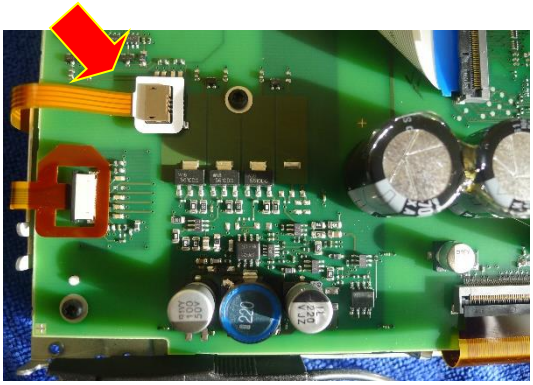
FV-Rover_Jaguar_2014 installation manual_ v140214

[Product type: FV-Rover_Jaguar_2014]

This interface can insert High definition RGB navigation video, AV and reverse camera video onto Rover, Jaguar car screens [from 2011 and later]. This version is updated with the 2014 capacitive touch control function, which keep the video processing and compatibility the same as the 2011-T.

The features are:

- Daughter board is used to insert video by switching the LVDS signal on ribbon cable. So the user can switch the video input in whatever mode [navigation, DVD, car information etc].
- Guaranteed digital video quality on screen by full-compatible OEM LVDS encryption method.
- This interface with 2011~2014 all rover/Jaguar cars [including Range rover, freeland2-2014, Evoque, Discovery etc], and Jaguar XF, XFL, XJ etc. and some special monitors of dual-view [the Driver sees the map, while the passenger watches the DVD at the same time].
- Compatible with 2014 capacitive touch panels while also compatible with previous resistive touch panels, the installer always uses OEM touch panel to control the installed navigation [FN-900D navigation is suggested].



- Plug and play connectors are used, the installer does not need to cut or modify any cable. Full digital circuit inside also guarantees the quality.
- OEM key is used to switch the interface, also automatic reverse and guide lines can be displayed.

1. DIP switch setting

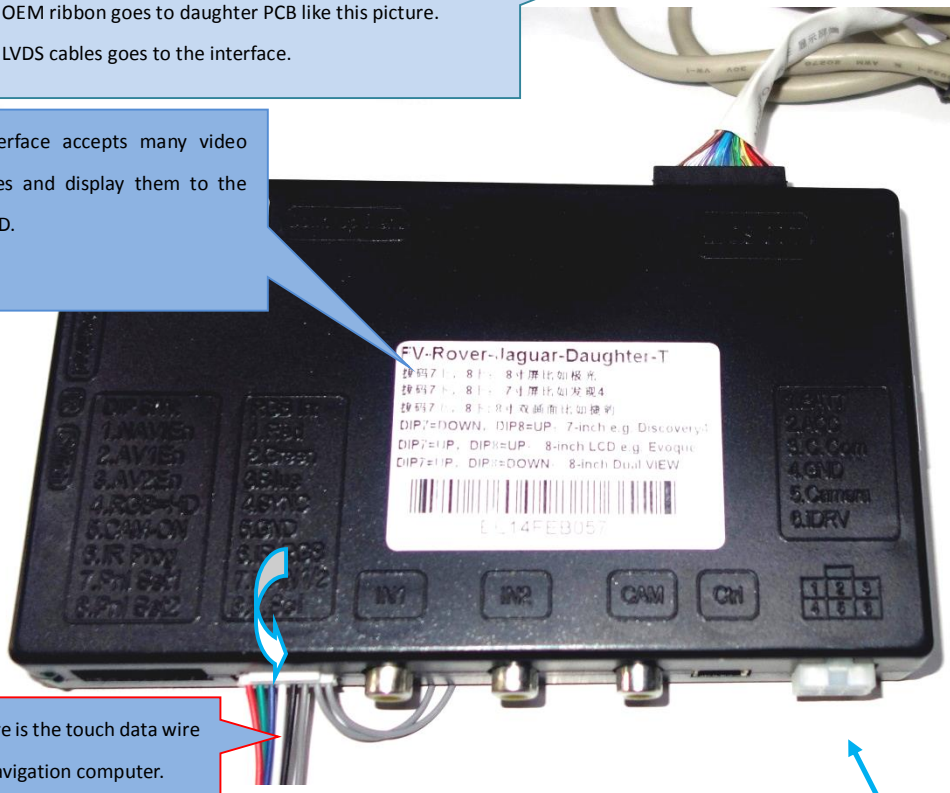
DIP	=ON [DIP=Down side.]	=OFF
1	RGB enabled	RGB disabled.
2,	AV1 for DVD enabled	AV1 disabled
3	AV2 for Tuner or extra video enabled	AV2disabled
4	RGB=HD RGB [800X480 or VGA 640X480]	RGB=Normal NTSC [480X240]
5	This is reverse camera trigger wire go to CAM when Green wire= 12V]	go to car video when Green wire= 12V
6	IR programming when once to ON Touch calibration when get to ON >5 times.	OFF for normal work.
7,8	Dip7=UP, Dip8=Up: 8-inch display, e.g. Rover Evoque, and Jaguar XFJ. Dip7=Down, Dip8=Up: 7-inch display, e.g. Rover freelander2, and Discovery4, Jaguar XF. Dip7=UP, Dip8=Down: 8-inch display dual display, the drivers seems the map, the passenger watches DVD at the same time.	

