

Spitronics ECU - Tune and File Management - Guide

This guide explains how Spitronics ECU Tune files are saved, opened, transferred, backed up, recovered and cloned.

It also explains the difference between a normal Download and a Clone, how Critical Settings are protected, and how Tune Lock affects access to a Device.

Software Terminology

Spitronics software terminology has changed over time.

Earlier software may use the term Map where newer software uses Tune. This guide uses the current term Tune unless an older software name is required to identify a specific function.

Cosmos is used as the main current reference. Hyperspace follows the same general principles unless otherwise noted.

What a Tune Contains

A Tune contains the ECU setup and calibration information required for a specific engine application.

This can include:

- Engine setup values.
- Sensor selections and calibrations.
- Feature settings.
- Fuel Graphs.
- Timing Graphs.
- Matrix data.
- Compensation settings.
- User-control selections.
- Other application-specific settings.

Tune files can be saved to a PC for:

- Backup.
- Offline editing.
- Reuse.
- Transfer between compatible Devices.
- Recovery after a problem.
- Creating a duplicate Device.

Saving a Tune to the PC

To save the current Tune from the Device to the PC:

1. Connect the Device to the software.
2. Make sure the Device is online.
3. Select the appropriate Save function.
4. Enter a meaningful Tune name.
5. Select the required file location.

Typical methods include:

- File → Save As.
- Save Tune button on the toolbar.



The exact button appearance may differ between software versions.

File Naming

Use a Tune name that makes the application easy to identify later.

A good Tune name may include:

- Vehicle or customer.
- Engine.
- Main configuration.
- Development stage.
- Date or version where useful.

Example:

BMW 3.0 Turbo - Dyno Final

Meaningful Tune names are particularly useful because the Tune name also appears in Auto Save and Device Save backup filenames.

Opening a Tune from the PC

To open an existing Tune:

1. Select File → Open, or use the Open Tune button.



- 2.
3. Select the required Tune file.
4. The Tune opens in the software for inspection or offline editing.

Opening a Tune from the PC does not automatically change the connected ECU. The device will go offline so that the tuner can view and change the Tune first.

The Tune must still be deliberately downloaded to the Device.

If the software is currently connected to a Device, the software may request an action before changing between the live Device and the offline Tune.

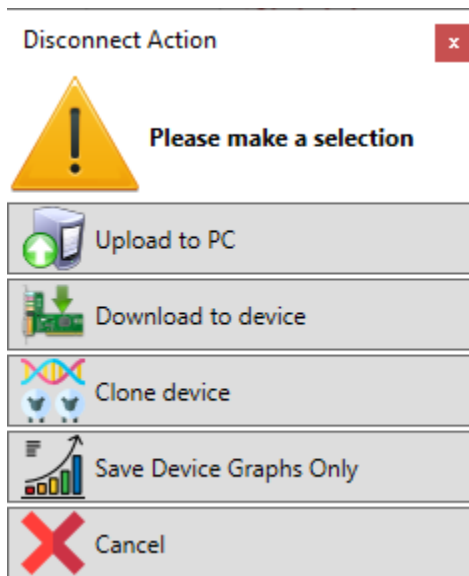
Connecting an Offline Tune to a Device

When an offline Tune is open and a Device is connected, the software presents a selection of actions.



Typical current options are:

- Upload to PC.
- Download to Device.
- Clone Device.
- Save Device Graphs Only.
- Cancel.



The selected action determines which information is retained and which information is transferred.

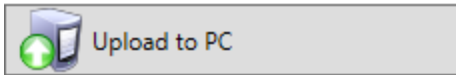
Upload to PC

Upload to PC discards the currently open offline Tune and reads the Tune currently stored in the Device into the software.

Use this when:

- The Device contains the Tune you want to inspect.
- The PC copy is outdated.
- You want to save the current Device Tune to the PC.
- You are unsure whether the Device or offline Tune contains the correct calibration.

After uploading the Device Tune, save a copy to the PC before making changes where appropriate.



Download to Device

Download to Device transfers the opened Tune into the Device.

A normal Download transfers:

- Normal setup data.
- Graph data.
- Matrix data.
- Tuning information.

A normal Download does **not** alter Critical Settings.

This allows a Tune to be transferred while preserving configuration values that could change wiring, input/output allocation or important calibration relationships.

Use Download to Device when updating or replacing the normal Tune on an ECU that is already correctly configured for the vehicle.



Critical Settings

Critical Settings are protected settings that are not changed by a normal Download to Device.

They are identified in the software by a warning triangle.



