FN_infinity_Q50 Installation Manual_v20140820

Product Type: FN_infinity_Q50， [with internal navigation module]

FV_infinity_Q50 [Video interface without internal navigation]

Inserted Navi picture display

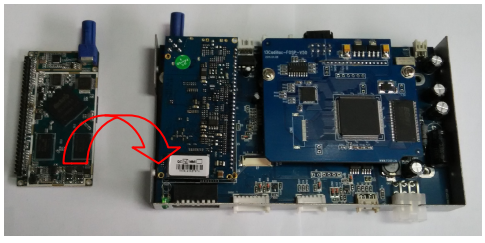
OEM picture display

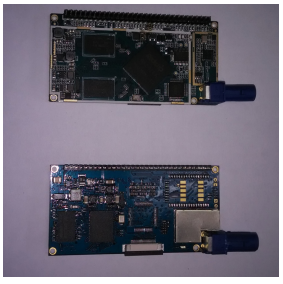
This interface can insert video into 2014 Infinity monitors.[monitors with 2 LCDs like the pictures above]. This product offers RGB-navigation, TV, DVD and reverse video insertion onto the OEM screen.

It has the following advantages.

- ✓ All Plugs are plug-and-play, the installer does not need to open the monitor. Digital navigation module is embedded inside, the wiring job is simple and easy for the installers, and this digital module gives very clear picture with HD map. The installation job is guaranteed to be finished within 15 minutes.
- ✓ The OEM touch panel is used to control the navigation, the user does not need to add an extra touch foil. All touch operations are touch and smooth to the inserted navi, and no background operation to the OEM system.
- ✓ The OEM MENU key is used to switch the interface.[the menu key below the monitor, the user long presses it], then inserted picture will be displayed.
- ✓ the RGB input can be connected to a wireless mirrorcast dongle via a FOSP HDMI input cable. The smartphone's display can be mirrored onto the car screen with 1080P or 720P delivery so no picture quality is hurt. Both Android and iPhone can be mirrored. The installer can buy the mirrorCast dongle from Fosp or directly inside his local market.
- ✓ The FV-infinity fits cars before this dual monitor version:

- ✓ The customer can also buy the Android version, it can directly replace the CE module, and offer 4.X android, OEM touch control, 1G Ram and 4G Flash.
  Just like most other Fosp interfaces.



