



**EMERALD**  
MOBILE INTEGRATIONS

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**BMW09**

Model: PIP-BM09-N3-V2

**Specification & Installation**

# -PIP BMW 09 Feature

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- Clear quality view
- NTSC, PAL Auto detection
- AV source switching thru genuine button in vehicle.
- Convenient use by remote & keypad
- SAFETY function

Emerald Integrations

# -Precaution

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- Ignition key should be taken off before starting installation, interface power connection must be the last step in installation.
- Power cable should be separated when connecting interface.
- Should be no any electronic devices or magnetic pole around installation place.
- All steps of installation should be done by well-trained specialist.
- Dismantling without manufacturer's permission can not be guaranteed, (No permission to break attached label on the board.)
- Kindly check all parts are in the box, when receiving the product, if anything missing, inform to the supplier or manufacturer.
- According to our sales policy, any problems caused by user's mistake, careless can not be guaranteed.

# -Main Spec.

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## 1. Input Spec. (MULTI VIDEO INTERFACE)

- 3 x A/V Input (External video source).
- 1 x CVBS(REAR CAMERA) Input. (Rear camera source)
- 1 x Analog RGB Input (Navigation System output)
- 1 x LCD Input (Car system Input)

## 2. Output Spec.

- 1 x LCD Output

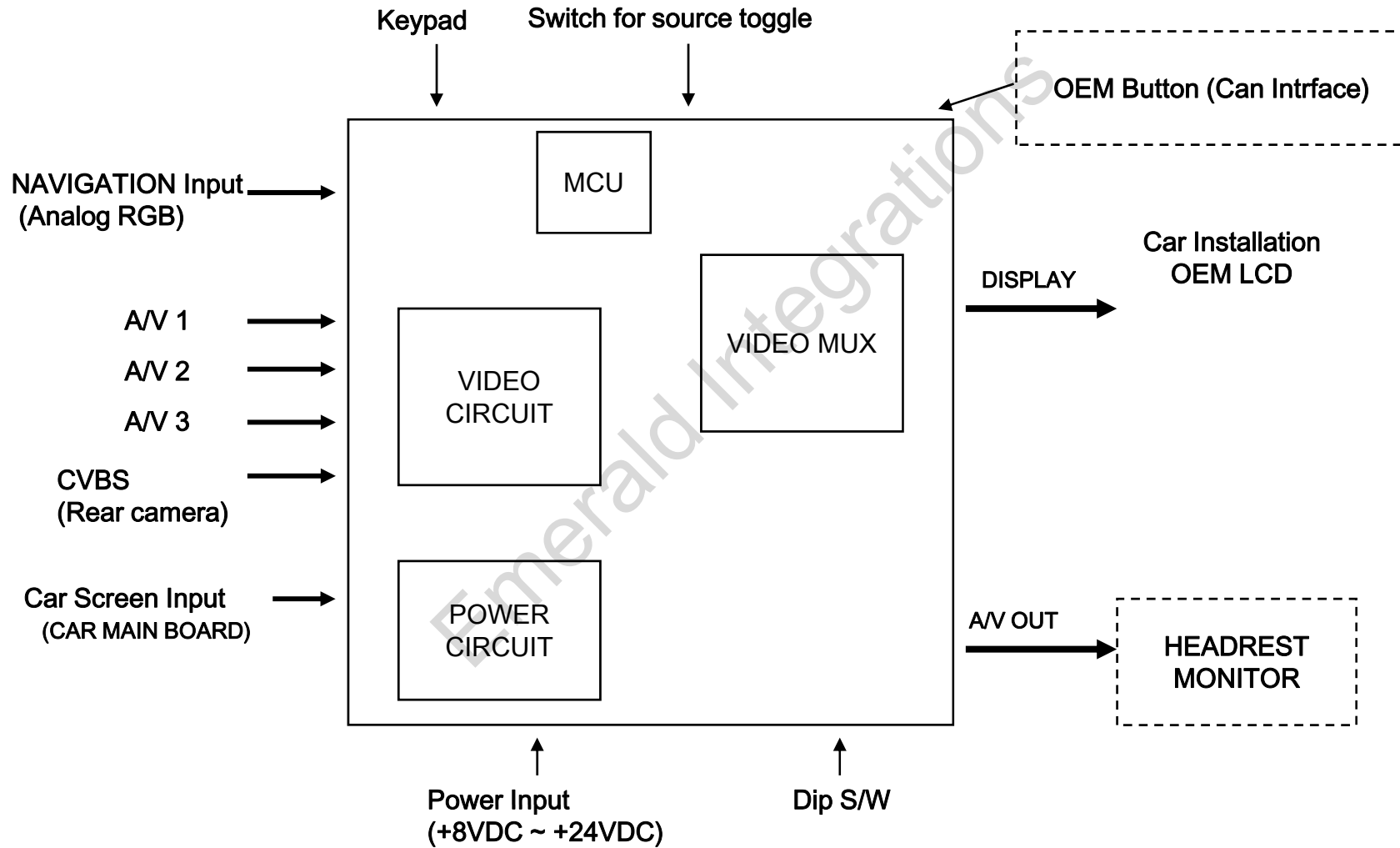
## 3. Power Spec.

- Input Power : 8VDC ~ 24VDC
- Consumption Power : 12WATT, Max

## 4. Switch Input mode

- Input Video MUTE Function : Possible to make each input mute by operating Dip S/W.
- Possible to switch Input mode with Keypad(or Remote control)
- Possible to switch AV3(Front camera) with switch for source toggle
- Detecting rear camera by CAN or rear-lamp wire

