

RSNAV.com Cockpit Video interface Installation Manual

Version 1.0

Warning: Professional installation recommended. Mask the working trim surface properly, otherwise, it will be scratched easily while installing!

Required tools: Trim removal tools, 8mm hex nut screwdriver, T9 screwdriver, Philips screwdriver size 0, 2 x Add A Circuit Fuse Tap Piggy-Back Mini Blade Fuse Holder APS ATT Mini Low Profile

1. Introduction

- Add HDMI 1.4 1080p input and two analog video inputs to your factory 7" OEM speedometer display

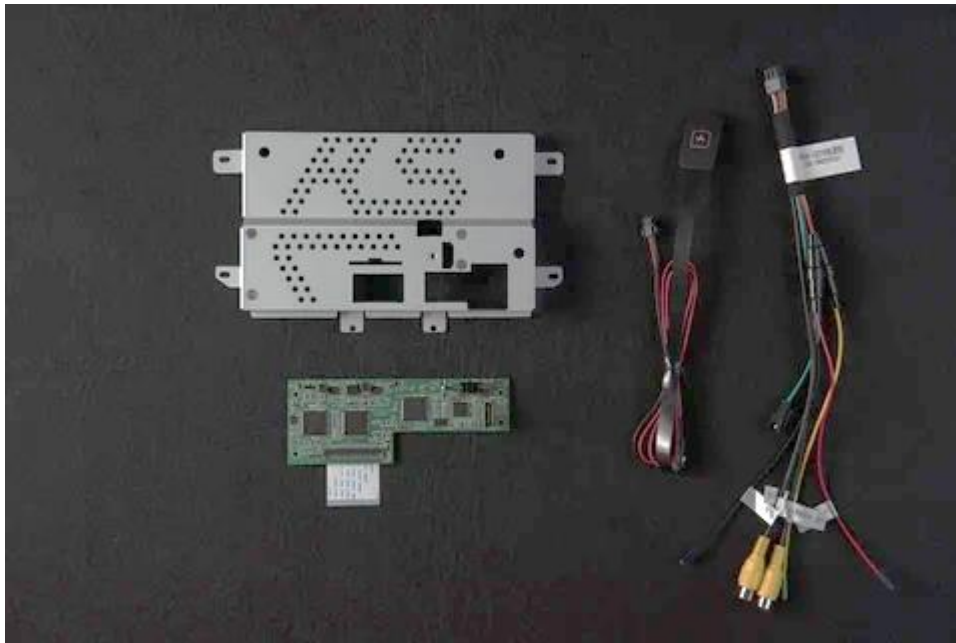
- Easy one-touch button switching: Audi Speedometer Display -> HDMI -> Analog Video 1 -> Analog Video 2 (loop, selection only when available)

- Automatic switching for analog video 1: if there is a video signal from an analog camera, the video is displayed until the signal is cut off. E.g. rearview camera input

**** Warning: the video interface injects RGB signals between the LCD and Instrument Cluster Motherboard. Because of prolonged data lines, the factory original graphics will have highlighted dots along with their high contrast area. This is not noticeable, but it presents. Thus, this is not a defect, but technological limitation. ****

**** Warning2: By any mean, this addon device will NOT trigger any error codes or instrument cluster locking if properly installed. However, if you leave or damage the instrument cluster speaker lines while installing device, you may have ACC malfunction. For the instrument cluster function, everything matters and must be assembled back properly, not leaving anything damaged or unplugged. Professional installation required. ****

**** Warning3: If you have remaining factory warranty in your vehicle, opening the instrument cluster's back cover voids your warranty on the instrument cluster. This does not mean that you lose all your warranty, but just the instrument cluster. Rsnav is not responsible for anything at the consequence of attempting the installation of this product. The kit is provided As-is based.**



