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**User Manual**

Release **4.0**

CS12800F101P-C141

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# Chipsee Products Naming Rules

|  |  |
| --- | --- |
| CS12800F101P-C141 | |
| CS | **Chipsee Product Abbreviate** |
| 12 | **Horizontal Resolution**  **80** Means 800 Pixel  **10** Means 1024 Pixel  **12** Means 1280 Pixel  **14** Means 1440 Pixel  **19** Means 1920 Pixel |
| 800 | **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** |
| 101 | **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 |
| 4 | **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**** | 10.1 Inch IPS LCD,1280\*800 Pixel Resolution,16:9,Brightness:250nit |
| ****Touch**** | Ten-Point Capacitive Touch |
| ****USB**** | 2 x USB 2.0 Host,1 USB OTG |
| ****LAN**** | 1 Channel 1000M LAN, Support **POE**.  2nd Channel 100M Optional |
| ****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 |
| ****3G/4G**** | Optional, Not Mount on by default. |
| ****Power Input**** | 12~36V DC |
| ****Current @ 15V**** | 600 mA max(No 4G module) |
| ****Power Consumption**** | 7W Typical |
| ****Working Temperature**** | -20°C to +70°C |
| OS | Android, Ubuntu, Linux |
| ****Dimension**** | 280\*185.5\*27.5mm |
| ****Weight**** | 1410g |

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

## CS12800F101P-C141



Figure 1 Top View (Ubuntu)



Figure 2 Back View

## 

## Power Input Connector

The product CS12800F101P-C141 uses a wide range power input: **DC 12~36V**. The total power consumption is about **7W** normally. The Power Input Connector is 3 Pin 3.81mm Screw Terminal Connector as Figure 3 shows. The Character “**+**” means power **Positive** input, The Character “**-**” means power **Negative** input. The Character “**G**” means system Ground. Table 1 has detailed descriptions about the connector definition.



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** |

***BE ATTENTION:***

*The system ground* ***“G”*** *has been connected to power negative* ***“-”*** *on board.*

## Capacitive Touch

The product CS12800F101P-C141 uses ten-point capacitive touch.

**BE 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 touch point float. There are several ways to solve this problem:

1) Use a high quality power adapter. Or use battery to provide the power like cell phone or tablet PC.

2) If user power adapter can’t be good enough, there’s another effective method to solve this problem: Make sure the CS12800F101P-C141 power input connector **Pin 3 really connect to user “Power System Ground”**. This method can eliminate the problem totally. User can also use another method to test this problem: touch the GND of CS12800F101P-C141 by one hand, the other hand operates on the capacitive touch screen. In this case, 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, they can be configured as RS232 or RS485 freely. If you need any other setting different to the default setting, 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 +(B) signal |
| Pin 6 | RS485\_2- | CPU UART2, RS485 -(A) signal |
| Pin 7 | RS485\_5+ | CPU UART5, RS485 +(B) signal |
| Pin 8 | RS485\_5- | CPU UART5, RS485 -(A) signal |
| Pin 9 | RS485\_4+ | CPU UART4, RS485 +(B) signal |
| Pin 10 | RS485\_4- | CPU UART4, RS485 -(A) 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. |

**BE ATTENTION:**

1. UART2 signal has been used by Bluetooth signal on board. The RS485\_2 function has been disabled by default. If customer needs to use RS485\_2 function, please contact us, we will disable the Bluetooth function.

2. All the CAN signal and RS485 signal have not mount on the 120Ohm Matched Resistance.

## 

## USB HOST Connector

The product CS12800F101P-C141 has two USB connectors as Figure 5 shows. These two USB can provide 500mA current each.



Figure 5 USB HOST Connector

## USB OTG Connector

The product CS12800F101P-C141 has one USB OTG connector as Figure 6 shows. It works as slave by default. User can connect it to host PC by this connector.



Figure 6 USB OTG Connector

## LAN Connector

The product CS12800F101P-C141 has one channel 1000Mbit Ethernet Connector(LAN1), as Figure 7 shows. And this port support POE(Power-On-Ethernet).The other one channel 100Mbit Ethernet Connector is optional.

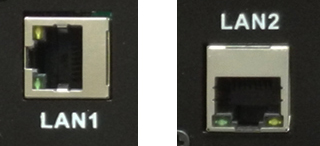


Figure 7 LAN Connector

## TF Card

The product CS12800F101P-C141 has one TF(uSD) card connector as Figure 8 shows. This device supports TF(uSD) card up to 32GB.



Figure 8 TF Card Connector

**BE ATTENTION:**

The TF card slot is **NOT mounted** with any TF card by default.

