ProTune™

"ProTune™ 2" User Manual

Version 2.4

2023-December-14

Contents

I. Introduction

The ProTune™ tuning and coding system provides powerful capabilities for emergency restoration services and inventory management. This user manual provides a step-by-step guide from system set-up and installation through transceiver tuning and coding.

Please review this guide prior to installing the software to ensure proper set-up.

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Revision History:

Version	Description	Dates
1.0	Initial user manual	1 August 2018
1.1	Updated with improved visuals	8 February 2019
2.0	Updated for “ProTune 2”	3 May 2019
2.1	Updated with display adapter and driver troubleshooting tips	5 July 2019
2.2	Updated with new appliance and UI changes	25 June 2021
2.3	Added Windows 11 functionality and additional tuning screenshots	09 May 2023
2.4	Updated driver link	14 December 2023

1. Release Notes

2.0 “ProTune 2” – The ProTune 2 software application May 2019 release incorporates the following changes from a pre-existing configuration:

- New installation required – The application uses a new URL and requires a new file download
- Expanded OEM compatibility options
- User Interface enhancements – improved filtering of compatibility options
- Transceiver tuning features

2.1 Updates July 2019

- Updated link to Windows 7 appliance device drivers
- Section IX has updated to include resources for troubleshooting Windows 7 device drivers and optimizing the display for use with ProTune

2.2 Updates June 2021

- Release of v2.5 appliance – Support for QSFP-DD and previous form-factors
- Update with UI enhancements

2.3 Updates May 2023

- Added Windows 11 functionality and additional tuning screenshots

2.4 Updates December 2023

- Updated driver link in “System Requirements”

II. Package Contents

PL-PROTUNE-KIT

- Soft-side carry case
- ProTune™ Tuning and Coding Appliance
- USB 2.0 to USB-C Cable

PL-PROTUNE-KIT-PELI

- Rugged hard-side carry case
- ProTune™ Tuning and Coding Appliance
- USB 2.0 to USB-C Cable

III. System Requirements

1) Hardware

ProTune™ requires a PC with a USB 2.0 (minimum) port. The USB 2.0 port must be set to "High Power Device," type allowing 2.5W power output. (Default on most PCs) An external power supply is not required.

2) Software

ProTune™ requires Microsoft Windows 7 or later. Mac support is only available via a virtualized instance of Windows on Parallels or VMWare. Linux or other operating systems are not supported by ProTune™. Google Chrome, Mozilla Firefox, or Internet Explorer are required for software installation.

3) Drivers

Microsoft Windows 8, 10, & 11 – Drivers for the appliance will be automatically installed by Windows Update when you connect the appliance. Internet connection required.
Windows 7 may require the manual installation of drivers. Drivers can be downloaded from this link:

https://www.prolabs.com/assets/uploads/docs/CDM21228_Setup.zip

4) Java Runtime Environment

ProTune™ requires Java Runtime Environment. To install Java, please go to the Java website https://java.com/inc/BrowserRedirect1.jsp?locale=en to download and install.

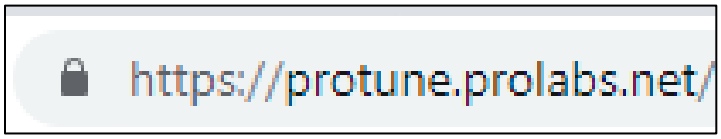
Note: *Installation troubleshooting steps are listed in the "**IX. ProLabs Support**" section of this manual.*

IV. System Setup and Installation

First Time Setup and Launch

1) Connect the ProTune™ appliance to your computer with the provided USB cable.
    a. If prompted, follow steps to install the appliance USB drivers.

2) Navigate to the URL: https://protune.prolabs.net/.



Google Chrome, Mozilla Firefox, and Microsoft Edge are supported browsers.

3) Enter your provided login credentials (Figure 1).

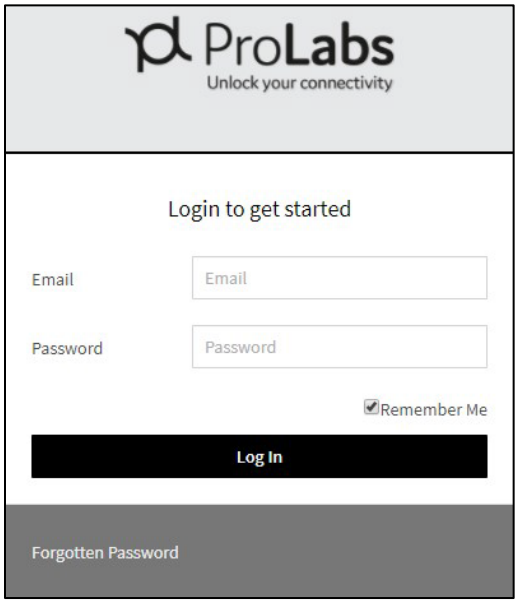


Figure 1 - ProTune™ Login Window

4) Upon successful credential validation, you will see a screen like the below. Click the "Connect" button.

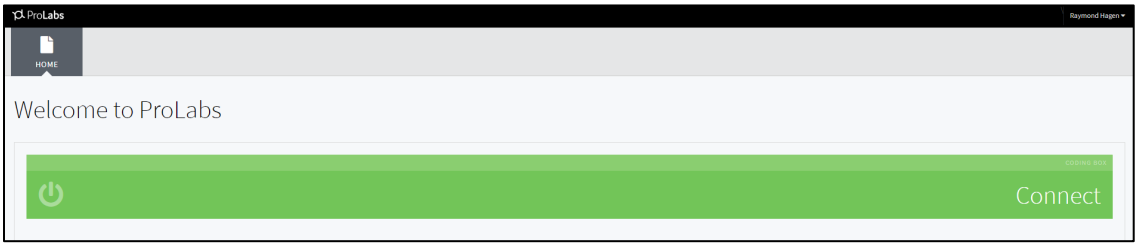


Figure 2 - Connect Screen

5) Clicking connect will open a Java download window prompting an option to download or run.

