

Ford Sync2 TDC2

- MODEL : BT2012-TD-REV0.7
- DATE : 2021.11.09



GU ELECTRONIC

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1. Main Spec.

1. Input Spec. (MULTI VIDEO INTERFACE)

- 1 x Digital RGB Input (Navigation System source)
- 1 x Analog RGB Input (Navigation System output)
- 1 x CVBS(REAR CAMERA) Input. (Rear camera source)
- 1 x CVBS(FRONT CAMERA) Input. (Front camera source)

2. Output Spec.

- 1 x Virtual Analog Touch (Navigation System source)
- 1 x Uart Digital Touch (Navigation System source)
- 1 x LVDS Output (LCD Operation)

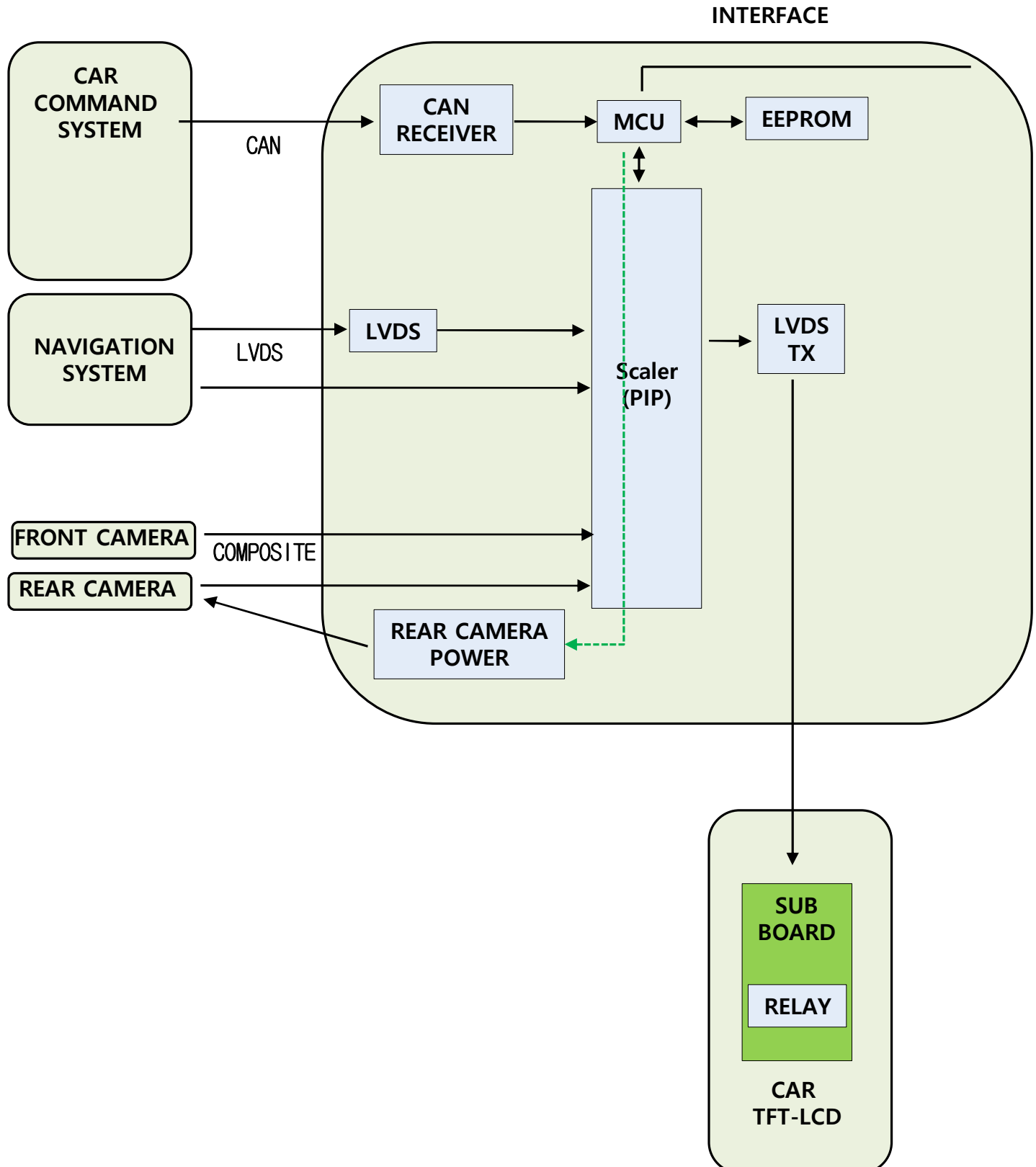
3. Power Spec.

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

4. Switch Input mode

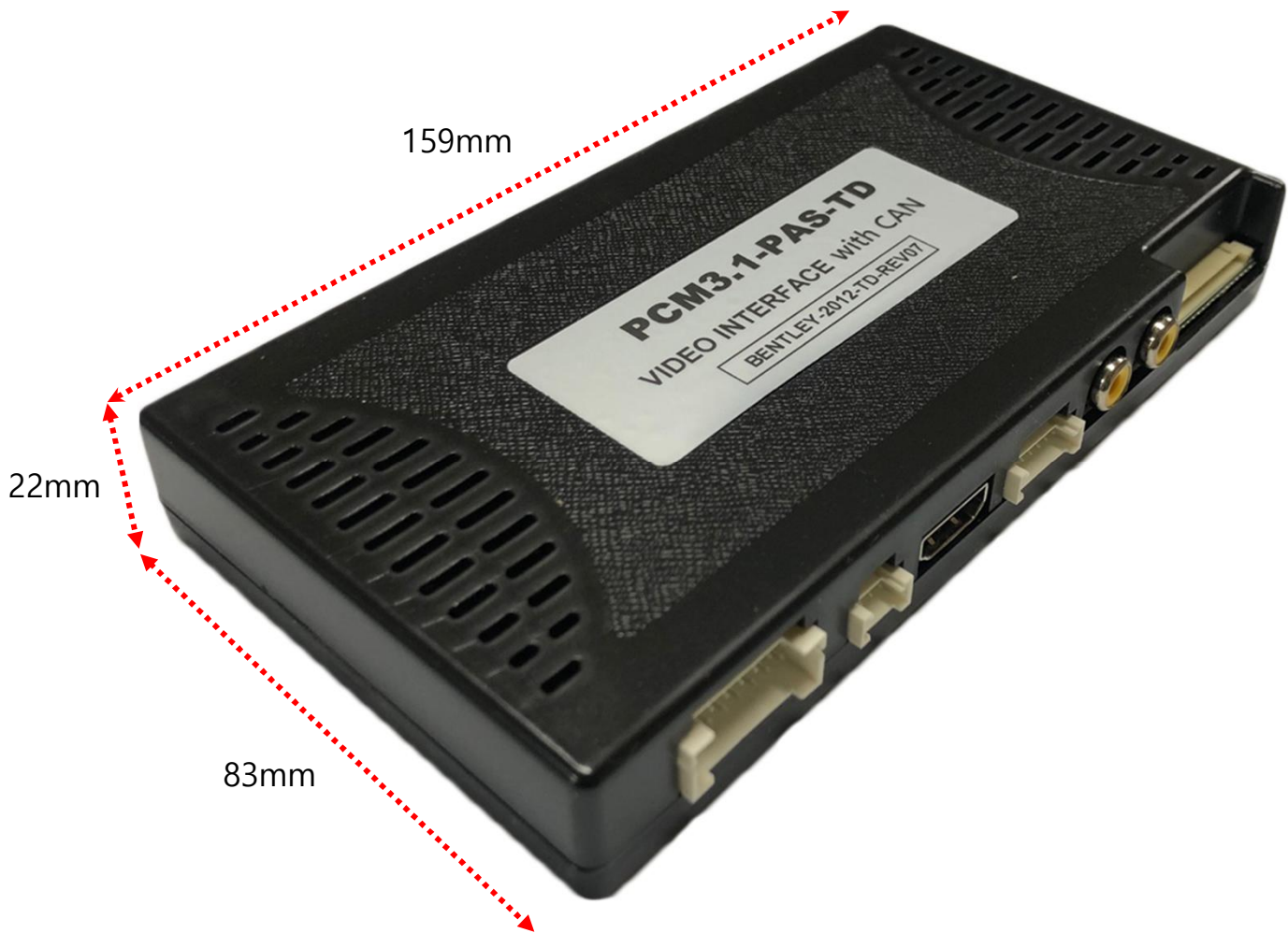
- Possible to select CAR model while switching mode by DIP S/W
- By button on the Commander in the car via CAN

