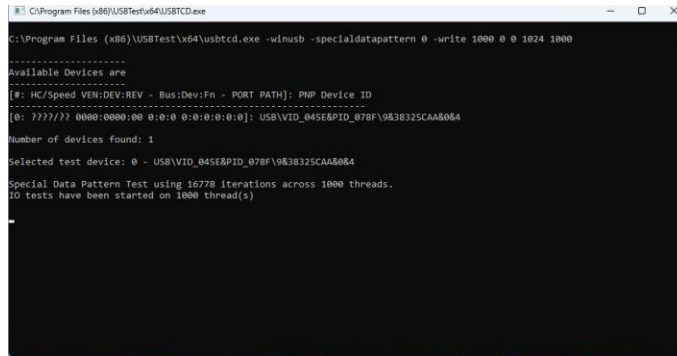
Step 4: Run the program from Command Line.

- Open “command prompt”
 - Open the **Start** menu or press the **Windows key + R**.
 - Type **cmd** or **cmd.exe** in the Run command box.
 - Press **Enter**.
- Change Directory to “USBTest\x64” OR “USBTest\arm” OR “USBTest\x86” Folder
 - Example (on x64 system): **cd C:\Program Files (x86) \USBTest\x64**

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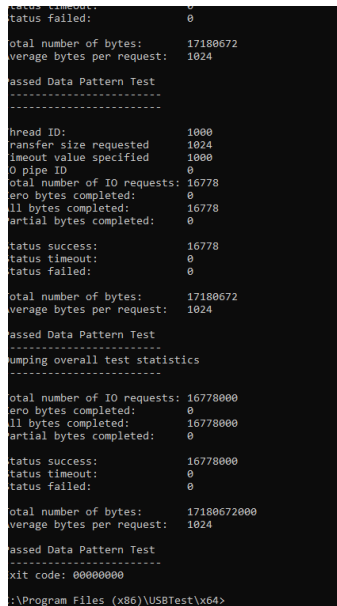
- Example (on arm system): `cd C:\Program Files (x86) \USBTest\arm`
- Type the below command and hit Enter:
 - `usbtdc.exe -winusb -specialdatapattern 0 -write 1000 0 0 1024 1000`

Below is an example screenshot of the output after Hitting Enter



```
C:\Program Files (x86)\USBTest\usb64\USBTD.exe
C:\Program Files (x86)\USBTest\usb64\usbtdc.exe -winusb -specialdatapattern 0 -write 1000 0 0 1024 1000
-----
Available Devices are
-----
[#: HC/Speed VEN:DEV:REV - Bus:Dev:Fm - PORT PATH]: PNP Device ID
-----
[0: 7777?? 0000:0000:00 0:0:0 0:0:0:0:0]: USB\VID_045E&PID_078F\9838325CAA&0864
Number of devices found: 1
Selected test device: 0 - USB\VID_045E&PID_078F\9838325CAA&0864
Special Data Pattern Test using 16778 iterations across 1000 threads.
10 tests have been started on 1000 thread(s)
```

Below is an example screenshot of the output after Test is completed and PASS



```
status timeout: 0
status failed: 0
total number of bytes: 17180672
average bytes per request: 1024
PASSED Data Pattern Test
-----
hread ID: 1000
transfer size requested 1024
timeout value specified 1000
0 pipe ID 0
total number of IO requests: 16778
zero bytes completed: 0
all bytes completed: 16778
partial bytes completed: 0
status success: 16778
status timeout: 0
status failed: 0
total number of bytes: 17180672
average bytes per request: 1024
PASSED Data Pattern Test
-----
umping overall test statistics
-----
total number of IO requests: 16778000
zero bytes completed: 0
all bytes completed: 16778000
partial bytes completed: 0
status success: 16778000
status timeout: 0
status failed: 0
total number of bytes: 17180672000
average bytes per request: 1024
PASSED Data Pattern Test
-----
xit code: 00000000
.: \Program Files (x86)\USBTest\usb64>
```

NOTE: If the TEST FAILS--> it will show a different output depending on the Failure Mode.