



BMW E53 X5

AvinUSA Avant-2 Installation Guide  
including front facing DVR and DSP relocation



The E53 X5 SAV really is a fantastic vehicle and has maintained that quality even as the model has aged. This upgrade though will help bring a crucial part of your vehicle, the technological and audio driving experience back up to the most modern standards.

### **READ THIS FIRST – Not kidding!**

#### **Assumptions:**

The example used for this DIY is a 2001 BMW X5 4.4 with the stock factory stereo **with a DSP sound system without a multidisc CD changer**. The install will walk through the deck installation first, and include steps to work around the DSP sound system. **If you do NOT have a DSP car, then the additional steps are not required.**

**Critical note:** As a default, AvinUSA does not recommend the Avant-2 to be installed with a DSP sound system car. That said, I have a viable workaround that will allow the system to work, while retaining the existing DSP amp, stereo mid controls and CD player.

The heart of the problem is the stock DSP amp expects to be connected to the CD player and stereo mid section to function and if they are not connected, your speakers will be off by default. You have two options: tear out almost the entire sound system and rewire, or hotwire the mid and CD player back inline to fool the amp. In addition, the mid section also controls a number of ODBC functions, and without that, you lose access to those controls. It is possible to easily bring those components back and have the best of all worlds, a completely refreshed stereo deck with advanced functionality while maintaining the existing DSP system with only a small compromise in space.

#### **Goal:**

Install the [AvinUSA Avant-2 X5 deck](#) with the least amount of effort, for that clean OEM look and *dramatic* audio performance upgrade. Also documented will be installing the [forward facing DVR camera](#) and DSP sound system work around.

#### **Disclaimer:**

This process worked for me beautifully but that doesn't mean it will automatically do so for you. Work slowly and carefully, don't force anything and don't rush. Unlike some other Avant-2 installations, this will require cutting out a portion of the internal frame for the stereo in the dash. **DO NOT RUSH** this step. Measure carefully, cut the least amount possible, check if the deck fits and repeat if needed. If you do not do this carefully, you can put yourself into a position where the original components will no longer fit, and the Avant-2 won't sit correctly either. **Be careful and work slowly!**

Lastly... do yourself a favor as you get in and out of your car multiple times: **DO NOT** put tools in your pocket. It's tempting, but one wrong move and you can punch a screwdriver through your seat. **DON'T DO IT.** Also, always be careful when leaning up against the car that you don't scratch the paint with zippers, buttons or other metal items on clothes.

As you do follow this guide, this is my attempt to get this work done. I have no doubt there are better/faster/easier ways of doing this effort. Feel free to provide feedback on the forums.

# Tools:

## Must have:

[AvinUSA Avant-2 X5 deck](#)

[AvinUSA Interior trim removal kit](#)

Torx – t10 driver

Philips (+) screwdriver

Flat screwdriver

General purpose hacksaw blade

Strong utility knife

16 gauge wire *\*DSP relocation*

red/black/yellow, 2' each

5 strand bundle, 2' length

16 gauge wire butt connectors x 13 *\*DSP relocation*

16 gauge spade connectors x 3 *\*DSP relocation*

Velcro pad/double sided adhesive pad *\*DSP relocation*

Wire stripping tool or needle nose pliers *\*DSP relocation*

## Nice to have:

[Dremel rotary tool](#)

[Dremel rotary flex shaft attachment](#)

Magnetic screw bowl

Shop towels

Lots of light and a clean space to work

[Music](#) (I recommend BB King, nothing like the blues while doing car work)

Patience

# Contacts:

[AvinUSA.com](#)

[XOutpost.com mobile electronics forum](#)

# Installation

Unlike other Avant-2 installations, for the E53 you will need to cut out part of the internal framing for the stock stereo components. I will call out in individual pictures, but I made a **mistake** right off. **Do not cut out the middle frame bar**, as will be shown missing in subsequent pictures. Remove the upper frame portion first, measure, measure again, cut carefully, check fitment, repeat as needed. BE CAREFUL. This isn't hard, just very detailed work you will need to handle carefully.

