OBCinformation and instrument cluster testing for E36

E36 On-BoardComputer (OBC) Hidden Codes and Tests

- Programming the Display Order
- Accessing Data
- Unlock the Display
- Test Codes
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Programming the OBC to Display Contents in a Desired Order

Prog 1. Press the buttoncorresponding to the first function you would like to have displayed in thesequence. For example, if you would like the outside temperature to bedisplayed first, press the **TEMP** button. The display will thenchange to . Continue pressing the OBC buttons in the order you want, upthrough nine entries. You don't have to enter all nine - if you would like thedisplay to cycle only between TEMP and RANGE, simply enter those two items asProg 1 and Prog 2. When finished, press the **SET/RES** button tostore the sequence in memory.

Prog 1 is displayed.

Accessing Data in the OBC

1. Press the **1000** and **10** keys simultaneously. You should see ***Test-Nr.:*** appear in the display.
2. The table below lists the available test codes that are available. Enter a test code number, using the number keys, followed by the **SET/RES** key. However, to access codes other than 1, 10, 14, 19, and 21, **you have to first unlock the OBC**, using the procedure described below.
3. Read the results.
4. For test numbers 10 and 11, enter a new value (if desired) and press **SET/RES**.
5. Return to the normal display functions by pressing **CHECK** or any other key.

Unlock the Display.

Then enter an unlocking code consisting of the sum of the currentmonth plus date (for example, if today is July 11, enter 18). Then press , and the OBC is nowunlocked.

Following is a listing of the available tests,along with with my notes as to what I think each test means. Note that thedisplay uses European conventions for decimals (i.e., the number 61,7 is 61.7for us Americans). You will see that I don't have good explanations for severalof these test codes -- if you have any information that can help me make thistable more complete, please email me at Ceno@BMWplanet.com

Test Code No.	Display	Notes	Display Must Be Unlocked First?
01	All LED display elements are lit	Verify that the display is working properly	No
02	*VBR:* n,n *l/100km*	n,n = instantaneous fuel usage in liters/100 km	Yes
03	*VBR*: n,n *l/h*	n,n = instantaneous fuel usage in liters per hour	Yes
04	*RW-VBR:* n,n *l/100*	n,n = average fuel usage in liter/100 km.	Yes
05	*RW*: nnn *km*	nnn = range in km	Yes
06	--	Not used	Yes
07	*TMTL*: nn,n *l*	nn,n = fuel remaining (in liters)	Yes
08	*V:* n *km/h*	n = instantaneous speed in km/h	Yes
09	*UB:* nn,nn *V*	nn,nn = system voltage (should be around 13,80)	Yes
10	*LAND:* n xxx *	Country code -- for US drivers should be set to *2 USA* -- see description below	No
11	*EINHEIT* n: xx *	?? There are two *EINHEIT* displays: the values for xx in *EINHEIT 1* can range between B0 and BF, and for *EINHEIT 2* range between 0F and FF (mine is set to *B3* and FF, respectively). Press the **1000** or **100** key to switch between *EINHEIT 1* and *EINHEIT 2*.	Yes
12	*VANK* nn *km/h*	nn = average speed	Yes
13	*ANK*: nn:nn	nn:nn = ETA (will display --:-- if the OBC's distance function is not in use)	Yes
14	*ROM*: dd.mm.yy	dd.mm.yyyy = Software version date. Mine is *25.06.1991*	No
15	*DIAG:* nn nn nnn xx	Diagnosis code? Mine is *01 05 255 FA*	Yes
16	*PORT*: nn nnnnnnnn	Port codes? Press **1000** or **100** key to cycle port numbers. For example, *PORT 01* is *10101000*	Yes
17	*PROM*: nn nn	?? Mine reads *00 12*	Yes
18	*HORN:* xxxx	*DTON* or *DTOFF?* (Single tone horn versus dual tone)	Yes
19	*LOCK:* xx	xx = *ON* or *OFF*. See description above for method.	No
20	*KVBR: nnnn*	nnnn = Fuel rate calibration factor. Mine is set to *1000*	Yes
21	*RESET?*	Reset all defect codes? Also erases all stored values in the OBC (i.e, fuel consumption, avg. speed, timer, etc) and clock.	Yes

Note: #20 The factor is used to correct the OBC Avg Fuel Consumption figure to reality.if your OBC is off a bit, fill it UP totally and then run the tank down and refill. Then calculate your Actual MPG. Now enter test #20 get the old Correction Factor. NEW CF = OLD CF *(Actual MPG/OBC MPG)

Setting the Country Code.

If your OBC suddenly starts displaying everythingin German, and you would like to put it back to English, use test sequencenumber 10. Once you're into test number 10, press the key several times, andyou'll see the display cycle through various country options. For example, *0*is for Germany (the display reads

***LAND:0 D ** - I assume D stands for Deutschland). As you cycle through theoptions, you'll see choices for the Great Britain, USA, France, Canada, etc.Once the display is on the country you want, press the key to store yourchoice into memory -- for US drivers the display should be set to *LAND: 2 USA * . Then press the key, and the displaywill reflect the units of the country you've chosen.

Instrument Panel Tests

and then will begin to cycle through several displays. Releasethe button. The display will continue to cycle through several displays. Here'sthe data my car displays:

Display	Display Sequence	Notes
363758	1	BMW Part No.
0000	2	Code No.?
7504	3	K No.?
nnnnn	4	Last 5 digits of VIN
230	5	Software Version
62	6	Revision Index Hardware No.

Finally, all LED elements will light, and allgauges will cycle once.

Display	Test Sequence	Notes
n	02	Engine type: n = 2 for 4-cylinder engine, 3 for 6-cylinder, and 4 for 8-cylinder
nnnnnn	03	km traveled since last oil service reset.
nnnn	04	Age of car, in days
For tests 5 - 13, display must first be unlocked using sequence 15.		
n	05	SI evaluation factor: n = 0 or 1 (over-rev), t= 0 or 1 (engine temp over heat)
	06	Fuel level and coolant temp. Displays hexadec codes relating to gauge position: Fuel Gauge Hex value: A (empty) ----> 0d End of Reserve ----> 37 B ------> 54 C --------> 90 D ---------> c4 E (full) ------> f0 Engine Temp Hex value: A -------> ce B --------> 6d C --------> 5c D (center) ------> 4f-23 E --------> 1e F ---------> 18
	07	Current engine RPM

	08	Current road speed in km/h
nnnnnn A	09	Distance - used to compare odometer mileage in the EPROM vs. the coding plug. If the two values don't agree (for example, if one of these elements was replaced), the manipulation dot will illuminate. This function will synchronize the two readings to the highest value. Press and hold the reset button for 4 seconds, and the lower mileage reading will be overwritten by the higher, and the manipulation dot is cancelled.
bbbbbb	10	Status bits - input signal (0=low or 1= high): 1: seat belt: fastened =0 2: ignition lock: key inserted=0 3: door contact: door open = 0 4: clock button pressed = 0 5: SI reset = 0 6: EGS transmission failure = 0
bbbbbb	11	Status bits - output signals: 1: Gond output 2: Brake warning lamp 3: Low fuel warning lamp 4: EGA lamp 5: Seat belt lamp 6: manipulation dot
------	12	Not used
nn	13	Country code of cluster (USA = 02)
	14	Software reset
L On/Off	15	Lock Status (on or off). Press and hold the reset button for about five seconds until the display reads "OFF". Now you can access test sequences 5 through 14.