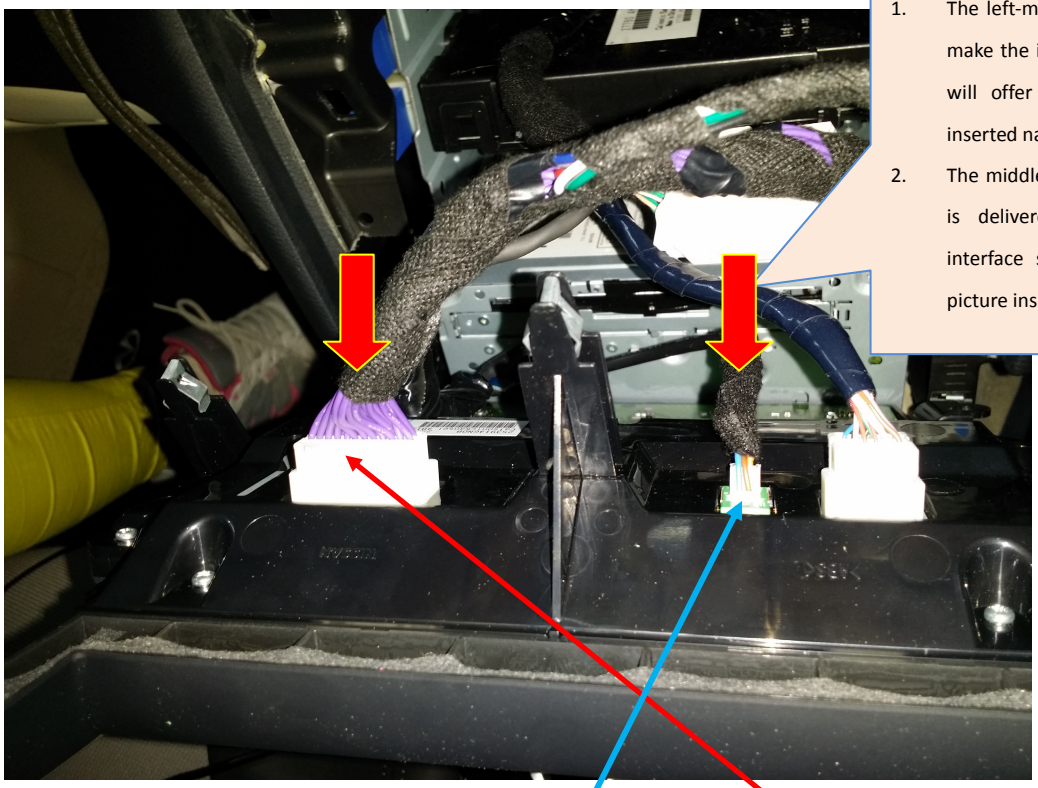


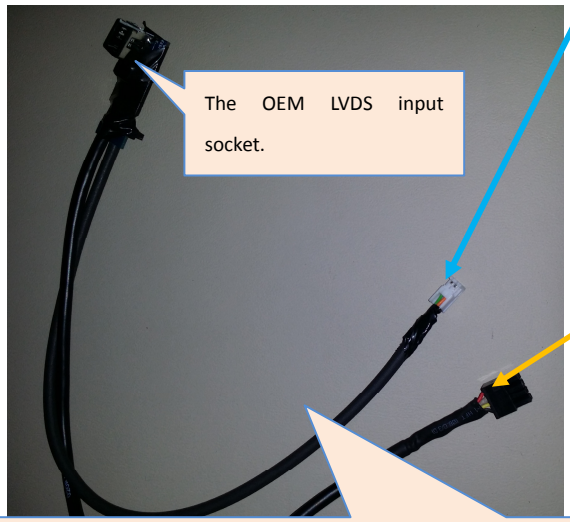
1. System connections:

There are 3 connectors behind the below monitor.

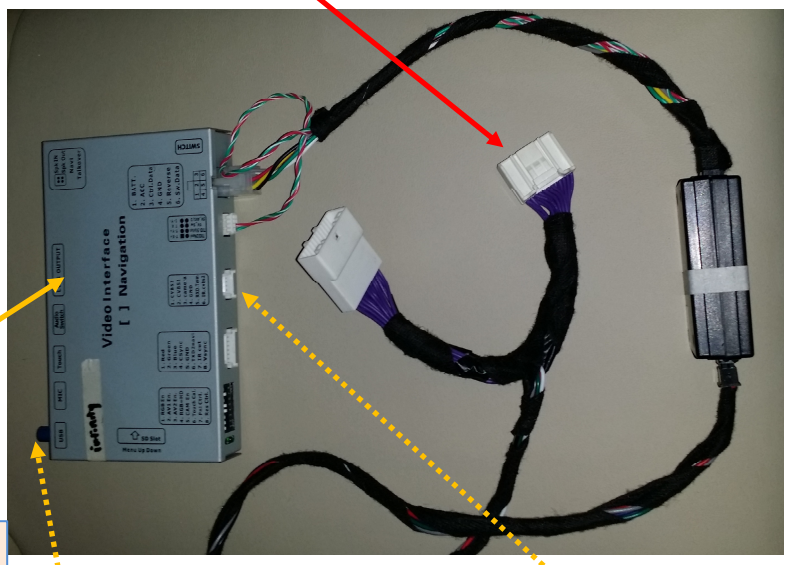
[All installation job is done to the below monitor's connectors]

1. The left-most plug: should be pulled out and make the interface's harness in between, this will offer power and touch signal to the inserted navi。
2. The middle-connector: LVDS signal for display is delivered here, the LVDS harness of interface should be added in between for picture insertion.





The OEM LVDS input socket.



This LVDS harness should be inserted between the OEM plug for picture insertion.

There is only one mechanical relay on the socket PCB, to switch the LVDS signal, so when the 2X4 LVDS cable is not connected, the OEM signal will still be displayed, this is the way to judge the connection is good or not.

For shipment before Oct 2014: the installer should be extra attention on the socket insertion of this LVDS cable. If black screen is seen, probably the LVDS connection is not good. [nothing will be damaged, just pull out and watch and insert again]. When OEM picture is seen, seal it with glue type.

After 2014.Oct, OEM plug-play sockets will be used.

Red: reverse video

Yellow：AV1，

White：AV2

Gray：control signal for external DVD based on OEM touch.

2. DIP settings On interface box:

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= fosp HDMI dongle input, which is further connected with a phone-mirror dongle. So phone pictures can be mirrored and dipalyed on this OEM screen.
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	DIP7=DOWN for normal operation, DIP7=UP is for FOSP factory debug mode, the installer should pull it down. DIP6 and DIP8 are not used, they should be pulled high for normal operation.	