2. Block Diagram



3. Dimension

159mm * 83mm * 22mm



* This can change under manufacturer's circumstance

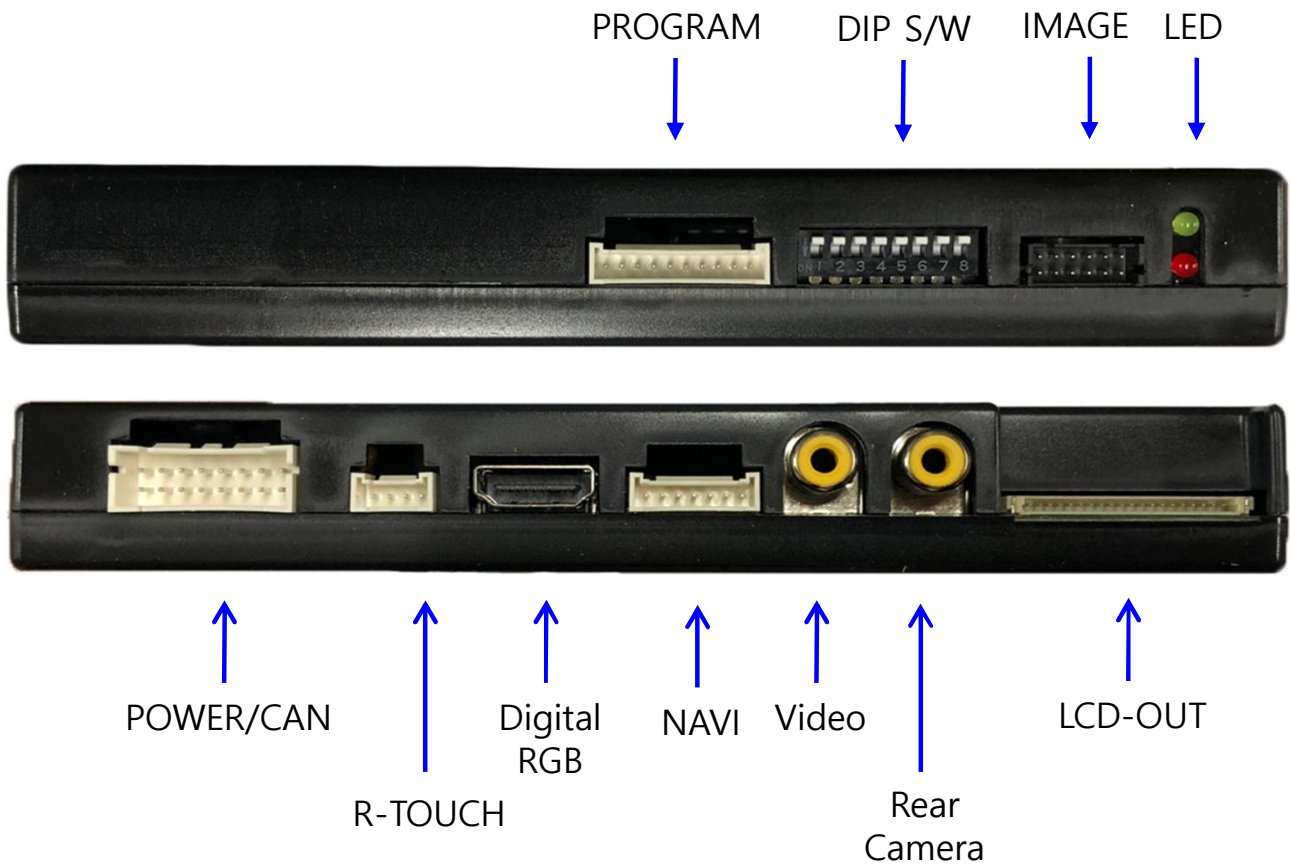


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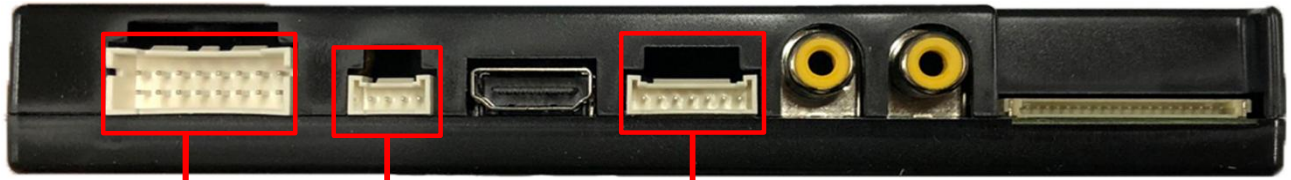
4. External Appearance



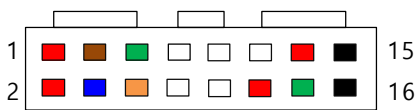
4. External Appearance



5. Connector Pin Assignment

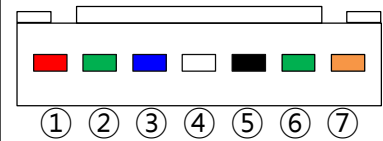


*POWER Connect



- | | |
|---------------------|-----------------------|
| 1. ACC (Red) | 9. N.C |
| 2. ACC (Red) | 10. N.C |
| 3. Rear-DET (Brown) | 11. N.C |
| 4. Front-DET (Blue) | 12. Rear-power (Red) |
| 5. CAN-L (Green) | 13. Front-power (Red) |
| 6. CAN-H (Orange) | 14. Mode (Green) |
| 7. N.C | 15. GND (Black) |
| 8. N.C | 16. GND (Black) |

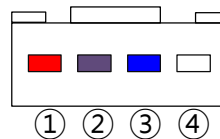
*NAVI Connect



- | |
|-------------------|
| ① R DATA (Red) |
| ② G DATA (Green) |
| ③ B DATA (Blue) |
| ④ SYNC (White) |
| ⑤ GND (Black) |
| ⑥ DMB IR (Green) |
| ⑦ DVD IR (Orange) |

* Rear-power & Front-power
-> Output Current = Max 200mA

*Touch Connect



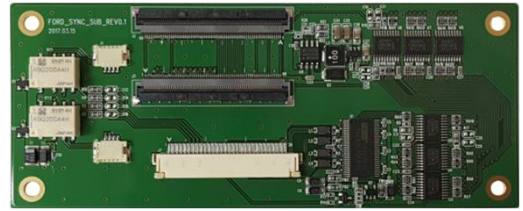
- | |
|------|
| ① Y- |
| ② X- |
| ③ Y+ |
| ④ X+ |



6. Product Composition



Interface 1 EA



SUB Board (R01) 1 EA



LVDS Cable(800mm) 1 EA



Power Cable 1 EA



OSD Board 1 EA



RGB NAVI Cable 1 EA



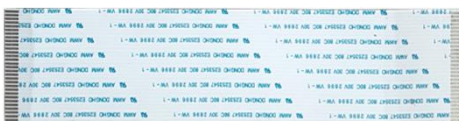
Mode S/W 1 EA



JIG Board (REV02) 1 EA



(80mm)



(100mm)

LVDS FFC Cable 2 EA



Touch FFC Cable(100mm) 1 EA



Touch convertor Cable(KD-900) 1 EA



6. Product Composition

* CarPlay Set Sales(option) – KPLAY



Interface 1 EA



AUX Cable 1 EA



Power Cable 1 EA



HDMI Cable 1 EA



Bluetooth / Wifi Antenna 2EA



Microphone 1 EA



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6. Product Composition

* CarPlay Set Sales(option) – NV17



CarPlay Main 1 EA



AUX Cable 1 EA



Power Cable 1 EA



HDMI Cable 1 EA



Microphone 1 EA

7. DIP S/W Setting

* ON : DOWN , OFF : UP

PIN	FUNCTION	DIP S/W Selection
1	NAVI	ON : Not Used OFF : Used
2	DVB-T(AV1)	ON : Not Used OFF : Used
3	DVD(AV2)	ON : Not Used OFF : Used
4	N.C	
5	N.C	
6	CAR type SEL	Right Picture
7		
8		

* DIP S/W Example



F150 Model
LINCOLN MKX (2011year)



Vehicles that do not function as basic
DIP-SW among F150 models



Explorer Model
Mustang (2015)



Ranger Model



2015year FOCUS ST



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8. Mode Change

Mode Change Button – F150 Model Steering Wheel

MENU	Steering Wheel	NAVI
Config	FrontCam-Power	Auto
Option	FrontCam-Det	ExtWire
Image	FrontCam-RcvOpt	0s
Screen	Steering Wheel	Left Voice Off
Parking	Reset	Execute Cancel

Select either "Left" button or "Voice" button.
Select "Off" when not using both.



"Left" button

- Switch mode by pressing for 1.5 seconds
- Short press to switch OEM



"Voice" button

- Press Mode for 3 seconds.
- Short press to switch OEM



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8. Mode Change

Mode Change Button – Explorer Model Steering Wheel

MENU	Steering Wheel		NAVI
Config	FrontCam-Power	Auto	
Option	FrontCam-Det	ExtWire	
Image	FrontCam-RcvOpt	0s	
Screen	Steering Wheel	Left Voice Off	
Parking	Reset	Execute Cancel	

Select either "Left" button or "Voice" button.
Select "Off" when not using both.



"Left" button

- Switch mode by pressing for 1.5 seconds
- Short press to switch OEM

"Voice" button

- Press Mode for 3 seconds.
- Short press to switch OEM



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8. Mode Change

Mode Change Button – Ranger Model Steering Wheel

MENU	Steering Wheel	NAVI
Config	FrontCam-Power	Auto
Option	FrontCam-Det	ExtWire
Image	FrontCam-RcvOpt	0s
Screen	Steering Wheel	Left Voice Off
Parking	Reset	Execute Cancel

Select either "Left" button or "Voice" button.
Select "Off" when not using both.



"OK" button

- Press Mode for 3 seconds.
- Short press to switch OEM

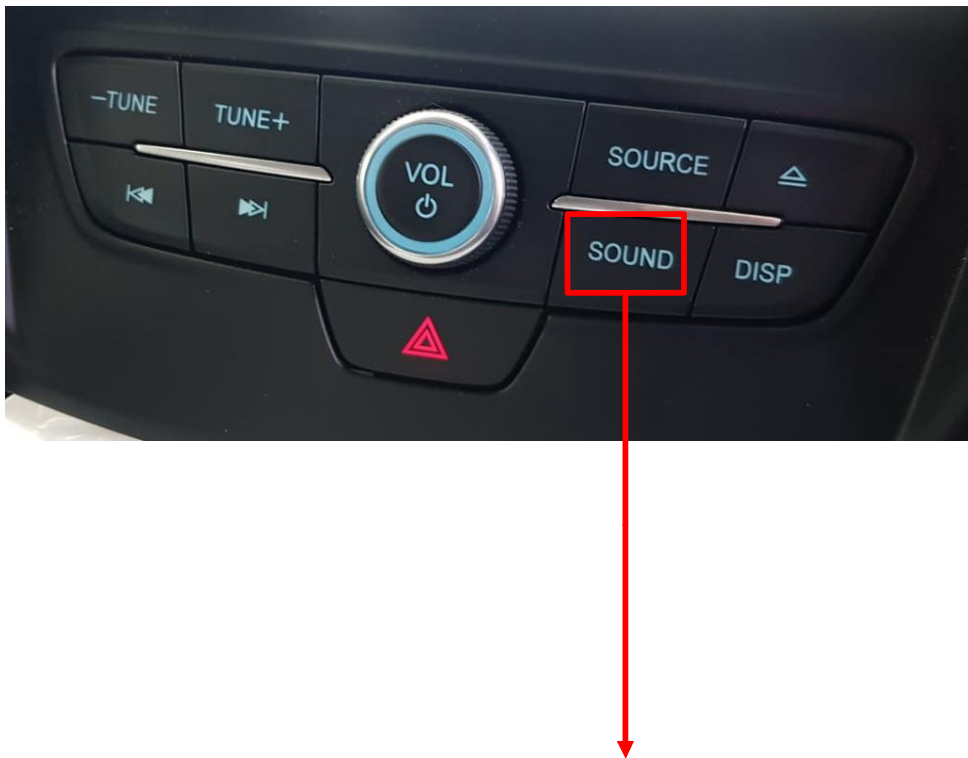
Carplay mode TRACK UP
Carplay mode TRACK DOWN



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8. Mode Change

2015year Ford Focus ST



"SOUND" button

- Switch mode by pressing for 1 seconds
- Short press to switch OEM



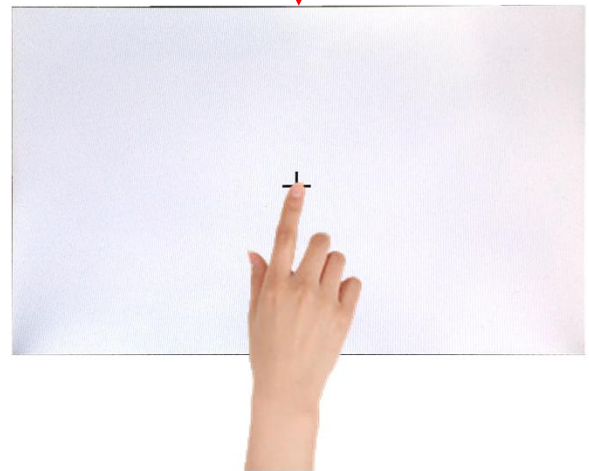
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9. Touch Control

Touch control - Calibration

MENU	RearCam-Det		NAVI
OSD	Factory Reset	Execute	Cancel
IR-Ctrl	Calibration	Execute	Cancel
Utility	Version	BEW3100AUX-210518	

OSD menu -> Utility -> Calibration



+ Touch according to the shape coordinates.

