



## Sniper Transmission Controller Quick Start Manual 551-101

**NOTE:** This manual is a “quick start” manual. For a comprehensive manual go to [www.Holley.com](http://www.Holley.com) and download the full manual for part number 551-101. This manual is intended to complete installation and load a base calibration.

### OVERVIEW

The Sniper Transmission Controller (STC) allows the use of common GM and Ford electronic four speed transmissions. It connects to your Sniper EFI system via CAN bus and is programmed through the existing Sniper 3.5” touch screen. No programming is available with PC computer software, however the transmission functions can be data-logged and reviewed with Sniper PC software. This kit is intended to work with Sniper throttle body injection systems only.

### KIT CONTENTS/ADDITIONAL PARTS REQUIRED

This kit contains the Sniper Transmission Control Module as well as the Power/CAN bus harness.

The user must purchase a transmission harness separately that fits their specific transmission. These harnesses are as follows (note that these are the same harnesses used for Holley Dominator and Terminator X Max ECUs):

558-405 – GM 4L60/70/80E

558-455 – 2009+ GM 4L60E\*

558-470 – 1998+ Ford 4R70W/4R75W

558-471 – 1992-1997 Ford AODE/4R70W

\* The “2009+” 4L60E specifically applies to OEM/factory original applications. When dealing with a GM Performance Parts, reman, or unknown year transmission the transmission connector should be checked per the image below. If pin “F” (Circled in **Figure 1** below) IS PRESENT, you need the 558-455 harness. If it is NOT present you need the 558-405 harness. Go by THIS PIN ONLY as the other pins may vary transmission to transmission. Be sure you compare your connector to the image below by “clocking” the pins based on the connector slot.



Figure 1

# REQUIRED SOFTWARE AND FIRMWARE VERSIONS

To use the STC, your Sniper system (ECU and Handheld) must be updated to any V2 version of software and firmware. The ECU version can be found under “File” and “ECU HW/FW” on the 3.5” touchscreen. The 3.5 Touchscreen version can be found under “File”, “Local Setup” and “Local Info” on the 3.5” touchscreen. The versions need to start with a “2” not a “1”.

If you need to update either do the following:

- 1) Using a computer (connected to the internet) open the contents of your SD card and see if it has a file named “SD card updater.bat” on it. If it does click on this file. It will open a program (you must be connected to the internet) called “Update Agent”. Follow the instructions on it to update the SD card.
- 2) If you do not have the “SD card updater.bat” file on your SD card go to Holley.com to download the SD card update program. On the Holley website click “Support”, “Fuel Injection”, and “Sniper EFI”. This will bring you to the Sniper EFI support page. At the top there will be a “Sniper EFI SD Card Updater – for 3.5 Touchscreen”. Open this and it will download the “Update Agent” program. Insert your SD card into the computer and run this program (there will be an icon installed). Follow the steps.

After you do 1 or 2, re-install the SD card into the 3.5 touchscreen and power it up. The 3.5 touchscreen will automatically update the firmware on it. You will then be instructed to update the firmware on the Sniper ECU as well. Follow these steps which will update the Sniper ECU firmware and automatically save and reload the Sniper ECU calibration.

## GENERAL OPERATION

GM and Ford four Speed electronic overdrive transmissions are simple in operation. They have four speeds with the top gear being an overdrive and all have a lockup torque converter that eliminates any slippage when the lockup is applied. With a stock torque converter the lockup should only be applied under light throttle conditions or excessive wear will occur.

Upshifts, downshifts, and torque converter lockup are based on vehicle speed and throttle position (or optionally the MAP sensor) and are adjustable with the 3.5” touch screen.

## WIRING

Install the (purchased separately) transmission harness. Connected it into the 26 pin (smaller) connector on the STC. Instructions for the specific transmission harness can be found at Holley.com under the transmission harness part number.

The 34 Pin connector has the following loose wire connections:

**Red (16 Gauge)** – Connect to battery power

**Black (16 Gauge)** – Connect to battery ground

**Red/White (20 Gauge)** – Connect to +12v switched ignition power

**Grey/Red (20 gauge)** – Fan Output 1- Optional – Turns on/off based on transmission temperature. This is a GROUND output and should ALWAYS be used to trigger a relay.

**Grey/Yellow (20 gauge)** – Fan Output 2- Optional – Turns on/off based on transmission temperature. This is a GROUND output and should ALWAYS be used to trigger a relay.

