Halo

Customer Edition
Version 1.6

USER MANUAL

WinTune™

Transceiver Coding System

Version 1.6 **Released** June 2026

Contents

For technical support at any point, contact your sales representative or the technical support team via the Support icon in WinTune™.

01 Introduction

This manual walks you through setting up and using the WinTune™ transceiver coding system: installation on Windows and macOS, the core programming operations, and what to do when something doesn't look right.

It is written for network technicians and engineers responsible for programming and managing optical transceivers. Basic familiarity with optical networking is assumed.

02 What is WinTune™?

WinTune™ is a cloud-based transceiver coding system that simplifies the programming of optical network modules. It gives you access to an extensive library of compatibility codes — spanning more than 90 OEMs and thousands of transceiver SKUs — so you can quickly recode transceivers to match your network equipment.

KEY FEATURES

- **Broad form-factor support** — SFP, SFP+, SFP28, XFP, QSFP+, QSFP28, and QSFP-DD
- **Secure cloud platform** hosted in a high-availability environment
- **Portable kit** — padded carry case, appliance, and USB-C cable included
- **Mac support** via Parallels or VMware Fusion
- **One-step programming** via an intuitive drop-down selection interface
- **Real-time diagnostics** with per-lane monitoring data
- **Windows-native** — no Java installation required

03 Equipment Requirements

Before you begin installation, confirm you have all of the following:

ITEM	DETAILS
WinTune™ programming box	The WinTune™ hardware appliance
WinTune™ software	Downloaded from the WinTune™ download page (Sections 4–5)
USB-C cable	Included in the carry case
Transceiver	A genuine transceiver to be coded
PC or Mac	Windows PC, or a Mac running Parallels or VMware Fusion

NOTE

Mac users run WinTune™ inside a Windows virtual machine (Parallels or VMware Fusion). Native macOS operation is not currently supported.

04 Installing WinTune™ on Windows

1. Navigate to the WinTune™ download page in your web browser.
2. Click **Install**. The installer (Setup.exe) saves to your Downloads folder.
3. Open Downloads and double-click **Setup.exe** to begin installation.
4. Follow the on-screen prompts. WinTune™ launches automatically when installation completes, and a shortcut is placed on your desktop.
5. To open WinTune™ later, double-click the desktop icon (Figure 1) or search "WinTune™" in the Windows search bar.

Figure 1 · Desktop icon

05 Installing WinTune™ on macOS

WinTune™ runs on Macs through a Windows virtual machine (Parallels or VMware Fusion). Installation has three phases: install the FT4222 USB driver, configure the USB serial ports, then install the WinTune™ software. Follow all steps in order.

NOTE

All steps below are performed **inside the Windows virtual machine** on your Mac — not in macOS directly.

PHASE 1 — INSTALL THE FT4222 USB DRIVER

The FT4222 driver lets your computer communicate with the WinTune™ appliance. You will install it for two devices: Interface A and Interface B.

Interface A

1. Download the driver package from the FT4222 driver download page.
2. Open **Device Manager** in the Windows VM (search "Device Manager").
3. Locate **FT4222** in the device list. Right-click it and select **Update driver** (Figure 2).
4. Select **Browse my computer for drivers**.
5. Click **Browse**, go to This PC → C: drive.
6. Navigate to the **Release** folder and click OK.
7. Click **Next** to install the driver.
8. When complete, **FT4222H Interface A** appears under Universal Serial Bus Controllers.

