

Z Automotive Programming Utility (ZPU) User's Guide (version 1.3.7)

The Z automotive Programming Utility is a PC application used for configuration and firmware updates on Z Automotive products.

1: Installation

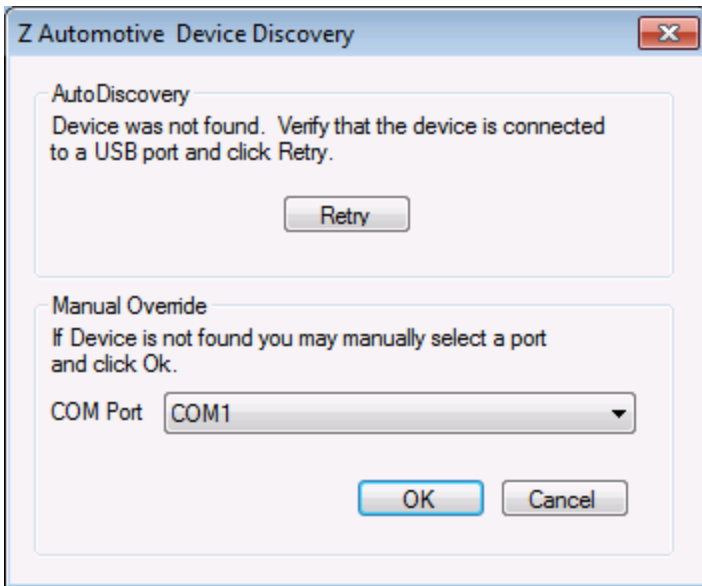
Plug the supplied USB cable into the TranZformer/Tazer and your PC. If you are running Windows 7, 8 or Vista, the drivers should load automatically. If you are prompted to allow Windows to check the Web for drivers, allow it to do so. If the drivers do not install automatically or if you are running Windows XP, please download the USB drivers from the Zautotech.com website.

Next, click on the "ZPU" link on the TranZformer or Tazer page of the Zautotech.com website. Allow the program to install itself on your PC. This document is for ZPU version 1.3.7.

From the task bar, run the Z Automotive Utility.



Click "configure." If you see the screen below, then the TranZformer/Tazer was not detected automatically. You can try to point the ZPU to the proper COM port using the pulldown menu. This can also be caused by the serial port drivers having not been loaded automatically as mentioned above.



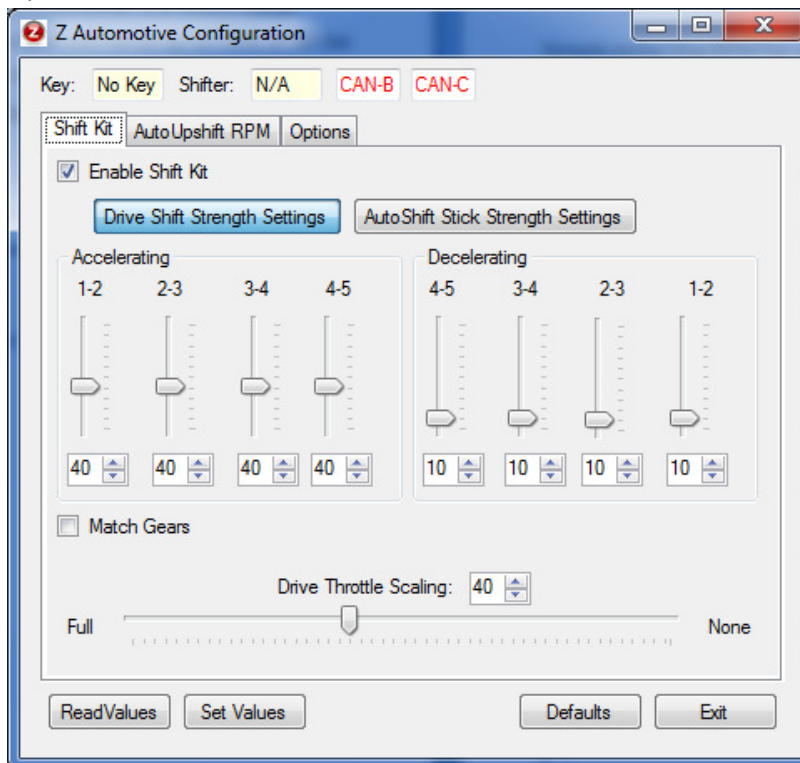
2: Configuration

The configure screen will load with the proper selections for your device.

