



AIO-3128C

All in one Board Specifications

Author	T-chip Intelligent Technology Co.,Ltd.
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Company Profile

T-Chip Intelligent Technology Co., Ltd. was founded in 2005. It has more than 10 years of research and development experience in scientific and technological products, has 6 invention patents and more than 30 computer software copyrights, and is a national high-tech enterprise. We focus on the research and development, design, production and sales of open source intelligent hardware, internet of things and digital audio products, and provide the overall solution for intelligent hardware products meanwhile.



Firefly is a brand owned by T-chip Technology. It operates open source products, open source communities and online stores. It has a large number of enterprise users and developer users, and its products are well received by users. Firefly open source products include open source boards, core boards, industry mainboards, etc. The open-source board series is the recommended board card by chip original factory Rockchip and obtain the support of native SDK. The core boards and industrial mainboards are widely used in commercial displays, advertisement integrated machines, intelligent POS, face recognition terminals, internet of things, intelligent cities, etc. At present, there are more than 100,000 users, including over 2,000 enterprise users. And well-known users include ARM, Google, Baidu, Tencent, Alibaba, etc.

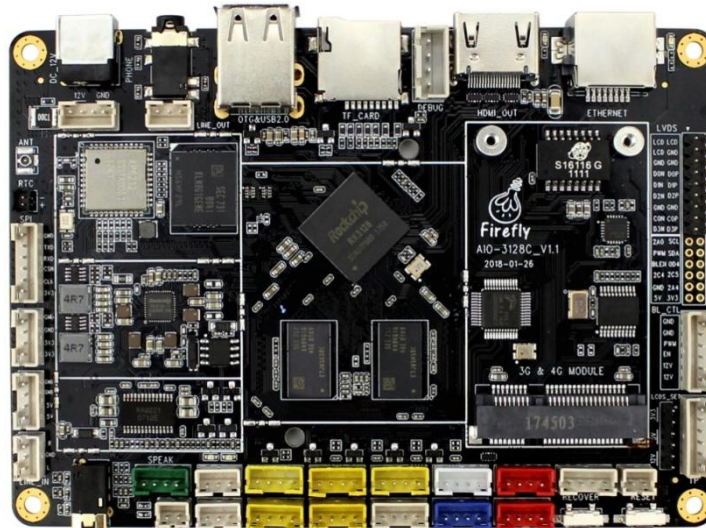
Firefly team has more than 60 research and development members and has the research and development capabilities in schematic design, PCB layout, mainboard production, embedded development, system development, application program development, etc., which accelerates the research and development process for many technology entrepreneurs and start-ups, and provides professional technical services..

" **Make technology more simple, Make life more intelligent** " is the idea of Firefly team. We hope to make the research and development of various technology products efficient and simple, and let intelligent technology integrate in our lives through the open source products and technical services of Firefly.

1. Product Overview









1.1 Overview

AIO-3128C integrated board is based on the RK3128 quad-core chip platform, Cortex-A7 ,up to 1.3G HZ. The board has single LVDS, HDMI display output interfaces, The board is integrated with MINI PCIE connector and SIM holder, which can be connected to 3G and 4G mobile communication modules. Support Line-in function.



It supports a full range of system software: Android, Linux and Ubuntu ,The supporting source code, instruction manual, technical materials and development tools are available for download on the official website, Its open source feature allows secondary development for enterprises, facilitating R&D and shortening the product development cycle.

1.2 Application Scenarios

			
Amusement equipment	Commercial display	Medical / health equipment	Vending machines
			