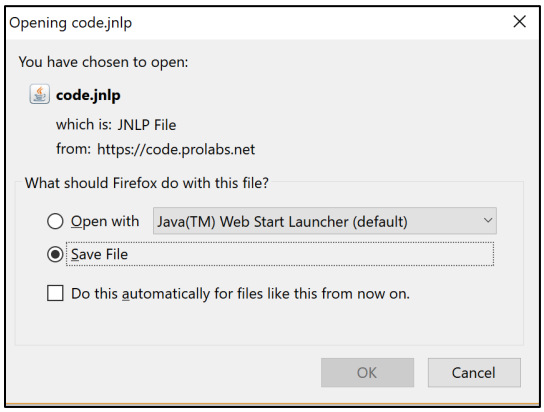


Figure 3 – Java Download Window

Note: *Choose Save File to your desktop, or to a different convenient location. This enables ProTune™ to launch from a shortcut without repeated download and installation. If the application is not saved locally, steps 1-4 will be required each time the product is needed.*

6) Locate the "ProLabs Coding Box" shortcut (figure 4) on your desktop (or location where it was saved) and double click.

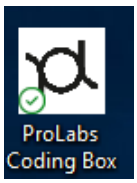


Figure 4 – File Icon

Note: *During this step, you may be asked to update or install Java-based upon your local machine settings. Follow the instructions as provided.*

7) After double-clicking on the shortcut, you will again be asked to login to the application. (See Figure 1)

8) The ProTune™ application interface will now load and a green ProTune™ Coding Box Service light will indicate that you are connected to the ProTune™ appliance. (See Figure 5)

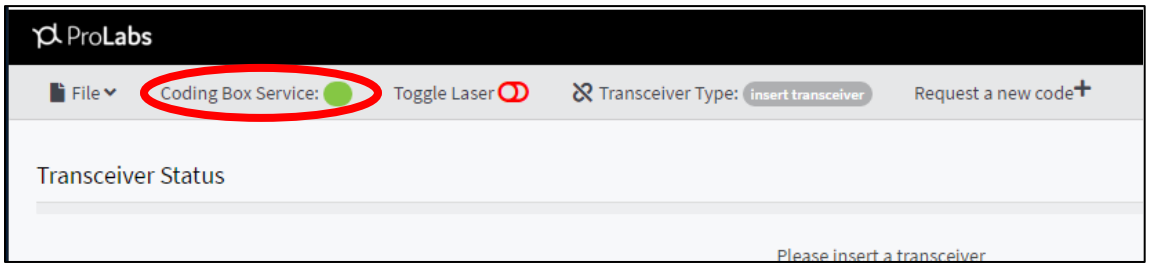


Figure 5 – ProTune™ Service

v. ProTune™ System Interfaces

1) The ProTune™ appliance accepts SFP, SFP+, SFP28, XFP, QSFP+, QSFP28, QSFP56, and QSFP-DD transceivers. A three clearly marked slots on the front of the appliance each have a small LED that will illuminate when a transceiver is seated properly.

Figure 6 – ProTune™ Appliance

2) Upon inserting a ProTune™ compatible transceiver into the appliance, the application interface will display key properties for each transceiver. Figure 7 highlights the transceiver attributes highlighted.

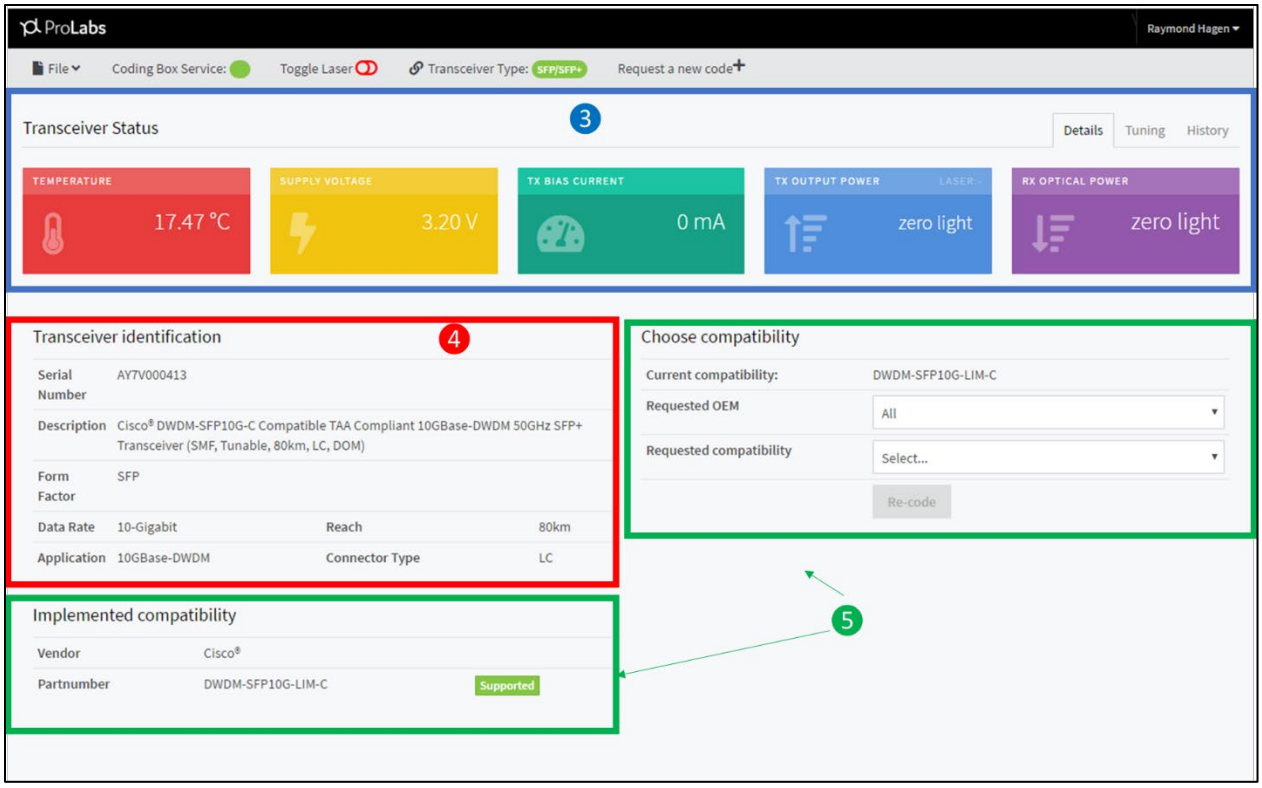


Figure 7 – ProTune™ Application Interface

Each highlighted box contains diagnostic information described below.

