

5G CPE



M12K21

Product Description

V1.2

Date 2022-05-05



Content

Product Description.....	- 0 -
1 Product Overview.....	- 2 -
1.1 Brief Introduction.....	- 2 -
1.2 Characteristics.....	- 3 -
1.3 Appearance.....	- 4 -
2 Technical Specifications.....	- 5 -
3 Installation of Base Station.....	- 7 -
Note:.....	- 7 -
4 Quick Start-up of Base Station.....	- 8 -
4.1 Overview of Configuration.....	- 8 -
4.2 Port Connection Description.....	- 8 -
4.3 System Configuration.....	- 8 -
4.4 login web page.....	- 9 -
5 Software Specifications.....	- 10 -
5.1 Software function introduction.....	- 10 -
6 LTE CA combination.....	-11-
7 packing list.....	- 12 -

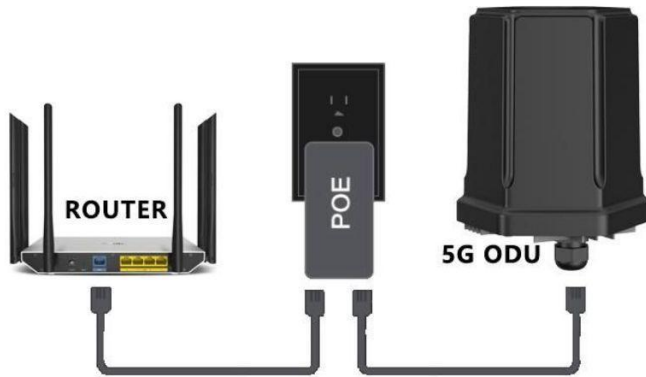
1 Product Overview

1.1 Brief Introduction

The CPE-GT04 product is developed based on a new hardware platform. By accessing the 5G base station signal and converting it into WiFi and wired network, it can meet the increasing access requirements of mobile terminals and IOT nodes, and can greatly improve the user's wireless Internet experience.

The CPE is fully compatible with NSA/SA dual mode, and complies with the network access standards for telecom products of the Ministry of Industry and Information Technology. Provides up to gigabit air fiber access capability to meet the transmission bandwidth requirements of VR/AR/4GK/8K online video streams.

Access the Internet through the mobile network (5G/LTE), plug in the operator's SIM card and power on to enjoy a super-fast Internet experience



1.2 Characteristics

■ 5G Cellular

Built-in Qualcomm™ SDX62 modem, it has best 5G mobile network performance and works with integrated world-wide 5G to 2G multi-mode.

■ 5G Cellular

- 1) 5G Baseband: Qualcomm® Snapdragon™ X62 Modem-RF System
- 2) 5G Network Modes: SA (standalone), NSA (non-standalone)
- 3) 5G NSA Bands:
n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n75/n76/n77/n78/n79
- 4) 5G SA Bands:
n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n75/n76/n77/n78/n79
- 5) 5G Standards: 3GPP Release 15
- 6) 5G SA Transmission Speed: 2.1Gbps/900Mbps (up to ISPs)
- 7) 5G NSA Transmission Speed: 2.5Gbps/650Mbps (up to ISPs)

■ 4G Cellular

- 8) LTE Category: Down Cat 16/ UP Cat 18
- 9) LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71
- 10) LTE-TDD: B34/B38/B39/B40/B41/B42/B43/B48
- 11) LTE Down 4 × 4 MIMO: B1/B2/B3/B4/B7/B25/B30/B32/B34/B38/B39/B40/B41/B42/B43/B48/B66
- 12) WCDMA: B1/B2/B3/B4/B5/B8/B19
- 13) LTE: Down 1.0 Gbps; UP 200 Mbps

■ WiFi

- 1) Working Radio: #1: 300Mbps @ 2.4GHz (Mode only supported)

■ Data Switching

- 1) Mobile 4G/5G Connection (Support APN)
- 2) Giga Ethernet Connection
- 3) Advanced Firewall
- 4) MAC Filter
- 5) VPN Passthrough and VPN Client (L2TP PPTP)
- 6) IPV4/IPV6
- 7) WEB Management
- 8) Firmware upgrade
- 9) TR069

1.3 Appearance

Figure 1-1 shows the appearance and ports of the M12K21:

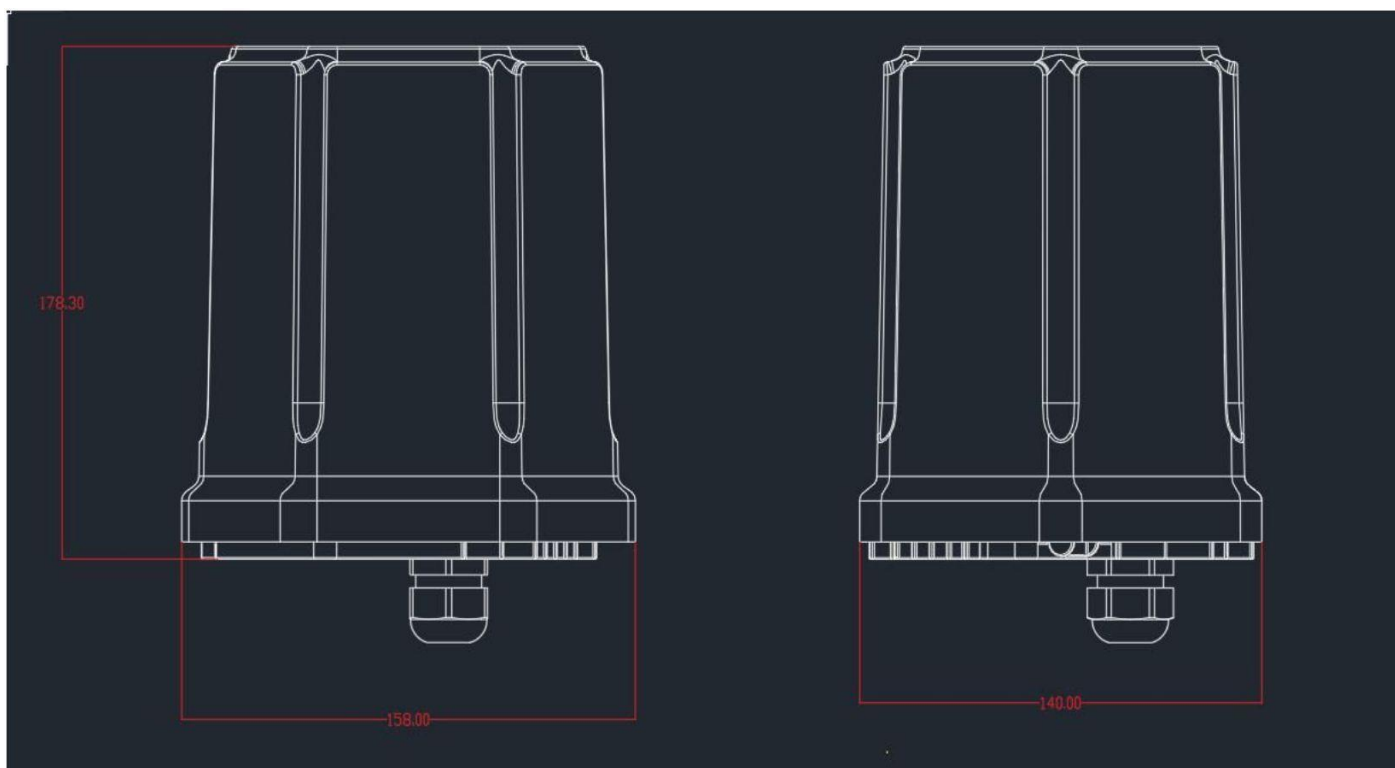
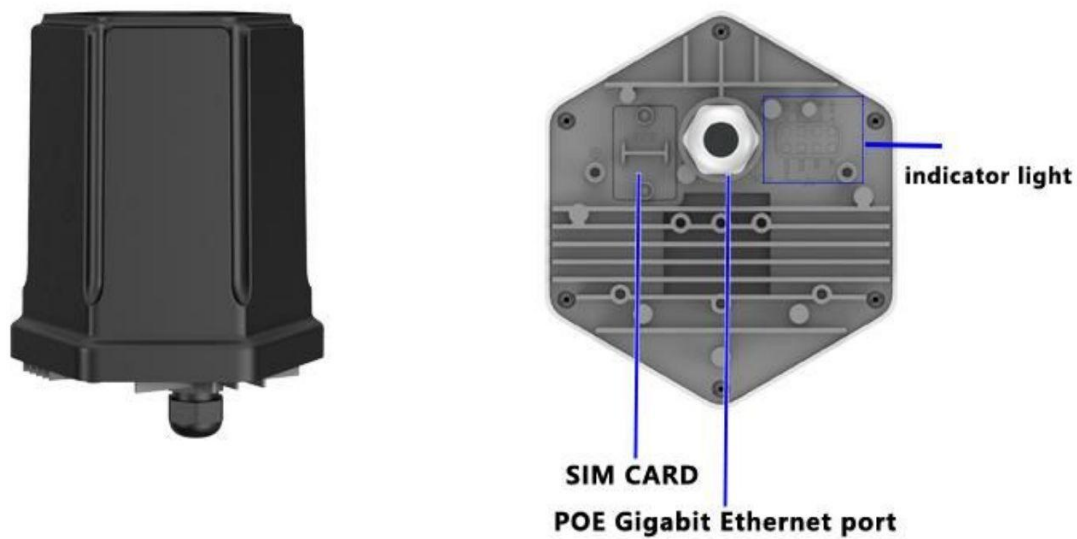