mobile POS machines	Interactive printer	Smart robot	Industrial computer

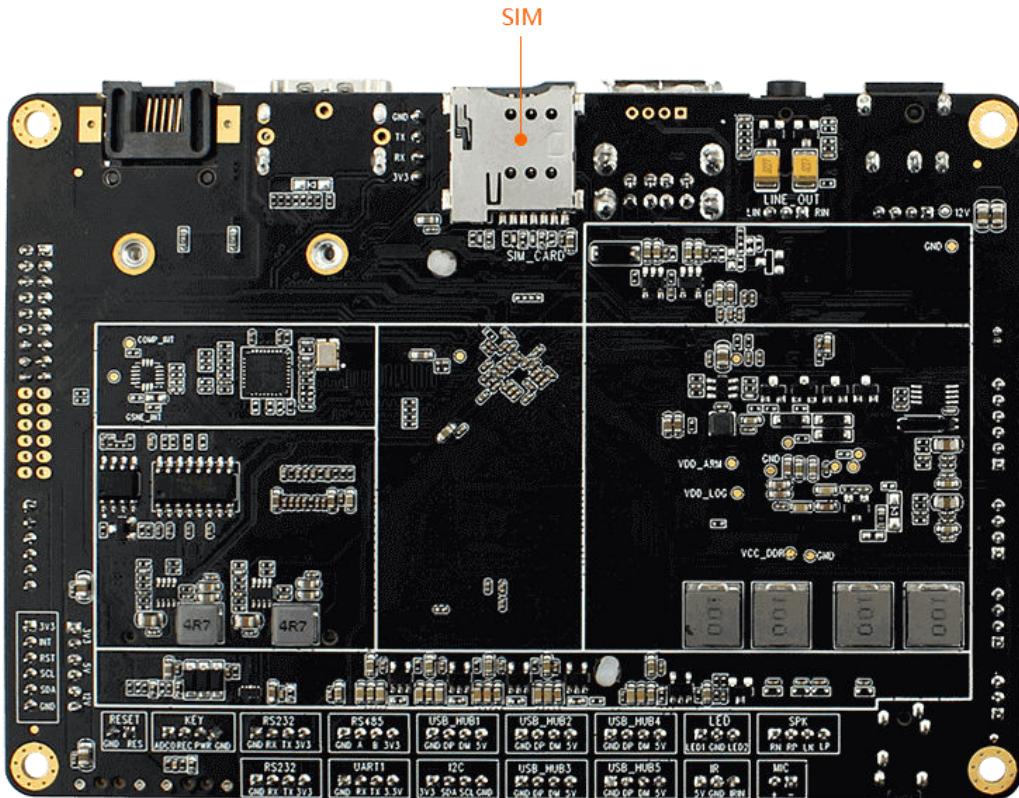
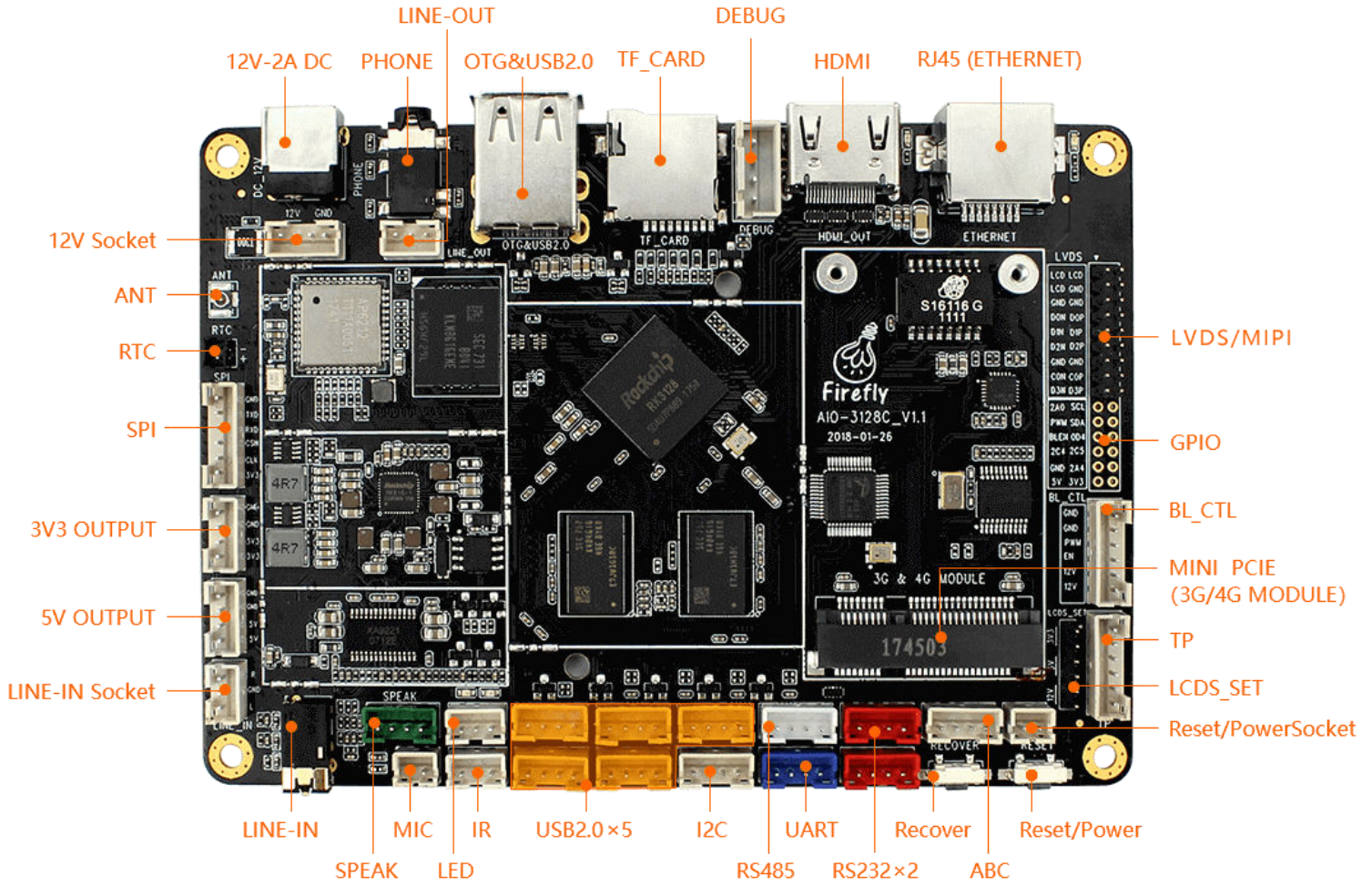
2. Hardware Specifications

