How can I use the PowerDebug X51 to remotely control the target's serial terminal?

2025-04-22 - Comments (0) - Setup / update

Especially if your target is running a rich operating system like Linux, you may need to interact with its serial terminal to properly launch and debug your application. When your target board is located in a remote lab, the **PowerDebug X51** can act as a remote serial interface, allowing you to access the target's terminal from your host PC.

Note

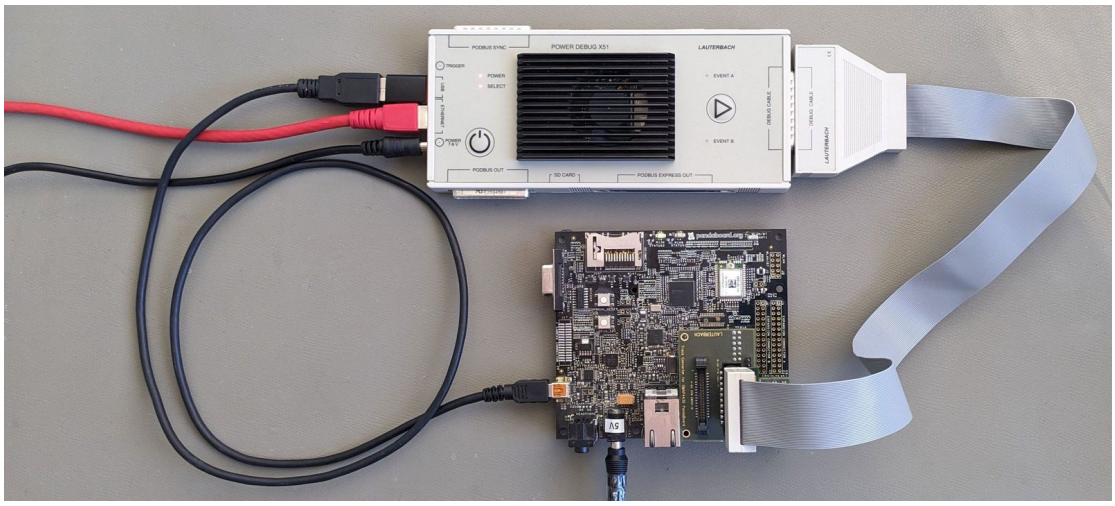
This feature requires TRACE32 release **R.2025.02 or later**.

Step-by-Step Instructions

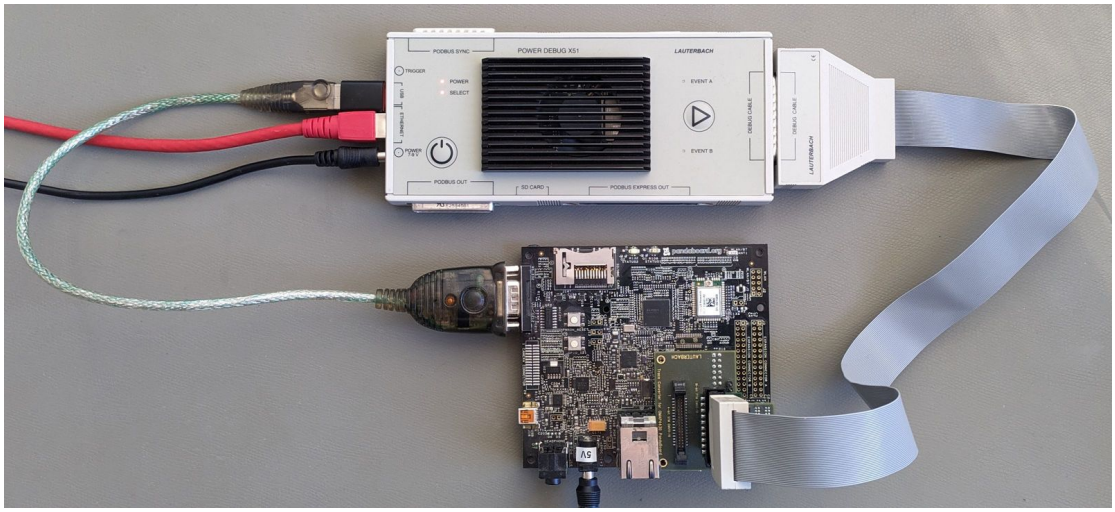
1) Connect the Hardware

- Connect the **PowerDebug X51** to your host PC via Ethernet.
- Connect the target’s serial interface to the USB-C port on the **PowerDebug X51**.

