FV-VW2013 Interface Installation Manual

ver:20130226：

    FV_VW2013_NAVI，[with internal navigation module]

    FV_VW2013 ，   [without internal navigation]

This interface can insert video into 2013-volkswagen monitors.[the 4Pin version inside Volkswagen, skoda,seat, audi and etc]. This offers RGB-navigation onto the OEM screen, also DVD/TV videos can be inserted. This interface also has the following features:

➢ All Plugs are Volkswagen/Skoda/Seat/Audi specific, so the installers does not need to open the OEM monitor, so the installation process is risk-free.

➢ This one interface can fit all 2013 Volkswagen car types with 4Pin round connector, no matter 6-inch normal resolution or 8-inch High definition screens. The high speed FOSP ASIC processor convert HD-map onto the 6-inch lcd with nice visual effect.

➢ OEM touch panel will be used to control navigation or other internet devices, all touch operations in inserted video mode will not make background control to the OEM CD/Head unit, becauses of the dedicated CAN-bus blocking function for inserted video inside.

➢ FV_VW2013_NAVI has internal navigation module, which simplifies the system wiring. Fosp may also offer customers software to update the navigation module, so it supports Igo, Navitel, Primo, and etc. all these are controlled by the OEM capacitive touch panel.Fosp may offer the UART protocal of control to other 3rd party developers so they can insert whatever device onto this monitor.

➢ The Can bus will generate automatic reverse video, channel switch signal, and parking guidelines.

6inch LCD show inserted navi   8-inch show reverse video+guidelines   OEM touch to inserted DVD
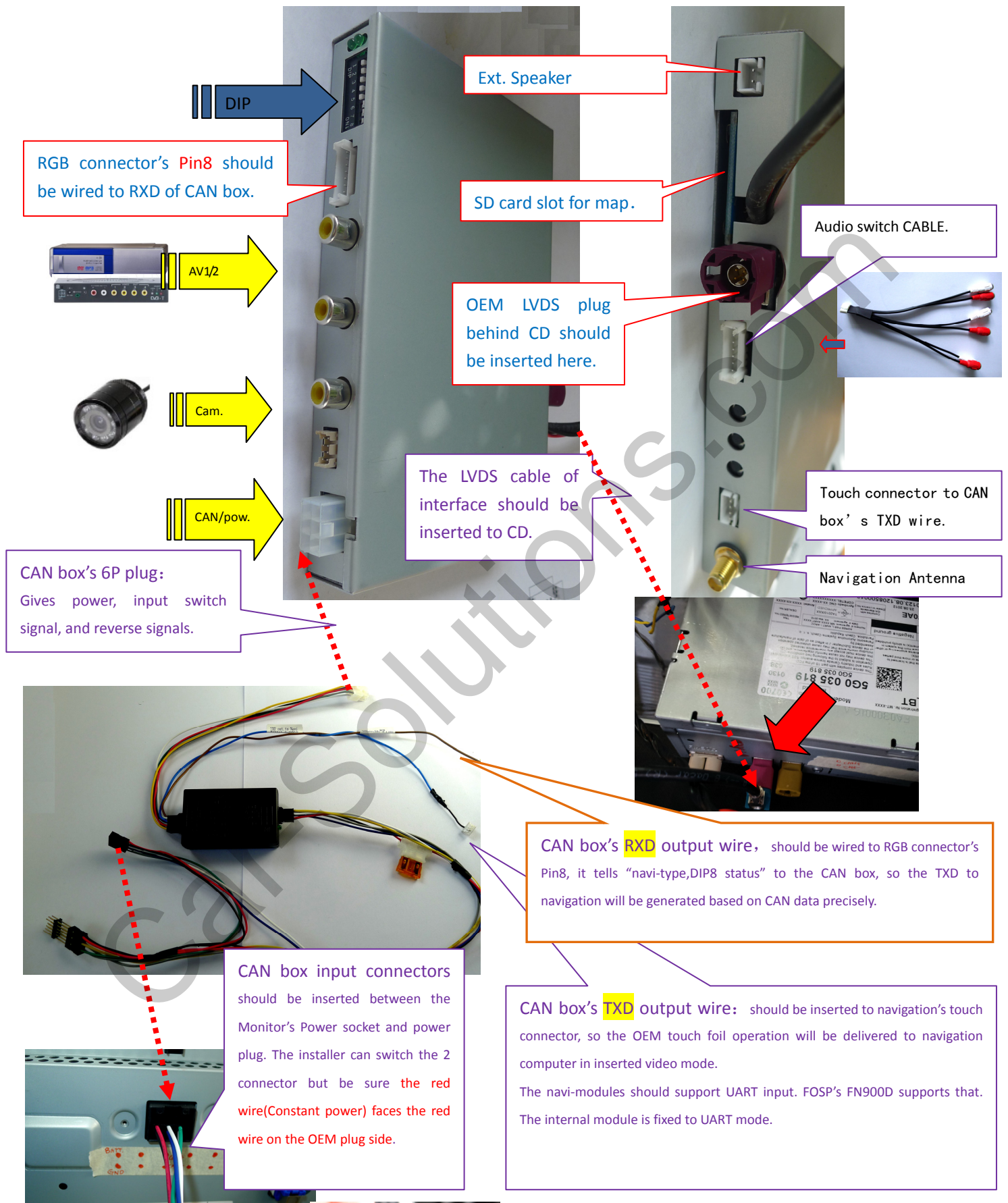
1. DIP settings

