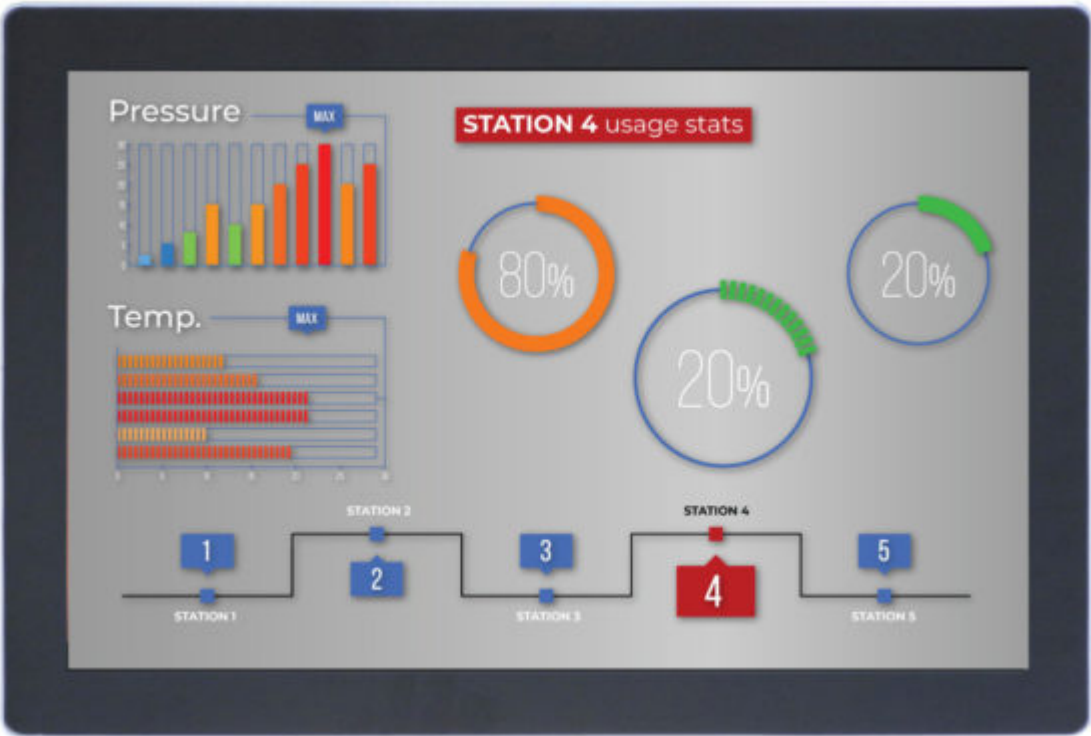


PPC-A9-190-C

User Manual

Release 1.0



Chipsee Products Naming Rules

CS14900F190P-C111	
CS	Chipsee Product Abbreviations

14	Horizontal Resolution 80 Means 800 Pixel 10 Means 1024 Pixel 12 Means 1280 Pixel 14 Means 1440 Pixel 19 Means 1920 Pixel
900	Vertical Resolution 480 Means 480 Pixel 600 Means 600 Pixel 768 Means 768 Pixel 800 Means 800 Pixel 900 Means 900 Pixel 102 Means 1024 Pixel 108 Means 1080 Pixel
F(T)	Product based on Freescale (TI) CPU
190	LCD Dimension 050 Means 5.0 Inch 070 Means 7.0 Inch 080 Means 8.0 Inch 097 Means 9.7 Inch 101 Means 10.1 Inch 104 Means 10.4 Inch 120 Means 12.0 Inch 150 Means 15.0 Inch 170 Means 17.0 Inch 190 Means 19.0 Inch 215 Means 21.5 Inch
P	Means Embedded PC or Panel PC E Means Embedded PC without Case P Means Panel PC with Case
C	Means Touch Type R Means Resistive Touch C Means Capacitive Touch

1	Means LCD Brightness 1 Means Common Brightness 2 Means High Brightness
1	PCB Version Baseboard PCB Version Number
1	PCB Version SOM Module PCB Version Number