3) Transceiver Status -

The Transceiver Status section of the application interface (Figure 7a) displays digital optical monitoring of the transceiver:

- **Temperature** – Internal transceiver temperature (unit: degrees Celsius)
- **Supply Voltage** – ProTune™ voltage on transceiver temperature (unit: Volts)
- **Tx Bias Current** – Current of the laser (unit: milliampere)
- **Tx Output Power** – Laser optical output (unit: decibel, referenced for one milliwatt)
- **Rx Optical Power** – Receiver optical input (unit: decibel, referenced for one milliwatt)

When the diagnostic information is disabled by the module, the fields will appear as "N/A".

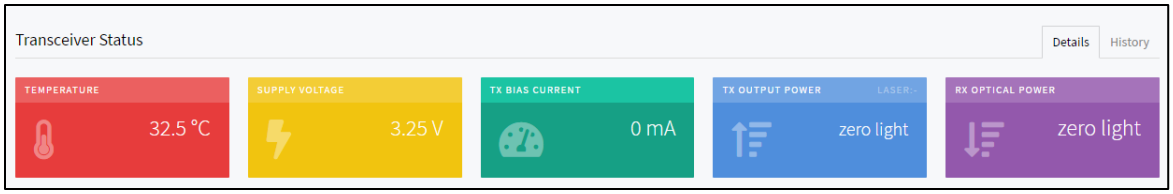
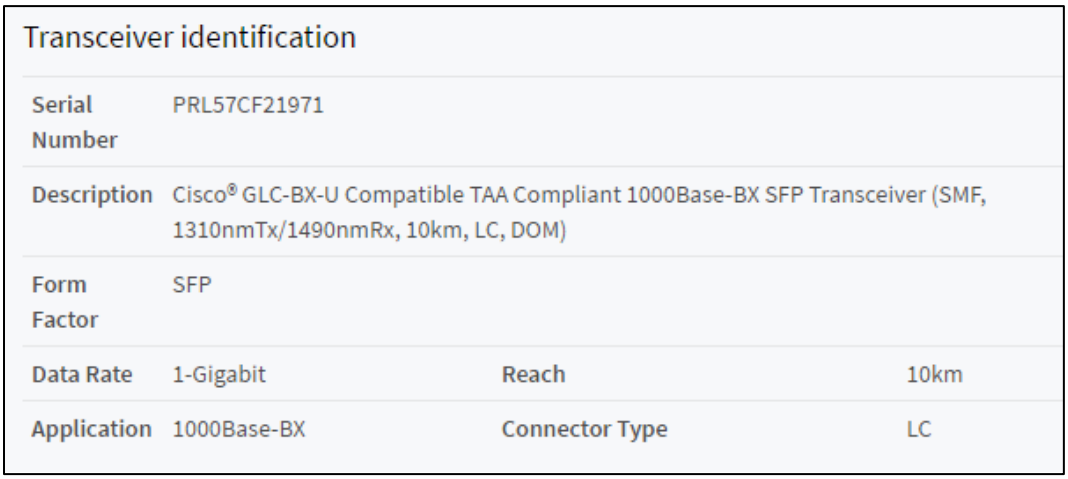


Figure 7a – ProTune™ Application Interface

4) Transceiver Identification -

The Transceiver Identification section (Figure 7b) of the main interface lists all information related to the transceiver identification such as vendor compatibility, part number, serial number, transceiver type, and other attributes.

The wavelength is only shown for SFP+ and XFP DWDM tunable transceivers.



Transceiver identification

Serial Number	PRL57CF21971		
Description	Cisco® GLC-BX-U Compatible TAA Compliant 1000Base-BX SFP Transceiver (SMF, 1310nmTx/1490nmRx, 10km, LC, DOM)		
Form Factor	SFP		
Data Rate	1-Gigabit	Reach	10km
Application	1000Base-BX	Connector Type	LC

Figure 7b – ProTune™ Application Interface

5) Compatibility -

The transceiver's current OEM compatibility is displayed in the "Implemented Compatibility" field in Figure 7c. This includes the transceiver's current OEM compatibility and the recognized ProLabs part code.

Figure 7c – ProTune™ Application Interface

The "Choose Compatibility" fields (Figure 7d) include current (if any) compatibility and a drop-down that contains all currently available ProLabs part codes to which the transceiver can be coded. Users can filter by OEM, then by compatible part number.

