

PPCL5xx Quick Start Guide

GENERAL

The Pure Photonics' PPCL500 and PPCL550 are high performance tunable laser modules with narrow intrinsic linewidth, ultra-low low-frequency noise and special performance features.

The product has an integrated communications interface (typically micro-USB) and built-in -5.2V and +3.3V power supplies. The customer will only need to connect the inputs (power and communications) and ensure mechanical heatsinking.

POWER INPUT

Barrelplug. Input voltage 10V-25V

COMMUNICATIONS

Micro-USB: the micro-USB interface will install as a virtual COM port and can be operated as a serial interface. It will only be recognized when the module is powered.

MECHANICAL INTERFACE

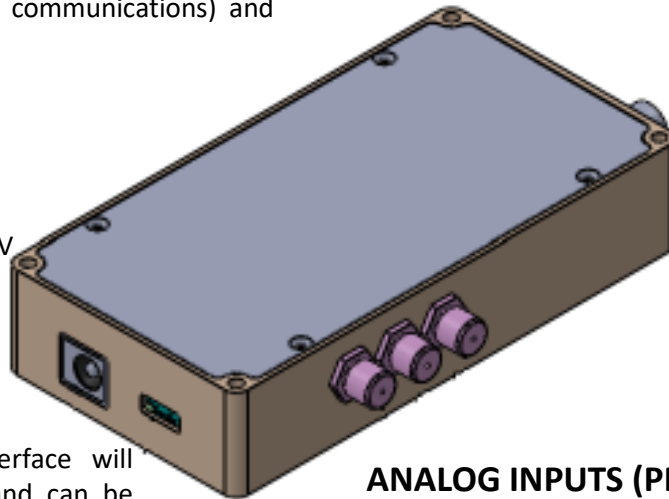
A heatsink is required. **Do not operate the unit without a method to remove heat from the module.** This can be achieved with air-flow (for low-load applications) or by mounting on a larger heatsink (with the 4 M2 mounting holes).

MICRO-USB INTERFACES

As the USB interface is not optimal for serial communication, it is important to set the latency time of the interface to 1ms (see instructions in section 4 of the feature guide). Especially when performing a firmware upgrade this is critical.

The micro-USB interface should be recognized and installed as a virtual COM port. If the interface is not recognized, you may need to install the VCP driver from FTDI.

PPCL550 with 3 analog inputs



OPTICAL OUTPUT

Bulkhead FC/(A)PC or pigtail with custom connector type (2mm cable, 3mm cable or 900um tubing)

ANALOG INPUTS (PPCL550 only)

Up to 3 SMA connectors for analog inputs. Custom assigned functionality (FM modulation, AM modulation, Clean measurement (2 channels))

Pure-Photonics.com

+1 (510) 497 0815

Customer_Service@pure-photonics.com

FEATURES

The Pure Photonics tunable laser module can be configured with a range of advanced features:

- **Output Power:** 13.5dBm (standard) up to 18dBm
- **Frequency Range:** 38 nm (standard) up to 60nm in 1515-1580 and 1560-1625nm range
- **Clean Sweep:** continuous single-mode modulation around a frequency setpoint. Magnitude up to 250GHz Speed up to 40GHz/sec
- **Clean Jump:** any-to-any frequency jump. Speed between 0.3 and 1 seconds (depends on target)
- **Clean Scan:** wider frequency range scan with sweeps of 100GHz, separated by jumps
- **Low RIN configuration:** reduced AM (<155dB/Hz) and FM (to intrinsic level) noise for > 50kHz
- **AM Modulation:** analog modulation of the drive current. Bandwidth 1MHz
- **FM Modulation:** analog modulation of the frequency. Bandwidth DC-100kHz, 100MHz pk-pk
- **Clean Measurement:** analog input into the micro-processor. Behavior depends on firmware (up to 2 channels)

TYPICAL DATASHEET

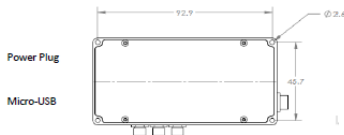


PPCL550 - Tunable Laser Module

www.pure-photonics.com (support section for downloads and application notes)

| | |
|------------------|---------------------|
| Serial Number | CRTNFB202F |
| Mfg Date | 10-Mar-17 |
| Firmware version | 8.0.9.6H |
| Min output power | 7.00 |
| Max output power | 17.00 |
| Min frequency | 190.30 |
| Max frequency | 197.25 |
| Connector | FC/APC 900um buffer |

| Features | | |
|-------------------|--|--------------|
| Clean Sweep | | 150GHz |
| Clean Jump | | Included |
| Clean Scan | | Not included |
| No Drift | | Not included |
| AM modulation | | Included |
| FM modulation | | Included |
| Clean Measurement | | Included |
| Low RIN | | Not included |

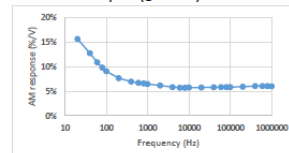


Up to 3 SMA outputs
From left to right

AM modulation
FM modulation
Clean Measurement

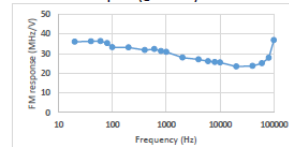
Optical output
FC/APC 900um buffer

AM Modulation Response (@13.5dBm)



Apply voltage 0 - 10V

FM Modulation Response (@13.5dBm)



Apply voltage 0 - 6V (signal rails if voltage < 0V)

Clean Measurement

Apply voltage 0 - 8V

Micro-USB interface

Upon installation, change latency time to 1ms
See feature guide (on website) for instructions

FIRMWARE UPGRADE

Firmware upgrade can be done through the GUI software or through the CLI. An application note on the upgrade process is available on our webpage (support section). **Make sure that the upgrade process is not interrupted.** In case the firmware upgrade fails, in most cases it can be corrected through the 'GUI - restore' application.

RESOURCES

Software (GUI and CLI): www.pure-photonics.com/downloads1/

MSA: www.oiforum.com/wp-content/uploads/OIF-ITLA-MSA-01.3.pdf

FTDI VCP drivers: www.ftdichip.com/Drivers/VCP.htm

Application notes: www.pure-photonics.com/downloads1/

Pure-Photonics.com

+1 (510) 497 0815

Customer_Service@pure-photonics.com