Specification

Product：Android

Board

Model：XCD-3288D

Date：2020-11-10

Catalogue

Chapter I Overview

1.1 APPLICATION

This product is an intelligent Android motherboard, Applicable to smart display terminal、Industrial automation terminal and video terminal products, for example: Digital signage、Intelligent self-service terminal、New retail intelligent terminal、2o intelligent device、Robot equipment、AI equipment, etc。

1.2 OVERVIEW

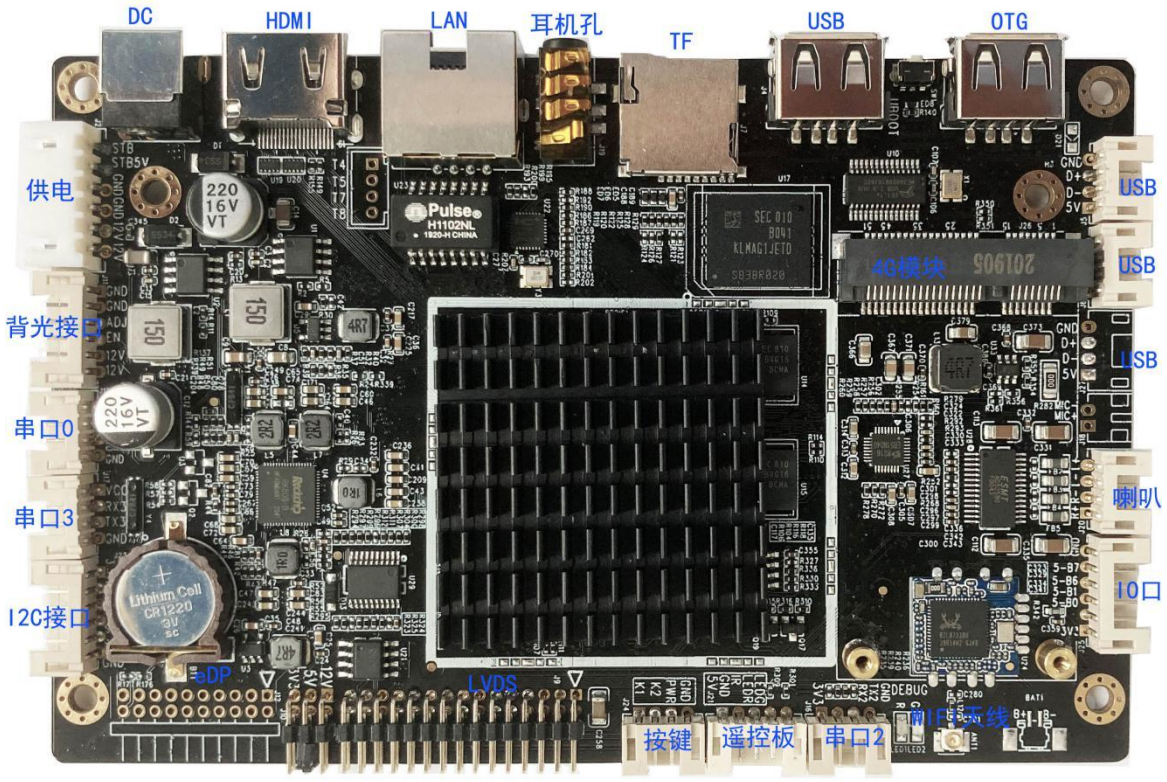
This product adopts Rockhip RK3288 chip, Android Os Version 7.1.2 ,Built in WIFI-2.4G/BT-4.0 ; support 4K video decoder, HDMI-4K@30Hz output; Built in watchdog, Support remote switch on / off and network timing switch on / off, Support remote OTA upgrade; Support face recognition function expansion; Support various communication interface extensions; Various terminals can run smoothly。

