Integrated Communication Solution (4G-CPE)

Mans International

Connect.Share.Grow

CPE Introduction

Solution Introducation

Company Introduction

Mans International

Connect.Share.Grow

CPE Introduction

Mans International
Connect.Share.Grow

A wireless CPE is a wireless terminal access device that receives wifi signals and can replace wireless client devices such as wireless network cards. It can receive wireless signals from wireless routers, wireless APs, wireless base stations, etc. It is a new type of wireless terminal access device. At the same time, it is also a device that converts high-speed 4G signals into WiFi signals, requires external power, but also has a large number of mobile terminals that can support simultaneous Internet access.

CPE can be widely used in rural, urban, hospital, unit, factory, community and other wireless network access, which can save the cost of laying a wired network.

Current Status of the Mobile Network Market

Mans International
Connect.Share.Grow

Commercial broadband costs high and slow to open

High management costs

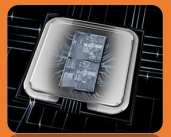
Terminal equipment has poor signal and cannot be used

Network instability

CPE Internet solutions

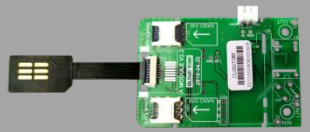
Mans International
Connect.Share.Grow

Embedded



- GSMA RSP standard
- Support cross-operator network management

Built-in module



- Advanced sim card technology
- No need for equipment
- No card required, with local SIM and remote SIM functions

MINI PCIE interface

- 4G Internet module
- GSMA RSP Specification
- Support cross-operator network management

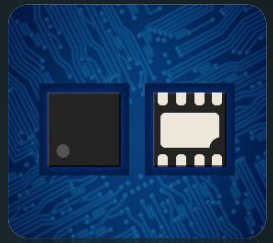
CPEInternet Solutions- Embedded

Mans International
Connect.Share.Grow

ESIM Card

ESIM card is our independent research and development with completely independent intellectual property rights. Supports cross-operator network management and meets various normative standards.

- Terminal chip supports SIM card private APDU transparent transmission
- The terminal develops the KI download management module, and implements KI download through the air interface protocol
- The terminal maintains a configuration management table to implement management of the SIM card
- SIM card sensitive data download (encrypted by server, management module only transparently transmits, SIM card internal decryption to ensure the security of the transmission process)
- Separate key for each ESIM card to achieve one card and one password to ensure data security



Item	Parameter
Project Name	ESIM card
Operating Voltage	2.7V--3.3V
Working current	Maximum current <10mA
Industrial GSM module	Supports GSM,WCDMA, TD_SCDMA, FDD-LTE,TD-LTE
SIM Standard	Meets GSM11.11 standard
	Meet sGSM11.14 standard
Other features	Support one card and multiple numbers, support dynamic update

CPE Internet solutions-built-in modules

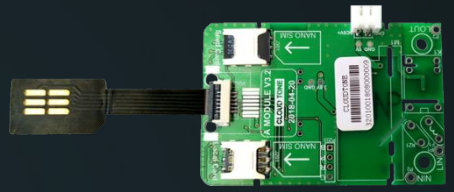
Mans International
Connect.Share.Grow

SIM Card Module

SIM card module is a SIM card function module independently developed by our company. It has completely independent intellectual property rights and solves the needs of various terminals with remote card adjustment. Transform various mobile terminals into terminals based on SIM card functions, adopt advanced sim card technology, and provide mobile network services without the need to insert a card and without any other equipment. The SIM card provides two kinds of SIM card channels, and has both local SIM card and remote SIM card functions, which can better solve the problem of network stability. You can set different priority card adjustment sequences according to rules to meet different traffic operation schemes.