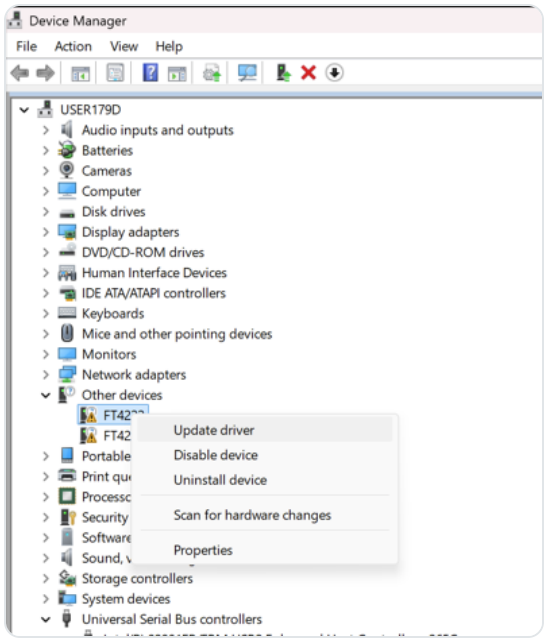


Figure 2 · Right-click the FT4222 device and select Update driver

Interface B

1. In Device Manager, locate the second FT4222 device.
2. Right-click → **Update driver** → **Browse my computer for drivers**.
3. Browse to the same **Release** folder and click OK.
4. Click **Next**. When complete, **FT4222H Interface B** appears under Universal Serial Bus Controllers.

CHECKPOINT

Both **FT4222H Interface A** and **Interface B** should now appear under Universal Serial Bus Controllers in Device Manager. Confirm this before proceeding to Phase 2.

PHASE 2 — CONFIGURE USB SERIAL PORTS

This phase assigns the correct drivers to the two USB serial ports used by the WinTune™ appliance.

USB Serial Port 1 (COM9)

1. In Device Manager, find **USB Serial Port 1** under Other Devices. Right-click → **Update driver**.
2. Select **Browse my computer for drivers**, then **Let me pick from a list of available drivers**.
3. Select **Show All Devices** and click Next, then click **Have Disk...**
4. In the path field, navigate to the driver path below.

```
C:\FTDI\DRIVERS\VCP\2.12.36.20A\ARM64\RELEASE
```

5. Select **USB Serial Port** from the list and click Next.
6. If a compatibility warning appears, click **Yes** to continue.
7. **COM9 USB Serial Port** now appears as configured in Device Manager.

USB Serial Port 2 (COM10)

1. Repeat the same steps for the remaining unrecognized USB Serial Port, using the same driver path.
2. Select **USB Serial Port**, click Next, then Yes to confirm.
3. **COM10 USB Serial Port** now appears as configured.

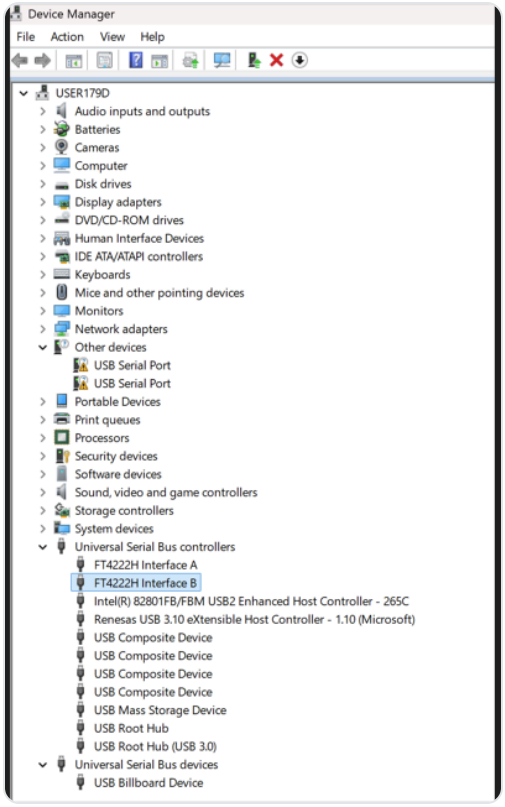


Figure 3 · Interfaces A and B configured under Universal Serial Bus controllers

CHECKPOINT

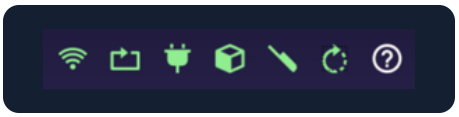
Both **COM9** and **COM10** should appear under Ports (COM & LPT) in Device Manager (Figure 3). If either is missing, repeat the configuration for that port.

