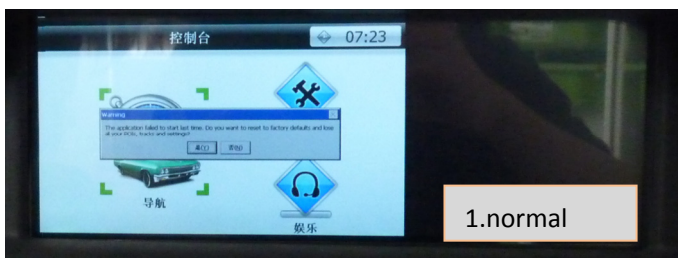


# FV\_CIC2 interface manual\_v20111031

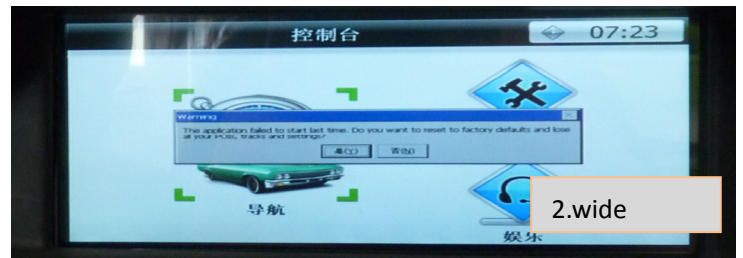
Product type: FV-CIC2

This interface can insert RGB/CVBS video into BMW CIC screens(including BMW 5 series,3 series,7 series,X5, X6). 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.

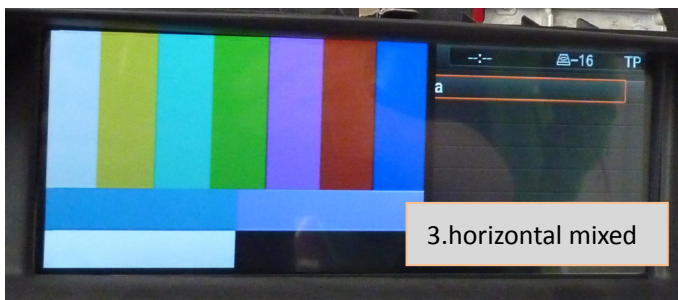
- ✓ The interface can be installed in BMW CIC screens, super wide screen or normal, (super wide is 24: 9 screen in BMW 3,5,7,Z4,X5 series with 1246X480 resolution), and a not so popular version X5 (400X240 resolution).
- ✓ the user can use the iDrv keys to control the DVD, TV tuner, iPod or added RGB navigation computer.
- ✓ 1G Hz bandwidth video cable is used from the interface to the display, so stable and clean video is guaranteed and this interface has good compatibility on many screens.
- ✓ Dedicated trigger wire for reverse camera with max 1A output, which eliminated the necessity of searching power for reverse camera elsewhere inside a BMW car.
- ✓ This interface has the following 4 display modes, which makes the parking easier because the radar picture is also shown the same times as well as guide lines.



1.normal



2.wide



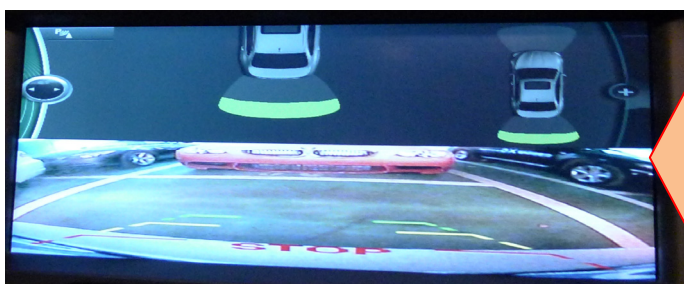
3.horizontal mixed



4.vertical mixed

## 1. BMW user control:

- Press NAVI or MAP key: the video interface will switch the input: car video → inserted RGB → inserted AV1 → inserted AV2 → car video
- Press CD: video image will go back to car CD,
- Press RADIO: video image will go back to car Radio,
- Press the Knob upward (when in inserted video by interface).

