

**Appendix 6.**

**User manual**

## **2-DIN, 7" Touch screen vehicle monitor for allround vision**



**Model : MXN-7DDT**

Design and Specifications are subject to change without notice.

# 2-DIN, 7" Touch screen Monitor

## Model : MXN-7DDT

### Instruction Manual (Ver 1.0)

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1. Caution
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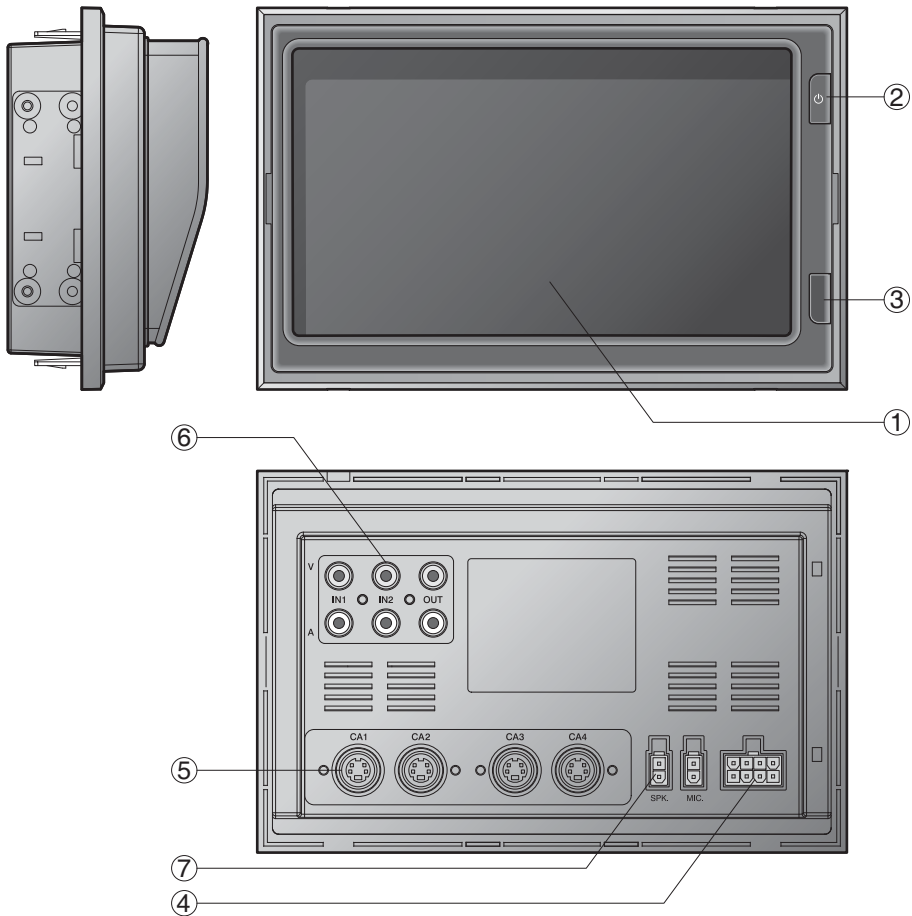
- Thank you for purchasing our touchscreen vehicle monitor.
- Please read this manual before you use the product.
- The product may be different than described in the manual; depending on renewal and/or upgrade of S/W version and performance it can be altered without notice.

# Caution

- For your safe operation, please read this manual before you start to use the product. We inform you that our company shall not be responsible for failures and troubles that are occurred due to misuse or neglect of the cautions written on this manual.
- Operating this equipment when driving a vehicle might cause an accident. Use the equipment after parking or stopping the vehicle in a safe area.
- When wiping off the dust, use a soft fabric instead of liquid solvents (thinner, benzene etc.) solution or a wet rag.
- Do not press the liquid crystal screen hard. It might be damaged by hard pressure.
- Do not drop or give shock. It might cause breakdown or damage.
- Do not dismantle the product arbitrarily. We do not supply free after service for an arbitrarily dismantled product.
- Touching the power with a wet hand causes electric shock. Caution required.
- For accessories or cables to connect with the product, it is recommended to use proper goods from our company. We are not responsible for any problems caused by wrong articles.
- Do not disconnect the power cable during using the product. It might cause damage to the product.
- Amplified explanation is as follows.
  - Caution: This part informs what to keep in mind or understand and what caution is required to use the product.
  - Ref (reference): Reference is about functional explanation.

**Caution : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

# Components of the product



## ① Touch Screen

- By touching one of the small pictures during multi screen mode, the concerning small picture will be enlarged into Full Screen mode.
- By touching the screen it is possible to control the equipment or to change the settings.

## ② Power On/Off

- Press the Power button for 0.5 seconds to turn on the screen.
- Press the Power button for 0.5 seconds to turn off the screen when it is tuned on.