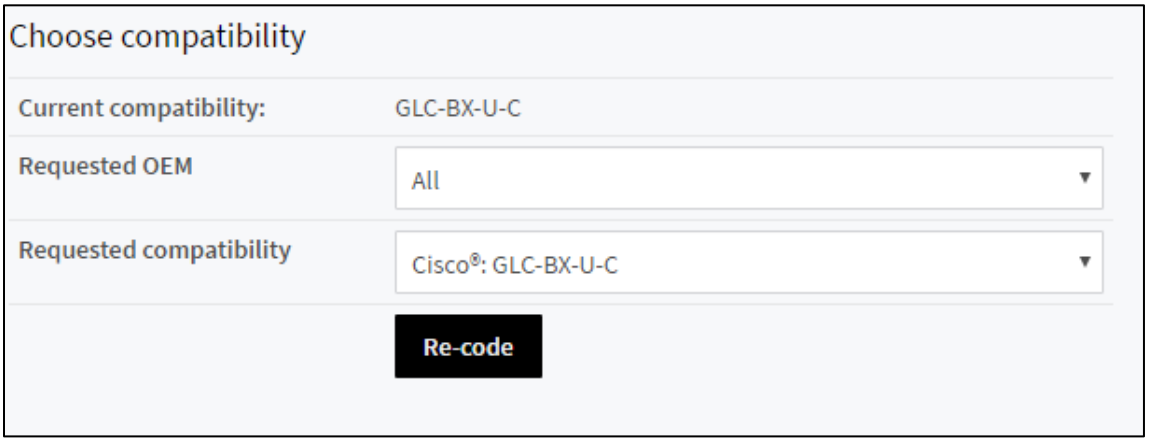


Figure 7d – ProTune™ Application Interface

6) The "History" tab in the application interface displays the ten most recent operations on a specific transceiver by ProTune™. (See Figure 8). Please note that only coding operations used by the ProTune™ system will be listed.

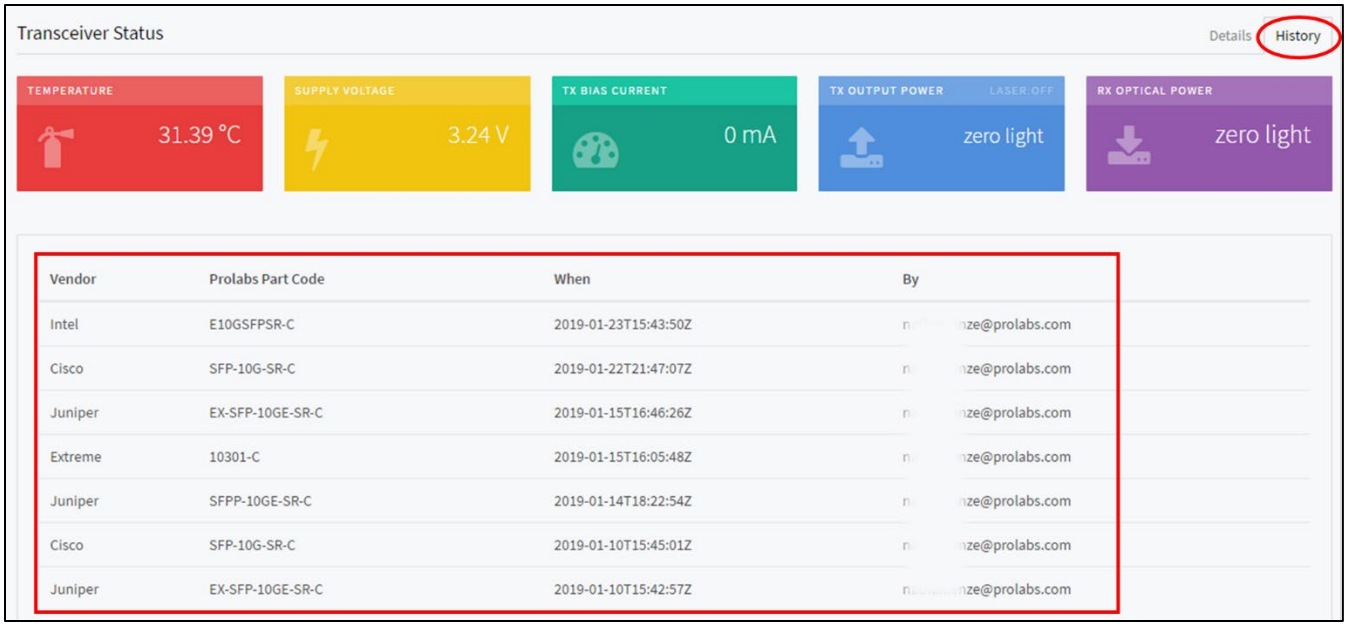


Figure 8 – Transceiver History

The ProTune™ history feature tracks:

- OEM Vendor Compatibility
- ProLabs Part Code
- Date of Operation
- User

7) The "Toggle Laser" option the top menu bar offers the function to toggle on and off the transceiver's laser. When the laser is toggled on, the ProTune™ system will indicate the laser output power and Tx Bias Current.

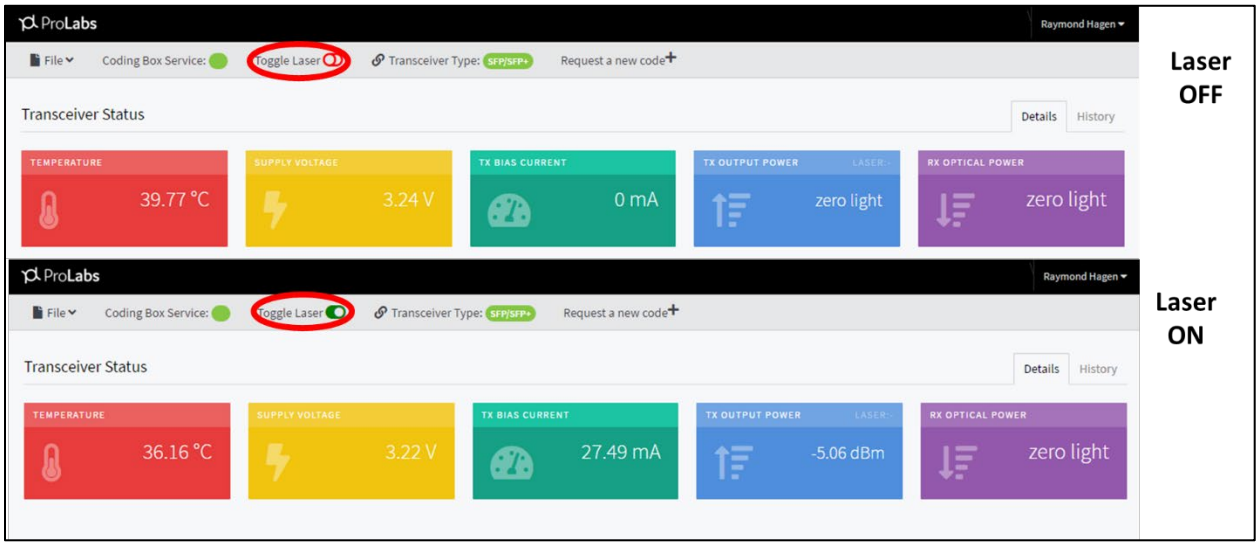


Figure 9 – Toggling Laser Off and On

8) Request a Code –
To request an OEM Compatible code to add to ProTune, click on the “Request a New Code” option in the top menu. This will open a support ticket for ProLabs Technical Support to add the new code option.