2. System connection

The daughter board is installed on the ribbon connecting the 2 big PCBs inside. 3 screws are used to fix it there.

The daughter PCB's ribbon goes to the main PCB.
The OEM ribbon goes to daughter PCB like this picture.
The LVDS cables goes to the interface.

The interface accepts many video resources and display them to the OEM LCD.



The 6th pin here is the touch data wire for FN900D navigation computer.

NAVI AV1 AV2 Cam

This harness should be inserted behind the monitor to offer power, switch signal, and reverse signal to interface.
This box has 4 DIPs to make it compatible with different cars.

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 is used to give reverse signal to interface box， also giving power to camera [max.1A]

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

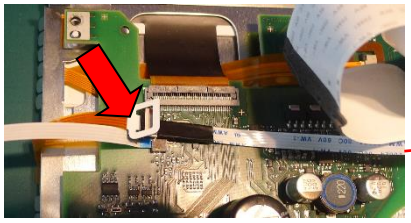
Gray wire: CAN bus control data to interface, it is used to pop up the control icons. Also it carries the steering wheel angle data.

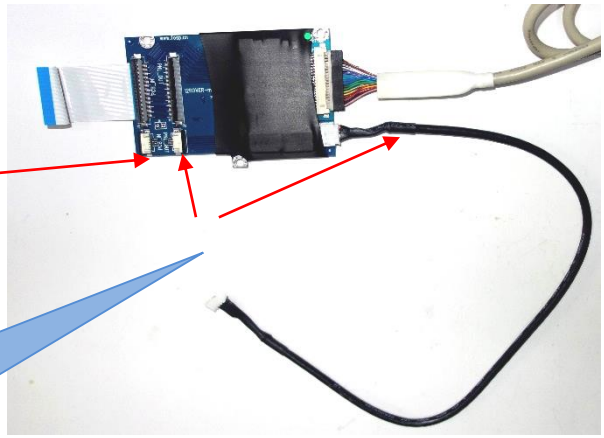
3. Touch control connection

All rover, Jaguar cars has OEM touch panel, the installers can use it to control installed navigation.

The FOSP's FN-900D is suggested, it accepts 4Pin resistive touch signal, as well as 1-wire data touch at the same time.

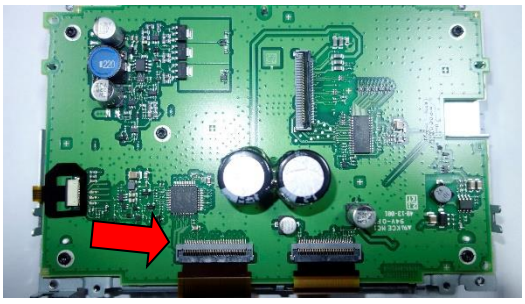
for the cars with 4P resistive touch like below:

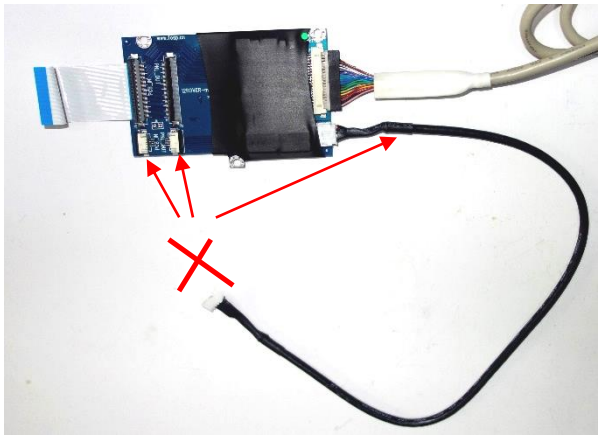


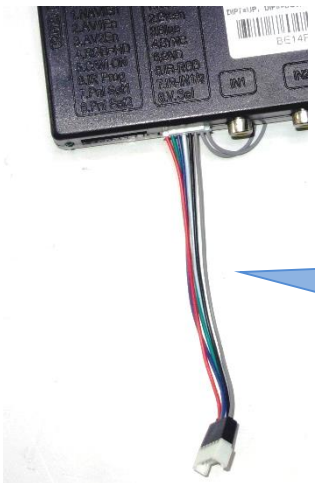


These 3 connectors pointed by red arrow should be connected. So the OEM touch is wired to the 4Pin socket, which is further delivered to the installed navigation computer.

For the cars with capacitive touch:





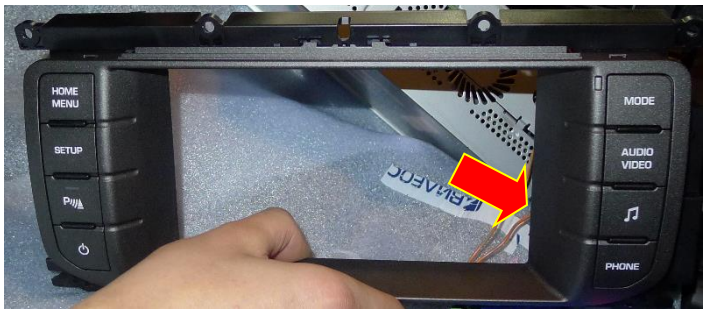


These 3 connectors pointed by red arrow should be NOT connected [also no connector to wire to.].

The PCB's internal PCB will automatically judge the touch operation, and convert signal and send it down to the RGB connector's 6pin.

This connector can be directly connected with FN900D.

4. SWITCH and CONTROL



The installer can use the OEM key to switch the interface:

1) Press "NAV" key [Jaguar XJ，XFJ，Rover discovery4，Ranger Rover，Evoque etc.]，to switch among all enabled inputs.
2) For the versions without OEM navi, [Evoque] Press the AUDIO key like the right picture to switch.
3) 2014's Range rover which uses capacitive touch, please use HOME key to switch.

5. Interface Settings

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 not affecting others.

- 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 or touch screen to control the installed device in AV1/2 mode. Left/right push will pop up the MMI icons, and push will execute the selected icon.
- 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.

Reverse: when the driver goes to R, the can box's output [Green wire=12V], then the reverse image will be shown. And guideline can be shown if enabled by OSD.

The programming of IR code：

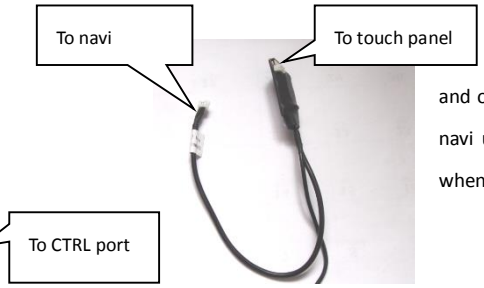
- There are >10 types of DVD, NAVI, and Tuners' IR code are stored inside the interface. The installer just adjusts the options to select to wanted one, then it works. If the wanted type is not there, he may set the option to be "Prog" in the menu.
- When programming, switch the input to AV1, and set 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 [or make the gray wire of the power connector wire to the IR sensor's signal pin], the blinking icon will be moved to the next one when one remote key received. Which means one code is programmed. Repeat this step until all icons are programmed.

  The gray wire of the 6P power connector is the same as IR-data wire, it can be connected to IR sensor-signal to program IR as well.
- The programming of AV2 is the same as above.

6.CTRL port

There is an 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.

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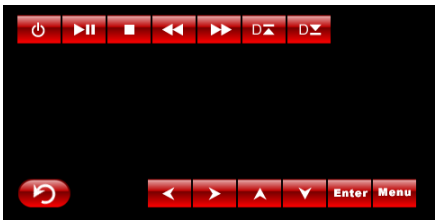

Ctrl port signal definitions：

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].

7. 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