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

YELLOW：power supply of 12V BATT。 Since the CAN box is wired from ACC, so this wire is actually wired from ACC as well.

RED：generated ACC（=12V when key in ignition state）： when=12V，the interface works. This wire is automatically generated by can box.

BLACK： Ground to Chassis。

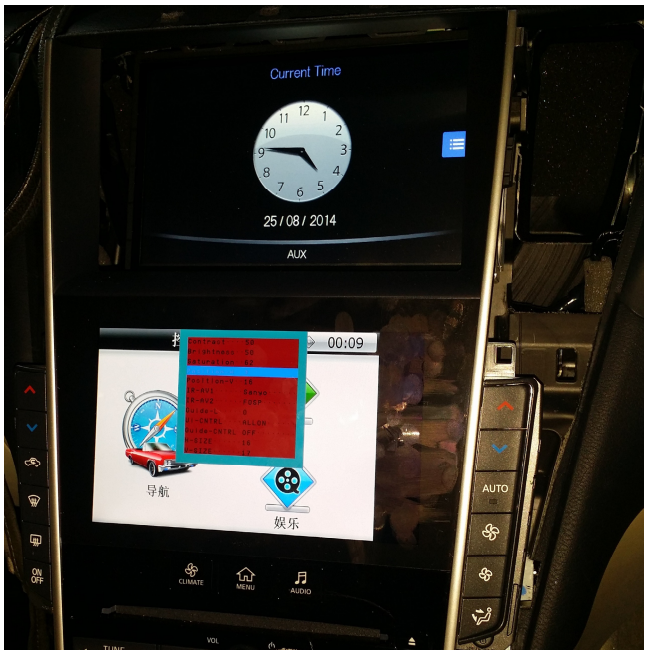
GREEN： reverse trigger signal [when =12V the reverse video is enabled], this wire can also be used to give power to reverse camera. This wire is not used in this module, since most infinity has a OEM camera there.

WHITE： The analog voltage wire sensing input, when the Call-Off pressed, the interface will switch the input.[the installer should cut it off and rewire to the related pin on 2X14 connector.]

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.]

3. To Switch the inputs

- The installer can push the"menu" key below the monitor for 1 second to switch the inputs.
- External keypad can be used to switch the inputs, it can be connected to the 2X2 on the side of interface.
- The installer can also just manually connect 12V to the white-wire, when >2.5V on the white wire for a while, the interface switches.



Attention：

Menu key has some OEM function, when short-press, the display will go back to the main page, when pressed for long enough, the below monitor will switch off. This is an OEM function.

So when switching, the installer just press the menu key for 1 second, it would be enough to switch.

3. 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 not affecting others.

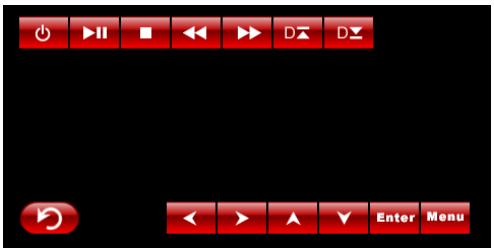
- The 3 side keys are : menu, +,- respectively. When menu is press, OSD strings will pop up on screen, and the installer may adjust the best video effect. The +/- will change the value.
- The brightness/contrast/saturation tunes the color of the current video input.
- The position H,position V set the 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 "Guide CTRL……ON":

the installer can set ON/OFF to enable the parking guide line, which shows the safe zone when parking. Please set to OFF in this interface..

The Guide L option set the left guide line's offset on screen, when the value changes, the left guide moves its location.

The Guide R option set the Right guide line's offset on screen, when the value changes, the Right guide moves its location. With this combination, the guide line can always fits the car and show the safety area no matter whatever camera the installer uses.



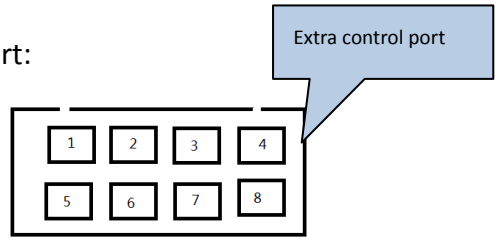
When in AV1/2, the user can long press the left-top area of the LCD to pop up the MMI-icons, so he can control the digital video recorder[power on/off], play, stop, record etc.