PHASE 3 — INSTALL THE WINTUNE™ SOFTWARE

With drivers and ports configured, install the software exactly as on Windows (Section 4): open the WinTune™ download page, click **Install**, run **Setup.exe** from Downloads, and follow the prompts. WinTune™ launches automatically when complete and places a shortcut icon on the desktop.

06 Interface Overview & Status Indicators

After launch, the main interface shows a row of status indicators. Each uses a simple color code: **green** means normal operation, **red** means an issue needs attention.



	INDICATOR	WHAT IT TELLS YOU
	Internet Status	Whether WinTune™ is connected to the internet. Red = no connection.
	Auto-Reconnect	Whether WinTune™ will automatically reconnect if the connection drops.
	Box Connection	Whether the programming box is connected. Hover to see the appliance serial number.
	API Status	Whether WinTune™ has authenticated with the cloud service.
	Port Status	Whether a transceiver is currently inserted in the appliance.
	Auto-Replay	Red when disabled; green when active. See Section 8.
	Support	Click to open the technical support page.

REAL-TIME MONITORING PANEL

The left panel displays live diagnostics for the first lane of the inserted transceiver: transmit (Tx) and receive (Rx) levels, electrical current, supply voltage, and operating temperature (on compatible modules). Values are color-coded:

Green	All values within normal warning and alarm thresholds.
Orange	A value exceeded a warning threshold — monitor the transceiver closely.
Red	A value exceeded an alarm threshold — take corrective action.

NOTE

Rx displays red when the laser is off or no loopback cable is connected. This is expected and not a fault. To verify normal Rx operation, enable the laser and insert a loopback connector.

07 Recoding a Transceiver

Recoding rewrites a transceiver's compatibility identifier so it is recognized by your target network equipment. Make sure WinTune™ is installed before you begin (Sections 4–5).

IMPORTANT

Only genuine transceivers can be used with WinTune™. If a non-genuine transceiver is inserted, the software displays an error and recoding will not proceed.

1. Connect the programming box to your computer with the included USB-C cable.
2. Launch WinTune™ and confirm all status indicators are green (Section 6).
3. Insert your transceiver. The Port Status icon turns green to confirm detection.
4. Review the **Current Compatibility** column (Figure 4): part number, serial number, vendor, form factor, and description.
5. In the **Compatibility** section, use the OEM drop-down filter or text search to find the desired compatibility code (Figure 5).
6. Check the **History** section for previously used codes — handy for repeat jobs.
7. Select the target part number from the results list.
8. Click **Recode**. A progress message appears while the operation runs.
9. On confirmation, Current Compatibility updates to reflect the new coding.