Critical Settings generally include values that may:

- Change ECU input or output locations.
- Change driver allocation.
- Change wiring requirements.
- Alter coil or injector configuration.
- Change important input selections.
- Preserve calibrations or application-specific setup.
- Affect firmware priority or shared functions.

Typical current ECU Critical Settings include:

- POT Selection.

- Cam Sensor Enable 1.
- Cam Sensor Enable 2.
- Cam Sensor Enable 3.
- Tune Switch.
- Tacho Output.
- Ignition Coil Combination.
- Ignition Coil Type.
- Injection Type.
- Idle Control Type.
- Anti-Lag.
- Flat-Shift.

The exact Critical Settings available depend on the ECU firmware.

Why Critical Settings Are Protected

Changing some Critical Settings can alter which physical ECU driver or input performs a function.

For example:

- Changing Coil Combination may move ignition functions to different drivers.
- Changing Ignition Coil Type may change between basic-coil and smart-coil driver requirements.
- Changing Injection Type may alter injector driver allocation.
- Changing Idle Control Type may require one or more different output drivers.
- Cam, Anti-Lag or Flat-Shift selections may share inputs or outputs with other features.

A normal Tune Download therefore protects these values so that tuning changes do not unexpectedly alter the vehicle wiring configuration.

Critical settings can only be changed on a connected device or with the Clone function.

Clone Device

Clone Device transfers the complete Tune configuration into the destination Device.

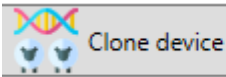
Clone includes:

- Normal setup data.
- Graph data.
- Matrix data.
- Critical Settings.

The destination Device is therefore configured to match the source Tune as closely as possible.

Clone is useful for:

- Building a spare ECU.
- Producing repeated installations using the same wiring and configuration.
- Replacing a failed Device with an identical setup.
- Preparing several ECUs for the same engine package.



Clone device

Important

Clone can change input and output locations.

After cloning, the existing vehicle wiring may no longer match the ECU configuration.

Before operating the engine after a Clone:

[] Verify the Pin Layout.

[] Verify coil configuration.

[] Verify injector configuration.

[] Verify Idle Control selection.

[] Verify cam and other output selections.

[] Verify sensor selections.

[] Verify user-control inputs.

[] Check all Critical Settings.

Disconnect or isolate ECU outputs where required until the setup has been verified.

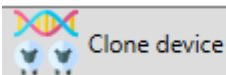
Clone and Multiple Tunes

Clone copies the currently loaded Tune into all available Tune positions in the Device.

This means the destination ECU initially receives the same Tune in every available Tune slot.

If the installation requires different Tune 1 and Tune 2 calibrations, the additional Tunes must be downloaded separately after the Clone.

This is important when creating a duplicate ECU for applications using Dual Tune or other multiple-Tune operation.



Clone device

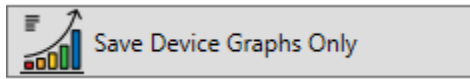
Save Device Graphs Only

Save Device Graphs Only allows the tuning Graph and Matrix information from the Device to be retained without transferring the complete Device configuration.

This can be useful where the tuning data is required but the setup and Critical Settings of the destination application must remain unchanged.

Use this function when the objective is to transfer tuning shapes or calibration data without duplicating the complete ECU configuration.

The exact available Graphs and Matrix data depend on the firmware.



Importing and Exporting Graph or Matrix Data

Individual Graphs and Matrix data can be transferred separately between Tunes.

This is useful when:

- Reusing a proven fuel Graph.
- Reusing ignition data.
- Comparing Graph and Matrix tuning methods.
- Transferring only one part of an existing Tune.
- Developing a new Tune from known calibration data.

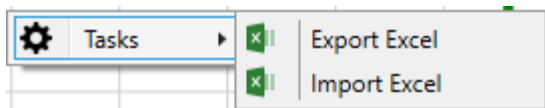
Typical procedure:

Export

1. Open the source Tune.
2. Right-click on the required Graph or Matrix.
3. Select Tasks and the Export function.
4. Save the exported file.

Import

1. Open the target Tune or connect to the Device.
2. Right-click on the required Graph or Matrix.
3. Select Tasks and the Import function.
4. Select the required exported file.
5. Verify the imported values.
6. Save the Tune or Device.



Auto Save

The software automatically creates backup copies of the Tune while editing.

Auto Save helps recover recent work if:

- The software closes unexpectedly.
- The PC crashes.
- A Tune is overwritten.
- Recent changes were not manually saved.

The Auto Save interval can be configured in the software settings.

A typical default interval is approximately 10 minutes.

Auto Save files are normally identified by a # prefix.

