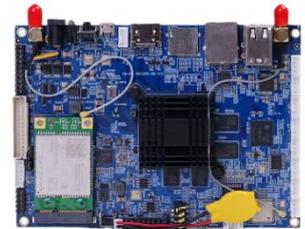


Product Introduction

CM580-6BF is a low-power, high-performance **Industrial Motherboard**, independently developed by Xiamen Caimore Communication Technology Co., Ltd. It adopts Rockchip RK3288 series CPU. The ARM-based processor combined with the Android operating system provides a very broad and free App operating environment; excellent computing and graphics performance, especially suitable for harsh or demanding industrial occasions and public space applications, It supports wide temperature operation, and expands a rich peripheral function interface.



Applicable Scene:

- ◇ Industrial field control acquisition
- ◇ Financial POS machine, vehicle control terminal
- ◇ Intelligent terminal in unattended environment
- ◇ Security/surveillance/police and IoT fields
- ◇ Human-computer interaction, intelligent retail

Model No.

Model No.	CPU	System Version	Dual screen different display	Screen Interface	Wi-Fi
CM580-6BF	RK3288	Android7.1.2/Linux	Support	LVDS, HDMI	Optional

Product Features

Main Features of Rockchip RK3288 series CPU

- ✧ Super quad-core Cortex-A17, frequency up to 1.6GHz
- ✧ GPU uses Mali-T764 GPU, supports TE, ASTC, AFBC memory compression technology
- ✧ Support 4K VP9 and 4K 10bits H265/H264 video decoding, up to 60fps
- ✧ Built-in multiple high-performance hardware processing engines, capable of supporting multiple formats of video decoding, such as: H.264/H.265/VP9 of 4K*2K@60fps , also supports H.264/MVC/VP8 of 1080P@30fps and High-quality JPEG codec and image front and rear processors

GPU Advantages

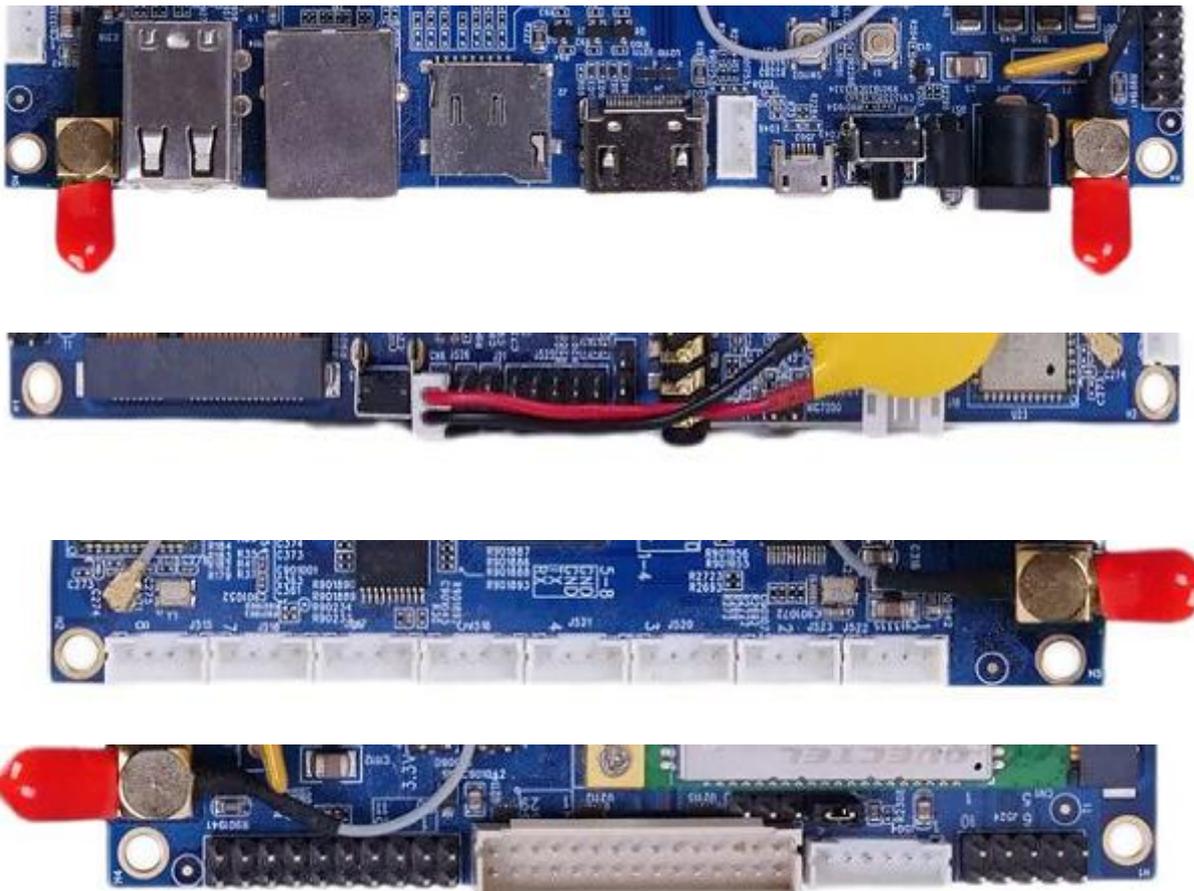
- ✧ ARM frame buffer compression technology
- ✧ Adaptive scalable texture compression technology
- ✧ TE Smart Elimination Technology
- ✧ Original stereo 3D game driver
- ✧ Original star search entertainment engine