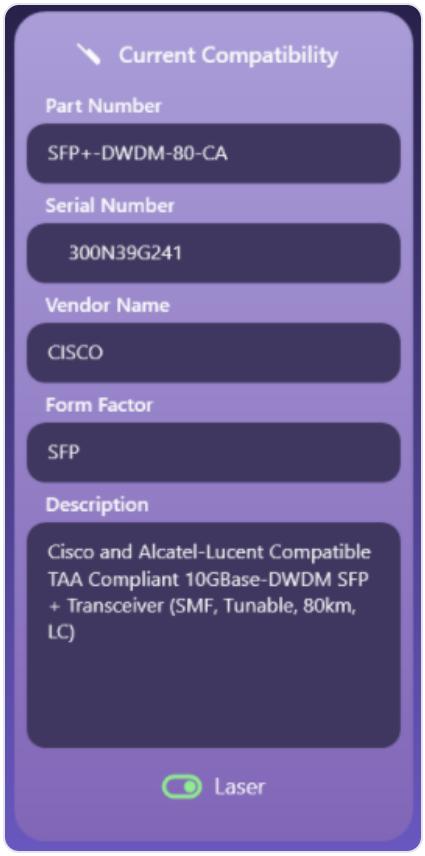


Figure 4 · Current Compatibility column

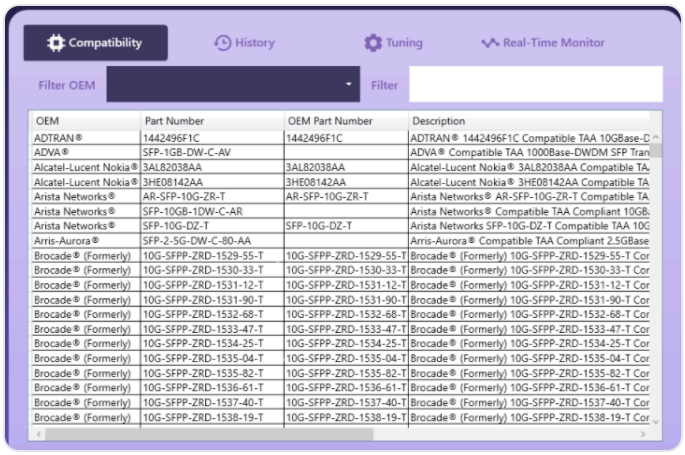


Figure 5 · Compatibility section — OEM filter and search

TIP

The **Laser** toggle turns the transceiver's laser on or off — adjust it to suit your testing workflow.

08 Multiple Module Recoding (Auto-Replay)

Auto-Replay applies the same coding to multiple transceivers in sequence, without re-selecting the compatibility code each time. Ideal when preparing a batch of identically programmed modules. It is disabled by default.

NOTE

Auto-Replay currently supports **recoding only**. Support for tuning operations is in development.

STEPS TO ENABLE AUTO-REPLAY

1. Locate the **Auto-Replay** icon in the indicator row. When disabled, it appears red.
2. Click the icon to enable the feature — it turns green to confirm it is active.
3. Insert the first transceiver into the appliance.
4. Select the target part number in the Compatibility section and click **Recode**.
5. When recoding completes, a **Replay** option appears in the confirmation window.
6. Swap in the next transceiver. WinTune™ automatically recodes it with the same compatibility code (Figure 6).
7. Repeat for each additional transceiver in the batch.

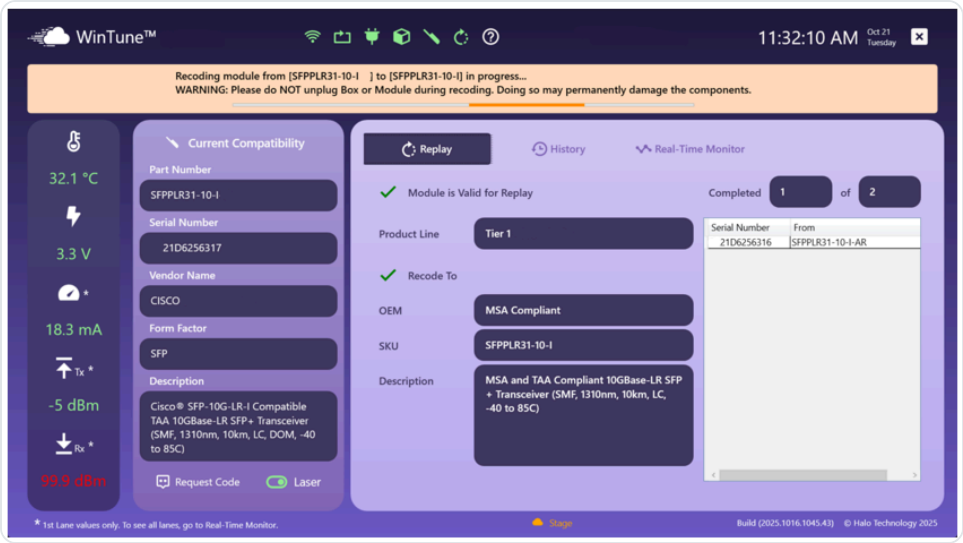


Figure 6 · Auto-Replay session — module valid for replay, batch progress at right

IMPORTANT

If you attempt a manual recode while an Auto-Replay session is active, WinTune™ shows a conflict warning. Wait for the current replay operation to complete before starting a new manual recode.