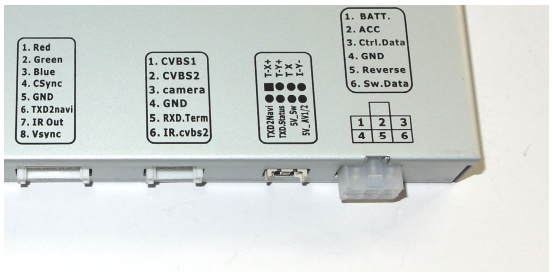
- The Last 2 Options: Size H, and Size V, are used to tune the picture size, in case an iPhone of android phone is connected, this option can be used to make the output nicely fit the screen size.

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, which means the suitable IR code is wanted. The installer should now connect the hardware: connect the IR signal wire of the DVD to the gray-wire in the power cable of the interface[the IR input wire.], and press once the related IR key.
- Then the 2nd icon will be blinking, which means one IR code is read and another code is wanted, the installer just repeat the pressing till all code are read.
- When the last icons stops blinking. The installer should change the hardware: connect the IR output wire[RGB port's 7 pin wire] of interface to the DVD's IR signal wire. Then when the user rotates the knob or use the touch foil to generate the IR code, DVD will be controlled.
- The programming of AV2 is the same as above.

4. Extra control port:





This interface has released a lot of hidden functions, so the 3rd party can use it for various usages.

The Extra control port close to the power connector：

（1） the 4-pin in the up row： touch screen 4Pin input, when in DVD or TV, the touch foil can be switched and connected to these 4Pin, so the controller inside can read the touch operation and location and generate the IR code for DVD etc.

（2） the 5th Pin(TXD2Navi)： the input pin to take external control data for internal navi, to replace the touch control。

（3） the 6th Pin (TXD.Status)： the interface tells the outside its internal status.

（4） the 7th Pin （5V_SW）: this pin can output 5V with 1A max, which is enough for a relay pull, when in inserted video this pin=5V, when in OEM video, this pin=0V.

（5） the 8th Pin（5V_AV1/2）: this pin can output 5V with 1A max, which is enough for a relay pull, when in AV1/2 video this pin=5V, otherwise this pin=0V. it can be used to switch the 4Pin touch so one touch foil is shared by navi, and DVD/TV.

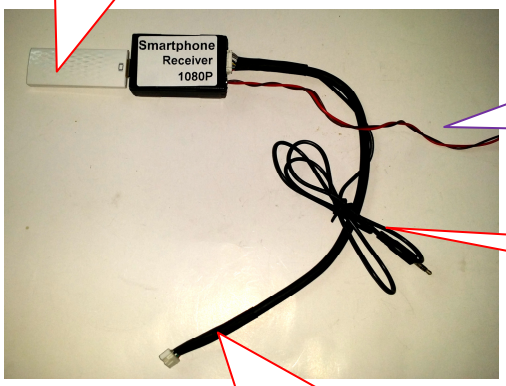
The 5th pin in the Video input port （RXD.Term）：

This interface can work in terminal mode, a 3rd developer or installer can send commands into this pin. E.g. when he sends “switchInput 1\r”,the interface will switch into RGB navi, “switchInput 2\r”,the interface will switch into AV1, when he sends“Help\n”， the interface will tell a list of available commands. This Pin works in 11.5K baud rate and it losts all sent commands when drops power.

5. Parameters

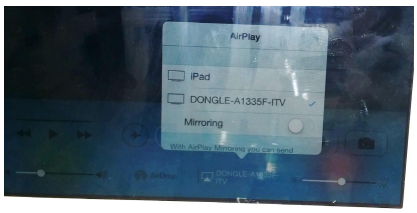
No.	name	parameter
1	RGB map resolution	800X480 HD suggested.
2	Av1, , cam video	0.7Vpp with 75 ohm impedance NTSC/PAL/SECAM automatic switch
3	GPS antenna	5V active antenna from the golden finger connector.
4	Reverse Control wire	>5V will force into camera mode. All these wires can tolerate 12V for <10 seconds.
5	Normal Power consumption	4.8W
6	Standby current	< 10uA
7	Reverse trigger threshold	>5V trigger
8	Work temperature	-40 ~ +85C
9	Size	15.2 * 9 * 2.1CM
11	USB	OTG function,1A output with surge of 3A.
12	Compatible with maps	Navione, navitel, Igo, Primo.sygic, etc.

6. How smartphone image mirrored:



- The FOSP smartphone receiver has an HDMI connector for dongle, and convert it into RGB-1080p or 720p, for the video interface.
- The RED/BLACK should be wired to ACC/GND of the interface box for power supply.
- The DIP4 of interface should be stay OFF, and DIP1 should stay ON.