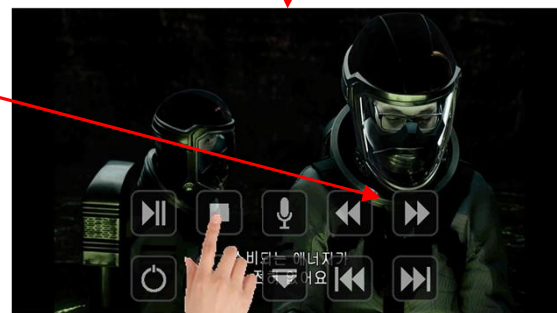
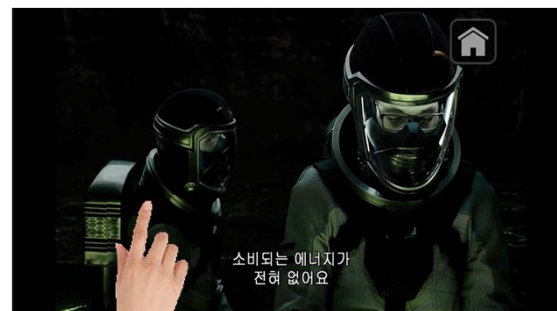
9. Touch Control

DVB-T/DVD Control

DVB-T



DVD



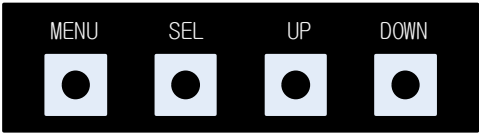
Press Icon



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10. OSD(On Screen Display) Control

OSD control



MENU	Press to display when there is no OSD screen. When OSD screen is on, press it to EXIT or OFF.
SEL	Item Selection, Value Selection
UP	Item up Increase selected value
DOWN	Item down Decrease selected value

Mode State		
MENU	Option	
Config	RearCam-Type	ExtDevice
Option	RearCam-Power	Auto
Image	RearCam-Det	GEAR
Screen	AV Mode	Off
Parking	FrontCam-Type	ExtDevice
First Menu	Second Menu	Third Menu



10. OSD(On Screen Display) Control

OSD Config

First Menu	Second Menu	Third Menu	Description
Config	NAVI-RGB	DIGITAL-INAVI :	Setting the Connected NAVI Model
	DVB-T(DMB)	ELT_DVBT20 :	Setting the Connected DVB-T Model
	DVD	ELT_980XU Slim :	Setting the Connected DVD Model
	RearCam	AVM VIDEO :	Setting the Connected RearCam Model
	Reset	Execute	Reset to default value of Config menu

MENU	Config NAVI	
Config	NAVI-RGB	DIGITAL-INAVI
Option	DVB-T(DMB)	ELT_DVBT20
Image	DVD	ELT-980XU Slim
Screen	Reset	Execute Cancel
Parking		



10. OSD(On Screen Display) Control

OSD - Option Menu

First Menu	Second Menu	Third Menu	Description
Option	NAVI COM	HMS FINE :	Set up manufacturer of woodworking device for UART Touch use
		OFF	Do not use features.
	RearCam-Type	OEM	Original Camera
		ExtDevice	Equipped with external camera
	RearCam-Power	ON	+ 12V continuous supply
		AUTO	+ 12V supply only in Rear camera mode
		OFF	+ 12V off
	RearCam-Det	GEAR	Detected by CAN
		WIRE	Detected by Rear-Det Wire
	AV Mode	ON	Use "REAR" video input port as VIDOE input.
		OFF	Do not use features.
	FrontCam-Type	OEM	Original Camera
		ExtDevice	Equipped with external camera
	FrontCam-Power	ON	+ 12V continuous supply
		AUTO	+ 12V supply only in Front camera mode
		OFF	+ 12V off
	FrontCam-Det	GEAR	Detected by CAN
		WIRE	Detected by Front-Det Wire
	FrontCam-RcvOpt	ON	After RearCam shows FrontCam and returns to previous state
		OFF	Disable feature



10. OSD(On Screen Display) Control

OSD - Option Menu

First Menu	Second Menu	Third Menu	Description
Option	UI DVB-T (DMB)	ON	DVB-T device control UI output function
		OFF	Disable feature
	UI DVD	ON	DVD device control UI output function
		OFF	Disable feature
	Reset	Execute	Option Menu all Reset

10. OSD(On Screen Display) Control

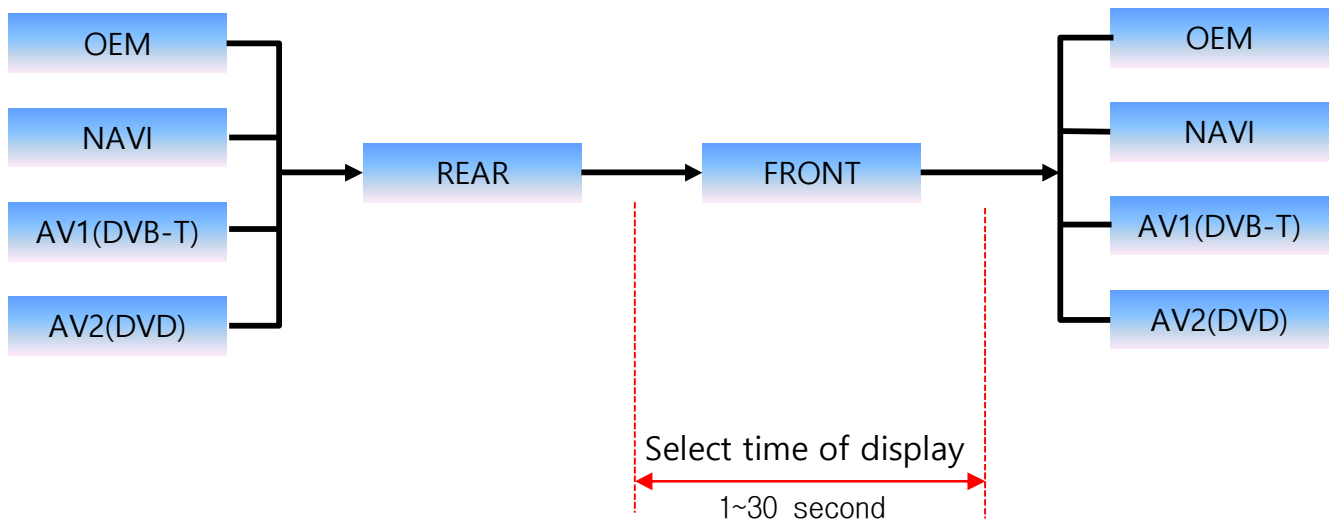
OSD Option -> FrontCam-RcvOpt

Front Camera Auto Mode

0 second = FrontCam-RcvOpt menu OFF
1~30 second = FrontCam-RcvOpt menu ON & time control

MENU	FrontCam-RcvOpt NAVI	
Config	FrontCam-Power	Auto
Option	FrontCam-Det	ExtWire
Image	FrontCam-RcvOpt	0s
Screen	Steering Wheel	Voice
Parking	Reset	Execute Cancel

MENU	FrontCam-RcvOpt NAVI	
Config	FrontCam-Power	Auto
Option	FrontCam-Det	ExtWire
Image	FrontCam-RcvOpt	30s
Screen	Steering Wheel	Voice
Parking	Reset	Execute Cancel



10. OSD(On Screen Display) Control

NAVI-RGB menu

First Menu	Second Menu	Third Menu	Action
Image	Brightness		Adjust the value of brightness
	Contrast		Adjust the value of contrast
	Color-RED		Adjust the value of RED
	Color-GREEN		Adjust the value of GREEN
	Color-BLUE		Adjust the value of BLUE
	Reset	Excute	Option Menu all Reset

DVD,DVB-T(DMB),NAVI-AV,REAR,FRONT menu

First Menu	Second Menu	Third Menu	Action
Image	Brightness		Adjust the value of brightness
	Contrast		Adjust the value of contrast
	Saturation		Adjust the value of Saturation
	Hue		Adjust the value of Hue
	Sharpness		Adjust the value of Sharpness
	Reset	Excute	Option Menu all Reset



< < Brightness > >



< < Contrast > >



< < Saturation > >



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10. OSD(On Screen Display) Control

OSD – Screen Menu

First Menu	Second Menu	Third Menu	Description
Screen	Horizontal		Output screen horizontal movement
	Vertical		Output screen vertical movement
	Scale X Up		Reduce / increase output screen width
	Scale X Down		
	Scale Y Up		Reduce / Increase Output Screen Height
	Scale Y Down		
	Reset		Screen menu all reset

MENU	Horizontal	NAVI
Config	Horizontal	50
Option	Vertical	50
Image	Scale X Up	50
Screen	Scale X Down	50
Parking	Scale Y Up	50

10. OSD(On Screen Display) Control

OSD – Parking Menu

First Menu	Second Menu	Third Menu	Description
Parking	OPS Display	ON	Show OPS
		OFF	Do not show OPS
	Line Display	ON	Show parking line
		OFF	Do not show parking lines
	Warnings Lang		Set warning text language
	Horizontal		Moving a parking line horizontally
	Vertical		Moving a parking line vertically
	Transparency		Parking line transparency
	Reset		Parking menu all reset

MENU	OPS Display REAR	
Config	OPS Display	Off
Option	Line Display	Off
Image	Warnings Lang	English
Screen	Horizontal	50
Parking	Vertical	60



10. OSD(On Screen Display) Control

OSD Parking – OPS Display On / Off

MENU	OPS Display	REAR
Config	OPS Display	On Off
Option	Line Display	Off
Image	Warnings Lang	English
Screen	Horizontal	50
Parking	Vertical	60



OPS ON Screen

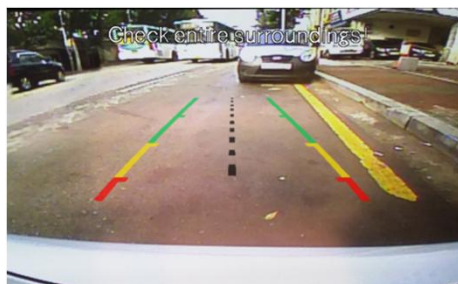
MENU	OPS Display	REAR
Config	OPS Display	On Off
Option	Line Display	Off
Image	Warnings Lang	English
Screen	Horizontal	50
Parking	Vertical	60



OPS OFF Screen

OSD Parking – Guide line On / Off

MENU	Parking / Line Display	REAR
Config	OPS Display	On
Option	Line Display	On Off
Image	Warnings Lang	Россия
Screen	Horizontal	50
Parking	Vertical	50



Parking Line ON Screen

MENU	Parking / Line Display	REAR
Config	OPS Display	On
Option	Line Display	On Off
Image	Warnings Lang	Россия
Screen	Horizontal	50
Parking	Vertical	50



Parking Line OFF Screen



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10. OSD(On Screen Display) Control

OSD Parking – Change warning language

MENU	Parking / Warnings Lang	REAR
Config	OPS Display	English
Option	Line Display	中文
Image	Warnings Lang	한국어
Screen	Horizontal	台灣
Parking	Vertical	Р о с с и я

English

Check entire surroundings!