09 Tuning a Transceiver

Tuning sets a tunable transceiver to transmit on a specific optical channel. Have the transceiver inserted and the interface ready before you begin (steps 1–3 in Section 7).

> **NOTE**
> Only tunable transceivers support channel tuning. If a non-tunable module is inserted, WinTune™ shows a notification that optical tuning is not supported.

1. Prepare the system and insert the transceiver (Section 7, steps 1–3).
2. Open the **Tuning** tab and review the list of channels available for the inserted transceiver (Figure 7).
3. Select the desired channel and click **Tune**. A progress message appears while tuning runs.
4. On confirmation, the Tuning section updates to show the newly selected channel.

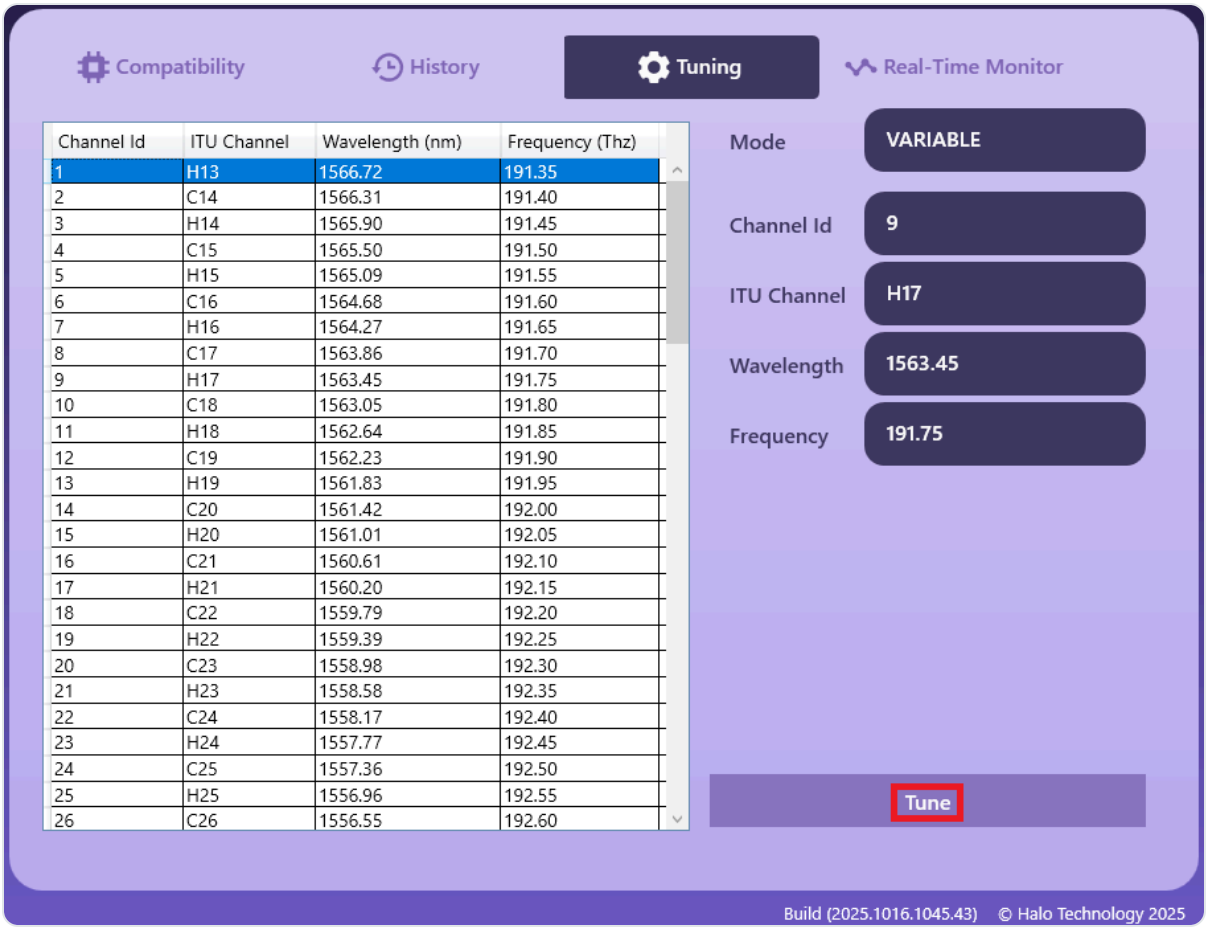


Figure 7 · Tuning tab — channel list with ITU channel, wavelength, and frequency

For further assistance, contact your sales rep or technical support team.

