

Factory Bluetooth Retrofit - Supplement

- **Model & Year:** 95-00 7-Series, U.S.
- **Expertise:** Intermediate
- **Date:** February 17, 2020
- **Updated:**
- **Time Estimate:** varies

7 Series ^{E38}

Tools Required

- Basic hand tools

Facilities Needed

- None

Parts Required



- **ELK-800 Audio Amplifier:** \$50 - \$80 (retail).
- **Microphone,** p/n 84-31-6-938-762 (\$31 retail).
- **Wiring Supplies:** miscellaneous

NOTE: This procedure supplements and presumes knowledge of [Factory Bluetooth Retrofit](#) and is for BMWs without DSP audio as well as other models produced before 9/00.

Getting Started

Most BMWs built thru 2000 that were pre-wired for phone but *not* equipped with DSP audio will require a supplemental amplifier to boost the audio signal coming from a factory Bluetooth TCU or ULF. Also, some cars may not have a voice microphone pre-installed. Finally, some may require a data bus wire be inserted into your car's existing DB25 telephone connector so that the TCU may communicate with the car's onboard electronics, such as your multi-information display (MID):



According to [BimmerNav](#), several non-DSP cars may need telephone audio boosting (E38, E39, E46, and E53).

Amp installation instructions on BimmerNav call for tapping the speaker wires from the 54-pin adapter of the TCU while drawing power from the unused cellular booster. Alternatively, this procedure taps the speaker *and* power wires of your DB25 connection, leaving the 54-pin adapter untouched. This way, the obsolete DB25 connection is altered instead of the 54-pin adapter, which retains its versatility and original wiring, allowing it to be re-used in other installations.

This approach is more convenient for those whose cars do not have a cellular booster connection or cannot locate it. Note this means the ELK-800 will share power with the TCU. But the additional power draw represented by the supplemental amp is minimal and will not pose a problem (no blown fuses, etc). This approach also does not require any additional wires or splices.

Purchase the amp on eBay or Amazon after searching by its name. Once installed, the ELK-800 requires so little power to boost telephone audio that its volume wheel needs to be set minimally (1/4 turn above OFF), otherwise audio clipping will occur.

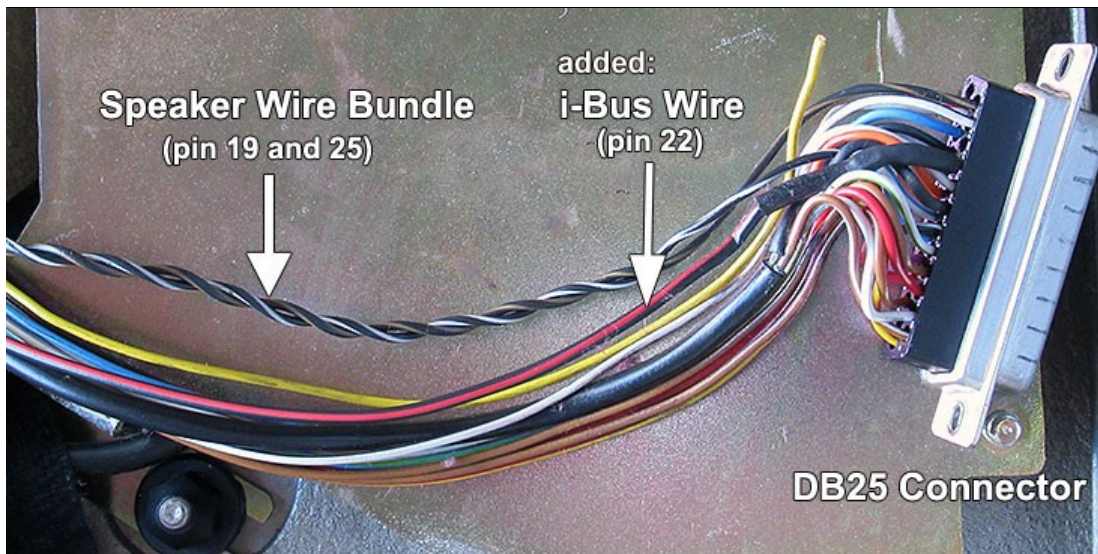
This procedure requires a [DB25-to-54-pin adapter](#) in order to complete the connection between a factory TCU and your existing DB25 plug.