To the AUX sound input of the car, the installer can also leave it, and use the phone's speaker as sound output.



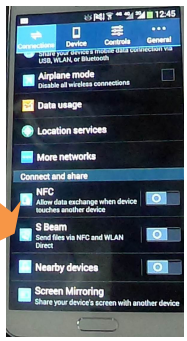
- the wirelss dongle has a key button to show the state:

when left-top corner shows:

- **DLNA**[or AirPlay], it means iOS can be received.

The user should enable the iOS device's wifi, find the dongle, and connect it. Then he scratch the buttom side of the iOS device, click the air Play function, and select the appropriate dongle, and enable the mirroring function and wait a little while. Then all the iOS shows will be mirrored.

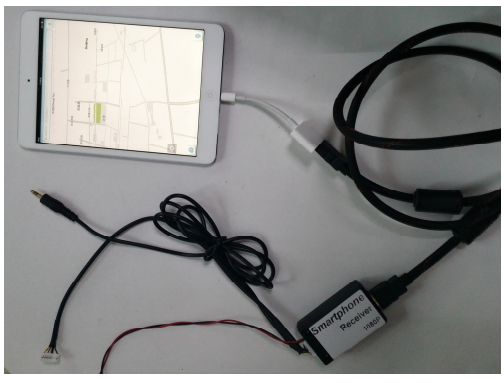
When the left-top corner shows:

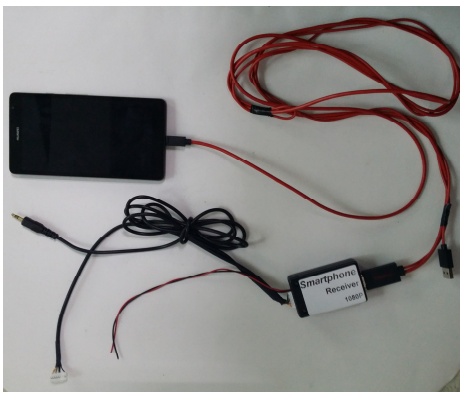


- MiraCast or EZcast, it means the android phone can be mirrored.

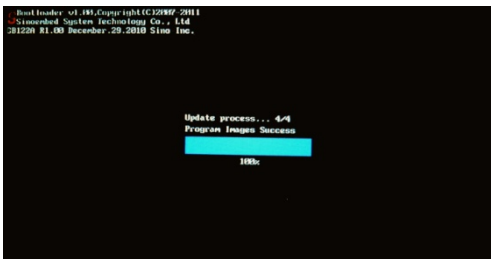
When using the Android phones: the user need to enable the wifi, just start the miracast the phone.[the name maybe different from android 4.1, 4.2, or 4.3]. also It is different from different phone brand.
Just enable the screen mirroring, then the phone's display will be mirrored onto car screen.

- The installer can also get the display from the smartphone in the wire way, the below picture shows, the FOSP smartphone receiver can also deliver the video input from iOS device with a standard apple HDMI cable, or from android device with a standard MHL to HDMI cable.





7. simple manual about the navi module.



（1） How to update the module software：

Copy the files that FOSP provides into a SD card.

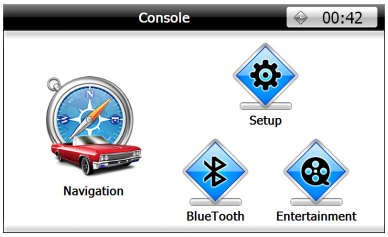
When the units power on, the users may see this picture. He just wait the start Up screen shown again.

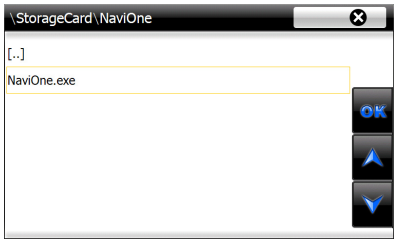
（2） How to make a start up Logo:

Make a directory named YP_A5, and put all the file that fosp supplies for a boot.

The logo.BMP contains the logo. Please be sure it must be 800×480， BMP format, and 16 bit in color.

（3） The functions of the icons.





The left picture shows the start up picture, the user may go to each icon to get their respective function.

When the navigation map is inserted the first time, the user may click the navigation icon, and the right-side picture will show up, the user should select the *.exe file to run the map. All the other functions are self-explained in the menu.