10 Fixed Tuning

Fixed Tuning recodes a tunable transceiver from a variable wavelength configuration to a single fixed wavelength, useful when a module must operate exclusively on one optical channel.

1. Prepare the system and insert the transceiver (Section 7, steps 1–3).
2. In the **Compatibility** section, identify a part number that specifies a fixed wavelength. Fixed-wavelength part numbers include a wavelength designation (e.g. **1310nm** or a channel code); variable-tuning part numbers do not (Figure 8).
3. Select the fixed-wavelength part number and click **Recode**. A progress message appears during recoding.
4. On confirmation, the Tuning section updates to show the selected fixed channel.

REVERTING

To return the transceiver to variable tuning, repeat the same steps and select a part number that does **not** specify a fixed wavelength.

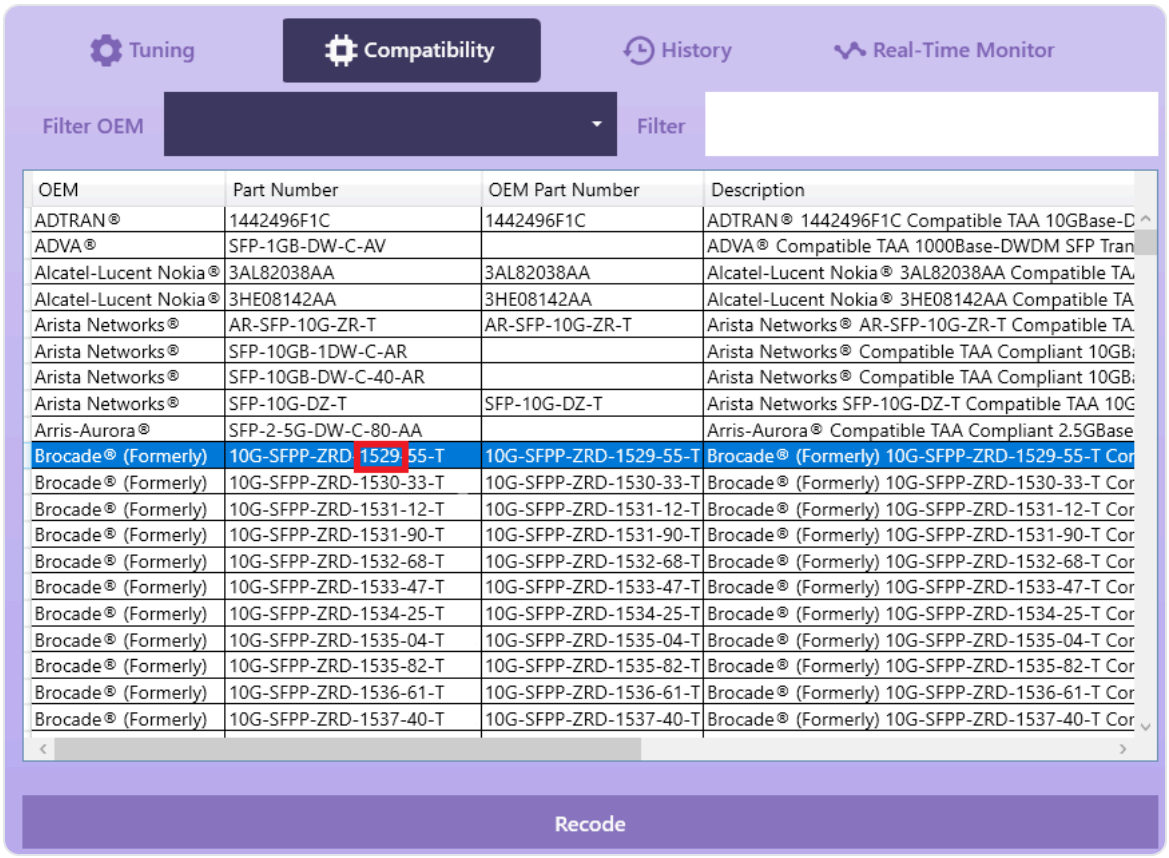


Figure 8 · Selecting a fixed-wavelength part number in the Compatibility list

For further assistance, contact your sales rep or technical support team.

