Instruction Manual

High-Definition Link for Mercedes-Benz
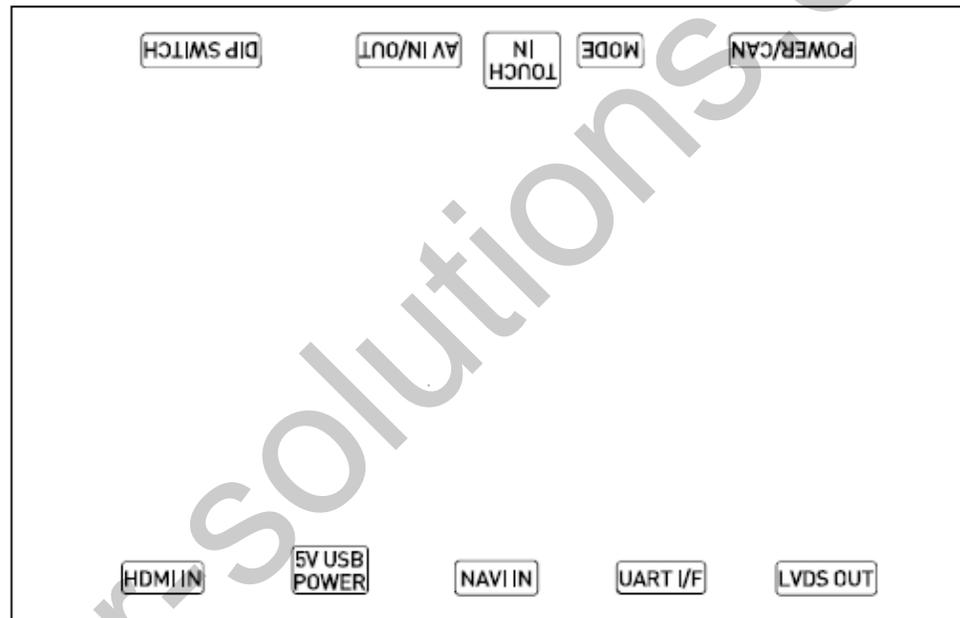
Latest Firmware Date	2015 - 10- 16
Manual Version	Rev. 3.4
Language	English

Cautions

- **Device related**
  - 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 12V power of reverse light.

- **HDMI device - related**
  - HDMI mode accepts general-screen resolution of HDMI devices(1080P / 1920*1080).
    If screen size of HDMI does not fit on the monitor, should adjust screen size & position in 'settings mode'.

  - Generally, '5V 1A Power output(5V USB POWER)' is a standard voltage for charging smartphone.
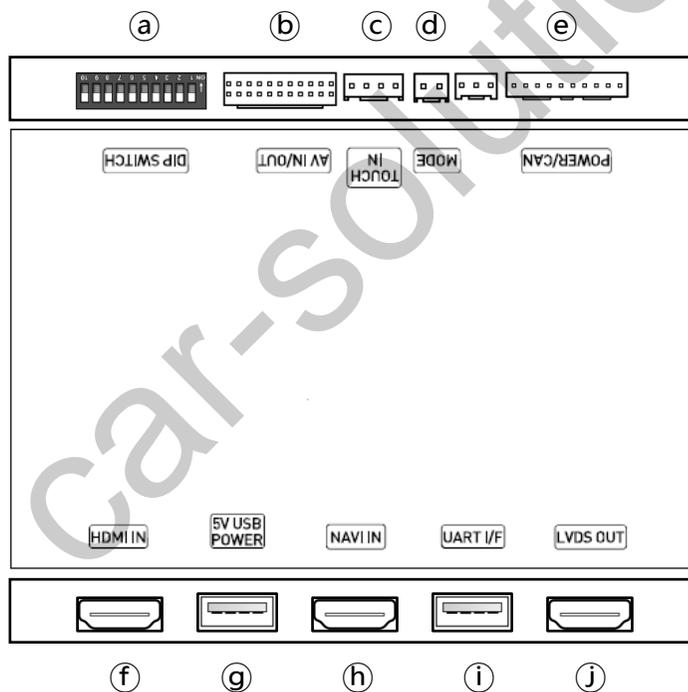   If you need higher voltage than 5V, you should add a separate power supply.

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

  - After installation is done, select an applicable navigation(GPS) box model in the 'Navigation model selection menu' of setting mode.

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

Dimension

Width: 142 mm

Height: 22 mm

Length: 91 mm

HD-LINK

DIGITAL MULTI INTERFACE
FOR MERCEDES

DIP SWITCH

AV IN/OUT

TOUCH IN

MODE

POWER/CAN

HDMI IN

5V USB POWER

NAVI IN

UART I/F

LVDS OUT

Exterior

ⓐ ⓑ ⓒ ⓓ ⓔ

DIP SWITCH

AV IN/OUT

TOUCH IN

MODE

POWER/CAN

HDMI IN

5V USB POWER

NAVI IN

UART I/F

LVDS OUT

ⓕ ⓖ ⓗ ⓘ ⓙ

ⓐ	DIP SWITCH
ⓑ	AV IN / OUT
ⓒ	TOUCH IN
ⓓ	MODE
ⓔ	POWER / CAN
ⓕ	HDMI IN
ⓖ	5V USB POWER
ⓗ	NAVI IN
ⓘ	UART I/F
ⓙ	LVDS OUT

Components

Power / CAN Cable

LVDS Cable

LVDS PCB

HDMI Cable
(For LVDS)