# -System Composition Diagram



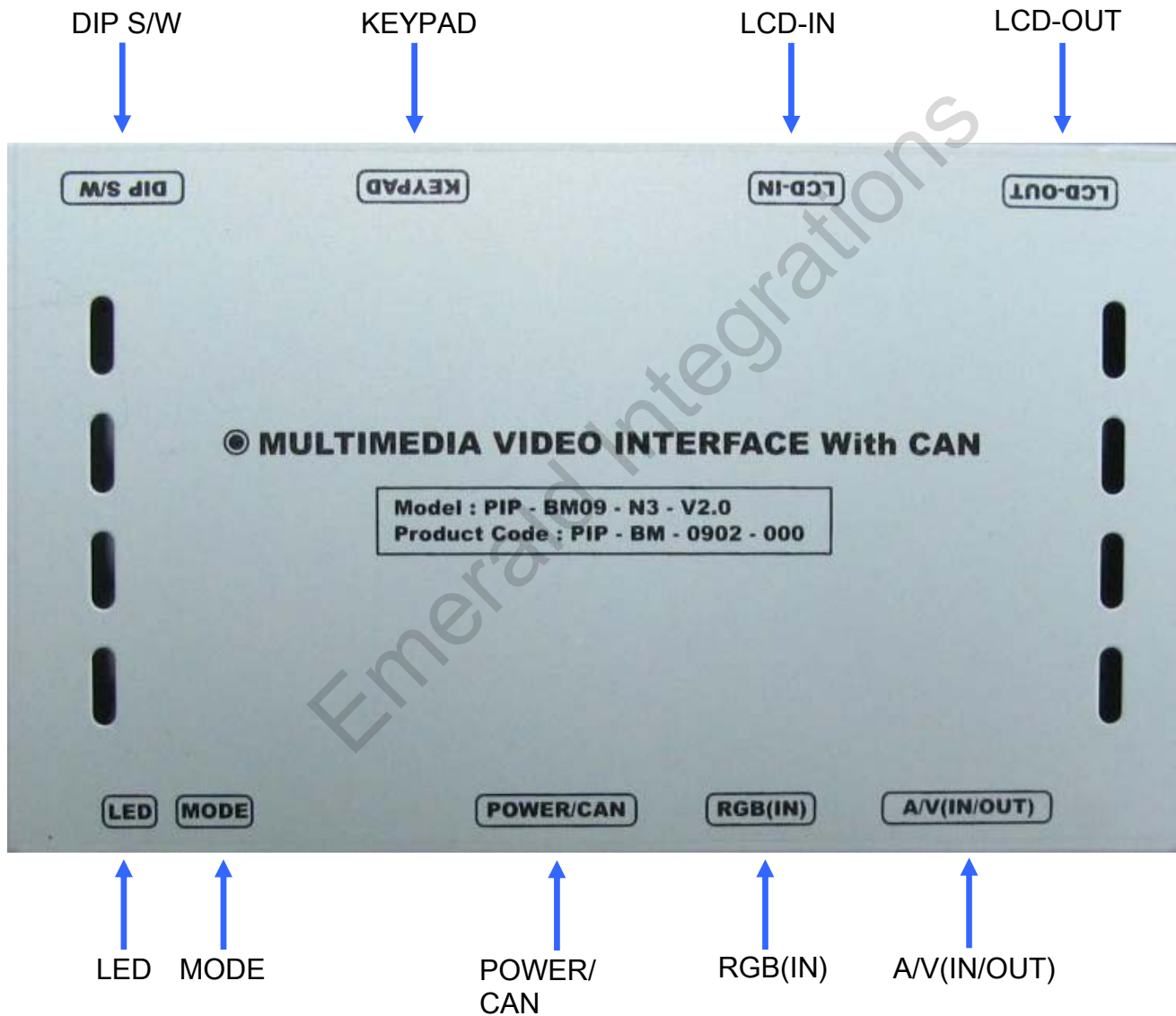
# -Dimension

155mm \* 93mm \* 22mm



# -External Appearance

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# -External Appearance

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↑  
MODE

↑  
POWER/CAN

↑  
RGB(IN)

↑  
AV(IN/OUT)



↑  
LCD-OUT

↑  
LCD-IN

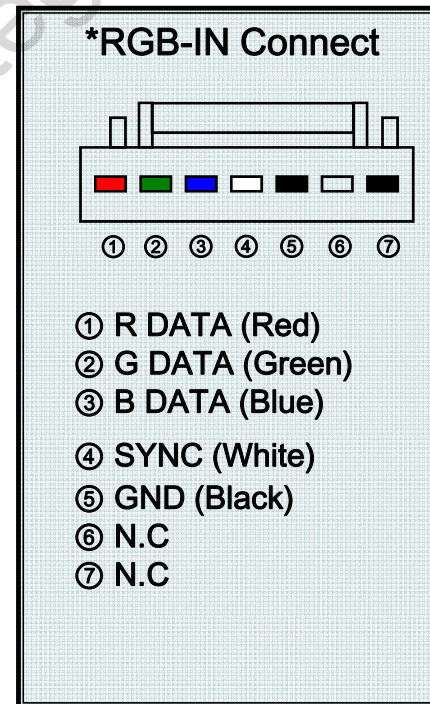
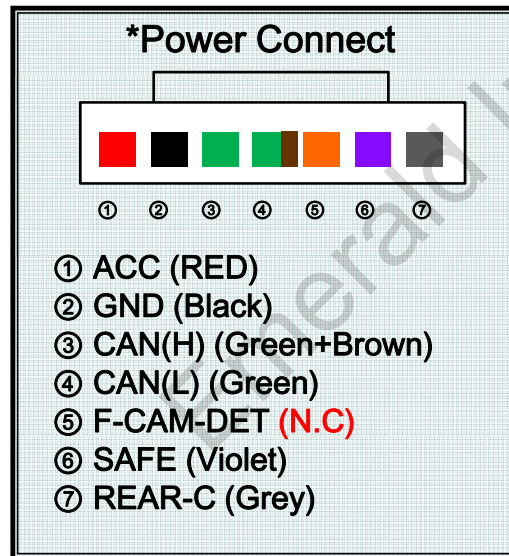
↑  
KEYPAD