中文

请注意车辆周围环境!

한국어

차량 주변을 전부 확인

台灣

請注意車輛周圍環境!

Р о с с и я

Следите за всем окружением автомобиля!

日本

周辺の安全を確認



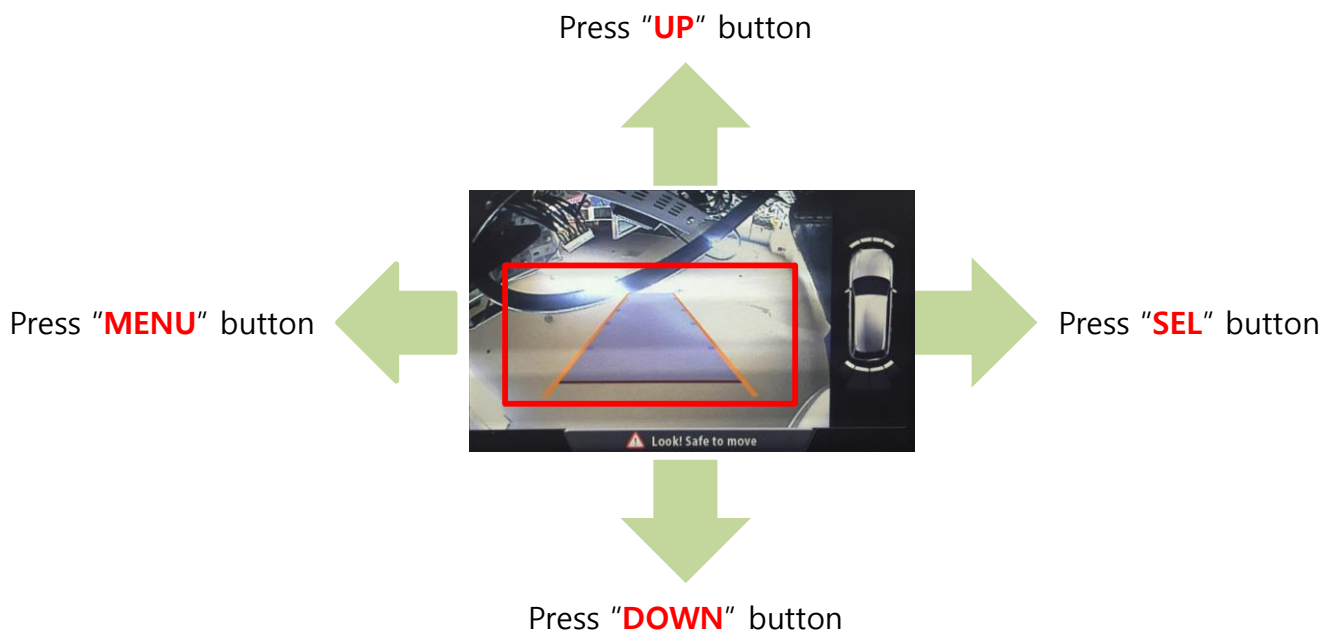
10. OSD(On Screen Display) Control

OSD Parking – Adjust position of parking guide line

MENU	Parking		REAR
Config	OPS Display	Off	
Option	Line Display	On	
Image	Warnings Lang	English	
Screen	Horizontal	50	
Parking	Vertical	50	

Possible to adjust the position of parking guide line
by Keypad in Horizontal / Vertical menu

※ Pressing this Horizontal / Vertical menu,
The OSD screen automatically disappears.
Please adjust from the parking line Screen.



10. OSD(On Screen Display) Control

OSD – OSD Menu

First Menu	Second Menu	Third Menu	Description
OSD	Horizontal	<i>value</i>	OSD Menu Horizontal Shift
	Vertical	<i>value</i>	OSD menu vertical Shift
	Display Time	<i>value</i>	OSD Menu Display Time (in seconds)
	Transparency	<i>value</i>	OSD menu transparency
	Language		OSD menu display language
	Reset	Execute	Initialize OSD settings

MENU	Horizontal DVB-T	
OSD	Horizontal	50
IR-Ctrl	Vertical	50
Utility	Display Time	10s
	Transparency	30
	Language	English
MENU	Reset DVB-T	
OSD	Reset	Execute Cancel
IR-Ctrl		
Utility		



10. OSD(On Screen Display) Control

OSD – IR learning function



* In order to work with the IR learning function, a separate IR cable is required.

MENU	IR-Ctrl / DVB-T(DMB)	NAVI
OSD	DVB-T(DMB)	Sel Learn Cancel
IR-Ctrl	DVD	Sys
Utility		

1. In DVB-T / DVD menu, select User in Sys (OSD list) or User (learned contents).
2. Select Learn from the OSD menu.



MENU	IR-Ctrl / DVB-T(DMB)	NAVI
OSD	All-Clear	
IR-Ctrl	POWER	-----
Utility	SCAN	-----
	CH+	-----
	CH-	-----

3. Before using IR learning function, select All-Clear to delete existing stored data.



MENU	IR-Ctrl / DVB-T(DMB)	DVB-T
OSD	New Code: -----	
IR-Ctrl	Cfm Code: -----	
Utility		
	Save	Clr Cancel

4. Press the remote control button to be used in each ICON once in New Code, press once again in Cfm Code to confirm it is the same and save it.

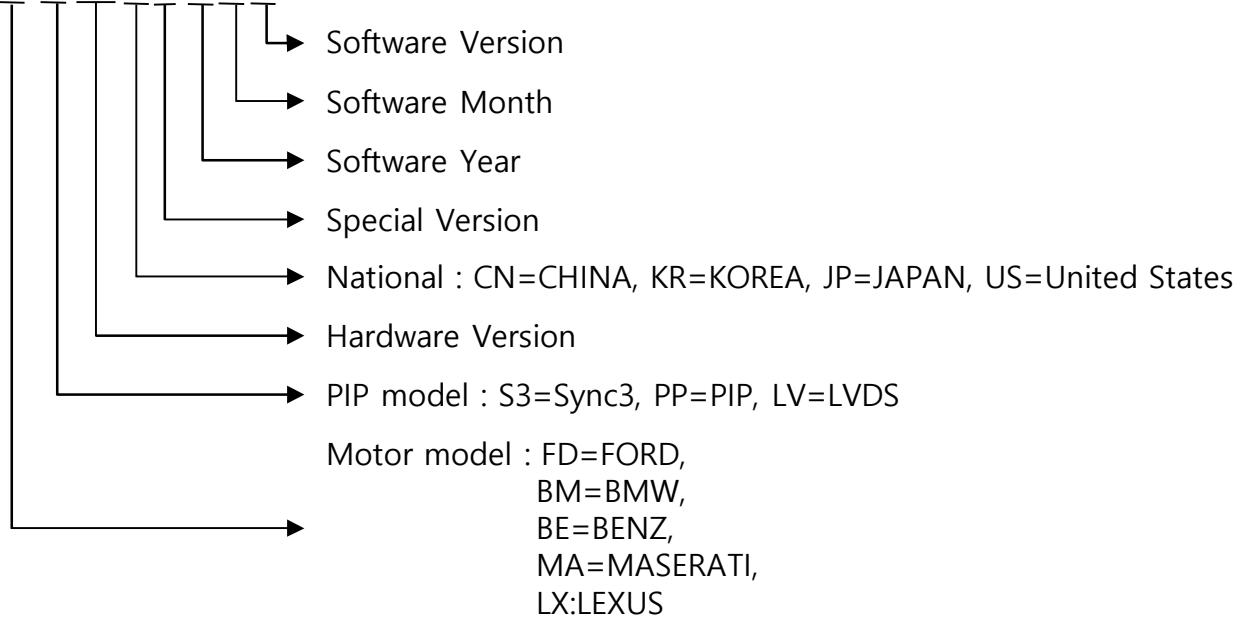


10. OSD(On Screen Display) Control

OSD – Utility Menu

First Menu	Second Menu	Third Menu	Description
Utility	Factory Reset	Execute	Initialize all settings
	Calibration	Execute	Calibration mode Execute
	Version		FDSYOOKRX-180209 (Check for future upgrades)

Last Source : FDSYOOKRX-180209

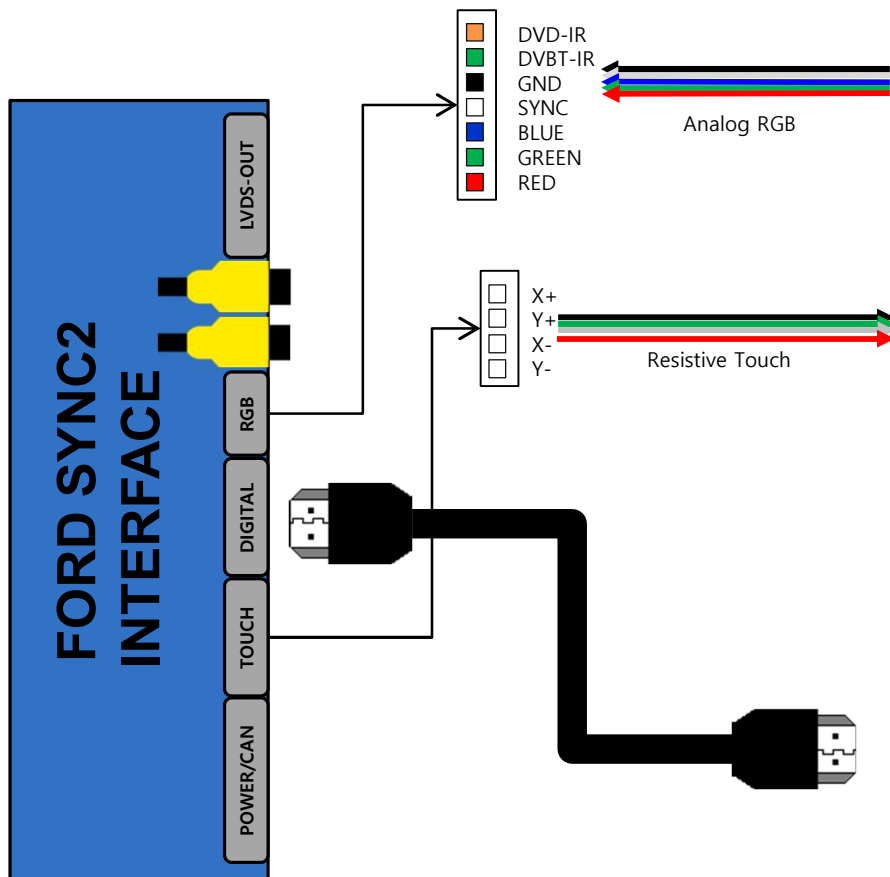


MENU	Utility	NAVI
OSD	Factory Reset	Execute Cancel
IR-Ctrl	Version	FDSYOOKRX-180209
Utility		