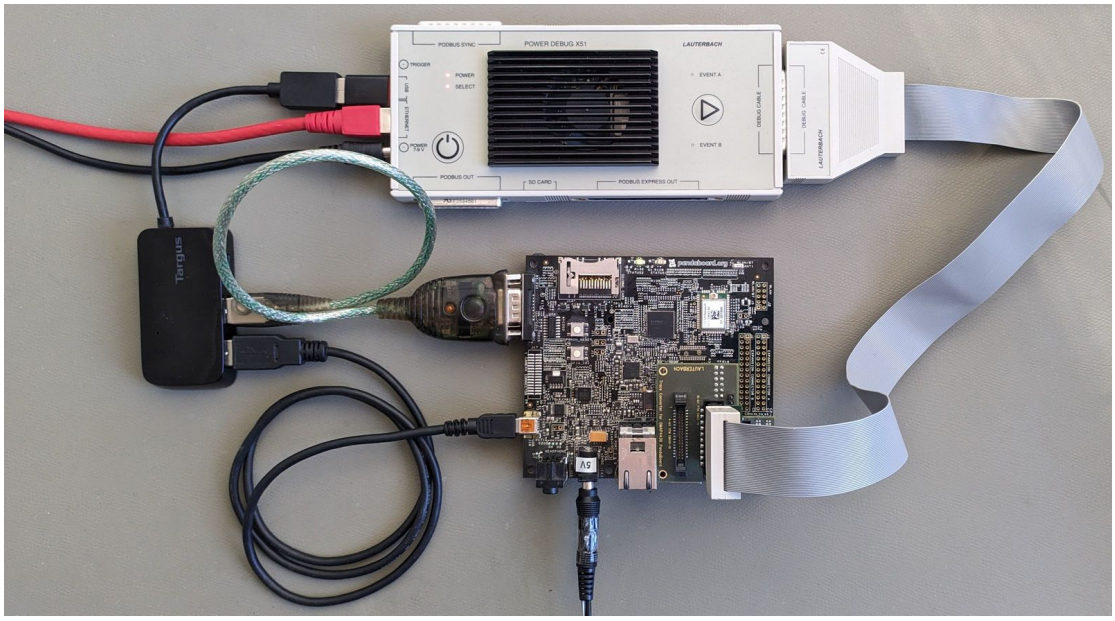
Most modern boards already integrate an RS-232 to USB converter. In that case, a standard USB cable is sufficient:



If your target board only has a classic RS-232 (9-pin) port, you will need a USB-to-Serial adapter:



A USB hub can be used if you want to connect multiple serial ports simultaneously:

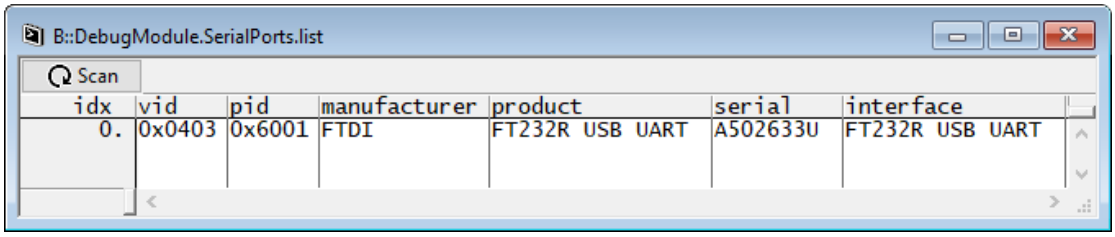


2) Detect Serial Ports

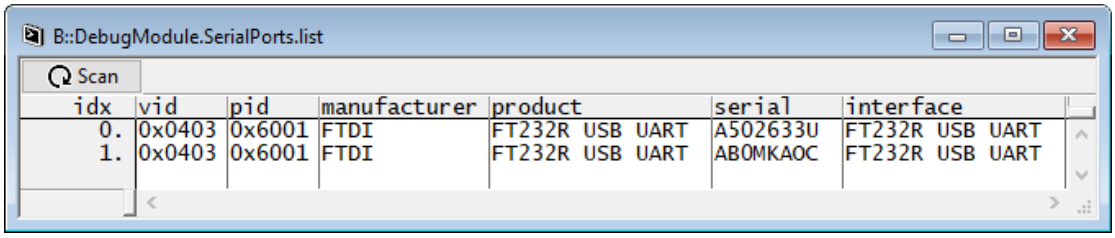
Launch TRACE32 PowerView then the following command to list the connected serial ports:

```
DebugModule.SerialPorts.list
```

This will display all serial ports detected by the **PowerDebug X51**. Note the **index** (idx) of the port you wish to use from the first column.