KIT Contents

1 x video interface mainboard, bypass FFC cable

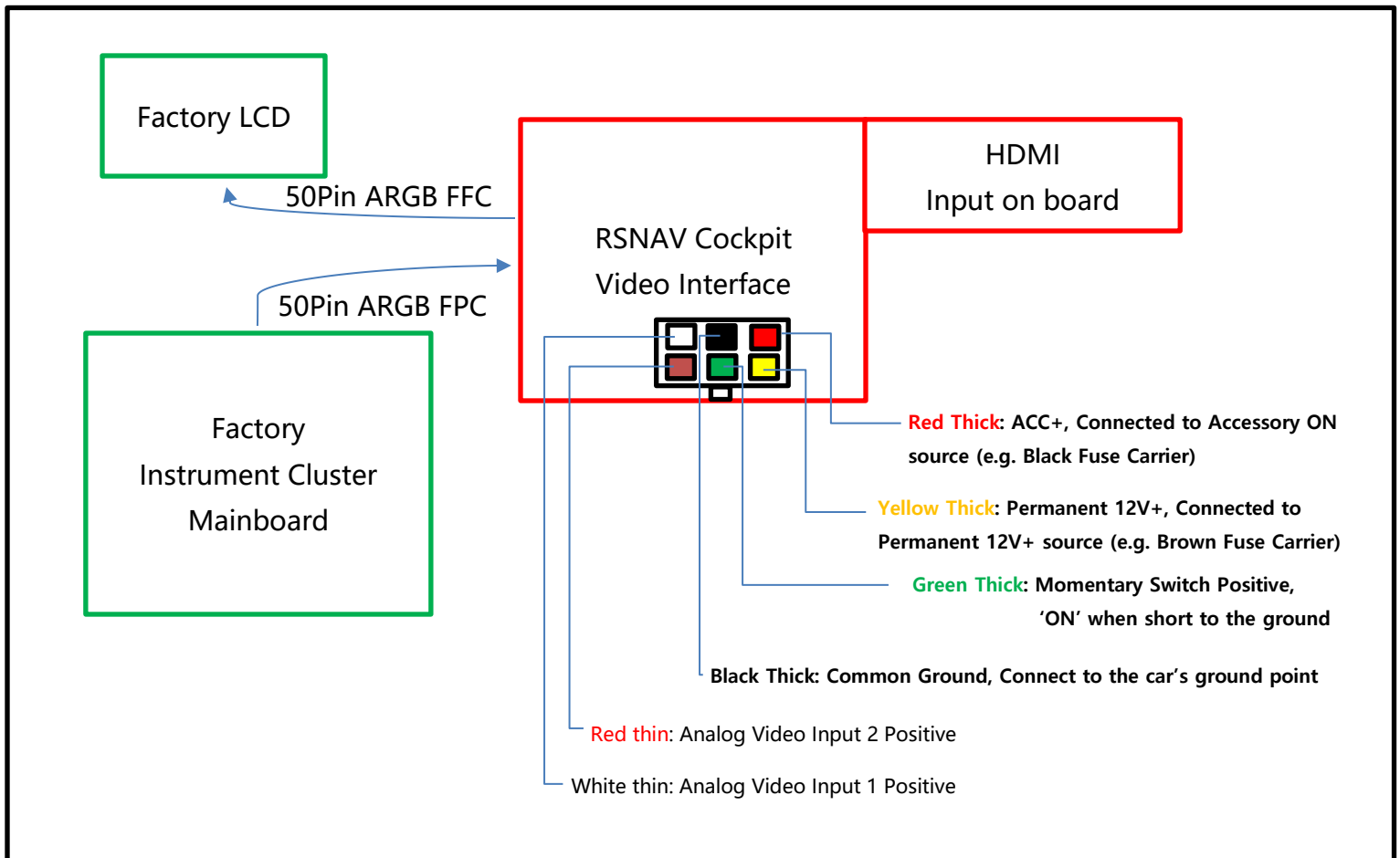
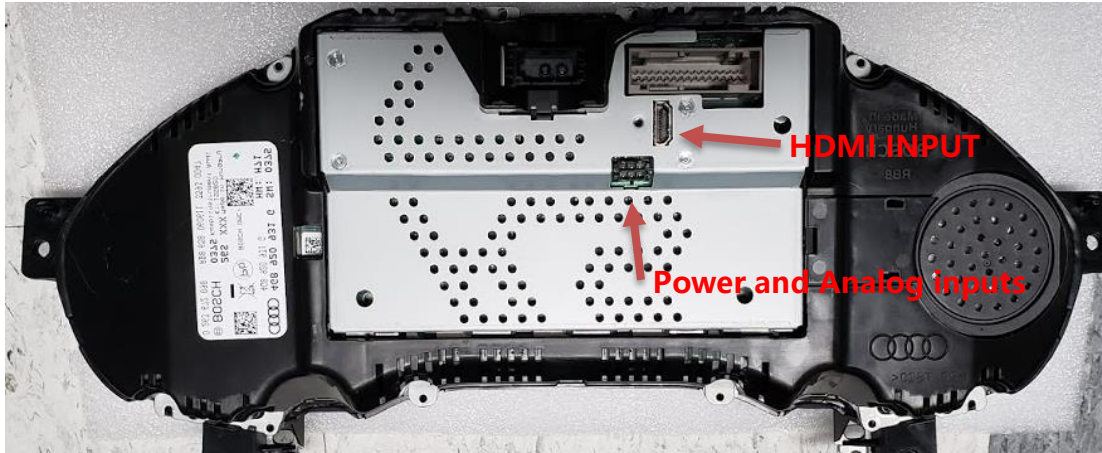
1 x One button switch extension cord