Hardware Features

Key Features:	
CPU	iMX6Q, Quad-A9, 1GHz
RAM	2GB DDR3
eMMC	8GB
Storage	TF card supports up to 32GB SDHC
Display	19 Inch LCD, 1440*900 Pixel Resolution, 16:10
Touch	Ten-Point Capacitive Touch
USB	4 x USB 2.0 Host, 1 USB OTG
LAN	1 Channel 1000M LAN
Audio	3.5mm Audio In/Out Connector, 2W Speaker Internal
Buzzer	1
RTC	Yes
RS232	2 Channels
RS485	3 Channels *
CAN	2 Channels
GPIO	8 Channels
WiFi/BT	On-Board WIFI/BT

HDMI	1 Channel
SATA II	1 Channel
4G/LTE	Optional
Power Input	15~36V DC
Current @ 15V	2000 mA max
Power Consumption	22W Typical
Working Temperature	-20°C to +70°C
OS	Android, Ubuntu, Linux
Dimension	466*313*63 mm
Weight	5200g

* * This product has 5 channels of UART in total. One UART channel is used for the Bluetooth. The default setting is 2*RS232+2*RS485+Bluetooth. The UART can be easily changed between RS232 and RS485. If you need different settings, please contact us.

CS14900F190P - C111

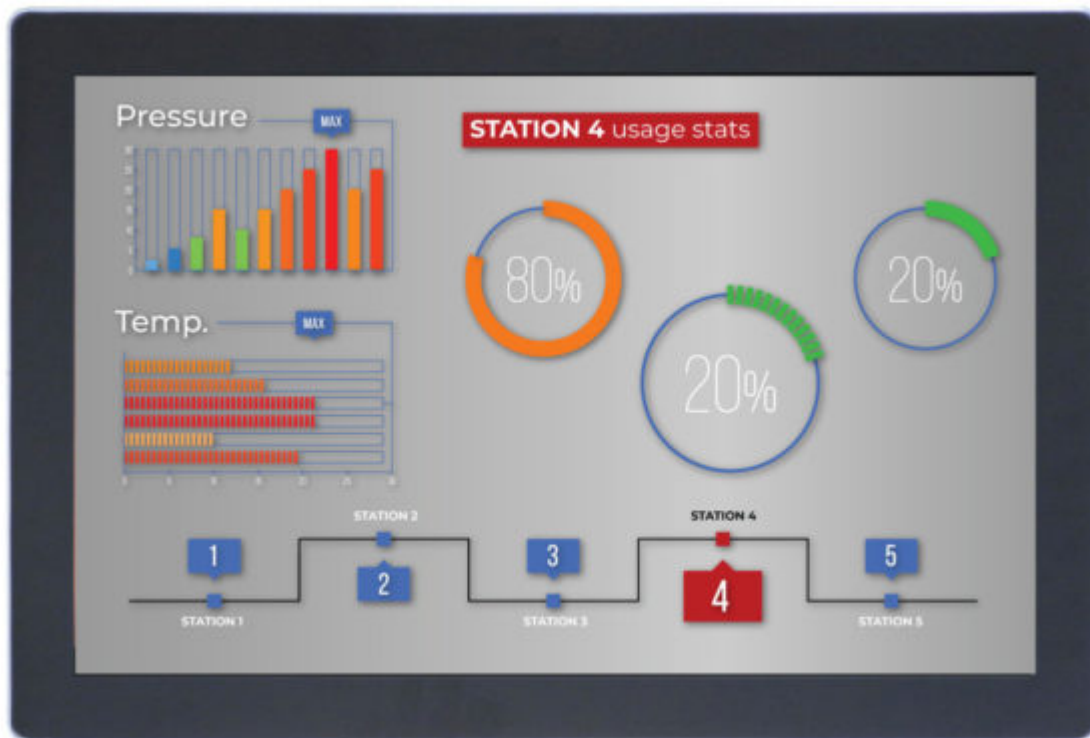


Figure 1: Top View (Android)

