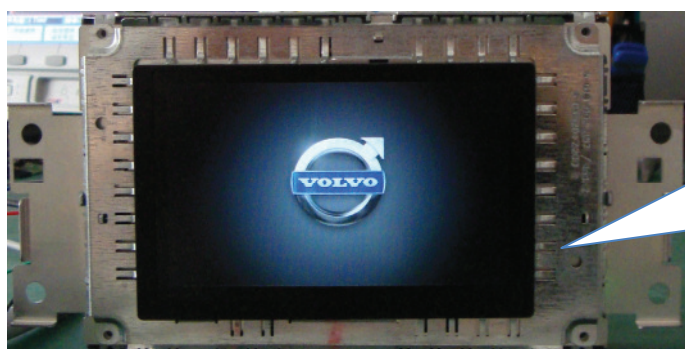


FV-Volvo5 installation manual_v1109

[product type: FV- Volvo5 Ver.11.09.16]

This interface can insert High definition RGB navigation video, AV and reverse camera video onto Volvo-5inch car screens. If the Volvo car has a 7 inch screen, please use FV-volvo7.

This is an improved version from V1105, while camera video display shows oem parking picture on the right as well. It also works on the S60 which has OEM camera already.



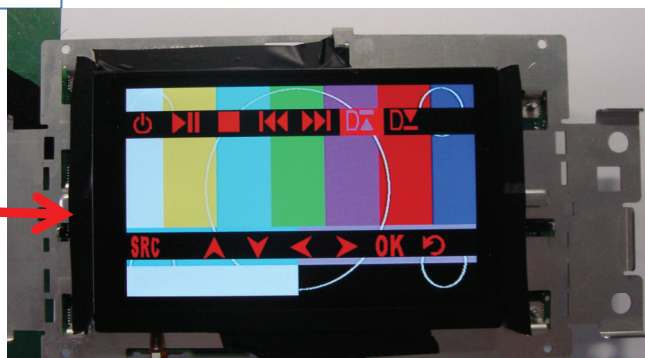
All installation are done behind this monitor, please do not work on the CD.

Extern reverse camera can be inserted, while OEM parking video displayed together. The Camera trigger signal also power supply to camera is provided by CAN bus.

