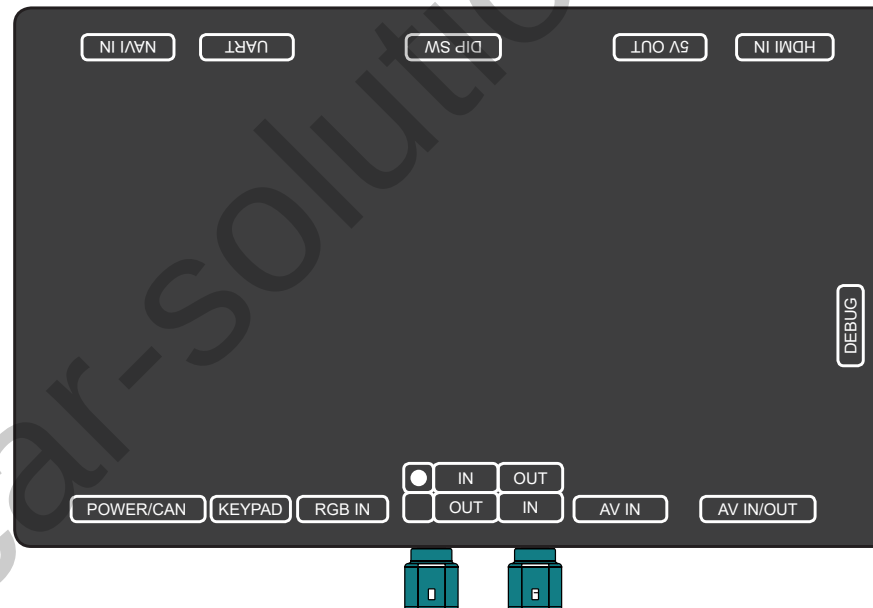


Instruction Manual

High-Definition Link for PCM5



Precautions

You should check the names and colors of each wires exactly, before you connect the wires.

ex) CAN HIGH: White wires / CAN LOW: Blue wires

The 'POWER / CAN Cable' should always be connected last and be disconnected first.

The 'Mode Switch' is an optional part to change modes forcibly without CAN-BUS.

Generally, the CAN-BUS wires are connected for changing modes by original buttons.

When the reverse gear is not detected by CAN-BUS,
the 'REVERSE 12V IN wire' should be spliced with 1 2V power of reverse light.

- **HDMI Device-related**

HDMI mode accepts general-screen resolution of HDMI devices.

Generally, '5V 1A Power output(5V USB POWER)' is a standard voltage for charging smartphone.

If you need higher voltage than 5V, you should add a separate power supply.

- **Navigation(GPS) box - related**

When you connect the power wires(B+, ACC) to the navigation(GPS) box,
the 'NAVI 12V OUT' wire supported by video interface should be spliced with an ACC wire of navigation box.

The navigation box should be powered off before unplugging the HDMI cable.

Car Compatibility Chart



PORSCHE

Car Models	Production Year	Specific Models
911 Carrera (991)	2018 -	- PCM 5.0 (12inch)
Macan	2018 -	- PCM 5.0 (12inch)
Cayenne	2018 -	- PCM 5.0 (12inch)



MACAN PCM 5.0



MACAN PCM 5.0



Volkswagen

Car Models	Production Year	Specific Models
Touareg	2019 -	- VW Discover Pro (9.2-inch)



VW Discover Pro (9.2inch)

Components



1. POWER Cable



2. LVDS Cable



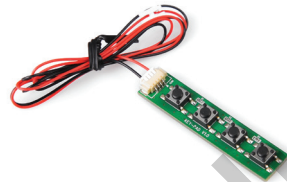
3. AV Cable #1



4. AV Cable #2



5. IR Cable



5. KEYPAD



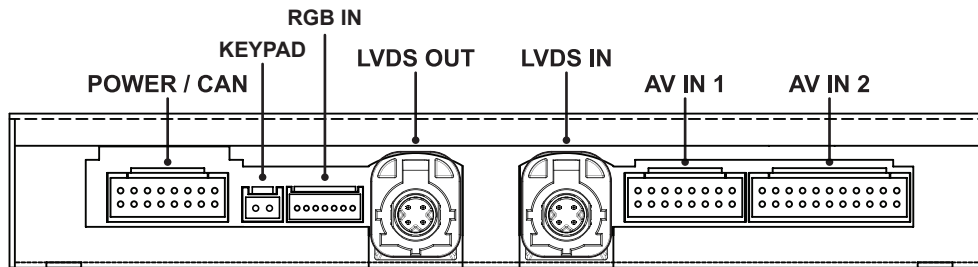
6. Micro USB

Optional Parts (sold separately)

