

Video Interface ML2012-TDC User Manual

car-solutions.com

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1. Main Specifications

1. Input Spec. (MULTI VIDEO INTERFACE)

- 1 x Digital RGB Input (Navigation System source)
- 1 x Analog RGB Input (Navigation System output)
- 2 x A/V Input (External video source)
- 1 x CVBS (REAR CAMERA) Input. (Rear camera source)
- 1 x CVBS (FRONT CAMERA) Input. (Front camera source)
- 1 x LVDS Input. (Car Command System)

2. Output Spec.

- 2 x CVBS Output (Video out for Installing Headrest Monitor)
- 1 x Audio L/R Output.
- 1 x Virtual Analog Touch (Navigation System source)
- 1 x UART Digital Touch (Navigation System source)
- 1 x LVDS Output (LCD Operation)

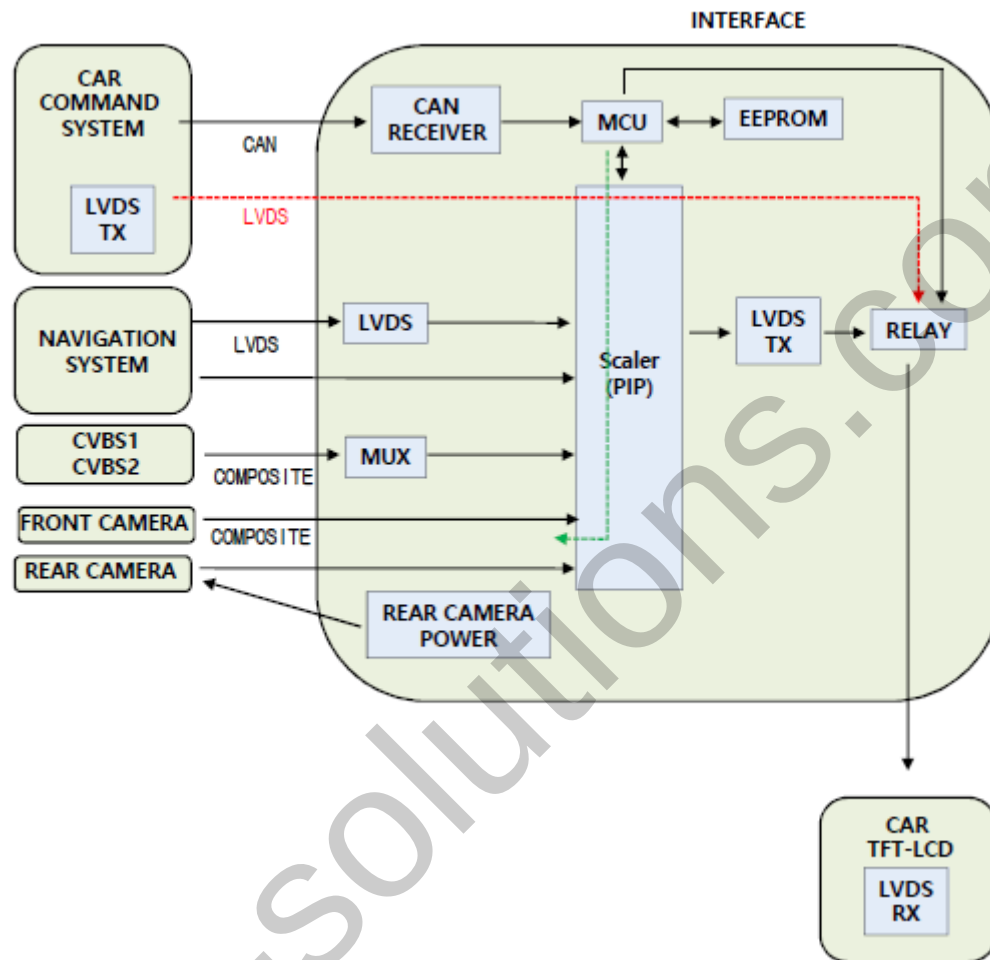
3. Power Spec.