Figure 1-1

The description of M12K21 ports and indicators are shown in Table 1-1

describe	Function	hint
power	POE	Be sure to use the supplied power adapter
SIM card holder	Carrier SIM card	Only NANO SIM card type is supported
internet light	internet status	Display device connection status

2 Technical Specifications

Model	CPE-GT04
CPU	MT7621AT
Flash	16MB
RAM	2Gb
WiFi Frequency	2.4G
WiFi Standard	2.4G:802.11b/g/n 2T2R MIMO
WiFi	2.4GHz :300Mbps
5G Standard	3GPP Release 15 NSA/SA operation, Sub-6 GHz
5G Network Mode	NSA/SA
5G/4G Data Rate	5G NR NSA n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78/n79 5G NR SA n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78/n79 MIMO Downlink: 4 × 4 MIMO on n1/n2/n3/n7/n25/n38/n40/n41/n48/n66/n77/n78/n79 Uplink: 2 × 2 MIMO on n41
5G Frequency Bands	LTE Category Downlink Cat 16 / Uplink Cat 18 LTE-FDD B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD B34/B38/B39/B40/B41/B42/B43/B48

	LAA B46 (Support 2 × 2 MIMO) Downlink 4 × 4 MIMO B1/B2/B3/B4/B7/B25/B30/B32/B34/B38/39/B40/B41/B42/B43/B48/B66 WCDMA B1/B2/B3/B4/B5/B6/B8/B19
4G&3G Frequency Bands	5G NR NSA n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78/n79 5G NR SA n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78/n79 MIMO Downlink: 4 × 4 MIMO on n1/n2/n3/n7/n25/n38/n40/n41/n48/n66/n77/n78/n79 Uplink: 2 × 2 MIMO on n41
Modulation Mode	5G: GMSK/8PSK/BPSK/QPSK/16QAM/64QAM/256QAM WIFI:
	256-QAM / OFDMA
Dimension	158X140X178.3MM
Interface	1*10/100M/1000 LAN(POE) 1 Reset Button 1 SIM card slot
Reset	Reset (Long press 10 seconds to restore the factory settings)
Power Consumption	<24W
Environment	Operating Temperature: -20℃~+50℃ Storage Temperature:-40℃~+70℃
Weight	Humidity: 5%~95% (Non condensation) TBD

Software Function	
IPV4	Support
IPV6	Support
Smart QOS	Support
Parent Control	Support
UPNP	Support

VPN	Supports L2TP VPN client Supports PPTP VPN client
APN	Support
DDNS	Support
DMZ	Support
Port Mapping	Support
TR069	Support
WiFi Encryption	Open WEP WPA2-PSK WPA/WPA2-PSK
WiFi Band Aggregation	Support
Other	5G connection information display Manual frequency lock Traffic Statistics

3 Installation of Base Station

M12K21 supports desktop installation. The place for installation should be chosen to ensure safe, sound and stable operation of the device

There should be enough room for heat dissipation and for the convenience of installation, debugging and maintenance;

The plane on which the device is placed shall be flat;

The place should be well ventilated;

The temperature and humidity of the installation place should be within the range specified by the device;

Dust proof and waterproof measures should be conducted;

The place should be convenient for signal coverage;

It also should be far from such interruption resources as high-power devices.

Note:

Make sure the placement of cables and wires has been completed at the installation place.

When the base station is stably placed, connect one end of the power adapter to the DC 12V port and the other end to the AC power supply. Then, connect one end of the network cable to the WAN port and the other end to the gateway server or switch equipment.

M12K21 is powered on, its current status is indicated by the

indicator. It can be judged from the indicator whether the base station has been normally activated.