AV IN / OUT Cable

5-pin Micro USB Cable

Optional Parts

HDMI Cable
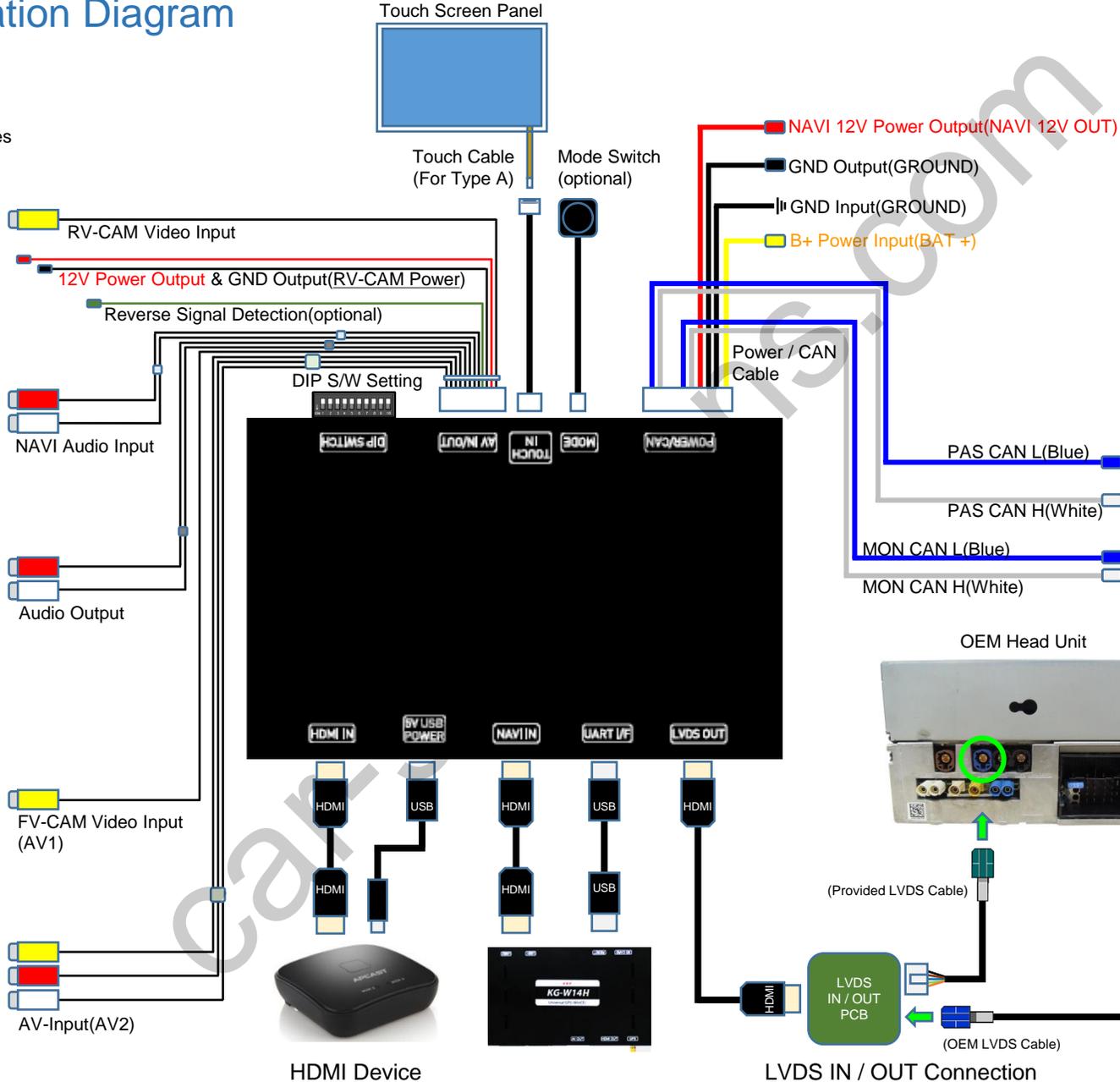(Male to Male)

HDMI Extender
(For stick type HDMI device)

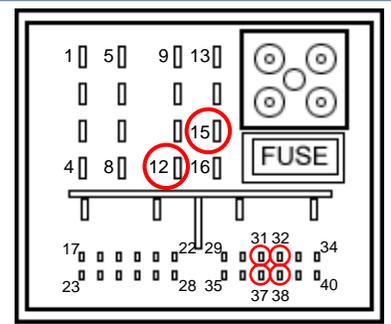Mode Switch

Full Installation Diagram

Touch Screen Panel

※ CAN HIGH / LOW Pin Specification

※ Optional External Devices

External Rear View Camera

Audio(AUX) Output of Navigation Box

Auxiliary(AUX) Input of the car

External Front View Camera

AV device (ex: DTV Box, Divx)

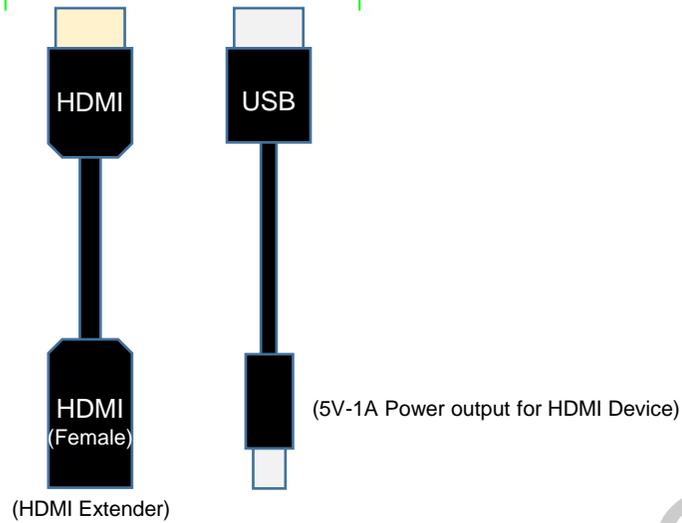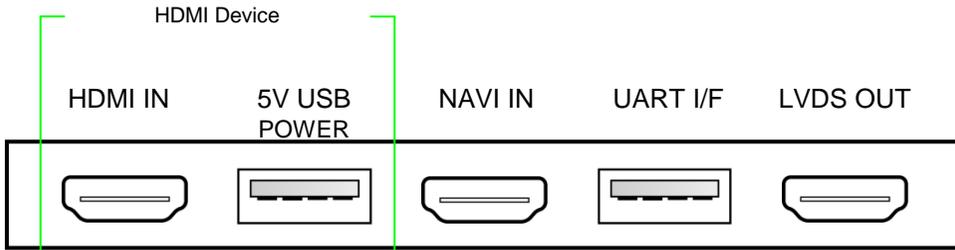Touch Cable (For Type A)