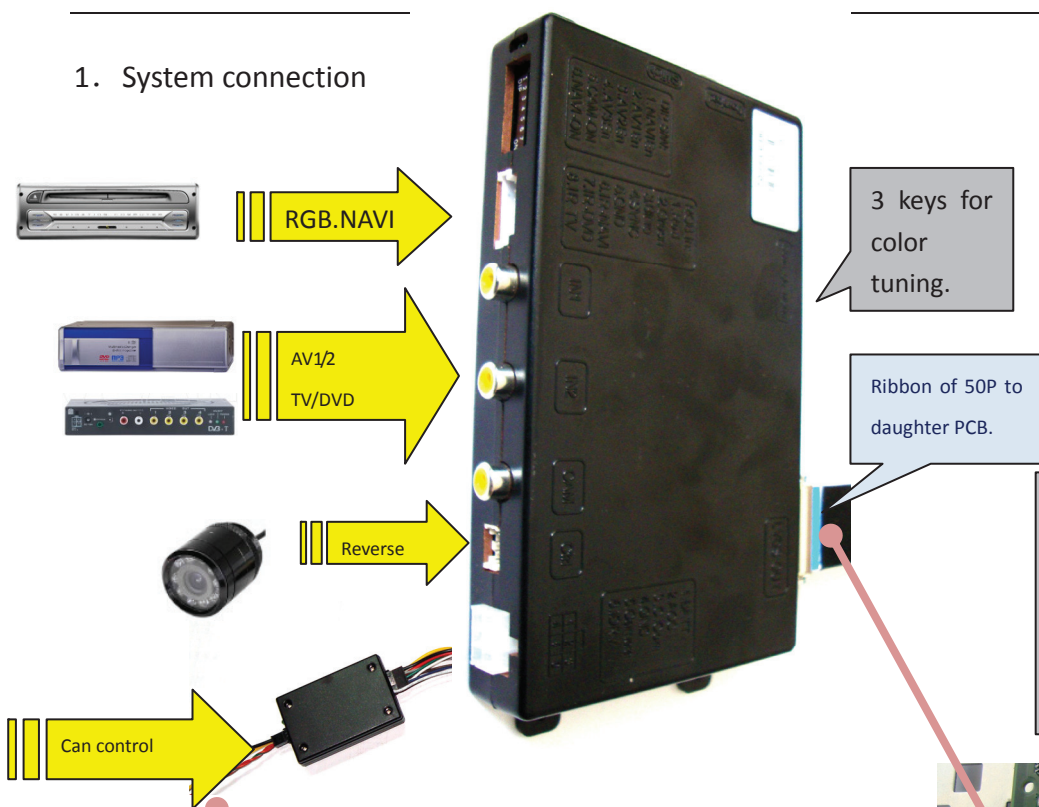


Control: the user can use the “|<<” or “>>|” key to pop out the control icons, and push **exit** key execute the selected icon. So IR code is sent and installed DVD or other devices are controlled.

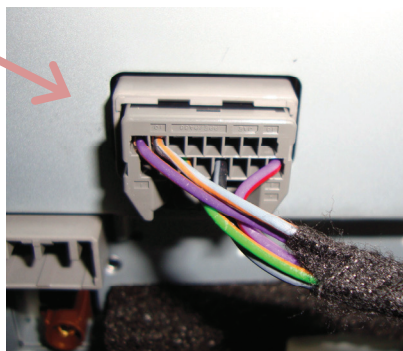
Input Switch: the user can press this **EXIT** key long switch from car → RGB → AV1 → AV2 → Car.



1. System connection



CAN connection:



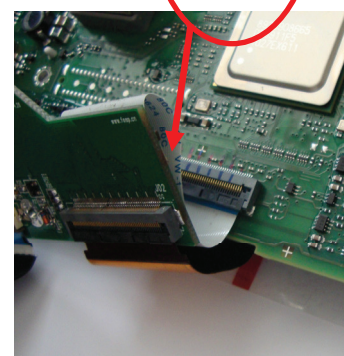
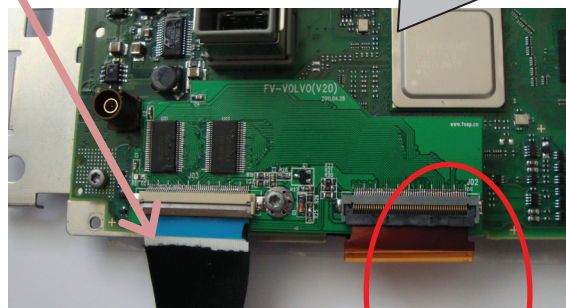
name	Car wires in above picture	CAN bus wire
CAN -	Blue/orange twisted	Gray twisted
CAN +	white/orange twisted	Blue twisted
GND	black	black
BATT or ACC	Red	Red with fuse

[CAN wire wrong connection will not damage anything, an LED will be blinking when user press CD keys if correctly connected]

Note1:

- 1) The daughter PCB socket should be wrapped with type after installation,
- 2) If the cover of the socket slides out in installation, it may be inserted back.

- The 50P ribbon to LCD should be re-connected to daughter PCB's top socket.
- The 50P ribbon from daughter PCB should be inserted into main PCB.
- One original screw will be inserted through the daughter board to fix it there.



The signal definition of 6P on interface from CAN box:

Yellow: constant power of 12V. **black:** GND of chassis.

RED[ACC]: when the monitor works, this wire=12V, otherwise=0V.

Green: reverse signal wire[=12V when in reverse], it can be used:

- To give reverse signal to interface box, also giving power to camera[max.1A]
- When giving power to camera, a 100u capacitor is necessary on this wire to filter the noise on camera long wires.
- When only give reverse signal to interface, and camera is powered elsewhere, do not add capacitor.

White wire: switch signal wire, when =12V or 5V, this interface switches.

Gray wire: CAN bus control data to interface, it is used to pop up the control icons.

