This is the master thread for S55 tuning info, dynos, track times, software, and updates!

Order here: https://tougetuning.com/shop/s55-jb4-bmw-performance-tuner-pneumatic-wastegate-2015-2019-bmw-m3-m4-2019-2020-m2-competition/

Install guide: https://tougetuning.com/wp-content/uploads/2020/02/JB4_S55_Instructions.pdf

JB4_S55 Map Guide as of v1_8_4 firmware:

Map 0: Disable JB4 / Full Pass Through Mode

Map 1: Stage1 map adding approximately 40whp and 40wtq across the power band on pump gas. Suitable for all stages and fuel mixtures.

Map 2: Slightly more aggressive version of map 1 intended for vehicles with bolt on modifications and 93+ octane fuel. Can also be used with E85 and racing fuel mixtures. Fuel pressure connector suggested.

Map 3: Slightly less aggressive version of map 1 intended for vehicles running on lower grade fuels such as 91 octane.

Map 4: Low boost / VALET / Safety Map

Map 5: //M low torque ramp power up to redline

Map 6: User defined map generally only used for diagnostics or troubleshooting.

Map 7: Race gas map. Requires 100 octane unleaded fuel and for the fuel mass connector to be installed. Can be used with or without the EWG connectors but will make more power with the EWG connectors installed. This map can also be used with up to 35% E85 but in some vehicles & conditions this may cause a high fuel pressure drop and resulting stuttering. If this occurs drop down to map 2.

Map 8: WMI map. Requires FSB controller for progressive mapping and safety systems. For pump gas a meth additive of 30-40 is suggested while for race gas/E85 + meth up to a 75 additive can be used. The higher the meth additive the more aggressive the boost curve. A meth additive of 60 would be roughly equivalent to map 7.

Note: map8 changes its curved based on your boost safety setting.

Setting of 30psi or less: Map8 targets a peak of 27psi with a 75 additive tapering towards redline. This setting is intended for OEM turbos.

Setting of more than 30psi: Map8 targets a peak of 32psi with a 75 additive with no taper to redline. This setting is intended for larger than OEM turbos like PURE S2 Turbos.

Note adding in a back end flash map and setting FutureUseD bit6 on changes the mapping characteristics to higher power maps meant to work with the back end flash maps.

E85 Mixtures:

On the stock flash mapping 5-6 gallons per tank and map1 or map2 may be used, with our E85 back end flash map loaded up to 100% E85 can be run on maps 2, 5, or 7.

Basic overview of the wheel controls: https://www.youtube.com/embed/6iLqHa2YFU

Install video of full Stage3 using OBDII CANbus connector: https://www.youtube.com/embed/pa4kyX8wDJY

Current dash settings as of OBDII v1.1 firmware:

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Exhaust Valve Mode:

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Toggle between flap open, flap closed, and OEM operation, by pressing the button for 2 seconds and letting go. The left blinker will flash for valve open, right blinker for valve closed, and both blinkers for OEM operation. The valve setting is persistent and will remain in effect until you change it. If you hold the button too long you'll jump in to the in dash menu system below.

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'**OBDII In Dash Menu**

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'0 map menu, map shown on tach (tach shows Map)

'1 Active Sound MUTE. (tach = 0 OFF, tach = 1000 ON)

'2 Boost gauge on fuel, scaling in dash is 0 to boost safety setting, turns on when gas pedal is pressed 60% or more and turns itself off when you resume low throttle use. (tach = 0 OFF; tach = 1 Boost Only; tach = 2000 Boost on fuel, Meth on speedo ring; tach = 3000 Boost on fuel, Timing on speedo ring; tach = 4000 Boost on fuel, AFR on speedo ring)

'3 LED MAX brightness mode. For those with factory LED headlights this option brightens HALO during nighttime operation. (tach = 0 OFF, tach = 1000 ON)

'4 Delete Fault Codes.

'5 Dash Mode. tach = 1000, SAE; tach = 2000 Metric

'6 1st gear boost limiter. (Tach = boost cap / 3)

'7 2nd gear boost limiter. (Tach = boost cap / 3)

'8 3rd gear boost limiter. (Tach = boost cap / 3)

Firmware:

JB4_S55_1_8_5 Firmware:

1) Fixed bug with code reading in app stopping JB4 canbus operation until vehicle is restarted.

2) Added functionality for CANflap via JB4 mobile app. Currently enabled in Android version. Add CANflap gauge to JB4 mobile and double tap to toggle through CANflap options.

3) Fixed bug with gauges going wonky in dash mode on newer models.

T19) Further adjusted in dash gauges for newer models

JB4_S55_1_8_4 Firmware:

1) Adjustments to the partial throttle mapping when using absolute target maps. The JB4 will now accept targets below the flash boost target. Very useful for boost by gear. Setting 1st gear to 10psi actually gives you a 10psi target now, for example. Not just the flash map target which could be as high as 22psi if using a back end flash map.

2) On absolute target maps the JB4 sets the partial throttle boost profile. We've mapped it out relatively smoothly and will add a user adjustable option soon to make it more or less aggressive on the fly.

3) Revised the boost targets on map7 to better suit our new E85 BEF and 100% E85. Same map7 will be suitable for stock turbo on unleaded race fuel, we expect.

4) Adjusted map5 when equipped with a BEF to be more aggressive with a peak of 24psi. Perfect for situations where map7 is too strong for the car.

5) Hijacked the "ignition average" parameter to temporarily show an internal JB4 calculation. Information there won't be useful to you. Just to me when looking at logs.