## ③ Illuminance Sensor

- Behind this window a sensor detects the actual light conditions in the area around the screen. When activated via the menu settings, this sensor automatically controls the brightness of the screen. (Day/Night control)

# Components of the product

## ④ Power Input

- Connect the Power Cable ( VCC/GND/TRIGGER1~TRIGGER5/Speed Switch )

## ⑤ Camera Input

- Connect the Camera Cable ( Cam1 ~ Cam4 )

## ⑥ AV In/Out

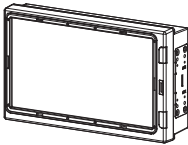
- AV IN: AUX1 & AUX2 (RCA), AV Out (RCA)

## ⑦ Ext. Speaker output / Mic. input

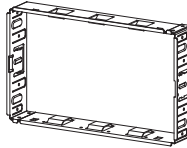
- Connect the external speaker (left side terminal)
- Connect the optional microphone (right side terminal)

## Package Contents

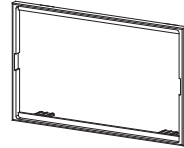
- Please check that you have the correct contents before using this product.
- If any items are missing, please contact your dealer.



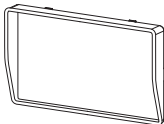
Monitor



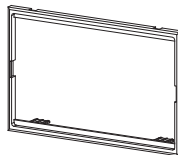
Trim Bracket



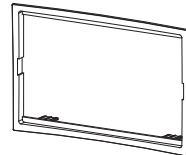
Deco Plate A  
(Dimensions:187.6 x 121.4mm)



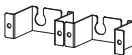
Sunvisor



Deco Plate B  
(Dimensions:187.6 x 115.4mm)



Deco Plate C(Optional)  
(Dimensions:190.4x 124mm)



Cable Bracket(2EA)



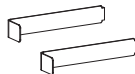
Power Cable



Speaker Cable



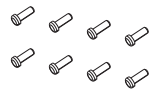
Instruction Manual



Ejection Key(2EA)



Tapping Screw  
T2 3X6L (4EA)



Tapping Screw  
T2 2.3X8L (8EA)

# How to use the product






## Start Screen

- When the booting is ready, the multi screen as below will be displayed

When the small window is touched, it is enlarged.



- When the small windows on the multi screen are touched, the channel is enlarged into full screen mode. One more touch returns it back to the multi screen mode.

-  : Controls volume of the speaker
-  : Settings menu
-  : Run the Bluetooth Phone (Optional function)
-  : Change Input signal
-  : Multi screen mode

# How to use the product

## Volume Control



Press the button to display Volume Pop-up.



- ① Press the button to mute
- ② Press the button to increase the volume
- ③ Press the button to decrease the volume



# How to use the product

## Input selection



Press the Input button to change Input



Press input button  
once: AUX1

Press input button  
3 times: Cam



Press input button twice: AUX2

# How to use the product

## Multi screen



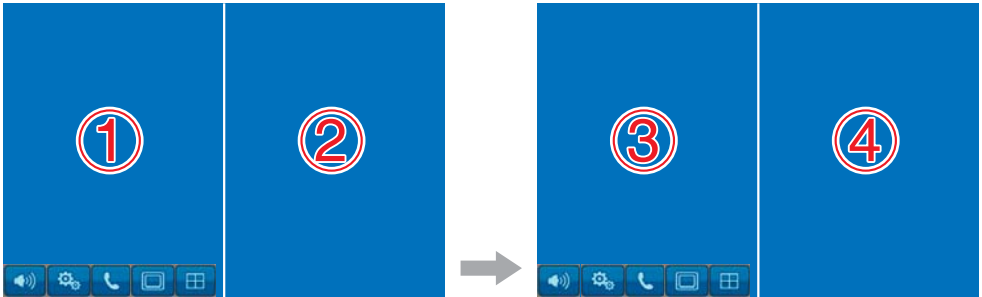
Press the multi screen button to divide the screen.



Press multi screen  
button once:  
Cam1,Cam2



Press multi screen  
button 3 times:  
Cam1,2,3,4



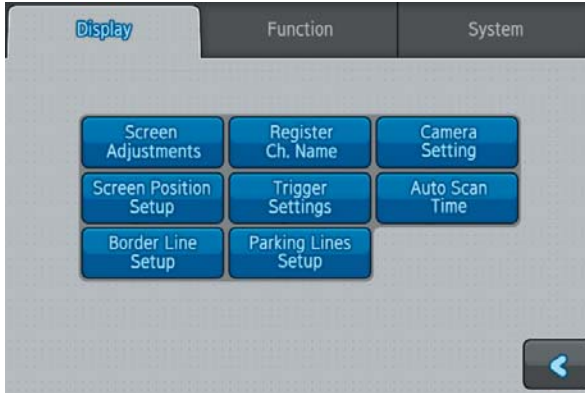
Press multi screen button twice: Cam3,Cam4

# How to use the product

## Setting Mode



Press the setting menu button to open the Setting screen.



### Screen Adjustments



- CAM : Adjust brightness of Camera input screen
- AUX : Adjust brightness of AUX screen

# How to use the product

## Display

### Register Ch. Name

Input the name into each channel.