- 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



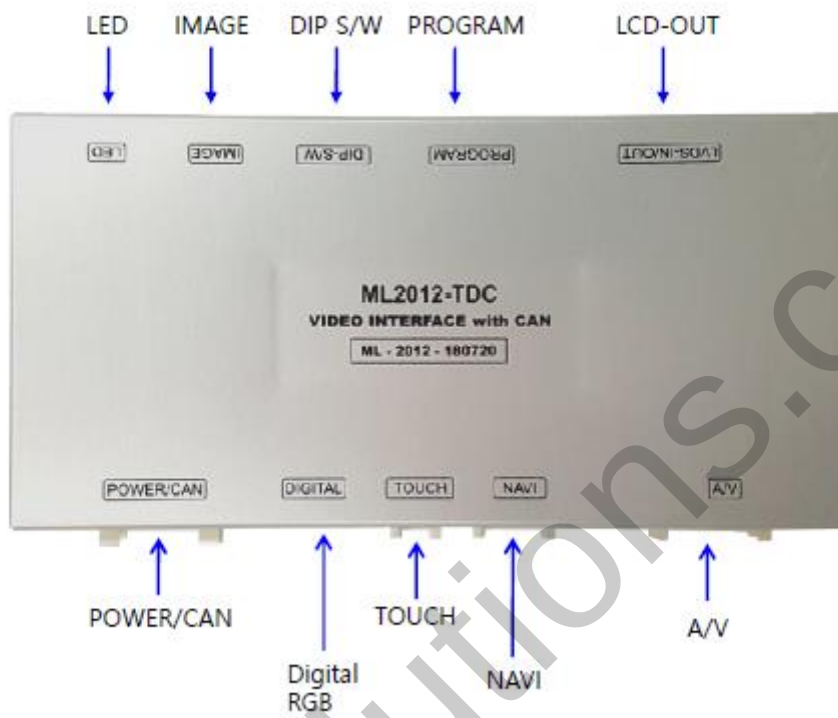
3. Dimensions

156mm * 83mm * 22mm

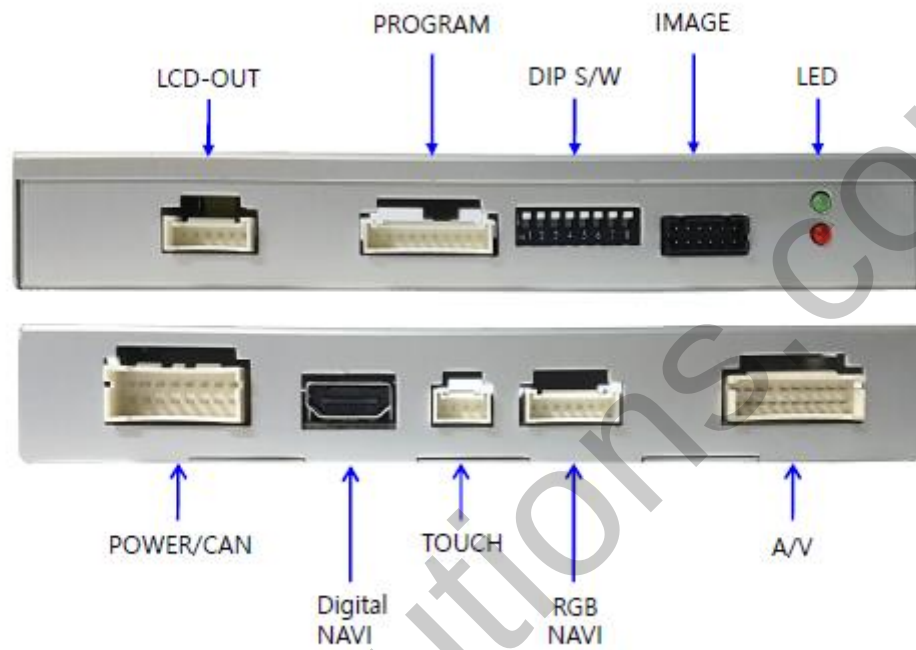


* This can change under manufacturer's circumstance

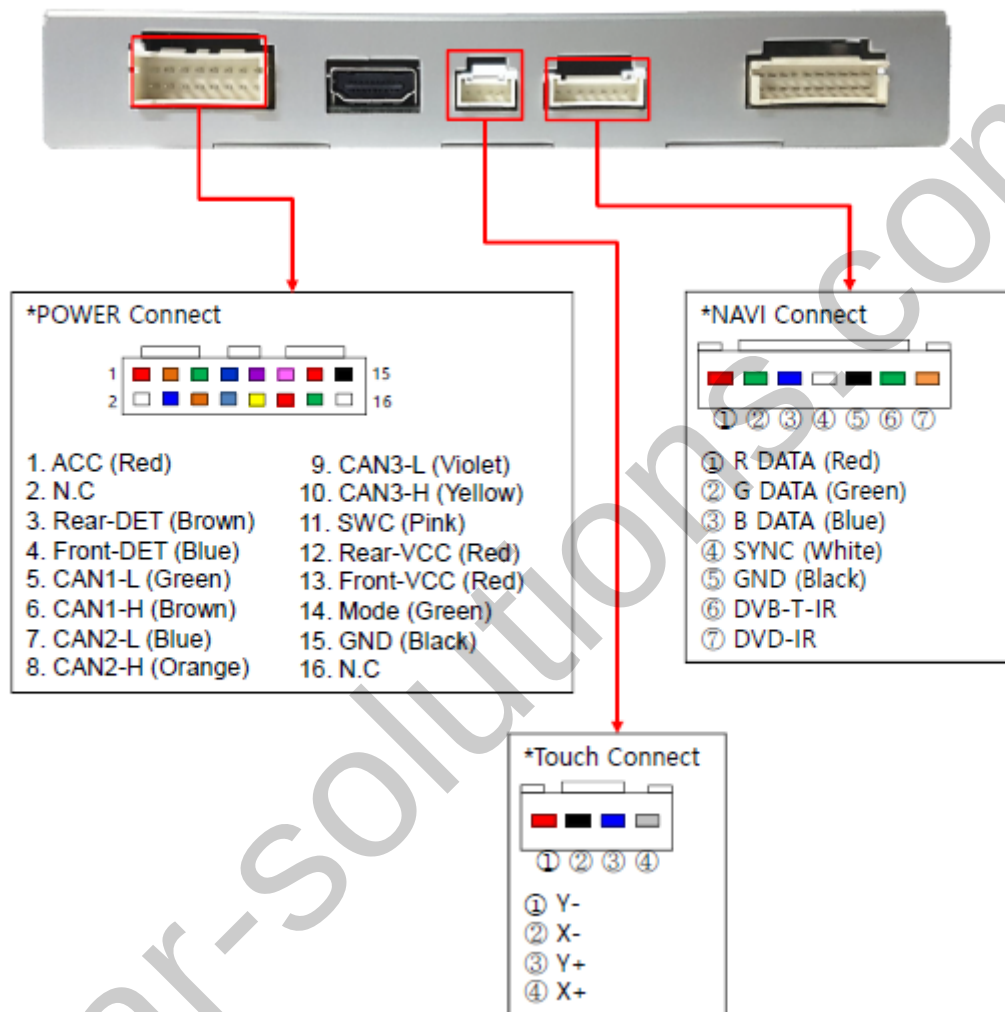
4. External Appearance



4. External Appearance



5. Connector Pin Assignment



6. Package Content



Interface 1 EA



Mode S/W 1 EA



Power Cable 1 EA



A/V Cable (24pin) 1 EA



RGB NAVI Cable(7pin) 1 EA



OSD Board 1 EA



Touch convertor Cable(KD-900) 1 EA



LVDS Cable 1 EA

6. Package Content

* CarPlay Set Sales (optional) – KPLAY



Interface 1 EA



AUX Cable 1 EA



Power Cable 1 EA



HDMI Cable 1 EA



Bluetooth / Wifi Antenna 2EA



Microphone 1 EA

6. Package Content

* CarPlay Set Sales (NV17) – KPLAY



CarPlay Main 1 EA



AUX Cable 1 EA



Power Cable 1 EA



HDMI Cable 1 EA



Microphone 1 EA

7. DIP S/W Settings

* 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



Malibu 7" 800*480,



Alpheon 7" 800*480,



GL8 7" 800*480,



REGAL 7" 800*480,



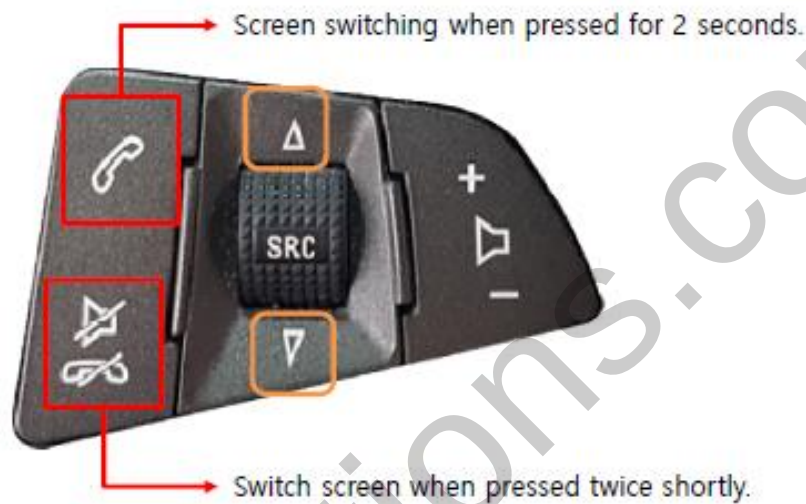
LACROSSE 7" 800*480,



HOLDEN Commodore 7"

8. Mode Changing

Mode Change SteeringWheel



MENU	SteeringWheelBtn	NAVI
Config	FrontCan-Pover	Auto
Option	FrontCan-Det	ExtWire
Image	FrontCan-RcvOpt	USER
Screen	AV Out	On
Parking	SteeringWheelBtn	On Off

- To use the Steering button You must select the "ON" button in the menu.
- Select "OFF" when not in use.