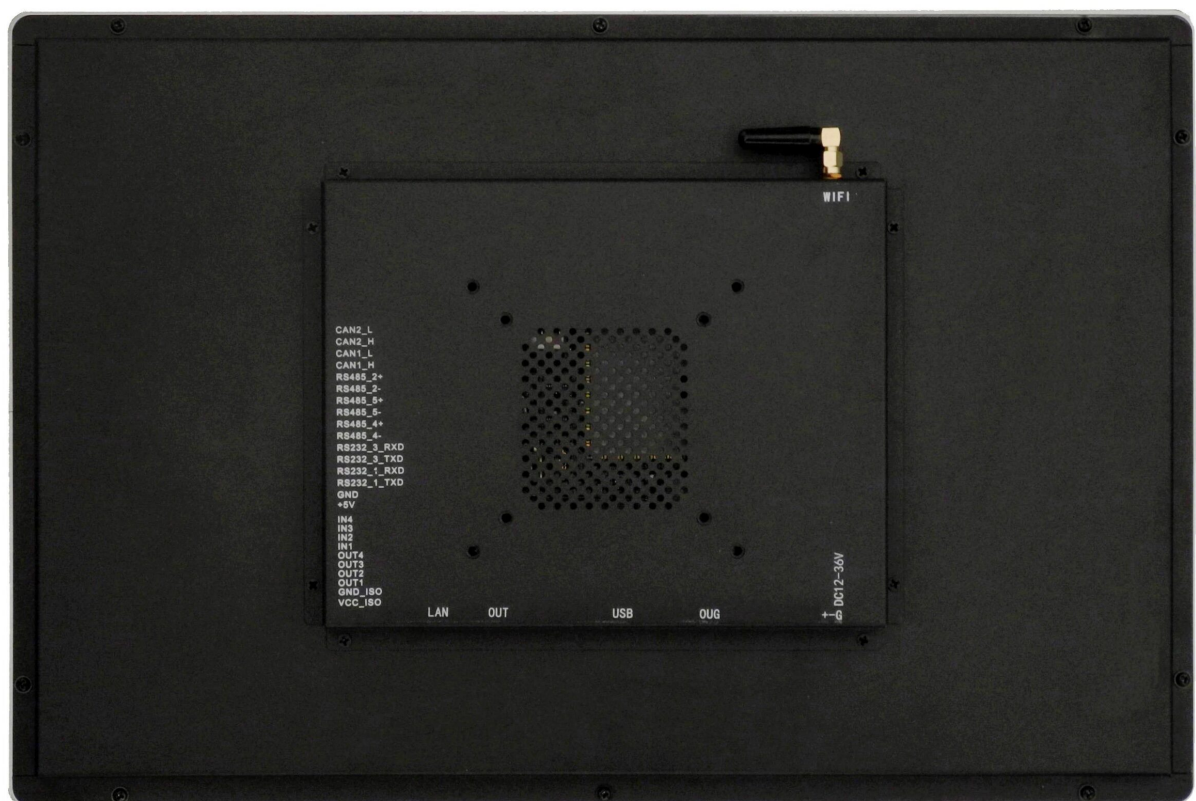


Figure 2: Back View

Power Input Connector

The product CS14900F190P-C111 uses a wide-range power input **DC 15~36V**. The total power consumption is normally about **22W**. The Power Input Connector is 3 Pin 3.81mm Screw Terminal Connector as Figure 3 shows.

A detailed description of the power input connector pins is provided in Table 1.

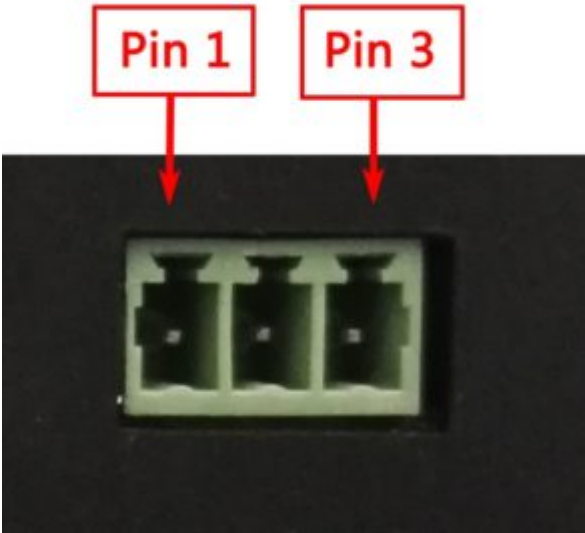


Figure 3: Power Input Connector

Table 1

Power Input Pin Definition:		
Pin Number	Definition	Description
Pin 1	Positive Input	Connect to DC Power Positive Terminal
Pin 2	Negative Input	Connect to DC Power Negative Terminal
Pin 3	Ground	Connect to Power System Ground

ATTENTION:

The system ground **"GND"** has been connected to power negative **"-"** on board.

Capacitive Touch

The product CS14900F190P-C111 uses a ten-point capacitive touch.