Ch. Name Change

Ch.1

Ch.2

Ch.3

Ch.4

Display Ch. Name

On

Off

OK Cancel

### Camera Setting

Mirror Up Shutter

Cam.1

Cam.2

Cam.3

Cam.4

OK Cancel

- Mirror : Mirror image or normal image
- Up : Change up and down of the screen
- Shutter : Enable to operate Shutter/Heater Camera

# How to use the product

## Display

### Screen Position Setup

Setup screen position of each channel

Screen Position Setup			
<b>Ch.1</b>	<input type="radio"/> None	<b>Ch.2</b>	<input type="radio"/> None
<input type="radio"/> Cam.1	<input type="radio"/> Cam.2	<input type="radio"/> Cam.1	<input type="radio"/> Cam.2
<input type="radio"/> Cam.3	<input type="radio"/> Cam.4	<input type="radio"/> Cam.3	<input type="radio"/> Cam.4
<input type="radio"/> Aux1	<input type="radio"/> Aux2	<input type="radio"/> Aux1	<input type="radio"/> Aux2
<b>Ch.3</b>	<input type="radio"/> None	<b>Ch.4</b>	<input type="radio"/> None
<input type="radio"/> Cam.1	<input type="radio"/> Cam.2	<input type="radio"/> Cam.1	<input type="radio"/> Cam.2
<input type="radio"/> Cam.3	<input type="radio"/> Cam.4	<input type="radio"/> Cam.3	<input type="radio"/> Cam.4
<input type="radio"/> Aux1	<input type="radio"/> Aux2	<input type="radio"/> Aux1	<input type="radio"/> Aux2

OK Cancel

**Caution:** Cam1 and AUX1 cannot be setup at the same time.  
Cam2 and AUX2 cannot be setup at the same time.

### Trigger Settings

Setup the screen on each Trigger

Trigger Settings			
<b>Ch.1</b>	<input type="radio"/> None	<b>Ch.2</b>	<input type="radio"/> None
<input type="radio"/> Cam.1	<input type="radio"/> Cam.2	<input type="radio"/> Cam.1	<input type="radio"/> Cam.2
<input type="radio"/> Cam.3	<input type="radio"/> Cam.4	<input type="radio"/> Cam.3	<input type="radio"/> Cam.4
<input type="radio"/> Aux1	<input type="radio"/> Aux2	<input type="radio"/> Aux1	<input type="radio"/> Aux2
<b>Ch.3</b>	<input type="radio"/> None	<b>Ch.4</b>	<input type="radio"/> None
<input type="radio"/> Cam.1	<input type="radio"/> Cam.2	<input type="radio"/> Cam.1	<input type="radio"/> Cam.2
<input type="radio"/> Cam.3	<input type="radio"/> Cam.4	<input type="radio"/> Cam.3	<input type="radio"/> Cam.4
<input type="radio"/> Aux1	<input type="radio"/> Aux2	<input type="radio"/> Aux1	<input type="radio"/> Aux2

Trig.1 Trig.2 Trig.3 Trig.4 Trig.5 OK Cancel

The screen will be showed screen by each Trigger set if input Trigger.

# How to use the product

## Display

### Auto Scan Time

Display the full screen according to each channel setup when setting up On

Scan Time ( 0~9sec )       On       Off

Quad Ch.1 Ch.2 Ch.3 Ch.4 Aux1 Aux2

OK Cancel

### Border Line Setup

Display the dividing lines of the screen

Border Line

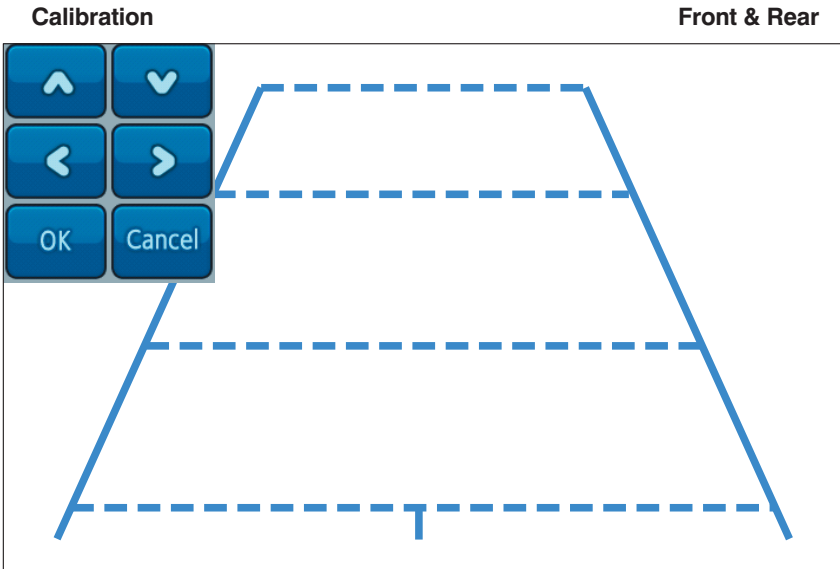
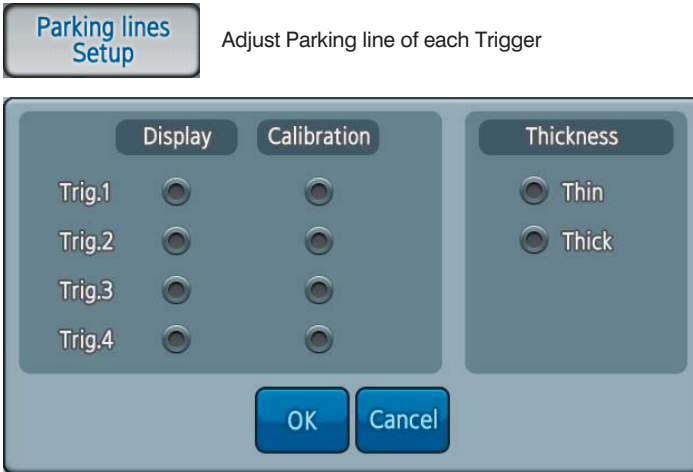
On       Off

