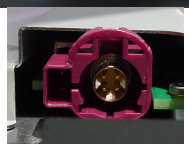
FN_BMW_6Pin Guide+NAVI interface manual

Product type: FV_BMW-6Pin, Ver:20131022

This interface can insert video into BMW, e.g. 1,3,5,7 series starting from 2012,if only the monitor has such a 6Pin connector as in the right. It can insert 1 RGB High definition video and 2AV and 1 reverse camera video or iPod video onto the screen, the following are the features.



- ✓ Plug and Play BMW connectors are used, the installer does not need to cut any wires or open the monitor to install the interface
- ✓ This one interface box fits both BMW F20(1,3,5-series), and F30(BMW 3,5,7,X5,X6 series) car screens, the installer only needs to change the DIP8 position to fit the car.
- ✓ CAN bus decoding is used to generate the reverse, switch, and guideline signals, the Guideline has 100% OEM look and feeling. Also the OEM PDC picture is kept and displayed together with the added reverse camera video.
- ✓ Digital Navigation module is used inside which means very clear picture on LCD is displayed, also the Navi sound goes into the OEM speaker without any background noise. This navigation computer is verified for long time compatible without various types of map in the world.
- ✓ This interface is upgraded version from FOSP's >2 year sold interface for this BMW screen. It is mainly updated: pure digital navigation process inside, OEM speaker for navi sound, and OEM-like guidelines.

1. Simple Operation manual

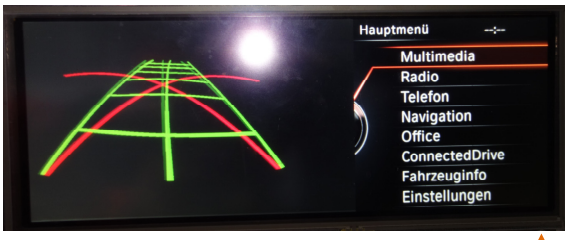
When DIP8=ON, the interface works on F20 BMW screens（1，3，5 series without OEM navi，usually 6.5 inch with 16：9 ratio）:

F20 with inserted navi.

F20 inserted camera+ guideline+OEM PDC.

When DIP8=OFF, the interface works on F30 BMW screens（3，5，X5，X6 series with OEM navi，usually 8.8 or 10.2 inch with 24：9 ratio）:

inserted camera+ guideline+ OEM PDC.



User presses Option key to switch on/off OEM PDC picture.

The OEM PDC picture may show on the right side/center of the screen, the "PDC offset"option will tune it centered on the right PDC area.

Long press the Menu key will switch the input.

The Reverse signal will be automatically generated by CAN box, together with guideline values. The Green wire can also power a camera.[max 1A.]

Attention ：

- F20，F30 screens are in 2012 BMW 1，3，5，7 series cars，it has 4P+2P connector together. The total monitor has only one connector.
- Year（2009~2012）version has a 4P round+6Pin flat connector to deliver power, in this case, the FOSP FV-BMW-CIC，or FV-BMW-CIC2 can be used.
- Before 2009's BMW，10P square connector is used,[BMW M-ASK，CCC]，Please use FV-BMW-CCC。

2．DIP settings

DIP	Down side（=ON）	Up side（=OFF）
1	Extern RGB input enabled	RGB input disabled This is the suggested state, put this to ON only when one extra navi inserted, or customer installs a FOSP's HDMI/MHL smartphone converter to display the Android of iPhone picture.
2,3	AV1/2 input enabled	AV1/2 input disabled
4	RGB input= VGA resolution 800X480 This is the suggested resolution, no matter the panel resolution.	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, and to ON 5 times for touch panel calibration.	Set to OFF for normal use. Note：this Calibration is for touch to control DVD/TV in AV1/2 mode, the navi mode is done by powring this unit up without SD card in slot.
DIP 7，8	7=UP,8=UP: F30 BMW screens（3，5，X5，X6 series with OEM navi，usually 8.8 or 10.2 inch with 24：9 ratio 7=UP,8=DOWN: F20 BMW screens（1，3，5 series without OEM navi，usually 6.5 inch with 16：9 ratio）: The DIP7 should ALWAYS Up. Otherwise people see black screen instead of inserted video.	

3. system connection：

The navi SD card and 3 Keys.