↑  
DIP SW



# -Connector Pin Assignment

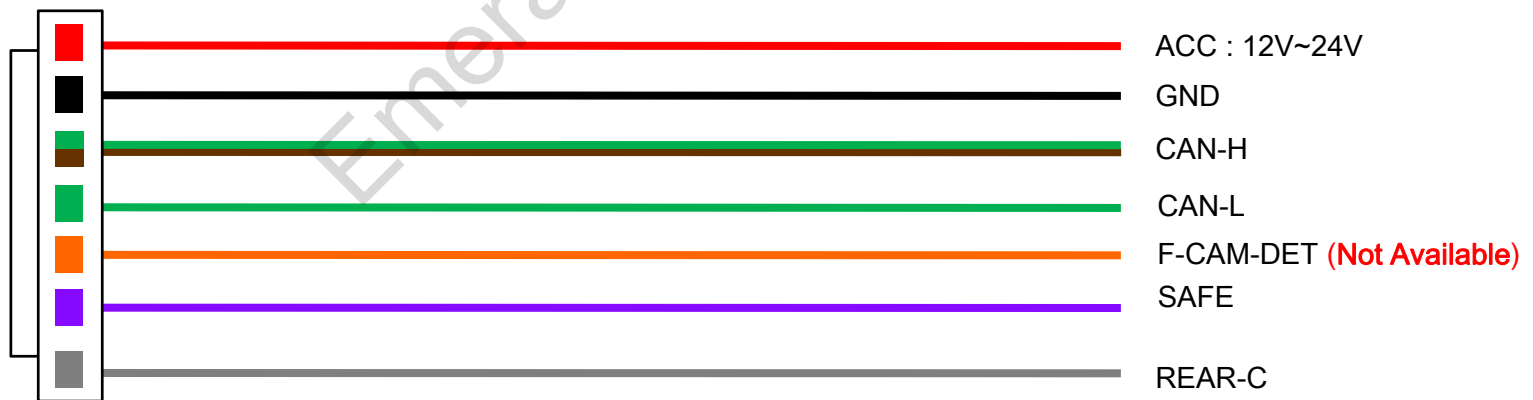
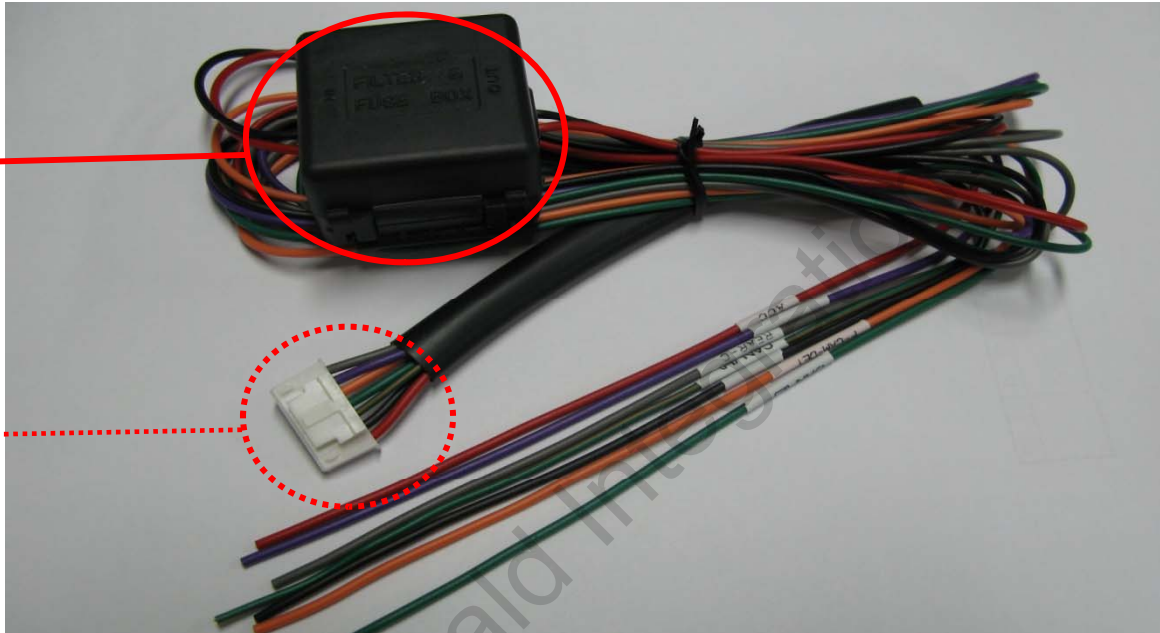
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# -Connector Pin Assignment

\* Power Cable

FILTER  
& FUSE BOX



1m

\*SAFE : When connecting to GND, switched to MAIN image and initialized.

# -DIP SW

※ ON : DOWN, OFF : UP ; Default : all OFF

#PIN	FUNCTION	DIP S/W Selection
1	RGB INPUT MUTE	ON : Skipping RGB Mode OFF : RGB Display
2	A/V 1 MUTE	ON : Skipping A/V 1 OFF : A/V1 Display
3	A/V 2 MUTE	ON : Skipping A/V 2 OFF : A/V2 Display
4	A/V 3 MUTE	ON : Skipping A/V 3 OFF : A/V3 Display
5		N.C
6		N.C
7	When to choose rear mode (ON : CVBS4, OFF : MAIN)	
8		N.C

## ※DIP S/W Use Example

- Use Input Mode : A/V2, A/V3
- Use original Navigation
- Use rear camera

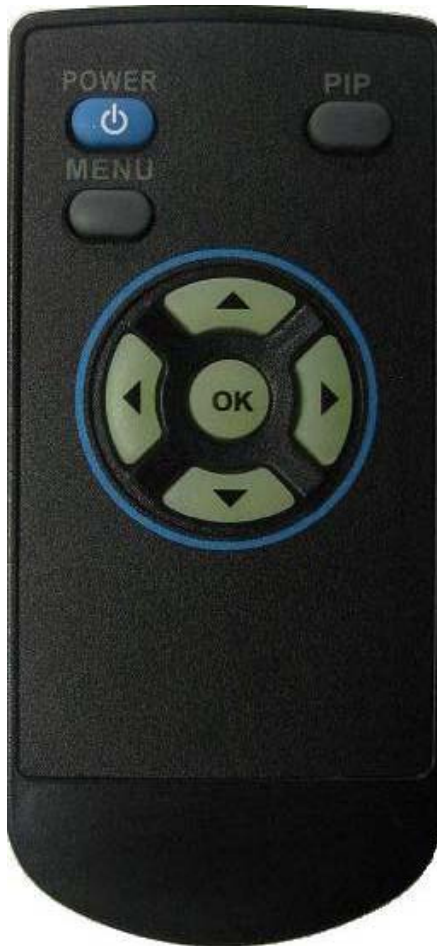
- ▷ DIP S/W : 1,2 -> ON (INPUT MODE SKIP)
- ▷ DIP S/W : 3 -> OFF (enable A/V3)
- ▷ DIP S/W : 4 -> OFF (enable A/V3)
- ▷ DIP S/W : 5,6 -> OFF
- ▷ DIP S/W : 7 -> ON
- ▷ DIP S/W : 8 -> OFF



# -How to use remote

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Dimension : 85 \* 40 \* 8 (mm) – Remote or Keypad (**Optional**)



POWER&PIP : N.C

MENU : OSD MENU

OK : Selection

▲ : Up , More than 5sec : Operating “SAFE MODE”

▼ : Down

◀ : Left

▶ : Right

\*FACTORY MODE (Interface setting for **installer**)

: Operated by pressing ▲ → ▼ → ▲ →MENU of remote or keypad in order.