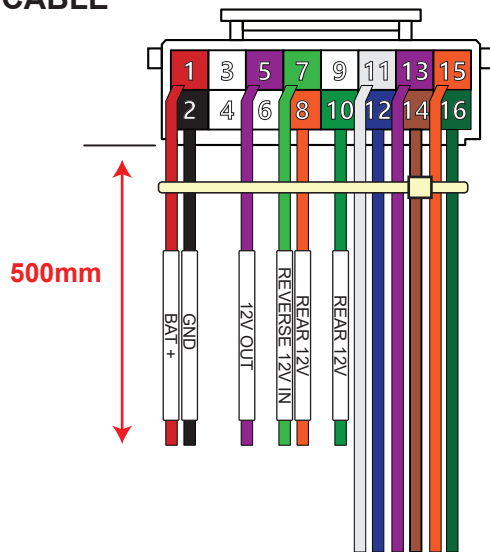


Extend LVDS Cable

Body Connector specifications



POWER / CAN CABLE

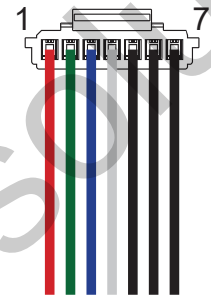


500mm

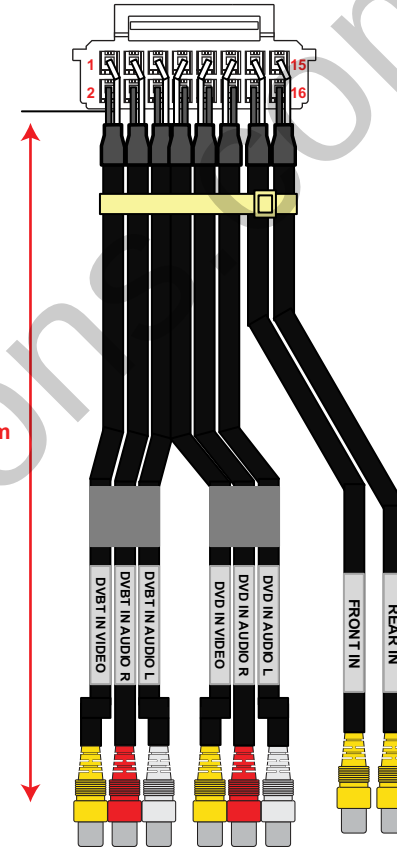
LVDS OUT CABLE



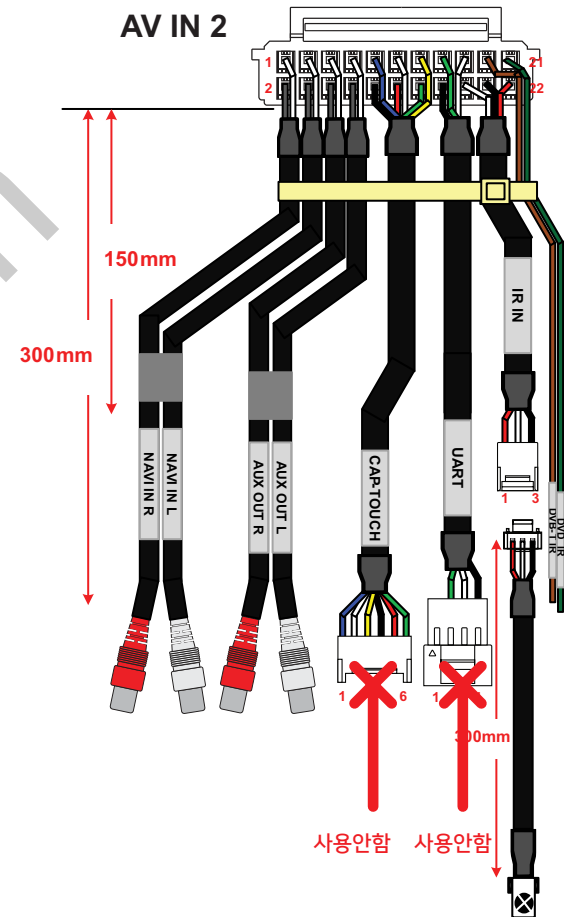
RGB IN Spec



150mm



AV IN 2



150mm
300mm

사용안함 사용안함

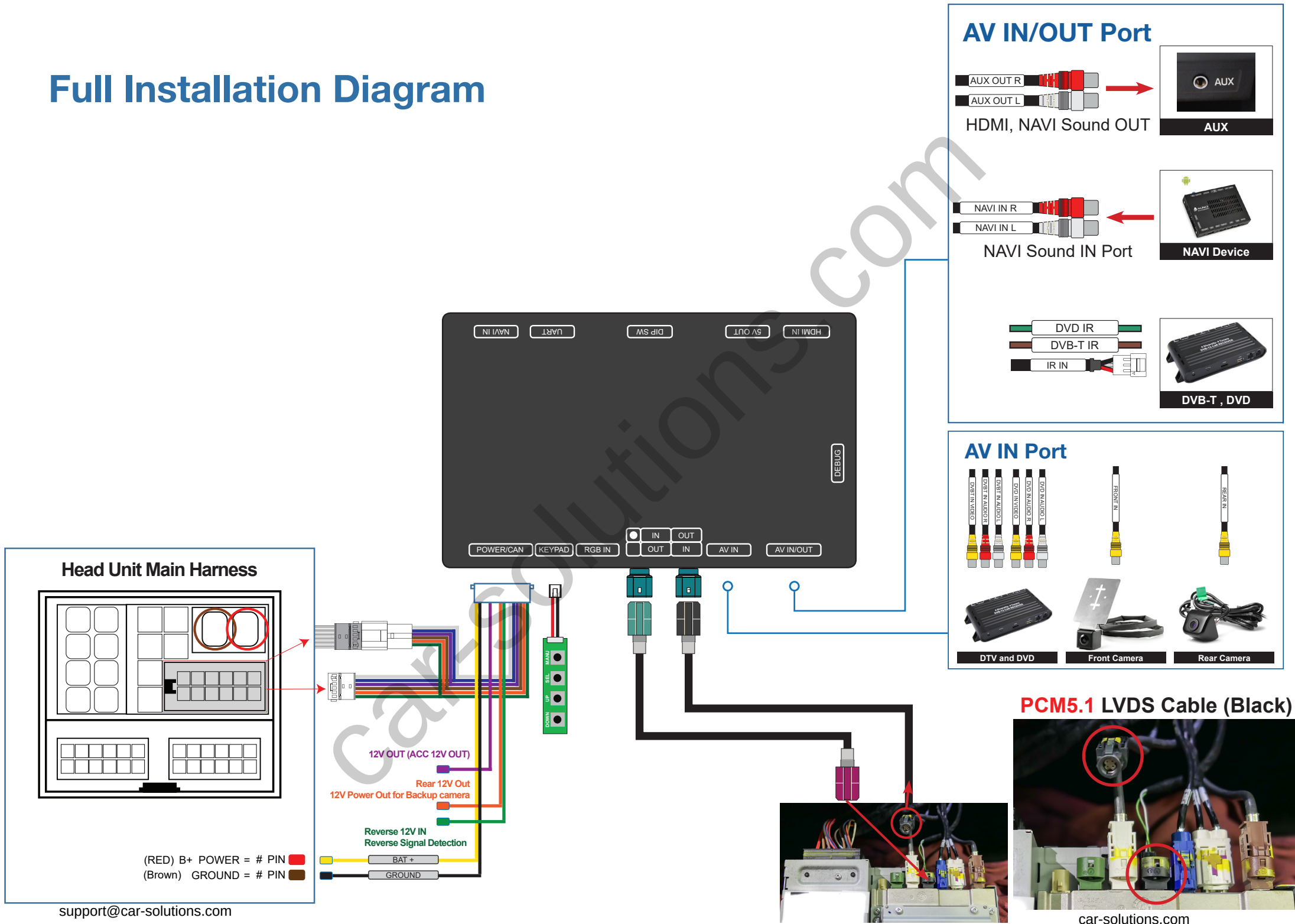
POWER / CAN CABLE			
1	ACC IN	2	GROUND INPUT
3	N.C	4	N.C
5	12V(ACC) OUT	6	N.C
7	REVERSE DETECTION	8	RV-CAM POWER OUT
9	N.C	10	OMNI KEY
11	ECU_CAN_HIGH	12	ECU_CAN_LOW
13	MON_CAN_IN_HIGH	14	MON_CAN_IN_LOW
15	MON_CAN_OUT_HIGH	16	MON_CAN_OUT_LOW

RGB IN	
1	Analog_Red
2	Analog_Green
3	Analog_Blue
4	Analog_Csync
5	Analog_Ground
6	UART RX ← Device
7	UART TX → Device