1 x power supply wiring harness

1 x replacement backplate for Audi original instrument cluster and mounting accessories

RSNAV.com Cockpit Video interface Installation Manual

2. Connection diagram

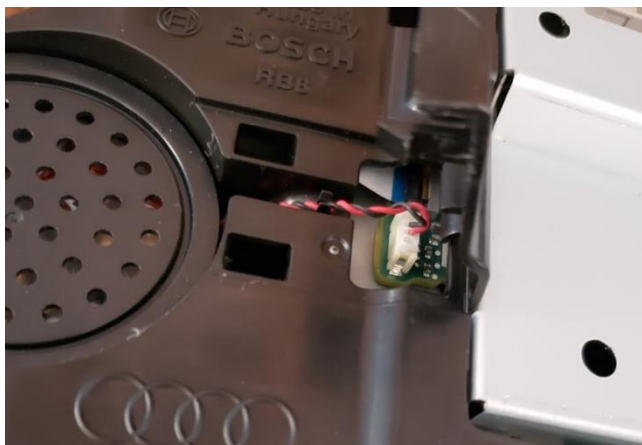


THIS IS NOT A PLUG AND PLAY PRODUCT. PROFESSIONAL ASSEMBLY SKILL AND SOLDERING SKILL IS REQUIRED. AUTOMOTIVE ELECTRIC KNOWLEDGE IS AN ASSET.

For Nerds: An On-board multiplexer IC work as switching mechanism between original 24bit Analog RGB signal channel and video interface's injection channel. The board must be always powered to power the multiplexer IC, otherwise the original RGB signal from the instrument cluster mainboard will not be transferred to LCD. Backlight control is pass-thru of the factory instrument cluster mainboard. HDMI input, analog inputs have priority over the factory signal – means if there is any signal from these sources, they will be shown over the factory image source. Thus, the source input device must have a capability to cut off its signal transmission otherwise, any active source will be automatically taken over the display. Nevertheless, it is always switchable among the media sources with the momentary push button switch.

RSNAV.com Cockpit Video interface Installation Manual

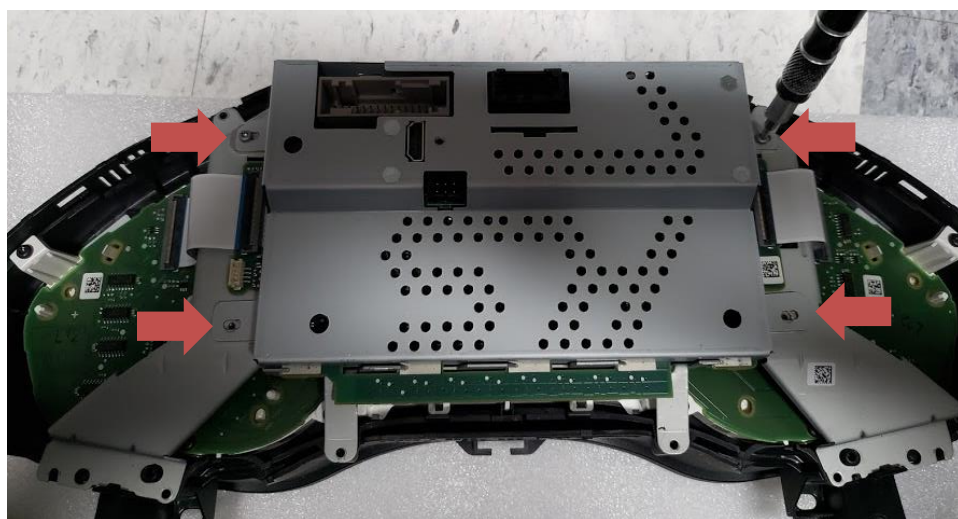
3. Installing the board to a compatible Bosch Instrument Cluster with 7" 800 x 480px integrated display