The meanings of different situations of the indicator are demonstrated in Table 1 - Indicator light description

4 Quick Start-up of Base Station

4.1 Overview of Configuration

When the base station is powered on, it should be configured with data for start-up, so that users can be accessed and provided with voice and data services. The start-up process of the base station is as shown in Figure 3-1.

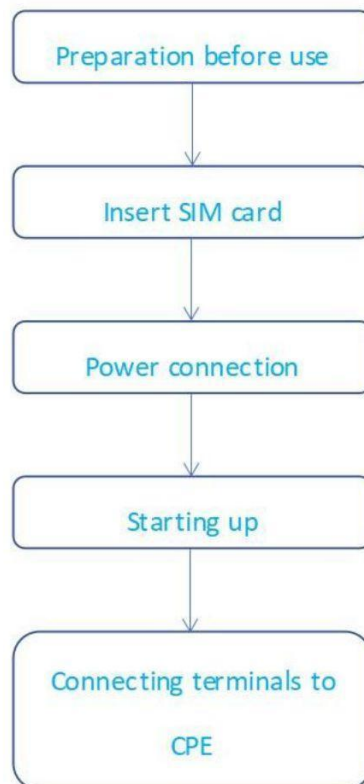


Figure 3-1

4.2 Port Connection Description

The Ethernet port of the base station includes LAN port and WAN port.

WAN port is usually served as a back haul port for data transmission between the base station and the operator's core network.

LAN port is usually for local logging in to the base station and for its direct configuration or maintenance.

4.3 System Configuration

Two ways to connect to M12K21 routing system

Wired connection: The computer is connected to the LAN port of the product through a network cable

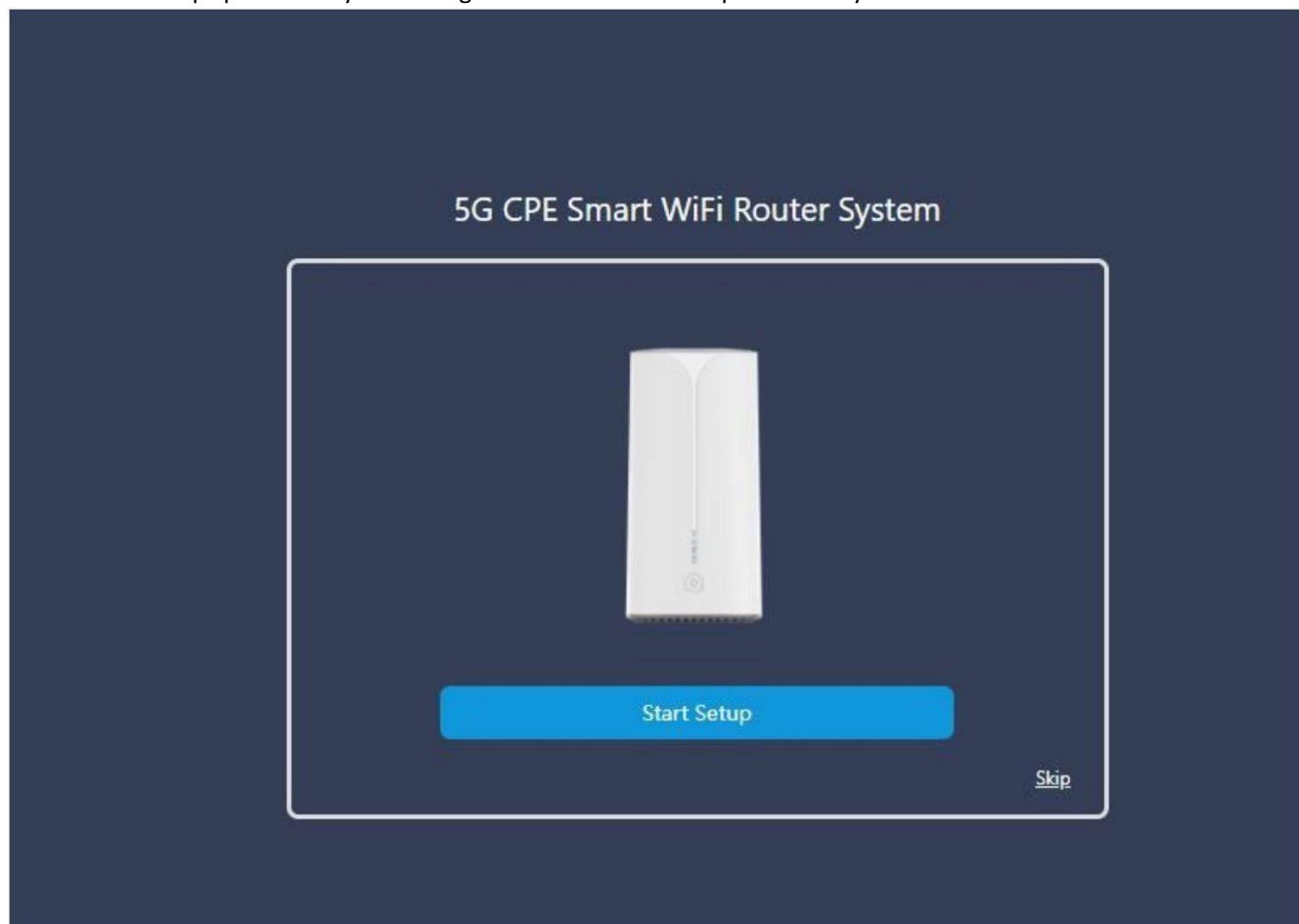
*Note: The cable must be plugged into the device's LAN port.