Types	Specifications
CPU	Rockchip 3128
Processor	ARM® Cortex™-A7 Quad-Core 1.3GHz
GPU	ARM® Mali-400MP2 GPU , AFBC (Frame Buffer Compression) supported , Support OpenGL ES1.1/2.0 , Embedded high-performance 2D acceleration hardware
Video	1080P multi-format video decoding (VC-1,RV, MPEG-1/2/4, VP6/VP8) 1080P video decoding , support H.263,H.264,H.265 , VP8 format Video post processor: deinterlacing, denoising, edge/ detail/ color optimization
PMU	RK816 Power management unit
DDR	32Bit 1GB/2GB DDR3-1066Mbps(533MHZ)
Memory	High-speed eMMC (8GB) Support MicroSD (TF) Card
WiFi	Onboard WiFi/Bluetooth Combo Module : - WiFi 2.4GHz (Support 802.11 b/g/n protocol) - Bluetooth 4.0 (Support BLE) Onboard 3G/4G LTE (Mini-PCIe) Module (Optional) : - Support WCDMA, EVDO, 4G full netcom
Ethernet	10/100M Ethernet (RJ45)
Display	Video Output Interface : 1 x HDMI 1.4 output up to 1080P@60Hz Screen Interface : 1 x LVDS , 1 x MIPI
Audio	1 x HDMI , audio output 1 x MIC(socket) for audio input

