



**709 INSTALLATION MANUAL**

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# 3 | Features

## Model Comparison Chart

	709CNH	709CNV	709TNH	709TNV
VGA ( D-SUB 15 Pin ) Input	1	1	1	1
VIDEO ( RCA ) Inputs	2	2	2	2
High Quality Scaling	●	●	●	●
High Quality Anti - Aliasing	●	●	●	●
Auto Power On	●	●	●	●
Touch Screen	Capacitive	Capacitive	5-Wire Resistive	5-Wire Resistive
HDMI Input	●	○	●	○
IP grade	IP65	IP65	IP65	IP65

● Standard ○ Not Available

## Features

- For Marine, In-Car Computing, PC, Server, GPS, POS, and various HDMI/DVI/VGA Use
- IP65 / NEMA4 rated water and dust resistance
- 1,000 nits Sunlight Readable with long lasting LED backlight
- Projected Capacitive Multi-Touch Touchscreen (USB) (709CNH / 709CNV Only)
- 5-Wire Resistive Touch Screen (USB) (709TNH / 709TNV Only)
- Multi-Monitor Touchscreen Support
- HDMI Input x 1 (709CNH / 709TNH Only)
- VGA Input (15 pin D-SUB) x 1 & Video Input x 2
- DVI Input through included DVI to HDMI adaptor (709CNH / 709TNH Only)
- Supports HDCP
- NTSC / PAL Multi-System
- 16x9 Aspect Ratio
- Ultra High Resolution - 1024 x 600 Native
- Solid Capacitors for improved durability
- Automatic backlight level adjustment through built-in ambient light sensor
- High Performance Image and Video Signal Processor
- AISS - Advanced Image-Scaling and Shaping
- Last Input memory
- Last Power setting memory
- IR Remote Control
- Auto power-on upon signal detection
- Automatic display adjustment
- On Screen Display Control
- Mirror Image Flip
- Vertical Image Flip
- Function to disable front button(s)
- Function to disable On Screen Text
- AV2 Auto Switching for backup camera
- VESA 50mm mounting holes
- 26-Pin heavy-duty connector with connector locking
- Anti-Reflective & Anti-Fingerprint Coating
- Matte Black paint Aluminum Casing
- Supports 10V DC ~ 35V DC
- "E" Mark Certified for Automotive use

# 4 | Specifications

## Specifications

### Display Specifications

- **Screen Size : Diagonal 7" ( 16 : 9 )**
- **Physical Resolution : 1024 ( H ) x 600 ( V )**
- **Pixel Pitch : 0.05 ( H ) x 0.15 ( V ) ( mm )**
- **Dot Resolution : 3072 x 600 = 1,843,200 ( dots )**
- **Supported Resolution : 640 x 480 ~ 1920 x 1080**
- **Supported Refresh : 60~75Hz**
- **LCD Panel Brightness : 1000 cd/m<sup>2</sup>**
- **Contrast Ratio : 700 : 1**
- **Response Time : 10~15ms**
- **Viewing Angle : Vertical : 150° / Horizontal : 145°**
- **Colors : 8-bits (16,777,216 colors )**

### Physical Specifications

- **Video Source Input**
  - **RGB analog male connector ( 15-Pin D-SUB ) x 1**
  - **RCA composite video female connector x 2**
  - **HDMI input connector x 1 ( 709CNH / 709TNH Only )**
- **Touch Panel ( Input / Output )**
  - **USB connector x 1**
- **Power Source Input**
  - **Single 12V DC\_IN ( Supports 10V~35V )**
- **External Buttons Input**
  - **OSD buttons for Power / Select / Menu / Increase / Decrease**
  - **Power button for power switch**
- **Dimension ( In ) : 7.87 ( L ) x 5.51 ( H ) x 1.18 ( D ) In**
- **Weight ( lb ) : 2.64 lbs**

### Electrical Specifications

- **Operating Voltage Range : DC 10V ~ 35V**
- **Power Supply : DC 12V**
- **Power Consumption :**
  - **Suspended Mode < 2W ( Max )**
  - **Continuous Mode < 10W ( Max )**

### Other Specifications

- **Operating Temperature : -4°F ~ 158°F**
- **Storage Temperature : -22°F ~ 176°F**
- **FCC, CE, and E9 Certifications**
- **ROHS Compliant**
- **IP65 Compliant**
- **24 Month Warranty**

