

\*\*\*\*\*Default\*\*\*\*\*

## Using module usbmon with with Wireshark to Examine what is sent to pico using picotool 05/16/22

\*\*\*\*\*Default\*\*\*\*\*

Found at the site

<https://technolinchpin.wordpress.com/2015/10/23/usb-bus-sniffers-for-linux-system/>

### **sudo apt-get install wireshark**

Should non-superusers be able to capture packets?

### **sudo lsmod | grep -i usbmon**

```
usbmon          32768  0
```

sudo or as root **modprobe usbmon**

### **sudo or as root wireshark**

```
devel@pi4-27:~/rp2040-freertos-project/build/test-read $ sudo ~/picotool/build/picotool  
load -f -v test-read.elf
```

The device was asked to reboot into BOOTSEL mode so the command can be executed.

```
Loading into Flash: [=====] 100%
```

```
Verifying Flash:  [=====] 100%
```

```
OK
```

The device was asked to reboot back into application mode.

In the file “~/rp2040-freertos-project/doc/wireshark/w-vusbmon0.pcapng”  
starting at time 159 7.964170 host 1.72.0 to 830 9.822218.

image 0

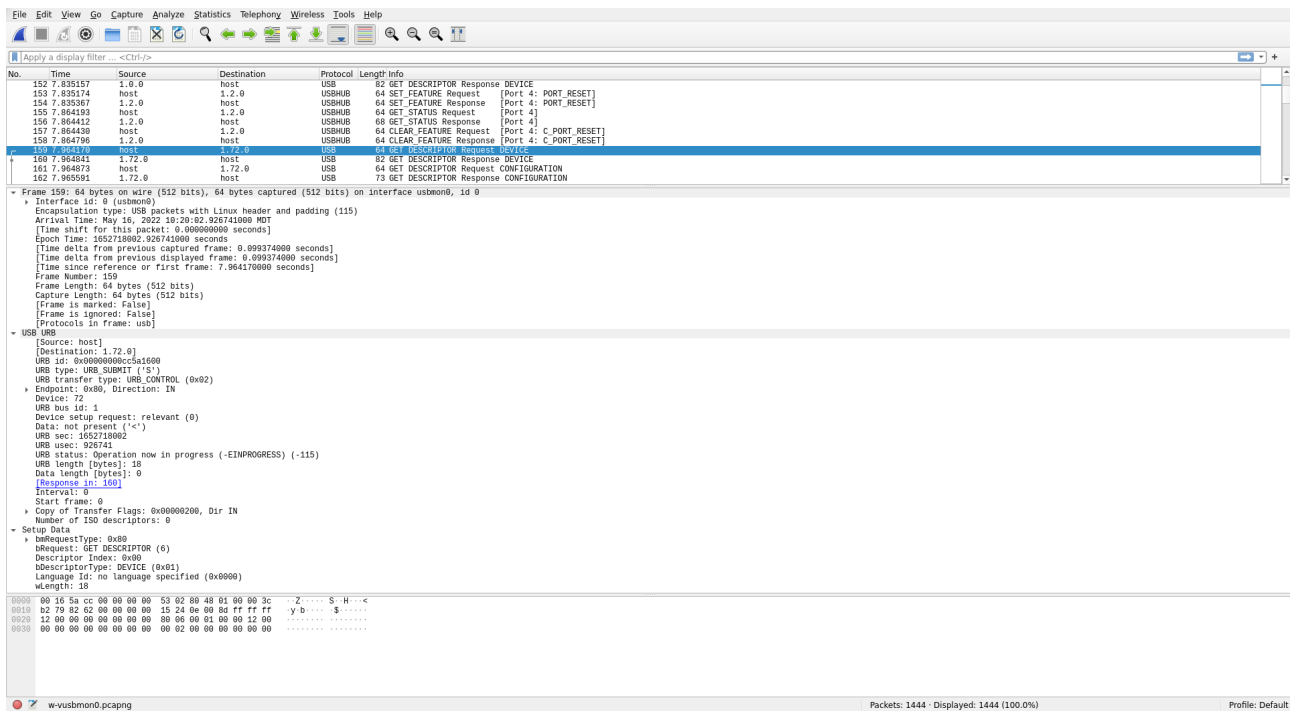


image 1

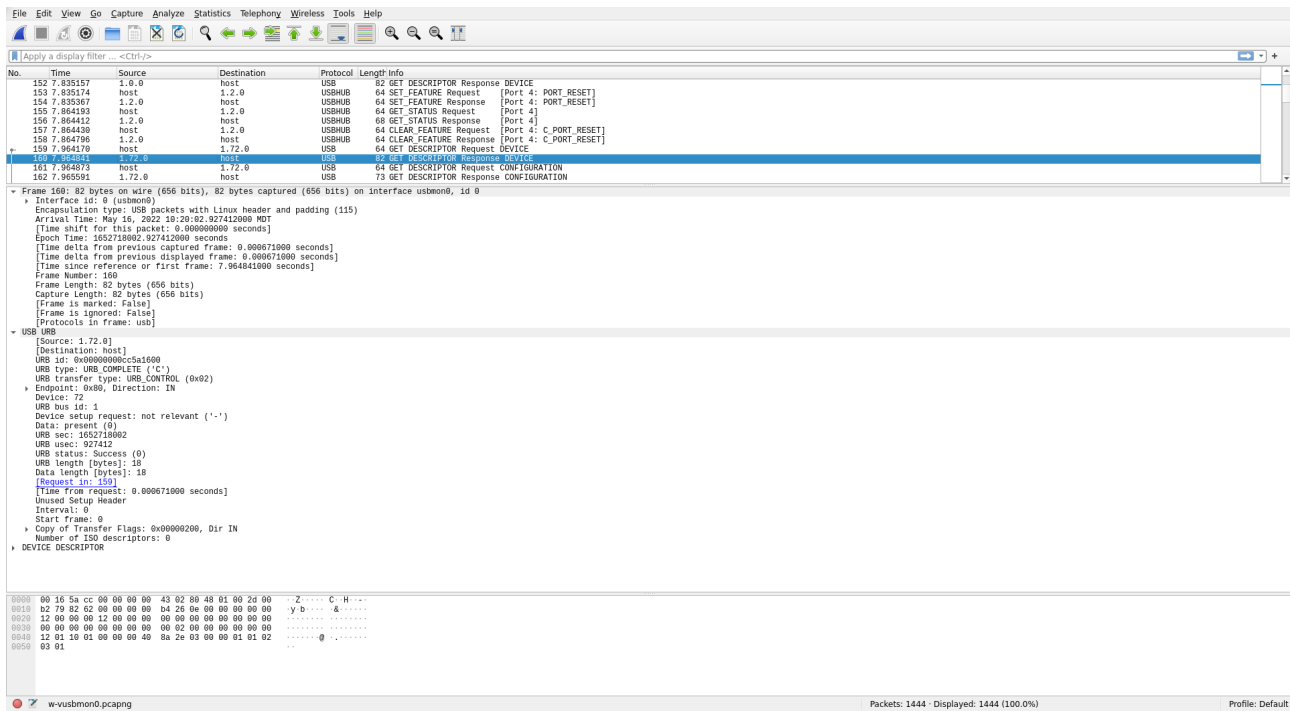


image 2

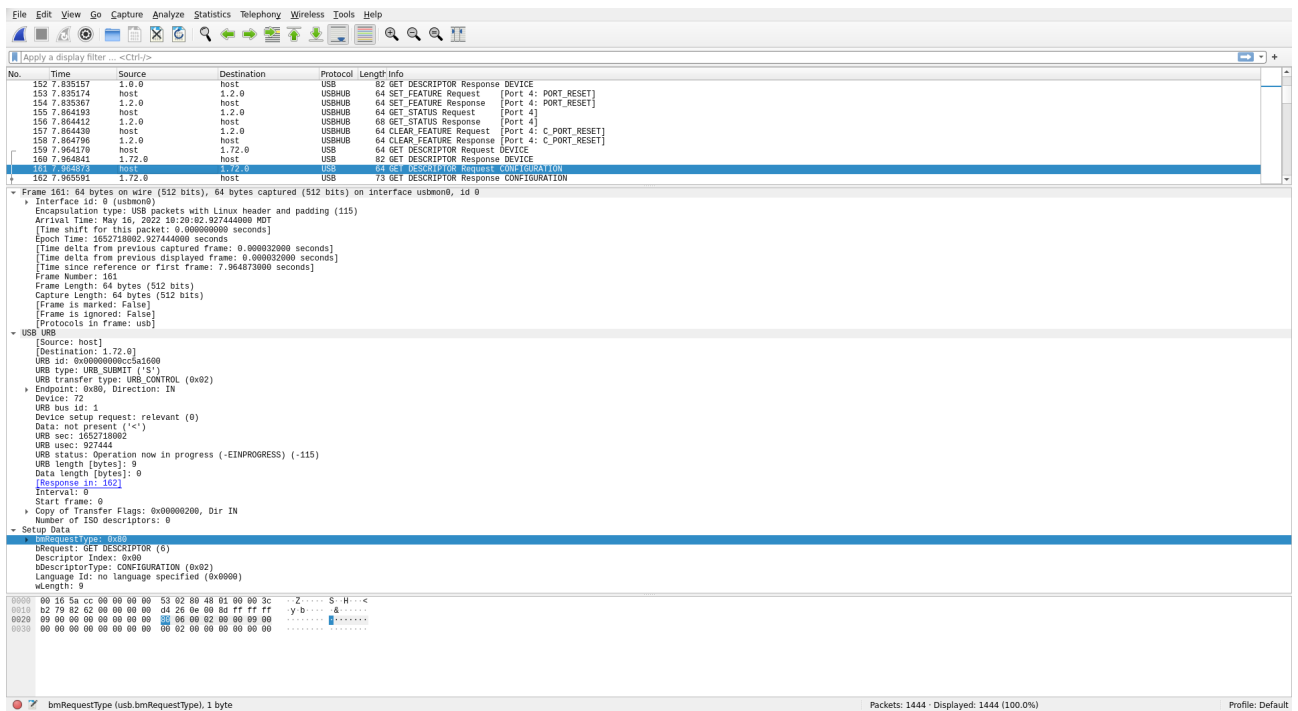


image 3

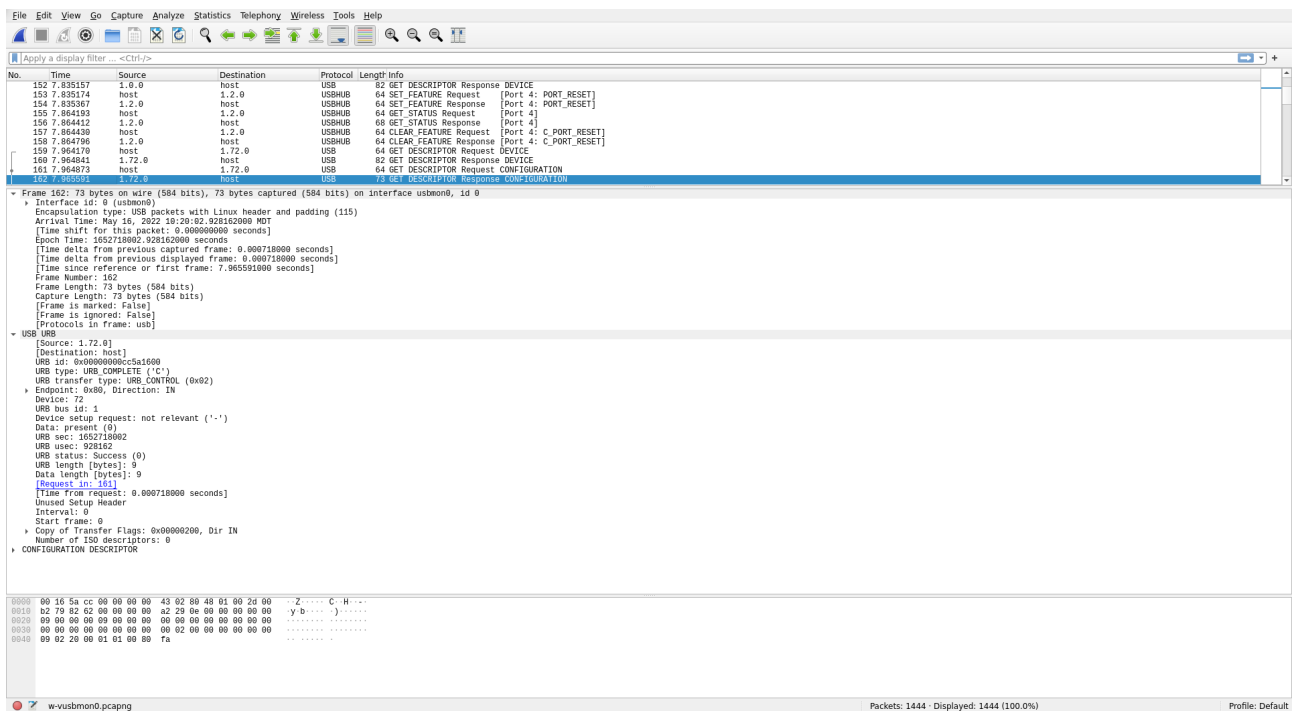


image 4



FileEditViewGoCaptureAnalyzeStatisticsTelephonyWirelessToolsHelp

Apply a display filterCtrl-Shift-F

No.	Time	Source	Destination	Protocol	Length	Info
150	7.864193	host	1.2.0	USBHUB	64	GET STATUS Request [Port 4]
156	7.864412	1.2.0	host	USBHUB	68	GET STATUS Response [Port 4]
157	7.864439	host	1.2.0	USBHUB	64	CLEAR_FEATURE Request [Port 4: C_PORT_RESET]
158	7.864706	1.2.0	host	USBHUB	64	CLEAR_FEATURE Response [Port 4: C_PORT_RESET]
159	7.864170	host	1.72.0	USB	64	GET_DESCRIPTOR Request DEVICE
160	7.864841	1.72.0	host	USB	82	GET_DESCRIPTOR Response DEVICE
161	7.864873	host	1.72.0	USB	64	GET_DESCRIPTOR Request CONFIGURATION
162	7.865591	1.72.0	host	USB	73	GET_DESCRIPTOR Response CONFIGURATION