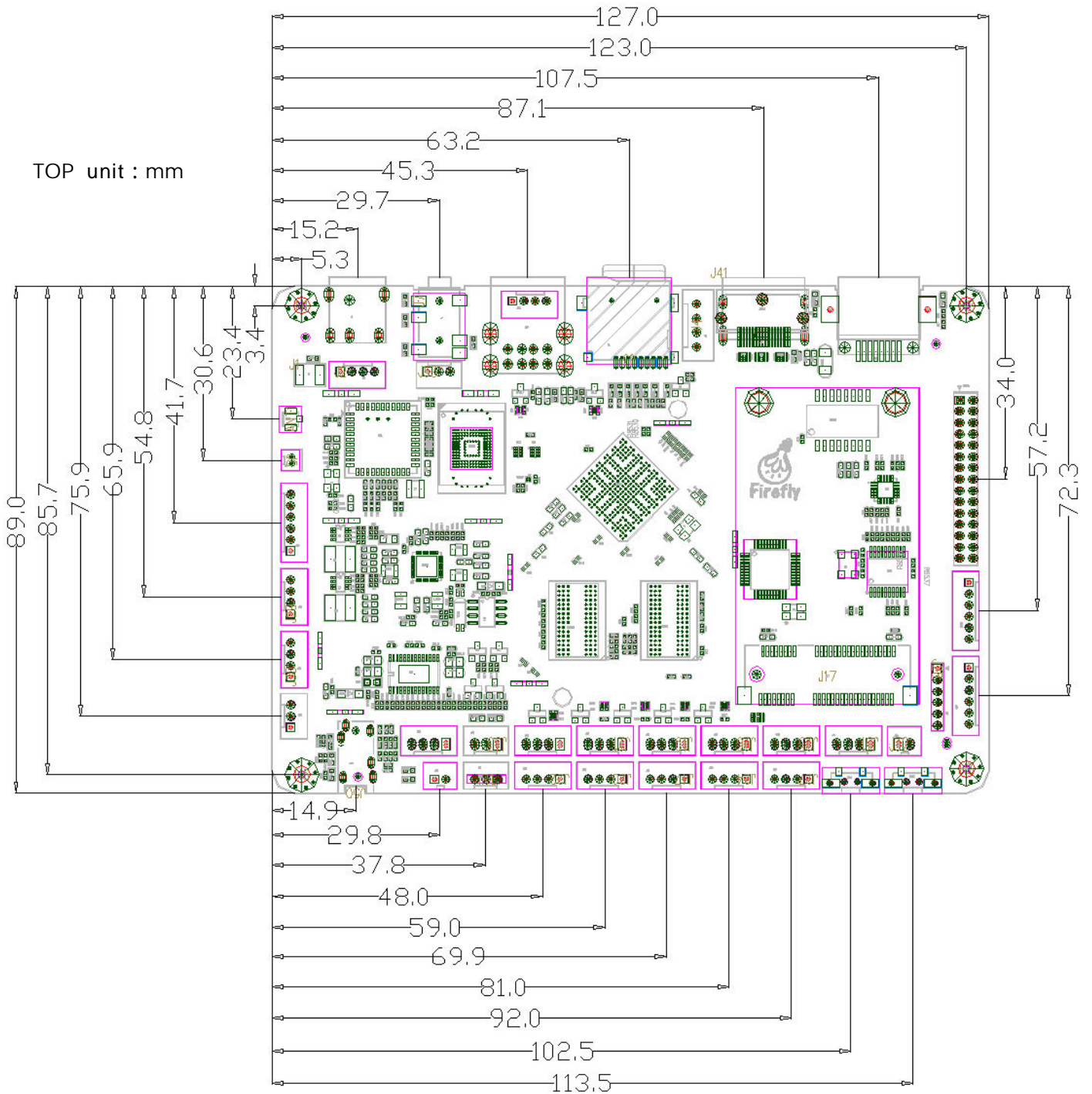


	<p>1 x Analog audio (via 3.5mm Combo Audio Jack for audio input and output)</p> <p>1 x Line-in for audio input</p> <p>1 x Line-out (socket) for audio output</p> <p>1 x Double -Speakers, (support left and right output, built-in double 4Ω/2.7W, 8Ω/1.6W PA)</p>
Camera	Support USB camera
USB	1 × USB2.0 HOST, 1 × USB2.0 OTG , 5 × USB2.0 Socket
Serial	2 × RS232 , 1 × RS485 , 1 × UART
Debugging	1 x Serial Console , for debugging
IR	1 x IR Receiver , support remote control
RTC	1 X RTC , Onboard battery socket (supports RTC wake up)
Key	1 x Reset or Power Key , 1 x Recover Key
Other	SPI, I2C, ADC, GPIO, Key , and power input and output interface
Power	DC12V - 2A (via DC 5.5*2.1mm Jack or 2.54mm Socket)
OS	Android 5.1、Ubuntu 14.04 / Ubuntu 16.04、Linux、u-boot
Programming	C、C++、Kotlin、Java、Shell、Python
Upgrade	Support TF-Card upgrade, USB upgrade
PCB Size	127mm × 89mm
High Limit	16mm (top) ,2.5mm (bottom)
Screw Hole	Φ 3mm
PCB Parameters	1.6mm (Thickness) , gold immersion process
Weight	80g