Open the speaker line cover by prying with a flat head screwdriver and carefully remove the two-wire speaker cable plugged into the mainboard. **DO NOT DAMAGE THIS WIRE OTHERWISE YOUR AUTOMATIC CRUISE CONTROL OR ANY OTHER DRIVER ASSISTANT FEATURE WILL BE LOCKED UNTIL THE SPEAKER WIRE IS RECOVERED.** This is the primary warning speaker for driver and is monitored its connectivity for driving safety. Even if neglected or damaged, recovering a proper connection will make all function to be available again.



Using a flathead screwdriver push in the holding taps slightly inward while grabbing the plastic back plate outward. **AT THIS STAGE YOU DO NOT NEED TO REMOVE ANY OF T9 HEAD SCREWS.** The back cover (except the metal part) is just held together by plastic latching. Gently remove the backplate.



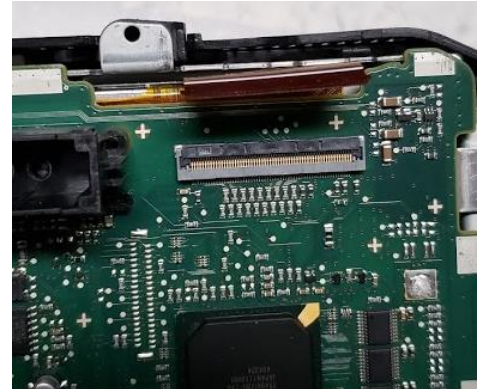
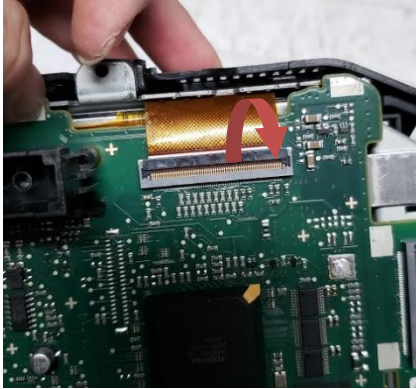
Remove 4 T9 head hex screws, this will release the metal back plate.

*Picture shown is RSNAV video cockpit already installed with its custom back plate, however the factory original back plate removal is the same.

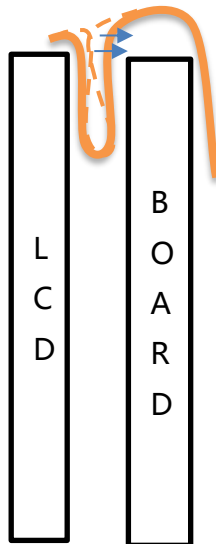
RSNAV.com Cockpit Video interface Installation Manual

From this part toward, please do watch our YouTube video instruction first!