## 5 | Quick - Start



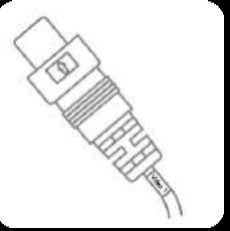
**Attach the 26-Pin connector to the monitor**



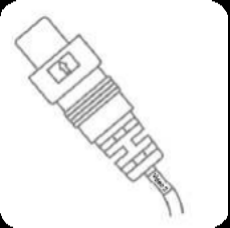
**Attach the D-Sub 15-Pin connector to your computer's analog VGA output connector**



**Attach the HDMI connector to your computer's HDMI output connector ( CNH / TNH Only )**



**Attach your " Video source one "  
(e.g. VCR, Video Game Console)  
to the Yellow RCA connector marked Video 1**



**Attach your " Video source two "  
(e.g. Rear View Camera)  
to the Yellow RCA connector marked CCD**

## 6 | Quick - Start



**Attach the USB plug to your USB connector**



**Touchscreen Installation**

**Please download and install the Touchscreen driver for your operating system from our website [WWW.XENARC.COM](http://WWW.XENARC.COM).**



**Slide Monitor into optional mounting stand**



**Secure "Height" position by adjusting knob**

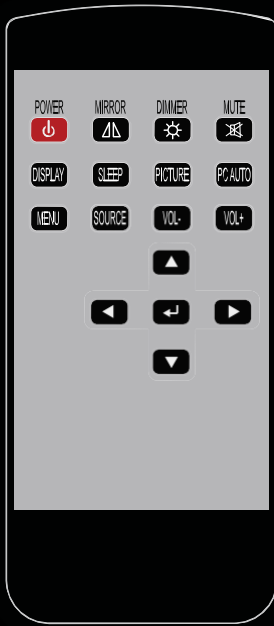


**Secure "Tilt" position by adjusting knob**



**Insert Power Adapter as shown**

## 7 | Remote Control



- 1. Power Button :** Turn the monitor ON or OFF.
- 2. Mirror Button :** Enable or Disable the mirroring of the display. Continue to press it and choose the mirroring you want.
- 3. Dimmer Button :** Dim the brightness of the display by pressing this key continuously to set the brightness level of the display. ( Only available when auto sensor is disabled. )
- 4. Mute Button :** Mute the speaker. Press again to restore the sound of the speaker.
- 5. Display Button :** Display the current input signal on the screen.
- 6. Sleep Button :** Enable or Disable the sleep timer. Press this button to select and set the time to turn off the monitor automatically.
- 7. Picture Button :** Enable or select the picture mode you prefer. Press this button and then you can select standard, user, bright, or soft.
- 8. PC auto Button :** Enable to adjust the picture automatically, only available in VGA mode.
- 9. Menu Button :** Enable the OSD menu. Press this button again to exit.
- 10. Source Button :** Enable to switch to different source input.
- 11. Vol+ / Vol- Button :** Increase or Decrease the Volume.
- 12. Up / Down Button ( ▲ / ▼ ) :** Navigate Up or Down in OSD menu.
- 13. Left / Right Button ( ◀ / ▶ ) :** Navigate Left or Right in OSD menu, as well as decreasing or increasing the value of setting in OSD.
- 14. Enter Button :** Confirm the setting or selection.

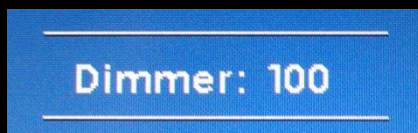
## 8 | Remote Control

### Instructions for remote control shortcuts

#### 1. Dimmer ( Adjust the brightness )

By pressing the Dimmer button, it will adjust the brightness level from 0, 20, 40, 60, 80 and 100.

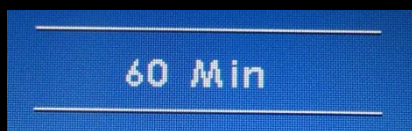
Default is 100 ( Only available when auto sensor is disabled )



#### 2. Sleep ( Set the sleep time out )

Select the time to automatically turn off the monitor.

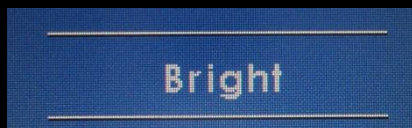
The minimum is 15 minutes and the maximum is 120 minutes.



#### 3. Picture ( Set the modes of the picture )

Enable to select the picture modes you prefer.

