



EASY FLASH MODULE 2.0 USER MANUAL



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IMPORTANT NOTES!



Before the installation and use of the Easy Flash Module 2.0 (EFM 2.0), thoroughly read and understand the module features and instructions contained in this manual!



The use of a flashing vehicle light system may be regulated by state, county, or municipal authorities. It is the responsibility of the end user to know and comply with these regulations.



The installation of the Easy Flash Module 2.0 (EFM 2.0) will modify the vehicle's electronic communication system. This modification may affect the warranty of your vehicle. It is the responsibility of the end user to verify the warranty conditions with the vehicle manufacturer. Also, the use of the Easy Flash Module 2.0 (EFM 2.0) may shorten the life of the vehicle's light bulbs, headlight assemblies, and electronic modules.

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Preface

This manual describes the features and operation of the Easy Flash Module 2.0 (EFM 2.0) with software version V1.21. Speed Turtle Engineering recommends you always run the latest available EFM 2.0 software. The latest software is always available for download at SpeedTurtleEngineering.com. To check and update your module software version, use the *STE Configuration Utility* program. *STE configuration Utility* installation and use is described in detail in the *STE Configuration Utility User Manual* also available at SpeedTurtleEngineering.com.

General Operation

The Easy Flash Module 2.0 (EFM 2.0) provides a simple and effective way to flash the factory exterior lights of supported vehicles. The system is easily installed in minutes and is a true plug and play solution. If equipped and supported, the module will flash the following lights:

- Front Low Beams
- Front High Beams
- Front Turn Signals
- Front Fog Lamps
- Front LED Accents
- Rear Turn Signals
- Rear Stop Lamps
- Third / Center Mounted Brake Lamp
- Reverse Lamps
- Rear LED Accents
- Pickup Bed Lamp

Unlike other solutions, the EFM 2.0 does not require any cutting or reconfiguration of the vehicle's wiring harness. This allows the module to be easily installed by anyone in minutes. The plug and play installation also allow the module to be removed and installed in another vehicle without repairing or replacing vehicle components.

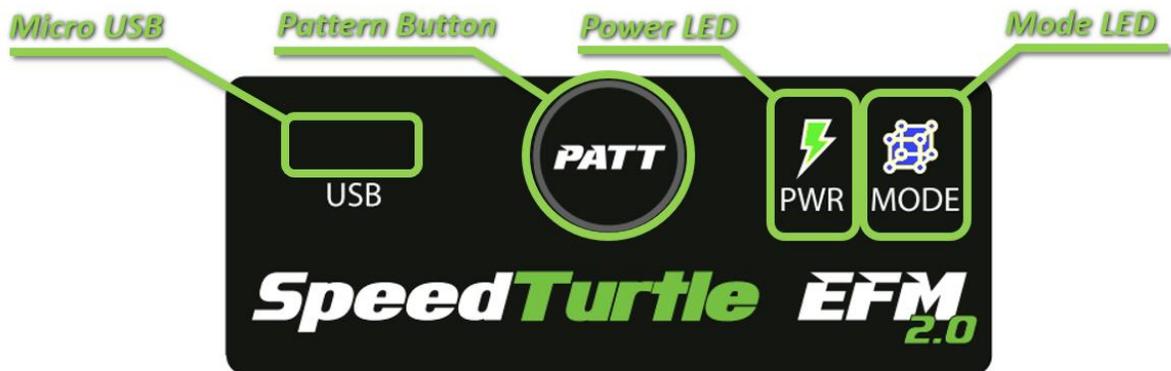
The module has two switch inputs as well as an existing vehicle button (most vehicles) that can be configured to activate the module either through a long press or quick cycle.

The EFM 2.0 has applications in a wide range of markets. They include, but are not limited to: police and fire, municipal vehicles, security personal, road workers, towing vehicles, or service vehicles.

Easy Flash Module 2.0 Overview

Module Layout

The Easy Flash Module 2.0 features six main components: The OBD-II connector, switch interface connector, power and mode LEDs, pattern button and micro USB port. These components locations are outlined below.