Mode Switch (optional)

RV-CAM Video Input

12V Power Output & GND Output(RV-CAM Power)

Reverse Signal Detection(optional)

NAVI Audio Input

DIP S/W Setting

Audio Output

FV-CAM Video Input (AV1)

AV-Input(AV2)

NAVI 12V Power Output(NAVI 12V OUT)

GND Output(GROUND)

GND Input(GROUND)

B+ Power Input(BAT +)

Power / CAN Cable

PAS CAN L(Blue)

PAS CAN H(White)

MON CAN L(Blue)

MON CAN H(White)
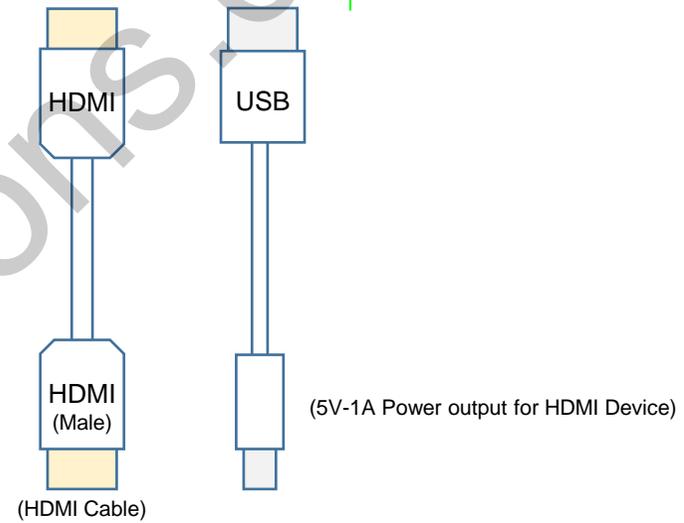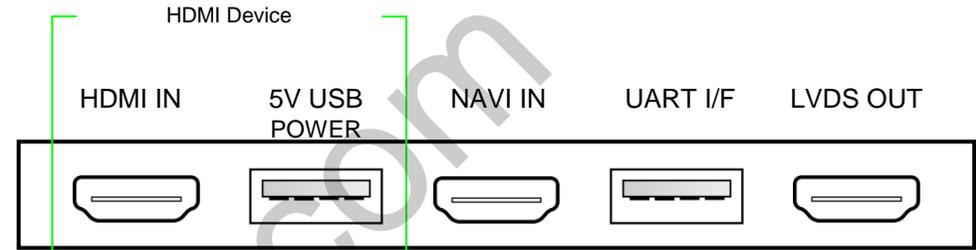
COMAND APS NTG 5.0 Original Main-Harness

Pin # 12 = GND(Brown)
Pin # 15 = B+ POWER(Red)

Pin # 31 = PAS CAN LOW(Yellow)
"   (Brown) *CLS-Class
Pin # 37 = PAS CAN HIGH(Yellow/White)
"   (Brown/Red)*CLS-Class

Pin # 32 = MON CAN LOW(Black)
Pin # 38 = MON CAN HIGH(Black / White)

OEM Head Unit

OEM Monitor

(Provided LVDS Cable)

LVDS IN / OUT PCB

(OEM LVDS Cable)

HDMI IN   5V USB POWER   NAVI IN   UART I/F   LVDS OUT

DIP SWITCH   AV IN/OUT   TOUCH IN   MODE   POWER/CAN

HDMI   USB   HDMI   USB   HDMI

HDMI   HDMI   USB   HDMI

HDMI Device

LVDS IN / OUT Connection

HDMI Connection Diagram

HDMI Device

HDMI IN	5V USB POWER	NAVI IN	UART I/F	LVDS OUT

HDMI

USB

HDMI
(Female)

(5V-1A Power output for HDMI Device)

(HDMI Extender)

'Stick Type' HDMI Devices

HDMI Device

HDMI IN	5V USB POWER	NAVI IN	UART I/F	LVDS OUT

HDMI

USB

HDMI
(Male)

(5V-1A Power output for HDMI Device)
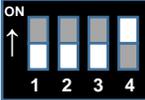
(HDMI Cable)

'Dongle & Adapter' Type HDMI Devices

Compatibility Navigation(GPS) box

Model	Country	Dip S/W (Navigation)	Required Parts
KG-W14H	South Korea	OFF(↓): 1, 2, 3 ON(↑) : 4	HDMI Cable (Male to Male)

- This device supports navigation(GPS) box models equipped with 'Digital video output'.
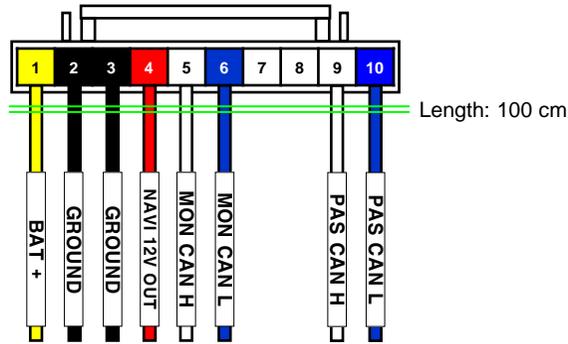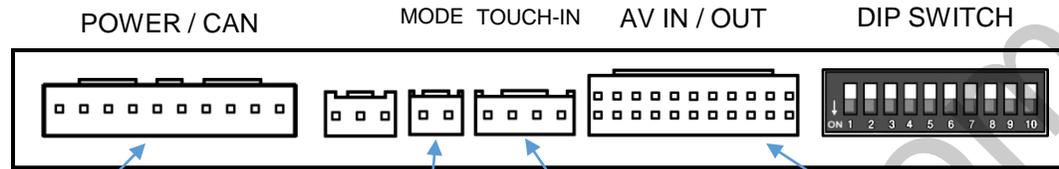
- It does not support the 'RGB video'.