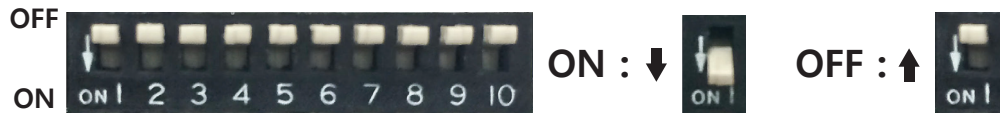
AV CABLE #1			
1	DVBT_IN_V	2	GND
3	DVBT_IN_R	4	GND
5	DVBT_IN_L	6	GND
7	DVD_IN_V	8	GND
9	DVD_IN_R	10	GND
11	DVD_IN_L	12	GND
13	FRONT_IN	14	GND
15	REAR_IN	16	GND

AV CABLE #2			
1	NAVI_IN_R	2	NAVI_IN_R_GND
3	NAVI_IN_L	4	NAVI_IN_L_GND
5	AUX_OUT_R	6	AUX_OUT_R_GND
7	AUX_OUT_L	8	AUX_OUT_L_GND
9	CAP_SCL	10	CAP_GND
11	CAP_SDA	12	CAP_VDD_3.3V
13	CAP_INT	14	CAP_RST
15	UART_TX	16	UART_GND
17	UART_RX	18	IR_IN
19	DVB-T_IR	20	IR_GND
21	DVD_IR	22	IR_POWER

Full Installation Diagram



DIP Switch Settings



PIN	ON (▼)	OFF(▲)
1	HDMI Mode	Skip HDMI Mode
2	Navigation Mode	Skip Navigation Mode
3	External Rear View Camera	Original Rear View Mode (OEM CAMERA)
4	External Front View Camera(AV1 Mode)	Skip External Front View Camera(AV1 Mode)
5	AV2(DVBT) Mode	Skip AV2(DVBT) Mode
6	AV3(DVD) Mode	Skip AV3(DVD) Mode
7	Selection of car model	
8		
9		
10		

	No.7	No.8	No.9	No.10	Car Model	Remarks
 Volkswagen	OFF(▲)	OFF(▲)	OFF(▲)	OFF(▲)	Volkswagen Touareg	2017 Discover Pro / 9.2-inch
 PORSCHE	OFF(▲)	OFF(▲)	OFF(▲)	ON (▼)	Porsche Macan	PCM 5.0 / 12 inch
	OFF(▲)	OFF(▲)	ON (▼)	ON (▼)	Porsche 911	PCM 5.0 / 12 inch
	OFF(▲)	OFF(▲)	ON (▼)	ON (▼)	Porsche Cayenne	PCM 5.0 / 12 inch

Activation by original buttons



Volkswagen Touareg 9.2-inch Screen



Porsche Cayenne 12-inch Screen



Porsche Macan 12-inch Screen



Porsche Macan 12-inch Screen

support@car-solutions.com

Button	Function	Operation	Remarks
1 MENU NAV BACK	Changing Modes	Press the button 2 seconds	Order : HDMI → NAVI → DVB-T → DVD → OEM
		Press the button short time	Return to the OEM mode in any modes.
2 OPTION	Screen ratio (Full - 4:3)	Press the button 2 seconds	Change to screen ratio <Full - 4:3>