I will mark repeatedly in following pictures the portion **NOT** to remove, though shown as removed so don't make the same mistake I did. I was still able to install the Avant-2, but it was more difficult because of it.

1. Remove the power/volume dial button by gently pulling it off. Open the top half cover.



2. Use T-10 torx into the small hole, and turn a ¼ turn to the left to unlock the mid section.



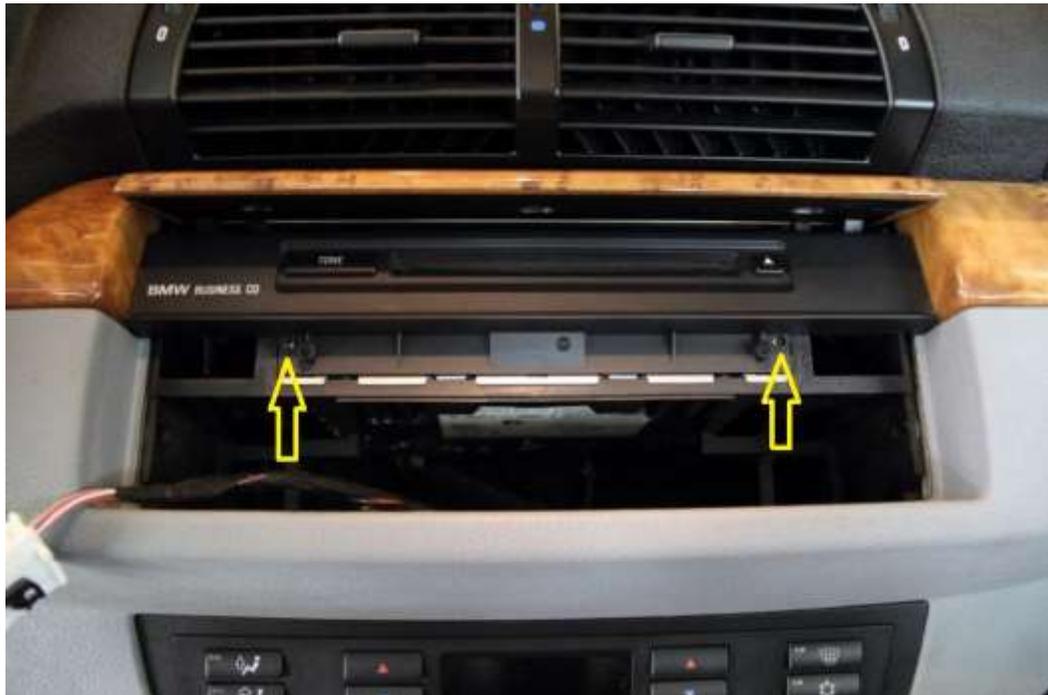
3. Use the T-10 in the hole to gently pry out the mid section, or gently grip the volume knob peg with pliers and pull out of the dash.