11. Install Manual

1. Installation Navigation Connection



*Analog RGBsync navigation



*Digital navigation



MENU	NAVI-RGB	NAVI
Config	NAVI-RGB	DIGITAL-G-NOM-A
Option	DVB-T(DMB)	DIGITAL-G-NOM-G
Image	DVD	DRGB-M2C-1920
Screen	RearCam	DIGITAL-KPLAY
Parking	FrontCam	DRGB-KPLAY-1280

MENU	NAVI COM	NAVI
Config	NAVI COM	Off
Option	RearCam-Type	GU
Image	RearCam-Power	KPLAY
Screen	RearCam-Det	NV17
Parking	AV Mode	NVC

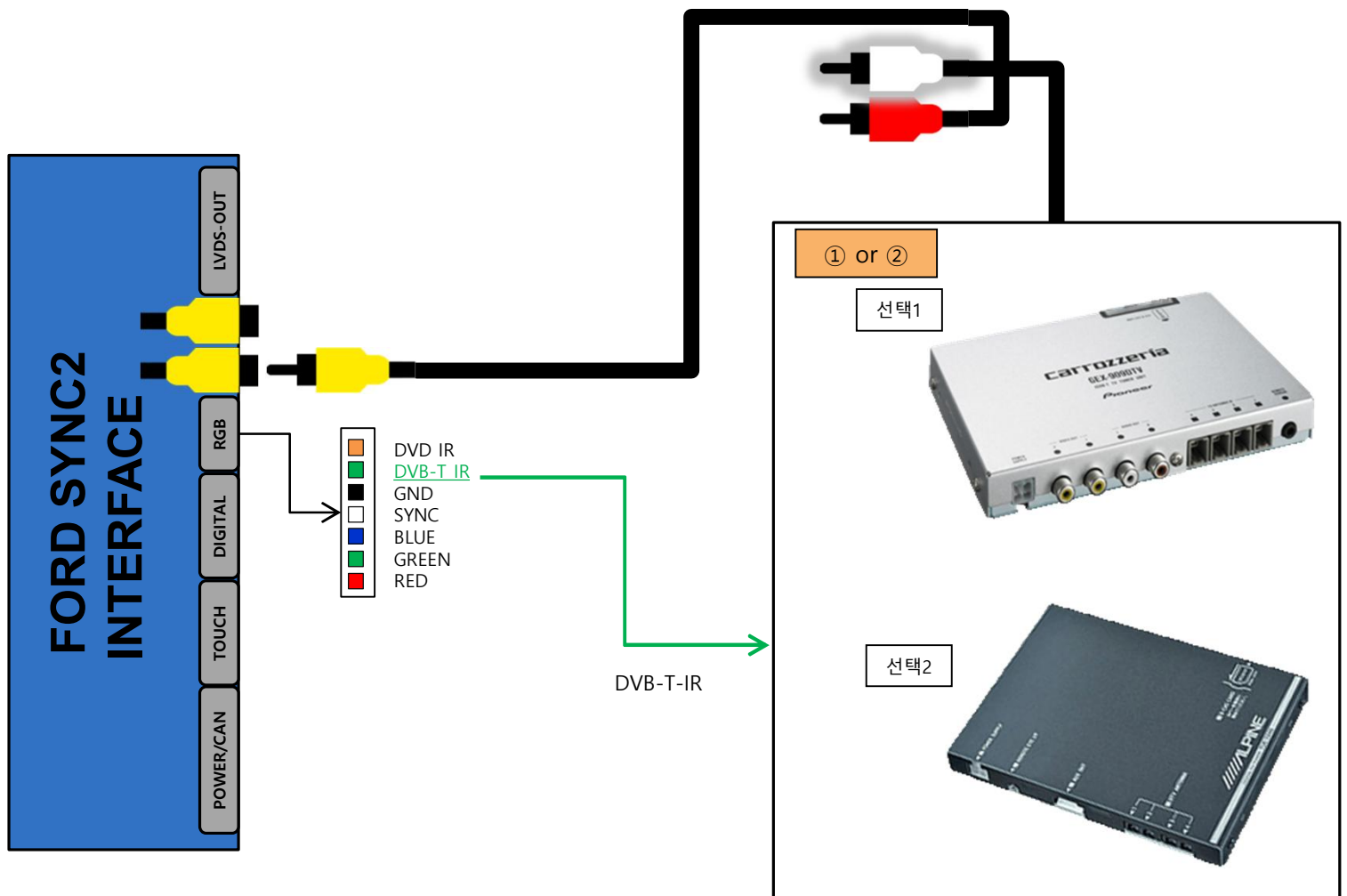
- Select the navigation you want to use from the above items.



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11. Install Manual

2. Installation DVB-T Remote Control Connection



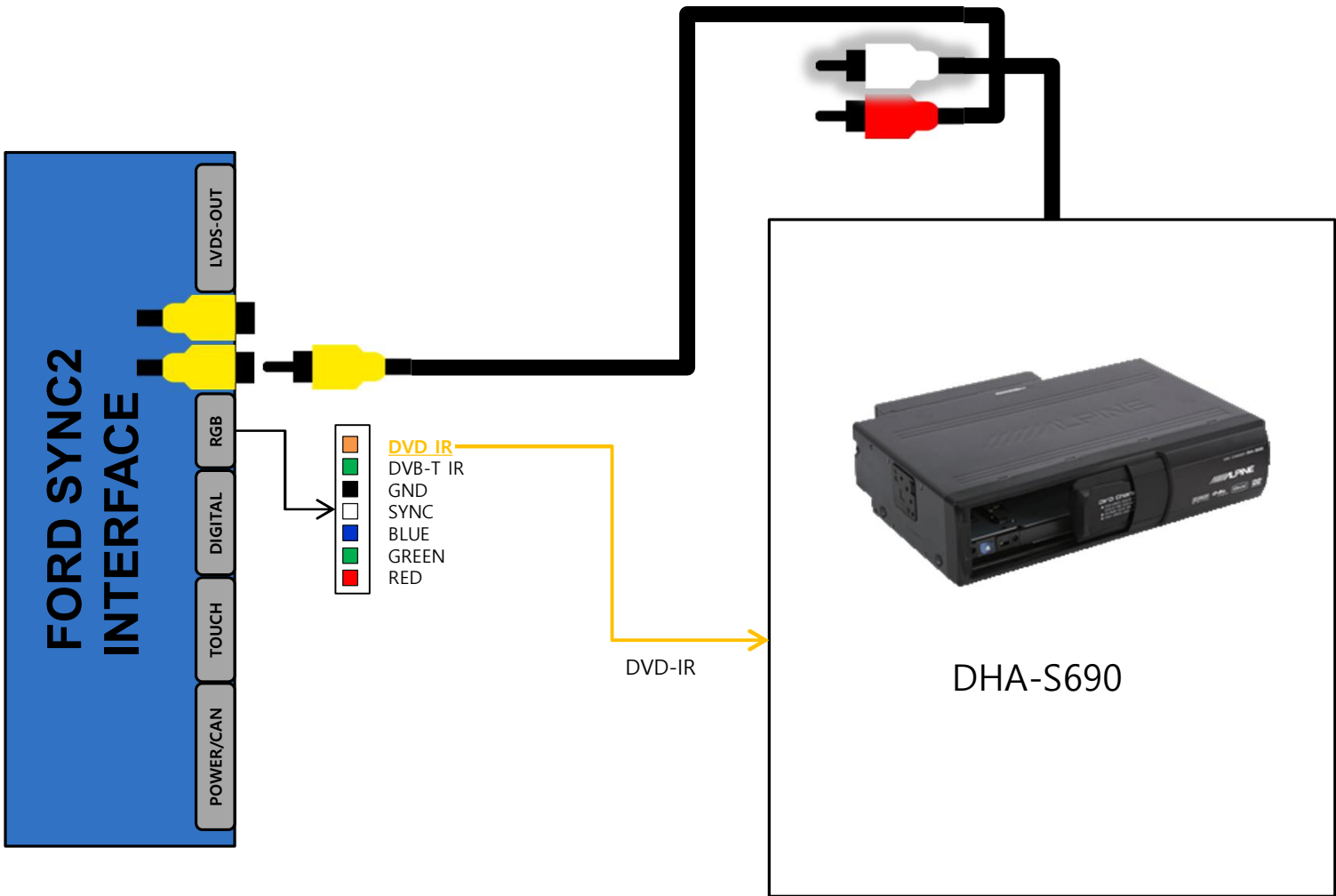
MENU	DVB-T(IMB)	DVB-T
Config	NAVI-RGB	ELT_DVBT20
Option	DVB-T(IMB)	NET-770
Image	DVD	MediaLife
Screen	RearCam	Panasonic
Parking	FrontCam	Pioneer

MENU	UI DVB-T(IMB)	DVB-T
Config	FrontCam-Type	ExtDevice
Option	FrontCam-RcvOpt	8s
Image	SteeringWheelBtn	Off
Screen	UI DVB-T(IMB)	On Off
Parking	UI DVD	On

- Select the DVB-T you want to use from the above items.

