PPC/EPC-A9-97-C

User Manual

Release 1.0
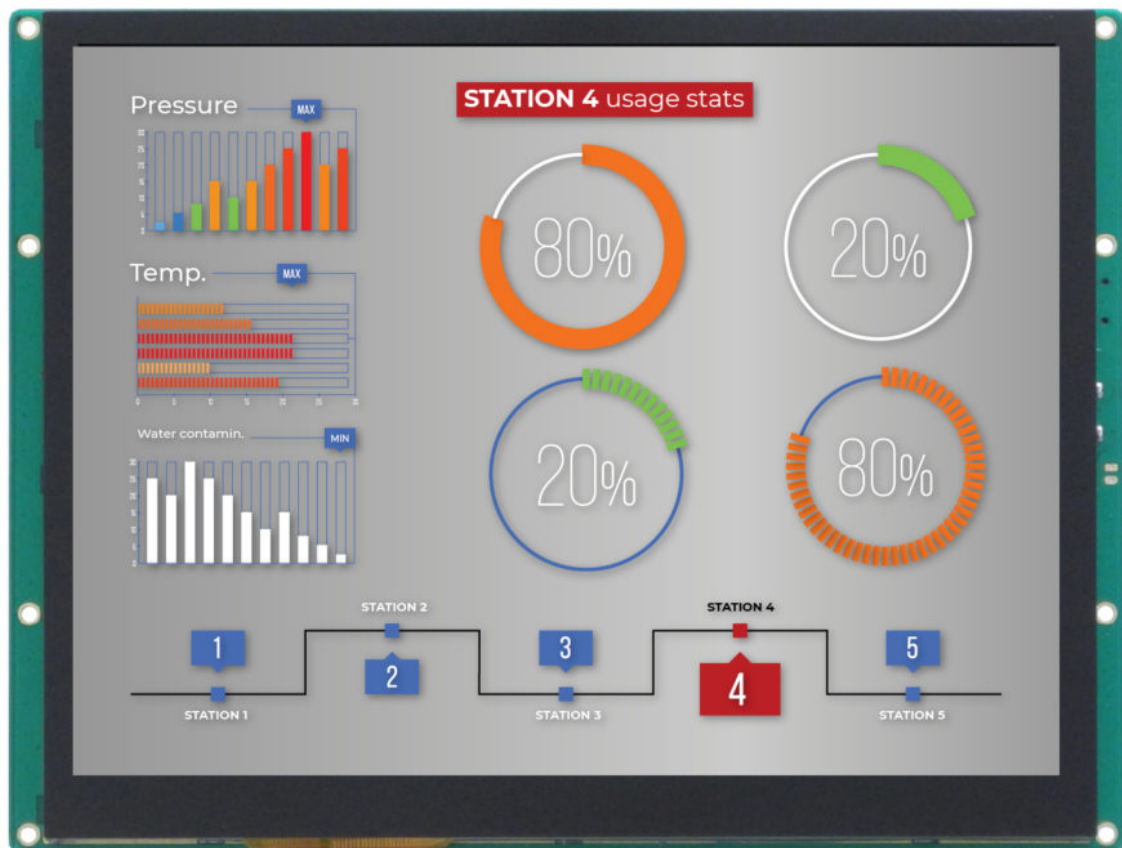
Chipsee Products Naming Rules

	CS10768F097E-C111 CS10768F097P-C111
CS	**Chipsee Product Abbreviate**
10	**Horizontal Resolution** **80**Means 800 Pixel **10**Means 1024 Pixel **12**Means 1280 Pixel **14**Means 1440 Pixel **19**Means 1920 Pixel

768	**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**
097	**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
E	**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	9.7 Inch LCD,1024*768 Pixel, Brightness:350nit
Touch	Ten-Point Capacitive Touch
USB	2 x USB 2.0 Host,1 USB OTG
LAN	1 Channel 1000M LAN, Support **POE（Optional）**. 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
4G/LTE	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	CS10768F097E: 226*172*26mm CS10768F097P:256*207*29mm
Weight	CS10768F097E:550g CS10768F097P:1370g