ATTENTION:

Capacitive touch is very sensitive to power noise. Ripple voltage/current from the power adapter will cause the LCD ripples, and will also cause the capacitive touch malfunction. If you use the APK Multi-Touch under Android to test, you can find the touchpoint float. There are several ways to solve this problem:

- 1) Use a high-quality power adapter. Or a battery to provide power like a cell phone or tablet PC.
- 2) If the power adapter isn't good enough, make sure the CS12102F170P-C111 power input connector **Pin 3 is connected to the Ground**. This method can eliminate the problem totally. You can test it by touching the GND of CS12102F170P-C111 with one hand, while the other hand operates on the capacitive touch screen. In this case, the user's body acts as the Power System Ground.

CAN+RS485+RS232 Connector

The CAN+RS485+RS232 connector is a 16 Pin 3.81mm Screw Terminal Connector, as Figure 4 shows. As for the definition of every pin, please refer to Table 2. This product has 5 channels of UART in total that can be freely configured as

RS232 or RS485. If you need other settings different from the default one, please contact us.

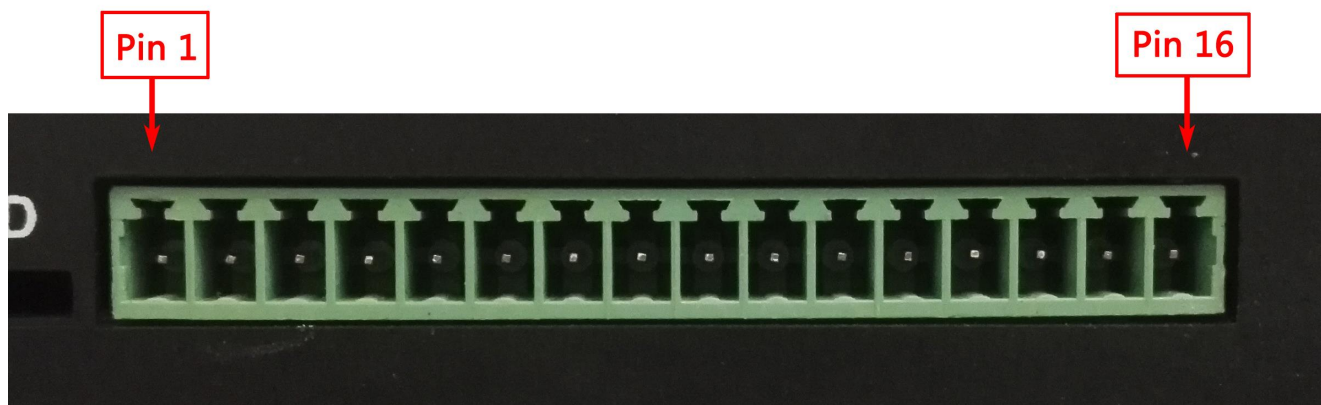


Figure 4: CAN+RS485+RS232 Connector

Table 2

RS232 / RS485 / CAN Pin Definition:		
Pin Number	Definition	Description
Pin 1	CAN2_L	CPU CAN Channel 2 L signal
Pin 2	CAN2_H	CPU CAN Channel 2 H signal
Pin 3	CAN1_L	CPU CAN Channel 1 L signal
Pin 4	CAN1_H	CPU CAN Channel 1 H signal
Pin 5	RS485_2+	CPU UART2, RS485 +(A) signal
Pin 6	RS485_2-	CPU UART2, RS485 -(B) signal
Pin 7	RS485_5+	CPU UART5, RS485 +(A) signal
Pin 8	RS485_5-	CPU UART5, RS485 -(B) signal
Pin 9	RS485_4+	CPU UART4, RS485 +(A)signal
Pin 10	RS485_4-	CPU UART4, RS485 -(B) signal
Pin 11	RS232_3_RXD	CPU UART3, RS232 RXD signal
Pin 12	RS232_3_TXD	CPU UART3, RS232 TXD signal
Pin 13	RS232_1_RXD	CPU UART1, RS232 RXD signal

Pin 14	RS232_1_TXD	CPU UART1, RS232 TXD signal
Pin 15	GND	System Ground
Pin 16	+5V	System +5V Power Output, No more than 1A Current output.