Navigation Connection Diagram(Type B)

Navigation(GPS) Box

| HDMI IN | 5V USB POWER | NAVI IN | UART I/F | LVDS OUT |

HDMI

USB

Touch screen panel

USB

HDMI

KG-W14H

LVDS Connection Diagram

LVDS Connection

HDMI IN	5V USB POWER	NAVI IN	UART I/F	LVDS OUT

HDMI

COMAND APS NTG 5.0 - Head Unit

(Blue 'DISP port')

(Provided LVDS Cable)

- 'Genuine(OEM) LVDS connector' should be connected to 'LVDS IN / OUT PCB'.

- 'Provided LVDS connector' should be connected to the 'head unit' instead to the genuine connector.

OEM Monitor

HDMI

LVDS IN / OUT PCB

(OEM LVDS Cable)

Body Connector specifications

POWER / CAN   MODE   TOUCH-IN   AV IN / OUT   DIP SWITCH

Length: 100 cm

1	BAT +
2	GROUND
3	GROUND
4	NAVI 12V OUT
5	MON CAN H
6	MON CAN L
7	
8	
9	PAS CAN H
10	PAS CAN L

Length: 150 cm   Length: 150 cm

REAR CAMERA / REAR 12V / GROUND / REVERSE 12V IN / IR OUT / NAVI AUD IN R / NAVI AUD IN L / AUDIO OUT R / AUDIO OUT L / AV1 IN V / AV2 IN V / AV2 IN R / AV2 IN L

Length: 20 cm

Push Switch

Touch Cable
(Type A)

1	BATTERY POWER INPUT
2	GND INPUT
3	GND OUTPUT
4	NAVI 12V(ACC) POWER OUTPUT
5	MON CAN HIGH
6	MON CAN LOW
7	-
8	-
9	PAS CAN HIGH
10	PAS CAN LOW
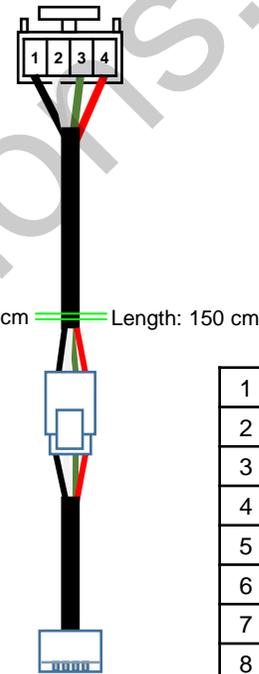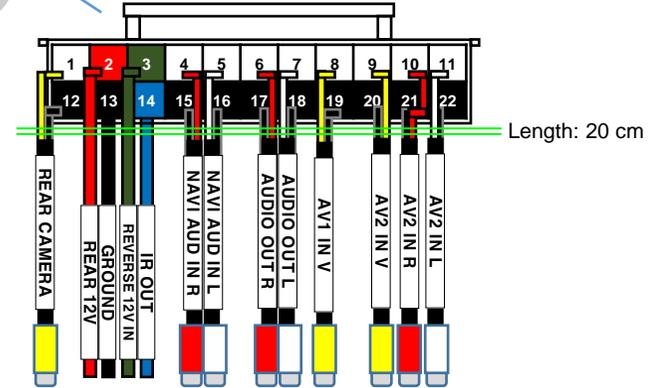
1	RV-CAM VIDEO INPUT	12	GND(RV-CAM VIDEO)
2	RV-CAM POWER OUT	13	GND OUTPUT(RV-CAM)
3	REVERSE DETECTION	14	IR OUT
4	NAVI AUX INPUT R	15	GND(NAVI AUX IN R)
5	NAVI AUX INPUT L	16	GND(NAVI AUX IN L)
6	AUDIO OUTPUT R	17	GND(AUDIO OUT R)
7	AUDIO OUTPUT L	18	GND(AUDIO OUT L)
8	AV1 VIDEO INPUT	19	GND(AV1 VIDEO IN)
9	AV2 VIDEO INPUT	20	GND(AV2 VIDEO IN)
10	AV2 AUDIO INPUT R	21	GND(AV2 AUDIO IN R)
11	AV2 AUDIO INPUT L	22	GND(AV2 AUDIO IN L)

• The colors of each wires can be changed under manufacturer's circumstance.

Car Compatibility Chart

Car Models	Production Year	Specific Models
C-Class	2014 -	W205
GLC	2014 -	
GLE	2014 -	C292
V-Class	2014 -	W447

The device is used in combination with Mercedes-Benz COMAND APS NTG 5.0(ONLINE) and AUDIO 20.

The device supports the Mercedes-Benz original screen equipped with '4-pin LVDS round connector' only.

Please check the specification of original LVDS connector on the sidelines of a production year.

Activation by original buttons of W205(C-Class), V-Class(W447)

COMAND Controller & Steering wheel buttons
www.car-solutions.com

Button	Function	Operation	Remarks
1 BACK	Changing Modes	Press the button 2 seconds long.	Order: HDMI → NAVI → AV1 → AV2 → OEM
1 BACK	Shortcut to each modes	Press the button 2 times. < OEM → NAVI > Press the button 3 times. < OEM → AV1 > Press the button 4 times. < OEM → AV2 >	
1 BACK	System Locking / Unlocking	Press the button 10 seconds long.	If you visit car service center, you can lock the all functions of this device. It is only possible to use the OEM functions under it is locked.
Buttons marked with yellow	Back to OEM	Press the buttons short.	Return to the OEM mode in any modes.
2 BACK (Steering wheel)	Changing mode to Front View CAM mode(AV1)	Press the button 2 seconds long.	It changes the screen from any modes to AV1 mode directly.
3 OK (Steering wheel)	Reset to factory default setting and power.	Press the button 10 seconds long.	You can use this function when you get in trouble to see the screen while setting the screen.
4 Bookmark	Enter into the setting menu	Press the button 5 seconds long.	All functions of setting menu is controlled by COMAND controller.