OK Cancel



# How to use the product

## Display



# How to use the product

## Function

### Auto Power

The screen is turned ON automatically when starting the vehicle



### Dimmer

Automatic brightness adjustment by sensor in the front housing



Sensitivity of automatic brightness adjustment, level 0 to 10 controlled by actual light conditions (Day/Night)



# How to use the product

## Function

### Trigger Delay Time

Keep Trigger activated during setup time after Trigger off in order to bridge temporary powerloss, e.g. from vehicle's turnlight signal

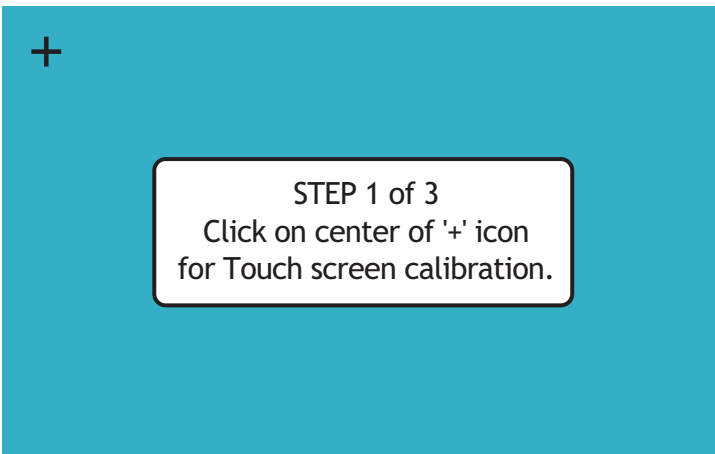
Trigger Delay Time (0~9 sec)

Trig.1 Trig.2 Trig.3 Trig.4 Trig.5

OK Cancel

### Touch Calibration

Re-adjust center Point of Touch panel

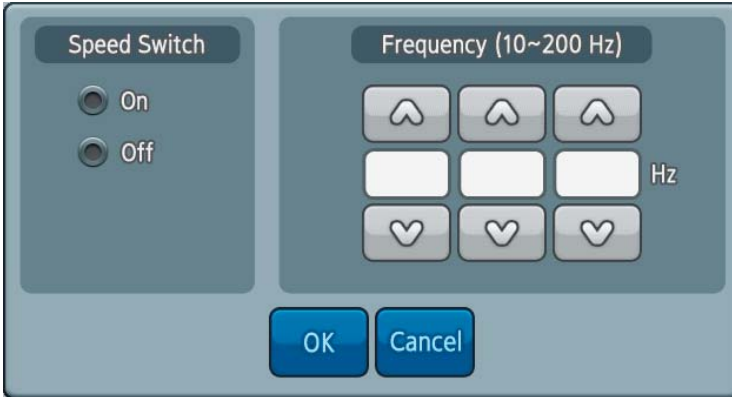


# How to use the product

## Function

### Speed Switch Setup

Detect speed of a vehicle from 10 to 200 Hz



The screen is divided into two main sections. The left section, titled "Speed Switch", contains two radio buttons: "On" and "Off". The right section, titled "Frequency (10~200 Hz)", features a numeric keypad with three columns of buttons. The top row has three up-arrow buttons, the middle row has three blank numeric input boxes followed by "Hz", and the bottom row has three down-arrow buttons. At the bottom of the screen are two blue buttons labeled "OK" and "Cancel".

### Speed Switch Display

To switch automatically into the screen ON mode, by detecting a speed signal (tacho signal)



The screen is divided into three main sections. The left section has two columns of radio buttons: "Under Freq." and "Over Freq.". Each column has seven rows of radio buttons labeled "Normal", "Cam.1", "Cam.2", "Cam.3", "Cam.4", "Aux1", and "Aux2". The right section, titled "Over Freq. Display", contains two radio buttons: "LCD On" and "LCD Off". At the bottom of the screen are two blue buttons labeled "OK" and "Cancel".

# How to use the product

## System

### Menu Display Time

Set time displaying the Menu screen

The screenshot shows a settings menu titled "Menu Display Time". It contains six radio button options arranged in two rows: "On", "3 sec", "5 sec" in the first row, and "10 sec", "15 sec", "1 min" in the second row. At the bottom of the menu are two blue buttons labeled "OK" and "Cancel".