11. Install Manual

3. Installation DVD Remote Control Connection



MENU	DVD	DVD
Config	NAVI-RGB	ELT-980XU Slim
Option	DVB-T(DMB)	LCKT
Image	DVD	Sanyo
Screen	RearCam	NECVOX DVA-3206
Parking	FrontCam	AMPIRE DVX-101

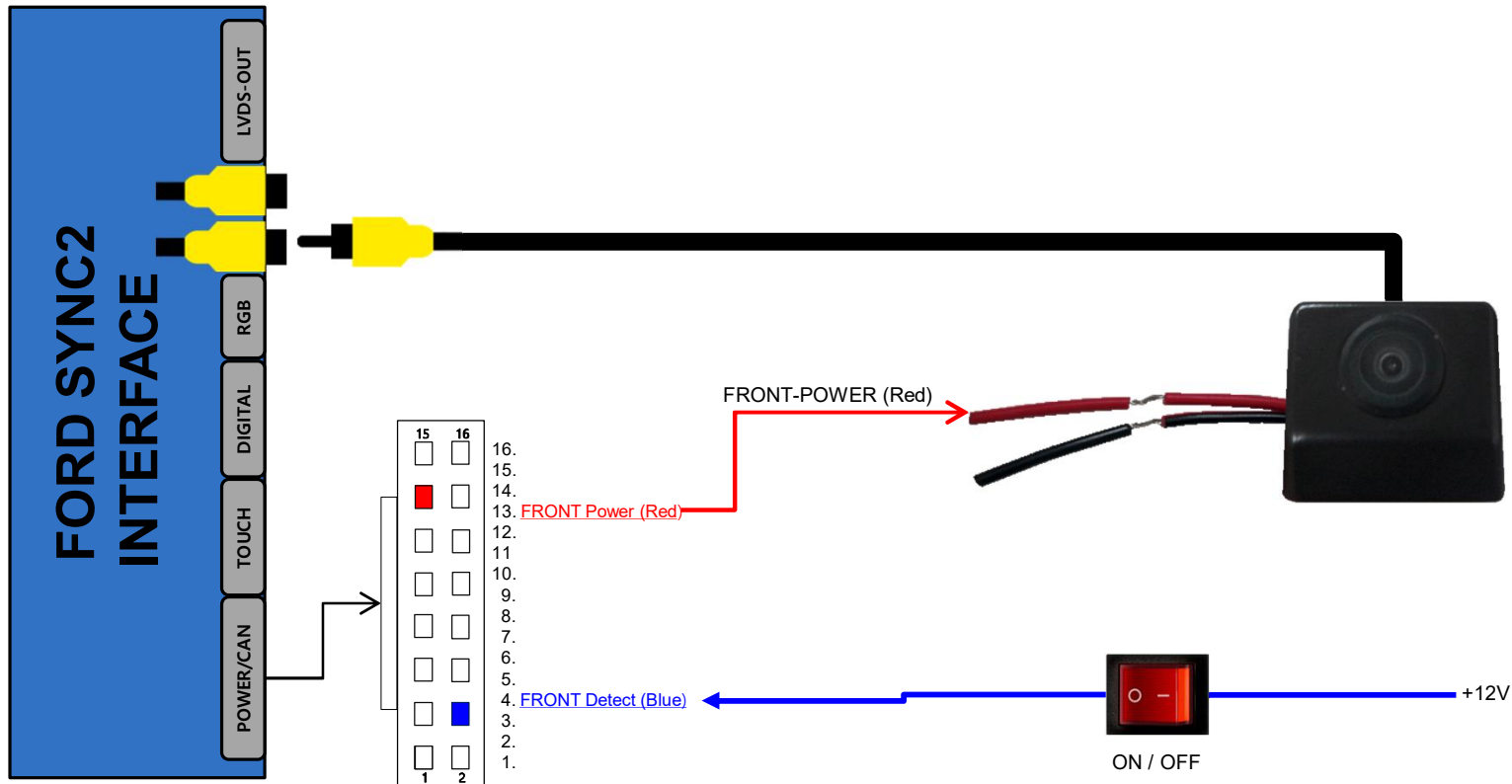
MENU	UI DVD	DVD
Config	FrontCam-Type	ExtDevice
Option	FrontCam-RcvOpt	8s
Image	SteeringWheelBtn	Off
Screen	UI DVB-T(DMB)	On
Parking	UI DVD	On Off

- Select the DVD you want to use from the above items.



11. Install Manual

4. Installation External Front Camera Connection



MENU	FrontCam	AV
Config	NAVI-RGB	AVM-VIDEO
Option	DVB-T(DMB)	AVM-DIGITAL
Image	DVD	Default
Screen	RearCam	
Parking	FrontCam	

MENU	FrontCam-RcvOpt	AV
Config	FrontCam-Type	ExtDevice
Option	FrontCam-RcvOpt	8s
Image	SteeringWheelBtn	Off
Screen	UI DVB-T(DMB)	On
Parking	UI DVD	On

- Refer to page. 10. OSD (On Screen Display) Control -> OSD option -> FrontCam-RcvOpt.

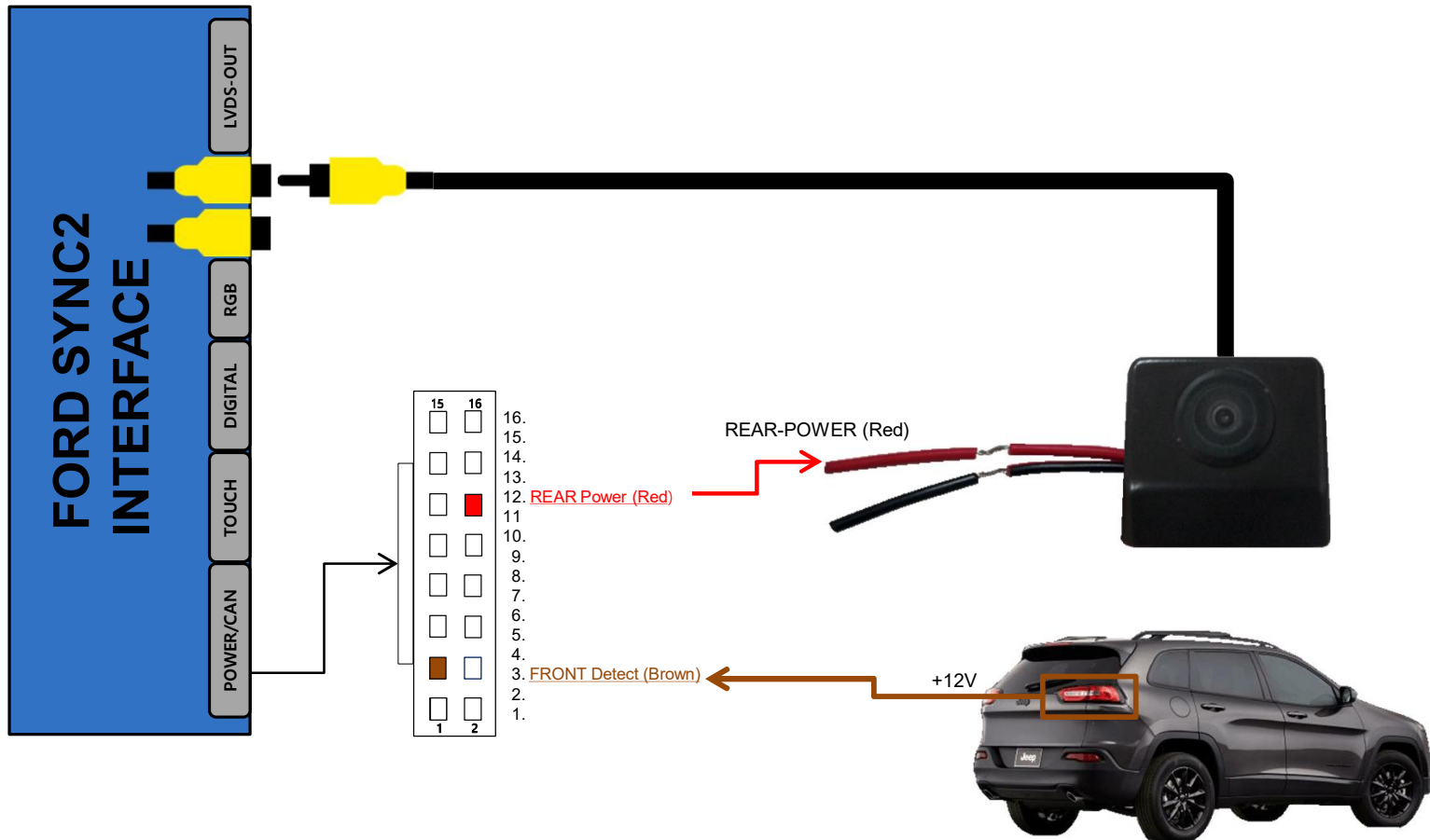
MENU	AV Mode	NAVI
Config	NAVI COM	KPLAY
Option	RearCam-Type	OEM
Image	RearCam-Power	Auto
Screen	RearCam-Det	CAN
Parking	AV Mode	On Off

- When AV mode is activated, the Front camera can be viewed using the Mode change button..



11. Install Manual

5. Installation External Reverse(Rear) Camera Connection



MENU	RearCam		REAR
Config	NAVI-RGB	AVM-VIDEO	
Option	DVB-T(DMB)	AVM-DIGITAL	
Image	DVD	Default	
Screen	RearCam		
Parking	FrontCam		

- Select the RearCam you want to use from the above items.

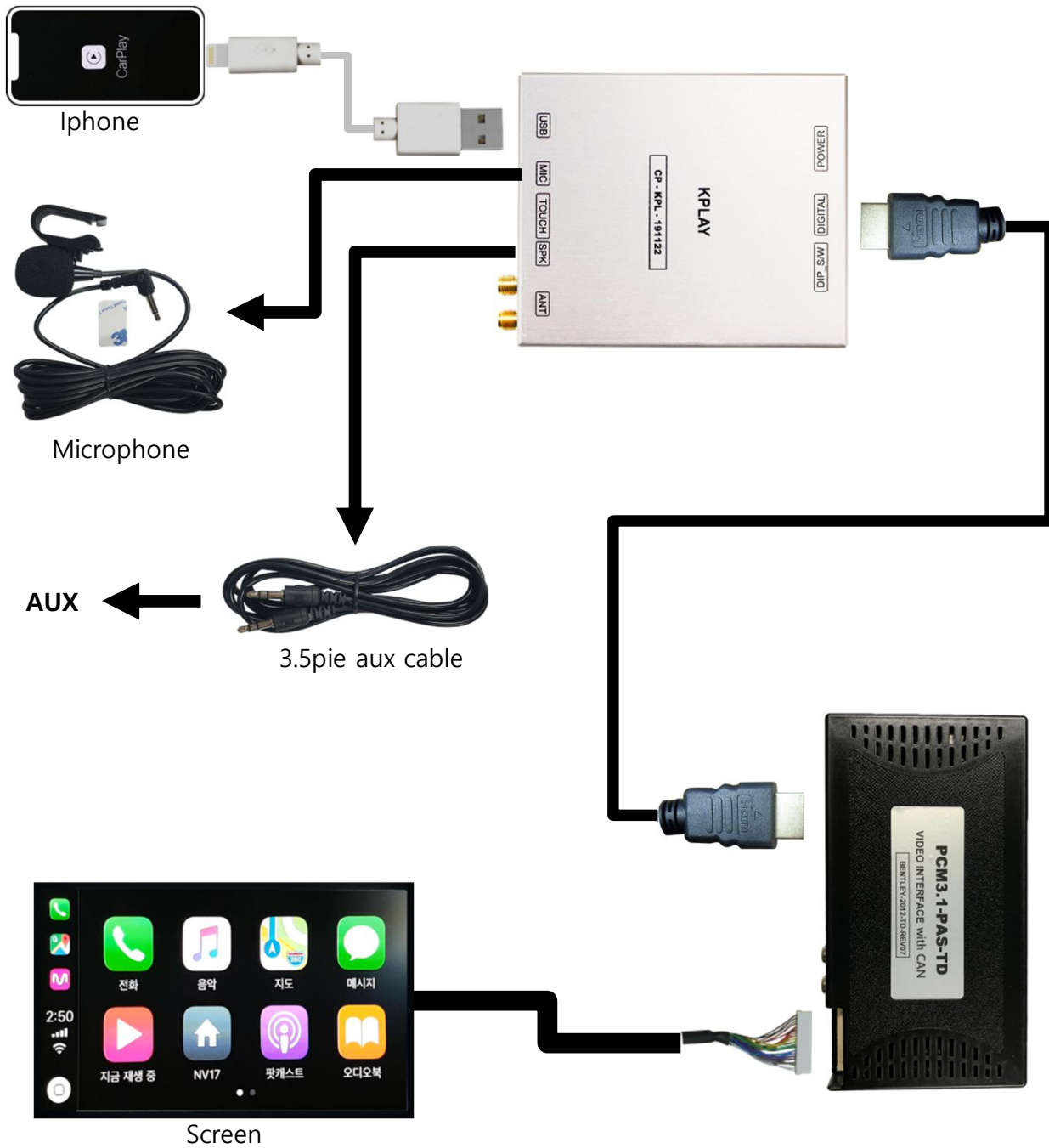


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11. Install Manual

6. Installation CarPlay - KPLAY

* When installing CarPlay, set it to OSD
MENU-OPTION-NAV COM-KPLAY.