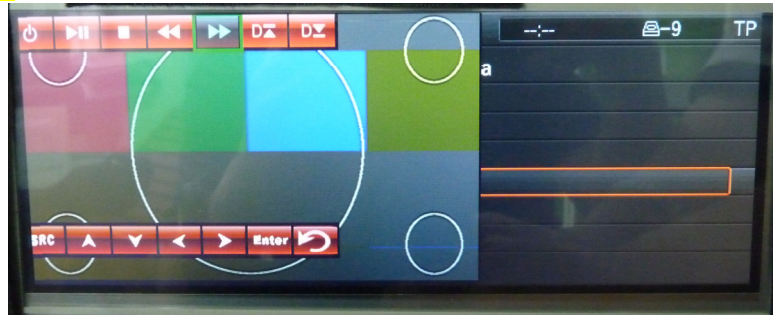


Push the knob upward to switch display mode



➤ **Left,Right** arrow keys ,and **BACK**-pushing the knob

- After market navigation might be controlled in RGB input.
- When in AV1, AV2, the user may control DVD,TV and IPOD with the iDrv knob with the pop up OSD.
- The user needs to back-push the knob to execute the selected icon.
- When people does not want to use this pop-up OSD, he may set the DVD type to “none” by press the 3 side keys on the interface .
- The installer can also set the DVD type to be programmable by press the side keys of the interface box and set the DVD type to “Prog.”
- The installer can also cut the gray wire off [between the CAN box and interface] to remove the original knob control functions.



2. **System connection:**

The connector from the car computer should be inserted onto the socket here.

3 keys to tune color and DVD/TV type.

AV1,AV2 audio are selected to output

The 4Pin LVDS should be inserted to the monitor's socket.

CAN wire connections:

- The OEM connector on CAN box: should be inserted onto the matching socket on Monitor.
- The Monitor's OEM connector should be connected to CAN box PCB as the picture shows.[Text facing outside], wrong connection will not damage anything but the monitor and CAN box has no power supply.
- When connected correctly the CAN LED will be blinking to show data running.

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

- YELLOW:** power supply of 12V, it can be ACC or BATT.
- RED: ACC (=12V when key in ignition state):** when=12V, the interface works.
- BLACK:** Ground to Chassis.
- GREEN:** reverse video trigger signal [when =12V the reverse video is enabled], this signal is generated inside the CAN bus with max output of 1A current, this can be used directly to power a camera.
- WHITE:** 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.]

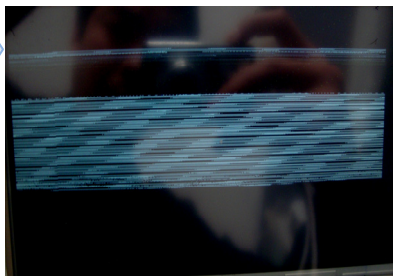


**4. DIP Settings**

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 computer video is selected when green wire goes to 12V.
6	IR programme when once to ON Touch calibration when get to ON >5 times.	
<b>DIP 7, 8</b>	<p><b>8UP:</b> the screen is BMW CIC super wide 24:9 screen in 5. 3. 7series cars, 4 display modes will be available when the user push the knob upward.[normal, wide, horizontal mixed, vertical mixed.]</p> <p><b>8DOWN:</b> for 16:9 screen, 2 display modes will be available when the user push the knob upward.[normal full, vertical mixed.]</p> <p>DIP7 is not used in this unit.</p> <p><b>DIP8 if set wrong, will cause the top 50% video wrong in vertical mixed display mode.</b></p>	