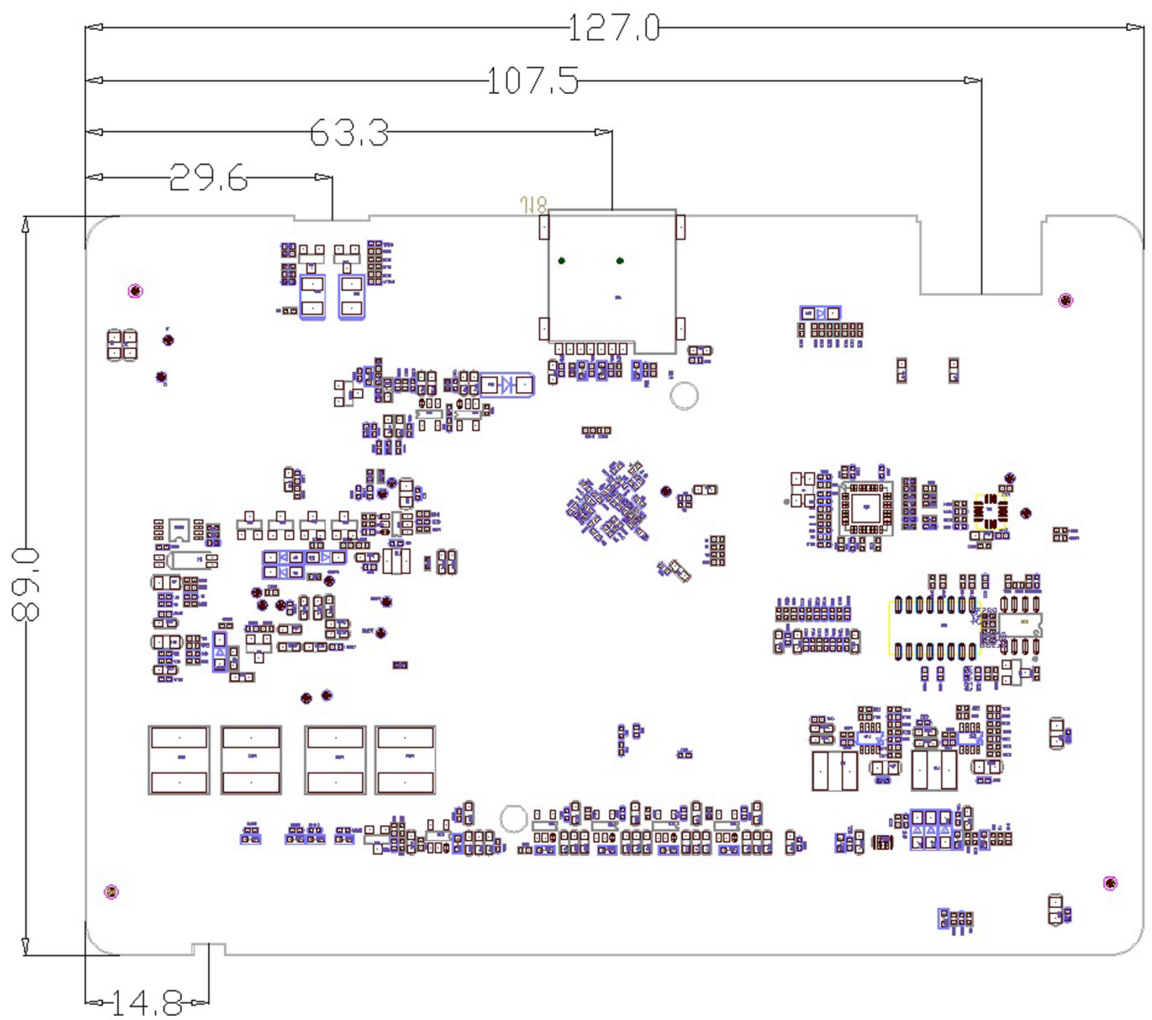
3. Interface description



4. PCB Size

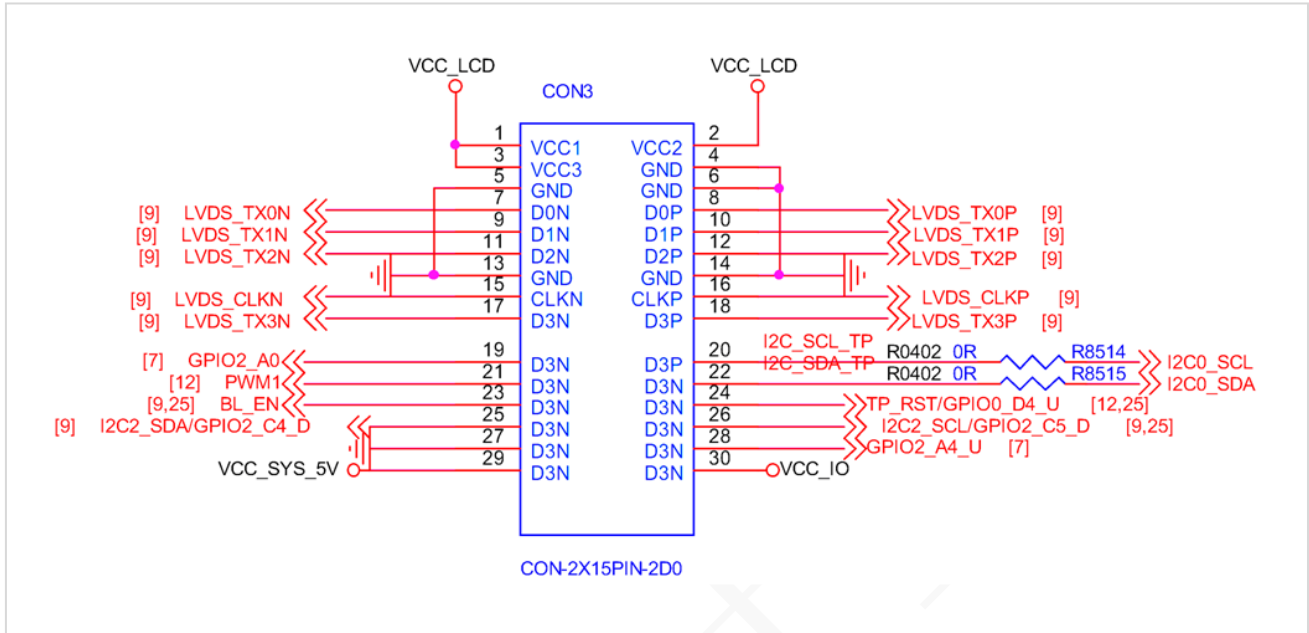


Bottom (unit : mm)



5. Pin definition

1. LVDS



No.	Definition	No.	Definition
1	VCC_LCD	Power output	Output 12V/5V/3.3V
2	VCC_LCD	Power output	Output 12V/5V/3.3V
3	VCC_LCD	Power output	Output 12V/5V/3.3V
4	GND	GMD	GMD
5	GND	GMD	GMD
6	GND	GMD	GMD
7	LVDS_TX0N	I/O	Output LVDS/MIPI data signal
8	LVDS_TX0P	I/O	Output LVDS/MIPI data signal
9	LVDS_TX1N	I/O	Output LVDS/MIPI data signal
10	LVDS_TX1P	I/O	Output LVDS/MIPI data signal



11	LVDS_TX2N	I/O	Output LVDS/MIPI data signal
12	LVDS_TX2P	I/O	Output LVDS/MIPI data signal
13	GND	GMD	GMD
14	GND	GMD	GMD
15	LVDS_CLKN	I/O	Output LVDS/MIPI clock signal
16	LVDS_CLKP	I/O	Output LVDS/MIPI clock signal
17	LVDS_TX3N	I/O	Output LVDS/MIPI data signal
18	LVDS_TX3P	I/O	Output LVDS/MIPI data signal
19	GPIO2_A0	I/O	Output GPIO2_A0 signal