For a Tranzformer Gen 1 or Gen 2:

There are three tabs or configuration screens to configure the TranZformer. These are:

- Shift Kit
- Auto Upshift RPM
- Options



Shift Kit tab:

This tab includes every parameter available to change the shift speed and firmness and scaling that the TranZformer has to offer. There are two pages to this screen, one for Drive and one for AutoStick. Press the “Drive Shift Strength Settings” button so the screen is enabled to set shift parameters and scaling for Drive. Press the “AutoShift Stick Strength Settings” to configure shift parameters and scaling for AutoStick mode.

There are sliders for each gear shift independently. The four sliders on the left configure shift strength for accelerating upshifts or downshifts (kickdown). A higher value results in a firmer shift. When utilizing the scaling feature, this is the strength that you dial in which will be attained at Wide Open Throttle (WOT).

The four sliders on the right are for decelerating shifts. These are not only downshifts when coasting, but forced downshifts as commanded via AutoStick at zero throttle, or Brake Assist downshifts during heavy braking, or even a coasting Upshift (as when coasting downhill at zero throttle. Typically these values are set very low to avoid harsh and annoying downshifts.

The “Match Gears” checkbox, when checked, will tie together the values for all accelerating shifts/decelerating shifts. This is helpful to set all shift strengths the same value if that is what you desire. Keeping it unchecked allows you to set values independently.

Scaling - With this feature, the TranZformer varies its output (“boost”) based on throttle position. If Scaling is set to None (value of 99) then the shift boost applied to each shift is the value set by the accelerating and decelerating shift strength sliders. If the Scaling is set to Full (00) then boost is varied, from 0 at no throttle, to the set value at WOT. Any value set in between is a starting point, in percentage, of the boost value set, ramping up to the actual value set at WOT.

For example, if the 1-2 shift boost is set to 80, and scaling is set to 50, then at zero throttle, the boost value output to the transmission will be 50% of 80, or 40. At 50% throttle the boost value output will ramp up to 75% of 80 (as 50% throttle is halfway between 50% set scaling base percentage and 100%) or 60. At WOT the output boost will be the 80 that it was set to. It may be easier to visualize the Scaling value as a “start percentage” of the set shift boost, with the “end percentage” always being 100% of the set shift boost at WOT.

The “Enable Shift Kit” checkbox should be checked for the shift kit functions to operate. Unchecked the TranZformer will not boost shift firmness. Other features such as AutoUpshift and SWS will continue to operate if they are enabled. This can also be turned on/off in vehicle by pressing the ESP button twice.

Once the desired values are entered, press the “Set Values” button to save them in the TranZformer.

*all sliders also have a value box where you can alternatively directly enter the value.