Activation by original buttons of W218(CLS-Class), W246(B-Class)

COMAND Controller & Steering wheel buttons

| Button	Function	Operation	Remarks
1 BACK	Changing Modes	Press the button 2 seconds long.	Order: HDMI → NAVI → AV1 → AV2 → OEM
1 BACK	Shortcut to each modes	Press the button 2 times. < OEM → NAVI > Press the button 3 times. < OEM → AV1 > Press the button 4 times. < OEM → AV2 >	
1 BACK	System Locking / Unlocking	Press the button 10 seconds long.	If you visit car service center, you can lock the all functions of this device. It is only possible to use the OEM functions under it is locked.
Buttons marked with yellow	Back to OEM	Press the buttons short.	Return to the OEM mode in any modes.
2 BACK (Steering wheel)	Changing mode to Front View CAM mode(AV1)	Press the button 2 seconds long.	It changes the screen from any modes to AV1 mode directly.
3 OK (Steering wheel)	Reset to factory default setting and power.	Press the button 10 seconds long.	You can use this function when you get in trouble to see the screen while setting the screen.
4 (Bookmark)	Enter into the setting menu	Press the button 5 seconds long.	All functions of setting menu is controlled by COMAND controller.

DIP Switch Settings

OFF
ON ON 1 2 3 4 5 6 7 8 9 10

ON: ▼   OFF:▲

Pin No.	ON(▼)	OFF(▲)
1	HDMI Mode	Skip HDMI Mode
2	Navigation Mode	Skip Navigation Mode
3	External Rear View Camera	Original Rear View Camera
4	External Front View Camera(AV1 Mode)	Skip External Front View Camera(AV1 Mode)
5	AV2 Mode	Skip AV2 Mode
6	Selection of car model	
7		
8		
9		
10		

No.6	No.7	No.8	No.9	No.10	Car Models
OFF(▲)	OFF(▲)	OFF(▲)	OFF(▲)	OFF(▲)	C-Class(W205) (8.4-inch screen / 960*540) GLC / V-Class (8-inch)
OFF(▲)	OFF(▲)	ON(▼)	OFF(▲)	OFF(▲)	C-Class(W205) V-Class(W447) GLC (7-inch screen / 800*480)
OFF(▲)	OFF(▲)	OFF(▲)	ON(▼)	ON(▼)	B(W246), CLA(C117) , CLS (8-inch) GLE, E(W212), B(W246), CLA(C117) V-Class(W447) (7-inch screen / 800*480)

Settings
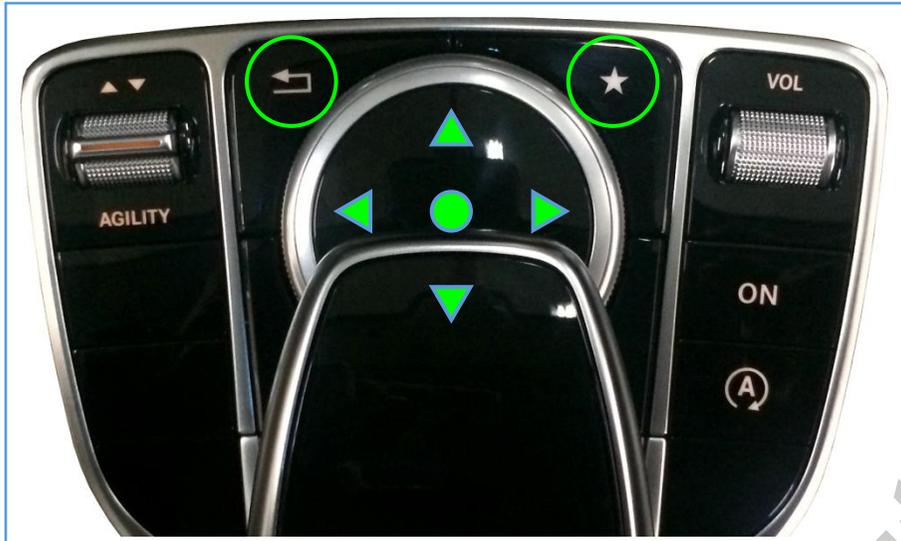
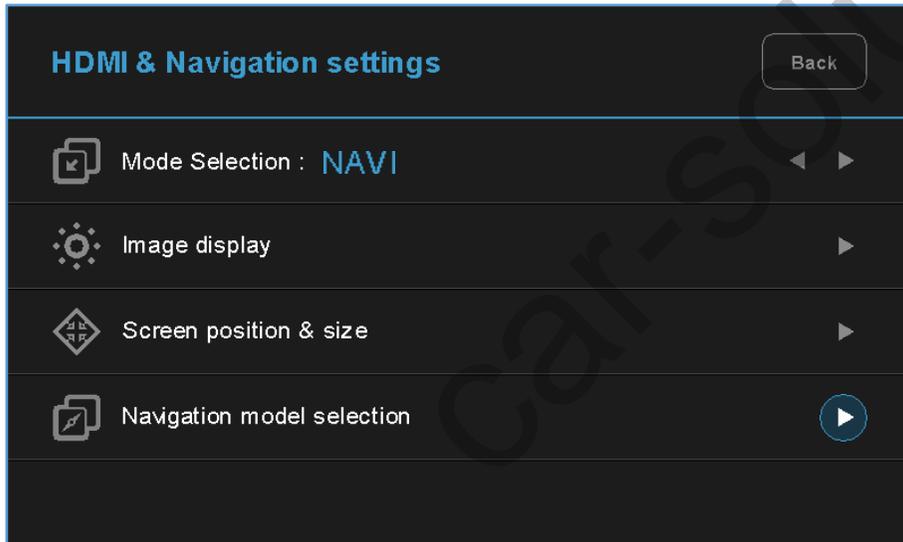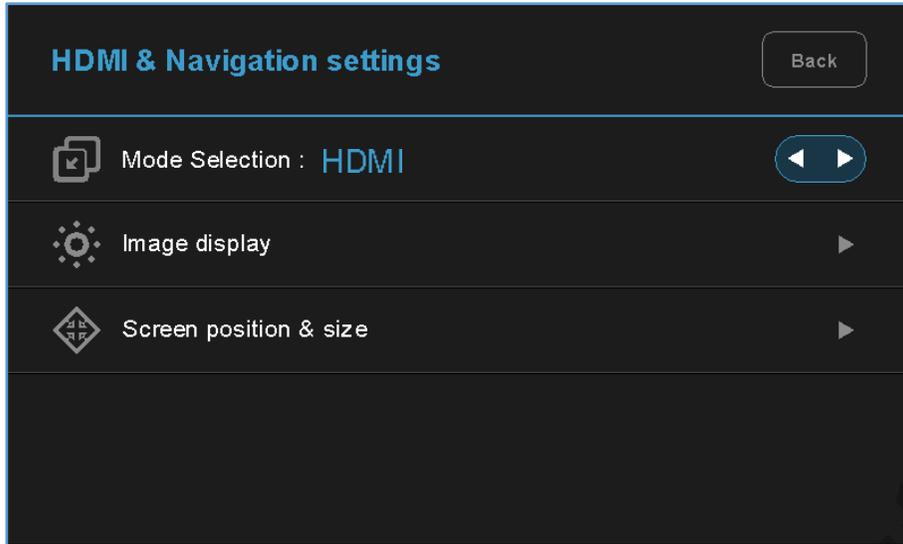| Button	Function
Back(⬅)	Back to previous menu when press the button short.
Bookmark(★) *W205(C-Class)	Enter into the setting menu when you press the button 5 seconds long.
Up, Down, Left, Right (▲ , ▼ , ◀ , ▶)	Move the menu-pointer and adjust the setting values.
Selection(●)	Select the setting menu and setting values.