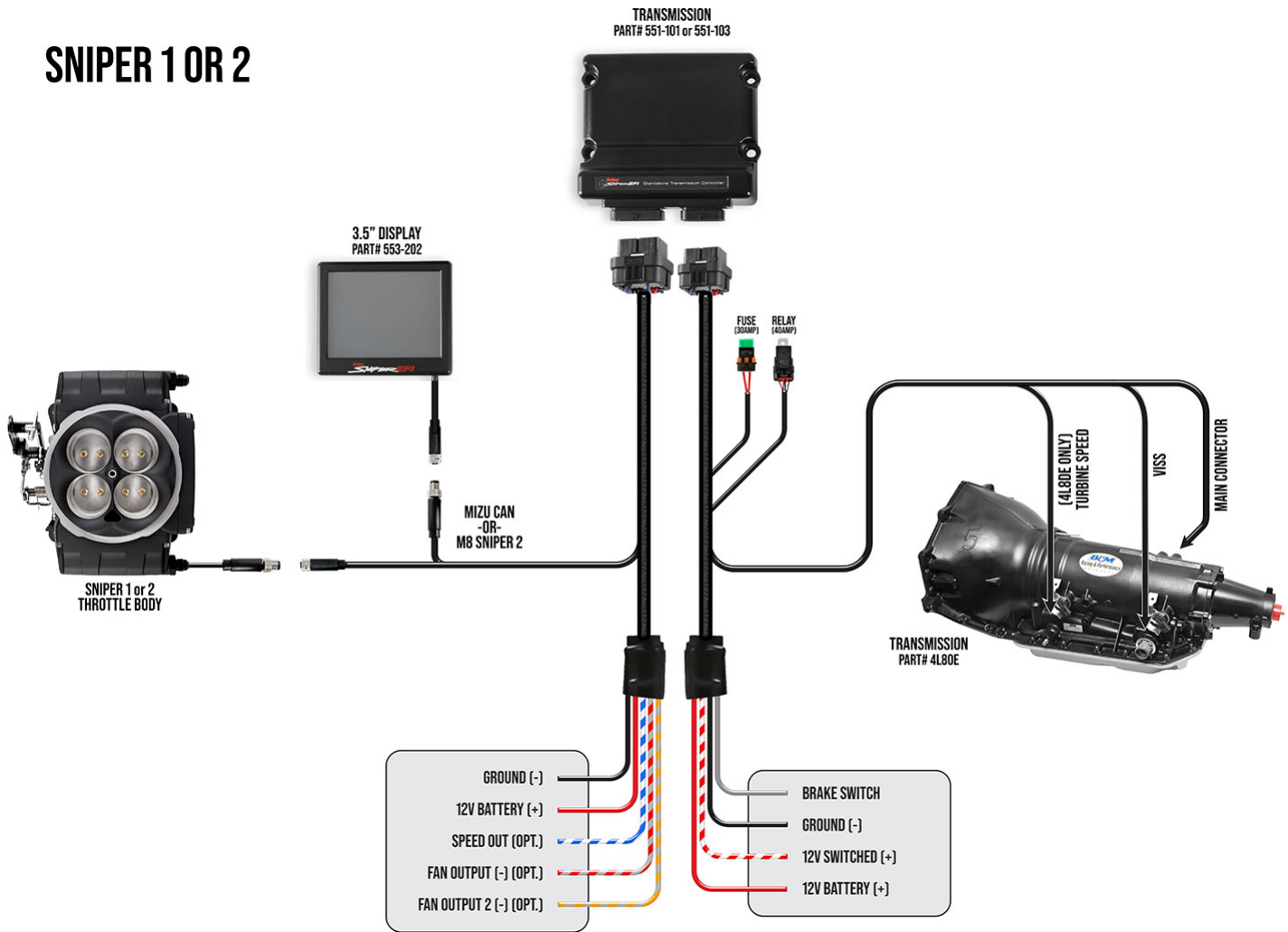
**Blue/White (20 gauge)** – Speedometer Output – Optional – Used to send signal to an electronic speedometer. (configure PPM setting in 3.5 handheld).

The 4 pin male and female CAN bus connectors must be installed between the Sniper ECU and 3.5” touch screen LCD.

STC 34 Pin Connector Pinout:

Description	Color	Pin
Battery Power (A2/3/4 tied together)	Red	A2
Battery Power (A2/3/4 tied together)	Red	A3
Battery Power (A2/3/4 tied together)	Red	A4
Ground (A6/7/8 tied together)	Black	A6
Ground (A6/7/8 tied together)	Black	A7
Ground (A6/7/8 tied together)	Black	A8
Fan Output	Grey/Red	A9
Fan Output 2	Grey/Yellow	A17
CAN Low	Orange	A24
CAN Power	White	A25
Speedometer Out	Blue/White	A28
CAN Hi	Tan	A32
CAN Ground	Black	A33

# SNIPER 1 OR 2



## INITIAL USE

Make sure the Sniper unit and 3.5" touch screen firmware are both updated. When powered up you'll see the main screen (**Figure 2**). The Sniper EFI as well as the Transmission controller functions (tuning, gauges, wizards, logging) will all be performed through the same icons in **Figure 2**.