**DIP4 is used to tell the RGB input resolution:**

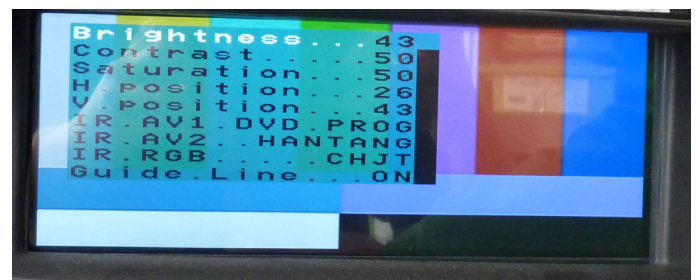
- > If the RGB is getting VGA resolution while DIP4 is set to UP=NTSC resolution, then left picture here is displayed.
- > If the RGB is getting NTSC resolution while DIP4 is set to DOWN=VGA resolution, then right picture is displayed.
- > **The installer only needs to set the DIP the same as input resolution, then image gets OK.** No reboot is needed.
- > DIP4 is only effect to RGB input, not to AV or camera input.



**5. 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, +, -.**

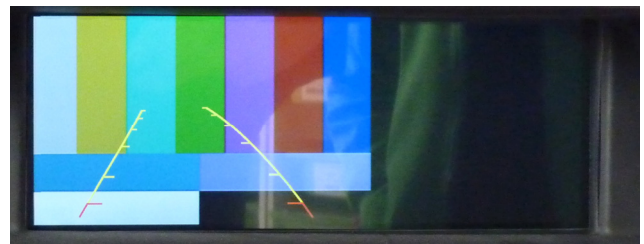
The first 5 options has separate state memory. The modification of one input is different not



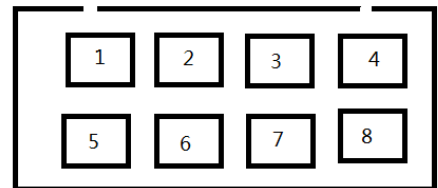
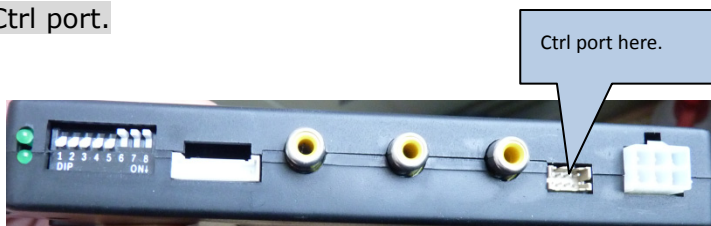
affecting others.

- 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 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.



### 6. The 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.

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 touch.	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 3<sup>rd</sup> 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 fosp interface terminal mode operations, please contact fosp sales people.

### 7. Parameters

No.	name	parameter
1	RGB video amplitude	0.7Vpp with 75 ohm impedance
2	sync amplitude in RGB-navi port	3~5Vpp with 5K ohm impedance Sync should be NTSC composite with negative polarity. When in VGA mode, the Hsync and Vsync should be combined by a 74HC86 to make a

		Composite sync.[Xor operation], it can be XOR with '1' to get inverted to negative polarity.
3	RGB resolution	NTSC-RGB navigation, that is. 320X240,400X240,480X240 Or VGA resolution[640X480 or 800X480]
4	Av1,Av2, cam video	0.7Vpp with 75 ohm impedance NTSC/PAL/SECAM automatic switch
5	IR RGB, IR_AV1 output	3.3V digital infrared control code with 4 data bytes [machine code1,machine code 2, user code, verification code]
6	Normal Power consumption	2.4W [0.2A @12V]
7	Standby current	< 10uA
8	Reverse trigger threshold	>5V trigger
9	Ctrl port Pin1,2 and Pin7: Output voltage	Relay pull voltage for Audio and touch screen selection 5V volts.
10	Ctrl port Pin1,2 and Pin7: Current	2A. Tested to have no damage when short-circuit to GND for 2 minutes. Leave it open when do not use.
11	Work temperature	-40 ~ +85C