Codec

Rockchip RK3288 is a chip that supports 4Kx2K and hard-decode H.265 video, bringing users a clear visual enjoyment as a more efficient high-definition compression format. Compared with H.264, H.265 uses variable-size coding units and more advanced intra-frame prediction modes. With the same image quality, H.265 video can save half of the bandwidth compared to H.264. Rockchip RK3288 is the industry's first ARM core chip that supports 4K H.265 real-time hardware decoding. It has played its accumulated advantages in the audio and video fields in video support, and truly supports 4K video output and playback.

Technical Parameters

Device Interface Diagram



CM580-6BF Accessories

		
Power Connector	Ethernet Cable	Antenna

Industrial Design

Item	Description
Hardware Design	It has the characteristics of high seismic resistance, dustproof, low calorific value and so on, suitable for harsh industrial environment applications.
Reinforced Circuit Board	PCB follows the principle of 20H and 3W, and the PCB is produced with Shengyi material to ensure the stability and reliability of the board.
Industrial Grade Components	The components of the whole machine are manufactured by strictly screened industrial-grade components.

Performance Parameter

Item	Description
CPU	RK3288 SoC Cortex-A17 Quad Core @ 1.6GHz Max
Memory	DDR3 default 2GB (expandable)
Storage	EMMC default 8GB (expandable)