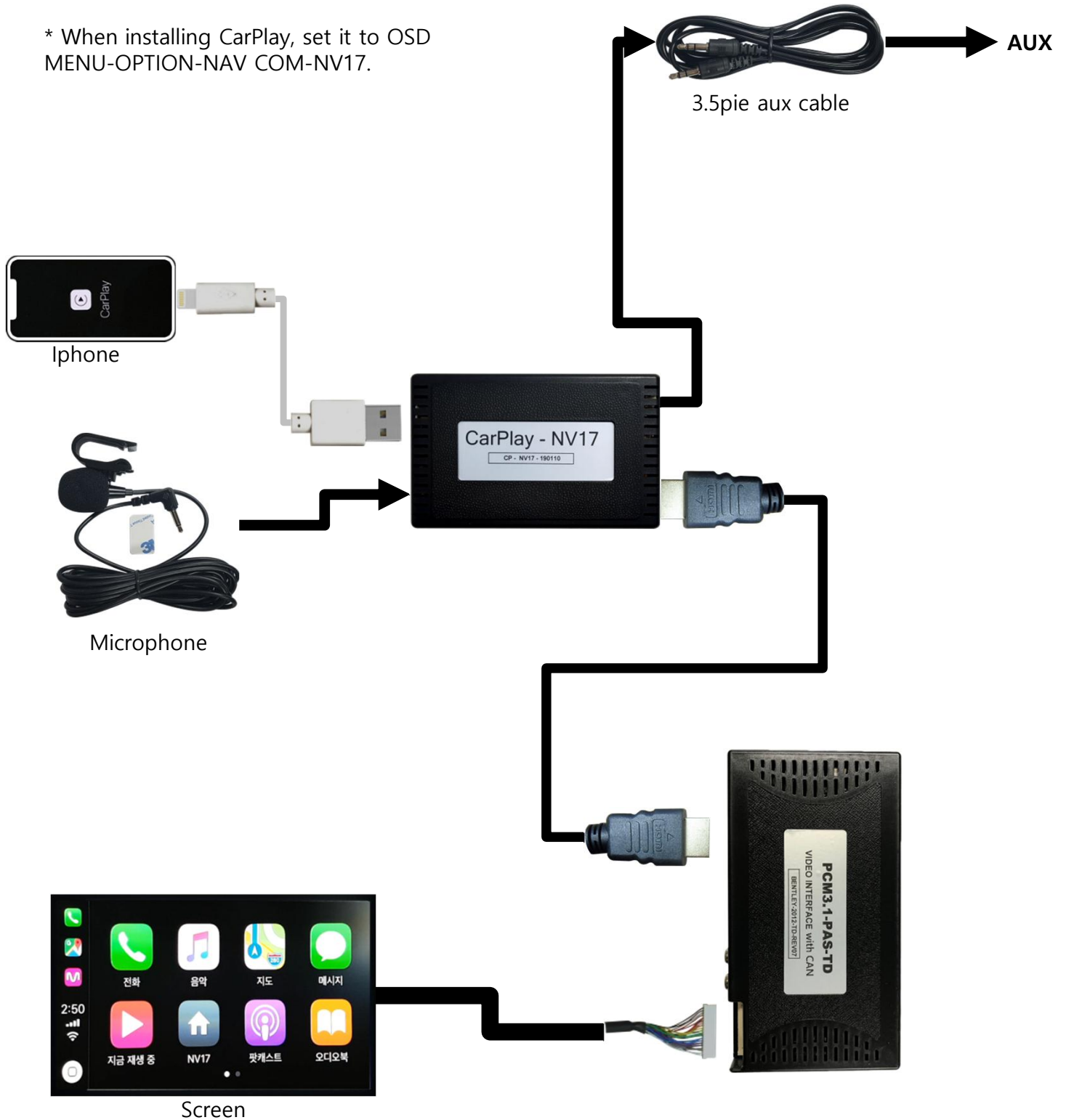


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11. Install Manual

7. Installation CarPlay – NV17

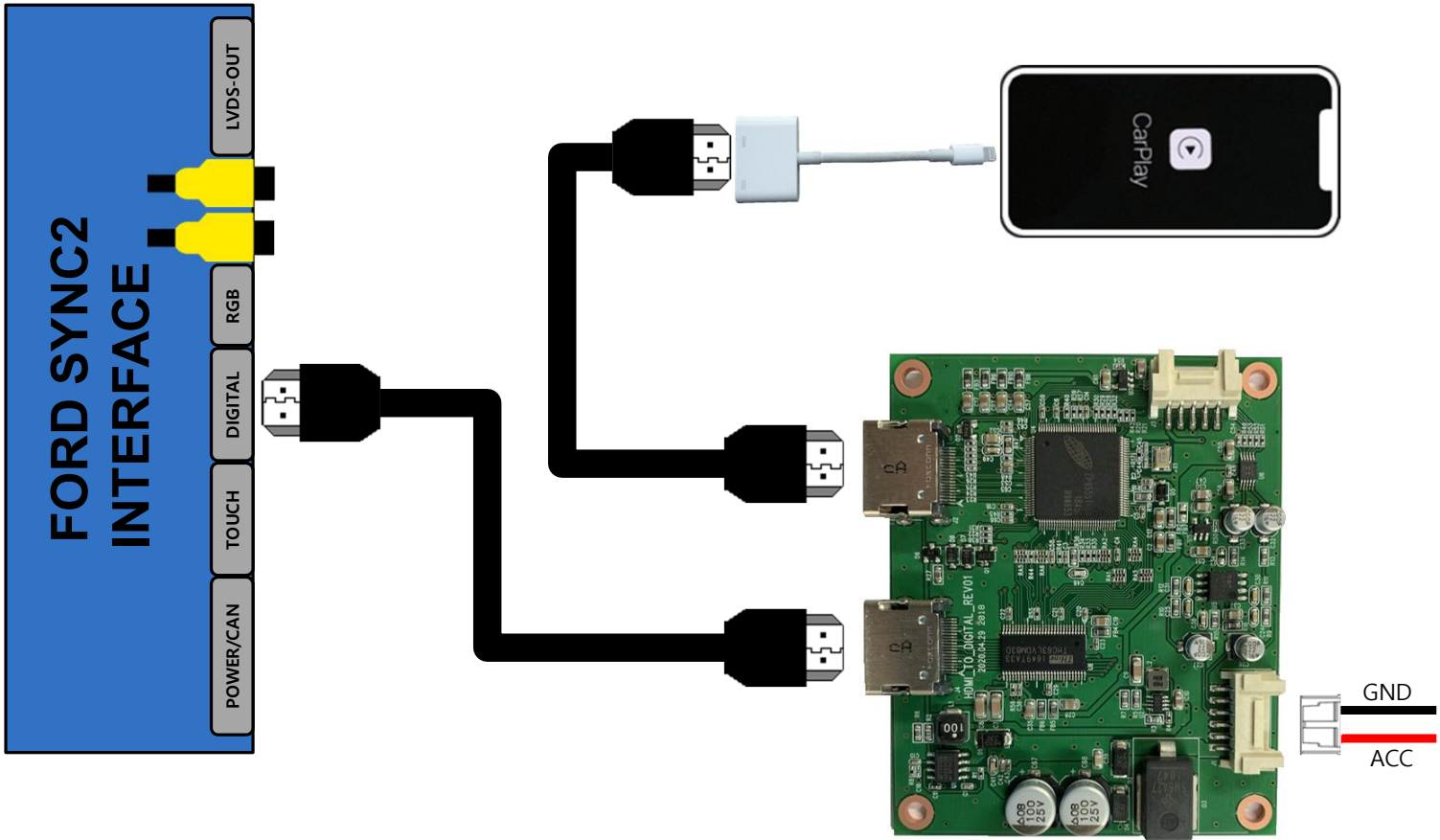
* When installing CarPlay, set it to OSD MENU-OPTION-NAV COM-NV17.