# -How to use Keypad

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※ Remote or Keypad (Optional)



MENU : OSD Menu, switching to previous mode.

SEL : Selection in menu, switching AV sources.

UP : Move to Left, Up

DOWN : Move to Right, Down

UP + DOWN at once : Operating "SAFE MODE"

\*FACTORY MODE (Interface setting for **installer**)

: Operated by pressing ▲ → ▼ → ▲ →MENU of remote or keypad in order.

# -Original buttons (E60)

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## - I-Drive Button



“MENU button” : Long press – Mode switching  
Short press – Switching to OEM mode

## - Steering wheel buttons



button : Long press – Dual screen operation



button : Long press - Mode Switching

# -Original buttons (E65)

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## - I-Drive Button



MENU Button : Long press – Mode switching  
Short press – Back to OEM image

▽ Button : Long press – PIP function Operation

※ In Reverse gear – This function is only available in cars with aftermarket rear camera.

▽ Button : Long press – PIP function Operation  
Short press – Positioning Translucent PDC Image

# -OSD(On Screen Display)

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· Analog RGB Mode

· Video Mode

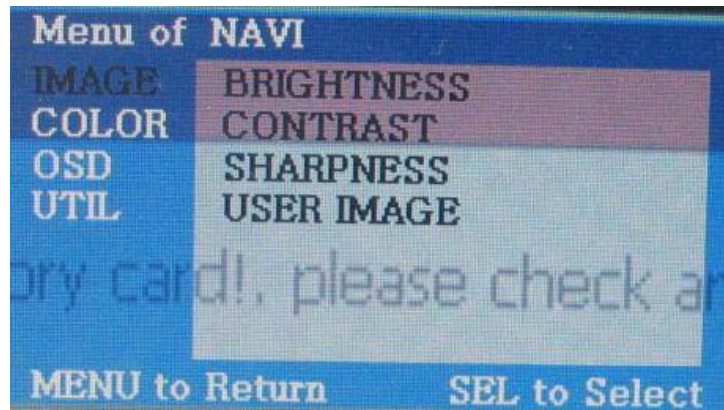


IMAGE Menu :

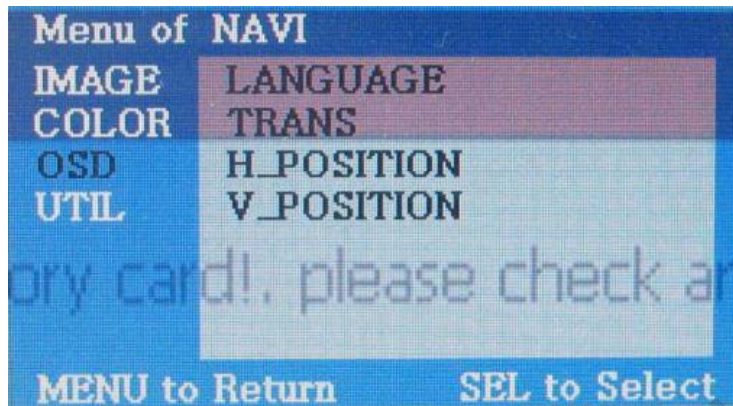
- BRIGHTNESS
- CONTRAST
- SATURATION
- HUE
- SHARPNESS
- USER IMAGE



# OSD(On Screen Display)

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- Analog RGB Mode
- Video Mode



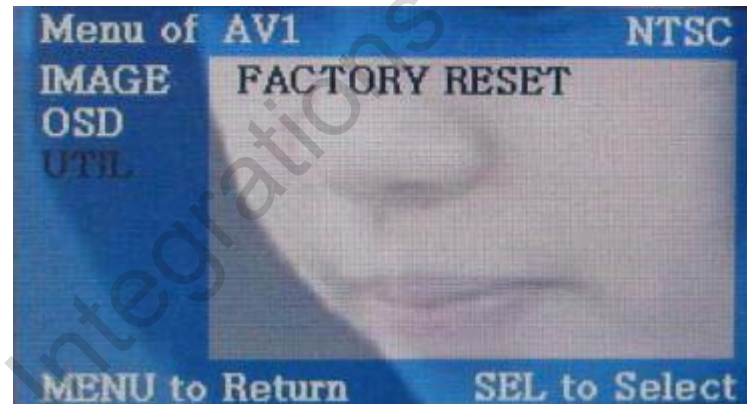
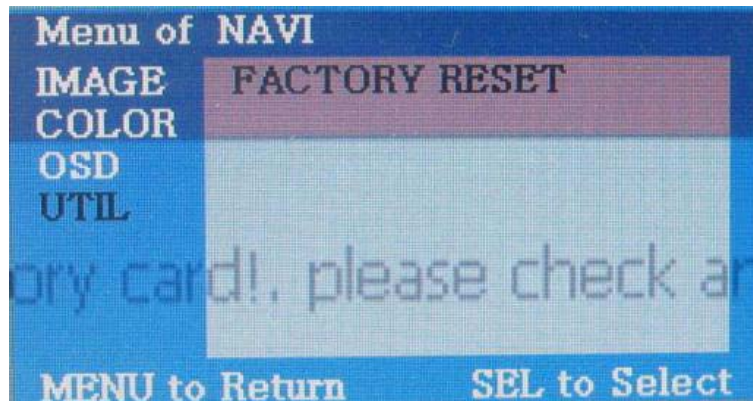
## OSD Menu

- LANGUAGE
- OSD TRANS
- OSD H\_POS
- OSD V\_POS

# OSD(On Screen Display)

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- Analog RGB Mode
- Video Mode



## UTIL Menu

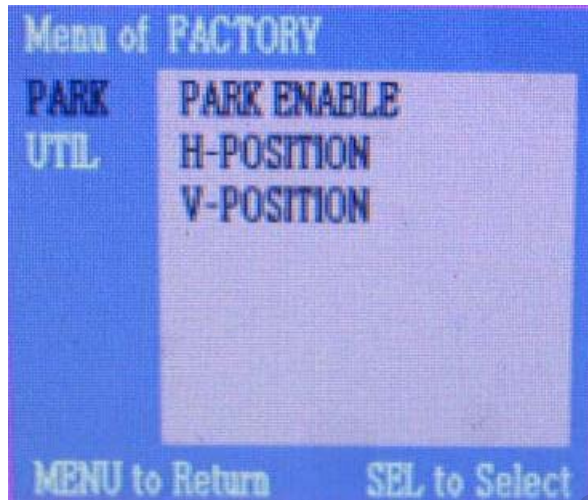
- FACTORY RESET : Initializing setting value (NAVI, AV individual initialization)

# OSD(On Screen Display)

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- Factory Mode

-Operated by pressing ▲ → ▼ → ▲ →MENU of remote or keypad in order.