* 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.
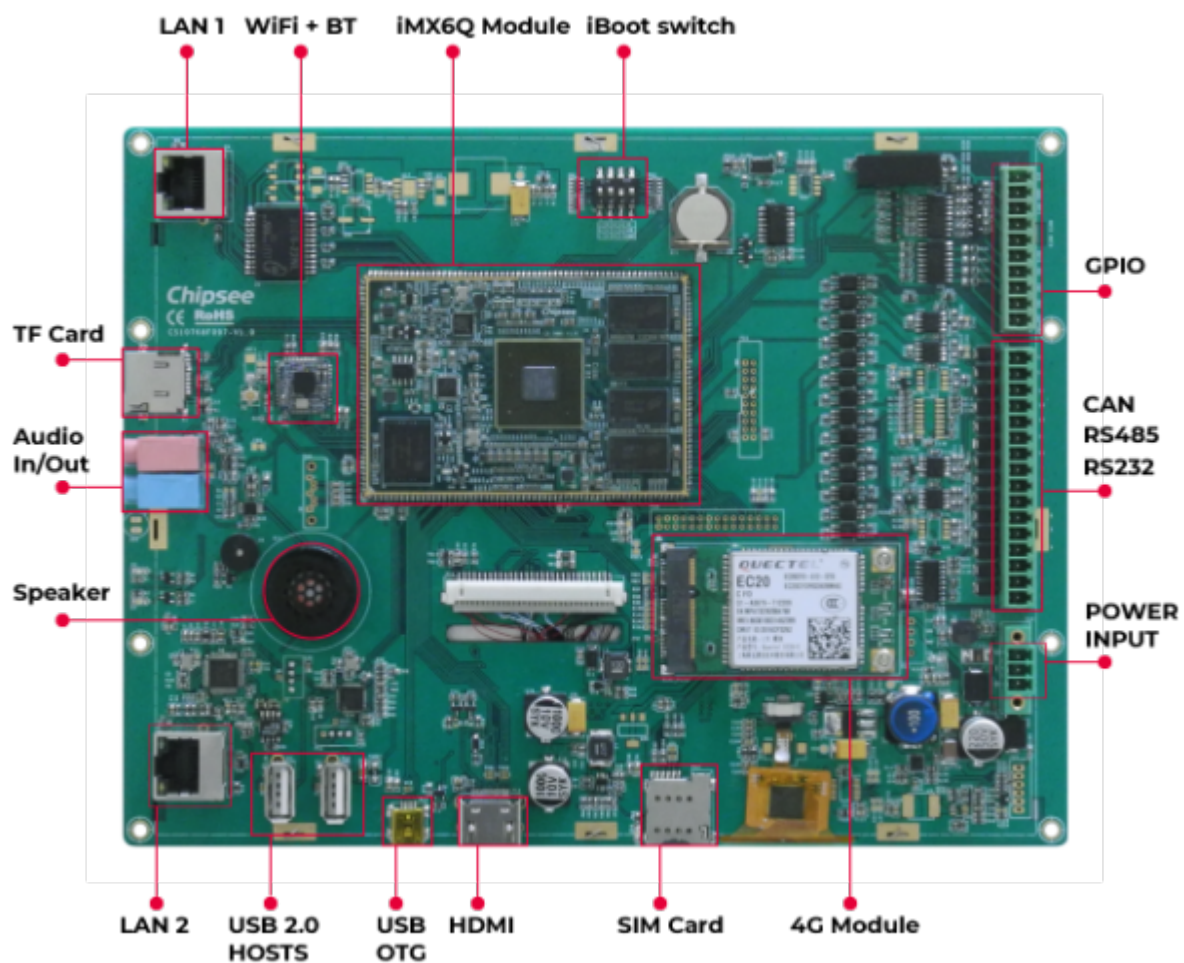
CS10768F097E-C111

Figure 1 Top View (Android)

LAN 1   WiFi + BT   iMX6Q Module   iBoot switch

GPIO

TF Card

CAN
RS485
RS232

Audio
In/Out

Speaker

POWER
INPUT

LAN 2   USB 2.0   USB   HDMI   SIM Card   4G Module
         HOSTS   OTG

Figure 2 Back View

CS10768F097P-C111

Figure 3 Top View (Android)

Figure 4 Back View

Power Input Connector

The product CS10768F097E/CS10768F097P uses a wide range power input: **DC 12~36V**. The total power consumption is normally about **7W**. The Power Input Connector is 3 Pin 3.81mm Screw Terminal Connector, as Figure 5 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.
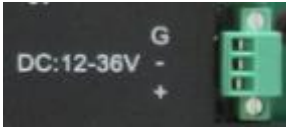
Figure 3 Power Input Connector

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**

ATTENTION:

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

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 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 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 CS10768F097P-C111 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 6 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 6 CAN+RS485+RS232 Connector

Table 2

RS232 / RS485 / CAN Pin Definition:		
Pin Number	Definition	Description
Pin 1	CAN2_H	CPU CAN Channel 2 H signal
Pin 2	CAN2_L	CPU CAN Channel 2 L signal
Pin 3	CAN1_H	CPU CAN Channel 1 H signal
Pin 4	CAN1_L	CPU CAN Channel 1 L 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 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 are not mounted on the 120Ohm matched resistance.*

USB HOST Connector

The product CS10768F097E/CS10768F097P has two USB connectors as Figure 7 shows. These two USB can provide 500mA current each.