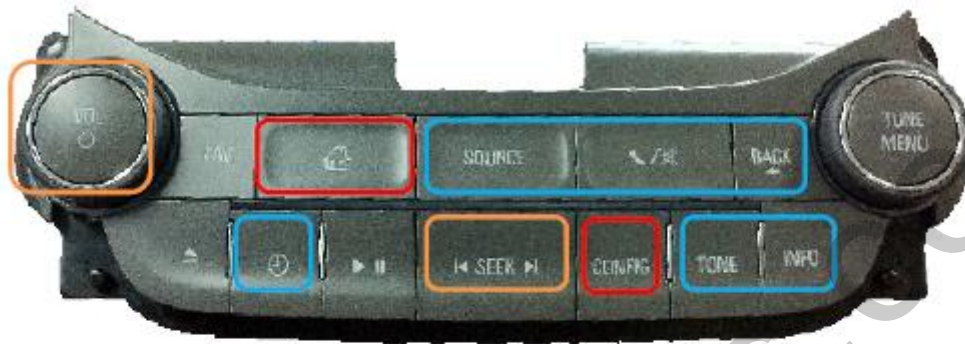
MENU	SteeringChannel	NAVI
Config	SteeringChannel	On Off
Option	Mode Button	NAV
Image	UI DVB-T(IMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	Off

- To use the Steering button You must select the "ON" button in the menu.
- Select "OFF" when not in use.



8. Mode Changing

Mode Change Button for MALIBU



☐ Return OEM display

MENU	Mode Button	NAV
Config	SteeringChannel	On
Option	Mode Button	HOME CPG NAV OFF
Image	UI DVB-T(DMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	Off

- To use the Steering button You must select the "HOME" or "CONFIG" or "NAV" button in the menu.
- Select "OFF" when not in use.

☐ mode change(1 second)

MENU	ScrChg-Btn	NAV
Config	SteeringChannel	On
Option	Mode Button	NAV
Image	UI DVB-T(DMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	On OFF

- Turn the button to show the oem screen for 3 seconds

☐ 2second OEM display

8. Mode Changing

Mode Change Button for ALPHEON/LACROSSE



 Return OEM display

MENU	Mode Button	NAV
Config	SteeringChannel	On
Option	Mode Button	HOME CPG NAV OFF
Image	UI DVB-T(DMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	Off

- To use the Steering button You must select the "HOME" or "CONFIG" or "NAV" button in the menu.
- Select "OFF" when not in use.

 mode change(1 second)

MENU	ScrChg-Btn	NAV
Config	SteeringChannel	On
Option	Mode Button	NAV
Image	UI DVB-T(DMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	On OFF

- Turn the button to show the oem screen for 3 seconds

 2second OEM display

8. Mode Changing

Mode Change Button for REGAL



☐ Return OEM display

MENU	Mode Button	NAV
Config	SteeringChannel	On
Option	Mode Button	HOME CFG NAV
Image	UI DVB-T(DMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	Off

- To use the Steering button You must select the "HOME" or "CONFIG" or "NAV" button in the menu.
- Select "OFF" when not in use.

☐ mode change(1 second)

MENU	ScrChg-Btn	NAV
Config	SteeringChannel	On
Option	Mode Button	NAV
Image	UI DVB-T(DMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	On Off

- Turn the button to show the oem screen for 3 seconds

☐ 2second OEM display

8. Mode Changing

Mode Change Button for REGAL



MENU	Mode Button	NAV
Config	SteeringChannel	On
Option	Mode Button	HOME CPG NAV
Image	UI DVB-T(DMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	Off

- To use the Steering button You must select the "HOME" or "CONFIG" or "NAV" button in the menu.
- Select "OFF" when not in use.

☐ mode change(1 second)

MENU	ScrChg-Btn	NAV
Config	SteeringChannel	On
Option	Mode Button	NAV
Image	UI DVB-T(DMB)	On
Screen	UI DVD	On
Parking	ScrChg-Btn	On Off

- Turn the button to show the oem screen for 3 seconds

☐ 2second OEM display

9. Touch Control

Touch control - Calibration



Press and hold for more than 11 seconds on NAVI, DVB-T, DVD screen.
(Note that it only works the first time after switching screens)

OR

MENU	Calibration	NAVI
OSD	Factory Reset	Execute Cancel
IR-Ctrl	Calibration	Execute Cancel
Utility	Version	FISHHOOKRX-180112

OSD menu -> Utility -> Calibration



+ Touch according to the shape coordinates.

9. Touch Control

DVB-T/DVD Control



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	NAVI
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
	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
	AV Out	AV1	In the OEM, NAVI, AV1, FRONT, and REAR modes, the output of AV OUT is set to AV1.
		AV2	In the OEM, NAVI, AV2, FRONT, and REAR modes, the output of AV OUT is set to AV2.

10. OSD (On Screen Display) Control

OSD - Option Menu

First Menu	Second Menu	Third Menu	Description
Option	AV Out	USER	In the OEM, NAVI, FRONT, and REAR modes, output the output of AV OUT to the final screen.
	SteeringWheel Btn	ON	To use the Steering button You must select the "ON" button in the menu
		OFF	Do not use features.
	Steering Channel	ON	Use DVB-T Channel Up / Down with Steering wheel button
		OFF	Do not use features.
	Mode Button	HOME	Switching screen by using "HOME" button
		CFG	Switching screen by using "CONFIG" button
		NAV	Switching screen by using "NAV" button
		OFF	Do not use features.
	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
	ScrChg-Btn	On	Turn the button to show the oem screen for 2 seconds
		Off	Disable feature
	Reset	Execute	Option Menu all Reset

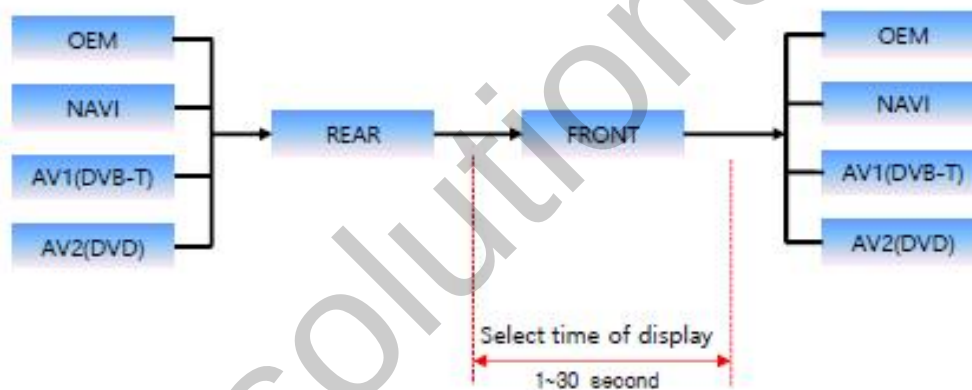
10. OSD (On Screen Display) Control

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	



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 >>



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	MAVI
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
	Grid Type	Full	Do not show OPS
		SPLIT	Show OPS
	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