Work process:

- Device boot
- Send Internet Request
- Distribute flow cards
- Sign up for the Internet
- Release traffic card



Items	Parameter
Product Name	SIM Card module
Work voltage	DC5V
Work current	Peak current >2A,Average working current 25mA, stand-by current 10.5mA.
Industrial GSM module	Quad-band 850/900/1800/1900 MHz
	Meets GSM 2/2+ standard
	– Class 4（2 W @ 850/900 MHz）
	– Class 1（1 W @ 1800/1900MHz）
SIM standard	Meets GSM11.11 standard
	Meets GSM11.14 standard
SIM interface	2FF／3FF
SIM card system	USIM card (FDD／TDD／WCDMA／GSM)
Seed card traffic	<5M/month
Operating temperature	-20 ～+70 ℃

CPEInternet Access Solution-MINI PCIE Interface

SIM 4G Communication module

The SIM 4G communication module is a 4G internet module with remote card adjustment independently developed by our company. It has completely independent intellectual property rights and uses the industry's widely used Mini-PCIE interface to solve the Internet access requirements of various mobile terminals. Adopt advanced sim card technology, no need to insert the card, no need to resort to any other equipment, boot can provide mobile network services. The 4G communication module has both local SIM card and remote SIM card functions, which can better solve the problem of network stability. Different priorities can be set according to the rules to meet different traffic operation scenarios.

Work process:

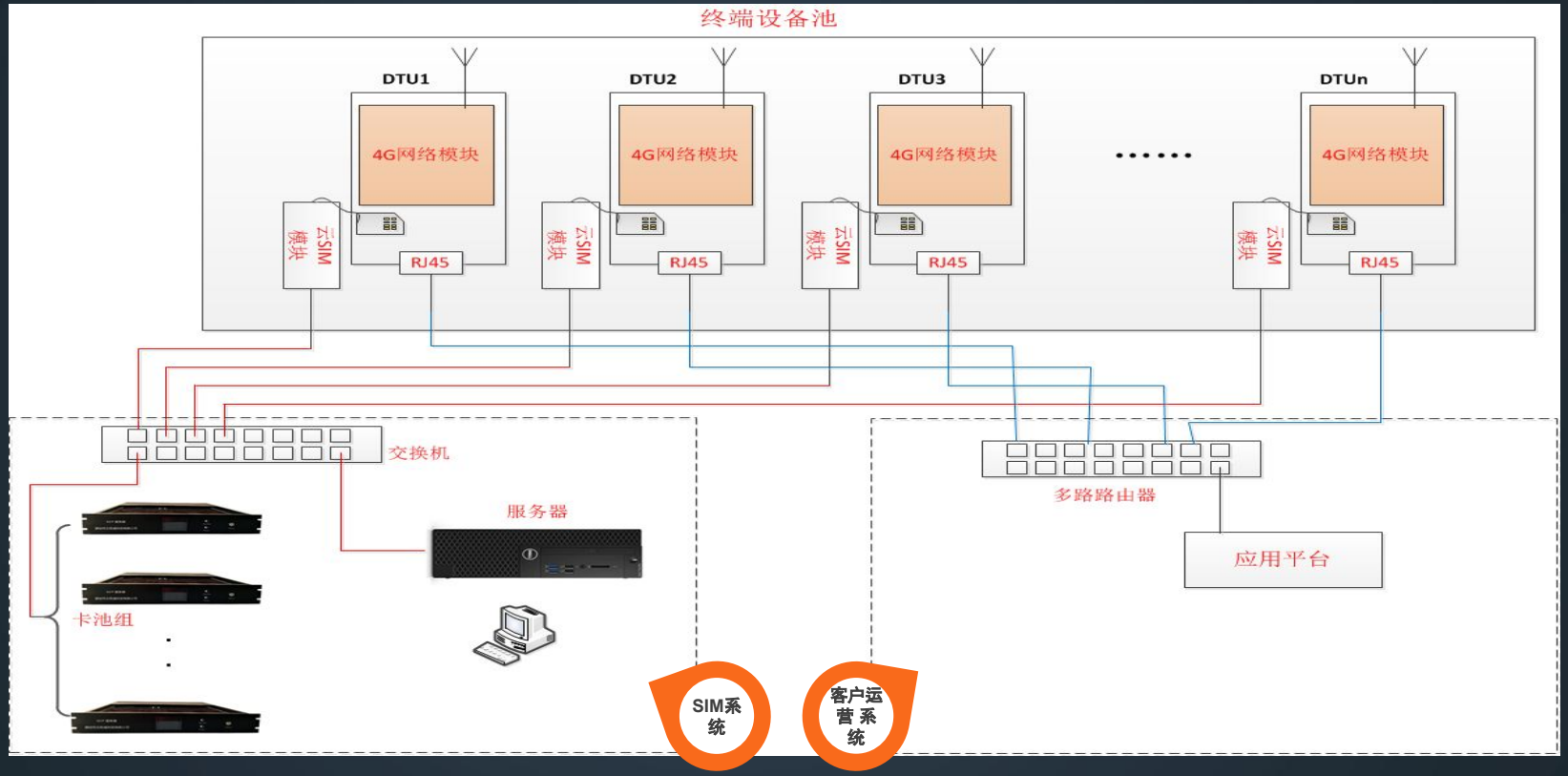
- Device boot
- Send Internet Request
- Distribute flow cards
- Sign up for the Internet
- Traffic reporting
- Release traffic card