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11. Install Manual

8. Installation HDMI-TO-DIGITAL Connection

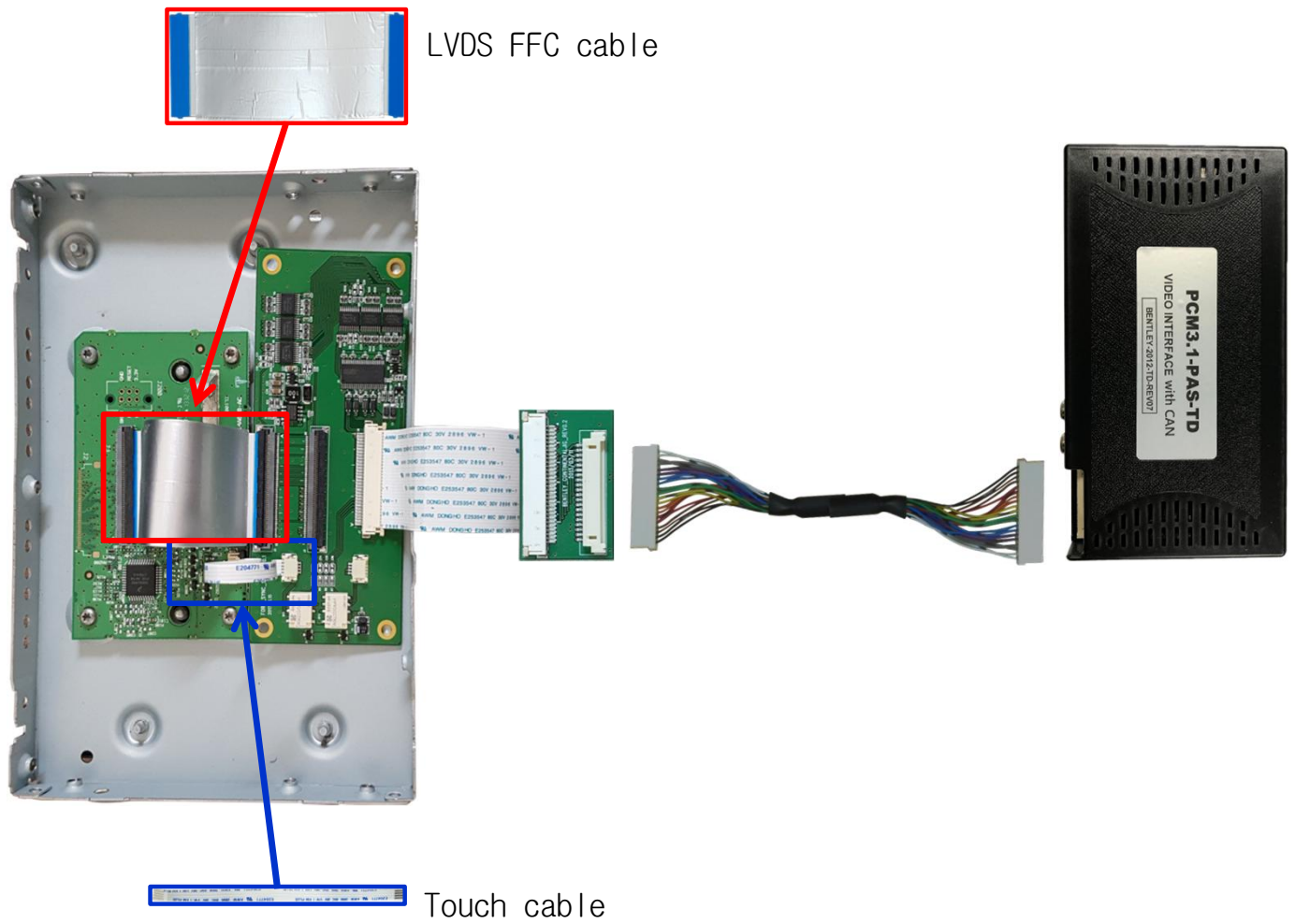


MENU	NAVI-RGB	NAVI
Config	NAVI-RGB	DIGITAL-GI7000A
Option	DVB-T(DMB)	DIGITAL-NV17
Image	DVD	HIMI-720P
Screen	RearCam	GI5000-WVGA
Parking	FrontCam	CNT-WVGA

- Select the navigation you want to use from the above items.

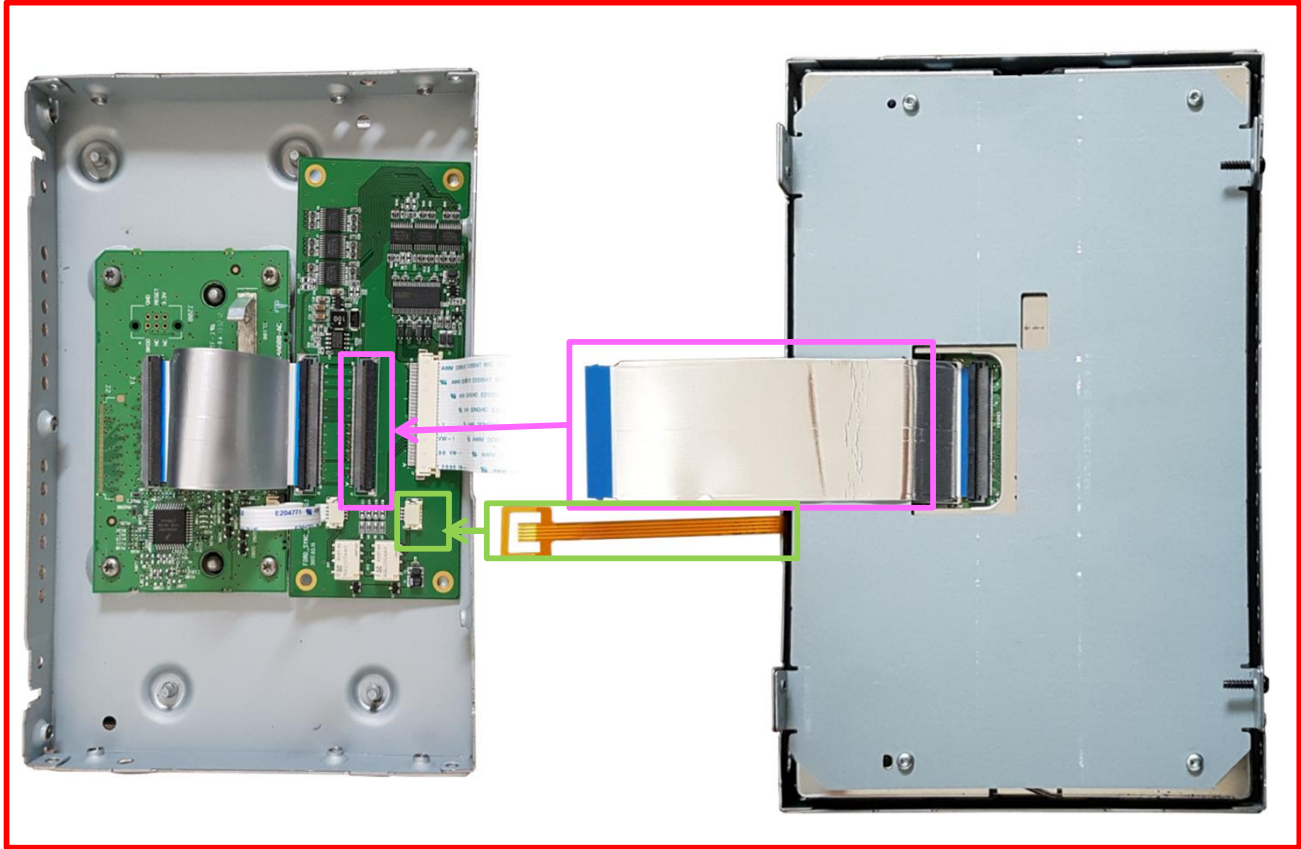
11. Install Manual

8. Installation

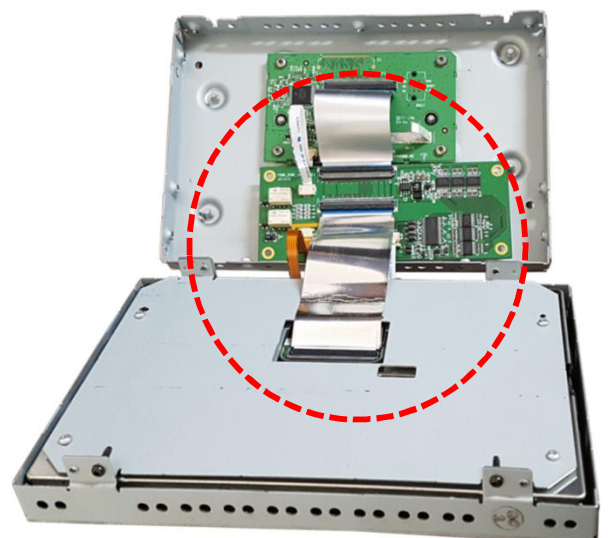


11. Install Manual

8. Installation



Install as above image



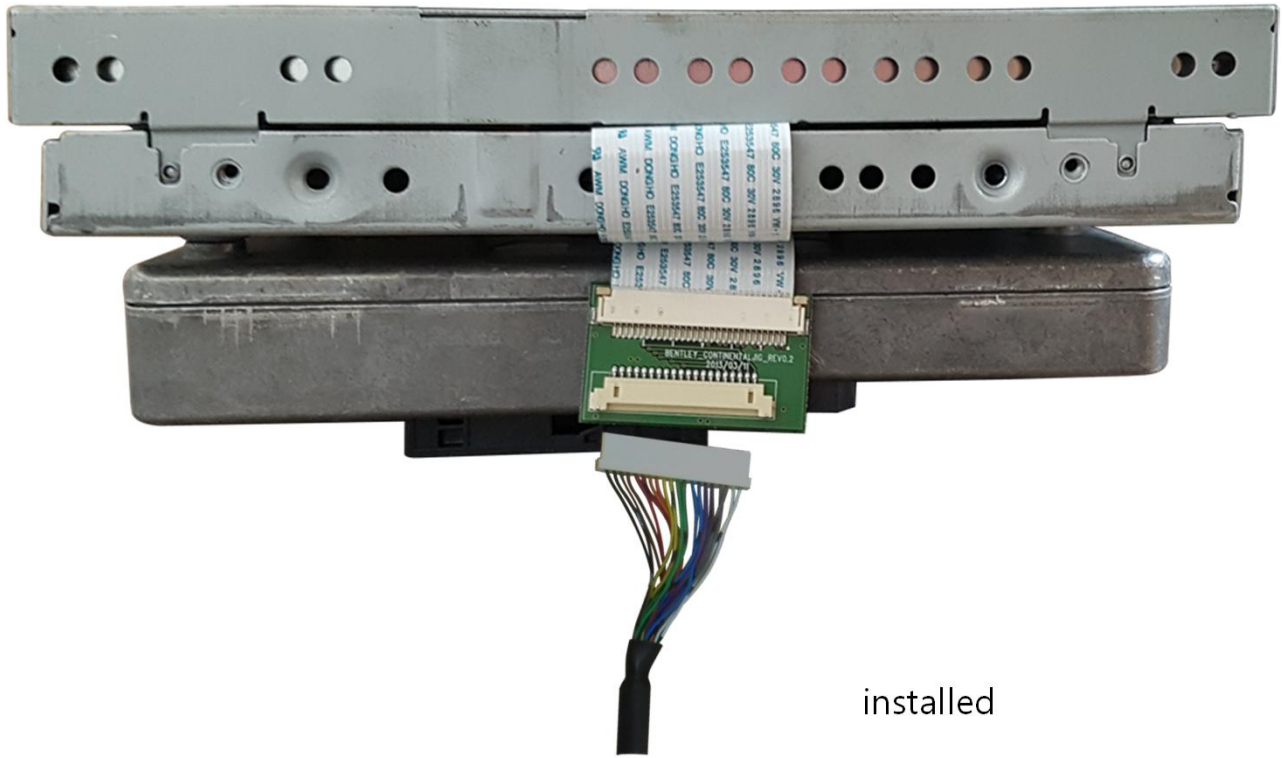
Installed appearance



GU Electronic

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GU Electronic

12. Q & A

FAQ

1. Not possible to switch mode
 - Check connection of OSD Key pad wire
 - Check CAN connection
2. Display wrong size of picture
 - Check Dip s/w setting
3. Display black screen in OEM mode
 - Check connection of LVDS/LCD cable
4. Not possible to switch to rear screen
 - Check the packing setting (OSD Menu – option – RearCam-Det)

Caution

1. The device must not be installed in where it interferes driving
(close to brake pedal, steering wheel, airbag etc.)
2. LVDS cable must be connected correctly according to the manual
3. Insulate the end of wire by using electrical tape
4. The installation should be done by expert
5. GU electronic does not take any responsibility for any problem caused by wrong installation
6. How to distinguish between FORD SYNC2 and SYNC3



SYNC2



SYNC3