1. Enter into the setting menu.

<Press the 'Bookmark(★)' button 5 seconds long. / W218: (**C**) button>

- HDMI & Navigation settings

- Rear view camera settings
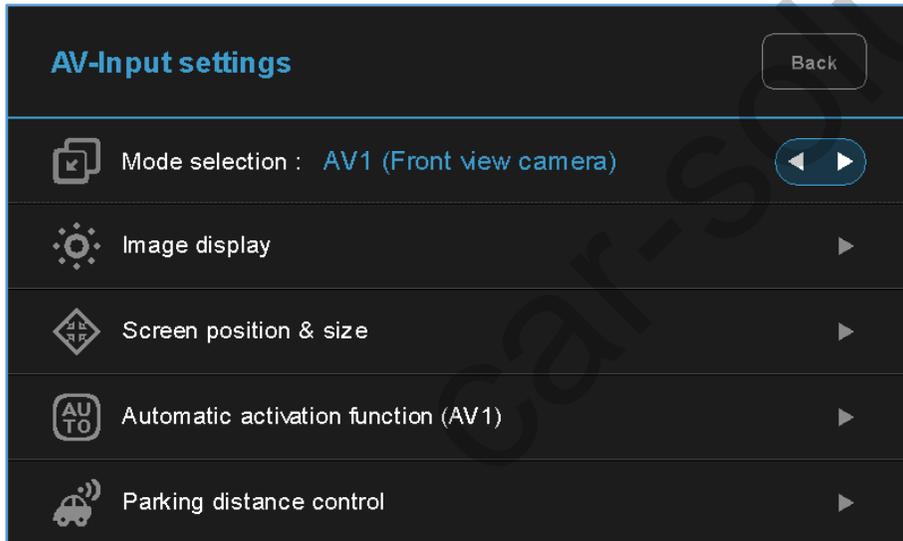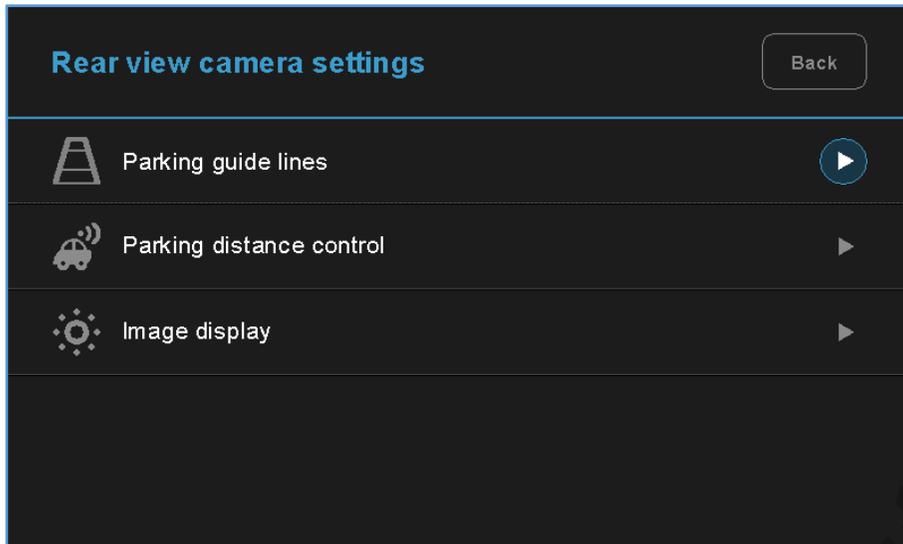
- AV-input settings

- System settings

- System information

Settings

HDMI & Navigation settings `Back`

🔲 Mode Selection : HDMI	◀ ▶
✦ Image display	▶
✦ Screen position & size	▶

HDMI & Navigation settings `Back`

🔲 Mode Selection : NAVI	◀ ▶
✦ Image display	▶
✦ Screen position & size	▶
🔲 Navigation model selection	▶

2. HDMI mode settings

- Mode selection: HDMI ↔ NAVI

- Image display
  = Adjust the values of brightness and contrast
    Red-Green-Blue colors of HDMI display.