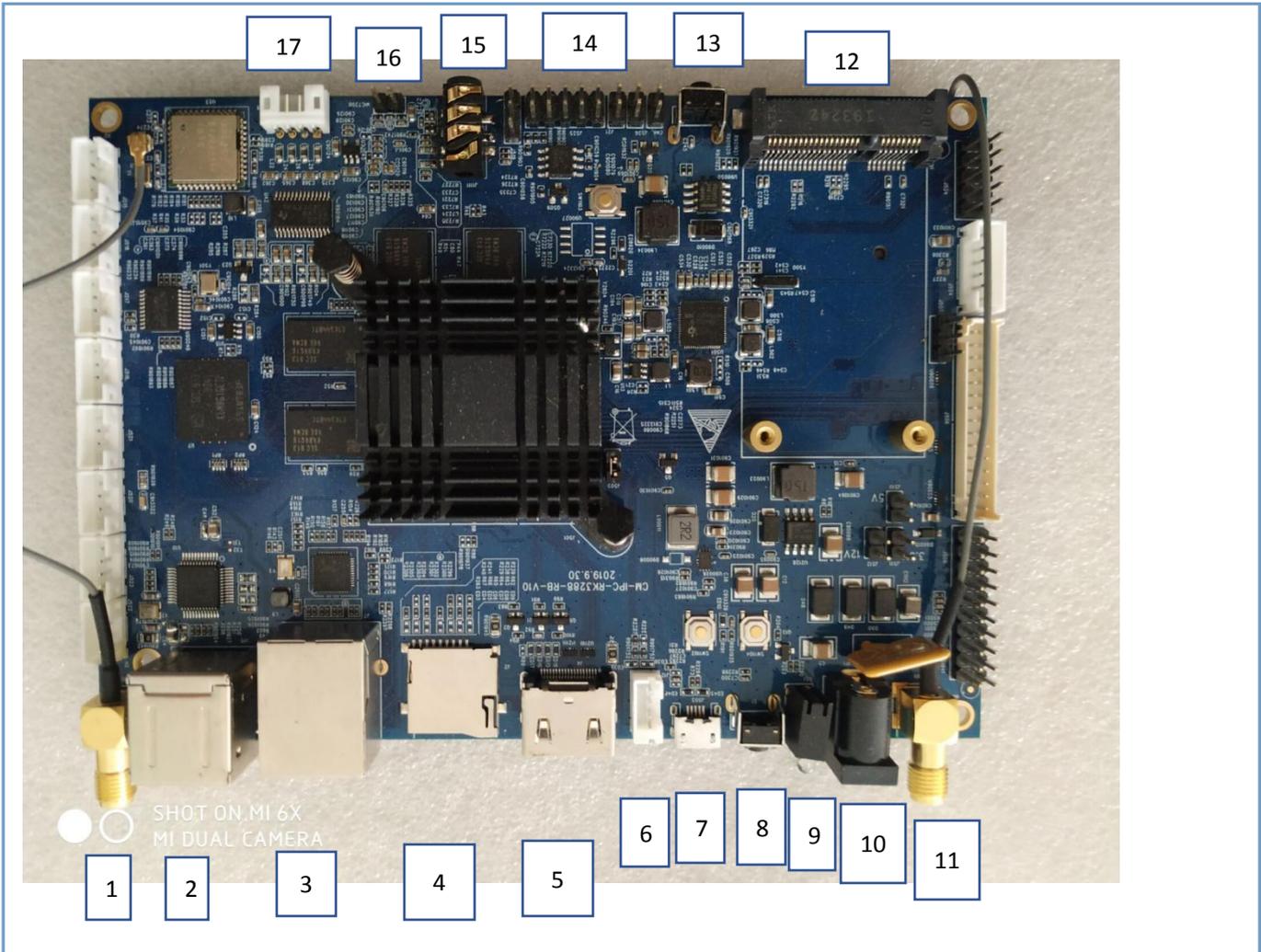
Function Interface

Item	Interface Description
Power	12V DC, 4A, With lightning protection, over-voltage and over-current protection, anti-reverse connection protection
LED	1 channel power indicator, 1 channel system indicator
KEY	RESET key , MODE key
USB	7-channel USB ports, 3 of which are USB three-layer A-type female sockets, and the other 4 are PH2.0x4P sockets, output current 500mA, 1 channel OTG. All comply with USB 2.0 specification and have over-current protection function.
GPIO	4-channel GPIO ports, using bent-pin 5PIN3.5mm terminal sockets, see pin definitions for details
Audio	1 channel 3.5mm headset, 2 channels dual 15-watt amplifier speaker output, 1 channel MIC
SIM	1 channel Micro SIM
Antenna	1 channel Wi-Fi Antenna, 1 channel 4G Antenna
Serial Port	4-channel RS232, 1 channel RS485
IO	4 channel external GPIO. 2 channel I2C
Network	Adopt 4G network module, which must adopt PCIE Interface.
RJ45	1 channel 10M/100M/1000M bps
Wi-Fi/Bluetooth (Reserved)	1 on-board 2.4G Wi-Fi with hotspot function, 802.11b/G/ n, BT4.0
TF Card	Support 8G/16G/32G/64G/128G storage expansion function

Item	Interface Description
EDP	1 channel EDP output, output 1080P video
HDIM	1 channel standard HDMI, support 1080P @60Hz,4K* 2K@60Hz output
LVDS	1 channel LVDS, output 1080P video, can directly drive 50/60Hz LCD screen
Image Engine	Support OpenGL ES1.1/2.0/3.0, OPEN VG1.1, OPENCL, Directx1 Support 4K、 H.265 video decoding
RTC	Real Time Clock, External battery, support timing switch
WatchDog	Support software watchdog, system exception, automatic restart

Environment Parameters

Item	Description
Operating Temperature	-20 °C ~+70°C
Storage Temperature	-40 °C ~+80°C
Operating Humidity	95% no condensation



1. Wi-Fi/BT antenna socket
2. Three-layer USB2.0 port (maximum current 500mA)
3. 1000M/100M Ethernet Port
4. TF Card Slot
5. Standard HDMI interface
6. Debug serial port

The first pin is near the edge of the board			
1 GND	2 RX	3 TX	4 VCC3V3

7. OTG Port
8. MODE Key
9. Dual-layer LED light (up is system light, down is power indicator)
10. DC socket (12V/2A)
11. 4G antenna socket
12. PCIE socket (4G module)
13. Reset key
14. Interface definition