<https://youtu.be/P3NtYZLFLCs>

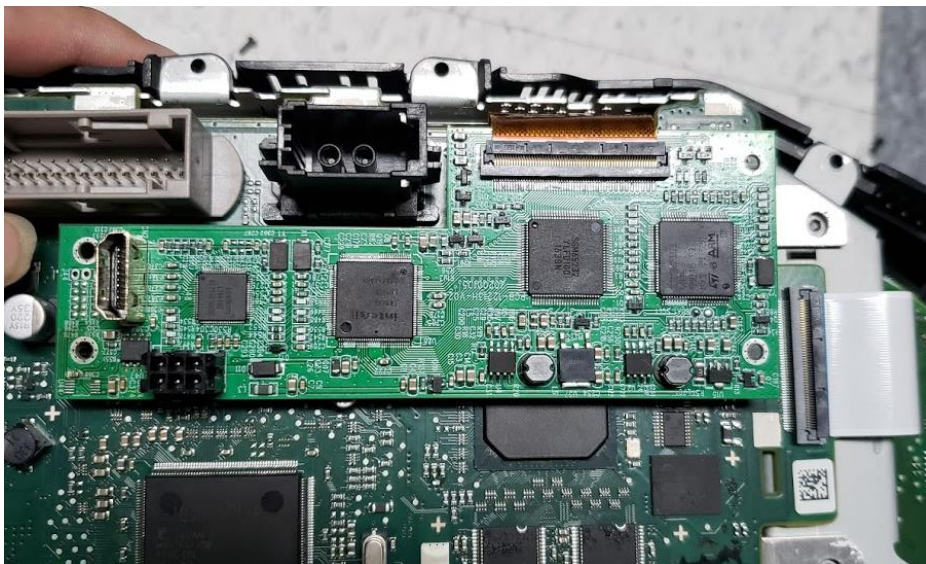


Locate LCD display ribbon cable in brown on the upper right corner of the mainboard, and flip up the latching mechanism gently (no tool is required, do not use excessive force) and remove the LCD display ribbon cable.



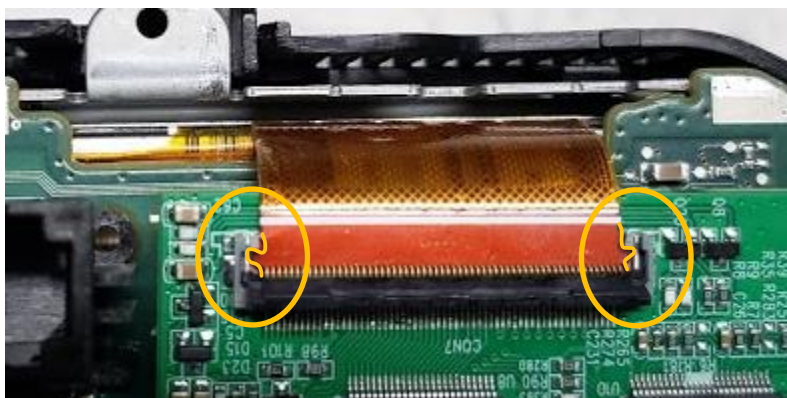
For the ease of installation, you can pull the 50-pin display ribbon cable slightly outward where the blue arrows are directing carefully with your fingers by separating the ribbon cable glued together between the LCD and the board. **DO NOT APPLY EXCESSIVE POWER. IF THIS RIBBON CABLE IS DAMAGED, THE ENTIRE LCD HAS TO BE REPLACED. UNDER YOUR JUDGEMENT, IF YOU THINK IT WOULD BE SAFER TO DETACH THE CABLE A BIT AFTER YOU REMOVE THE MAINBOARD, DO SO.** In order to remove the mainboard, remove all the screws and

carefully dismantle by common sequence. **DO NOT RUSH.** In any cases, you do not need to apply too much force. If something is not releasing, then there is something else holding it. Be throughfall. **DO NOT USE KNIFE, WEDGE, OR ANY TOOL TO SEPARATE THE CABLE. DO NOT USE HEAT OR CHEMICALS. JUST GENTLE FINGER MOVEMENT WITH CAUTION WILL DO THE JOB.**