## Factory Mode

- IMAGE :

- H-POSITION : Move to left and right
- V-POSITION : Move to up and down

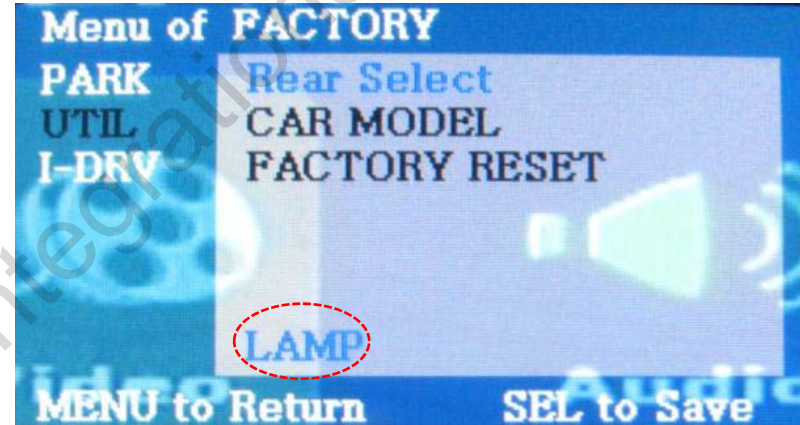
- PARK : Refer to the next page for detail.

# OSD(On Screen Display)

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- Factory Mode

-Operated by pressing ▲ → ▼ → ▲ →MENU of remote or keypad in order.



## Factory Mode

- UTIL :

- Rear Selection : Rear Camera Detection Method Selection

- LAMP : Detecting Rear Cam by rear lamp in vehicle ('Rear-C' wire of Power cable should be connected with rear lamp in vehicle)

- CAN : Detecting Rear Cam by CAN Signal ('CAN' wires of power should be connected with CAN wires in vehicle)

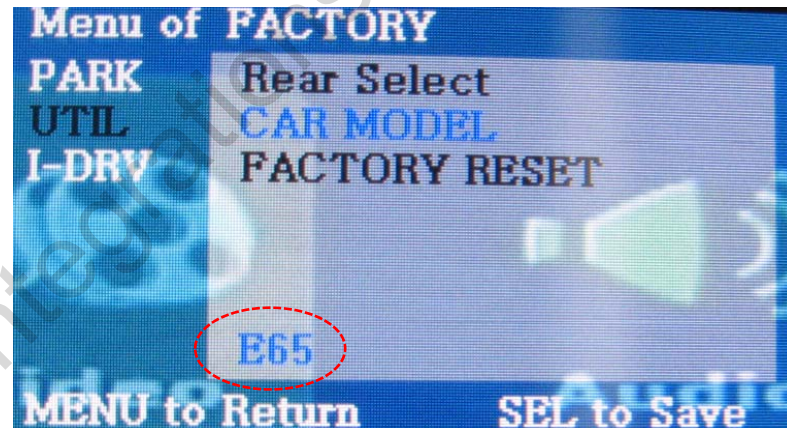
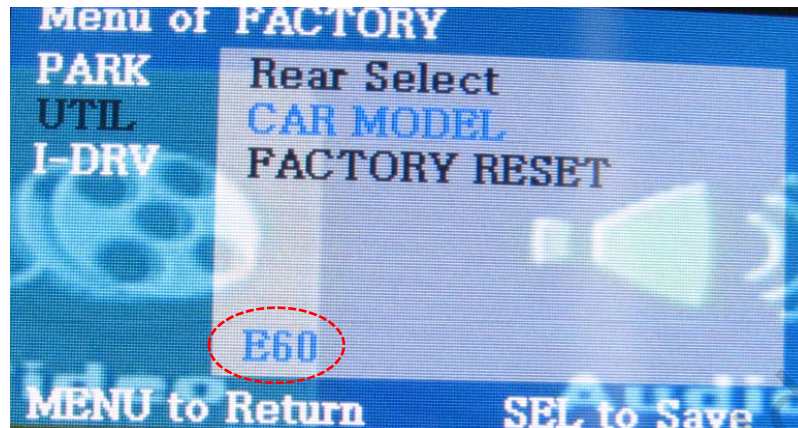
- FACTORY RESET : Initialization

# OSD(On Screen Display)

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- Factory Mode

-Operated by pressing ▲ → ▼ → ▲ →MENU of remote or keypad in order.



**Factory Mode :**

- UTIL – CAR MODEL : Select one of 2 models

: E60 – For 3, 5 series.

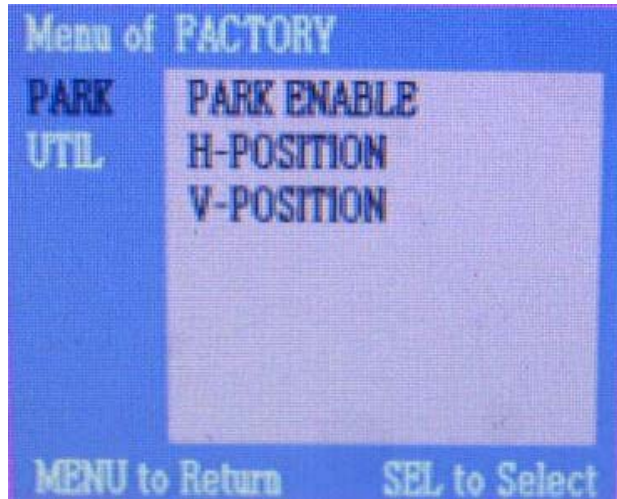
: E65 – For 7 series

# -Rear parking guide line

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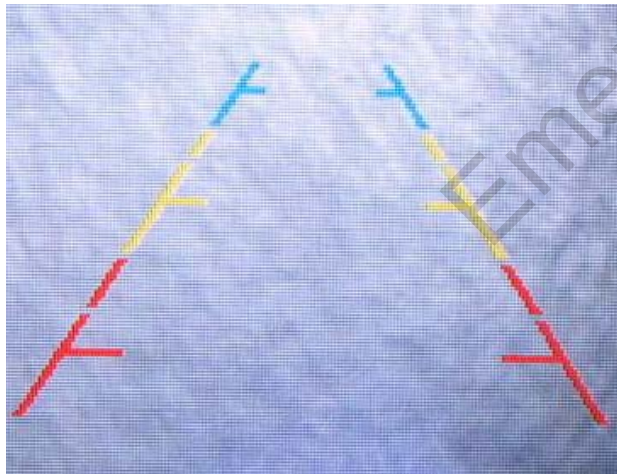
Factory Default : DISPLAY – ENABLE

①



① To get factory mode like left picture, put gear to reverse and press '▲ → ▼ → ▲ → MENU' of remote or keypad.