### Screen On Time

Set time displayed on the screen

The screenshot shows a settings menu titled "Screen On Time". It contains six radio button options arranged in two rows: "On", "1 min", "2 min" in the first row, and "3 min", "5 min", "10 min" in the second row. At the bottom of the menu are two blue buttons labeled "OK" and "Cancel".

The screen is turned off when there is no input like touching it or so during setting up time

# How to use the product

## System

### Menu Lock

Set a password to lock the Menu button



### Language

Support languages for each country ( Option )

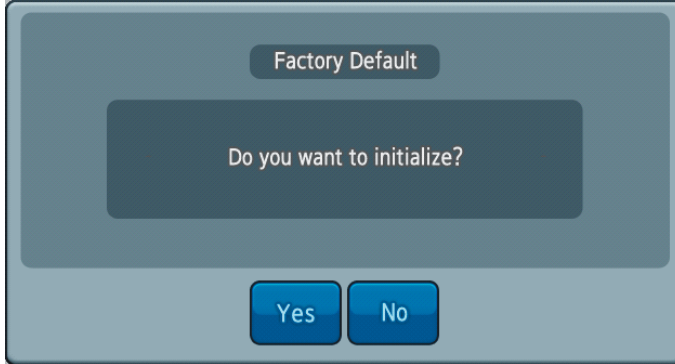


# How to use the product

## System

Factory  
Default

Initializing set points of Menu



Factory Default

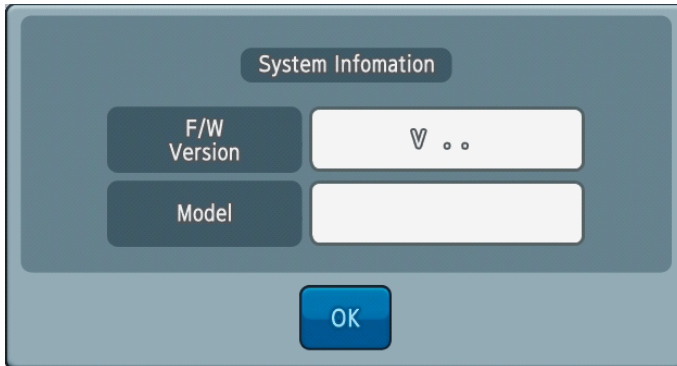
Do you want to initialize?

Yes No

The image shows a screen with a dark blue header containing the text 'Factory Default'. Below the header is a large dark blue rectangular area containing the question 'Do you want to initialize?'. At the bottom of the screen, there are two blue buttons labeled 'Yes' and 'No'.

Sys-Info.

Display Firmware Version and Model name



System Information

F/W Version V ..

Model

OK

The image shows a screen with a dark blue header containing the text 'System Information'. Below the header are two rows of information. The first row has a dark blue label 'F/W Version' and a white input field containing 'V ..'. The second row has a dark blue label 'Model' and an empty white input field. At the bottom of the screen, there is a blue button labeled 'OK'.

# How to use the product

## Bluetooth Phone (Optional)










Press the button to start Bluetooth

Screen of Bluetooth start



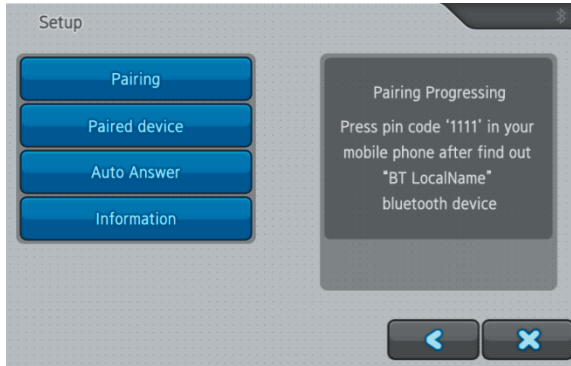
- Start-up screen displays the Phone Book list of the phone paired

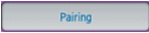
-  : Displays call lists during absence
-  : Displays phone call lists received
-  : Displays phone call lists sent
-  : Use for making a call dialing numbers
-  : Displays a Phonebook list
-  : Setup of Bluetooth
-  : Finishes Bluetooth

# How to use the product

## Bluetooth Phone (Optional)

- Enter the Paring Mode for Paring with Bluetooth by pressing the  button



1. Pairing mode is set by pressing the  button.
2. Connect Bluetooth to a cell phone you want searching Bluetooth device.  
(Enter the Pin code depending on type of cell phones)
3. Message is displayed when it is connected as below.



4. Return to the start-up screen of Bluetooth by pressing the  button.

# How to use the product

## Bluetooth Phone (Optional)

- **Paired device** : Displays devices Paired.