Procedure

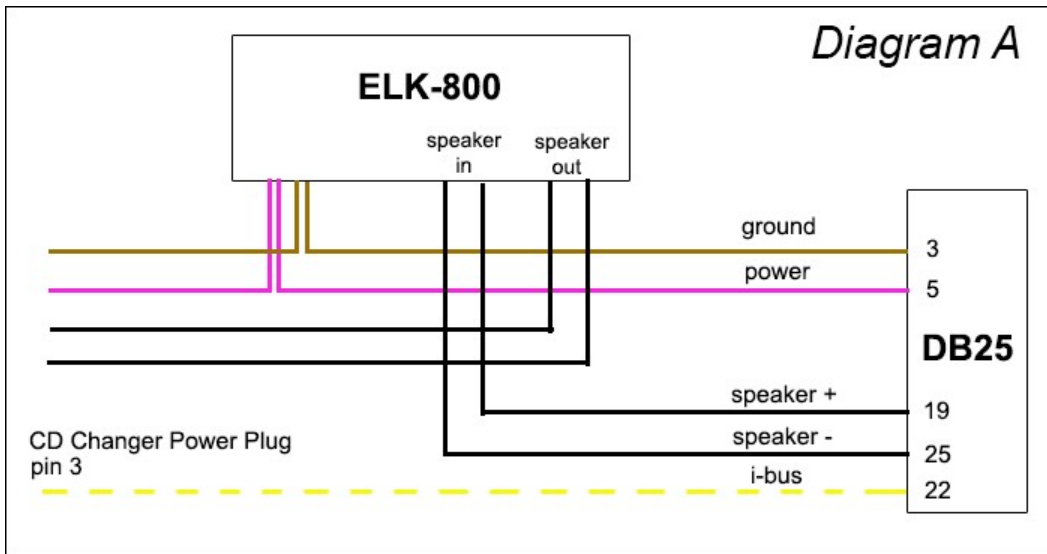
1) Determine a suitable mounting location for the ELK-800 amp. Each car may be slightly different. This procedure assumes the amp will be mounted close to the DB25 wire bundle, tapping into the needed signal wires therein.

Building a mounting board out of scrap plywood serves well to secure the amp to existing points.

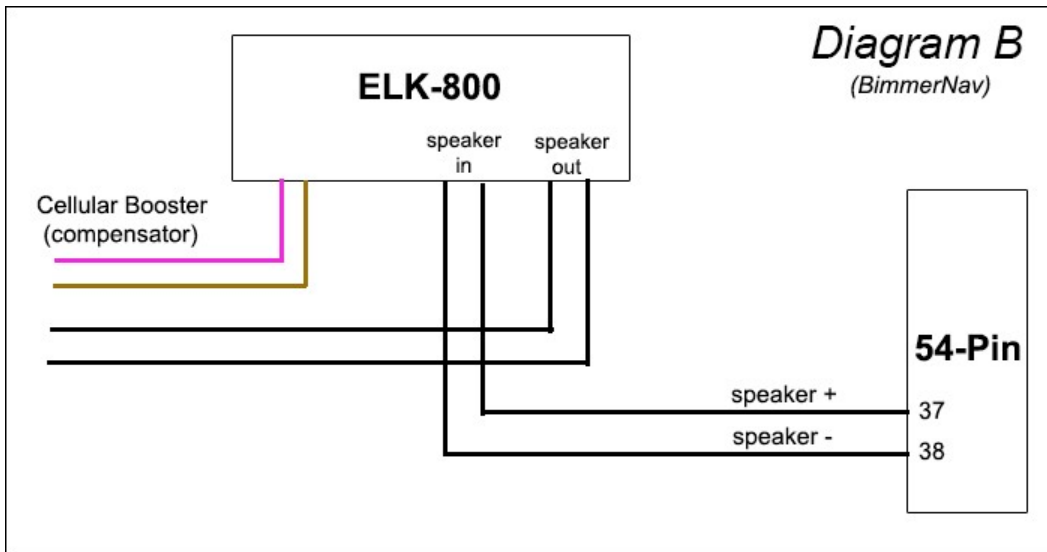
2) Open the DB25 connector by removing the four (4) small Phillips screws on top, then separate the connector from its bottom trim by removing the remaining two (2) small Phillips screws. Remove about 12 inches of sheathing from the DB25 wire bundle to expose the wires. The "naked" DB25 should look like:



3) With the ELK-800 securely mounted in its location, snip the needed wires of the DB25 bundle in the most convenient place for access to the amp's terminals, according to this schematic:



Compare this schematic with the suggested procedure from BimmerNav ([See more](#)).



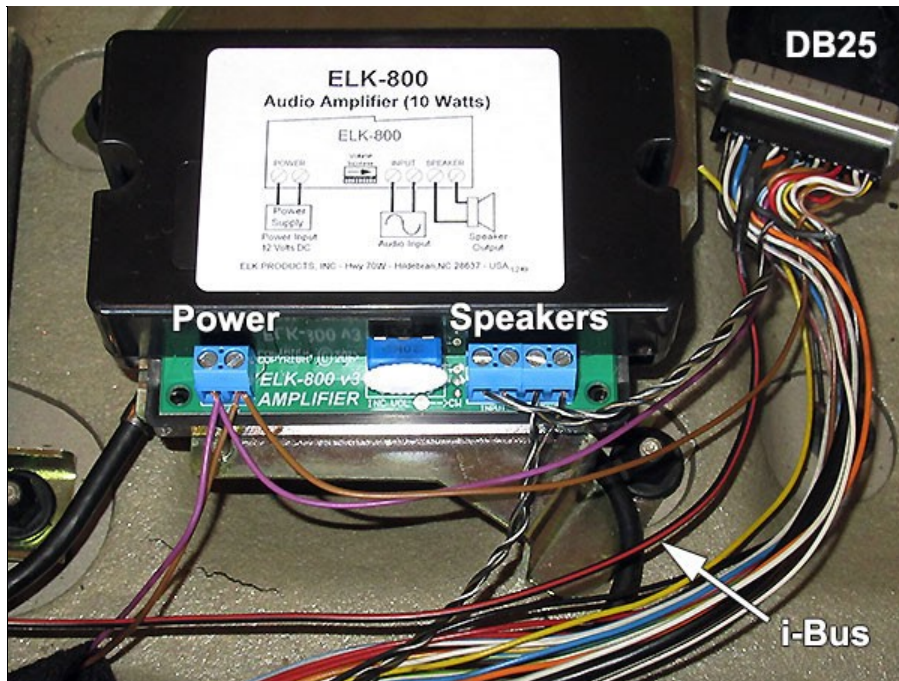
Reference the diagram printed on the amp's label for connections at the ELK-800. Strip 1/4" off the ends of each wire and secure them into the terminals of the amp by turning the small screw atop each respective binding post.

4) Verify DB25 pin 22 is wired (the car's communication bus).

