CAN Tool Guide

Last update: 9/13/10

Use subject to terms and conditions posted at: http://www.burgertuning.com/terms.htm

This document reflects directions for the latest CT firmware version posted on n54tech.com. If your CT is running an older version see the firmware updates section below.

Installation:

Insert the DB9 cable in to the CT control box. Insert the OBDII cable in to the vehicles OBDII diagnostic port. The port is located on the driver side of the cabin next the door jamb half way between the floor and the steering column.

Some early model 2007 vehicles do not have CAN access at the OBDII port. For those vehicles the ECU mounting location detailed at the bottom of the guide must be used.

Dash Display Calibration:

The CT works with the 135, 335, 535, and X5 and comes preconfigured with the 335i USA dash calibration selected. To select the proper 135 USA dash calibration or for other configurations you will need to change the calibration mode.

With CT plugged in to the OBDII port and engine running press and hold the CT button. After 5 seconds the CT will display an orange test imagine on the dash to indicate it is in configuration mode. Then release the button. This same config mode will be used for any changes you want to make to the CT setup.

Once in config mode press and release the button once to move to mode 1, dash configuration. Normally the speedo will move to the 1 (10 mph) position to indicate your mode 1 selection but the first go around will show above or below the 1 until the proper mode is selected for your car.

Once you see the speedo move up to the 1 (or wherever it wants to go with the one button press) then press and hold the button again until the test image on the dash disappears. The CT will then save the calibration settings and position the speed to 80mph (or 80kph when proper metric mode is selected), fuel to 1/2, and oil temperature to 1/2 for two seconds to allow you to visually verify whether you're in the correct dash configuration mode. If the gauges do not center properly simply repeat this process again to try modes 2, 3, and 4. If none of the 4 modes center the gauges email BMS for support.

Reading codes:

To read ECU codes with the CT click the button. Codes will display on the speedo in the following pattern:

A) Blinkers will flash twice to let you know the codes have been read.

B) The speedo will indicate how many codes are stored or pending by moving to that digit. 0mph=0, 10mph = 1, 20mph = 2, 80mph = 8, 120mph = 12 (or C), 150mph = 15(or F), etc. So if the speedo moves to 30 then you have 3 codes pending.

C) The flashers will again blink twice and then the speedo will start to display the first code one digit at a time. Each code consists of 4 numbers 0-15, or 0-F for those familiar with HEX notation. Write each block of 4 digits down on a piece to look up the descriptions later.

D) After 4 digits are displayed the blinkers will flash twice letting you know it is about to start reading out the next code.

E) After reading out all codes the blinkers will flash four times indicating the CT has left code reading mode. If no codes were stored you will see the flashers blink twice followed by the flashers blinking four times with no codes displayed in between.

F) To find the code descriptions first convert the numbers 10, 11, 12, 13, 14, or 15 to A, B, C, D, E, or F. This is known as HEX notation. For example code 2,10,11,12 is converted to 2,A,B,C. Then use the code listing posted on N54Tech to look up the description for 2ABC. We plan to create a web interface to facilitate this process in the near future.

Deleting Codes:

To delete all codes press and hold the button for a second and then release. If you hold it more than 5 seconds you will wind up in configuration mode (orange image will appear on dash) and then you must press and hold it a few more seconds to exit configuration mode and try again. So just press it a second or so. When a code delete is initiated the CT will send the delete commands and then immediately initiate a code read to give you visual confirmation that any codes have been deleted. No codes stored will show as two flashers, no speedo movement (because there are no codes stored to read out), followed by four flashers.

Like all other BMW diagnostic tools codes can not be selectively deleted. It is an all or nothing operation.

Auto Delete:

For your convenience the CT can be equipped to automatically delete certain codes when they go pending (e.g. before light is displayed on the dash). Included in this list are tuning detection codes, exhaust modification codes, and other annoyance codes that are not relevant to cars running in non-emissions related situations such as dedicated race cars.

To enable enter configuration mode and select item 9. To disable select item 10.

Shift Light:

Shift light mode programs the CT to display your dash blinker lights at a specific RPM to remind you to shift up to the next gear.

Each time you select mode 11 it will increase the shift light RPM by 200 to a maximum of 7200rpm (shift light off). Once you hit 7200 it will scroll back down to 6000rpm. Upon saving the TACH will jump to the selected RPM for a moment for visual confirmation.

Gauge Hijacking:

As of the writing of this guide the following values are available for gauge mode:

A) DME Boost (boost as read from the DME. Will be accurate with stock and flash tunes but will not be accurate with piggyback tuning systems).
B) Air Intake Temperature.
C) Total Timing Advance.

To enable gauge hijacking enter configuration mode and make the following selections:

0: Disable all dash hijacking
2: Boost on the fuel gauge, displayed as empty=0psi and full=20psi.
3: Timing on fuel gauge, displayed as empty=0 degrees and full=20 degrees.
4: IAT on oil gauge, displayed as min = 60 degreesF, middle=120 degreesF, max=180 degreesF.
5: Boost on fuel AND IAT on oil
6: Boost on fuel AND timing on oil
7: Timing on fuel AND IAT on oil

N55 Support:

Select mode 15 to toggle between N54 and N55 support. This is not required for code reading but is required for gauge hijacking, shift light, etc

Resetting the cluster:

If you don't follow the directions and attempt to read codes in the wrong gauge calibration mode your gauge needles may collide and throw off the calibration. To hard reboot the cluster unplug the CT, press and hold the button, and plug in while the button is depressed.

Steering wheel controls:

Steering wheel and cruise control stick commands are not routed to the OBDII port and are only available when the CT is mounted inside the ECU box.

Mounting in the ECU box:

Mounting the CT in the ECU box allows a more discrete installation, allows the TMAP boost signal to be read giving accurate boost readings for piggyback tuning systems, and allows mode changes using the steering wheel controls. Directions and a harness for this type of install will be released soon.

Select mode 16 to toggle to ECU box mode and mode 12 to toggle boost reading from the DME to the physical analog TMAP signal.

Firmware Updates:

Firmware can be updated on the CT in the same way it is updated with the JB3. Plug the JB3 USB cable in to the female DB9 connector and use the JB3 interface to upload the new firmware. Firmware updates will be regularly posted to www.N54Tech.com as new features are released.