### Displays devices paired up to 8 devices

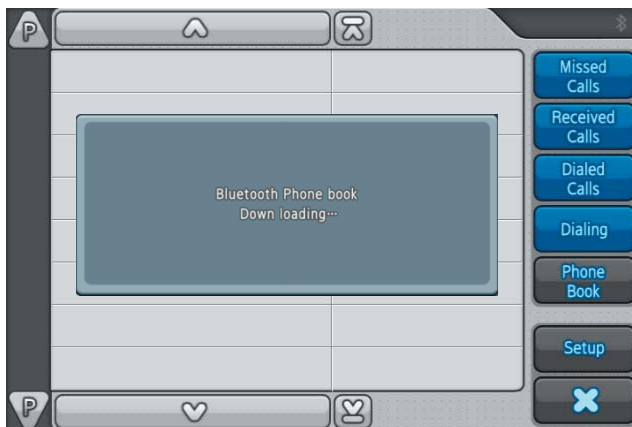
- Displays devices paired
  - Deletes devices connected by the **Del** button
  - Connects devices by pressing the **Connect** button
  - Deletes all devices by pressing the **All Delete** button
- ( Devices paired are connected automatically in order )



# How to use the product

## Bluetooth Phone (Optional)

- Down load phonebook list after pairing succeed.



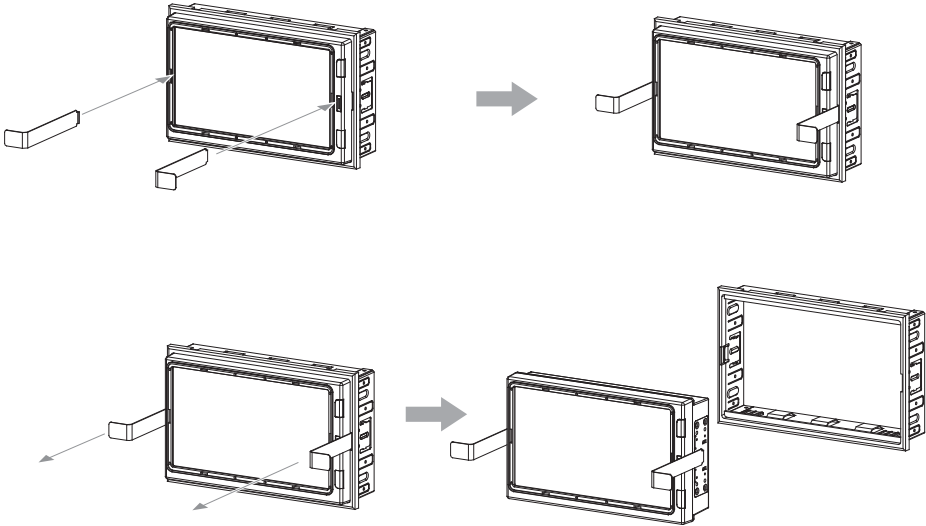
Call after press the number in the list.



# Installation

## Pre-Installation

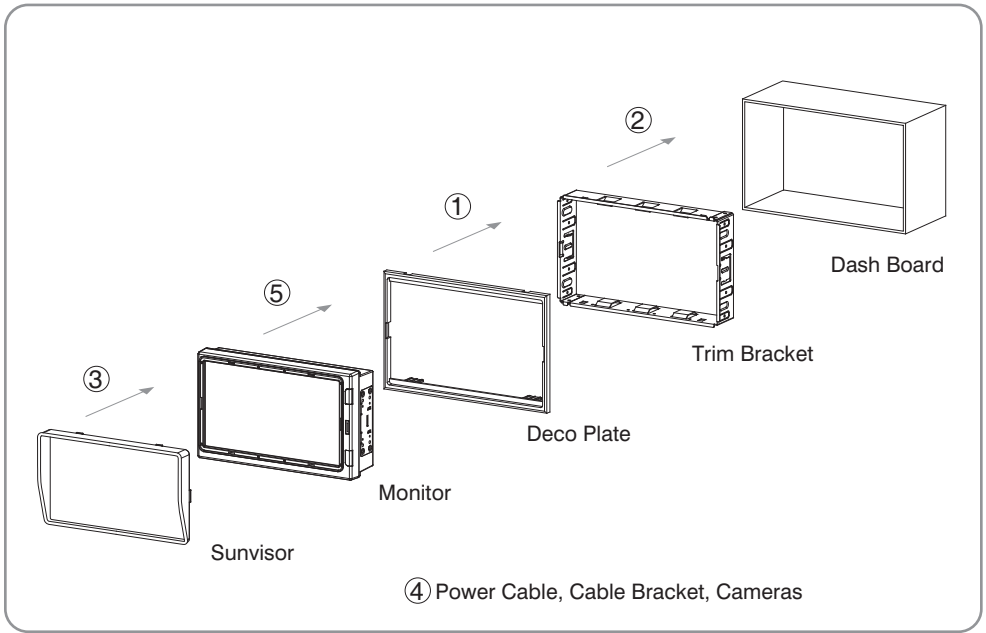
- Please make sure to disassemble the monitor and trim bracket before installation.



1. Insert the ejection keys into the monitor along the guides on either sides.
2. Pull the monitor out from the trim bracket.