WiFi: Connect the mobile device to the routing system via a WiFi hotspot (SSID) and password.

*The default SSID and password can be found in the body label of the device.

4.4 login web page

1. When you are connected to the network (using a WiFi or Ethernet cable), you can access the 5G router with a web browser to view or change its settings. The first time you access the router, it automatically starts the installation wizard.
2. Start the mobile device (computer or mobile phone) browser and enter the WiFi system configuration page through the link "islogin.com".
3. Follow the steps provided by the configuration wizard to set up the WiFi system.



5 Software Specifications

5.1 Software function introduction

Item	Description	
Mobile network	APN management APN auto adapter	
Gateway	Router	• Supports the default route • Supports manual configuration of LAN IP addresses • Supports Address Resolution Protocol (ARP)
	DHCP server	• The DHCP server can be enabled or disabled • The address pool of the DHCP server can be configured • The lease can be configured
	IPv4v6 dual stack IPv4 only IPv6 only (Optional , CLAT for LAN side IPv4 device access Internet)  NOTE When the CLAT function is enabled, the IPv4 device Internet access service cannot reach the maximum throughput. Under IPv6 only, NAT-base service (such as port forwarding and port triggering) is not available	
	VPN pass-through	
VPN client	• Supports L2TP VPN client • Supports PPTP VPN client	
Data service	• Supports the SA and NSA networks • The SA network supports a maximum of DL 2CC and 200 MHz bandwidth • In the NSA network, the NR downlink supports single CC and 100 MHz bandwidth • Maximum number of downlink is 16 flows in the LTE network(The number of flows is related to the EN-DC combination)	
	Wi-Fi 802.11b/g/n/a/ac/ax	

Item	Description
Firewall setup	• Firewall enable/disable • MAC Address Filter • IP Filter • Special Applications • DMZ settings • UPnP settings

Item	Description	
LAN	• 10/100/1000 Mbps auto-negotiation • MDI/MDIX auto-sensing • IEEE 802.3/802.3u-compatible	
Wi-Fi	Broadcasts and hides service set identifiers (SSIDs)	
	Complies with IEEE 802.11b/g/n/a	
	Encryption	WEP, AES, and TKIP + AES
	Security mode	• Open • WEP • WPA2-PSK
Operator maintenance (Optional)	• Supports TR-069 Amendment III	
USIM	PIN management and USIM card authentication	
System requirements	Operating system	Windows 7, Windows 8.1, Windows 10 (Not support Windows RT), MAC OS X 10.12, 10.13 and 10.14 with latest updates

Item	Description
------	-------------

	Web browser	• Microsoft Internet Explorer 9.0 and Microsoft Edge with latest updates • FireFox 49.0 with latest updates • All major versions of Chrome in the last year (53.0 with latest updates) • Safari 10.0 with latest updates (MACOS)
	Your computer's hardware system should meet or exceed the recommended system requirements for the installed OS version	

6 packing list

- One (1) 5G CPE Router (M12K21)
- One (1) 1m Cat6 Ethernet cable
- One (1) Power Adapter
- Quick Start Guide

*: under development / in progress.

Maximum wireless signal range derived from IEEE standard 802.11 specifications. Actual data throughput and data over distance will vary. Network conditions and environmental factors, including volume of network traffic, building material and construction, and network overhead, result in lower actual data throughput rate and wireless coverage.