## SIM Card Holder

The product CS12800F101P-C141 has a mini-PCIe connector inside, customer can mount on 4G module to it. Then it will need the SIM Card Holder, as Figure 9 shows. There is a connector on the backside case which can connect external 4G Antenna, as Figure 10 shows.



Figure 9 SIM Card Holder



Figure 10 4G Antenna

**BE ATTENTION:**

This product is not mounted on any 4G module by default. And only Android 4.3 driver for 4G module is available at present.

## Audio Connector

The product CS12800F101P-C141 has one Audio Input (“Line-in”) and one Audio (“Line-out”) output, as Figure 11shows. And the product has an internal 2W speaker.



Figure 11 Audio Connector

## WiFi+BT

The product CS12800F101P-C141 has one WiFi+BT. It uses Realtech RTL8723 which integrates WiFi and BT. There is a connector on the backside case which can connect external WiFi/BT Antenna, as Figure 12 shows.



Figure 12 WiFi+BT Antenna

## HDMI Connector

The product CS12800F101P-C141 has one HDMI connector as Figure 13 shows. The HDMI output resolution can be configured by software.

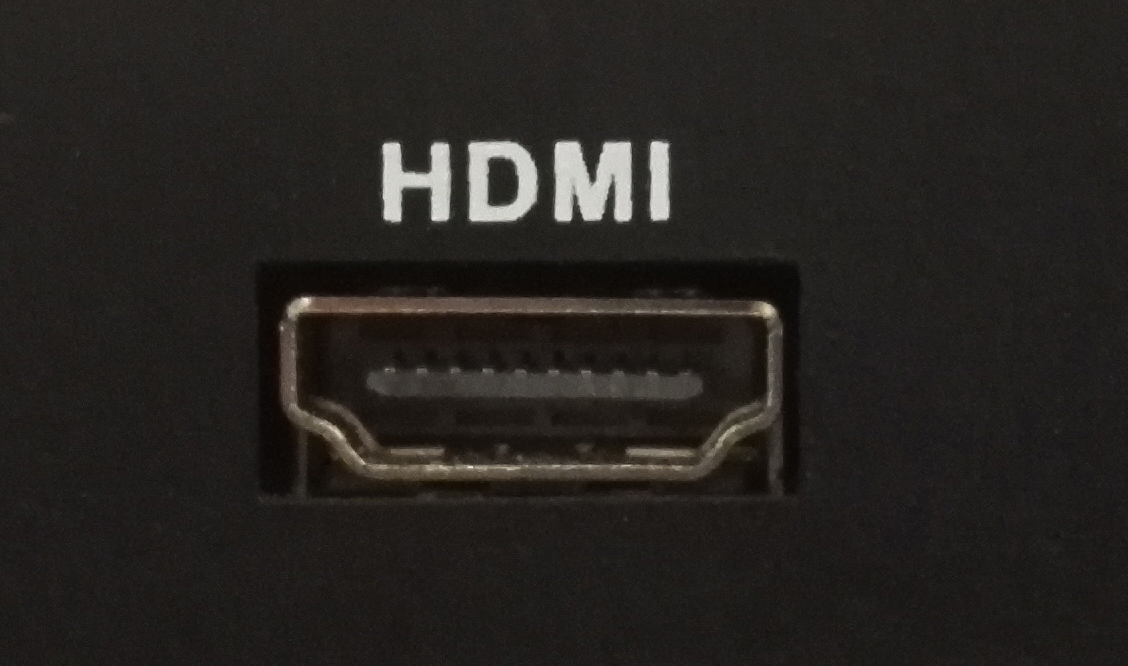


Figure 13 HDMI Connector

## Boot Switch

The product CS12800F101P-C141 has a boot switch which can be used to change boot sequence, as Figure 14 shows. It is defined as SW2 on the PCB. As for the details of the boot switch, please refer to Table 3.