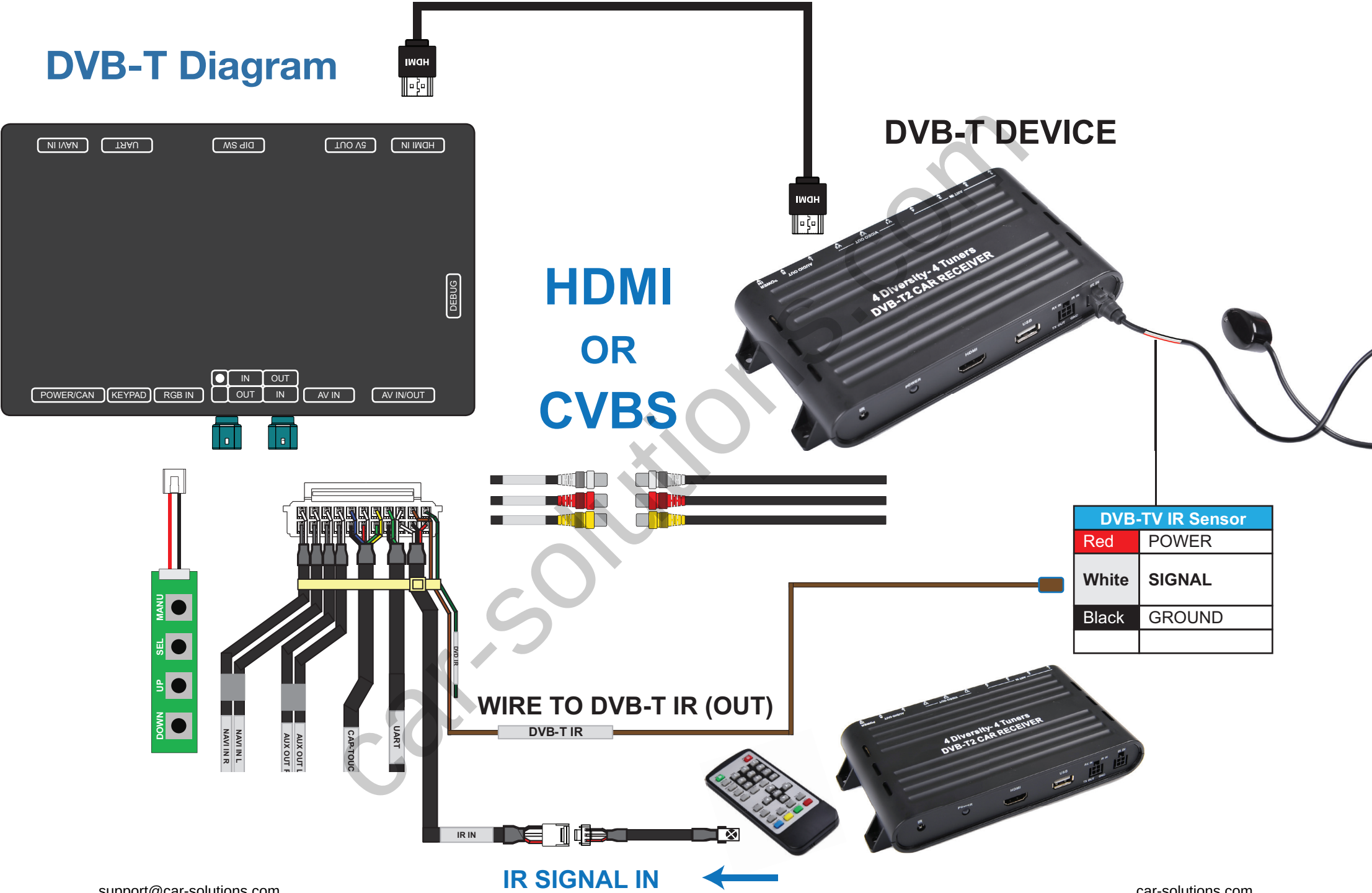


Full Screen

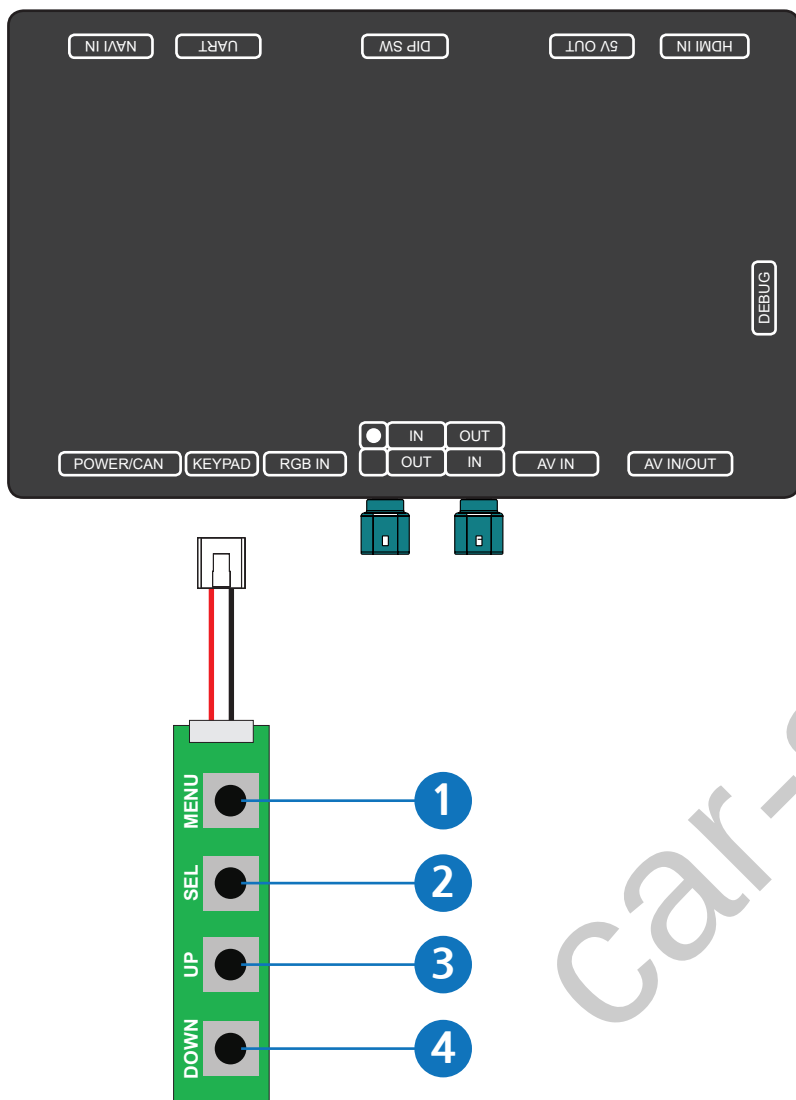


4:3 Screen

DVB-T Diagram



Settings (How To Use KEYPAD)



