HUAWEI LTE CPE eA380-123
Product Description

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1 Product Overview

Introduction

The Huawei eA380-123 CPE is the Long Term Evolution (LTE) customer premises equipments (CPEs). As a wireless gateway, the eA380 can be deployed outdoors to provide services such as data collection and video surveillance.

The eA380-123 supports LTE Release 11/ Release 12. The eA380 provide the following functions:

- Data service
- Wi-Fi Service
- Security service
- Local and remote maintenance and management
- Data routing

Product Features

The eA380-123 main features are as follows:

- Multiple LTE band connectivity

  Band38(2570~2620MHz)、Band40(2300~2400 MHz)、Band41(2496~2690 MHz)、Band7(2500~2570 MHz、2620~2690 MHz)
- 1T4R for B38/41/7 and 1T2R for B40
- 2CC CA (Intra-band Contiguous)
- 4×4 MIMO
- Support LTE DL Category12, UL Category 13
- support UL 64QAM
- Support 2.4G Wi-Fi, IEEE802.11b / g / n, support up to 2 different SSID
- Built-in DHCP and NAT to provide high-speed routing services
- support routing function (Routing Behind MS)
- Support GRE bridge (L2VPN over GRE) networking
- Support L2TP
- support dual APN, a TR069, a data
- provide the firewall function

- Support UE interworking

- Support soft SIM card

- Support frequency lock function

- Web-based management, convenient and intuitive

- Device management is based on TR-069 protocol remote management

- Design friendly LED indicator, easy to install and debug is to observe the CPE working state

- Built-in LTE and Wi-Fi high-gain antenna design, both to ensure performance, but also to facilitate the installation of products

- Built-in lightning protection function, enhance the protection of outdoor use equipment

- The enclosure protection class meets the IP65 standard

  meet IEC62305 outdoor protection requirements

Appearance

Figure 1-1 Appearance of eA380

2 Application Scenarios

The eA380 are specially designed for outdoor deployment to obtain better wireless access performance to the LTE network.

The eA380 are intended to be deployed in wISP network. They can also be deployed in industrial, public security and enterprise network if the performance is acceptable to the network operator.

