



CAN Tool Guide for 2008+ BMW 135/335/535/X5

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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.

Programming Overview:

The CT has a single button on it which manipulates the speedometer on your dash to indicate programming selections. This same simple process is followed to make all selections.

- 1) Press and hold the button for around 5 seconds until the command mode comes up. You'll see an orange screen in your dash if you have a 135/335. The 535/X5 does not display the orange screen so you just wait a few seconds before letting go to ensure you're in command mode.
- 2) Press the button until the speedo displays the option you'd like to select. Each push will move the speedometer up 10mph, up to 150mph, for a total of 16 selections in programming mode. They are referred to as selections 0-15. If each push is moving the speedo more or less than 10mph the CT thinks you are using a different model car and you must tell it otherwise using model setup below.
- 3) Press and hold the button for 1-2 seconds to save that option. The orange screen will disappear and speedo revert back to normal. Then release the button. Your setting was saved.

Model setup:

The CT comes preset to 335/535/X5 USA so this only has to be adjusted for 135 owners or metric dash users.

Using the programming directions above select option 1. When the dash is improperly configured the speedo will not properly display your options so count up one button press and then press and hold to save that selection. Upon saving option 1 the CT will always center each gauge to give visual confirmation as to the current model setup. When the speedo shows 80, tach 4, fuel 1/2, and oil 1/2, you have the proper mode. If not keep selecting option 1 to scroll through the modes until you find one that properly centers the gauges.

Setup for N55:

The CT comes preset to N54 mode. If you have an N55 you must first change to N55 mode for the in dash gauges and shift light to work. Selecting option 15 will toggle between N54 mode and N55 mode. Select option 15 once to go to N55 mode. Select it again to toggle back to N54 mode.

Reading codes:

To read ECU codes with the CT click and quickly release 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.

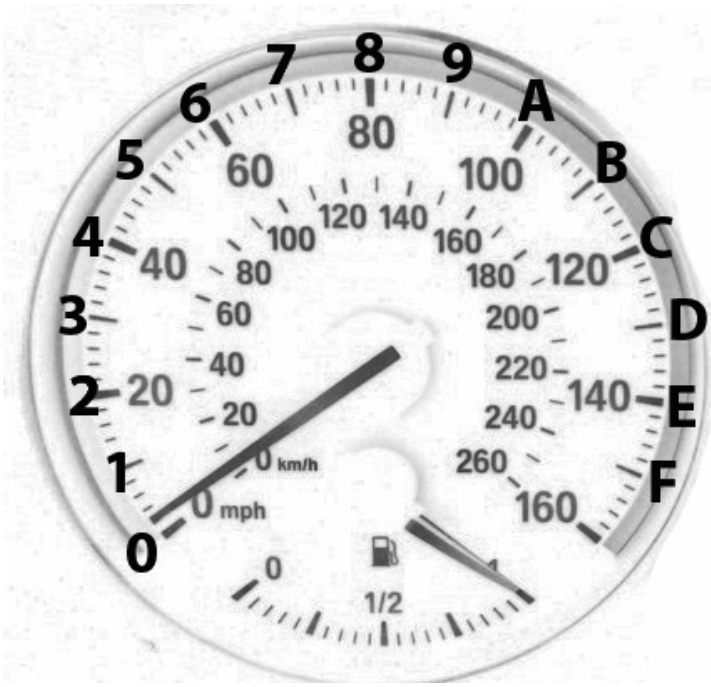
B) The speedo will indicate how many codes are stored or pending by moving to that digit. 0mph=0, 10mph = 1, 20mph = 2, 80mph = 8, 120mph = 12 (or C), 150mph = 15(or F), etc. So if the speedo moves to 30 then you have 3 codes pending.

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 to look up 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. You can use the attached image as a cheat sheet for converting from 0-15 to HEX notation. Please note the N54 and N55 use different code numbers so when looking up codes online ensure you are using looking at codes from the proper model.



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. If you press it for less than a second you'll read the codes instead of deleting them.

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 with dedicated race cars. Real codes will still continue to display a check engine light.

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

For this mode to work the CT must be left plugged in to the car full time. We suggest routing the OBDII cable under the floormat and leaving the control box to the left of or under the seat as shown.



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. Note actual exterior blinkers will not flash. Only the in dash lights.

The light comes preset at 6200rpm. If you do nothing the light will come at this RPM. To disable or change select mode 11. Each selection will increase it by 200rpm up to a maximum of 7200rpm. Once you hit 7200rpm it will scroll back to 6000rpm. Upon saving the TACH will jump to the selected RPM for a moment for visual confirmation.

Gauge Hijacking:

One of the more useful features of the CT is to make your dash gauges display non-standard data. For example instead of showing the fuel level your fuel gauge can now also show your boost pressure. When

hijacked the fuel level is still visible in the dash LCD and the low fuel idiot light still functions properly. So don't worry about not knowing how much fuel you have left.

To enable gauge hijacking make the following selections:

- 0: Disable all dash hijacking
- 2: Boost on the fuel gauge, displayed as empty=0psi, half = 10psi, and full=20psi.
- 3: Timing on fuel gauge, displayed as empty=0 degrees, half=10 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

Resetting the cluster:

If you 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. The dash will go through a reset process and your gauges will recalibrate themselves.

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. As bugs are fixed or updates done firmware will be posted to www.n54tech.com.