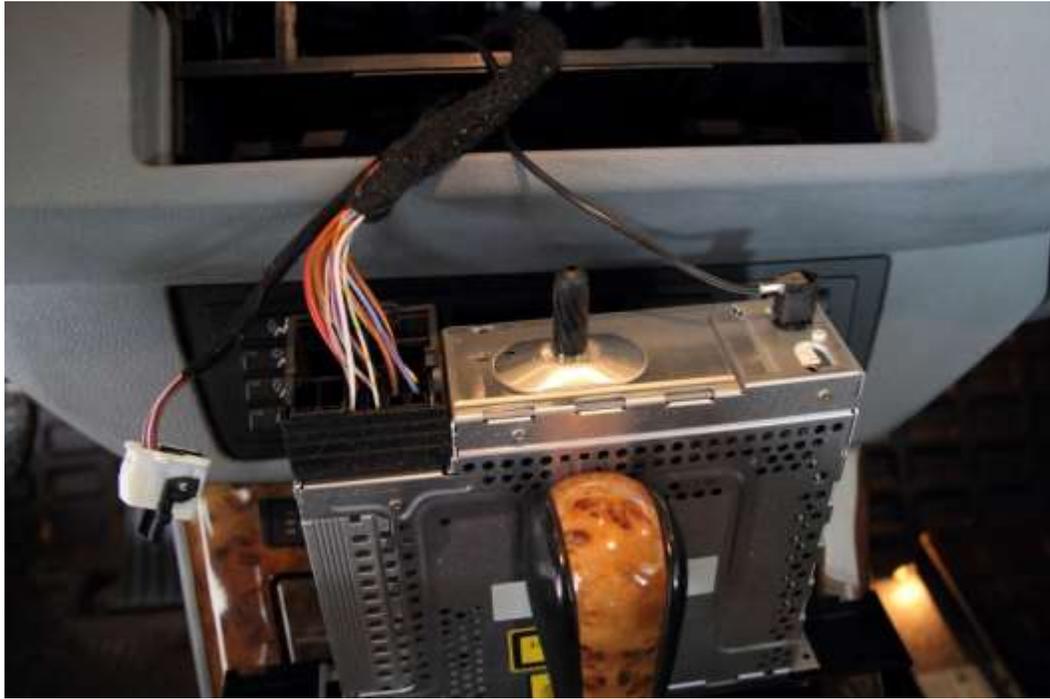
4. Depress the small locking tab, and then push the black collar back to remove the plug, and set the mid section aside.



5. Remove the two indicated screws and gently slide the CD player out of the dash.



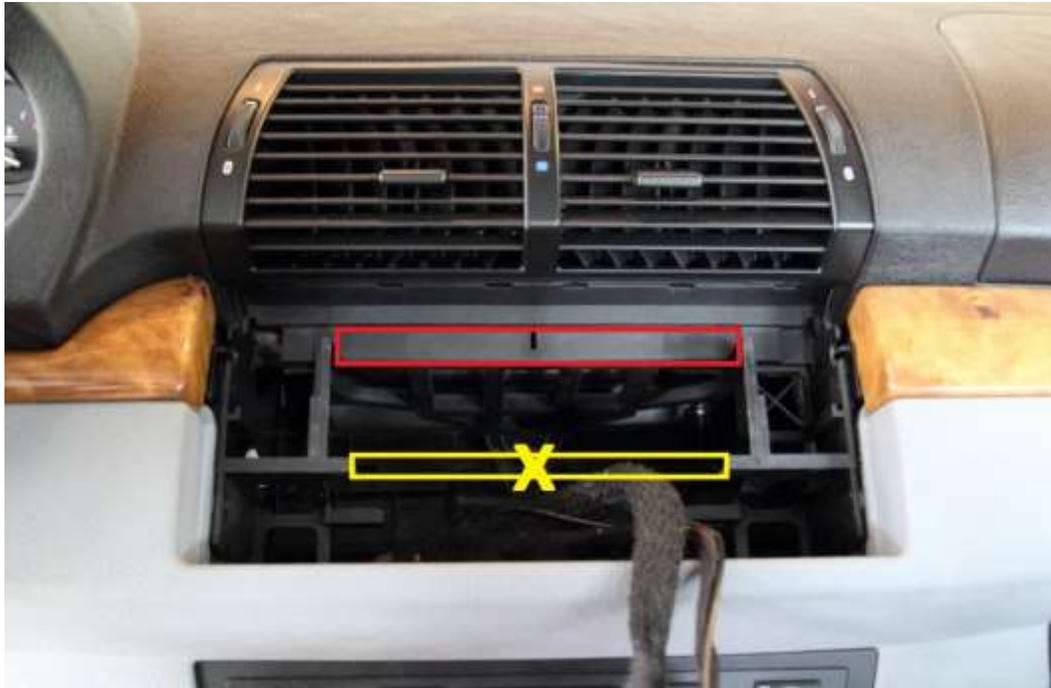
6. Remove cable harness by unlocking the collar, and remove the antenna connection by depressing the tab and pulling free. Set CD player aside.