Figure 2-1 The eA380 deployed in wISP network
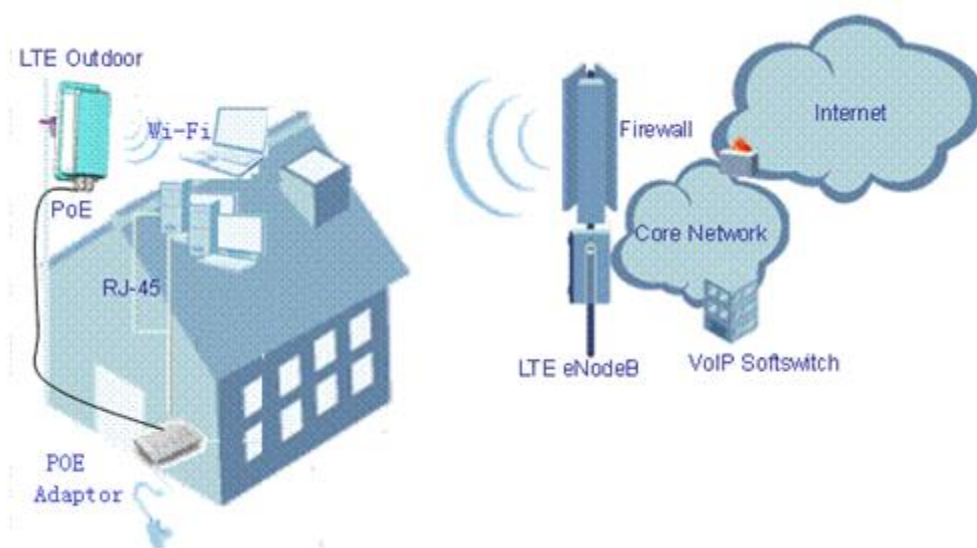
Figure 2-2 The eA380 deployed in industrial network
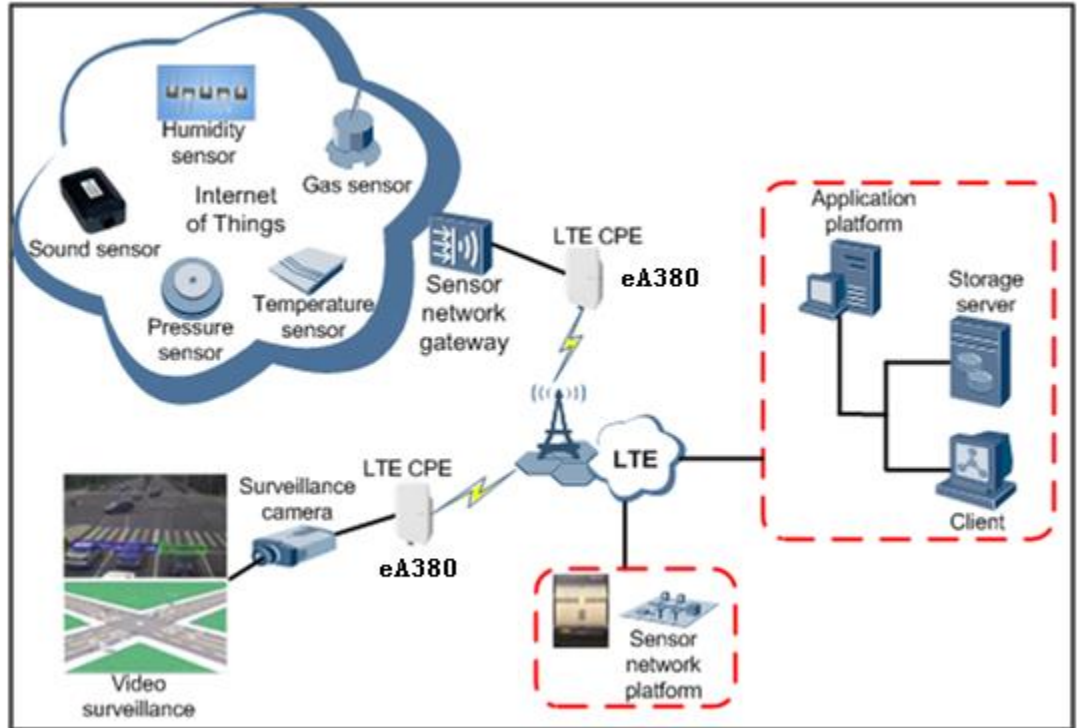
Figure 2-3 The eA380 connected to a video camera.
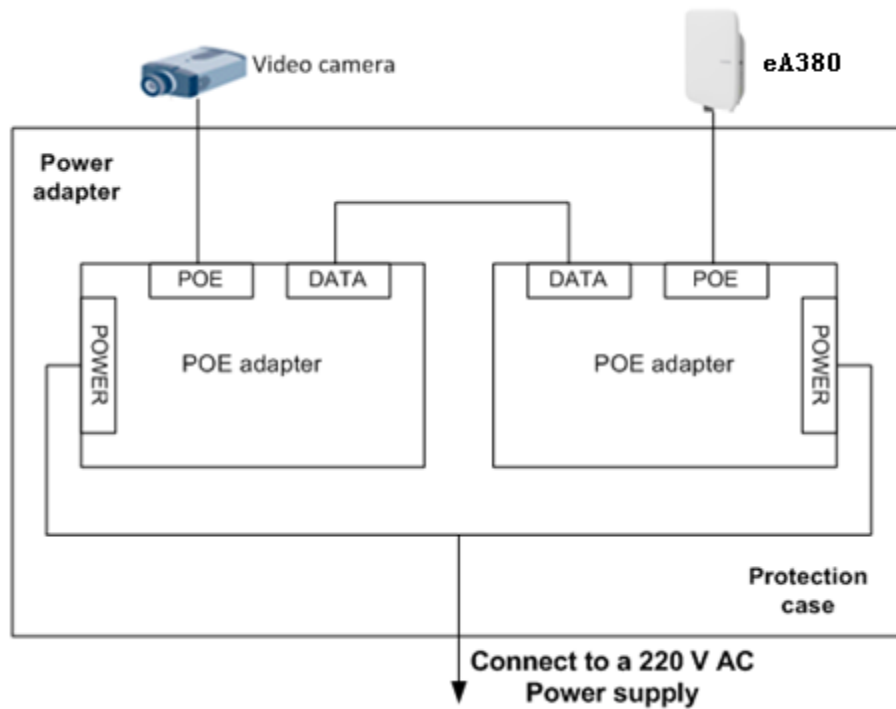
Figure 2-4 The eA380 connected to multiple devices
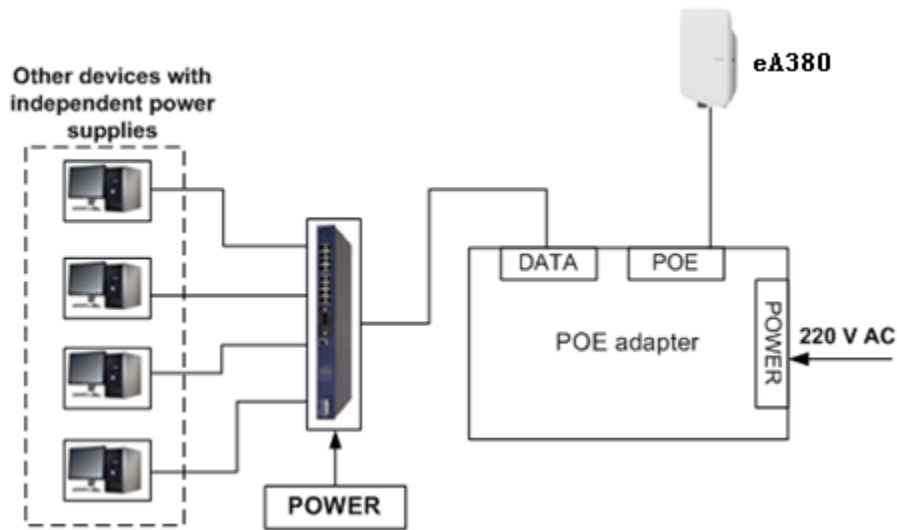
3 Technical Specifications