1.3 Features

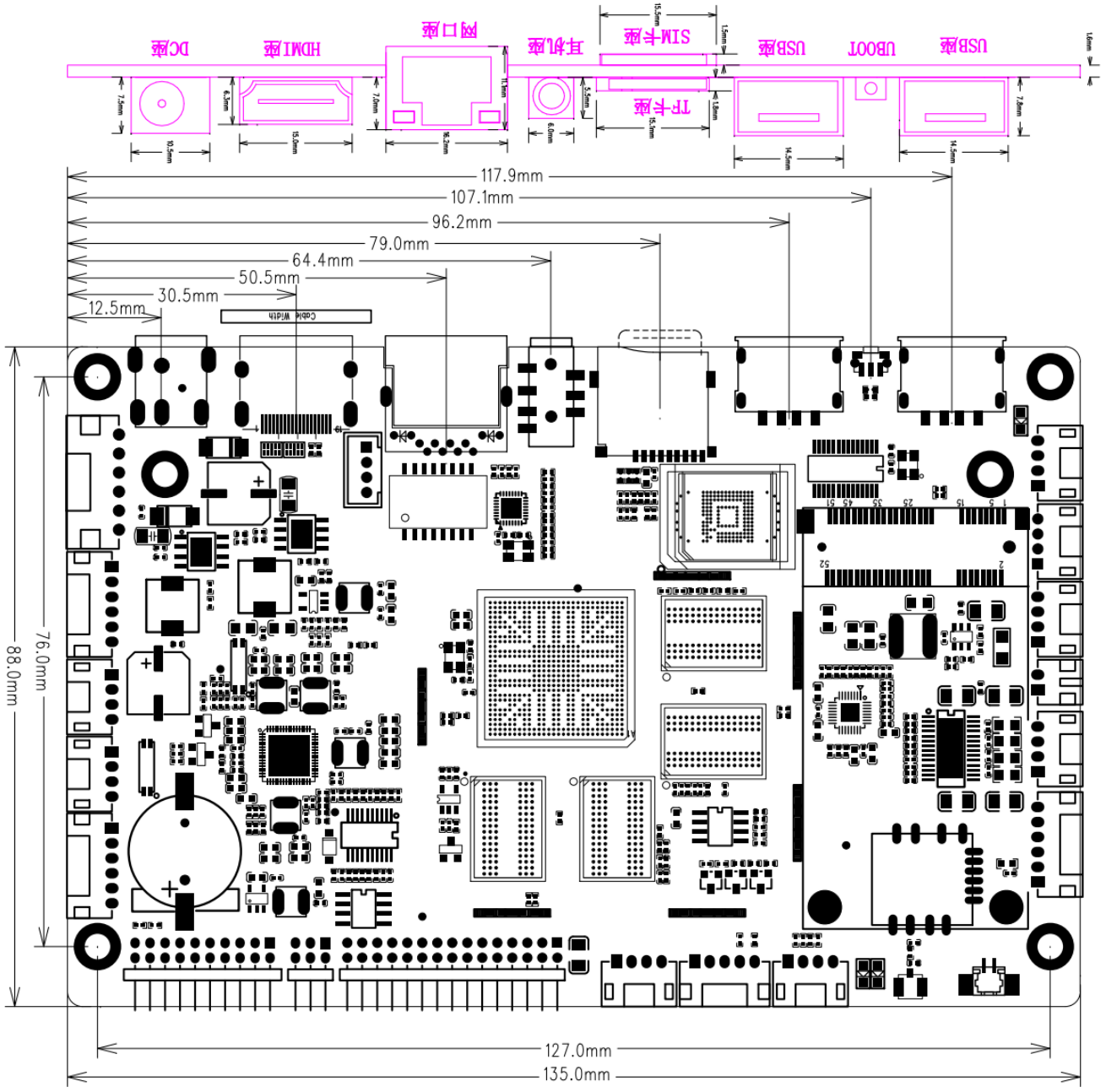
- Ram and ROM can be configured according to customer needs。
- Voltage DC input: DC + 12V, normal working mode < 4.5w, standby mode < 0.3w。
- Support HD video and picture playback , support LVDS-1920X1080,EDP-1920X1080,HDMI-4K output 。
- Timing switch function:support local daily mode and weekly mode timing on / off settings,Support network timing switch interface call;It has the advantages of simple operation, high stability and high accuracy, which is convenient for the development and call of the upper app;Realize the true shutdown of the system during the shutdown period;External device not responding,Energy conservation and environmental protection,And prolong the service life of products and peripherals。

- And extend the service life of products and peripherals, and support Android system customization, Provide API system interface code, Perfect support for the development of customers' app。
- Perfect support for all kinds of peripherals,Provide common peripheral support list and peripheral driver debugging。

1.4 Appearance & Size



TOP VIEW



Pcb size:

*PCB height: 12.0mm *PCB length: 135.0mm

*PCB width: 88.0mm *PCB location hole: 3.2mm x4

Chapter II Hardware parameters

2.1 Hardware parameters

PARAMETERS	
CPU	RK3288, Quad-core ARM-A17, 1.8GHz
GPU	Mali-T764
内存	DDR 2GB （4G option）
Built in memory	EMMC 8G（16G/32G/64G option)
Os	Android 7.1.1
Decoding resolution	Max-up 2160P
Video format	support RM/RMVB,MKV,TS,FLV,AVI,VOB,MOV,WMV,MP4 ...
Picture format	Support BMP,JPEG,PNG,GIF ...
Playmode	It supports multiple playback modes such as cycle, timing, plug-in and so on
Network	以太网、WiFi、BT
Rtc Timer	support
Timing switch	support
Upgrade	Support network upgrade,USB/TF Card upgrade and computer upgrade

2.2 Hardware interface

Hardware interface	
POWER	12V/ DC Input port

HDMI	HDMI2.0 MAX-UP 4K@30HZ output
LVDS	Dual 8 bit LVDS+backlight,max support 1920X1080 output

EDP	EDP max support 1920X1080 output
Storage	TF card
USB	6 个/ 5 HOST USB , 1 OTG USB
Uart	3 / 2 TTL, 1 debug TTL
IIC	1 IIC （3.3V）
IO 口	4 IO （3.3V）
Remote&indicator	1 infra-red, 1 Red indicator , 1 Green indicator
Ethernet	10m / 100M adaptive Ethernet
WIFI/BT	support WIFI-2.4G/BT-4.0
Speaker	8Ω5W x 2
Audio	Support left/left channel, MIC inteface

Chapter II Precautions for assembly and use

Please pay attention to the following (but not limited to) problems during assembly and use.

1 Relative humidity ≤ 75%。

2 Storage temperature: 15 ° C to + 45 ° C。

3 Service temperature: 0 ° C to + 60 ° C。

4 Pay attention to anti-static treatment during assembly and transportation of the whole machine。

5 When the whole machine is assembled, it can be installed at the bottom or side, but do not deform or distort the board and do not bear heavy pressure。

6 The opening of each terminal hole should not be too small, especially the HDMI port, so as to avoid squeezing the terminal during installation。

7 The connecting line between this board and the supporting module board should not be too long, otherwise the image quality may be affected。

8 The internal wiring of the whole machine shall be reasonable, and the connecting wires shall not directly pass through the PCB board as far as

possible。

9 In order to achieve better EMC Effect of the whole machine, it is recommended that the LVDS screen line between the main board and the screen adopt shielded wire or twisted pair, and if possible, put a magnetic ring on the line near the board end。

Chapter IV Interface definition

Definition and description of main interfaces:

J2 (6PIN/2.54)

SEQ	definition	Desc.
1	+12V	12V
2	+12V	12V
3	GND	GND
4	GND	GND
5	S5V	5V
6	STB	Stb control

J11 (6PIN/2.0) backlight interface

SEQ	definition	Desc.
1	+12V	Lcd backlight vcc
2	+12V	Lcd backlight vcc
3	ON/OFF	Enable
4	ADJ	Adjust
5	GND	GND
6	GND	GND

J18 (2PIN/2.0) mic

SEQ	definition	Desc.
1	MIC-	MIC-
2	MIC+	MIC+

J20 (4PIN/2.0) speaker

SEQ	definition	Desc.
1	LPK+	LEFT +
2	LPK-	LEFT-
3	RPK-	RIGHT-
4	RPK+	RIGHT+

J24 (4PIN/2.0) PWR KEY

SEQ	definition	Desc.
1	K2	RESEVE K2
2	K1	RESEVE K1
3	PWR	PWR KEY
4	GND	GND

J9 (2*15PIN/2.0) LVDS 接口（弯插）

SEQ	definition	Desc.
1	PWR	VCC
2	PWR	VCC
3	PWR	VCC
4	GND	GND
5	GND	GND
6	GND	GND
7	RX00-	LVDS Signal
8	RX00+	LVDS Signal
9	RX01-	LVDS Signal
10	RX01+	LVDS Signal
11	RX02-	LVDS Signal
12	RX02+	LVDS Signal
13	GND	GND
14	GND	GND
15	RX0C-	LVDS Signal
16	RX0C+	LVDS Signal
17	RX03-	LVDS Signal
18	RX03+	LVDS Signal
19	RXE0-	LVDS Signal
20	RXE0+	LVDS Signal
21	RXE1-	LVDS Signal
22	RXE1+	LVDS Signal
23	RXE2-	LVDS Signal
24	RXE2+	LVDS Signal
25	GND	GND
26	GND	GND
27	RXEC-	LVDS Signal
28	RXEC+	LVDS Signal
29	RXE3-	LVDS Signal
30	RXE3+	LVDS Signal