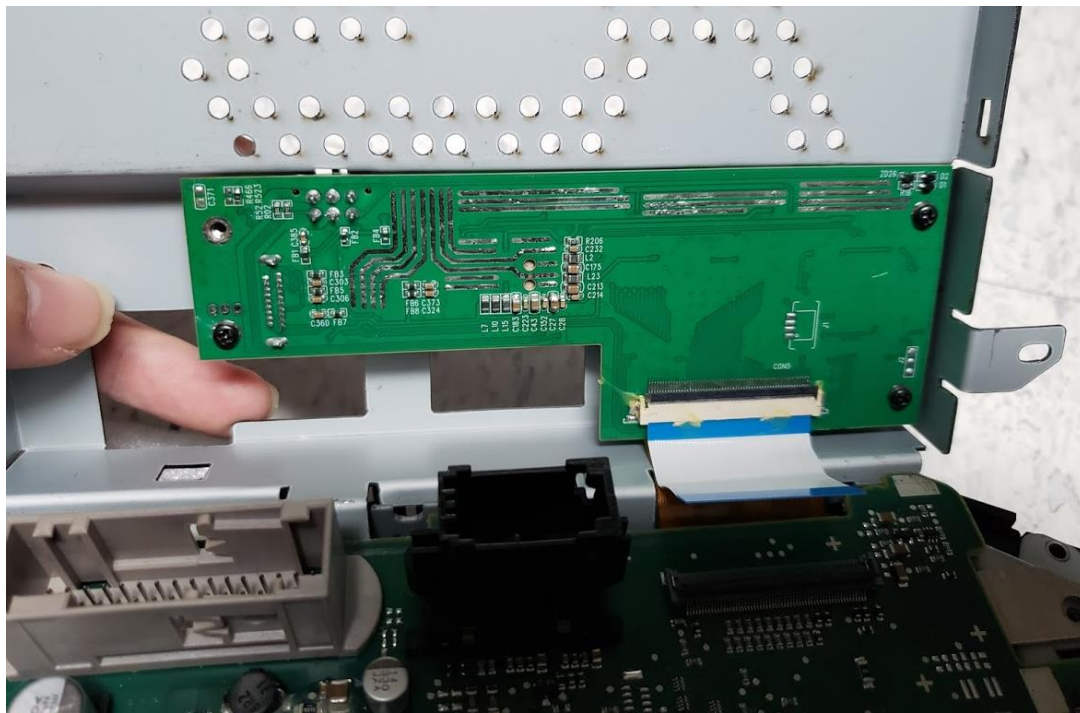


Place RSNAV video interface board like the picture and connect the factory ribbon cable to the connector on the top side of RSNAV board (where there is an HDMI connector is on upward). At this time, you do not connect the ribbon cable behind the RSNAV interface board.

RSNAV.com Cockpit Video interface Installation Manual

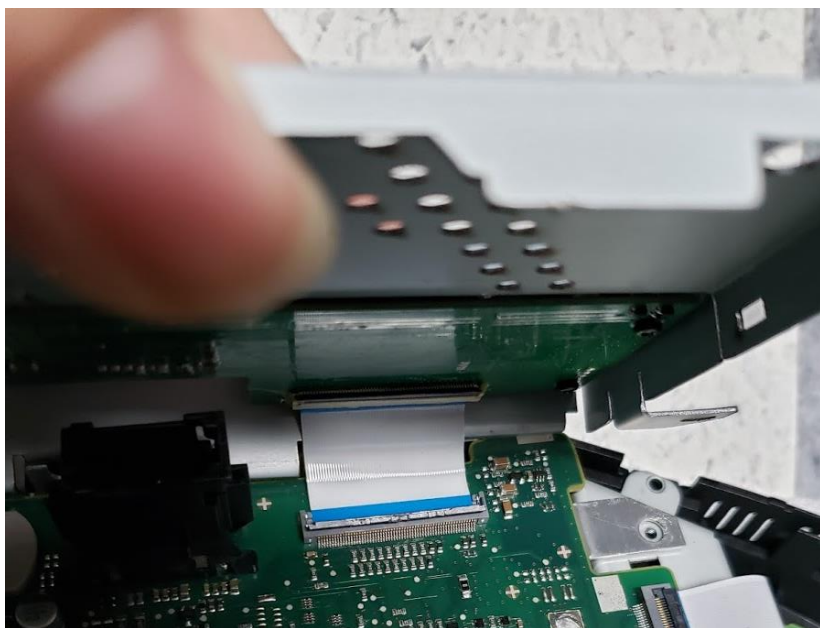


Mind that the factory ribbon cable is not square type but it has guiding dents to make sure proper alignment and fit. Do not force the latch when it is not properly engaged. Place the ribbon cable along the guides and check if the ribbon cable is fully inserted and the marking line is aligned straight with the connector and then close the latch.



Do watch the YouTube Instruction first! Screw down RSNAV board securely with provided metal back plate and four Philips screws. At this time the factory ribbon cable from LCD must be already connected to the RSNAV board and the blue-white ribbon cable from RSNAV interface should not be connected to the factory mainboard yet. When you are doing this job make sure that you are not pulling the factory ribbon cable too much. You may want to review the previous instruction of detaching glued cable to ensure more room to screw down the RSNAV board.