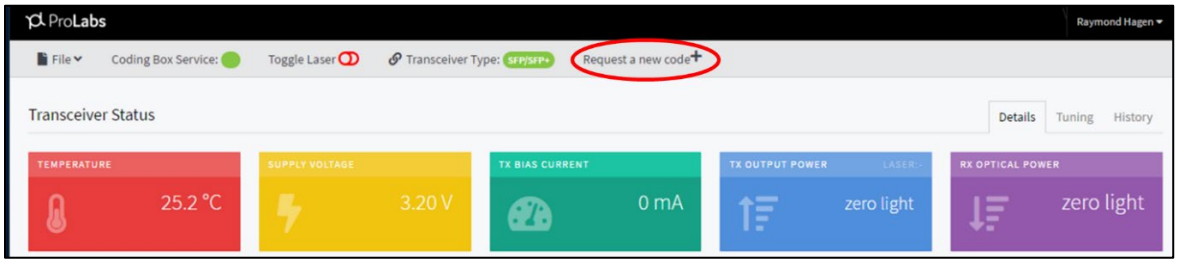


Figure 10 – Request a New Code

VI. Coding Operations

1. Coding or Re-coding a Transceiver

1) Once the ProTune™ system has been successfully launched, insert the desired SFP/SFP+, XFP, or QSFP/QSFP28 transceiver into the appropriate port labeled on the ProTune™ appliance.

2) Filter to the desired OEM compatibility.

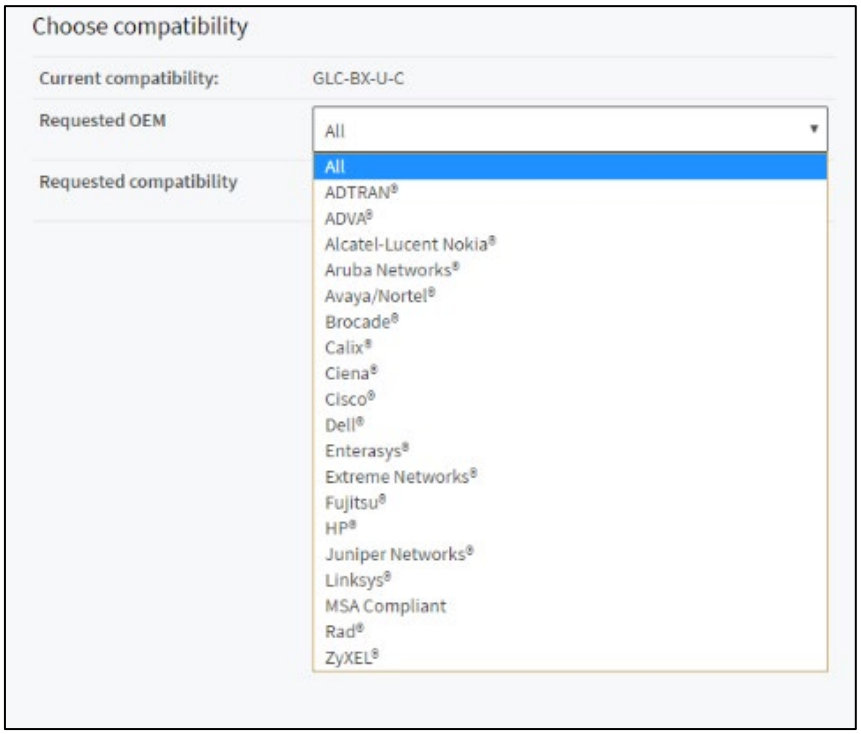


Figure 10 – Example Drop Down of OEM Options

3) Choose the requested part code.

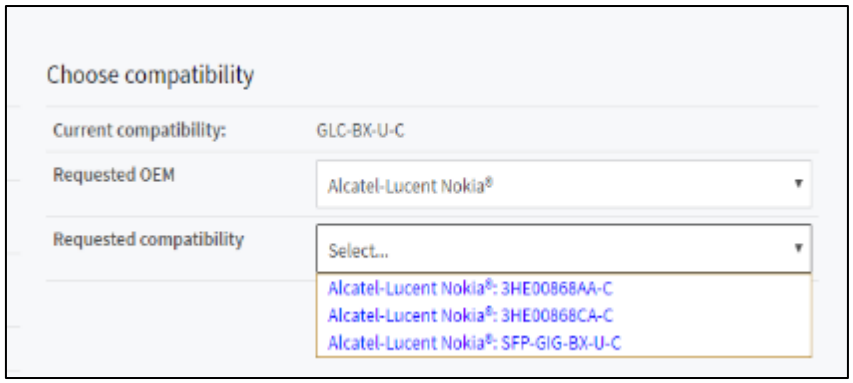
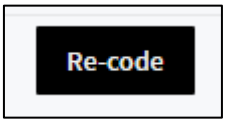


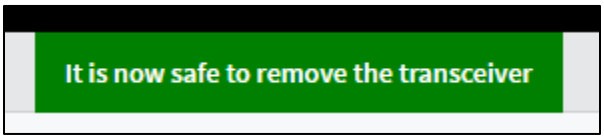
Figure 11 – Example Drop Down of Part Compatibility Options

4) Click Re-code.



