

USB Driver:

In order for Windows to recognize the device the USB driver must first be installed, after which it appears as an additional COM port on the computer.

1. Copy the file "cdc_NTXPV764.inf" from the supplied CD to the hard drive.
2. Plug the unit into a free USB port. When the hardware installation wizard asks for the driver location, browse to the "cdc_NTXPVista.inf" file on the hard drive.
3. After the driver has been installed right click "my computer" and select "properties". In the properties window select the "hardware" tab. Click on "device manager" and expand the "Ports (COM & LPT)" item. Locate the "Spectronix, Inc." entry and note the assigned COM number, (ie "COM4"). This is the COM port that the software will use to communicate with the Quad Cell Viewer.

Note, on some operating systems such as Window 7, manual USB driver installation may be necessary. If the hardware installation wizard fails, go to "My Computer" > "Properties" > "Hardware" > "Device Manager", and find the "Spectronix" or "SERIAL DEMO" entry under "Other Devices" and select "Update Driver". At this point you will be able to browse to the location of the driver.

USB Commands:

The device uses ASCII data to communicate with a host computer; the tables below list the individual commands, parameters, and responses from the unit.

Notes:

1. All communication is initiated by the host.
2. Text is not case sensitive.
3. A space should be inserted between the command and any parameters.
4. All commands should be terminated with <CR>, <LF>, or both.
5. Responses from the OTM are framed using a binary 0x00 character (start) and terminated with 0x0D0AFF (<CR><LF>0xFF). These framing bytes are not shown in the tables below.
6. Response parameters are variable width, may contain white spaces, and are separated by commas.
7. For the descriptions below, values inside quotations (") are literal ASCII values, text inside brackets ([]) are variable ASCII values, and values inside <> are binary values.

Example Command / Response:

Command set the laser power:

Command: **SetLaserdBm -5 0<CR><LF>**

Get Unit Information	
Command:	Description:
"?"	

<u>Response:</u>	<u>Description:</u>
"?"	Echo command
"100529A"	Unit name (fixed)
[major.minor]	Firmware version
<i>Example:</i>	
<i>Notes:</i>	

Zero the laser power	
<u>Command:</u>	<u>Description:</u>
"ZeroLaser"	
<u>Response:</u>	<u>Description:</u>
<i>Example:</i>	
<i>Notes: Connect the laser output directly to the power meter port and execute this command. The laser will automatically be adjusted for 0dBm. The calibration will be stored and used to adjust the laser power. This takes about 2S, during which time the unit will be unresponsive.</i>	

Set the laser power level	
<u>Command:</u>	<u>Description:</u>
"SetLaserdBm"	
[value]	dBm (-10:0 in 1dB steps)
<u>Response:</u>	<u>Description:</u>
<i>Example: "SetLaserdBm -5" (sets the laser to -5dBm)</i>	
<i>Notes: The laser must be zero'd before using this command. Any value other than zero is an approximation.</i>	

Calibrate the VOA	
<u>Command:</u>	<u>Description:</u>
"CalVOA"	
<u>Response:</u>	<u>Description:</u>
<i>Example:</i>	
<i>Notes: Connect the laser output (or other stable 0dBm source) to the VOA input, connect the VOA output to the power meter port, and execute this command. The tester will build a look up</i>	

table

Calibrate the Power Meter

Command:

Description:

"CalOPM"

Response:

Description:

Example:

Notes: Calibrates the low power end of the OPM dynamic range.

Set the laser power to 0dBm. Connect the laser output to the VOA input and the VOA output to the power meter input using external attenuators so that the power meter reads between -80 and -75dBm. Due to the large amount of attenuation and the low power levels, it's suggested to split the attenuation equally between the four ports.

Set the relative VOA attenuation

Command:

Description:

"SetVOAdB"

[value]

Relative attenuation in dB*10 (0:400 in 1dB steps)

Response:

Description:

Example: "SetVOAdB 125" (sets the attenuation to 12.5dB relative to its insertion loss)

Notes: The VOA must first be calibrated.

Set the power meter filtering

Command:

Description:

"SetFilter"

[value]

value (see below)

Response:

Description:

Example: "SetFilter 1920" (sets the filtering to normal, 10SpS)

"SetFilter 384" (sets the filtering to fast, 50 SpS)

Notes:

Read power measurements

<u>Command:</u>	<u>Description:</u>
"Read" or "ReadNew"	
<u>Response:</u>	<u>Description:</u>
[mode]	'r'= run, 'v'= calibrating VOA
[laser power]	Laser power setting (dBm)
[attenuation]	VOA attenuation (dB)
[meas power]	Measured optical power (dBm)
[min atten]	Minimum VOA attenuation (dB)
[max atten]	Maximum VOA attenuation (dB)
[ADC value]	Raw ADC value (24 bits)
<i>Example:</i>	
<i>Notes: "Read" returns power readings immediately, "ReadNew" waits until new measurements has been taken before returning. "ReadNew" commands received before a previous one has been serviced will be ignored.</i>	

Read laser and VOA calibration values	
<u>Command:</u>	<u>Description:</u>
"ReadCal"	
<u>Response:</u>	<u>Description:</u>
[Laser zero]	Laser DAC value at 0dBm (16bits)
[VOA Min IL]	CSV list of insertion loss values (dB) and their corresponding DAC drive level (16bits). List of 410 entries at 0.1dB increments.
<i>Example:</i>	