KEYPAD - Function #1

Button	Function	Operation	Remarks
1 MENU	Changing Modes	Press the button short time	Order : HDMI → HDMI2 → HDMI3 → NAVI → DVB-T → DVD → OEM
2 SEL	Enter into the setting menu	Press the button short time	

KEYPAD - Function #2

Button	Function	Operation
1 MENU	Back to previous menu When press the button short.	Press the button short time
2 SEL	Select the setting menu and setting values.	Press the button short time
3 UP 4 DOWN	Move the menu-pointer and adjust the setting values	Press the button short time

Settings

HDMI 1	INPUT SOURCE	DEFAULT
HDMI 2	BRIGHT	AVM
HDMI 3	CONTRAST RED	DTV
NAVIGATION	CONTRAST GREEN	
REAR VIEW	CONTRAST BLUE	
AV1 (FRONT VIEW)		
AV2 (DTV)		
AV3 (DVD)		
CUSTOM		
EXIT		

DIP SWITCH INFO : 

FIRMWARE DATE :
MAIN : 2018-03-02
SUB : 2018-03-02
TW23 : 2018-03-02

HDMI - DEFALUT

- INPUT SOURCE (Hdmi device model select)

- DEFALUT (Basic HDMI Device)
- AVM (360° Around View Camera)
- DTV (Digital Television)

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

HDMI 1	INPUT SOURCE	AVM (AROUND VIEW)
HDMI 2	BRIGHT	128
HDMI 3	CONTRAST RED	128
NAVIGATION	CONTRAST GREEN	128
REAR VIEW	CONTRAST BLUE	128
AV1 (FRONT VIEW)	AVM KEEPING TIME R → D	7 Sec
AV2 (DTV)	AVM KEEPING TIME P → D	7 Sec
AV3 (DVD)	PGS ON / OFF	OFF
CUSTOM	PGS - HORIZONTAL	128
EXIT	PGS - VERTICAL	128
	PDC ON / OFF	OFF

DIP SWITCH INFO : 

FIRMWARE DATE :
MAIN : 2018-03-02
SUB : 2018-03-02
TW23 : 2018-03-02

HDMI INPUT - AVM

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

- AVM KEEPING TIME

- When you shift gear 'from reverse to drive' or 'from parking to drive', it just works automatically during the activation time you selected.

- PGS (Parking Guide System)

- Adjust position of parking guide lines and select the lines 'ON or OFF'.

Settings

HDMI 1	INPUT SOURCE	DTV
HDMI 2	BRIGHT	128
HDMI 3	CONTRAST RED	128
NAVIGATION	CONTRAST GREEN	128
REAR VIEW	CONTRAST BLUE	128
AV1 (FRONT VIEW)	REMOTE OSD ON / OFF	ON
AV2 (DTV)	MEMORY UP ①	0x807f807f
AV3 (DVD)	MEMORY DOWN ②	0x807f807f
CUSTOM	MEMORY LEFT ③	0x807f807f
EXIT	MEMORY RIGHT ④	0x807f807f
	MEMORY OK ⑤	0x807f807f
	MEMORY MENU ⑥	0x807f807f
	MEMORY EXIT ⑦	0x807f807f
	MEMORY ETC1 ⑧	0x807f807f
	MEMORY ETC2 ⑨	0x807f807f

DIP SWITCH INFO : 

FIRMWARE DATE :
 MAIN : 2018-03-02
 SUB : 2018-03-02
 TW23 : 2018-03-02

HDMI 1	NAVIGATION MODEL	DEFAULT
HDMI 2	BRIGHT	128
HDMI 3	CONTRAST RED	128
NAVIGATION	CONTRAST GREEN	128
REAR VIEW	CONTRAST BLUE	128
AV1 (FRONT VIEW)		
AV2 (DTV)		
AV3 (DVD)		
CUSTOM		
EXIT		

DIP SWITCH INFO : 