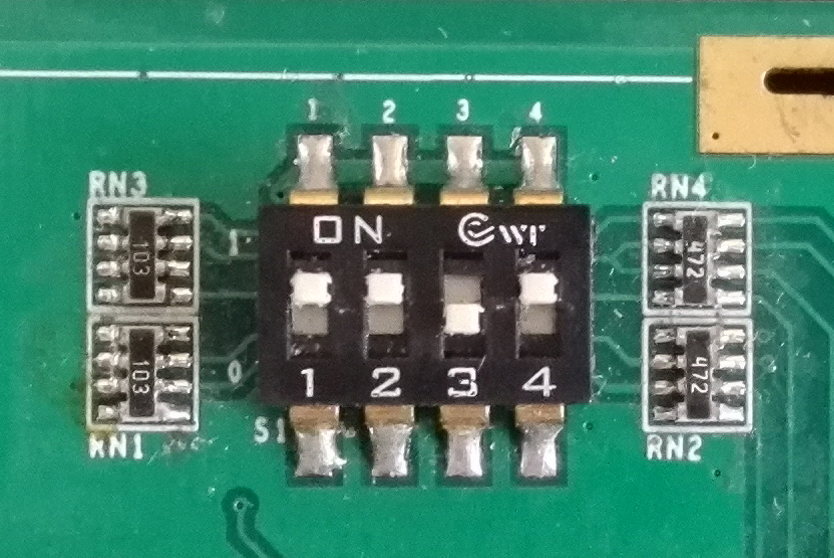


Figure 14 Boot Switch

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 CS12800F101P-R141 has one GPIO Connector, as Figure 15 shows. This connector is labelled as P28 on the PCB.. As for the definition of every Pin, please refer to Table 4.

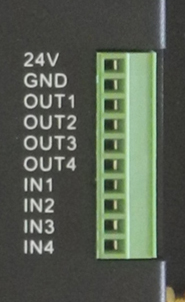


Figure 15 GPIO Connector

Table 4

|  |  |
| --- | --- |
| GPIO Connector Definition | |
| Pin Number | **Definition** |
| Pin 1 | VCC, Isolated Power +5-24V Input |
| Pin 2 | GND |
| Pin 3 | OUT1 |
| Pin 4 | OUT2 |
| Pin 5 | OUT3 |
| Pin 6 | OUT4 |
| Pin 7 | IN1 |
| Pin 8 | IN2 |
| Pin 9 | IN3 |
| Pin 10 | IN4 |

**BE ATTENTION:**

All these signals connect to CPU directly. Please use it carefully, or the CPU will be damaged easily.

## Camera

The Product CS12800F101P-C141 supports one channel CMOS camera. User should open the product’s backside case then can find the camera connector, as Figure 16 shows. It labelled as P26 on the PCB. It can support camera OV2659, OV5640.

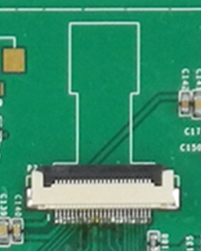


Figure 16 Camera Connector

# Measurements and Mounting

## Measurements

The measurement of CS12800F101P-C141 is 280\*185.5\*27.5mm, as Figure 17 shows.

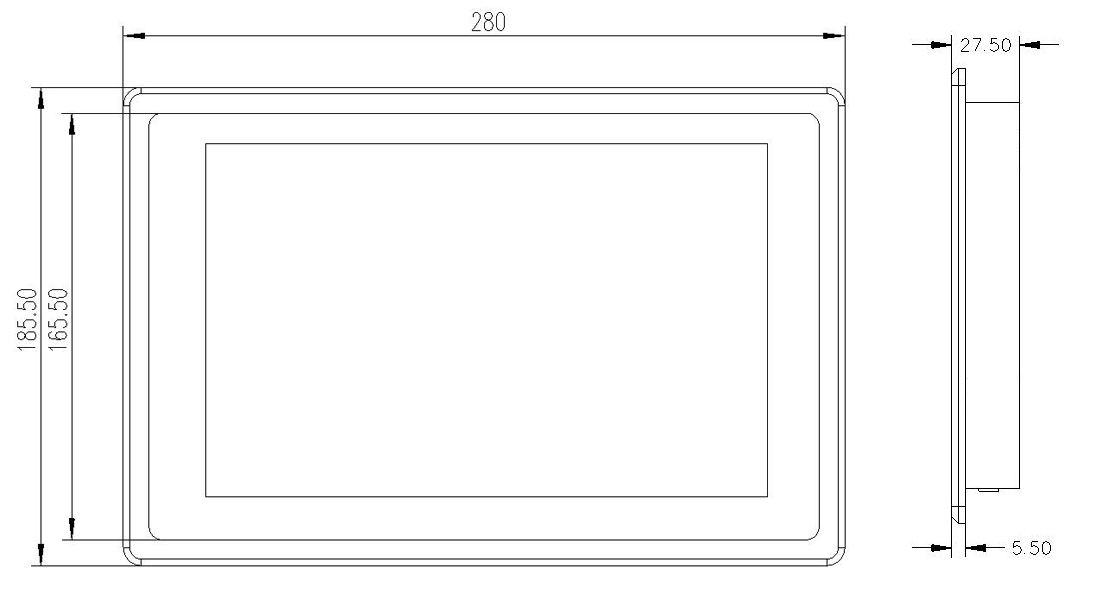


Figure 17 Dimension

## Mounting Method

This product CS12800F101P-C141 can be mounted using the mounting set, as Figure 18 shows. Please make sure the display is not exposed to high pressure when mounting into an enclosure.



Figure 18 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 [service@](mailto:service@)chipsee.com providing all possible details.



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