②

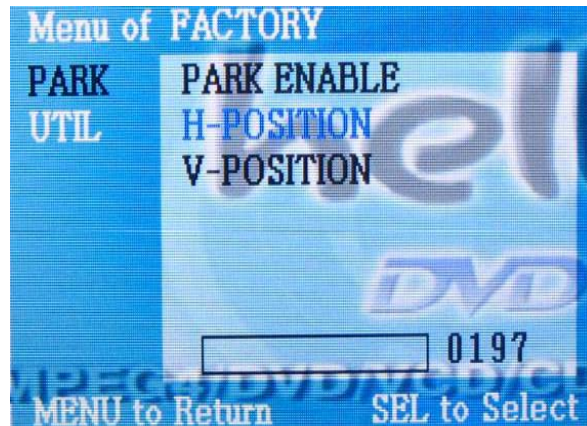


② Select 'PARK ENABLE' to 'ON', then the guide line appears as left picture.

# -Rear parking guide line

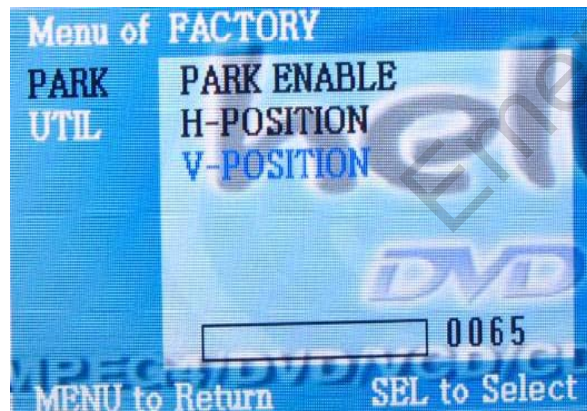
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③



③ On Step no.2, after “Factory Mode” operated, line’s position can be moved to left and right in H-POSITION menu.

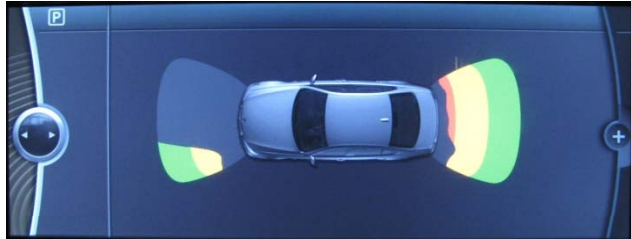
④



④ Also can move the line to up and down in H-POSITON menu.

# -Rear parking guide line (E60)

-Rear Display Setting : Select one of 4 displayed types as below by button on the steering wheel.



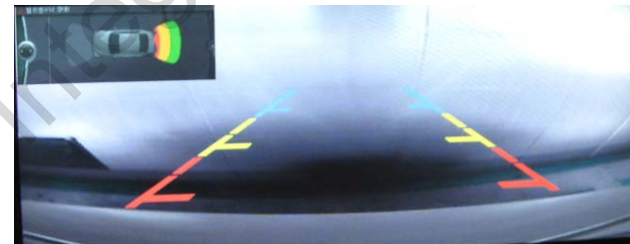
<Full PDC Type>



<Full Rear Camera Type>

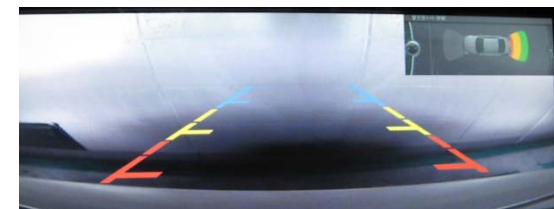
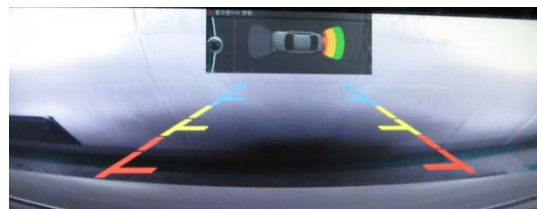


<Dual Screen type>



<Full Rear Camera+ Translucent PDC Type>

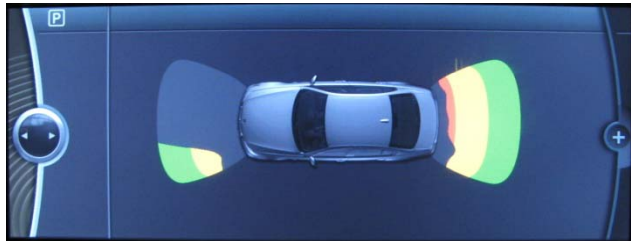
-Translucent PDC Image positioning : By button on the steering wheel, you can position PDC image to one type of below 3 types.





# -Rear parking guide line (E65)

-Rear Display Setting : Select one of 4 displayed types as below by button with long press on I-Drive



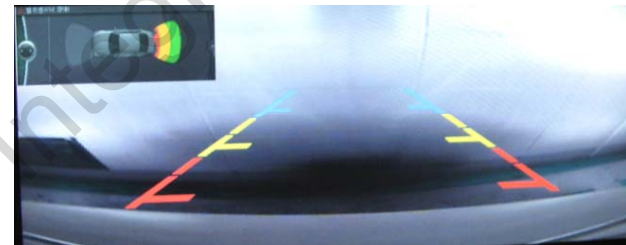
<Full PDC Type>



<Full Rear Camera Type>

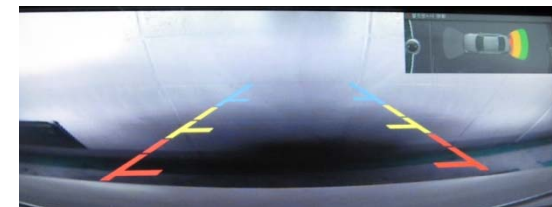


<Dual Screen type>



<Full Rear Camera+ Translucent PDC Type>

-Translucent PDC Image positioning : By button with long press on I-Drive, you can position PDC image to one type of below 3 types.