Switch Interface Harness

The purpose of the switch interface harness is to provide an ON/OFF signal to the module. There are two switch interface harness options:

Toggle Switch Harness: This harness provides a simple ON/OFF toggle switch with adhesive backing. There are two internal LEDs to the toggle switch with green indicating the switch is OFF and orange indicating the switch is ON. While this is the simplest of the two harnesses

to install, it only provides one of the two possible switch inputs. The toggle switch harness is connected to Input 1 on the module.

Voltage Input Harness: This harness provides two ‘flying lead’ input wires. Each wire will accept a 5 – 17 volt input signal from a switch or light controller of your choice. The white wire corresponds to switch input 1 and the green wire corresponds to switch input 2.

Both switch interface harnesses plug into the right side of the EFM 2.0 using a small black square connector. It is secured by a locking tab attached to the top of the harness connector. To disconnect the interface harness, depress the connector’s locking tab and gently pull the connector, NOT the wires!

Supported Vehicles

The following vehicles are currently supported by the EFM 2.0 software release V1.21.

GM

Avalanche	2007 - 2013
Canyon	2015 - 2016
Colorado	2015 - 2016
Equinox	2010 - 2017
Escalade	2007 - 2016
Impala	2014 - 2017
Sierra 1500 - 3500	2007 - 2016
Silverado 1500 - 3500	2007 - 2016
Suburban	2007 - 2016
Tahoe	2007 - 2016
Traverse	2009 - 2017
Terrain	2010 - 2017
Yukon	2007 - 2016

Chrysler

300	2011 – 2020
Challenger	2015 – 2020
Charger	2011 - 2020
Durango	2014 - 2020
Jeep Grand Cherokee	2014 - 2020
Pacifica	2017 - 2020
Ram 1500 – 5500	2013 - 2020

Ford

F-150 (Non-motion)	2015 - 2019
Explorer (Non-motion)	2016 - 2018

Installation

- 1) Chrysler / Jeep / Ram vehicles model year 2018 and above will need to install an OBD pass through connector for operation. Instructions for installing the OBD pass through connector are outlined in the OBD pass through connector manual available on the Speed Turtle Engineering support webpage. All other vehicles can skip this step.
- 2)
 - a. If using the toggle switch interface harness, mount the toggle switch using the self-adhesive pad located on the bottom of the switch in a safe and easily accessible location. Route the switch harness in a manner that does not interfere with normal vehicle operation. Secure with zip ties.
 - b. If using the voltage input interface harness, connect the white and green wires to a 5-17 volt fused switch source. Route the voltage input wire in a manner that does not interfere with normal vehicle operation. Secure with zip ties. Remember that the white wire will control Input 1 and the green wire will control Input 2.
- 3) Plug the small black square connector on the interface harness into the right side of EFM 2.0.
- 4) Turn the vehicle ignition to the 'Run' position.
- 5) Plug the EFM 2.0 into the OBD-II connector of the vehicle. The OBD-II connector is located under the driver's side dashboard. Location will vary by vehicle; however, the connector will be identical for all vehicles.
- 6) The module will run through a sequence of checks and configurations. Within a minute the module should enter *Normal* mode. This will be indicated by a flashing green power LED (lightning bolt) on the module. If the module does not enter normal mode after one minute, remove the module, wait at least 30 seconds and reconnect the module to the vehicle. If normal mode is not reached consult the *Troubleshooting* section of this manual.
- 7) Test the module by activating the switch or voltage input. If the module does not work as expected see the *Troubleshooting* section of this manual.
- 8) The module is now installed and may remain in the vehicle indefinitely. To uninstall simply remove the switch input harness and disconnect the module from the OBD-II port. No additional steps are required.

Module Modes

The green power LED (lightning bolt) and blue mode LED (cube) located on the front of the module indicate the current mode of the EFM 2.0. Determining the current module mode is the first step in troubleshooting any problem. There is a total of 11 modes. These modes are described in detail below.