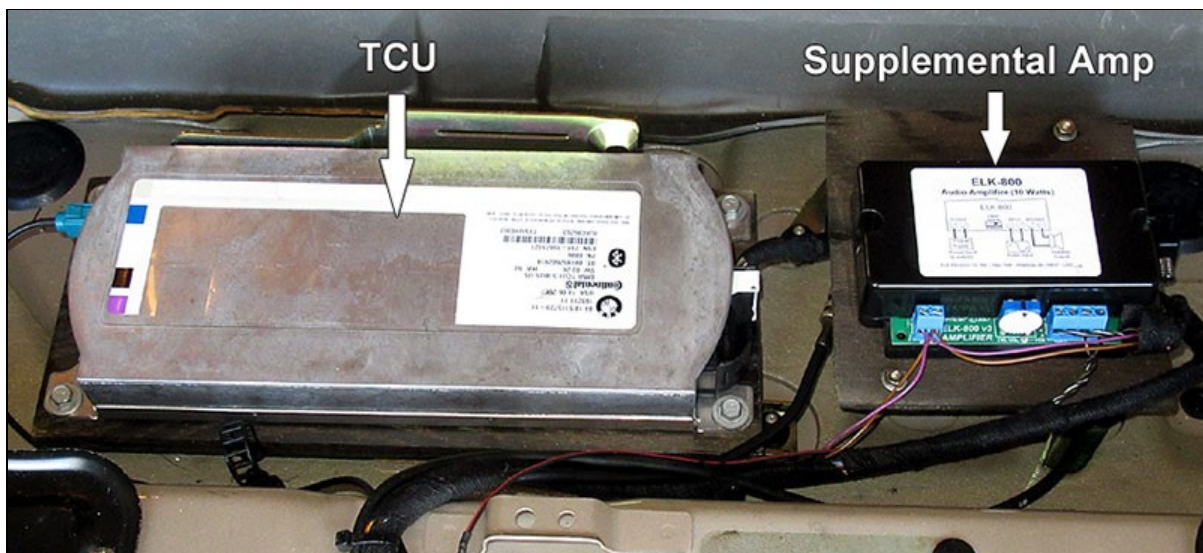
If not, pin a wire from CD changer power plug pin 3 into pin 22. Use a pin tool to move an unused pin of the DB25 over to pin 22 (such as pin 23), thereby negating the need to purchase a separate pin. (Search keywords "DB25 pin tool" on Amazon, about \$5. See also YouTube for demonstrations.)

Splicing into the existing wire of CD changer power plug pin 3 is acceptable since this is a data bus - which shares signals with all connected devices. This wire is required for BimmerNav's schematic as well, but not shown because it assumes the i-bus wire is present in the DB25. Alternatively, you could connect the i-bus wire directly to pin 15 of the 54-pin adapter. See pin table in Procedure section of [DB25-to-54-pin adapter](#).

The result should look similar to:



5) Re-wrap the DB25 wire bundle as appropriate and verify both amp and wire bundle are secure. Image below shows an installation in a '99 528iT, with both TCU and ELK-800 secured to mounting boards atop existing factory brackets.



6) Verify a telephone microphone is installed by pulling down the mic cover (in headliner, left of rearview mirror). If not, install mic using 3-pin pre-wired connector tucked away above mirror.

7) Test your installation before replacing trim. (Pair your phone using four digit "PK" code printed on TCU Label.)

Since only a few watts of boost are needed, begin by turning amp volume wheel OFF (full left) and then move wheel 1/4 turn clockwise. Mark this point as a reference. Anything louder may result in clipping when radio volume is turned up full. Press and hold the telephone button on steering wheel, then speak "Help". The TCU should begin speaking available features, which allows for volume references and provides an opportunity to make adjustments.

Once satisfied, replace trim.

MID Telephone Menus



- The main menu should appear when pressing TEL button (panel A above). This menu can be recalled from within other modes by pressing MENU (if shown) or ^ (back).
- The paired address book will appear after selecting NAME from main menu (panel B). Step thru the address book by either pressing < or > button on MID, or by pressing R/T button on steering wheel and then up/down arrows to scroll. After selecting a contact, press "telephone" button on wheel or MID to place call.
- To dial a number from the MID, press DIAL from main menu then press number buttons (panel C).
- To monitor cellular signal strength at any time, press INFO from main menu (panel D). For better reception, consider [Phone Charging and Signal Boosting](#).

Don't forget about the hands-free phonebook feature (place calls by voice command). See [BMW Voice Control User Manual](#). The radio doesn't need to be ON in order to use telephone functions, and radio audio is muted during calls.

You're ready to start using your factory Bluetooth system!

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