\* This function is only available in vehicle with **aftermarket** rear camera

# -Product Composition

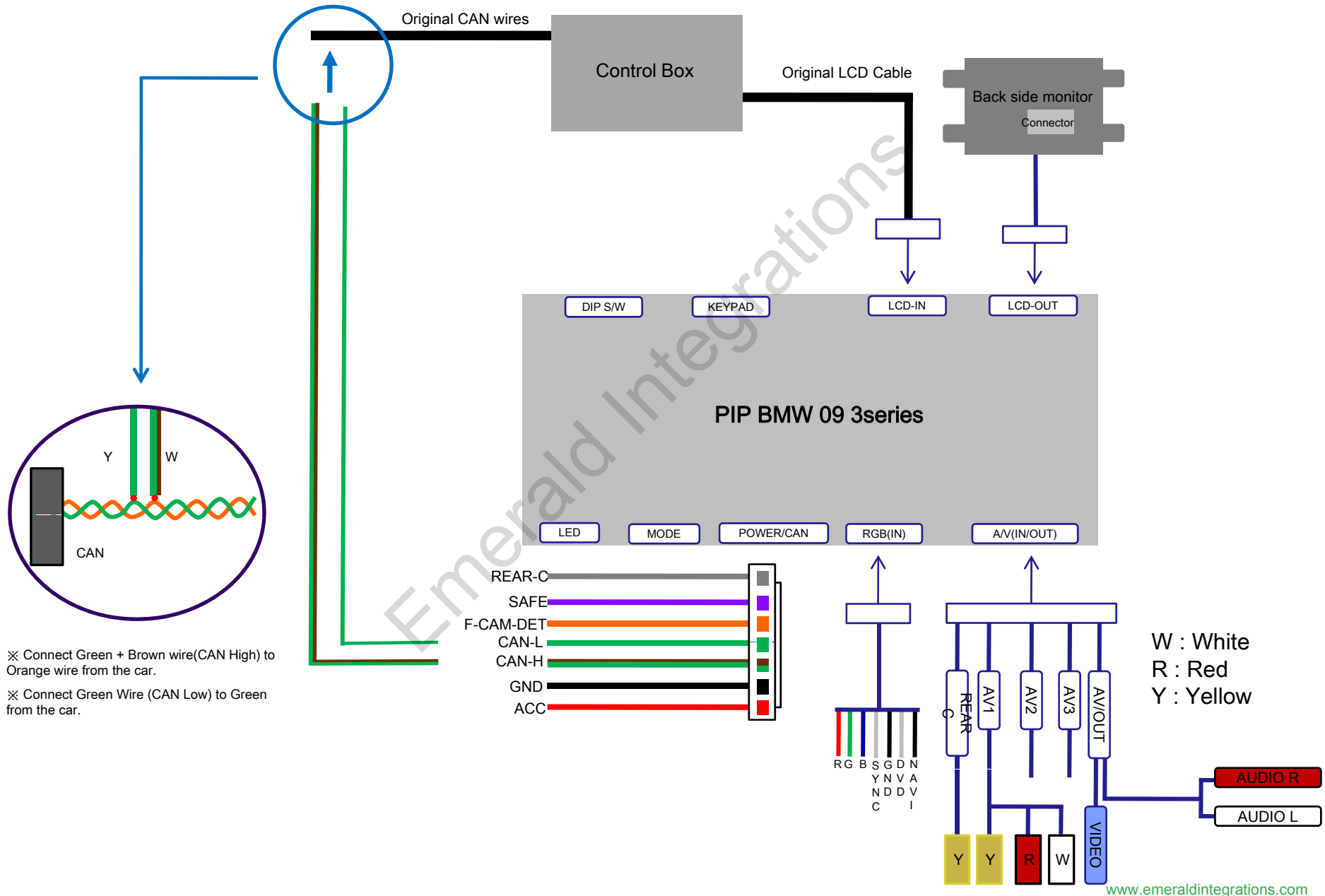
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OSD Keypad or Remote : 1 EA (Optional)  
LCD Cable : 1 EA  
Navi Cable : 1 EA  
Toggle Switch : 1 EA (Optional)

Power Cable : 1 EA  
A/V Cable : 1 EA  
Ground or IR Cable : 1 EA

# -Installation Diagram



# -Installation Manual

## 1. Monitor separation



- Remove indicated screws with a proper tool to take apart monitor from the vehicle.

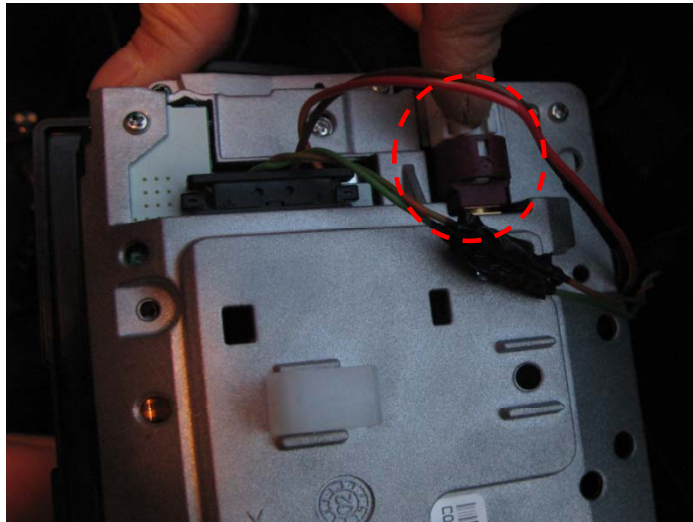


- Pull the monitor out from up to down and take apart it.