Press this button and then you can select standard, user, bright, or soft.



#### 4. PC AUTO ( Auto adjust, only on VGA )

By pressing PC AUTO, it will auto adjust the image.

#### 5. Source ( Select the source )

Press this button to select the input signal to display.

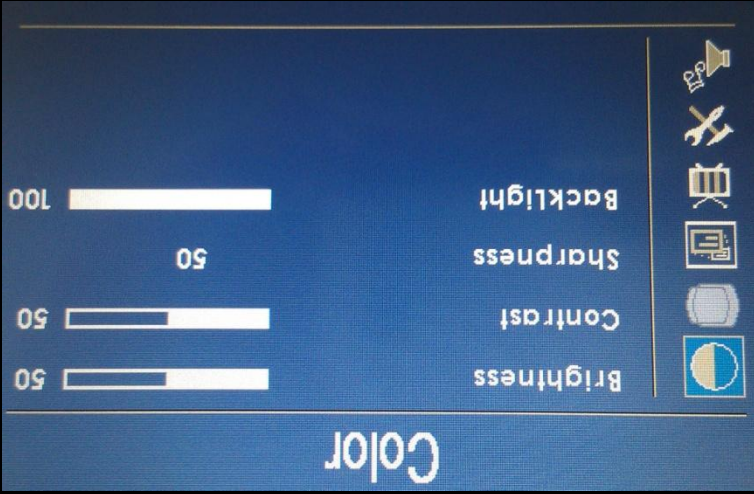
If one of these modes is disabled in OSD menu, please setup under ( Function → Source Enable )



# 9 | Remote Control

## 6. Mirror ( Image mirror )

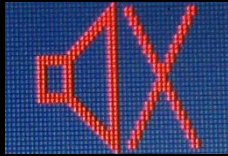
Enable or Disable the mirroring of the display. Continue to press it and choose the mirroring mode you wish to display.



## 7. Mute

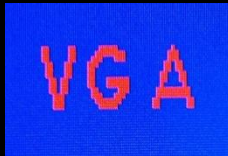
Mute the speaker.

Press again to restore the sound of the speaker.



## 8. Display ( Display mode )

Display the current input signal on the screen.



## 9. VOL- / VOL+

Volume adjustment.



# 10 | Capacitive Touch (709CNH / 709CNV Only)

1. Supports plug and play ( WINDOWS OS )

2. Supports below operating systems

OS		Touch Function
WINDOWS	10	Available for multi-touch
	8	Available for multi-touch
	7	Available for multi-touch
	XP	Only supports single mouse point
	VISTA	Only supports single mouse point
	CE	Only supports single mouse point
MAC	OS9	Only supports single mouse point
	X	Only supports single mouse point
Linux	Kernel 2.6.24 Upwards	Available for multi-touch if kernel version is 2.6.36 above. If kernel version below 2.6.35, it will only support single point.
	Kernel 2.6.23 Downward	Only supports single mouse point
	Kernel 2.4.X	Only supports single mouse point

3. Touch Calibration is not required.

## 4. Operation

### Touch & type

To select or activate something, touch it.






To type something, such as a name, password, or search terms, just touch where you want to type. A keyboard pops up that lets you type into the field.

Other common gestures include:

- **Touch & hold.** Touch & hold an item on the screen by touching it and not lifting your finger until an action occurs.
- **Drag.** Touch & hold an item for a moment and then, without lifting your finger, move your finger on the screen until you reach the target position. For example, you can move object or icon around on the Home screen.
- **Swipe or slide.** Quickly move your finger across the surface of the screen, without pausing when you first touch (so you don't drag something instead). For example, you can slide a Home screen left or right to view the other Home screens.
- **Double-tap.** Tap quickly twice on a webpage, map, or other screen to zoom. For example, double-tap a picture in Chrome to zoom in, and double-tap again to zoom out.(This function depends on Win7 or Win8 function)
- **Pinch.** In some apps (such as Maps, Chrome, and Gallery), you can zoom in and out by placing two fingers on the screen at once and pinching them together (to zoom out) or spreading them apart (to zoom in). (This function depends on Win7, Win8 or Win10 function)

# 11 | Hardware Installation

## Buttons description:

1.  **Power Button** : Press to turn ON or OFF the monitor.
2.  **Select Button** : Press to select the input signal to display. Press the left ( ◀ ) or right ( ▶ ) to highlight the input source desired and then press menu button to make the selection.
3.  **Menu Button** : Press the button to show the OSD menu. And then press the left ( ◀ ) or right ( ▶ ) to navigate through the menu. Press “ Select “ button to go through a list of settings and options. Press the left ( ◀ ) or right ( ▶ ) buttons to change the values of settings. Press Menu button again to leave the OSD menu.
4.  **Right Button** : Press this button to the value of settings inside the OSD menu.
5.  **Left Button** : Press this button to the value of settings inside the OSD menu.