Row pin definition (as shown in the picture) left to right

GND	GND	3V3	GND	3V3	GND	3V3	GND	External Battery (GND) -
485A	3V3	I2C4_SCL	I2C4_SDA	I2C1_SDA	I2C1_SCL	3V3	GND	External Battery (3V) +
485B								

15. 3.5 Headset socket

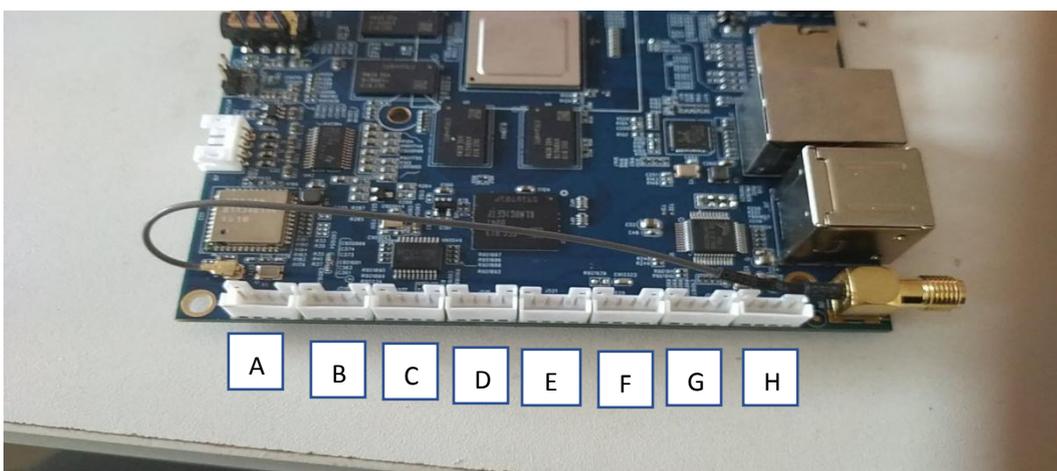
16. MIC interface

17. Speaker interface



Row pin definition (as shown in the picture) left to right

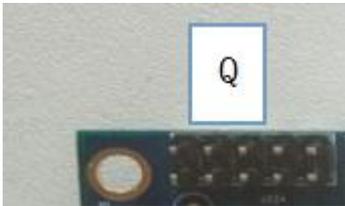
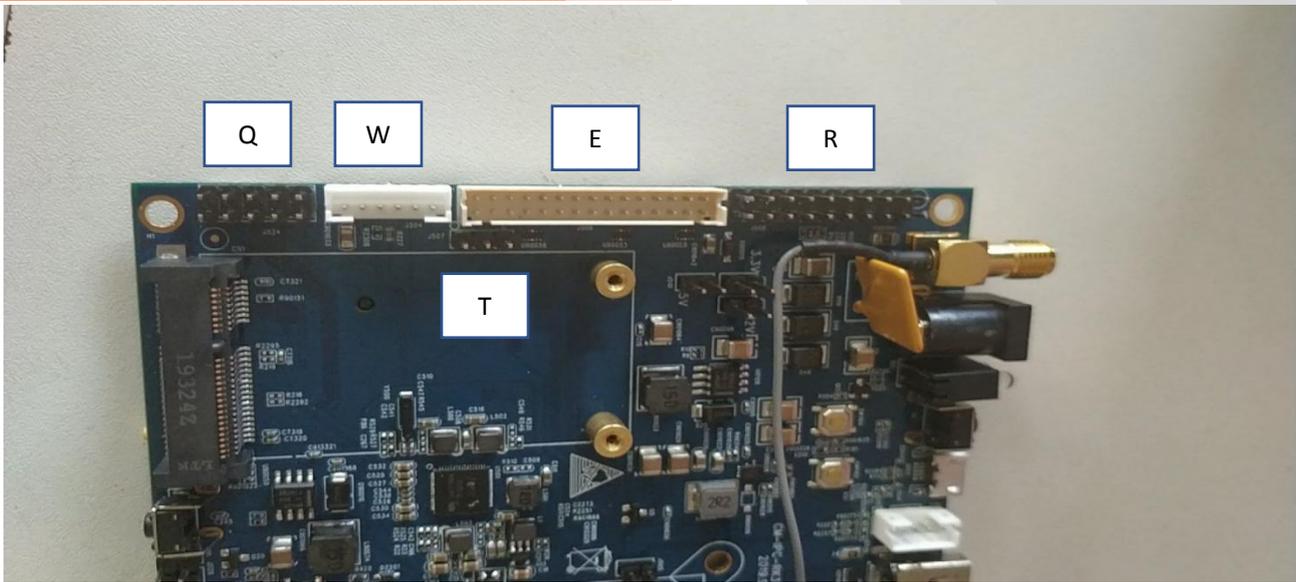
Definition of Speaker interface				MIC	
L+	L-	R-	R+	MIC_N	MIC_P