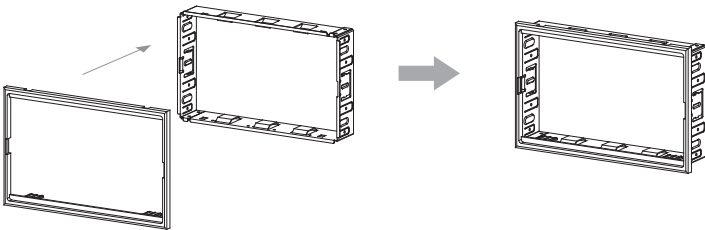
# Installation

## Installation



### Installation Overview

#### ① Deco Plate + Trim Bracket

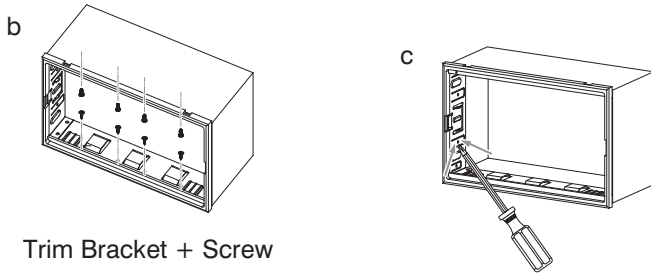
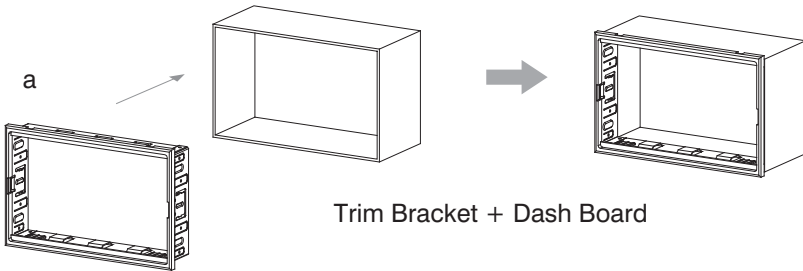


# Installation

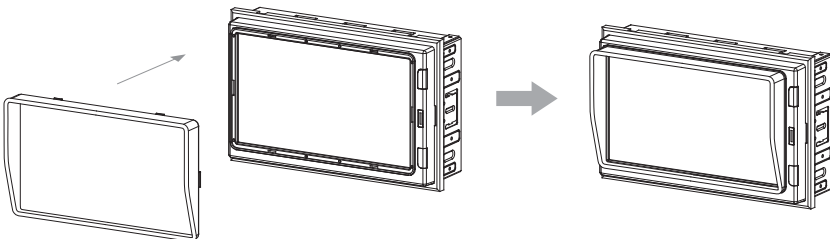
## Installation

### ② Trim Bracket → Dash Board

- Insert trim bracket into dash board.
- Fix trim bracket firmly with the supplied screw. ( top and bottom )
- Bend the taps. ( right and left )



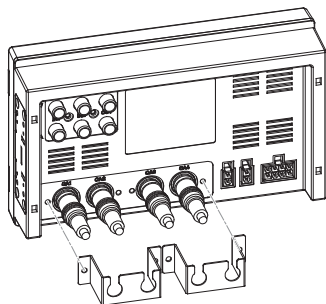
### ③ Sunvisor + Monitor



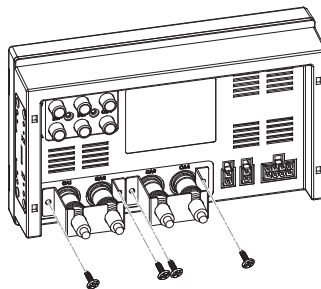
# Installation

## Installation

### ④ Power Cable, Cable Bracket, Cameras



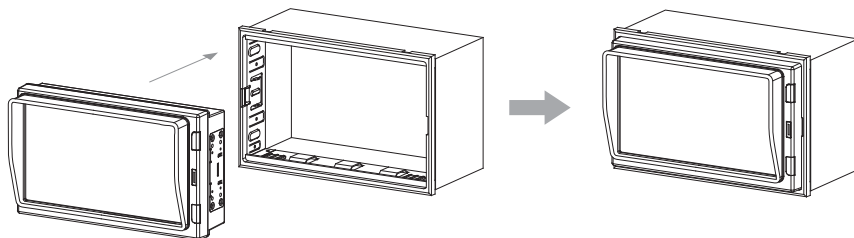
Monitor + Cable Bracket



Monitor + Screw

- Please make a connection for power cable, camera cables, cable bracket before installation of monitor and trim bracket.

### ⑤ Monitor + Trim Bracket

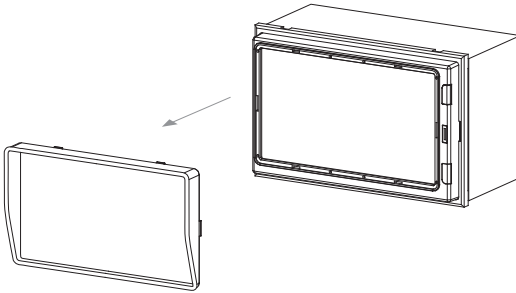


# Installation

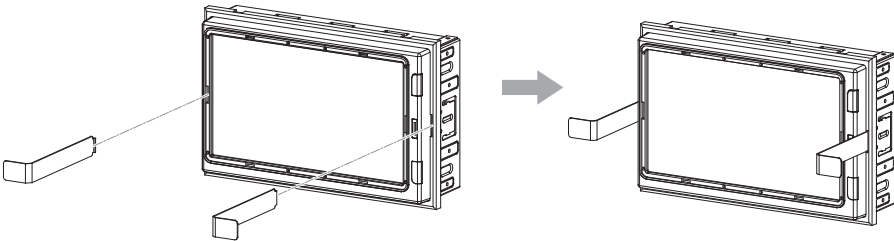
## Disassemble

- Please disassemble the unit in reverse of installation.