ATTENTION:

1. *UART2 signal has been used by Bluetooth signal onboard. The RS485_2 function has been disabled by default. If you need the RS485_2 function, please contact us to disable the Bluetooth function.*
2. *A 1200hm resistor doesn't come mounted by default with the product.*

USB HOST Connector

There are two dual USB ports, as Figure 5 shows, each provides a 500mA current.



Figure 5: USB HOST Connector

USB OTG Connector

The product CS14900F190P-C111 has one USB OTG connector, shown in Figure 6, that works as a slave by default. It can be used to establish a connection with the host PC.



Figure 6: USB OTG Connector

LAN Connector

The product CS14900F190P-C111 has one channel 1000Mbit Ethernet Connector, as Figure 7 shows.



Figure 7: LAN Connector

SIM Card Holder

There is a mini-PCIe connector inside the CS14900F190P-C111 that can be used to mount a 4G module. If you want to add the 4G module, then you will need the SIM card holder, as shown in Figure 8.



Figure 8: SIM Card Holder

ATTENTION:

This product doesn't come with the 4G/LTE module by default. Also, no software driver for any kind of 4G/LTE module is available at present.

Audio Connector

There is one Audio Input ("Line-in") and one Audio Output ("Line-out"), as Figure 9 shows. As well as an internal 2W speaker.

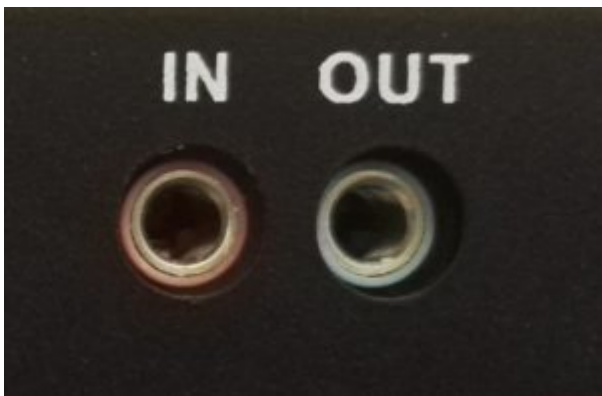


Figure 9: Audio Connector

WiFi+BT

The product CS14900F190P-C111 has one WiFi+BT. It uses

Realtech RTL8723 which integrates WiFi and BT. There is a connector on the backside case that is used to connect the external WiFi/BT Antenna, as Figure 10 shows.



Figure 10: WiFi+BT Antenna

HDMI Connector

The product CS14900F190P-C111 has one HDMI connector as Figure 11 shows. The HDMI output resolution can be configured by software.



Figure 11: HDMI Connector

Boot Switch

The product CS14900F190P-C111 has a boot switch, shown in Figure 12, used to change the boot sequence. For more details

on the boot switch configuration, please refer to Table 3.

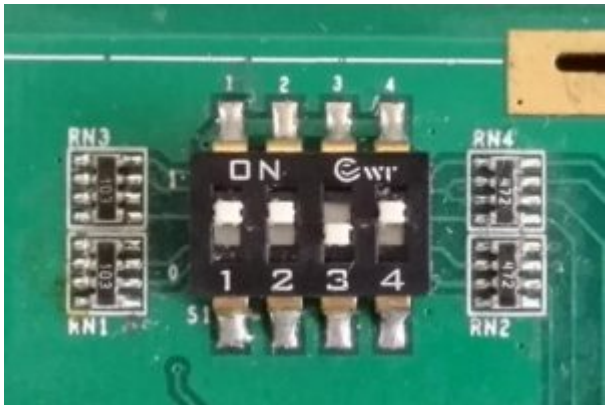


Figure 12: Boot Switch

Table 3

Boot Config Select:				
Mode	1	2	3	4
TF Card	1	0	0	0
eMMC	1	1	0	1
Download	0	1	1	0

GPIO Connector

The product CS14900F190P-C111 has one GPIO Connector, as Figure 13 shows. As for the definition of every pin, please refer to Table 4.