FIRMWARE DATE :
 MAIN : 2018-03-02
 SUB : 2018-03-02
 TW23 : 2018-03-02

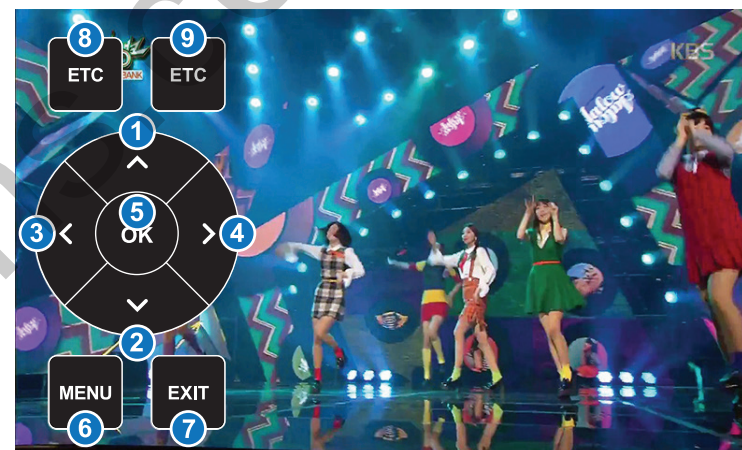
HDMI INPUT - DTV

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

- REMOTE OSD ON / OFF

You can control some of function on DTV remote control by OSD UI



NAVIGATION

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

Settings

HDMI 1	INPUT SOURCE	OEM CAMERA
HDMI 2	BRIGHT	AVM (AROUND VIEW)
HDMI 3	CONTRAST RED	EXTERNAL CAMERA
NAVIGATION	CONTRAST GREEN	
REAR VIEW	CONTRAST BLUE	
AV1 (FRONT VIEW)		
AV2 (DTV)		
AV3 (DVD)		
CUSTOM		
EXIT		
DIP SWITCH INFO :		FIRMWARE DATE :
		MAIN : 2018-03-02
		SUB : 2018-03-02
		TW23 : 2018-03-02

REAR VIEW INPUT - OEM CAMERA

- INPUT SOURCE

- OEM CAMERA
- AVM (360° Around View Camera)
- EXTERNAL CAMERA

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

HDMI 1	INPUT SOURCE	DEFAULT
HDMI 2	BRIGHT	128
HDMI 3	CONTRAST RED	128
NAVIGATION	CONTRAST GREEN	128
REAR VIEW	CONTRAST BLUE	128
AV1 (FRONT VIEW)	AVM KEEPING TIME R → D	7 Sec
AV2 (DTV)	AVM KEEPING TIME P → D	7 Sec
AV3 (DVD)	PGS ON / OFF	OFF
CUSTOM	PGS - HORIZONTAL	128
EXIT	PGS - VERTICAL	128
	PDC ON / OFF	OFF
DIP SWITCH INFO :		FIRMWARE DATE :
		MAIN : 2018-03-02
		SUB : 2018-03-02
		TW23 : 2018-03-02

REAR VIEW INPUT - AVM

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

- AVM KEEPING TIME

- When you shift gear 'from reverse to drive' or 'from parking to drive', it just works automatically during the activation time you selected.

- PGS (Parking Guide System)

- Adjust position of parking guide lines and select the lines 'ON or OFF'.

Settings

HDMI 1	INPUT SOURCE	EXTERNAL CAMERA
HDMI 2	BRIGHT	128
HDMI 3	CONTRAST RED	128
NAVIGATION	CONTRAST GREEN	128
REAR VIEW	CONTRAST BLUE	128
AV1 (FRONT VIEW)	PGS ON / OFF	OFF
AV2 (DTV)	PGS - HORIZONTAL	128
AV3 (DVD)	PGS - VERTICAL	128
CUSTOM	PDC ON / OFF	OFF
EXIT		
DIP SWITCH INFO :		FIRMWARE DATE :
		MAIN : 2018-03-02
		SUB : 2018-03-02
		TW23 : 2018-03-02

REAR VIEW INPUT - EXTERNAL CAMERA

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

- PGS (Parking Guide System)

· Adjust position of parking guide lines and select the lines 'ON or OFF'.

Settings

HDMI 1	INPUT SOURCE	OEM CAMERA
HDMI 2	CAM KEEPING TIME R → D	7 Sec
HDMI 3	CAM KEEPING TIME P → D	7 Sec
NAVIGATION		
REAR VIEW		
AV1 (FRONT VIEW)		
AV2 (DTV)		
AV3 (DVD)		
CUSTOM		
EXIT		
DIP SWITCH INFO :		FIRMWARE DATE :
		MAIN : 2018-03-02
		SUB : 2018-03-02
		TW23 : 2018-03-02

AV1 (FRONT VIEW INPUT) - OEM CAMERA

- CAM KEEPING TIME

- When you shift gear 'from reverse to drive' or 'from parking to drive', it just works automatically during the activation time you selected.