5) The coding process will take up to 90 seconds. During the coding operation:
   - *Do not remove the transceiver*
   - *Do not unplug the box*
   - *Do not turn off the computer/internet connection*
   - *These events may damage the transceiver and void the warranty***.**

The application prompt will tell you when it is safe to remove the transceiver.



Upon successful completion of the coding process, you will be directed back to the application interface page displaying the full record of transceiver attributes once the coding is completed.

2. Coding a Tunable Optic

Tunable transceivers coded as another OEM compatible tunable optic and coded as a fixed wavelength DWDM for use in a platform that does not support tunable operations.

1) Insert tunable optic into the correct slot on the appliance.

2) Filter the “Requested OEM” and “Requested Compatibility” from the drop-down menus. See Figure 12.

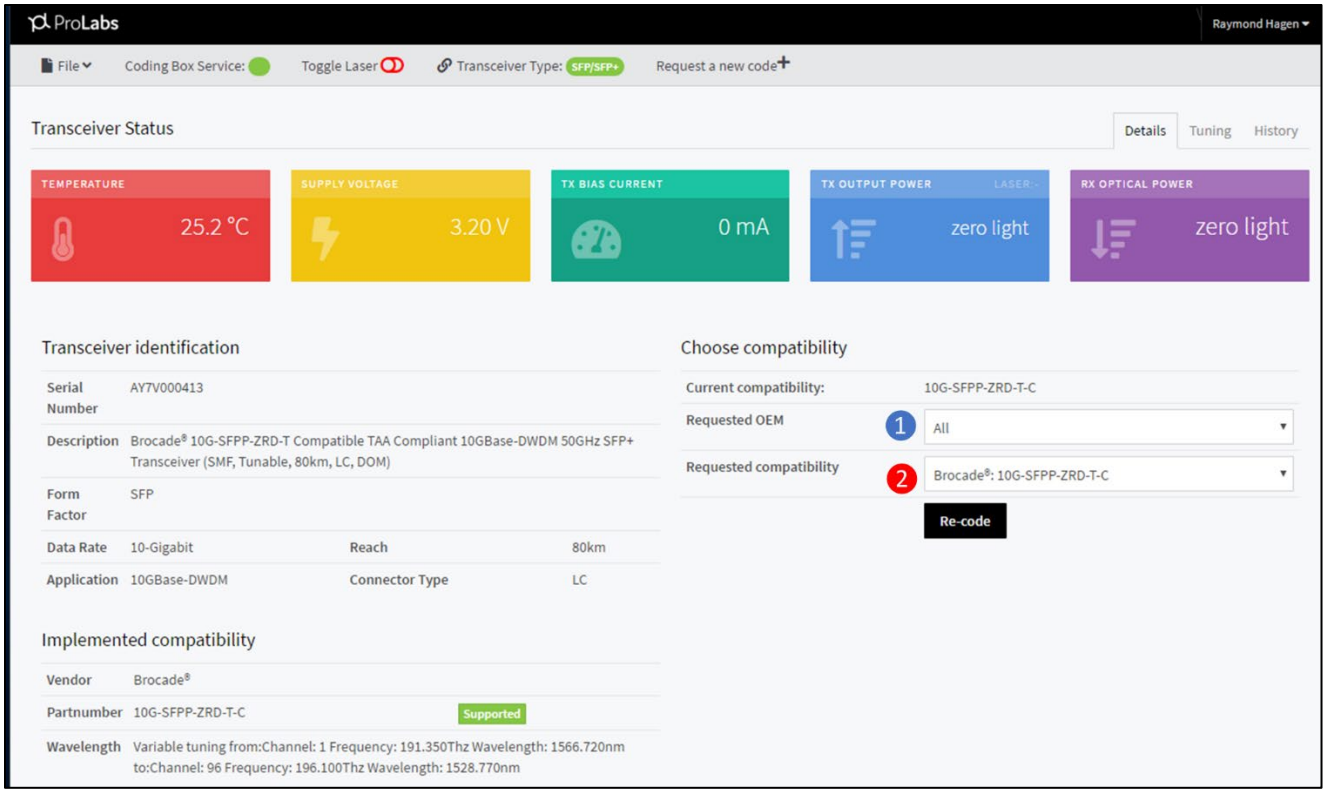
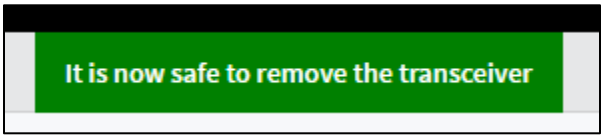


Figure 12 – Coding a Tunable Optic

3) Click the "Re-code" button.

4) The coding process will take up to 90 seconds. During the coding operation:
   - *Do not remove the transceiver*
   - *Do not unplug the box*
   - *Do not turn off the computer/internet connection*
   - *These events may damage the transceiver and void the warranty*.

The application prompt will tell you when it is safe to remove the transceiver.



3. Tuning a Tunable Optic

The ProTune™ "Tuning" feature enables tunable transceivers to be tuned to any of the ITU 50GHz frequencies supported by the transceiver.

1) Insert tunable optic into the correct slot based on form-factor.
2) Choose the "Tuning" tab at the top right of the interface.