DIP	Down side（=ON）	Up side（=OFF）
1	RGB input enabled	RGB input disabled
2,3	AV1/2 input enabled	AV1/2 input disabled
4	RGB input= VGA resolution 800X480	RGB input= NTSC resolution 400[or 480]X240。
5	AV4 video is selected when green wire goes to 12V.[this is for the case aftermarket camera is installed]	Car oem picture is selected when green wire = 12V.
6	Set to ON once for IR programming.	Set to OFF for normal use.
DIP78 7，8	DIP8=UP: 8-inch LCD in VW cars. high resolution monitor. DIP8=DOWN: 5.8-inch LCD in VW cars. Normal resolution monitor. The DIP7=UP: for Volkswagen cars, this DIP should stay high. The DIP7=DOWN: for Audi cars, this DIP goes low.	

2. system connection(for the version without internal navi, the SD slot, navi-antenna,speaker conn. will not be seen.)

DIP

Ext. Speaker

RGB connector's Pin8 should be wired to RXD of CAN box.

SD card slot for map.

AV1/2

Audio switch CABLE.

OEM LVDS plug behind CD should be inserted here.

Cam.

The LVDS cable of interface should be inserted to CD.

Touch connector to CAN box's TXD wire.

CAN/pow.

Navigation Antenna

CAN box's 6P plug:
Gives power, input switch signal, and reverse signals.

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CAN box's RXD output wire, should be wired to RGB connector's Pin8, it tells "navi-type,DIP8 status" to the CAN box, so the TXD to navigation will be generated based on CAN data precisely.

CAN box input connectors should be inserted between the Monitor's Power socket and power plug. The installer can switch the 2 connector but be sure the red wire(Constant power) faces the red wire on the OEM plug side.

CAN box's TXD output wire: should be inserted to navigation's touch connector, so the OEM touch foil operation will be delivered to navigation computer in inserted video mode.
The navi-modules should support UART input. FOSP's FN900D supports that.
The internal module is fixed to UART mode.

3. User's Control：

➢ menu: when pressed twice repeatedly, input will be switched from OEM → NAVI→AV1→ AV2→OEM.。

➢ Audio/media：when pressed, the video will always go back to OEM picture.

➢ When in Navi-RGB mode, the OEM touch foil will be used by installed navi-ONLY.

➢ When in AV1/AV2, the oem touch foil will be used by the red-icon controls. The user can click on the wanted icon, and connected IR code will be generated, so remote controller will not be necessary used.

To use the OEM foil to control the installed navigation module：

1) The installer should confirm the navigation module is fixed at UART mode, instead of 4Pin touch foil mode. He may use :

   ● FOSP's FN900D, or the interface's internal navigation module. The later one is always fixed at UART mode. And he must set the IR.RGB to be FN900D.

   ● He may also use Wonder Power WP9100 navi-module, in this case, he should set the OSD option to be WP9100, since these modules use different protocol. and set the WP9100 into UART mode.

2) FOSP may give customers the UART protocol, so a 3rd party device can be integrated into the system as well.

3) The customers can also flash the navigation computer by himself. He can request the file from fosp sales people, unzip it into a SD card root directory,   then it re-flashes automatically when power on. The icon on the entrance picture may show different Icon on the left-top corner when power up, to show it is in UART mode, or 4PIN touch foil mode.

4) The installer needs to wire the RGB connector's Pin8 to the RXD of can box. Otherwise the CAN box will not know the interface is in OEM picture mode, or inserted picture mode.

5) The installed navigation and touch DVD icons do not need touch-calibration.

The 6PIN power connector signal definition between the Can box and interface box：

YELLOW：power supply of 12V BATT。

RED：generated ACC（=12V when key in ignition state）： when=12V，the interface works.

BLACK： Ground to Chassis。

GREEN： Can box generated reverse trigger signal [when =12V the reverse video is enabled]

WHITE：Can box generated switch signal wire, when=12V, this interface switches。[max.25V]

GRAY： CAN box's communication with interface on sharing control signal to DVD/TV on this wire.[if we do not need to idrv to control DVD/TV/iPOD, this wire may be cut off.]

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4. the 3 side key buttons

The input box has 3 side keys, the installer may use it to tune the picture display, and touch function for the connected DVD or other devices. The 3 keys are : menu, +, -.

The first 5 options has separate state memory. The modification of one input is different , and it does not affecting other inputs.