HDMI 1	INPUT SOURCE	EXTERNAL CAMERA
HDMI 2	BRIGHT	128
HDMI 3	CONTRAST RED	128
NAVIGATION	CONTRAST GREEN	128
REAR VIEW	CONTRAST BLUE	128
AV1 (FRONT VIEW)	CAM KEEPING TIME R → D	7 Sec
AV2 (DTV)	CAM KEEPING TIME P → D	7 Sec
AV3 (DVD)		
CUSTOM		
EXIT		
DIP SWITCH INFO :		FIRMWARE DATE :
		MAIN : 2018-03-02
		SUB : 2018-03-02
		TW23 : 2018-03-02

AV1 (FRONT VIEW INPUT) - EXTERNAL CAMERA

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

- FRONT CAM KEEPING TIME

- When you shift gear 'from reverse to drive' or 'from parking to drive', it just works automatically during the activation time you selected.

Settings

HDMI 1	BRIGHT	128
HDMI 2	CONTRAST RED	128
HDMI 3	CONTRAST GREEN	128
NAVIGATION	CONTRAST BLUE	128
REAR VIEW	REMOTE OSD ON / OFF	ON
AV1 (FRONT VIEW)	MEMORY UP ①	0x807f807f
AV2 (DTV)	MEMORY DOWN ②	0x807f807f
AV3 (DVD)	MEMORY LEFT ③	0x807f807f
CUSTOM	MEMORY RIGHT ④	0x807f807f
EXIT	MEMORY OK ⑤	0x807f807f
	MEMORY MENU ⑥	0x807f807f
	MEMORY EXIT ⑦	0x807f807f
	MEMORY ETC1 ⑧	0x807f807f
	MEMORY ETC2 ⑨	0x807f807f

DIP SWITCH INFO :

FIRMWARE DATE :

MAIN : 2018-03-02
SUB : 2018-03-02
TW23 : 2018-03-02

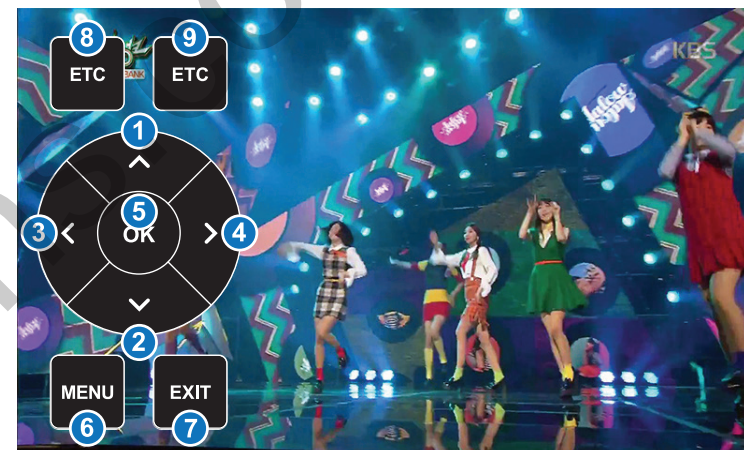
AV2 DTV

- BRIGHT and CONTRAST

Adjust the values of brightness and contrast

- REMOTE OSD ON / OFF

· You can control to some of function on DTV remote control by OSD UI



HDMI 1	BRIGHT	128
HDMI 2	CONTRAST RED	128
HDMI 3	CONTRAST GREEN	128
NAVIGATION	CONTRAST BLUE	128
REAR VIEW	REMOTE OSD ON / OFF	ON
AV1 (FRONT VIEW)	MEMORY UP ①	0x807f807f
AV2 (DTV)	MEMORY DOWN ②	0x807f807f
AV3 (DVD)	MEMORY LEFT ③	0x807f807f
CUSTOM	MEMORY RIGHT ④	0x807f807f
EXIT	MEMORY OK ⑤	0x807f807f
	MEMORY MENU ⑥	0x807f807f
	MEMORY EXIT ⑦	0x807f807f
	MEMORY ETC1 ⑧	0x807f807f
	MEMORY ETC2 ⑨	0x807f807f

DIP SWITCH INFO :

FIRMWARE DATE :

MAIN : 2018-03-02
SUB : 2018-03-02
TW23 : 2018-03-02

Adjust the values of brightness and contrast

- You can control to some of function on DTV remote control by OSD UI