- *Initialize*: Indicates the module is in the first stage of the startup routine. In *Startup 1*, the module green power LED is not illuminated and the blue mode LED is illuminated.
- *Startup 1*: Indicates the module is in the first stage of the startup routine. In *Startup 1*, the module green power LED is illuminated and the blue mode LED will blink once followed by a one second delay.
- *Startup 2*: Indicates the module is in the second stage of the startup routine. In *Startup 2*, the module green power LED is illuminated and the blue mode LED will blink twice followed by a one second delay.
- *Startup 3*: Indicates the module is in the third stage of the startup routine. In *Startup 3*, the module green power LED is illuminated and the blue mode LED will blink three times followed by a one second delay.
- *Not Supported*: Indicates the current vehicle is not supported by the device. In *Not Supported*, the module green power LED is illuminated and the blue mode LED will blink four times followed by a one second delay.
- *Normal*: Indicates the module has passed all startup tests and is awaiting activation. In *Normal*, the module green power LED will blink continuously. The blue mode LED is not illuminated.
- *Switch Input 1*: Indicates the module has been activated by the switch connected to switch input 1. In *Switch Input 1*, the module green power LED is not illuminated and the blue mode LED will blink once followed by a half second delay.
- *Switch Input 2*: Indicates the module has been activated by the switch connected to switch input 2. In *Input 2*, the module green power LED is not illuminated and the blue mode LED will blink twice followed by a half second delay.
- *Integrated Switch Input*: Indicates the module has been activated by the vehicles designated activation button. In *Integrated Switch Input*, the module green power LED is not illuminated

and the blue mode LED will blink three times followed by a half second delay.

- *Park*: Indicates the module was activated by switch input 1, switch input 2 or the integrated switch, the vehicle transmission is in park and park mode has been enabled using the *STE Configuration Utility*. In *Park*, the module green power LED is not illuminated and the blue mode LED will blink four times followed by a half second delay.
- *Configure Pattern*: Indicates the module has been placed in pattern configuration mode by pressing and holding the pattern button on the front of the module for 3 seconds. In *Configure Pattern*, the module green power LED and the blue mode LED will blink in unison based on the current pattern selected (1 – 10) followed by a one second delay.

Module Operation:

Switch Inputs

EFM 2.0 has two switch inputs available for module activation, switch 1 and switch 2 respectively. By default, switch 1 and switch 2 inputs are enabled. Switch inputs can be disabled if desired using the *STE Configuration Utility* available on the Speed Turtle Engineering website.

Toggle Switch Harness: The toggle switch harness controls switch 1 only. Internal to the toggle switch harness are two LEDs. The green LED will illuminate when the switch is in the OFF position. A yellow LED will illuminate when the switch is in the ON position.

Voltage Input Harness: For the voltage input harness the white wire controls switch 1 and the green wire controls switch 2. Voltage input wires can be connected to a switch or controller of your choice with a voltage of 5-17 volts. Voltages higher than this can permanently damage the module.

Integrated Vehicle Switch

In addition to the switched inputs, EFM 2.0 can also be activated by an existing vehicle button either through a fast double press or a long press. Table 1 identifies the vehicle button can be used for activation in specific vehicle models. The integrated vehicle button input is disabled by default. It can be enabled using the *STE Configuration Utility*.

Table 1

<i>Model</i>	<i>Years</i>	<i>Button</i>	<i>Activation</i>
GM Vehicles			
Avalanche	2007 - 2013	Hazard switch	Fast double press
Canyon	2015 - 2016	Bed light switch located below radio	Fast double press
Colorado	2015 - 2016	Bed light switch located below radio	Fast double press
Equinox	2011 - 2017	Hazard switch	Fast double press
Escalade	2007 - 2016	Hazard switch	Fast double press
Impala	2014 - 2017	Hazard switch	Fast double press
Sierra	2007 - 2013	Hazard switch	Fast double press
Sierra	2014	Not available	
Sierra (1500)	2015	Bed light switch located below radio	Fast double press
Sierra	2016	Bed light switch located below radio	Fast double press
Silverado	2007 - 2013	Hazard switch	Fast double press
Silverado	2014	Not available	
Silverado (1500)	2015	Bed light switch located below radio	Fast double press
Silverado	2016	Bed light switch located below radio	Fast double press
Suburban	2015 - 2016	Hazard switch	Fast double press
Tahoe	2015 - 2016	Hazard switch	Fast double press
Traverse	2009 - 2017	Hazard switch	Fast double press
Terrain	2011 - 2017	Hazard switch	Fast double press
Yukon	2015-2016	Hazard switch	Fast double press
Chrysler Vehicles			
Challenger	2015 - 2020	OK button on left side of steering wheel	Press and hold for 3 seconds
Charger	2012 - 2014	Back arrow on left side of steering wheel	Press and hold for 3 seconds
Charger	2015 - 2020	OK button on left side of steering wheel	Press and hold for 3 seconds
Durango	2014 - 2020	OK button on left side of steering wheel	Press and hold for 3 seconds
Grand Cherokee	2014 - 2020	OK button on left side of steering wheel	Press and hold for 3 seconds
RAM Trucks	2013 - 2020	Back arrow on left side of steering wheel	Press and hold for 3 seconds
Ford Vehicles			
F-150	2015 - 2019	OK button on left side of steering wheel	Press and hold for 3 seconds