7. Remove the upper door assembly by depressing the small tab on each side with plastic panel tool, or flat screwdriver and slide cover free. Set aside, as you will not be using this again.



- We will be removing the **RED SECTION**. Do **NOT** cut the center bar out, marked specifically **yellow and is missing in this case**. I made that mistake, do not do the same. Subsequent pictures will show the yellow section removed, again, do not remove it.



- Use a strong utility knife to score along the top line in the frame, to help guide your cut later. Use a flexible hacksaw blade, or dremel tool to cut the two vertical lines.



10. Score the top line heavily with a utility knife, and then break out the small square using pliers. It should break off cleanly. Then use hack saw blade or dremel and cut the remaining top line carefully, and also cut free the two curved arms of the frame to free it completely.



11. **CHECK FIT** for the deck! Again note, do not remove the middle bar. If the deck will not smoothly slide into place, and is too tall we will need to remove more framing. The deck should fit **VERY SNUGLY**, and not move at all when in place.



12. As before, heavily score the top line along the crease and cut a notch out to make the cuts easier. Cut out the marked sections in red. **Do I need to say again don't cut the middle bar?**



13. **CHECK FITMENT of the deck.** For me at this stage, the deck easily slides into place and fills the space properly. Also check deck depth into the dash, as mine needed to be deeper to be flush.



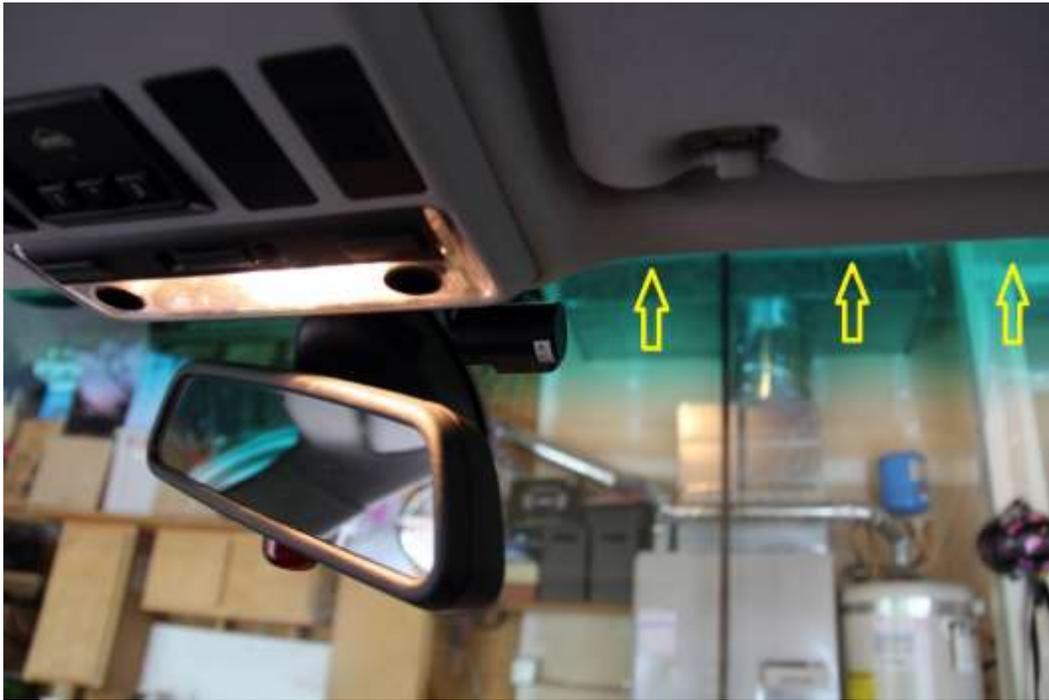
14. I wanted the deck to sit a little deeper into the dash to be more flush. I removed the front edges marked in red to give more depth. Note the AC controls are removed below to give more room to work. It pushes out from behind easily with your fingers.