The interface sequence is 1-4 from left to right

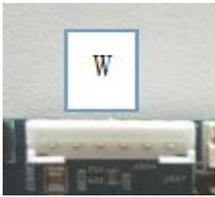
	1	2	3	4
A	RS232_RXD2	RS232_TXD2	GND	GND
B	RS232_RXD4	RS232_TXD4	GND	GND
C	RS232_RXD1	RS232_TXD1	GND	GND
D	RS232_RXD3	RS232_TXD3	GND	GND
E	GND	DM3	DP3	5V
F	GND	DM4	DP4	5V
G	GND	DM5	DP5	5V
H	GND	DM6	DP6	5V

*USB voltage 5V Maximum current 500mA



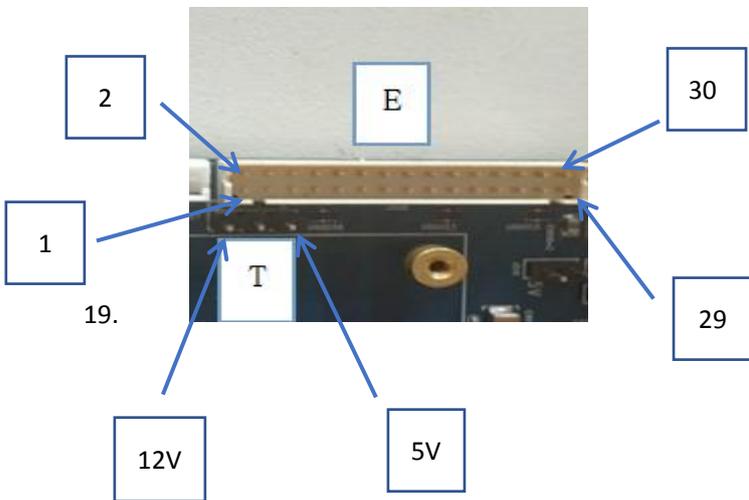
1. Interface sequence from left to right

GPIO 1	GPIO 3	GPIO 5	GND	GND
GPIO 2	GPIO 4	GPIO 6	GPIO 7	GPIO 8



2.

Interface sequence from left to right (LVDS/EDP power board interface sequence)					
12V	12V	EN	PWM	GND	GND

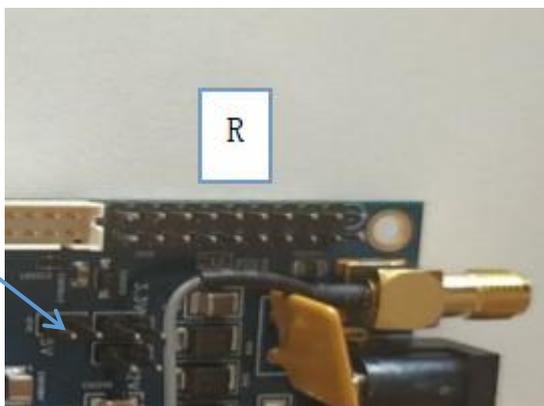


Interface sequence from left to right

T: LVDS voltage selection (5V/12V cap selection) The silkscreen on the board indicates that the left is 12V and the right is 5V. The default value is 5V

PHD2.0: (Double/single 8 channel LVDS)

Pin definition		Pin definition		Pin definition	
1	5V/12V	11	LVDS_D2N	21	LVDS_D6N
2	5V/12V	12	LVDS_D2P	22	LVDS_D6P
3	5V/12V	13	GND	23	LVDS_D7N
4	GND	14	GND	24	LVDS_D7P
5	GND	15	LVDS_CLK0N	25	GND
6	GND	16	LVDS_CLK0P	26	GND
7	LVDS_D0N	17	LVDS_D3N	27	LVDS_CLK1N
8	LVDS_D0P	18	LVDS_D3P	28	LVDS_CLK1P
9	LVDS_D1N	19	LVDS_D5N	29	LVDS_D8N
10	LVDS_D1P	20	LVDS_D5P	30	LVDS_D8P



3. Interface sequence from left to right

The EDP voltage is 3V/5V/12V. The silkscreen is marked on the board.