11 Online vs. Offline Functionality

WinTune™ requires an internet connection for full functionality. The table below shows what is available in each mode.

FEATURE	ONLINE	OFFLINE
Recoding a transceiver	✓ Available	✗ Not available
Tuning a transceiver	✓ Available	✓ Available
Viewing recoding history	✓ Available	✗ Not available
Real-time monitoring	✓ Available	✓ Available

NOTE
Make sure the Internet Status icon is green before attempting to recode. If it is red, check your network connection and try again.

12 Updating WinTune™

WinTune™ checks for updates automatically each time it launches while connected to the internet. If a new version is available, it downloads and installs automatically — no manual action required.

To make sure you are always on the latest version, connect to the internet before opening the application.

13 Troubleshooting

ISSUE	POSSIBLE CAUSE	RESOLUTION
Rx value shows red in Real-Time Monitor	Laser is off, or no loopback connector inserted	Enable the laser with the Laser toggle and/or insert a loopback connector.
Transceiver port powered off unexpectedly	Module temperature exceeded 75 °C (safeguard maximum)	Allow the transceiver to cool. Ensure adequate ventilation around the appliance.
Error message when inserting transceiver	Non-Halo transceiver detected	Replace with a genuine Halo Networks transceiver. WinTune™ works with Halo transceivers only.
"Optical tuning not available" message	Module does not support optical tuning	Use a tunable transceiver. WinTune™ cannot tune non-tunable modules.
Cannot recode transceiver (offline)	No internet connection	Connect to the internet and confirm the Internet Status icon is green before recoding.
Box Connection icon is red	Appliance not detected	Check the USB-C cable is secure at both ends. Try a different USB port.
FT4222 driver not installing (Mac)	Incorrect driver folder selected	Navigate to the Release folder within the C: drive as described in Section 5.

Issue not listed, or persists after the recommended steps? Contact your sales rep or technical support team.

14 Glossary

API
Application Programming Interface — the connection between WinTune™ and Halo Networks' cloud service, used for authentication and data access.

Auto-Replay
A feature that applies the same compatibility code to multiple transceivers in sequence, without re-selecting it each time.

COM Port
Communications Port — a serial interface (e.g. COM9, COM10) through which the appliance communicates with the host computer.

Fixed Tuning
A mode in which a tunable transceiver is recoded to operate at a single fixed optical wavelength rather than a variable range.

Form Factor
The physical size and connector type of a transceiver module. WinTune™ supports SFP, SFP+, SFP28, XFP, QSFP+, QSFP28, and QSFP-DD.

FT4222
A USB-to-SPI/I^2C bridge chip by FTDI. The appliance uses two FT4222 devices (Interface A and B) to communicate with transceivers.

Loopback
A connector or cable that routes the optical transmit signal back into the receive port, letting the transceiver test its own optical path.

OEM
Original Equipment Manufacturer — the network equipment vendor whose compatibility code is applied to the transceiver (e.g. Cisco, Juniper).

Recoding
Rewriting a transceiver's firmware identifier so it is recognized as compatible with a specific network switch or router.

Rx
Receive — the optical signal coming into the transceiver from the network.

SKU
Stock Keeping Unit — a unique identifier for a specific transceiver product model.

Tuning
Setting a tunable transceiver to transmit on a specific optical channel or wavelength.

Tx
Transmit — the optical signal sent by the transceiver to the network.

USB-C
A reversible USB connector standard used to connect the WinTune™ appliance to a host computer.