Items	Parameter
Name	SIM 4G Communication module
Structure size	51*30*6.7mm
Weight	<50g
Voltage	3.4V to 4.2V（Recommended value 3.8v）
Hardware platform	PXA1802
Main interface	Standard MiniPCIe Interface, 1 2G module internet card slot, 1 local nano sim card slot
	A status indicator
	One WWAN main antenna connector
	One WWAN diversity antenna connector
	One WWAN2G antenna connector
Working environment	Normal Operating temperature ：-20℃ to 80℃
	Extended Operating temperature:-45℃ to 85℃
	Storage temperature:-45℃ to 85℃
	Humidity:5%-95%

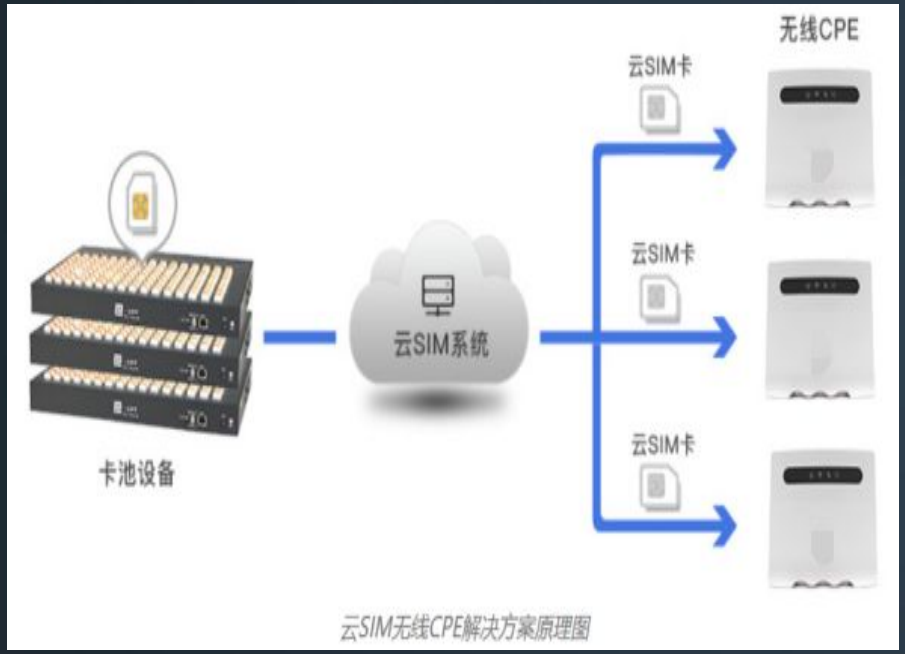
Mans International
Connect.Share.Grow

System Application Structure

Mans International
Connect.Share.Grow



Introduction of This Equipment



This device can support multiple SIM modes such as local SIM, cloud SIM, and eSIM at the same time. Wireless CPE users do not need to purchase additional SIM cards. All SIM cards are centrally managed through the cloud card pool and dynamically assigned to CPE terminals in real time through the cloud SIM system, thereby greatly improving the utilization rate of SIM cards and reducing operation and maintenance costs.