DIP switch setting:

DIP	=ON [DIP=Down side.]	=OFF
1	RGB enabled	RGB disabled.
2,	AV1 for DVD enabled	AV1 disabled
3	AV2 for Tuner or extra video enabled	AV2disabled
4	RGB=HD RGB	RGB=Normal NTSC This car LCD accepts normal RGB .[480X240]
5	This is reverse camera trigger wire go to CAM when Green wire= 12V], inserted camera video and OEM parking video will be both displayed.	go to car video when Green wire= 12V this is for the case when the car has OEM camera or no camera installed.
6	IR programme when once to ON Touch calibration when get to ON >5 times.	OFF for normal work.
7,8	7=UP,8=UP: no function, leave both UP as default.	

2. Interface Settings

- The 3 side keys are : menu, +,- respectively. When menu is press, OSD strings will pop up on screen, and the installer may adjust the best video effect. The +/- will change the value.
- The DVD/TUNER/NAVI is to set the IR code output to the installed device, so people use original knob to control
- When set to "none", the control icons will not pop out
- When set to "Prog", the installer can use DIP6=Down to program the IR code into the interface, so extra new devices can be controlled.



The programming of IR code:

- There are >10 types of DVD, NAVI, and Tuners' IR code are stored inside the interface. The installer just adjusts the options to select to wanted one, then it works. If the wanted type is not there, he may set the option to be "Prog" in the menu.
- When programming, switch the input to AV1, and set DIP6 down once, then the control icons will be shown, and one of the them will be blinking. Point the IR remote controller to the IR port of interface, the blinking icon will be moved to the next one. Which means one code is programmed. Repeat this step until all icons are programmed.
- The programming of AV2 is the same as above.

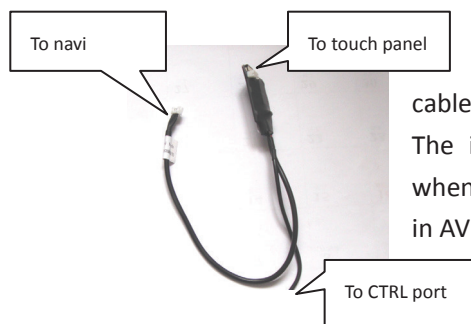
When the menu key is pressed twice, this menu will be shown, the installer can adjust the values to make the image fit into the center of the screen.



3. CTRL port

There is a 8-pin extra CTRL port on the interface, which the installer does not need to use in normal situation. For experienced users, this port may be used to get extra functions.

One dedicated daughter board can be used, so people just touch the screen, the installed devices can be controlled by the icons, because the interface can generate IR code based on touch screen operations.



the CTRL port can be connected to the left touch cable, so DVD and other devices can be touch controlled. The internal switch makes the navi use touch panel when in RGB-input, and DVD uses the touch panel when in AV1 input.



Ctrl port signal definitions:

Pin 1,2	+5V output voltage for sound-switch-relay, when AV1 is selected=5V, 0V when AV2 selected. Max 3A.	
3:	Constant +5V	Max .2A
4, 8	Ground	
5:	Dedicated control bus for camera.	Should not be connected to GND, otherwise CPU will halt.
6:		
7	+5V output when in interface mode, 0V when in Car mode.	

Note2:

There is a gray wire between the can box and interface box, which is used to deliver control data, so that multimedia icons will pop out and be executed. This wire can also deliver terminal-mode control data. So a 3rd party computer can control this interface.[terminal mode like: to directly go to RGB input, to AV1 input, AV2 input,reverse camera input], to get the full implementation of interface terminal mode operations, please contact sales people.

4. Parameters

No.	name	parameter
1	RGB video amplitude	0.7Vpp with 75 ohm impedance NTSC resolution [400X240,480X240] of navigation is allowed.
2	sync amplitude in RGB-navi port	3~5Vpp with 5K ohm impedance Sync should be NTSC composite with negative polarity.
3	Av1,Av2, cam video amplitude	0.7Vpp with 75 ohm impedance
4	Av1,Av2, cam standard	NTSC/PAL/SECAM automatic switch
5		
6	Normal work Power consumption	2.4W [0.2A @12V]
7	Standby current	< 5mA
8	Standby start	10 seconds after the users switch off the CD unit.
9	Reverse trigger threshold	>5V trigger
10	Work temperature	-40 ~ +85C
11	dimensions	15.6 X 9.2 X 2.2 Cm

4. Interface with navi computer inside.

this interface has another version, which has navigation computer inside. The connectors are shown in the pictures.

the demensions are:
15.6X9.2X3.2cm.