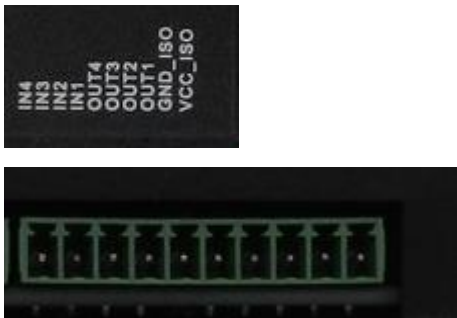


Figure 13: Expansion Connector

Table 4

Expansion Connector Definition:		
Pin Number	Definition	
Pin 1	IN4	
Pin 2	IN3	
Pin 3	IN2	
Pin 4	IN1	
Pin 5	OUT4	
Pin 6	OUT3	
Pin 7	OUT2	
Pin 8	OUT1	
Pin 9	GND_ISO	
Pin 10	VCC_ISO	

ATTENTION:

All these signals are in the connection with the CPU directly. Please use it carefully as the CPU can be easily damaged.

Measurements and Mounting

Measurements

The measurements of CS14900F190P-C111 are 466*313*63mm.

Mounting Method

This product CS14900F190P-C111 can be mounted by VESA mounting method (100x100cm or 75x75cm), as Figure 14 shows. Please make sure the display is not exposed to high pressure when mounting into an enclosure.

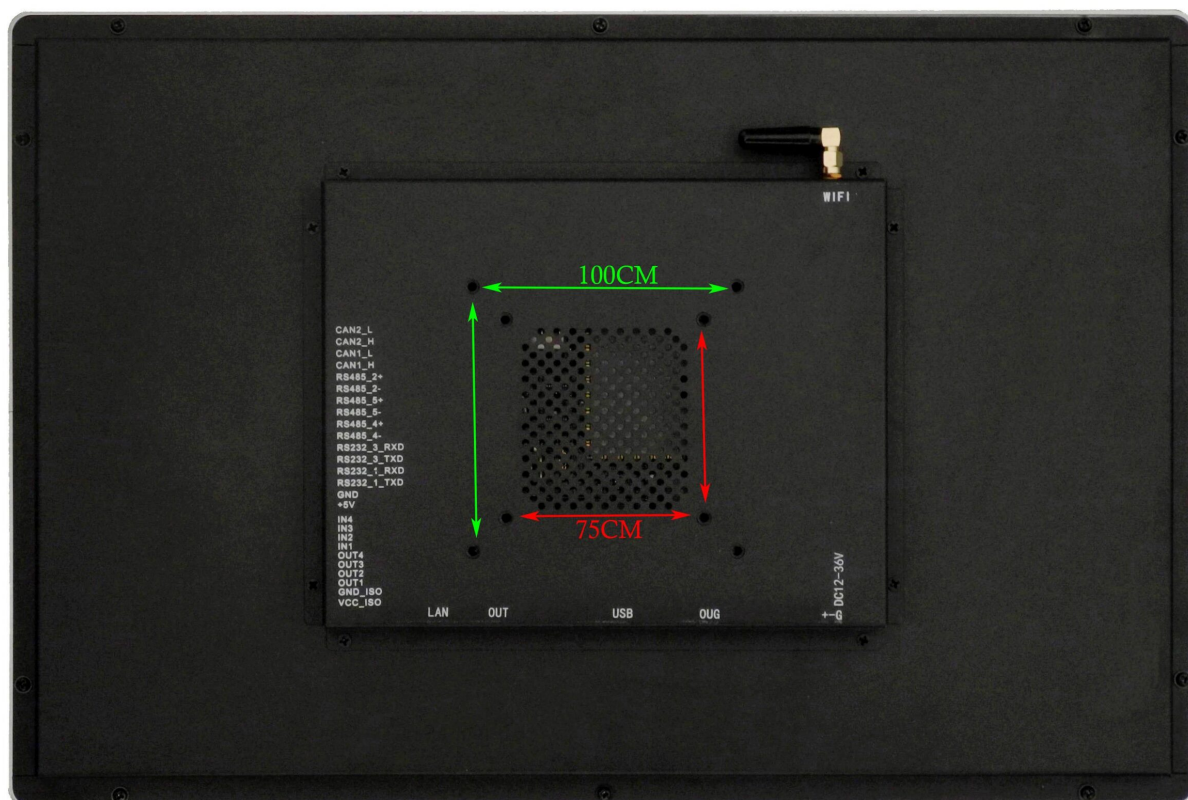


Figure 14: Mounting Method

How to Get Support

Please feel free to contact us with any questions, queries or suggestions.

If your question is about technical support or troubleshooting for one of our products, we kindly ask you to first check our documentation for a possible solution.

If you cannot find the solution you are looking for then please write to contact@chipsee.com providing all possible details.

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