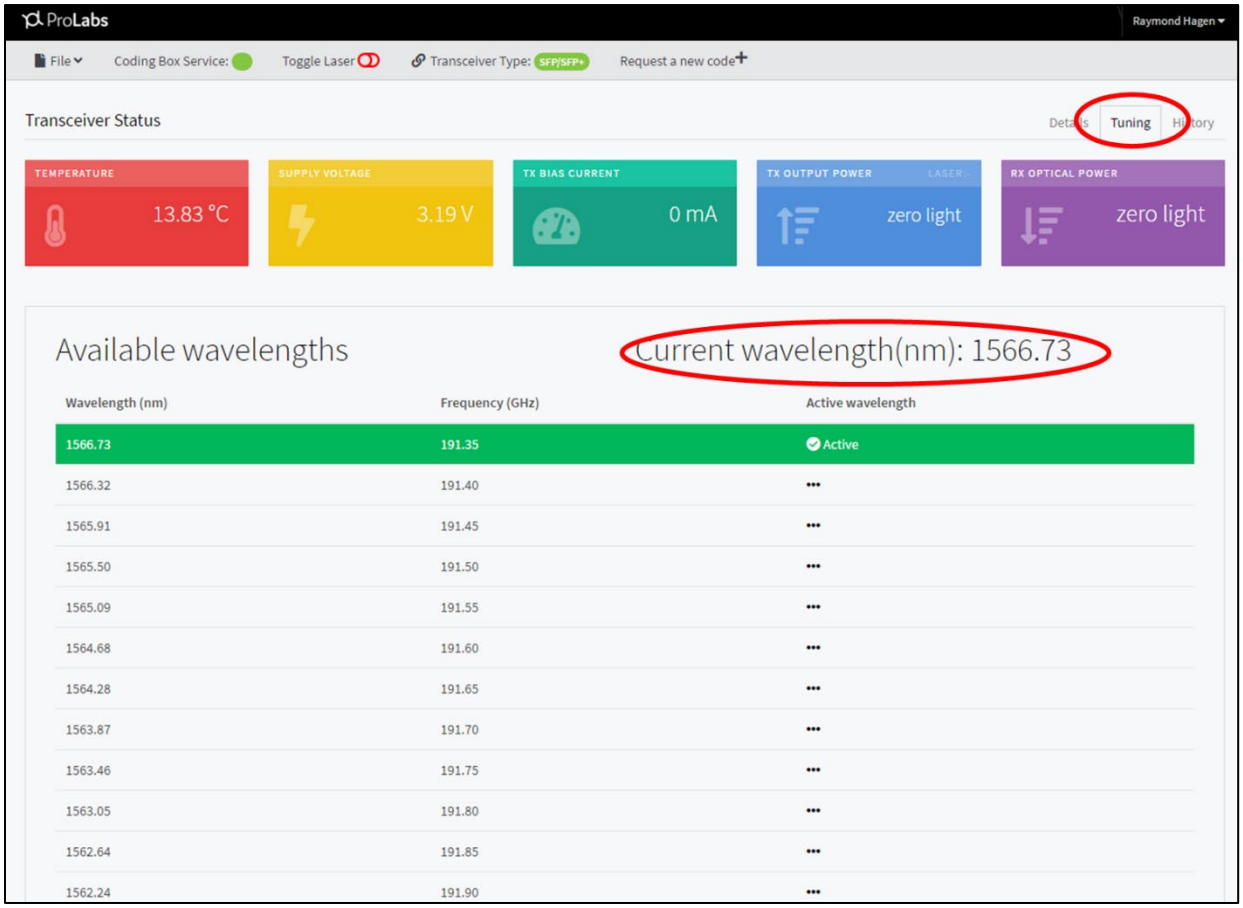


Figure 13 – Tuning a Tunable Optic

3) Scroll through the list of available wavelengths and click on the desired wavelength.
4) Once clicked, the desired wavelength will turn blue indicating that the module is in the process of tuning.

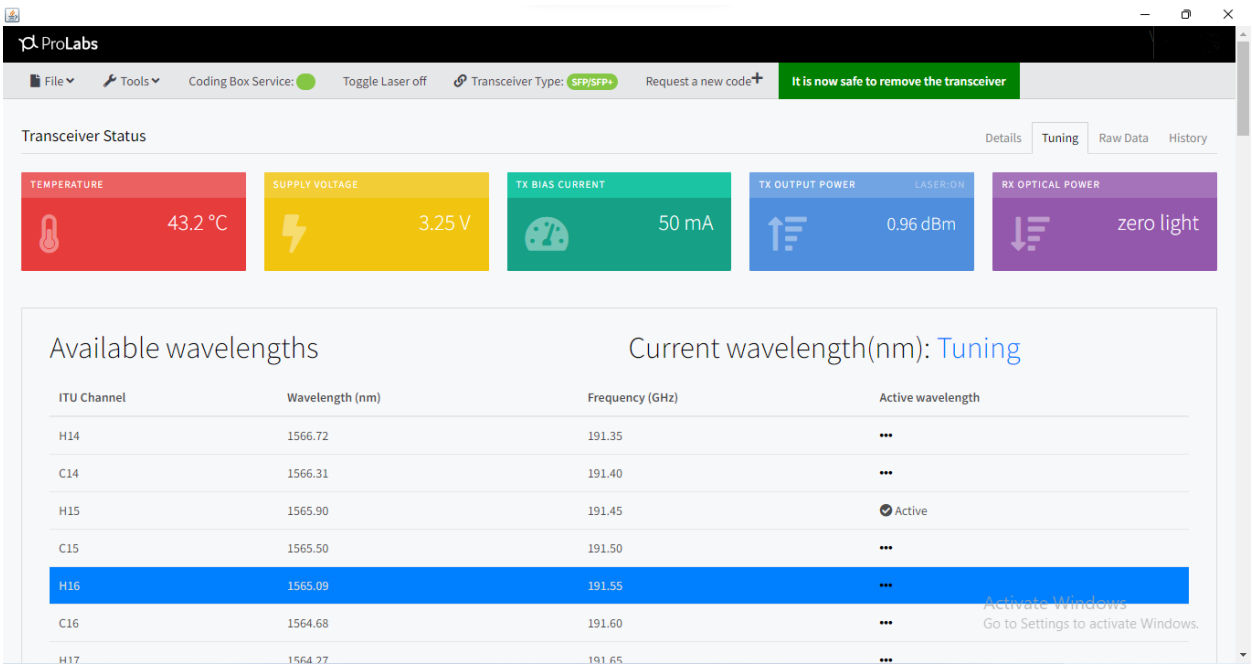


Figure 14 – Tuning in Progress

5) When the wavelength is green and marked "Active," the transceiver has been tuned to that wavelength.