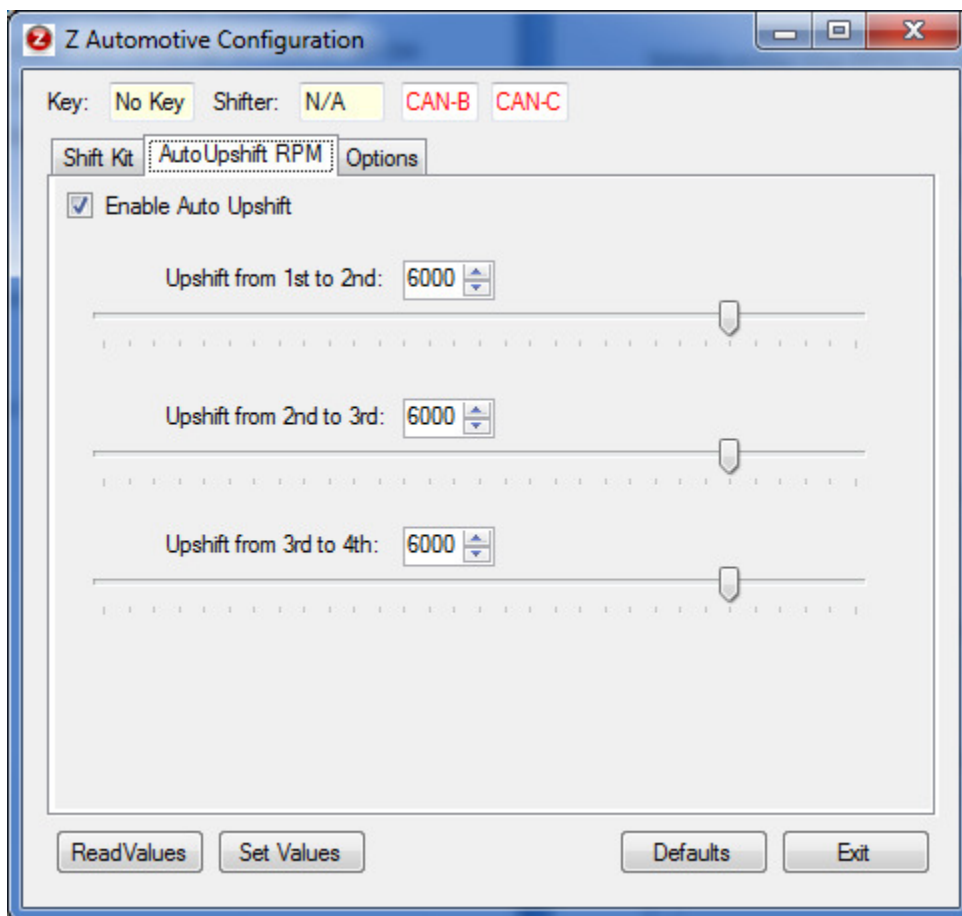
Auto Upshift RPM tab:

The Auto Upshift function of the TranZformer serves one purpose: To aid the racer by upshifting to the next gear at a precise engine RPM, usually greater than what can be set via other methods (such as a Diablo tuner), generally for heavily modified, high-revving motors. This function has no effect in Drive.

To use Auto Upshift, the TCM needs to be set so that it does NOT upshift on its own in AutoStick. This can usually be done using a Diablo Trinity/Predator, setting the TCM Quick Adjust Upshift mode to Mode 1 or Mode 2. Once the TCM is set to rev to the rev limiter without upshifting, the TranZformer AutoUpshift feature can be used. In 2011+ Charger/300, this function can be used when the vehicle is in Sport Mode.

Simply enter the RPM for each gear or use the sliders. Keep in mind that although the TranZformer reads engine RPM every 20 milliseconds and sends the Upshift command to the TCM almost immediately, by the time the actual shift takes place the typical engine will continue to climb an additional 200-300RPM. You may need to try a lower RPM first, then make some runs, using the "PeakRPMs" EVIC feature, to find where it actually shifts to dial it in exactly where you want them.

Once the desired values are entered, press the "Set Values" button to save them in the TranZformer.



Options:

This tab contains several checkboxes:

Enable Steering Wheel Button Shifting: When checked, enables the ability to paddle shift using the steering wheel buttons. This can also be enabled or disabled by using the steering wheel buttons themselves; page up and volume up at the same time enables SWS, while page down and volume down will disable SWS.