## Ambient Light Sensor

Ambient light sensor can be enabled or disabled in the OSD by going into the “ MISC ” category, and selecting the option “ Auto Sensor ”. When Auto Sensor is enabled, the LCD backlight brightness will be adjusted automatically according to the ambient lighting condition.

## Note

The brightness cannot be adjusted manually through the dimmer button or through the OSD menu when the Auto Sensor function is enabled.

## OSD ( On-screen display ) Menu

Press MENU to display the OSD on the screen, then press UP / DOWN ( or LEFT / RIGHT from the front control panel ) to highlight a different category. Press ENTER ( or Source ) to adjust the selected highlighted category. Under the selected item page, press UP / DOWN ( or Source ) to select the item from the list, use LEFT / RIGHT to adjust. To select the sub-menu, please press LEFT to enter to the sub-menu.

# 12 | Hardware Installation

## OSD ( On-Screen Display ) Menu

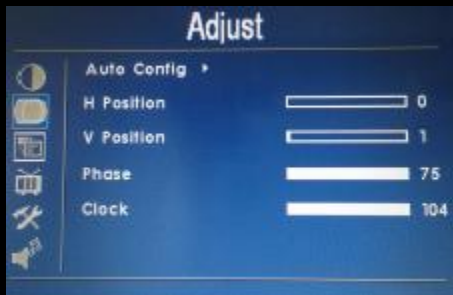
The settings and options in the OSD menu are categorized into 6

Categories : Color, Adjust, OSD, Setup, Function, Sound



### 1. Colors

- **Brightness** : Adjust brightness by pressing Left ( ◀ ) or Right ( ▶ ) buttons. Increase the number for a higher level of brightness. Decrease the number for a lower level of brightness.
- **Contrast** : Adjust contrast by pressing Left ( ◀ ) or Right ( ▶ ) buttons. Increase the number for a higher level of contrast. Decrease the number for a lower level of contrast.
- **Sharpness** : Adjust sharpness by pressing left or right buttons. Press left to decrease sharpness and right to increase the level of sharpness.
- **Color Temp** : Set the color temp to the desired setting : 6500K, 9300K and User.
- **Backlight** : Adjust backlight intensity by pressing Left ( ◀ ) or Right ( ▶ ) buttons. Increase the number for a higher level of backlight output. Decrease the number for a lower level of backlight output. Only works when Auto sensor is turned off.



### 2. Adjust

- **Auto Config** : Adjust display automatically.
- **H Position** : Adjust the Horizontal position by pressing the left or right buttons.
- **V Position** : Adjust the Vertical position by pressing the left or right buttons.
- **Phase** : Phase ( fine ) adjustment. Image flickering can be removed through changing this setting ( only valid for VGA setting )
- **Clock** : Adjust the horizontal sync width of the screen image.

# 13 | Hardware Installation



## 3. OSD

- **H Position** : Adjust the OSD Horizontal position by pressing the left or right buttons.
- **V Position** : Adjust the OSD Vertical position by pressing the left or right buttons.
- **OSD Timeout** : Adjust the time out of the OSD.
- **Transparent** : Adjust the transparency of the OSD screen image.
- **Key Backlight** : Adjust the button's backlight intensity.