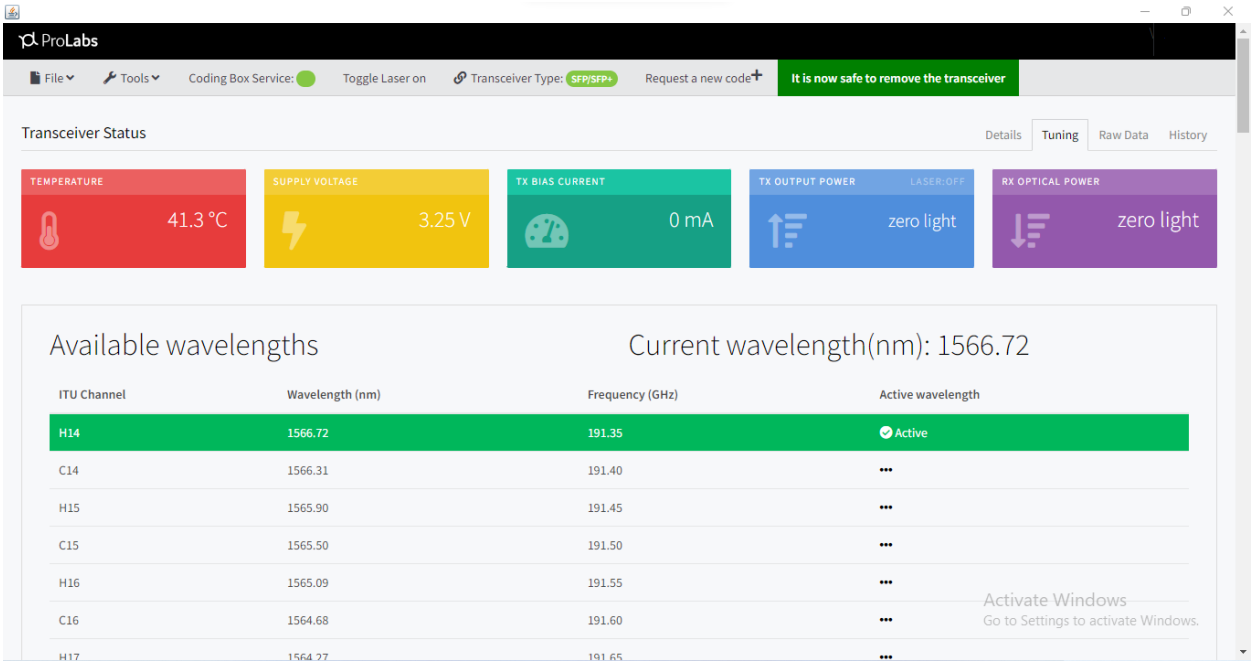


Figure 15 – Transceiver has been Tuned

VII. Transceivers Supported by ProTune™

ProTune™ will only support ProLabs transceivers with serial numbers logged in to the ProTune™ database. When optics not compatible ProTune™ are plugged into the system the software interface will indicate an error message (Figure 16).

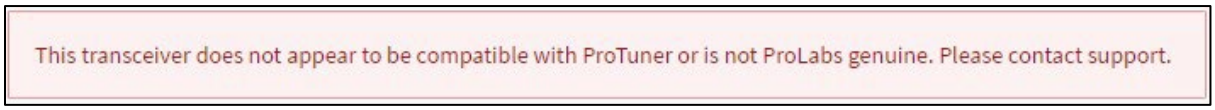


Figure 16 - Error Message for Non-Compatible Transceivers

Should this or any other message occur, please contact your ProLabs representative for support or assistance in obtaining transceivers for the ProTune™ system.

VIII. User Menu

The ProTune™ user menu provides users with access to information relating to User Account and Help.

1) Account – The ProTune™ account menu provides capabilities to:
    a. View their Client (Company) Name
    b. View and Change their Displayed Name
    c. View and Change their listed e-mail address
    d. Change their password for the application.

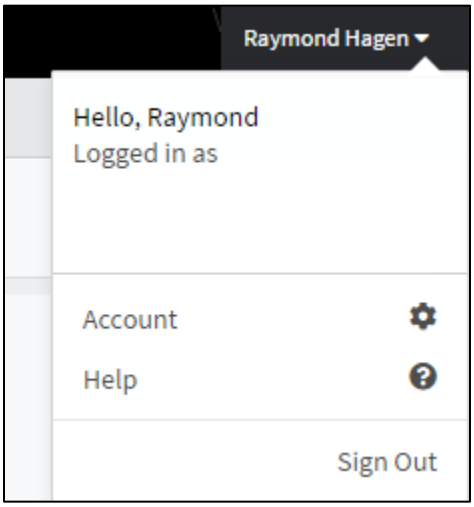


Figure 17 – Account Menu

2) Help – The "Help" menu option takes users to the Support page on the ProLabs global website, www.prolabs.com.

IX. ProTune™ Support and Installation Troubleshooting

E-mail: support@prolabs.com
Phone: + 1 877 957 9144
Web: https://www.prolabs.com/support/tech-support

a) Windows 7 Drivers – Should downloading and installing drivers directly from the FTDI site not successfully install the drivers for the local machine, FTDI has published documentation for Windows 7 installation. https://www.ftdichip.com/Support/Documents/AppNotes/AN_119_FTDI_Drivers_Installation_Guide_for_Windows7.pdf

   Should the FTDI installation not properly install the drivers, visit the manufacturer of the PC with the ProTune application software to obtain Windows 7 drivers.

b) Display resolution – The desktop resolution and display adapter should be set to 100% and "Scale Full Screen" for best results. Should the application not allow the cursor to be placed into the username screen, ensure these steps have been taken.

   If you have questions or need assistance with these steps, please contact the ProLabs technical support team.

c) Java updates – If Java was installed or upgraded with installation of Coding software, a system reboot may be required. In these instances, the software application may hang on start up at the coding box identification step.