10. OSD (On Screen Display) Control

OSD Parking – OPS Display On / Off

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



OPS ON Screen

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



OPS OFF Screen

OSD Parking – Guide line On / Off



Parking Line ON Screen



Parking Line OFF Screen

10. OSD (On Screen Display) Control

OSD Parking – Change warning language

MENU	Parking / Warning Lang	DEAD
Config	OPS Display	English
Option	Line Display	中文
Image	Warnings Lang	한국어
Screen	Horizontal	台灣
Parking	Vertical	Россия

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!
Россия	→	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	60

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	value	OSD Menu Horizontal Shift
	Vertical	value	OSD menu vertical Shift
	Display Time	value	OSD Menu Display Time (in seconds)
	Transparency	value	OSD menu transparency
	Language		OSD menu display language
	Reset	Execute	Initialize OSD settings

MENU	Horizontal		DVB-T
OSD	Horizontal	50	50
IR-Ctrl	Vertical	50	50
Utility	Display Time	10s	10s
	Transparency	30	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.



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



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



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)

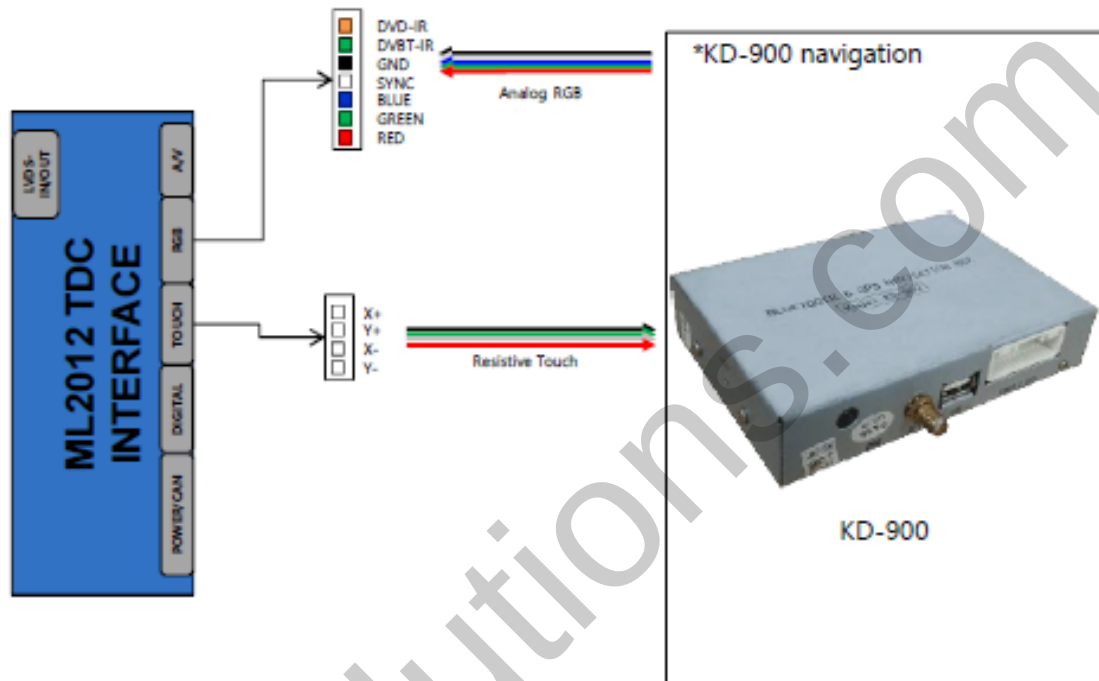
Last Source : FDSYOOKRX-180209



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

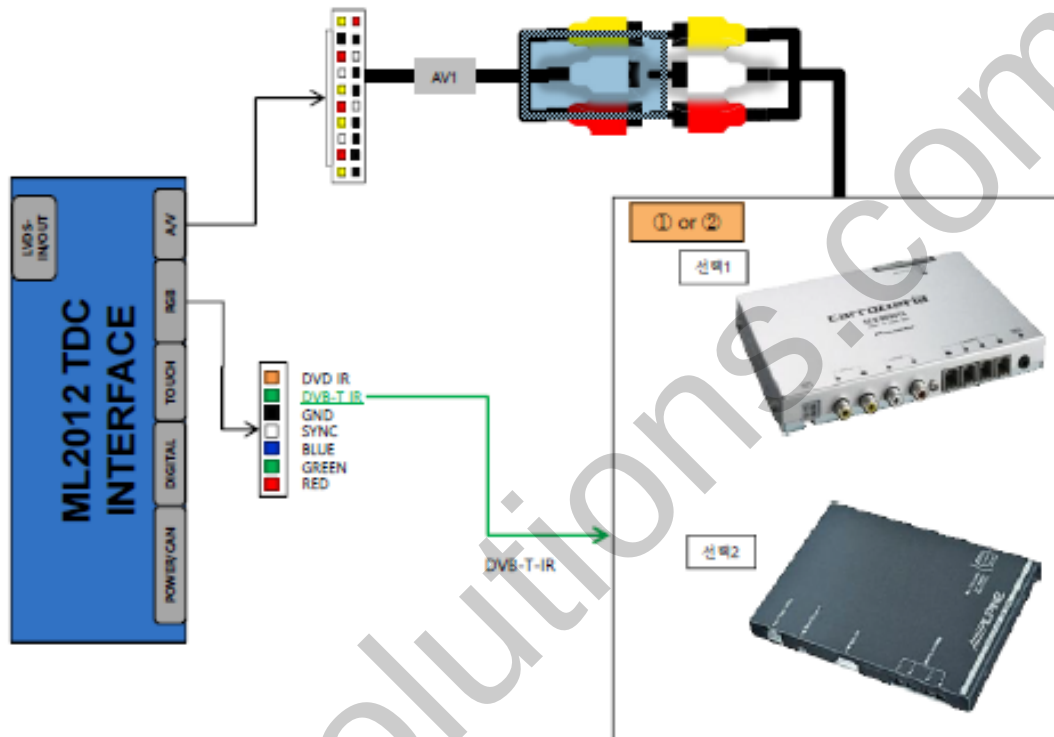
11. Installation Guide

1. Installation Navigation Connection



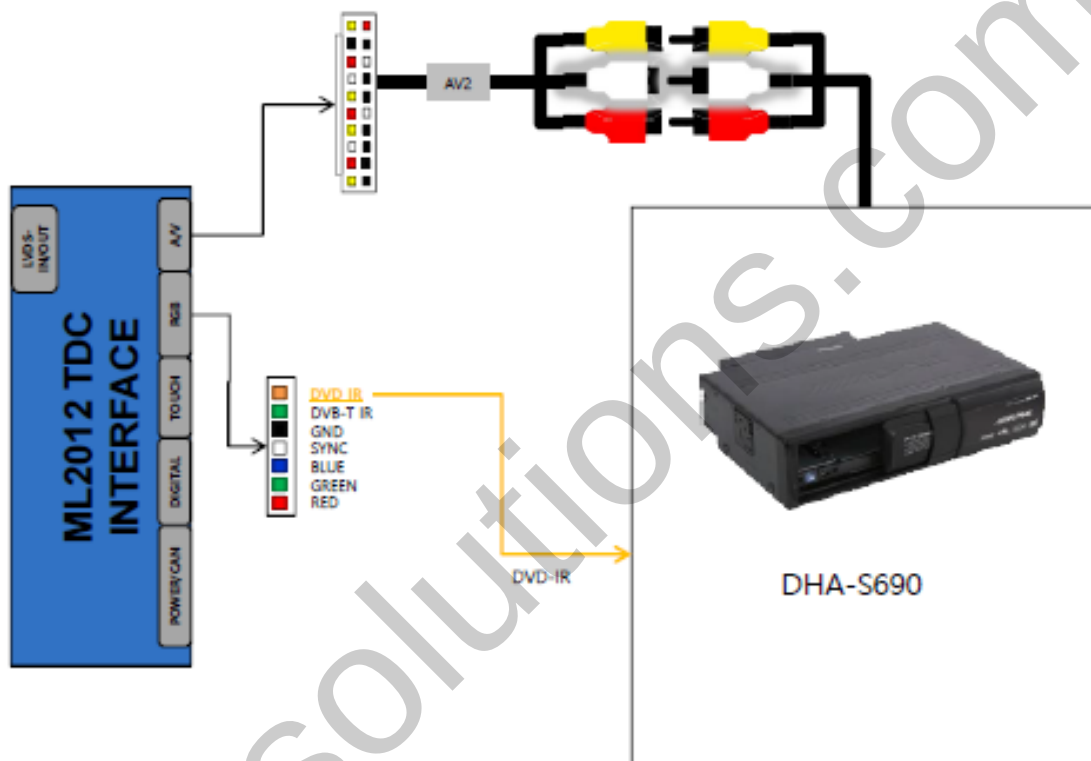
11. Installation Guide

2. Installation DVB-T Remote Control Connection