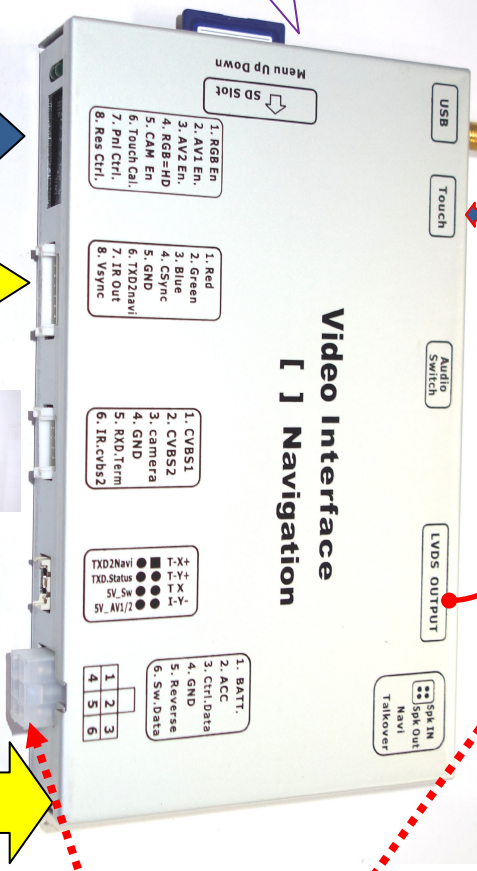
DIP switch

Ext.RGB

AV1/2

These DVBS input sockets are used:

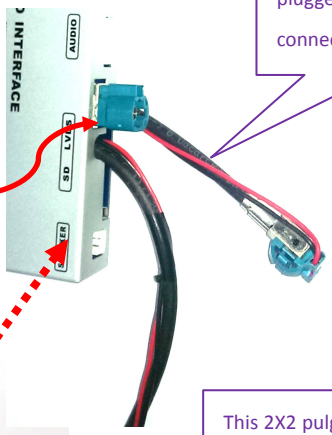
1. Red: reverse camera video input.
2. White: AV1-DVD video input.
3. Yellow: AV2-TV video input.
4. Gray: the IR output to ext DVD/TV.



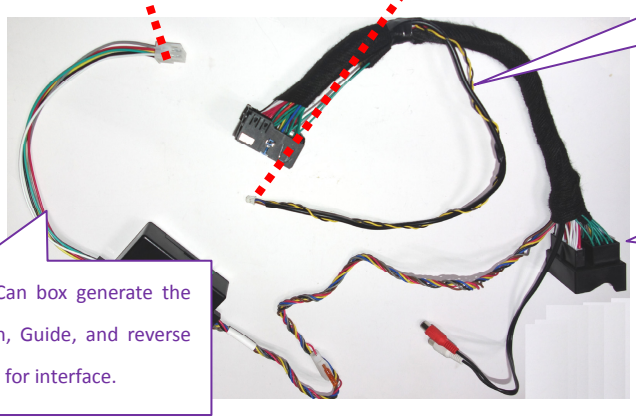
Navigation antenna and touch input.

This video plug should be inserted to monitor.

This video socket should be plugged with monitor's LVDS connector.



CAN 盒



This 2X2 pulg is used to insert audio into the OEM speaker.

This harness is inserted between the CD socket, so it gives power, reverse and Guide signals to interface by CAN box.

This Can box generate the switch, Guide, and reverse signal for interface.

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

[the installers does not need to modify, just for reference.]

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.

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 storage memory units. The modification of one input is not affecting others.

- The 3 side keys are : menu, +,- respectively. When menu is pressed, 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/rotation 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.

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

The Guide R option is not working on this product.

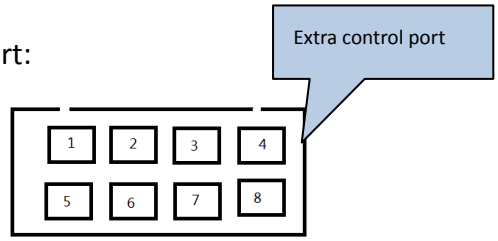
The PDC offset option is is used to tune the PDC location on the right side of LCD when in reverse mode, while the Left 75% is used to display the inserted camera video. Some cars has PDC in the center of screen, while some has the PDC on the right. This options makes it always centered.

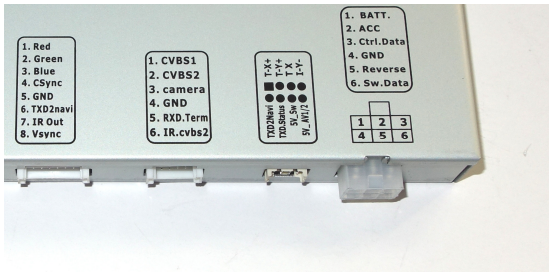
Reverse: when the driver goes to R, the can box's output [Green wire=12V], then the reverse image will be shown. And guideline can be shown if enabled by OSD.

The programming of IR code：

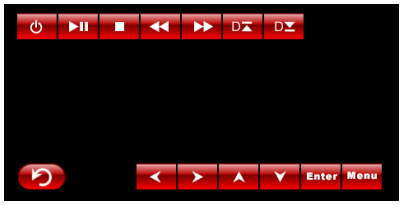
- There are >10 types of DVD, NAVI, and Tuners' IR code are stored inside the interface. The installer just adjusts the options to select to then wanted one, then it works. If the wanted type is not there, he may set the option to be "Prog" in the menu.
- When programming, switch the video input to AV1, and set DIP6 down twice, 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,or the gray wire of the CVBS connectors] 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.

5. 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.

6. 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.