20	I2C_SCL_TP	I/O	Output I2C/ I2C_SCL_TP signal
21	PWM1	I/O	Output PWM1/GPIO0_D3 signal
22	I2C_SDA_TP	I/O	Output I2C/ I2C_SDA_TP signal
23	BL_EN	I/O	Output BL_EN/GPIO2_C6 signal
24	TP_RST/GPIO0_D4_U	I/O	Output TP_RST/GPIO0_D4_U signal
25	I2C2_SDA/GPIO2_C4_D	I/O	Output I2C2_SDA/GPIO2_C4_D signal
26	I2C2_SCL/GPIO2_C5_D	I/O	Output GPIO2_C5_D/I2C2_SCL Or input TP_INT signal
27	GND	GND	GND
28	GPIO2_A4_U	I/O	Output GPIO2_A4_U signal
29	VCC_SYS_5V	Power	Output 5V
30	VCC_IO	Power	Output 3.3V

6. Appendix

6.1 Source code acquisition

Please visit the official website "Resource Download": ([please click here](#))

6.2 Contact us

	Company	T-chip Intelligent Technology Co.,Ltd.
	Address	Room 2101, No.1 Hongyu Building, #57 Zhongshan 4Rd, East District, Zhongshan, Guangdong
	Mobile	(+86) 186 8811 7175
	National service hotline	4001-511-533
	Telephone	0760-89881218
	Zip code	528400
	Business	sales@t-firefly.com
	Website	www.t-firefly.com