- 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 brightness/contrast/saturation tunes the color of the current video input.
- The H position,V position sets the image position on screen.
- 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 last option: "Guide Line……ON": the installer can set ON/OFF to enable the parking guide line, which shows the safe zone when parking

5. IR output method

This interface has more than 10 types of navigation computer, DVD, TV's control code, so usually the installer does not need to programme it for new IR code. Just change the OSD item to the wanted one.

The CPU inside interface can also be programmed, which means the user can throw away the remote controller and the device can control whatever brand DVD or TV. Here is the method on input/output IR code to the CPU inside.

1. Set IR.AV1 or IR.AV2 to PROG，then this device can read IR code and generate the programmed code. The video source should be connected first.
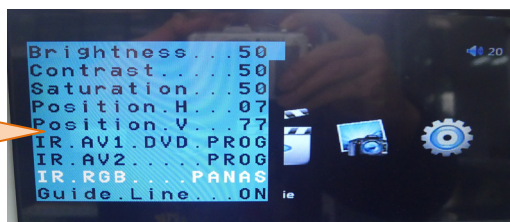
2. Set DIP6 down and up once, then the icons will show up with one Blinking, which means this one is waiting its IR code.

3. The gray wire on the power connector has IR-input function, connect it to the DVD's ir sensor[3 wires inside: +5V, GND and ir data]. When remote key pressed, this IR code is programmed into the CPU from this gray wire.
- ✧ Then another Icon will be blinking which means the CPU is waiting for another IR code.
- ✧ Repeat the above action until all icons are programmed.
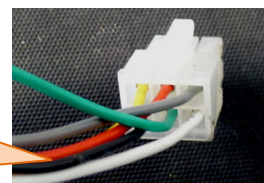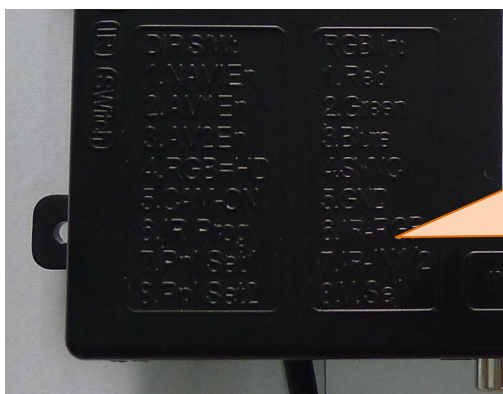
4. After programming the IR code, the IR-sensor's signal wire should be re-connected to the pin6 or Pin7 of the RGB connector. it sends IR code out when the user rotate the knob or touch the LCD to select the icon.

The Pin6 sends code out with 3.3Vpp, while Pin7 sends with 5Vpp. They can be wired to DVD/DTV together since the IR code has addresses itself.

5. The Ctrl port.

Ctrl port here.

| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
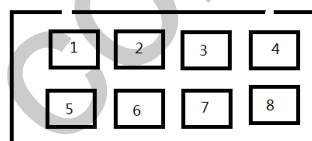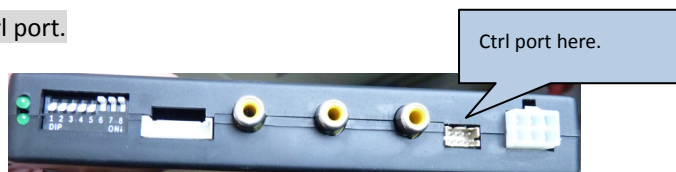
The Ctrl port has 8 pins, it is not necessary for the installers to use it in most cases, however it can be used for installer's convenience in case many more extra devices are installed.

Pin 1, Pin2	+5V output voltage for sound switch relay when AV1 is selected, 0V when AV2 selected.	This pin can pull the relay with +5V. [max output=2A, while most mechanical relay only needs 0.1~0.3A.]
Pin3:	constant +5V when the unit is working.	max 2A output.
Pin 4,8	GND	It is tied to GND inside.
Pin 5: Pin 6:	data bus for touch screen clock bus for touch screen.	Pin5,6 should NOT be connected to GND, because it will halt the CPU inside. Leave it open for normal use.
Pin 7	+5V output voltage for touch screen switch relay, when in inserted video mode, this pin=5V, when in original car video mode, this pin=0V.	For imported cars which needs touch screen for installed navigation computer, this voltage can be used to switch the original touch screen. max 2A output.

5. Parameters

No.	name	parameter
1	RGB resolution input	800X480 HD suggested.
2	Av1,Av2, cam video	0.7Vpp with 75 ohm impedance NTSC/PAL/SECAM automatic switch
3	IR output	5V digital infrared control code with 4 data bytes [machine code1,machine code 2, user code, verification code]
4	Control wires	White wire: signal= max 5V.

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			Gray wire: signal= max 5V.
			RXD wire: signal= max 5V.
			TXD wire: signal=max 5V.
			All these wires can tolerate 12V for <10 seconds.
5		Normal Power consumption	8.4W [0.7A @12V]
6		Standby current	< 10uA
7		Reverse trigger threshold	>5V trigger
8		Work temperature	-40 ~ +85C