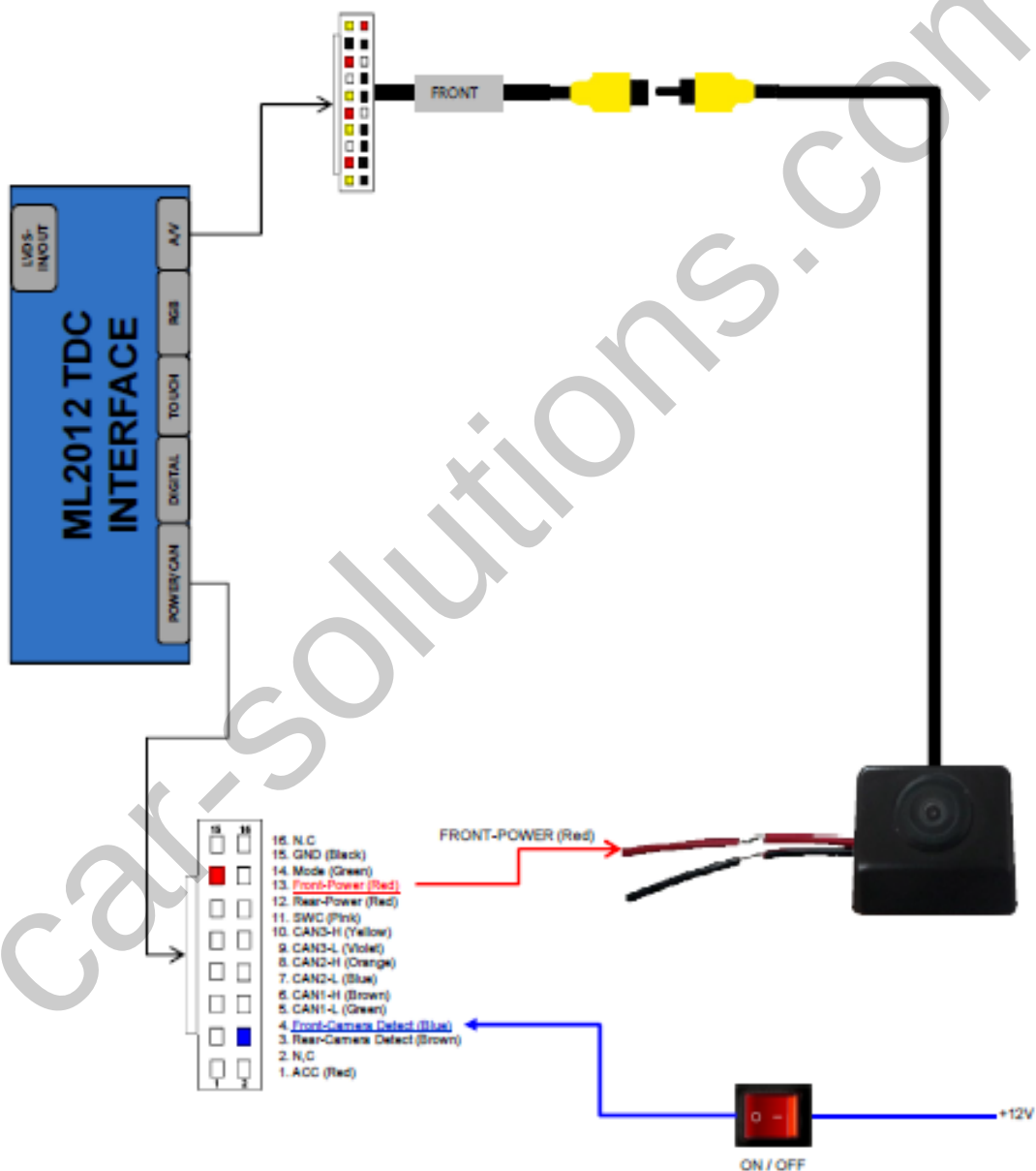
11. Installation Guide

3. Installation DVD Remote Control Connection



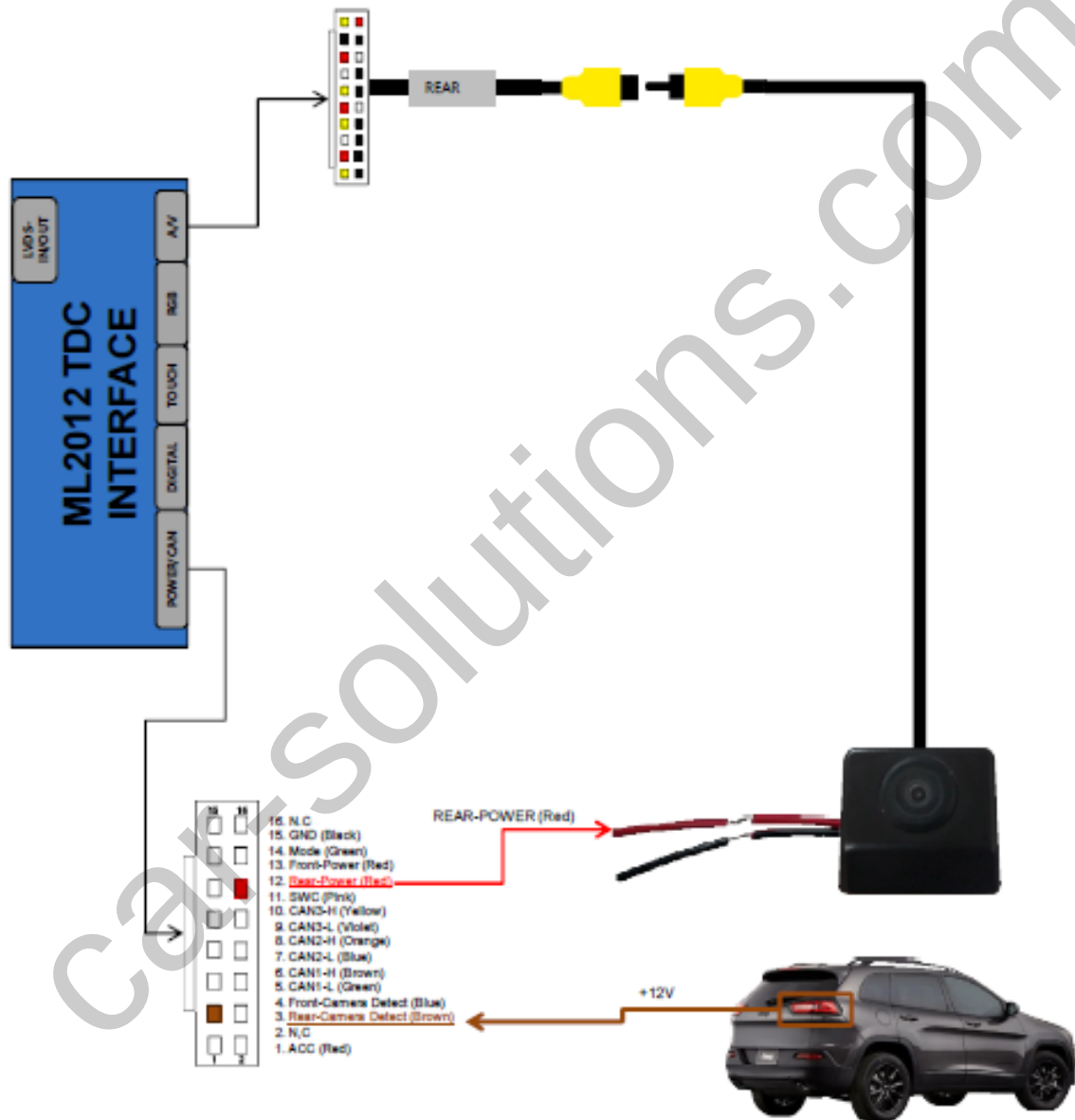
11. Installation Guide

4. Installation External Front Camera Connection



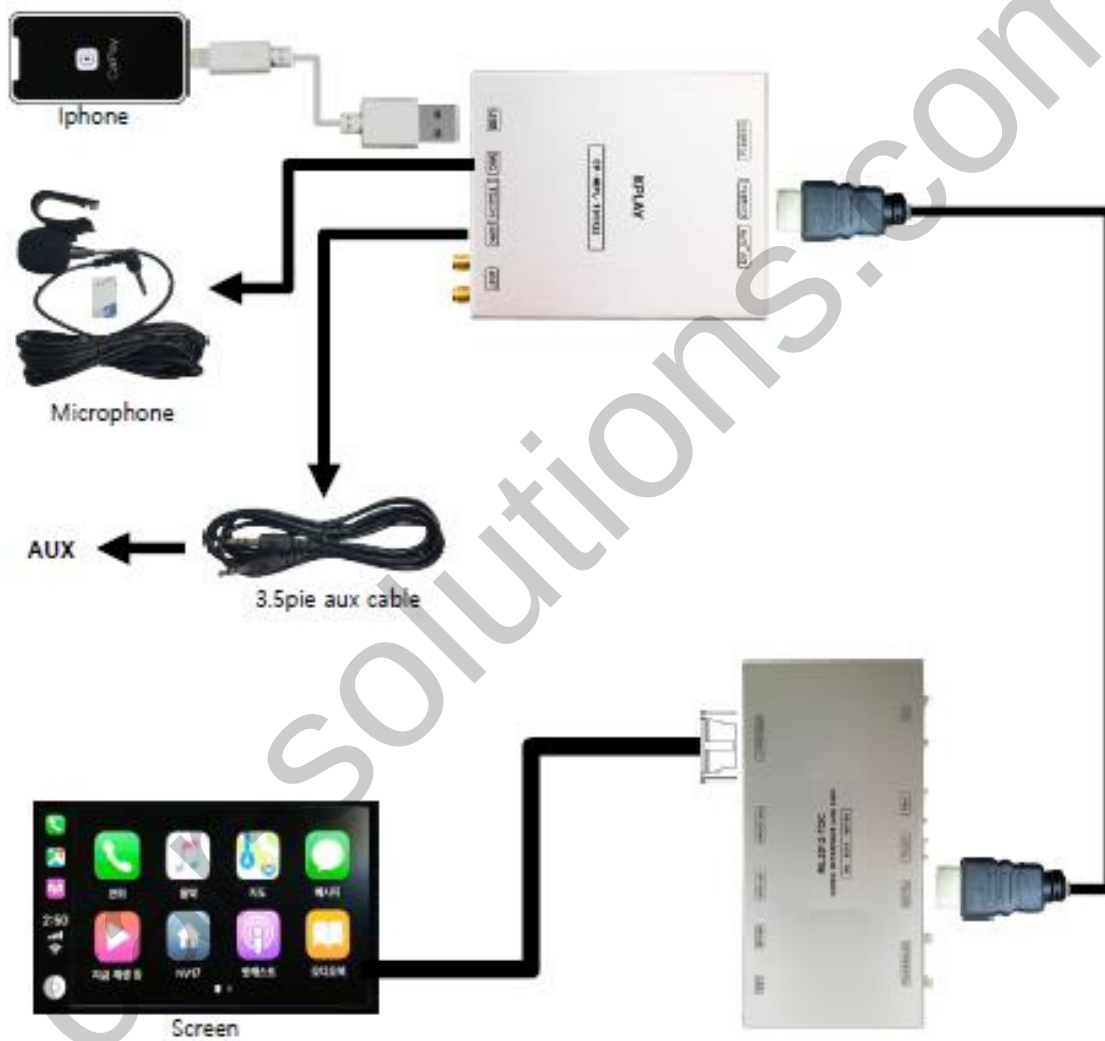
11. Installation Guide

5. Installation External Reverse (Rear) Camera Connection



11. Installation Guide

6. Installation CarPlay – KPLAY



11. Installation Guide

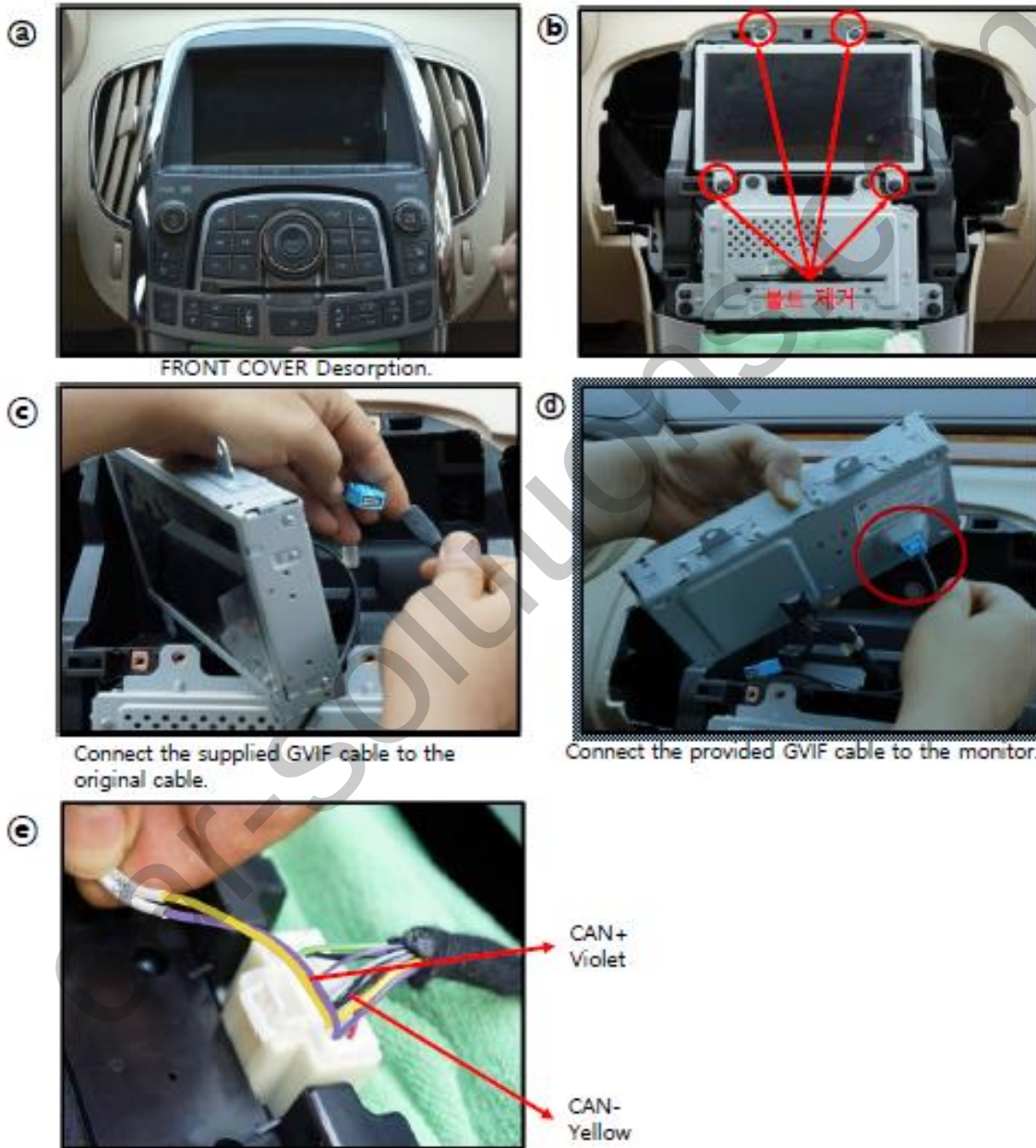
7. Installation CarPlay – NV17

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