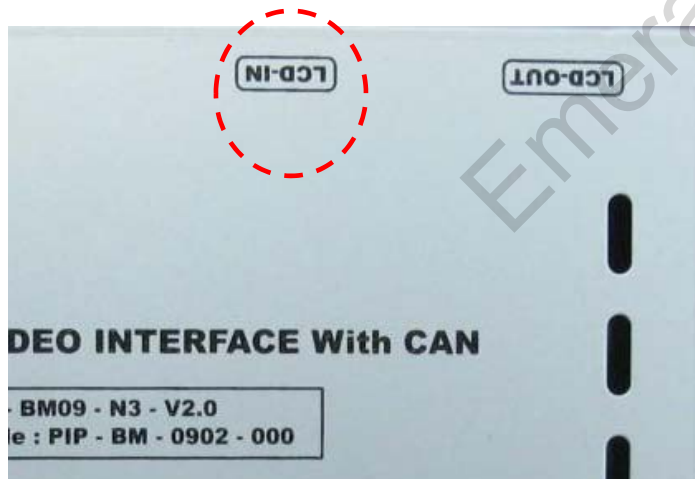
# -Installation Manual

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## 2. Connecting Monitor with Interface



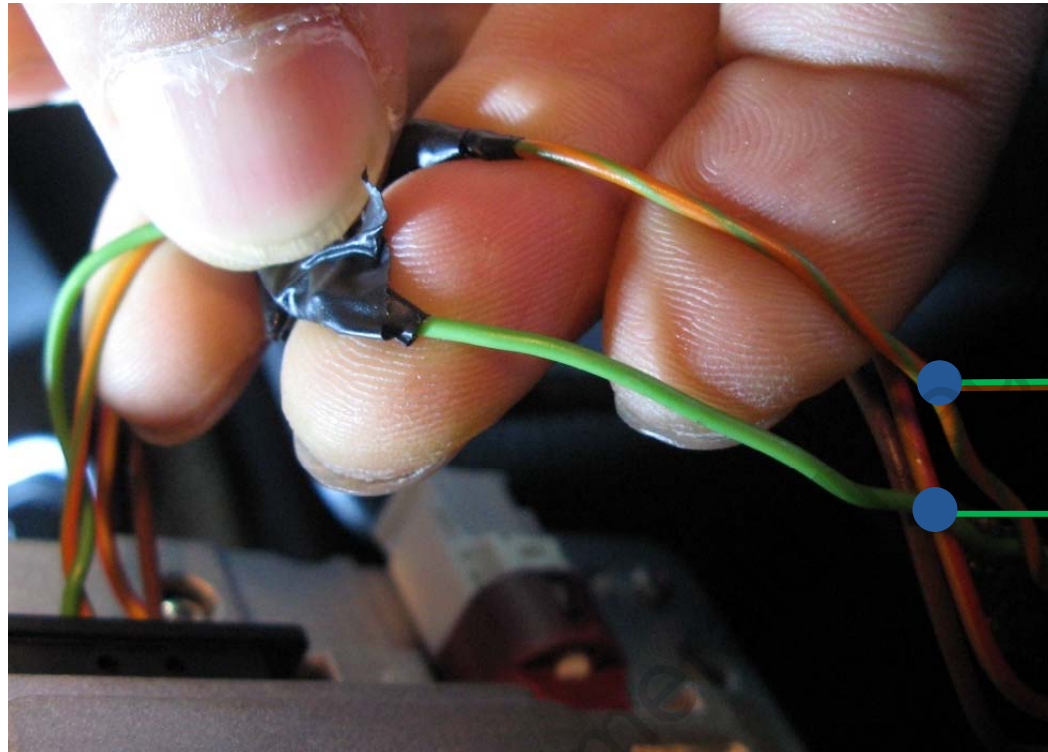
- As left picture, after unplugging the original LCD cable, plug the supplied LCD cable to the indicated connector in the monitor.



-Connect the unplugged original LCD cable to the interface.  
Make sure all connections are made correctly the right way as described.

# -Installation Manual

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CAN-High

CAN-Low

PIP BMW 09

As the above picture, the offered CAN High wire (Green+Brown) to OEM CAN high (Green+Orange) wire from car, the offered CAN Low wire (Green) to OEM CAN Low (Green)

# -Installation Q & A

①



**Q. All I got on the screen is black.**

**A. Check second LED lamp of the interface is on, if not, check A/V sources connected are working well. (Second lamp indicates AV sources connected works well.)**

Check interface connection has been done well.

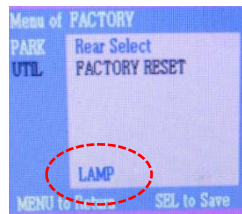
②



**Q. Screen only displays white like left picture.**

**A. Check LCD out cable is connected well, if this status keeps, inform to manufacturer.**

③



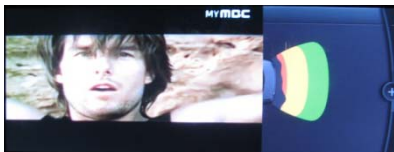
**Q. Rear CAM does not appear, when car is in reverse after CAN wiring.**

**A. Operate "FACTORY MODE" like left picture, then select "UTIL → Rear Select"**  
If it is set as "LAMP", change it to "CAN" by remote or keypad.

※ LAMP : In case of connecting "Rear-C" wire of Power Cable to Rear Lamp in vehicle.

CAN : In case of detecting Rear Cam thru CAN signal. (CAN must be wired)

④



**Q. After moving gear to "P" or "D" from "Reverse", I can't get navigation, but half PDC Image in the screen.**

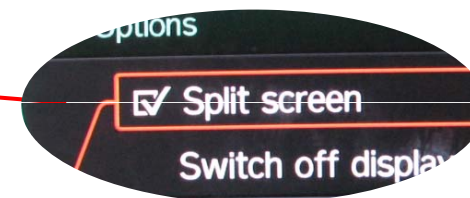
- Once, you starts driving, the screen displays navigation right away, this is not an system error.

⑤



**Q. After setting PIP function, I got only half OEM image at the right in the screen.**

- This is not an error, just caused by user's setting mistake, user should set to "Split Screen" in the OEM menu.



# -Installation Q & A

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- ⑥ Q. I can not switch A/V sources
  - A. Check IR or Ground cable connection.  
Check LED lamps in the interface, if it is not on, check power cable.
- ⑦ Q. Displayed image color is not proper (too dim or not suitable color)
  - A. Try to select "INITIAL" in OSD menu, if it does not work, inform to manufacturer.)
- ⑧ Q. Unwanted A/V mode is displayed. (A/V source switching order : OEM->RGB->AV1->AV2->AV3)
  - A. Check DIP Switch Setting.
- ⑨ Q. OEM image is not displayed.
  - A. Check interface's LCD In/Out cable connection. If the status keeps on, inform to manufacturer.

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