If you have more than one serial port connected to your PowerDebug X51 (via a USB hub), then you will see more than one device:



Remember the index of the terminal you want to control from the first column labeled “idx”.

If your serial port is not listed:

- Close PowerView and disconnect the **PowerDebug X51** from its power supply.
- Reconnect the power supply, restart PowerView, and run `DebugModule.SerialPorts.list` again.
- Verify that the serial port works when connected directly to a PC.
- Try using a different USB-to-Serial adapter.
- Contact Lauterbach Technical Support if the issue persists.

3) Configure the Terminal

Use the index of your serial port to configure the terminal in PowerView.
For example, if the device uses 115200 baud, 8 data bits, no parity, and 1 stop bit:

```
TERM.METHOD #1 DebugModule &i 115200 8 NONE 1STOP NONE
TERM.Mode #1 VT100
TERM.SIZE #1 80. 100. 2000.
```

Note

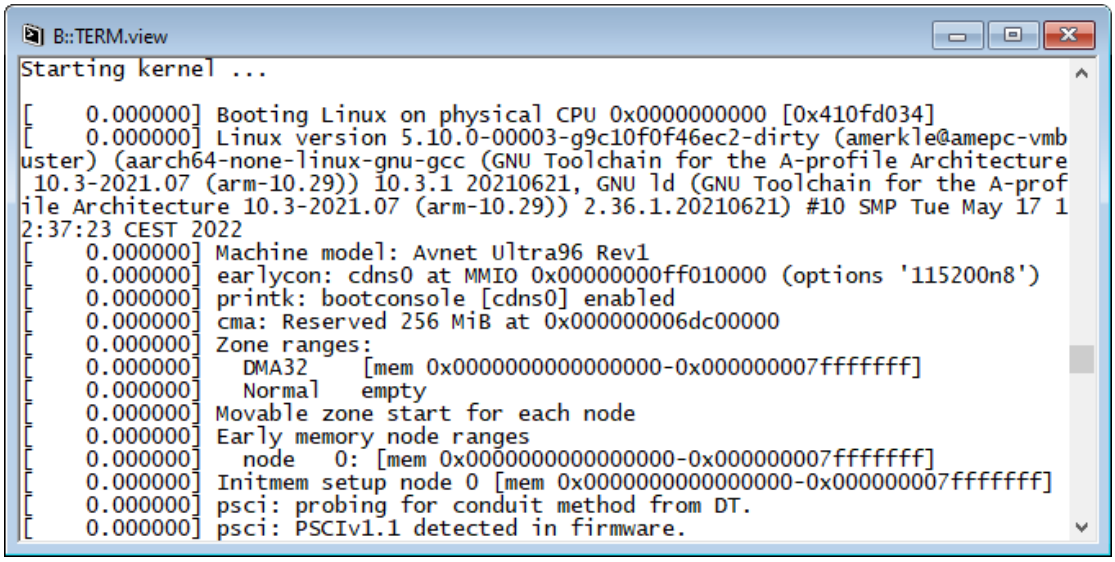
For more details on `TERM.METHOD` see the General Commands Reference Guide T.

4) Open the Terminal Window

To display the serial terminal use the command

`TERM.view`

If the target is running Linux, you should now see the boot log or shell prompt in the terminal window:



Optional: Select a Port by Serial Number

If you are using multiple serial ports, you can automatically select the correct port based on its serial number using a PRACTICE script like the following:

```
DebugModule.SerialPorts.SCAN     // Detect all serial ports
PRIVATE &idx
&idx=0.
WHILE   &idx<DebugModule.SerialPorts.COUNT()
(
    IF "DebugModule.SerialPorts.INFO(&idx,"serial")"=="A502633U"
    (
        // Found port with serial number "A502633U" => show that erminal
        TERM.METHOD #1 DebugModule &idx 115200 8 NONE 1STOP NONE
        TERM.Mode #1 VT100
        TERM.SIZE #1 80. 100. 2000.
        TERM.view
    )
    &idx=&idx+1.
)
```