Explorer	2016 - 2018	OK button on left side of steering wheel	Press and hold for 3 seconds
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Active Modes

EFM 2.0 has four active modes that can individually be configured for both flash pattern and active lights. Active modes are shown below in order of priority:

- Park Mode – Park mode is active when switch input 1, switch input 2, or the integrated vehicle switch is active and the vehicle transmission is in park. Park mode pattern and active light configurations take precedence over any switch configurations. Park mode is disabled by default.
- Switch Input 1 Mode – Switch input 1 mode is active when the toggle switch harness is in the ON position or when the input to switch input 1 is between 5 – 17 volts. Switch input 1 mode pattern and active light configurations take precedence over switch input 2 and integrated vehicle switch configurations. Switch input 1 mode is enabled by default.
- Switch Input 2 Mode – Switch input 2 mode is active when the input to switch input 2 is between 5 – 17 volts. Switch input 2 mode pattern and active light configurations take precedence over integrated vehicle switch configurations. Switch input 2 mode is enabled by default.
- Integrated Vehicle Switch Mode – Integrated vehicle switch mode is active when the vehicle button is activated according to Table 1. Integrated Vehicle Switch Mode is disabled by default.

For example, if park mode is disabled and switch input 2 is active, EFM 2.0 will use the configurations saved for switch input 2. If switch input 1 is then activated, EFM 2.0 will use the configurations for switch input 1 due to its higher priority. Alternatively, if park mode is enabled, the vehicle is in park and switch input 1 is activated, EMF 2.0 will use the park mode configurations due to its higher priority. Once the vehicle transmission is taken out of park, EFM 2.0 will use the configurations for switch input 1.

Pattern Selection

There are ten selectable patterns for every vehicle. These patterns are adjusted per vehicle to ensure the best possible pattern selection based on supported vehicle lights and light locations.

There are two ways to configure the pattern for switch input 1, switch input 2 and the integrated vehicle switch.

Using the Pattern Button: On the front of the EFM 2.0 there is a gray circle with a 'PATT' marking. There is a small push button switch located in this location beneath the front faceplate that can be activated by pressing firmly in the gray circle. You should hear a small click when activated. To set the pattern for a specific switch input use the following steps: NOTE: If Park mode is enabled, use the *STE Configuration Utility* to modify configurations.

1. Activate the switch input of the switch you wish to change the pattern of.
2. Firmly press the 'PATT' button on the EFM faceplate and hold for 3 seconds.
3. The green PWR (lightning bolt) and blue MODE (cube) LEDs will blink in unison. The number of blinks correspond to the current pattern (1 – 10).
4. Press the 'PATT' button to advance to the next pattern.
5. Once you have selected a pattern press and hold the 'PATT' button for 3 seconds. This will save the pattern configuration for that specific switch.
6. Turn the switch input off.

Using the STE Configuration Utility: Individual switch patterns can also be configured using the *STE Configuration Utility*. Using this PC based tool, patterns for switch input 1, switch input 2, integrated switch input and park mode can be configured.

Individual Lamp Configuration

Much like the pattern configuration, the EFM 2.0 allows individual lamp configuration of each active lamp mode. These individual lamp configurations can be configured using the *STE Configuration Utility*. This configuration allows specific lamps to be deactivated

Module Overrides

EFM 2.0 has four built in light overrides to ensure normal vehicle light operation is unaffected for specific lamps. Overrides include headlamp, turn signal, reverse and brake lamp. All module overrides are enabled by default. However, headlamp and turn signal overrides can be disabled using the *STE Configuration Utility*. Reverse and brake lamp overrides cannot be disabled.