15. Here is the final setup, after checking fitment multiple times. **If no front facing camera, but DSP move to step 20. If NO front facing camera and NO DSP relocate, move onto step 27.**



16. The front facing camera installation is very simple. Mount the camera behind rear view mirror and route cabling between the headliner using trim tool to assist placement.



17. Continue cable run to the A pillar, around and under the cover at the crease and down between cover and weather stripping.



18. Route cable down to the glove box hinge, running above the hinge and behind the panel. Use the plastic trim tool to help guide the wire behind the weather stripping.



19. Continue the cable run behind the glove box and up into the dash. You can remove the small panel below to help give space to route the cable. Replace panel once done.



20. **Factory DSP system only**, IF NOT move to step 27. Route your 5 wire 16 gauge bundle through the dash into the glove box. I routed through the hole for the glove box support, no cutting or changes needed.



21. Cut off the white plug for the OEM mid section, with at least 3" of wire from the plug. Strip and connect 5 wire bundle to mid wires using butt connectors. (or your preferred method)



22. Connect white plug to wire bundle in the glove box, make sure to wires are matched properly at either end. Bundle colors don't matter as long as they match at both ends. Red to red, brown to brown, yellow to yellow etc. Plug the mid section back in and secure in the glove box. I used a Velcro pad on the bottom to ensure it wouldn't move around. You obviously lose some space.



23. The mid section will need to be on, for your speakers to be active for the Avant-2. Set the volume at least to half and tone to flat, and DSP off. You can then use the Avant-2 volume and sound quality controls from this point on.



24. Open the left hand compartment in the rear of the car and find the three wire connection for the CD changer, red, brown and white with yellow tracer. If no CD changer, the wire should be loose. Tap into that connection using at least 1' of 16 gauge wire. I also left the plug in place just in case.



25. Using 16 gauge spade connectors, connect the wires to the CD player in the following order: Red to pin 15, brown to pin 12, and yellow to pin 9. You can see the pin numbering if you look closely. Make sure the spades on the pins are tight and don't move around.



26. Secure CD player in the compartment and close it back up. Make sure your spade connections and wires are secure. I used a large Velcro pad to hold the player in the compartment.



27. Install the GPS antenna on the internal frame pipe. The magnet will keep it in place, and I haven't had any reception issues installing inside the dash.



28. Connect the provided wiring harness adaptor, camera, USB, iPod and any other accessory cabling as desired.



29. Plug in the wiring harness, camera, antenna and any other cabling into the back of the Avante-2 and slide into place. Having the AC controls out of place helps give space for placement and cable management. **The deck should fit snugly, no additional screws needed to secure it.**



30. With everything connected, turn on the ignition and power up the deck (**IF DSP, mid section in the glove box turned ON**). Before closing everything up, make sure everything works. Check GPS reception, radio strength, and wireless connectivity and so on. Also, it is a good idea to check if there is a newer OS build for your deck as AvinUSA continues to make build improvements over time.

If everything is working, reinstall the AC panel by gently pushing it back into place. Clean up all tools and workspace, including checking glove box open/close to make sure it works smoothly. If DSP, double check that the mid section and CD player is secure and wiring isn't loose.



**Congratulations!** All in all this isn't a hard project but just a little detailed if you haven't done this kind of work before. Cutting the dash components is always concerning, as once you start down that path the OEM components are not going back in regardless. That said, it is absolutely worth it for the massive technology upgrade.

That said taking the work slowly and patiently, it isn't that hard and you saved yourself a healthy amount of money from having a third party or vendor do the install.

Time to test your new system, fire up the Avant-2 and favorite music and make sure everything is working. If all of the speakers are working, sound is clean and clear then time to clean up, put your tools away and enjoy your new system!

For users with DSP location, make sure all of your wiring is solid, especially the spade connections. After install, I initially thought my mid section was failing, but the problem was a poor red power wire connection back at the CD player.

Created by Stefan Yotz 6/2015

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***There is no warrantee or guarantee to this guide and is provided in all good faith and best effort.***

**Huge thanks to:**

[AvinUSA.com](http://AvinUSA.com)

[XOutpost.com](http://XOutpost.com) mobile electronics forum