1. The main components of the system:
   - Cloud SIM system: management and scheduling of wireless CPE and traffic cards;
   - Card pool device: store local physical SIM card;
   - Wireless CPE: 3G / 4G wireless routing based on cloud SIM solution;
2. Wireless CPE workflow:
   - The wireless CPE equipment is powered on, press the power button to turn on;
   - The CPE device automatically registers the cloud SIM server when it starts;
   - The cloud SIM system selects the appropriate traffic card from the card pool and issues the card information to the CPE device;
   - CPE obtains traffic card information and uses its registered operator network to provide WiFi services;
3. CPE function characteristics: 4G to WiFi, 4G to wired, free switching between three networks;

Advantage Analysis

Mans International
Connect.Share.Grow

a、For wireless CPE users:

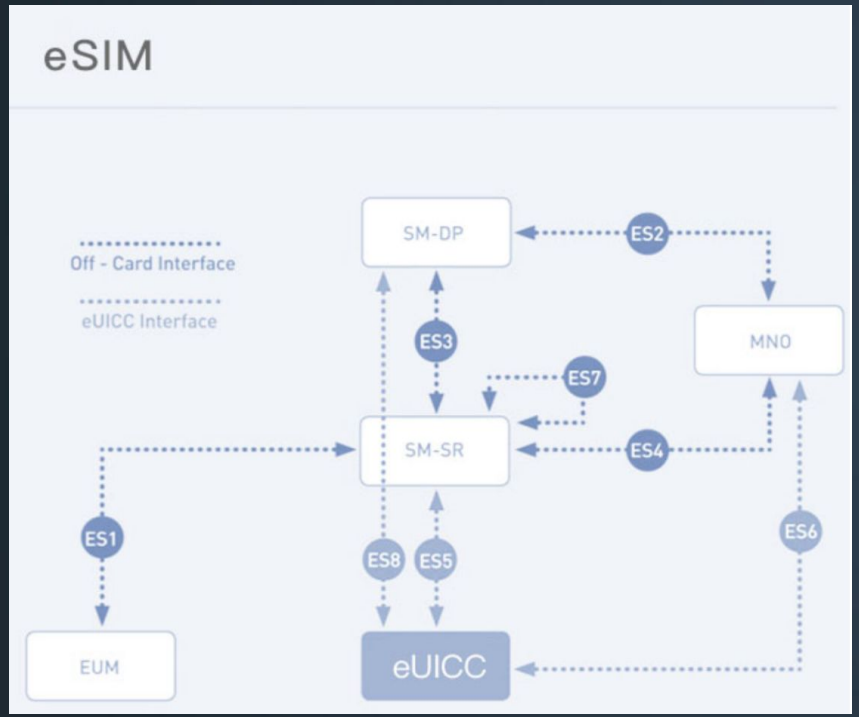
- More convenient to use: it can be used immediately after power on, no need to purchase additional SIM cards;
- The signal is more stable: free switch between the three major networks: China Mobile, China Unicom and China Telecom
- Lower fees: The integrated distribution of high-quality traffic resources, lower traffic fees;
- More convenient management: APP / public account / device management is easier by micro program

b. For wireless CPE operators:

- More profit models: from CPE equipment / SIM card sales to traffic operations, more application models;
- Reduce operation and maintenance costs: centralized management and flexible scheduling of traffic cards, greatly improve the utilization of traffic cards, and reduce operation and maintenance costs;
- More flexible security: The terminal does not need to contact the physical traffic card, and the security is more flexible;
- Simple and easy to maintain: The system is simple to use and easy to manage and maintain without professionals.