11. Installation Guide

8. Installation – LaCrosse



11. Installation Guide

8. Installation – REGAL



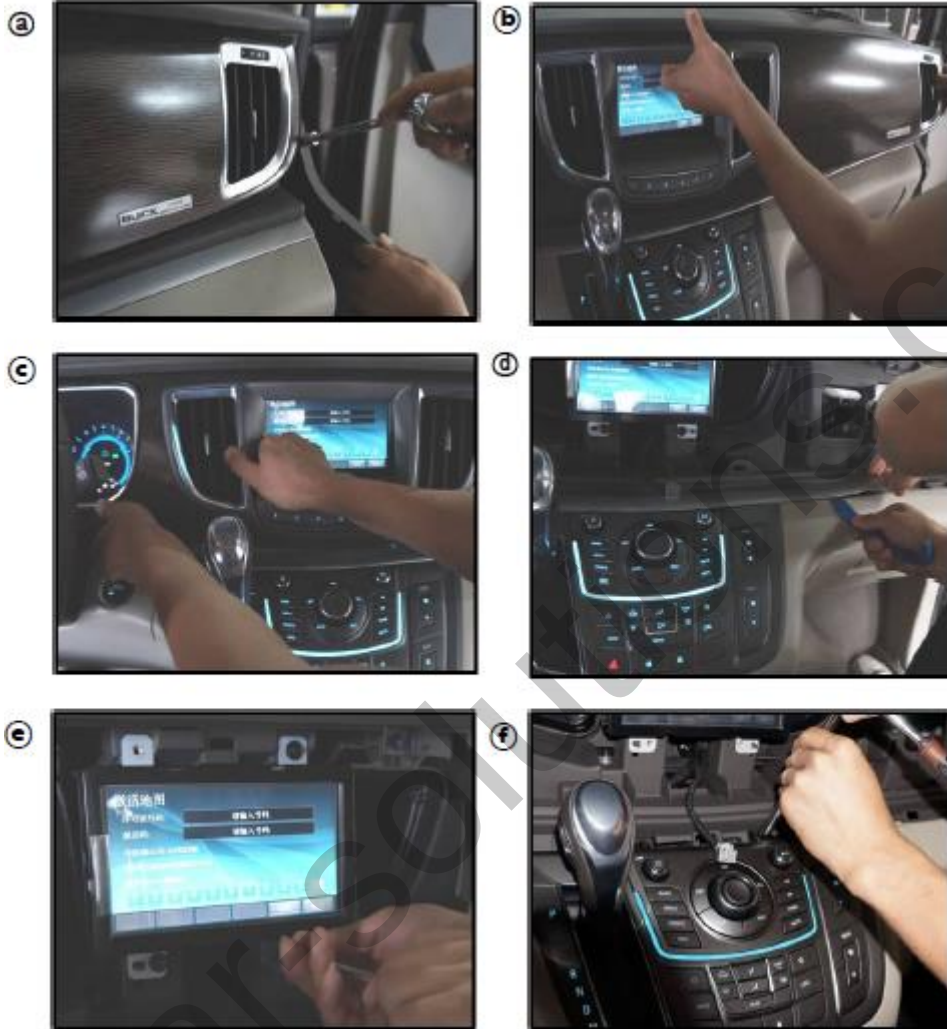
11. Installation Guide

8. Installation – REGAL



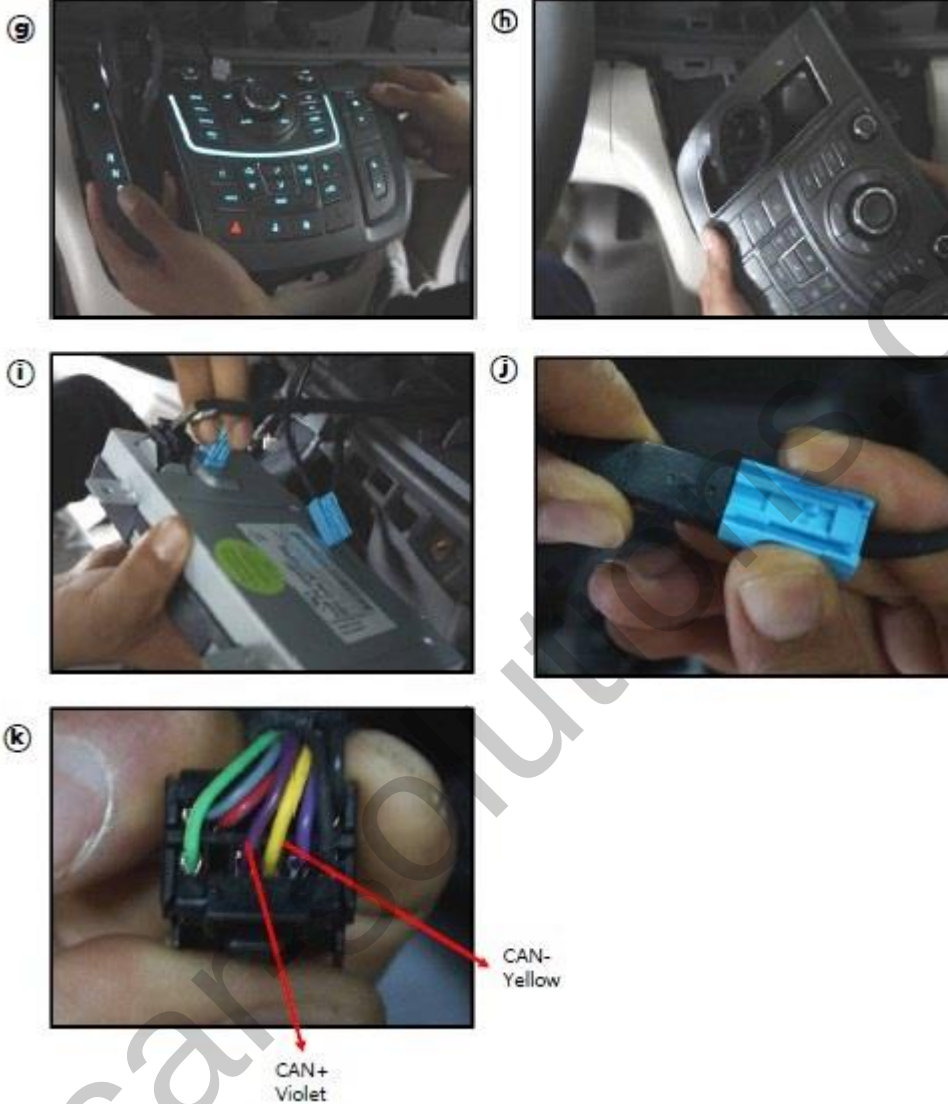
11. Installation Guide

8. Installation – GL8



11. Installation Guide

8. Installation – GL8



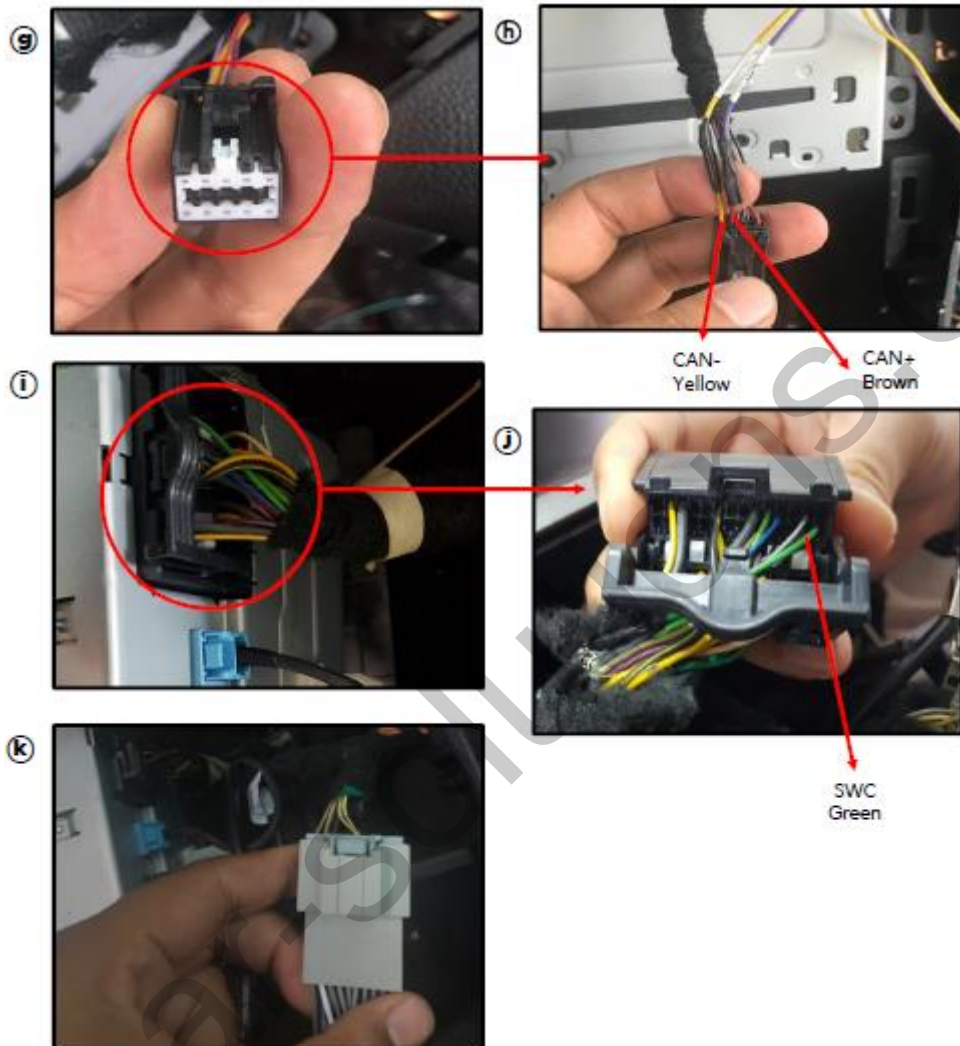
11. Installation Guide

8. Installation – MALIBU



11. Installation Guide

8. Installation – MALIBU



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