Example:

#001128153201_20260727163508_Lexus 1UZ.spiecu

The filename may include:

- Device serial number.
- Date and time.
- Tune name.
- Tune file extension.

The current Tune Recovery guide confirms that Auto Save stores work automatically and uses the # prefix.



Device Save

Device Save automatically creates a backup when a Tune is successfully programmed into a Device.

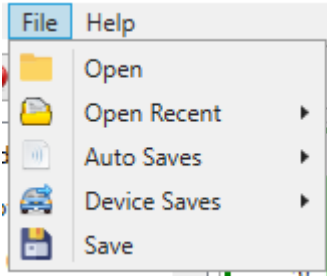
This is one of the most valuable recovery features because it normally represents a Tune that was actually loaded into the ECU.

Device Save files are normally identified by a ~ prefix.

Example:

~001128153201_20260727163508_Lexus 1UZ.spiecu

The current Tune Recovery guide recommends Device Save as the first recovery location because it normally contains the last Tune successfully programmed into the Device.



Manual Backups

Important Tunes should also be saved manually.

Create manual backups:

- Before major tuning changes.
- Before changing tuning strategy.
- Before a firmware or software upgrade where applicable.
- Before transferring or cloning a Device.
- After completing a successful dyno tune.
- Before experimenting with a new configuration.

For important applications, keep an additional backup on another PC, external drive or suitable cloud storage.

Tune Recovery

If a Tune is lost or overwritten, use the following recovery order:

1. Device Save.
2. Auto Save.
3. Manual Backup.

If the Device is still operating correctly, the Tune may also be read directly from the Device and saved to the PC.

The current Tune Recovery guide uses this same recovery priority.

Device Save Recovery

1. Open File → Device Saves.
2. Select the most recent appropriate file.

3. Open the Tune.
4. Verify the settings.
5. Download to the Device if required.

Auto Save Recovery

1. Open File → Auto Saves.
2. Select the most recent appropriate file.
3. Open the Tune.
4. Verify the contents.
5. Download if required.

Recover Directly from the Device

If the ECU still contains the correct Tune:

1. Connect to the Device.
2. Upload the Tune to the PC.
3. Save it immediately under a meaningful name.
4. Make a backup before further editing.

Backup File Locations

Auto Save and Device Save folders are stored inside the applicable software installation directory.

Typical locations include:

Hyperspace

C:\Spitronics\Hyperspace\ECU\AutoSaves

C:\Spitronics\Hyperspace\ECU\DeviceSaves

Cosmos

C:\Cosmos\Cosmos\ECU\AutoSaves

C:\Cosmos\Cosmos\ECU\DeviceSaves

The exact path may change with future software versions.

Where possible, access these folders through the software File menu rather than relying only on the Windows folder path.

The current Tune Recovery guide documents these backup locations.

Tune Lock

Tune Lock protects ECU setup and tuning information from normal access.

A locked Device requires the correct password before the protected Tune information can be viewed or edited.

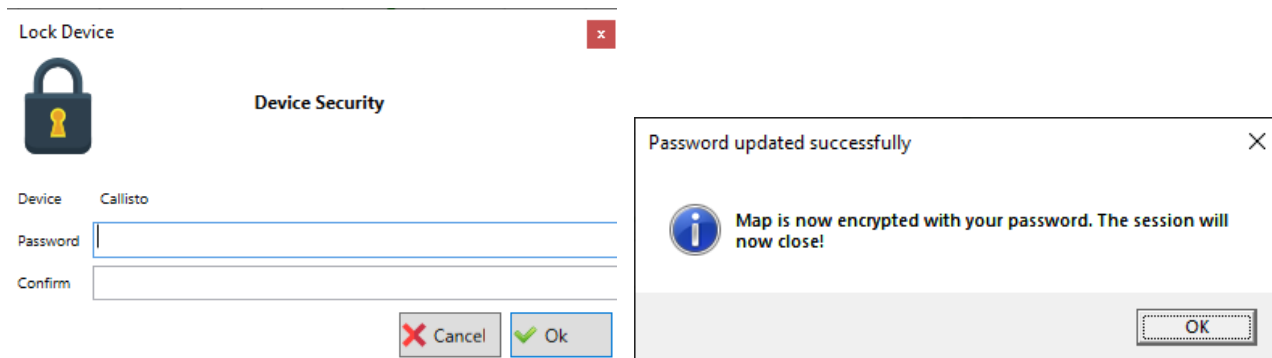
Tune Lock uses a 6-digit password.

There is no master password.

Always keep a secure record of:

- The Tune Lock password.
- A working Tune backup.
- The Device application information.

When a device is locked the ECU will disconnect from the software.