## 4. Setup

- **CCD First** : Set whether to have monitor switch to CCD signal automatically if a signal is present. ( Default is OFF )
- **Auto sensor** : Enable or disable the auto sensor of surrounding environment.  
— “ On ” means the monitor can automatically adjust the brightness of the display according to the surrounding environment.  
—Please note : While auto sensor is enabled, the option of dimmer or backlight inside the OSD can not work until auto sensor is disabled.
- **Source Info** : Select to turn OFF or turn ON displaying of On Screen Source Information.
- **Source Name** : Display the source of input signal. If it is ON, it will display the information on the left corner of the screen when Display button is pressed on remote control. ( Default ON )
- **Mirror Hor** : Adjust the horizontal mirroring position. If it is ON, the image will be on the left and right side. ( Default OFF )
- **Mirror Ver** : Adjust the vertical mirroring position. If it is ON, the image will be on the upper and lower side. ( Default OFF )

# 14 | Hardware Installation



## 5. Function

- **Reset** : Reset to factory default setting.
- **Display Ratio** : Select the display mode ( 16:9, 4:3 and Auto )
- **Sleep** : Select the time to automatically turn off the monitor. The minimum is 15 minutes and the maximum is 120 minutes.
- **Keypad** : Allows you to disable or enable the buttons on the front of the monitor. Power, Menu, Select, Left, and Right buttons can be disabled or enabled.
- **Source Enable** : Select to enable or disable the input signal. If an input signal is turned off, the source will automatically be disabled.
- **Touch Controller** : Switch the power source for touch control board.



## 6. Sound

- **Volume** : Adjust the audio volume of built-in speaker.
- **Mute** : Enable or disable muting of built-in speaker.
- **HDMI Input** : Select the audio source while in HDMI input mode. When set to HDMI, the built-in speaker will output the digital audio signal from HDMI.

When set to Analog, the built-in speaker will output the analog audio signal from the mini stereo jack marked as “ PC Audio ” ※The HDMI output option is only available for CSH / TSH models

# 15 | Additional Info

## NOTES

### NOTE 1 :

If you are trying to connect the monitor to a laptop computer, please make sure to enable the 15-PIN D-SUB external monitor output located at the back of your laptop computer. Some laptop computers have three modes: Laptop Display Only, Laptop Display plus External Monitor, and External Monitor Only. If this is the case, please switch to the External Monitor Only mode.

### NOTE 2 :

Touch Screen device driver must be installed onto your computer in order for the Touch Screen to become operational. Touch Screen driver and software for different operating systems can be downloaded from our website at [WWW.XENARC.COM](http://WWW.XENARC.COM).

### NOTE 3 :

The maximum voltage supported by the monitor is 35V DC. Feeding the monitor with higher voltage will damage the monitor and void the warranty. Please use a fused power source if you decide to wire the monitor directly to your vehicle's electrical system. It is also crucial that you check the polarity on the connection.

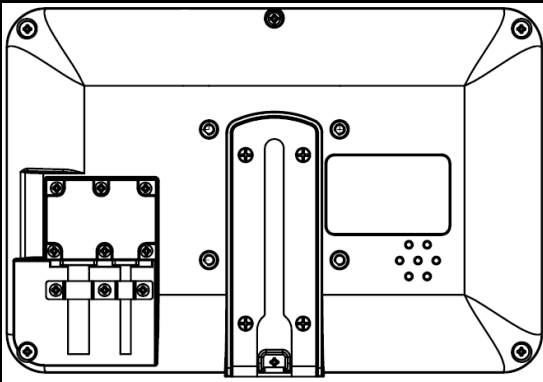
### NOTE 4 :

If the monitor is not displaying the VGA signal properly, the VGA signal might be out of range. Please try changing your display refresh rate to 60, 70, 72, or 75 Hertz.

### NOTE 5 :

Please note that the LCD screen is made with high-precision technology. However black points or bright points of light ( red, blue, or green ) may appear constantly on the LCD screen, and irregular colored stripes or brightness may appear on the LCD screen. This is not malfunction. ( Effective dots : more the 99.999% )

For Technical Support , please contact us at:  
Xenarc Technologies Corp.  
Toll Free : 888 - 656 - 6536  
E - Mail : support @ xenarc.com  
Website : [www.xenarc.com](http://www.xenarc.com)



Length of the mounting screw. [ M4 x 6 mm (max) ]  
( common between right side and left side )

# 16 | Additional Info

## Owner's Record

The model and serial number are located on the rear of the unit. Please record these numbers in the spaces provided below, as well as the dealer name, address, and telephone number.

Please refer to these records whenever speaking to your dealer regarding this product.

Model Number : \_\_\_\_\_

Serial Number : \_\_\_\_\_

Dealer Name : \_\_\_\_\_

Street Address : \_\_\_\_\_

City : \_\_\_\_\_

State : \_\_\_\_\_

Zip : \_\_\_\_\_

Phone Number : \_\_\_\_\_

Purchase Date : \_\_\_\_\_