注：LVDS 屏幕用跳线帽来进行屏电源的选择，从左到右，依次为：12V/5V/3.3V。

J12 (2*10PIN/2.0mm) EDP interface

SEQ	definition	Desc.
1	VCC	eDP vcc
2	VCC	
3	GND	GND
4	GND	
5	L0N	Display Port Lane0 negative output
6	L0P	Display Port Lane0 positive output
7	L1N	Display Port Lane0 negative output
8	L1P	Display Port Lane0 positive output
9	L2N	Display Port Lane0 negative output
10	L2P	Display Port Lane0 positive output
11	L3N	Display Port Lane0 negative output
12	L3P	Display Port Lane0 positive output
13	GND	GND
14	GND	GND
15	AUN	Display port AUX- negative
16	AUP	Display port AUX- positive
17	GND	GND
18	GND	GND
19	HPD-IN	hotplug
20	GND	GND

J21 (5PIN/2.0) IR interface

SEQ	definition	Desc.
1	GED	Red led
2	RED	Green led
3	IR	IR
4	GND	GND
5	+5V	+5V

J23（6PIN/2.0）IIC

SEQ	definition	Desc.
1	GND	GND
2	SDA4	12C 数据
3	SCL4	12C 时钟
4	RST	复位数据
5	INT	中断数据
6	3.3V	供电

J25（6PIN/2.0）IO

SEQ	definition	描述
1	GND	GND
2	IO4	IO 接口 4
3	IO3	IO 接口 3
4	IO2	IO 接口 2
5	IO1	IO 接口 1
6	3.3V	供电

J16（4PIN/2.0）UART2（Debug）

SEQ	definition	Desc.
1	GND	GND
2	TX2	TX 2
3	RX2	RX 2
4	VDD	VCC

J68（4PIN/2.0）USB

SEQ	definition	Desc.
1	GND	GND
2	D+	DP
3	D-	DM
4	+5V	VCC

J15（4PIN/2.0）UART0

SEQ	definition	Desc.
1	GND	GND
2	TX0	TX 0
3	RX0	RX 0
4	VDD	VCC

J17（4PIN/2.0）UART3

SEQ	definition	Desc.
1	GND	GND
2	TX3	TX 3
3	RX3	TX 3
4	VDD	VCC

J35（4PIN/2.0）Build in USB（3 Groups：J26,J31,J35,J68）

SEQ	definition	Desc.
1	GND	GND
2	D+	DP
3	D-	DM
4	+5V	VCC

Chapter V Electrical performance

◆ Standard power supply

类别		MIN.	TYPE	MAX.
Power parameters	Voltage	11V	12V	13.5V
	Ripple	/	/	50mV
	Electric current	3A	/	/

◆ Working current without other peripherals

Category		MIN.	Type	MAX.
Supply current (No screen and other	Working current	/	200 mA	600 mA
	Standby current	/	17 mA	20 mA
	USB power supply	/	/	800 mA

peripherals)	current			

◆ Working current when connecting LVDS panel

Category		MIN.	Type	MAX.
Supply current (LVDS)	3.3V Working current	/	400 mA	800 mA
	5V Working current	/	550 mA	1 A
	12V Working current	/	580 mA	1.5 A

◆ Working current when connecting EDP panel

Category		Min.	Type	Max.
Supply current (EDP)	3.3V Working current	/	400 mA	800 mA

注：The maximum working current of the USB device connected to the motherboard during normal operation shall not exceed 500mA。

注：When connecting the LVDS screen, please select the correct point screen voltage of 3.3v/5v/12v to prevent burning the screen。

注：When connecting the LVDS / EDP screen, the working current of the main board is determined by the connected screen, which is not listed in the table.