### ① Total Ass'y - Sunvisor

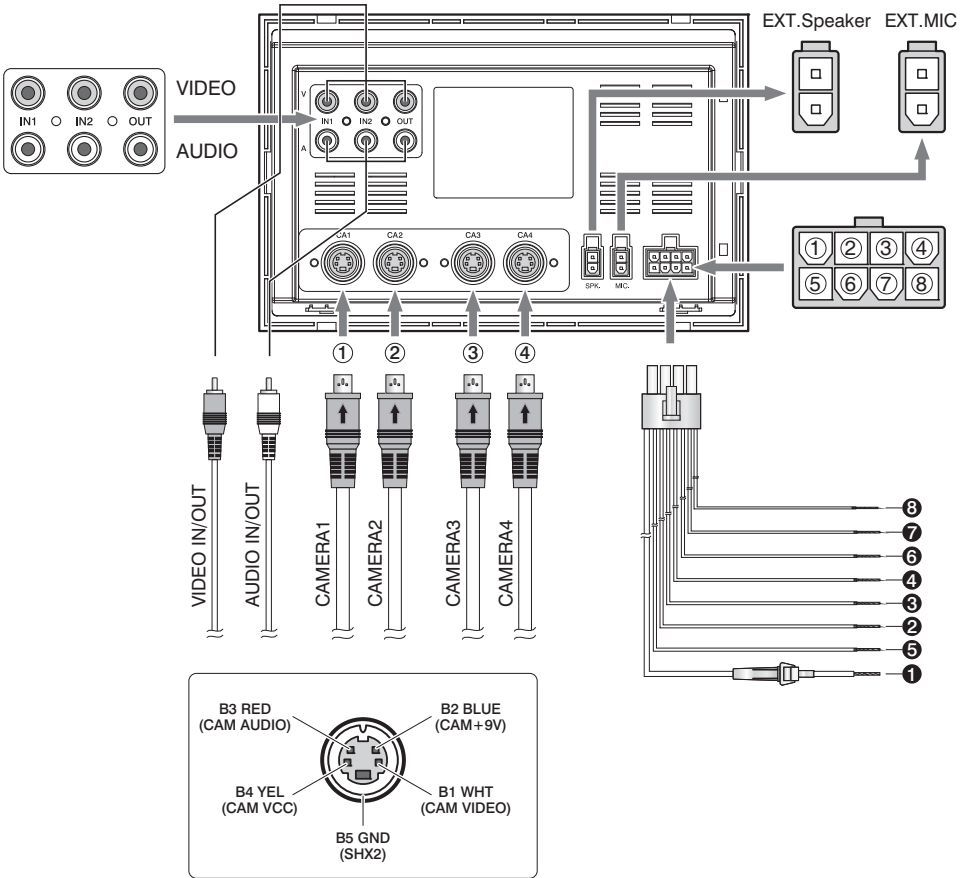


### ② Total Ass'y - Ejection Key



# Installation

## System Connection



\* Power Cable ( 2M±100mm )

No	Wire Color	Label
①	RED	Power ( 12~30V DC, via ignition )
②	GREEN	Trigger1 ( 9~30V DC, via direction light, etc. )
③	BLUE	Trigger3 ( 9~30V DC, via direction light, etc. )
④	BROWN	Trigger5 ( 9~30V DC, via direction light, etc. )
⑤	BLACK	Ground
⑥	WHITE	Trigger2 ( 9~30V DC, via direction light, etc. )
⑦	YELLOW	Trigger4 ( 9~30V DC, via direction light, etc. )
⑧	ORANGE	Speed Pulse ( via tachograph, 10 ~ 200 Hz )

# Specification

LCD : Built in 7 $\Omega$ TFT LCD (WVGA 800x480, with Touch Panel)
Camera : 4Ch input (1 Vp-p, 75 $\Omega$ ) /NTSC, PAL ( Video & Audio )
Video Output : CVBS 1 Ch. (1 Vp-p, 75 $\Omega$ ) /NTSC, PAL
Audio Output 1Ch (RCA)
External speaker Output ( +, - 2pin / Max 3.1V @ 8 Ohm Speaker )
Video input : AUX1, AUX2 ( RCA )
5 Trigger inputs (Cable Input : 12 ~ 24V)
ALS Sensor (Night & Daytime Brightness detection)
Power : 12~30Vdc (12Vdc 1.3A)
Operating Temp. : -20 $^{\circ}$ C ~ 60 $^{\circ}$ C
Storage Temp. : -30 $^{\circ}$ C ~ 85 $^{\circ}$ C
Dimensions (W x H x D) : 178mm x 110mm x 44.6mm
Weight : appx. 640g

**THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.**

**NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.**