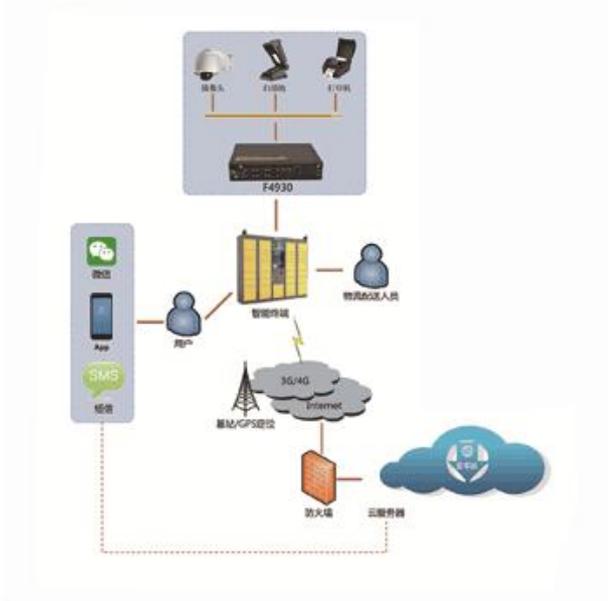
VCC	VCC	GND	GND	TX0N	TX0P	TX1N	TX1P	TX2N	TX2P
PHD	----	GND	GND	AXUP	AXUN	GND	GND	TX3P	TX3N

Installation Dimension



Product Application

1. Express cabinet



2. Topology Diagram of Caimore industrial PC



2、快递员取件



Typical Application



Corporate Qualification

Item	Content
	<p>2011, it was rated as "the best supplier for customer satisfaction in China's industrial control industry"; the company's GPRS DTU product was rated as "innovative product award".</p> <p>2012, the company became a member of "China Quality Travel".</p> <p>2013, the company became a member of the "Technical Innovation Strategic Alliance of Intelligent Power Transmission and Distribution Equipment Industry".</p> <p>2014, it was rated as an innovative pilot enterprise .</p> <p>2014, the company's Zhanjiang Wi-Fi coverage project was awarded the "Sample Engineering Award" by the 13th China Automation Annual Conference.</p> <p>2015, its video products were rated as "Top Ten Video Transmission Enterprises" by China's industrial control industry.</p>

Corporate Honor	<p>2015, the noise monitoring project was awarded the "Sample Project Award" by the 14th China Automation Annual Conference.</p> <p>2015, its video products were rated as "Top Ten Video Transmission Enterprises" by Huaqiang Security Network.</p> <p>2016, the video products was rated by Huaqiang Security Network as "2015-2016 High-quality Supplier in China's Security Industry".</p> <p>2016, it was rated as the "best supplier of charging equipment parts" by charging pile communication equipment.</p> <p>2016, won the " Product Gold Award of 2016 7th Guangzhou International New Energy Automobile Industry Exhibition ".</p> <p>2016, The 3rd China Good Wi-Fi Organizing Committee awarded Caimore "2016 Best Wi-Fi Industry Application Solution Provider".</p> <p>2018, the company's industrial router was rated as "China's Top Ten Industrial Router Brands", and DTU was rated as "China's DTU Top Ten Brands"</p> <p>2018, it was rated as a key listed reserve enterprise in Xiamen City.</p> <p>2019, it was rated as a key listed reserve enterprise in Xiamen City.</p> <p>2019, it was rated as a key listed reserve enterprise in Fujian Province.</p> <p>2019, Shortlisted for China Telecom Corporation Limited, DICT solution partner of Shanghai branch</p> <p>2020, Selected as a key listed reserve company in Xiamen</p>
High-tech Enterprise	2009, it was recognized as a high-tech enterprise by the country
Double-soft Enterprise	2010, it was recognized as a double-soft enterprise by the country
Occupational Health and Safety Management System Certification	<p>ISO9001:2015 quality management system conforms to the standard</p> <p>ISO14001:2015 environmental management system conforms to the standard</p> <p>ISO45001:2018 occupational health and safety management system conforms to the standard</p>
Copyright	The company has 7 patented technology certificates to maintain equipment stability and 31 software copyright certificates.
Offices	Nine regional offices have been established nationwide to provide customers with close and considerate services.
Registered Capital	The company has a registered capital of 20.58 million; it is a key high-tech enterprise supported by Xiamen City.
Historical Accumulation	18 years of industry R&D accumulation and industry application test.