Updating Module Software

The EFM 2.0 now allows in field reprogramming of its onboard software. This allows users to take advantage of new features and supported vehicles as well as any bug fixes that are released. Software updating is accomplished by using the supplied micro USB cable and the *STE Configuration Utility* available on the Speed Turtle Engineering website. More information on the installation and use of the *STE Configuration Utility* as well as any updated EFM 2.0 module software can be found on the support page of the Speed Turtle Engineering website.

Troubleshooting

Troubleshooting begins with determining if you have the latest EFM 2.0 module software. Use the following steps to check your software level:

1. Check for latest EFM 2.0 software version on the support page of SpeedTurtleEngineering.com
2. Ensure the module has the latest software by checking the software version number using the *STE Configuration Utility*.
3. If a newer software is available on the website, update your module using the *STE Configuration Utility*.

After ensuring you have the most up to date software, reinstall the module in the vehicle. If the problem persists, the next step is to determine the current module mode. This can be done by viewing the power and mode LEDs. The *Module Modes* section of this document describes all 11 module modes and the corresponding power and mode LED behavior. Once the module mode has been determined Table 2 can be used.

Table 2

Troubleshooting Matrix	
Issue	Troubleshooting Action
Module stuck in Initialize or Startup 1 – 3 modes	<ul style="list-style-type: none"> • Reset module by disconnecting and reconnecting to the vehicle

Module in Not Supported mode	<ul style="list-style-type: none"> • If this mode is still encountered after software update, contact STE.
Module in Normal mode and will not activate	<ul style="list-style-type: none"> • Check that the switch interface harness is securely inserted • If using the voltage input harness, ensure there is 5-17 volts applied to the input wire • If using the integrated vehicle switch, ensure you are using the switch specified in Table 1 and the integrated switch is enabled using the <i>STE Configuration Utility</i>.
Park mode will not activate	<ul style="list-style-type: none"> • Ensure vehicle is in park • Ensure switch input 1, switch input 2 or the integrated vehicle switch is activated • Ensure Park mode is enabled using the <i>STE Configuration Utility</i>.
Stuck in Configure Pattern Mode	<ul style="list-style-type: none"> • Press and hold the 'PATT' button on the module front faceplate for 3 seconds • Reset module by disconnecting and reconnecting to the vehicle

If problems persist after updating your module software and following the Troubleshooting Matrix, contact us as support@SpeedTurtleEngineering.com or by visiting our website at SpeedTurtleEngineering.com. Provide as many details as possible in addition to: vehicle make, vehicle model, vehicle model year, module mode, current symptom and any troubleshooting steps you may have already taken.

Frequently Asked Questions

- How does it work?
 - Traditionally, flasher systems operated by physically cutting the power wires to specific lights and splicing control electronics in-line. The Easy Flash Module takes a different approach by simply commanding the vehicle to illuminate specific lights.

This approach is faster and easier to install, less intrusive to vehicle wiring, and more cost effective.

- Does the Easy Flash Module support my vehicle?
 - The Easy Flash Module currently supports a wide range of vehicles. A list of supported vehicles and model years, at the time of printing, can be found in the *Currently Supported Vehicles* section of this manual. The most up to date list can be found at *SpeedTurtleEngineering.com* .
- Are there any tools required for installation?
 - There are no required tools
- Can the module be connected to my own switch or activation signal?
 - Yes, the module can be connected to an existing switch or voltage source for activation. Users that wish to provide their own input signal should order the Easy Flash Module with the voltage input harness. The module will accept activation signals in the range of 5 – 17 volts. Voltages higher than 17 volts can permanently damage the module.

Will the module work in more than one vehicle?

- Yes, the Easy Flash module will work in any supported vehicle. There are no restrictions on how many vehicles you can use the module on. If the module is planned to be used on more than one vehicle, purchasing a separate vehicle interface harness for each vehicle may be convenient.
- My vehicle is not on the supported list. Are there any plans to support it?
 - At Speed Turtle we are continuously working to provide you with more supported vehicles and model years. With that said, there are some vehicle lines that cannot be supported due to the technical aspects of how the vehicle operates. This is currently true for all GM vehicles. If there is a specific vehicle that you would like to request, we would love to hear from you at support@SpeedTurtleEngineering.com.

Questions / Comments ?

Whether you have questions, comments, or general feedback, we would love to hear from you at [SpeedTurtleEngineering.com](mailto:support@SpeedTurtleEngineering.com).