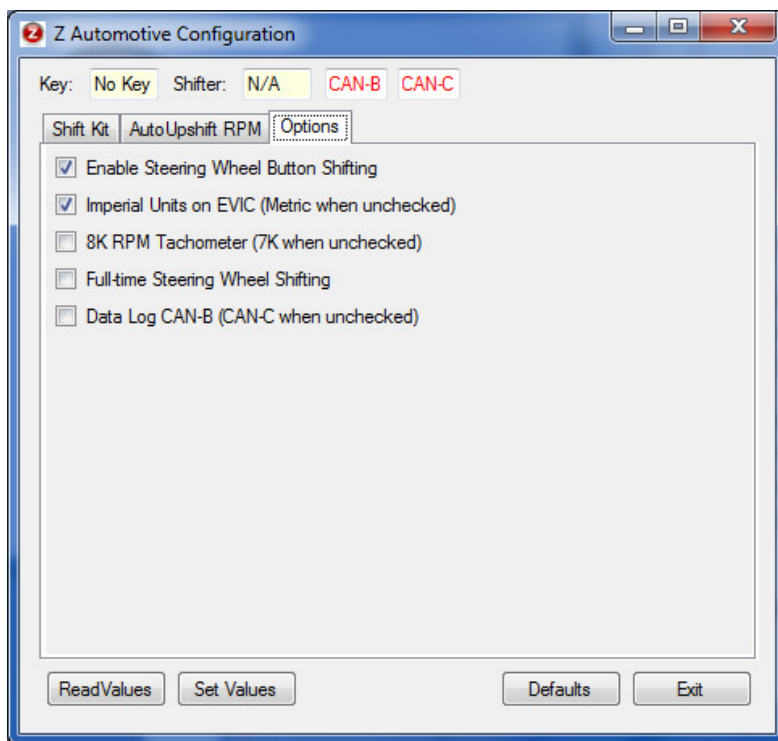
Imperial Units on EVIC: If your car is using Imperial units (ie in the USA), this box should be checked. If using metric units, uncheck this box (requires firmware version 1.3.4 or higher).

8K RPM Tachometer: Check this box if you have a cluster that has an 8K tach (SRT's). This is for if/when you use the “on the fly” Autoupshift adjustment and are using the tach to display the reading.

Full-time SWS: Check this box if you want the steering wheel shifting function all the time – not just if you're in Autostick. Handy if you have an aftermarket radio, and never use the steering wheel volume buttons for anything else.

Data Log Can-B: Used for datalogging feature, to switch the logger from reading CAN-C bus to CAN-B bus. Has no effect on unit operation.

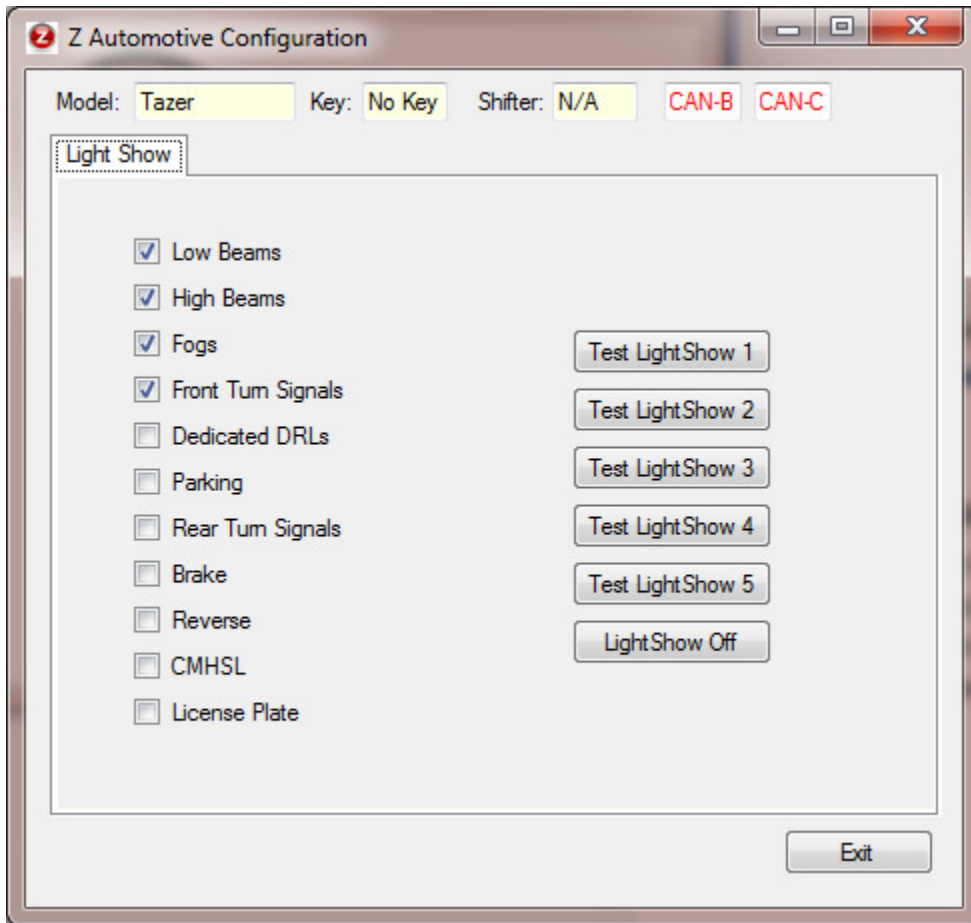
Once the desired values are entered, press the “Set Values” button to save them in the TranZformer.