Working with a Locked Device

When a locked ECU is connected:

- Real-Time Data remains available.
- Limited information required by displays and some Android functions remains available.
- Protected setup information is hidden.
- Graph and Matrix tuning data are not visible.
- The correct password is required for normal Tune access.

This allows the ECU to continue supporting display and monitoring functions without exposing the protected Tune.

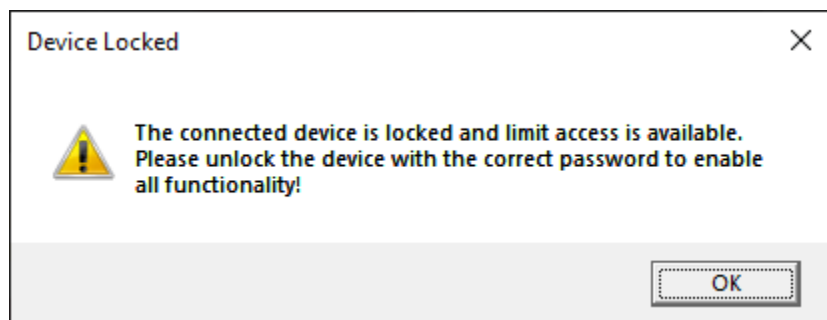
Unlocking with the Password

When the correct password is entered, the software allows access to the protected Tune.

The lock behaviour remains active according to the current software and Device state until the Tune is saved or the Device is disconnected, depending on the operation being performed.

Keep the password and original Tune backup together in a secure location.

When you connect to the ECU this message appears. Click OK.



Click on Open Lock button.



Enter your password key. Select Unlock Device Permanently if you want to clear the password. If not selected password will remain when ECU is disconnected.

Password Required

Device Security

Device Callisto

Password

Attempt 1 of 3

Note: The password will be cleared for this session or permanently if a map is saved in the device. To re-enter a password you will have to enter it again after you finished with tuning. If you don't have the password for this device, press Cancel and load a new map into the device. Note that this will clone the device to that map, meaning that your existing data will be gone. Then all settings will have to be reset. As a precaution, disconnect all the output cables from the device to minimize damage due to incorrect output layout.

☒ Unlock Device Permanently

Click on the Save button. The Tune will now be open.

Unlocking Without the Password

If the password is lost, another Tune can be loaded into the Device.

This operation is treated as a Clone.

The existing protected Tune data is therefore replaced.

On a multi-Tune ECU, both Tune positions are overwritten by the cloned Tune.

This means the original locked Tune is lost.

Use this only when the original protected Tune is no longer required or cannot be recovered.

Important

Before replacing a locked Tune without the password:

- [] Disconnect or isolate ECU outputs where required.
 - [] Confirm that the replacement Tune is compatible with the hardware.
 - [] Verify the Pin Layout after loading.
 - [] Verify all Critical Settings.
 - [] Follow the ECU First Start and Basic Setup procedure before operating the engine.
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Tune Conversion Between Systems

Tune files may sometimes be reused between compatible software versions or related products.

This should be treated carefully.

A Tune should never be assumed compatible simply because the file can be opened.

Before transferring a Tune between products or software versions, verify:

- Inputs.
- Outputs.
- Sensor calibration.
- Coil configuration.
- Injector configuration.
- Feature availability.
- Graphs.
- Matrix data.
- Critical Settings.
- Firmware compatibility.

Where complete Tune conversion is not appropriate, transfer the setup and required Graph or Matrix data manually.

Good Tune Management Practice

Use the following habits to reduce the risk of lost or incorrect Tune data:

- [] Give every Tune a meaningful name.
 - [] Keep Auto Save enabled.
 - [] Save important tuning stages manually.
 - [] Keep backups outside the main software installation folder.
 - [] Verify a recovered Tune before downloading it.
 - [] Use Download to Device for normal Tune transfer.
 - [] Use Clone only when deliberately replacing the complete ECU configuration.
 - [] Verify Critical Settings after a Clone.
 - [] Keep Tune Lock passwords with the corresponding Tune backup.
 - [] Do not assume Tune files from another product or version are automatically compatible.
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Quick Difference - Download vs Clone

Function	Download to Device	Clone Device
Normal Setup Data	Yes	Yes
Graph Data	Yes	Yes
Matrix Data	Yes	Yes
Critical Settings	No	Yes
Changes Wiring-Related Setup	No	Can
Used for Normal Tuning Transfer	Yes	No
Used to Duplicate an ECU	No	Yes
Copies Current Tune to All Tune Slots	No	Yes

Simple Rule

Download = transfer the Tune while protecting Critical Settings.

Clone = make the Device match the complete Tune configuration, including Critical Settings.