FV_MMI_2G interface manual_v20120520

Product type: FV_MMI_2G

This interface can insert video into AUDI MMI 2G screens (including Audi A6,Q7 before 2011). It can insert 1 RGB High definition video and 2AV and 1 reverse camera video or iPod video onto the screen. This is an updated version which support HD map display on this 480X240 LCD, also it support oem MMI keys to control.

the following are the features.

✓ The internal video processor and 64M video memory makes this interface displays HD map onto the screens. Many places in the world the new map only be released in the HD way, which also offers over-speed camera detection in advance, and map upgrade possibilities.

✓ This interface allows OEM keys to switch and control the installed device.

has another interface for Audi cars with 4P round connector[All Audi since 2011, which has 4P round connector,]that is FV-MMI-3G-4G.

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 This is the suggested set.	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.
DIP 7，8	DIP8=UP: default set, it does not have any function. DIP7=UP: MMI data is sent to the white wire, [ext key pad will not function] DIP8=DOWN: voltage is used to control the switch, white wire>3V or ext key can be used to switch.	

Operation guide：

➢ SWITCH: when in MMI-2G cars like A6 before 2011, people press NAV to switch;

➢ Reverse: when the driver goes to R, the [Green wire=12V], then the reverse image will be shown.

➢ MMI control: When in AV1/AV2, the user can rotate the mmi-knob to pop out the MMI icons, and press to make the execution.

2. system connection：

DIP 开关

RGB Navi

AV1/2

Cam.

power

The LVDS should be inserted to the CD's behind socket.

AV1,AV2 audio are selected to output

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

The 6PIN power connector signal definition

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 DIP7=DOWN: this interface switches when this wire >3V.[max.25V]

When DIP7=UP: this wire takes MMI data, and switches when NAVI key pressed.

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.]

---

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.

When in AV1，AV2, the knob's rotation and push can pop out the MMI icon, and the user can control installed device. Set to "None" in OSD to disable it.
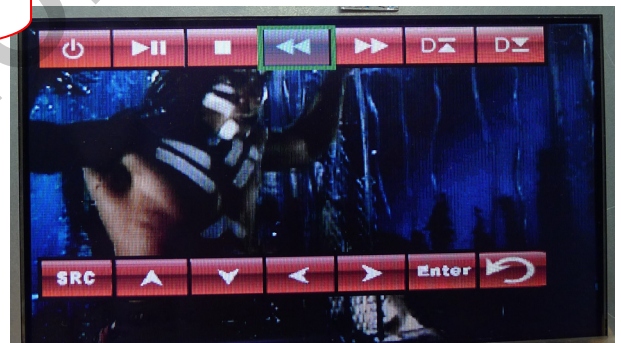
The programming of IR code：

- 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, the blinking icon will be moved to the next one. 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. The Ctrl port.
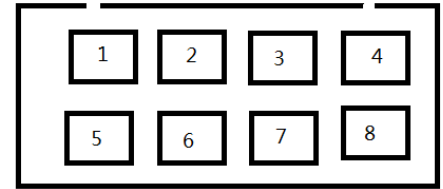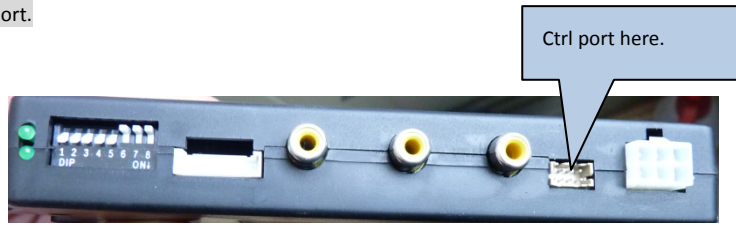
Ctrl port here.

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. [max output=2A, while most mechanical relay only needs 0.1~0.3A.]	This pin can pull the relay with +5V.
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.

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