Status information:

If the TranZformer is live in a vehicle, the status information at the top of the configure screen will update constantly. It will report key status (No Key/OFF/ACC/RUN/START), shifter status (PRND12345) and CAN bus detection. The CAN-B and CAN-C indicators will be red if there is no activity detected on that bus, and green if activity is detected. Note that the CAN-C bus will be inactive when the key is on the OFF, ACC, or key out states.

For a Tranzformer Gen 2 or Tazer:



Each checkbox allows you to add or remove each light from the light shows. If connected to a car, you can try the light shows right from the ZPU screen.

3: Upgrading Firmware

Occasionally new firmware will be available on the Zautotech.com website for bug fixes or product enhancements. First, download the file from the website, and save it to a convenient location on your PC.

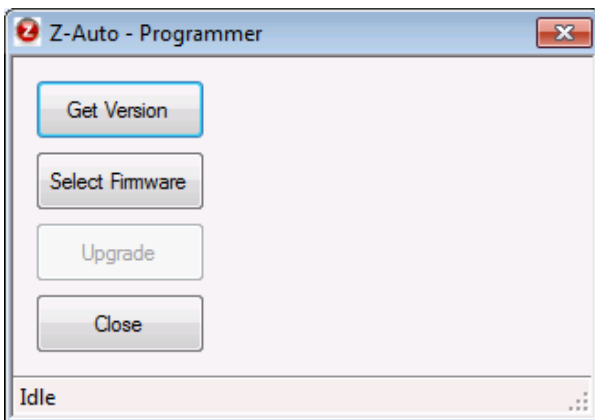
Open the ZPU utility. From the main screen, click the “Program” button.



If a TranZformer/Tazer is connected and detected, then the ZPU will go right to the “Programmer” screen, below.

Click on “Get Version” to see the current firmware version that’s programmed into the device. To upgrade the firmware, press the “Select Firmware” button. Select the new .zfw file you downloaded to load into the TranZformer/Tazer, and click “Open”.

Lastly, click “Upgrade” and the firmware will be loaded into the device.



Occasionally the firmware to fail to load. You can click Upgrade again to try again. If the unit is unresponsive or all else fails, the firmware can be “force upgraded” with the following procedure:

With the TranZformer USB cable disconnected, open the ZPU utility. Click Program. The ZPU will not detect the tranzformer and bring you to this screen:



Click on the COM port pulldown, and take note of which COM ports are listed, if any.

Close ZPU, plug in the TranZformer USB, and open ZPU again. Click Program. Click the COM port pulldown and look for the new entry in the list; this is the TranZformer – select it.

Proceed as normal – Click Select Firmware, choose the downloaded firmware file, then click Upgrade.