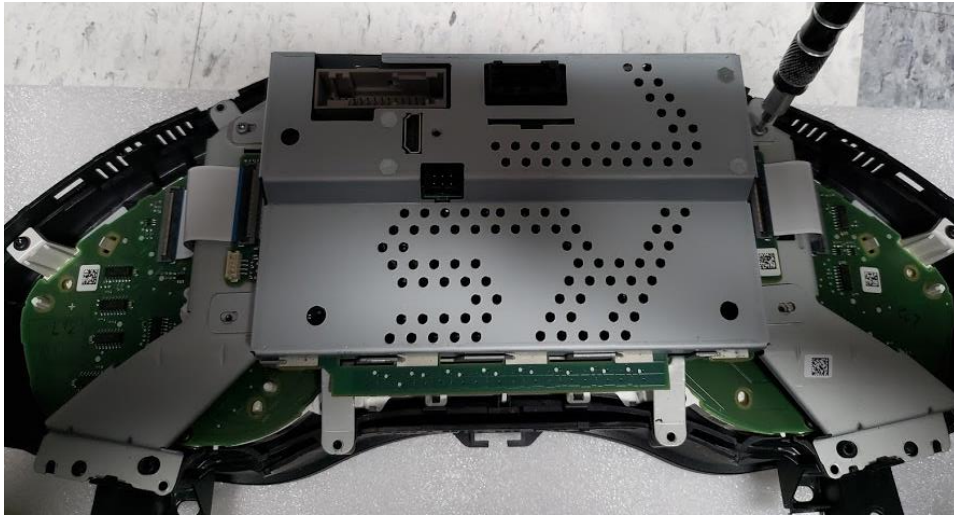
*The ribbon cable lengths are determined to keep the optimal image quality, and RSNAV finds its regrettable that it cannot make the installation any easier with the given resources.



Slide-in the RSNAV ribbon cable into the factory mainboard's connector. You need to do it with extra care by folding the metal plate downward to the mainboard yet carefully angling your movement. Once the blue ribbon cable is inserted into the connector, then with your finger nail, make sure the blue part is fully inserted, and close down the latching mechanism.

By carefully prying the metal plate to close down the assembly, you will find that RSNAV board is interfering with the black fiber optic connector. At this point you lean the metal plate toward right upper corner where there is the ribbon cable bypass. Then you will be able to clear the obstacle and can close down the metal back plate. To be able to understand what this instruction means, **[make sure to watch YouTube instruction first.](#)**

RSNAV.com Cockpit Video interface Installation Manual



Carefully assemble back everything.

Make sure to test if the factory original display is properly working before you finalize the installation.

Keep this in mind that in order for the instrument cluster display to work properly, Both the Instrument cluster's original connection and RSNAV power supply (12V+, ACC+, GND) connection must be connected and powered up properly as well.

With RSNAV interface installed, every connection must be secure otherwise there will be no image or strange image on the LCD.

Misaligned ribbon cables and/or poorly

plugged, connected wires are not likely to damage the instrument cluster or RSNAV interface in any manner even the cluster is powered briefly. Nevertheless, if you don't see any image when you start your car, quickly turn the engine off and disconnect the cluster to prevent any possible damage. If color is bad, inspect the ribbon cable for misalignment or damage.

In any case, if you damage the factory original LCD ribbon cable, replace the entire LCD with AUO display part number 'c070vw04 XX'. XX is sub-variant model code and use the one corresponding to your original part. Usually, it's VB version. These LCD displays are available in AliExpress.com under \$40USD (as of early 2020).

Upon the successful installation of RSNAV interface, it should trigger No error code to your car's system.

If there is any,

- You forgot the speaker wire to be reconnected properly – if neglected, all the driving assist function including Automatic Cruise Control will be disabled.
- While you are dismantling your car's trim, you forgot to connect back some important buttons, cable and/or indicators such as the light switch assembly, emergency flasher button, or fiber optic lines. Especially, missing or damage fiber optic line will prevent MMI system to start.
- TPMS warning may be triggered if you disconnected your battery. Just save the TPMS data again.

4. Vehicle specific guide to remove the instrument cluster and power wiring instruction– to be updated later
 - a. Audi C7 (A6, A7, S6, S7, RS6, RS7)
 - b. Audi D4 (A8, S8 with L variants)
 - c. VW Tuareg