- ~~Screen position & size~~
  = ~~Adjust position and size of HDMI display.~~

3. NAVI mode settings

- Mode selection: NAVI ↔ HDMI

- Image display
  = Adjust the values of brightness and contrast
    Red-Green-Blue colors of NAVI display.

- ~~Screen position & size~~
  = ~~Adjust position and size of NAVI display.~~

- Navigation model selection
  ① Default   ② iNAVI – CUBE   ③ imercury – Class settop

  ④ KG-W14H   ⑤ Mode A   ⑥ Mode B

Settings

Rear view camera settings   Back

- Parking guide lines ▶
- Parking distance control ▶
- Image display ▶

AV-Input settings   Back

- Mode selection : AV1 (Front view camera) ◀ ▶
- Image display ▶
- Screen position & size ▶
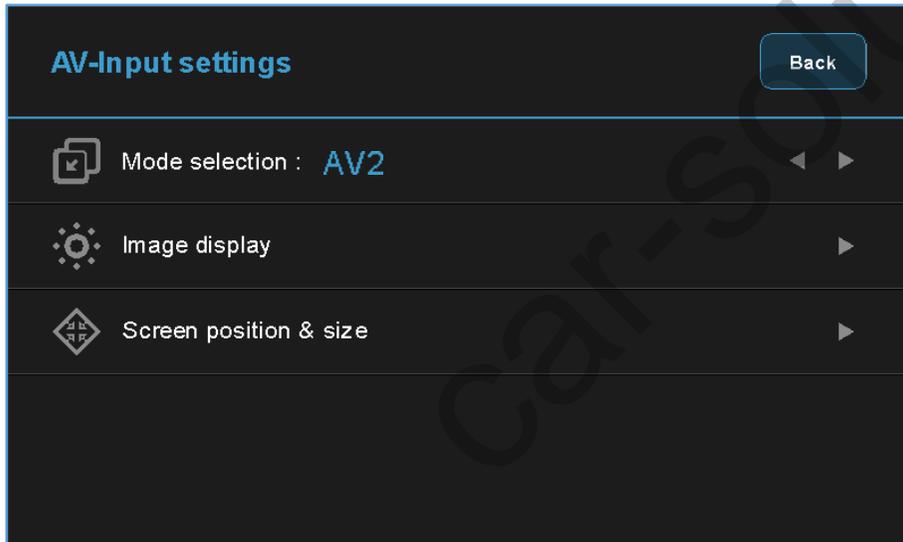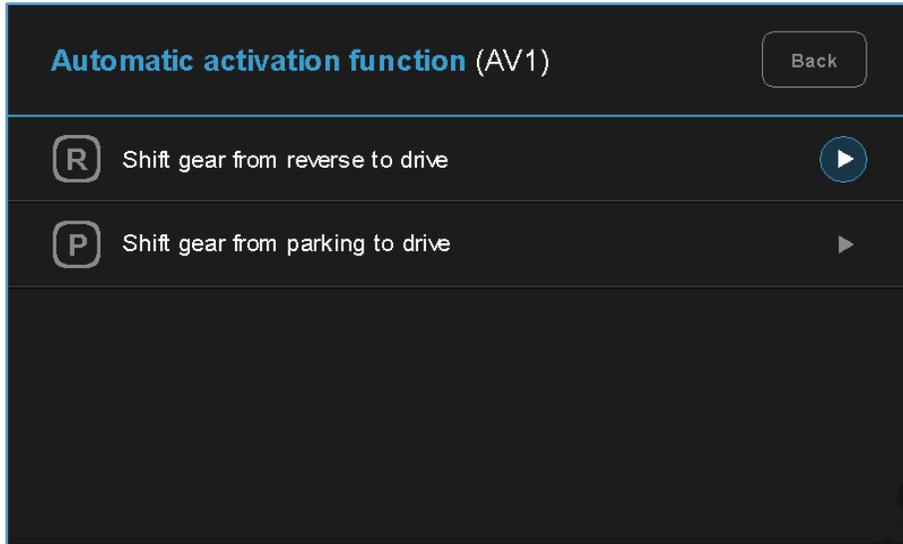- Automatic activation function (AV1) ▶
- Parking distance control ▶

4. Rear view camera settings

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

- Parking distance control
  = Adjust position of parking distance control sensors
    to 'LEFT or RIGHT' and select the PDC 'ON or OFF'.

- Image display
  = Adjust the values of brightness and contrast
    Red-Green-Blue colors of Rear view camera display.

5. AV1(Front view camera) settings

- Mode selection: AV1(Front view camera) ↔ AV2

- Image display
  = Adjust the values of brightness and contrast
    Red-Green-Blue colors of AV1(Front view camera) display.

- Screen position & size
  = Adjust the position and size of AV1 display.

- Automatic activation function(AV1)
  = * Please refer to next page.

- Parking distance control
  = Adjust the position of parking distance control sensors
    to 'LEFT or RIGHT' and select the PDC 'ON or OFF'.