Advantage Analysis

Mans International
Connect.Share.Grow

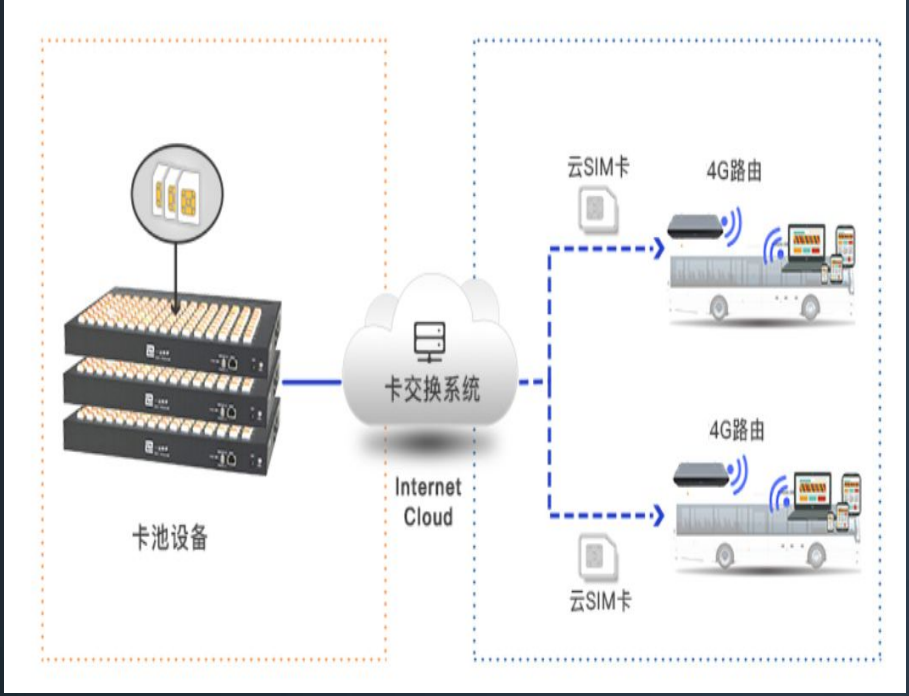


Functional advantages of eSIM distribution management system:

- Multi-strategy eSIM remote intelligent distribution management;
- Provide easy-to-use web management interface;
- Automatically generate various data reports;
- High-reliabile cluster server system;
- Complete data backup plan;
- Provide a rich API interface;
- Support the development and customization of personalized functions.

Advantage Analysis

Mans International
Connect.Share.Grow

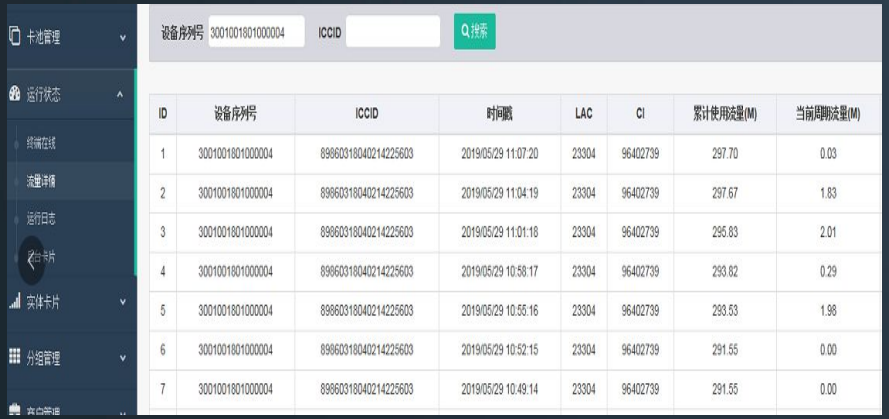


Features:

1. Wireless WiFi access: flexible access to China Mobile, China Unicom, and China Telecommunications, 4G to WiFi, providing high-quality WiFi services at any time;
2. Multiple access methods: Supports multiple access methods such as local traffic cards, cloud SIM cards, and eSIM cards;
3. Remote management: remote management of cloud platform, upgrade and maintenance are more convenient;
4. Local streaming media: Supports customized local streaming media services, providing services such as video, music, and games.

Adantage Analysis

Mans International
Connect.Share.Grow



Compared with similar products:

1. The traditional 4G routers are basically check cards. In simple terms, a router checks a mobile phone SIM card and uses the current SIM card to achieve Internet access. When the 4G signal of the card operator is weak, the Internet speed and stability cannot be guaranteed; this product can directly switch to the best operator network according to the current three major operator signals in the background to ensure Internet speed and stability without replacing the SIM card;
2. As a general 4G router needs a SIM card to access the Internet, the tariff depends on the SIM card package. Currently, the mainstream SIM card packages generally switch to 3G traffic after 40G monthly traffic, which cannot guarantee Internet access and speed; This product uses the traffic in the background card pool to maintain 4G Internet speed at all times;
3. At present, the devices in the market are limited to meeting customers' simple Internet access requirements, and cannot provide device management. This device supports remote platform management, real-time traffic monitoring, signal strength monitoring, and real-time traffic usage query (non-carrier delayed delivery)
4. This product can also be used as an ordinary router, but if it encounters a customer's fixed-line broadband disconnection, this product will automatically switch to the wireless 4G usage mode to ensure the use of the customer's network. It is also extremely useful as a backup line.