163	7.865686	host	1.72.0	USB	64	GET_DESCRIPTOR Request CONFIGURATION
164	7.866342	1.72.0	host	USB	96	GET_DESCRIPTOR Response CONFIGURATION

1597.8655930.291.0.0USB 64GET\_DESCRIPTOR Request CONFIGURATION

Frame 165: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface usbmon0, id 0

Interface id: 0 (usbmon0)

Encapsulation type: USB packets with Linux header and padding (115)

Arrival Time: May 16, 2022 18:20:02.828934908 MDT

[Time shift for this packet: 0.000000000 seconds]

Epoch Time: 1652718902.828934908 seconds

[Time delta from previous captured frame: 0.000021908 seconds]

[Time delta from previous displayed frame: 0.000021908 seconds]

[Time since reference or first frame: 7.866383000 seconds]

Frame Number: 165

Frame Length: 64 bytes (512 bits)

Capture Length: 64 bytes (512 bits)

[Frame is marked: False]

[Frame is ignored: False]

[Protocols in frame: usb]

USB USB

[Source: host]

[Destination: 1.72.0]

USB id: 0x00000000cc5a1600

USB type: USB\_SETUP ('S')

USB transfer type: USB\_CONTROL (0x02)

Endpoint: 0x00, Direction: IN

Device: 72

USB bus id: 1

Device setup request: relevant (0)

Data: not present ('<')

USB spec: 1652718902

USB usec: 928934

USB status: Operation now in progress (-EINPROGRESS) (-115)

USB length [bytes]: 255

Data length [bytes]: 0

[Response in: 166]

Interval: 0

Start frame: 0

Copy of Transfer Flags: 0x00000200, Dir IN

Number of ISO descriptors: 0

Setup Data

bmRequestType: 0x00

bmRequest: GET\_DESCRIPTOR (0)

Descriptor Index: 0x00

DescriptorType: STRING (0x03)

Language Id: no language specified (0x0000)

wLength: 255

0000 00 10 5a cc 00 00 00 00 53 02 80 48 01 00 00 3c -Z-----S-H---<

0010 b2 73 82 62 00 00 00 00 a6 2c 0e 00 6d ff ff ff y b-----

0020 ff 00 00 00 00 00 00 00 00 00 03 00 00 ff 00 -----[-----

0030 00 00 00 00 00 00 00 00 00 02 00 00 00 00 00 -----

bmRequestType (usb.bmRequestType), 1 byte

Packets: 1444 - Displayed: 1444 (100.0%)

Profile: Default