Settings

Automatic activation function (AV1)

Back

R Shift gear from reverse to drive ▶

P Shift gear from parking to drive ▶

AV-Input settings

Back

⊡ Mode selection : AV2 ◀ ▶

☀ Image display ▶

✤ Screen position & size ▶

6. Automatic activation function(AV1)
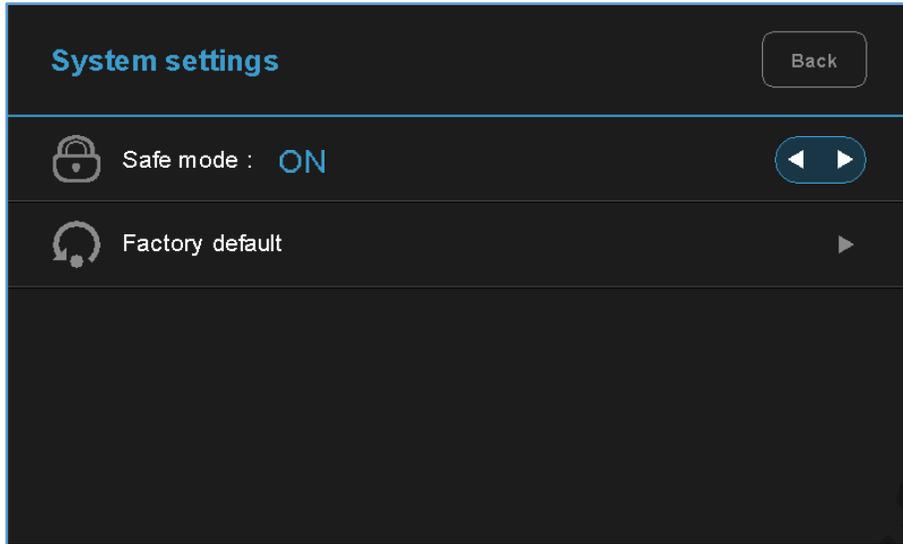
- Shift gear from reverse to drive

- Shift gear from parking to drive

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

Activation time

☐ OFF   ☐ 8 seconds   ☑ 10 seconds   ☐ 15 seconds

7. AV2 settings

- Mode selection: AV2 ↔ AV1(Front view camera)

- Image display
  = Adjust the values of brightness and contrast
    Red-Green-Blue colors of AV2 display.

- ~~Screen position & size~~
  ~~= Adjust the position and size of AV2 display.~~

Settings

System settings

Back

Safe mode : ON ◀ ▶

Factory default ▶

System information

Back

Model name :

Firmware date : 2015 - 10 - 16

Dip switch settings ▶
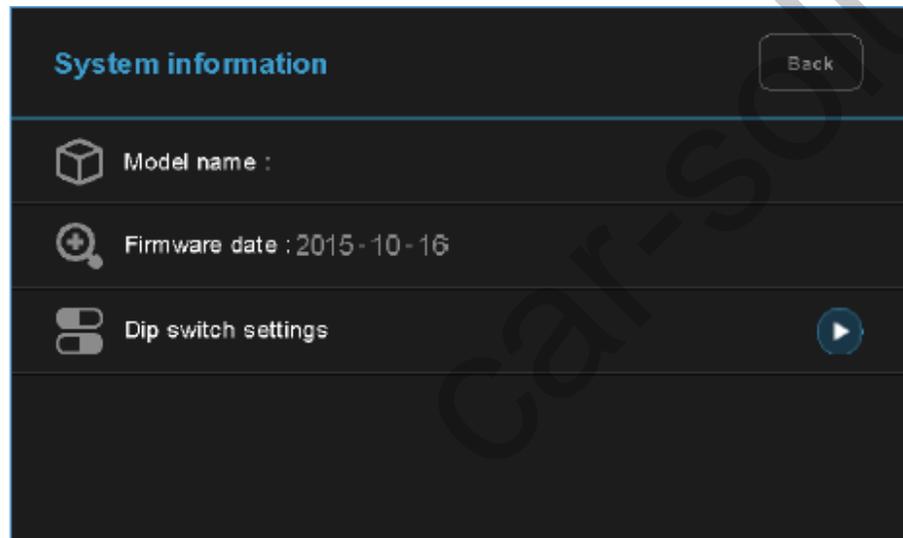
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8. System settings

- Safe mode
  = Select the one of two between 'ON and OFF'.

  * If you select 'ON', 3 modes(HDMI, NAVI and AV2) will be faded out
    when the car is driven.

- Factory default
  = Reset all setting values to factory default setting.

9. System information

- Mode name:

- Firmware date: 2015 - 10 -16(Latest firmware date)
- = You can check the current firmware version date.

- Dip switch settings
  = You can check the current positions of dip switch settings.

Settings

System information - Dip switch settings [Back]

	ON OFF			
1		No. 1	HDMI	ON
2		No. 2	Navigation	ON
3		No. 3	External rear view camera	ON
4		No. 4	AV1	ON
5		No. 5	AV2	OFF
6		No. 6	800*480(On) / 400*240(OFF)	ON
7		No. 7		OFF
8		No. 8	Selection of car model	ON
9		No. 9		ON
10		No. 10		OFF

10. Information of Dip switch settings

* You can check the current positions of dip switch settings.

ex 1)
Actual DIP switch values. (→)

Appears on the setting menu. (↓)

No. 1	HDMI	ON
No. 2	Navigation	OFF
No. 3	External rear view camera	ON
No. 4	AV1	ON
No. 5	AV2	OFF
No. 6	800*480(On) / 400*240(OFF)	OFF
No. 7		ON
No. 8	Selection of car model	OFF
No. 9		ON
No. 10		OFF

ex 2)
Actual DIP switch values. (→)

Appears on the setting menu. (↓)

No. 1	HDMI	ON
No. 2	Navigation	ON
No. 3	External rear view camera	OFF
No. 4	AV1	ON
No. 5	AV2	OFF
No. 6	800*480(On) / 400*240(OFF)	ON
No. 7		OFF
No. 8	Selection of car model	OFF
No. 9		OFF
No. 10		OFF