6) Adjusted map4 to target 8psi, regardless of the flash target, making it more like a true VALET map.

7) Added option for increased cranking fuel when on heavy E85 mixtures by setting FutureUseD bit2 on.

8) Adjusted MAP1 when equipped with a BEF to act as the "flash only map", for those who want to run flash only maps but have the JB4 active for safety systems, in dash gauges, CANflap, boost by gear, etc, this is a great option.

TEST2: Minor change to allowable TMAP voltage range to avoid plausibility fault.

TEST5: Changes to improve low throttle operation.

TEST10: Fixed bug on map1 when used with a BEF. Map1 with a BEF should run the flash boost target.

TEST11: Revised partial throttle blending when on absolute target maps.

JB4_M3_OBDII_1_8_3:

1) Added back trans temp logging parameter

2) Adjusted startup sweep timing

3) WMI Algorithm Adjustments

T5: Fixed bug with bank2 fuel trims always matching bank1 fuel trims in datalogs (JB4 was always reading them properly, though)

T13: Fixed possible bug with "shadow code" delete not working properly.

T14: Change to trigger exhaust flapper valve faster during startup when enabled.

T15: Minor change to shadow fault code clearing.

JB4_M3_OBDII_1_8_2_T12:

Enabled alternative meth safety algorithms. Meth safety settings now as follows:

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*Meth Safety Mode All Versions

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0 - Raise boost on map8 as a function of meth flow and other data.

1 - Raise boost on map8 as a function of meth flow only.

2 - Start at normal target and failsafe to map4 IF flow drops below flow level for 1 second under boost. Enabled for all maps.

3 - When on map8 meth flow is completely ignored. Useful for using map3 as an adjustable non-meth map by setting meth additive from 0-75.

4 - Run a progressive meth safety on all maps. Progresses from stock (or flash only) boost target up to defined JB4 map target as a function of WMI flow.

JB4_M3_OBDII_1_8_2_T11:

1) Adjustments to map7 when equipped with a BEF (26psi peak absolute map)

2) Adjustments to map2 when equipped with a BEF (22psi peak absolute map)

3) Adjustments to map5 when equipped with a BEF (25psi peak absolute map, boost ramp up to redline)

4) Adjustments to JB4 fuel trim mapping

5) Added "metric" speedo setup under menu5, option 1. Shifted boost by gear adjustments each up 1.

6) Duty bias values are now used on all absolute maps regardless of setting. So be sure to default values all to 50 if you have them set to 0. We also suggest enabling FutureUseD bit5 which triggers the JB4 to adjust duty bias by RPM automatically on absolute target maps.

JB4_M3_OBDII_1_8_2_T4:

Note: If your duty bias (on user adjustment page next to map6) is set to 0 your absolute boost maps will under target. So default all those values to 50.

1) Made map7 more aggressive when equipped with a back end flash map.

2) Adjusted in dash speedo so it lines up properly with standard dash. We'll add a metric speedo option down the road.

3) Added additional in dash gauge options under menu2:

2/1 Boost on fuel

2/2 Boost on fuel, meth on speedo ring

2/3 Boost on fuel, ign timing on speedo ring (shows lowest cylinder)

2/4 Boost on fuel, air/fuel ratio on speedo ring

4) Added duty bias auto tuning by RPM. To test this out set FutureUseD Bit5 on, and we also suggest setting FutureUseD Bit1 on to disable FF learning. Default FF to 100, duty bias to 50 across the board, and as you do full throttle runs duty bias should optimize itself by RPM.

5) Added startup sweep when JB4 is enabled. Can be disabled by also disabling BC button for in dash controls (FutureUseD Bit0).

JB4_M3_OBDII_1_8_1:

1) Redesigned CANbus logging module for high speed logging of all channels including timing

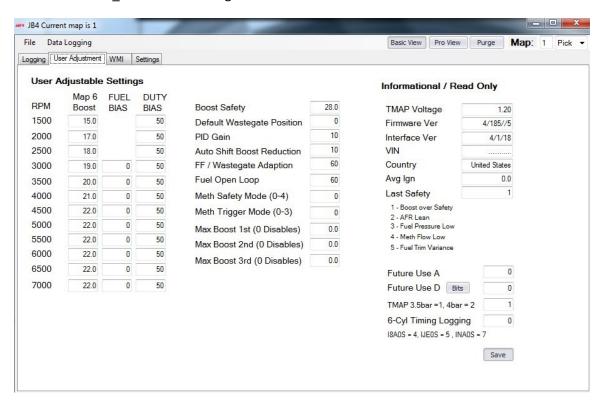2-6, load, and calculated torque. Bank2 AFR, Bank2 fuel trims, and low fuel pressure are logged full time now.

JB4_M3_OBDII_1_8:

1) Added extra logging parameters calculated torque and load for those running back end flash maps.

JB4_M3_OBDII_1_7:

1) Changes to improve Fuel-IT Port Injection integration

2) Enabled WMI ethanol bits for PWM controllable WMI and hard wired ethanol sensors.

Here are the JB4_S55 default settings.

How to install BlueTooth Module: https://www.youtube.com/embed/Q6NvtItTrUg

To install the BMS DATA Cable or REV3 BlueTooth Adapter
1) Remove the gray shell on the cable/REV3 including the metal stopper if installed on the wire
2) Open the JB4 enclosure
3) Using two short screws recycled from the gray shell, or included with the JB4, attach to the port as shown
4) Close the JB4 enclosure ensuring its properly aligned and closes smoothly

How to update firmware via JB4 Mobile: https://www.youtube.com/embed/vXXHUdxvv8U