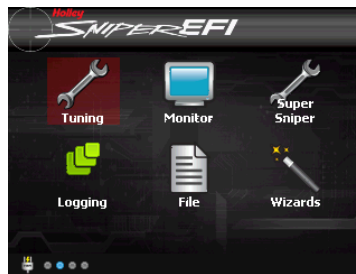


Figure 2

## PERFORM WIZARD

The STC wizard must be performed. This will prompt the user to select the proper transmission, tire size, etc. This is required for the transmission controller to function.

Numeric entries can be entered using the "slider bar" or clicking on the numeric value and using the keypad. Select "Next" after making a selection or "Back" to a previous entry.

Select the "Wizards" icon.

Select the "STC Wizard" icon (**Figure 3**).



Figure 3

- 1) Select Transmission Type (**Figure 4**) - Note: The 1.63 ratio is by far the most common 4L60E version.



Figure 4

- 2) Enter Tire Diameter (**Figure 5**) – Enter Height/Diameter for rear tire in inches.



Figure 5

- 3) Enter Rear Gear Ratio (**Figure 6**).



Figure 6

- 4) The next entry is “Automatically Scale Shift Tables” (**Figure 7**). It is advised to select “Yes” to this. This will rescale all of the up/down shift tables for the user’s specific tire diameter and rear gear ratio (compared to the base calibration values of a 4.10 gear and 27.7” tire). If this is not done, up/downshifts may occur early or late and a lot of manual adjustment may be required.



Figure 7

- 5) At this point a base calibration will be created and you'll see a file name of "AT" or "FAT" (**Figure 8**). Select "Start" and you will be prompted to cycle the ignition power. Select "Finish" (**Figure 9**).



Figure 8



Figure 9

At this point, the transmission controller programmed with a base calibration and is in a drivable condition. Use the Tuning Parameters to adjust transmission shifting, torque converter, and other operations. Refer to the comprehensive manual for information. It is highly advised to read all of these instructions and perform any adjustments before driving the car.

## MONITORS/GAUGES

You can view the transmission parameters by selecting the "Monitor" icon and then either the "Monitors" or "Mult-Gauge" icons. Monitors has two transmission specific screens (Trans #1 and #2) (**Figures 10-12**) and Multi-gauge has a "Trans/Engine" screen (**Figures 13-14**). You can set up a custom screen using the "Dash #1/2/3" screens.



Figure 10

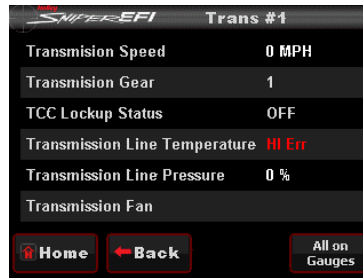


Figure 11

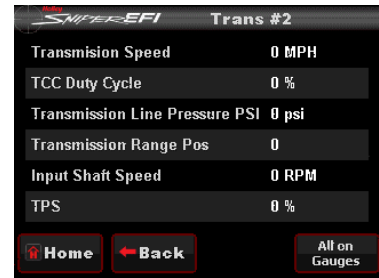


Figure 12



Figure 13

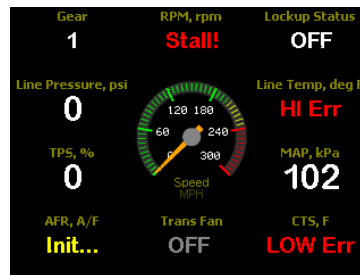


Figure 14

### LED Definition

The unit has 8 LEDs. Three of them are used as follows:

LED #1 – Flashes green to indicate the unit is powered and basic operation is being properly performed.

LED #2 – This LED will light up blue when an ECU (such as a Sniper EFI unit) is connected and the STC is properly receiving CANbus information. If an ECU is connected and powered and this LED is not lit up, there is a CANbus issue (wiring connection, etc.). Note: Having the 3.5" handheld display connected by itself will not cause this LED to light up.

LED #3 – This will light up red when the unit does not have a proper calibration loaded. When it is operating properly it should not be lit.

LEDs #4-8 – None of these will be active.

**Holley Performance Products**  
**Toll Free Technical Service: 1-866-464-6553**  
**Technical Service: 1-270-781-9741**

**For online help, please refer to the Technical Information section of our website: [www.holley.com](http://www.holley.com)**

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