Figure 7 USB HOST Connector

USB OTG Connector

The product CS10768F097E/CS10768F097P has one USB OTG connector as Figure 8 shows. It works as slave by default. User can connect it to host PC by this connector.
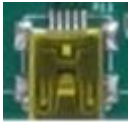
Figure 8 USB OTG Connector

LAN Connector

The product CS10768F097E/CS10768F097P has one channel 1000Mbit Ethernet Connector (LAN1), as Figure 9 shows. And this port supports POE (Power-On-Ethernet, optional, not supported by default). The other one channel 100Mbit Ethernet Connector is optional.

Figure 9 LAN Connector

TF Card

The product CS10768F097E/CS10768F097P has one TF (uSD) card connector as Figure 10 shows. This device supports TF (uSD)
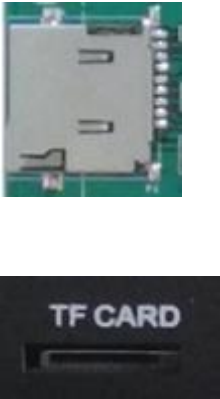
card up to 32GB.

Figure 10 TF Card Connector

ATTENTION:

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

SIM Card Holder

The product CS10768F097E/CS10768F097P has a mini-PCIe connector inside. The customer can mount on a 4G module to it. Then it will need the SIM card holder, as Figure 12 shows. There is a connector on the backside case which can connect external 4G Antenna, as Figure 13 shows.
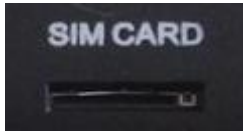

Figure 11mini-PCIe Connector&4G Module

Figure 12 SIM Card Holder

Figure 13 4G Antenna

ATTENTION:

This product is not mounted on any 4G module by default. The Ubuntu driver for the 4G module is not available right now.

Audio Connector

The product CS10768F097E/CS10768F097P has one Audio Input ("Line-in") and one Audio ("Line-out") output, as Figure 14 shows. And the product has an internal 2W speaker.

Figure 14 Audio Connector

WiFi+BT

The product CS10768F097E/CS10768F097P 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 16 shows.

Figure 15 WiFi+BT Module

Figure 16 WiFi+BT Antenna

HDMI Connector

The product CS10768F097E/CS10768F097P has one HDMI connector as Figure 17 shows. The HDMI output resolution can be configured by software.

Figure 17 HDMI Connector

Boot Switch

The product CS10768F097E/CS10768F097P has a boot switch which can be used to change boot sequence, as Figure 18 shows. It is defined as SW2 on the PCB. As for the details of the boot switch, please refer to Table 3.

Figure 18 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 CS10768F097P-R141 has one GPIO Connector, as Figure 19 shows. This connector is labelled as P28 on the PCB. As for the definition of every Pin, please refer to Table 4.
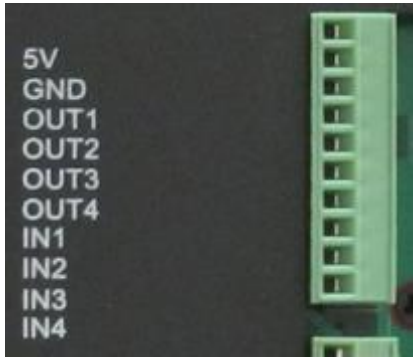

Figure 19 GPIO Connector

Table 4

GPIO Connector Definition	
Pin Number	Definition
Pin 1	VCC, Isolated Power 5VInput
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

Measurements and Mounting

Measurements of CS10768F097E

The measurement of CS10768F097E-C111 is 226*172*26mm.

Mounting Method of CS10768F097E

This product CS10768F097E-C111 can be mounted using the 4 screw holes on the PCB. Please make sure the display is not exposed to high pressure when mounting into an enclosure.

Measurements of CS10768F097P

The measurement of CS10768F097P-C111 is 256*207*29mm.

Mounting Method of CS10768F097P

This product CS10768F097P-C111 can be mounted using the mounting set, as Figure 20 shows. Please make sure the display is not exposed to high pressure when mounting into an enclosure.

Figure 20 Mounting Method

Precautions for Use

When you use product CS10768F097E, it is forbidden to touch the circuit board on the back of the product when the product is powered on.

When the product is out of power, please also take anti-static measures before touching the circuit board.

How to Get Support

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