3.1 Hardware

Table 3-1 Technical specifications of eA380

Category		Description
Technical standard		WAN: LTE 3GPP Release 11/ Release 12
		LAN: IEEE 802.3/802.3u
		WLAN: IEEE 802.11b/g/n
Working frequency band	LTE	TDD Band38 (2570 MHz to 2620 MHz) TDD Band40 (2300 MHz to 2400 MHz) TDD Band41(2496 MHz to 2690 MHz) FDD Band7 (2500 MHz to 2570 MHz(UL)/ 2620 MHz to 2690 MHz(DL）)
	WLAN	2.400 GHz ~ 2.4835 GHz
External interface		• 1 Ethernet interface (RJ45): 10/100/1000Base-TX Ethernet, POE combined • 1 USB interface(for local maintenance only) • 1 SIM(3FF) card slot
LED indicator		• One POWER indicator • One LAN indicator • Three LTE signal strength indicators
Maximum transmit power	LTE	23 dBm (±2)
	WLAN	16dBm(±3)
EIRP	WiFi 2.4G	< 20 dBm

Category		Description
Receiving sensitivity	LTE	B38/40： ＜ -100 dBm/5 MHz ＜ -97 dBm/10 MHz ＜ -94 dBm/20 MHz B41/B7：＜ -98 dBm/5 MHz ＜ -95 dBm/10 MHz ＜ -92 dBm/20 MHz
	WLAN	802.11b: -92 dBm@1 Mbps, -85 dBm@11 Mbps 802.11g: -88 dBm@6 Mbps -73 dBm@54 Mbps 802.11n: HT20： -87 dBm@MCS0 -71 dBm@MCS7 HT40： -84 dBm@MCS0 -68 dBm@MCS7
Power consumption		<25W when heater works <9W when heater off
Power supply		POE (meet the IEEE802.3at standard); Input: AC 100V~240V, Output: DC54V/650mA
Dimensions (W×D×H)		258mmx220mmx85mm
Weight		About 1.5kg (The power supply adapter is not included)
Water and dust proof		IP65
Temperature		Working temperature: -40℃~ +55℃ Storage temperature: -40℃ ~ +70℃
Humidity		5% ~ 95%
Installation		Mounted on poles or walls
Note		LTE works at B40, 2.4G Wi-Fi CH1-CH10 can not be used

📖 **NOTE**

Within three months after the arrival,it is recommended to use the equipment, or store in the following environment:

Temperature: -10 ℃ to 35 ℃, Relative humidity (RH): 30% RH to 85% RH

Storage environment should be equipped with temperature and humidity equipments and dehumidification equipment to monitor and adjust the temperature and humidity.

3.2 Antenna Specifications

Table 3-2 eA380 LTE antenna specifications

Item	eA380-123
Band	2.3GHz to 2.7GHz
Gain	13±1 dBi
Input impedance	50 ohm
SWR	< 2
Polarization	Dual cross polarization
Radiation pattern	Directional antenna

Table 3-3 WLAN antenna specifications

Item	Description
Frequency	2.4 GHz ~ 2.483 GHz
Input impedance	50 Ω
Standing wave ratio	< 3
efficiency	> 50%
Gain	2dBi
Polarization	Linear polarization

3.3 Software

Table 3-4 Software specifications

Item	Description
Gateway	Router: The default routing address is 0.0.0.0. The default routing table items can be generated accordingly.
	Supports Address Resolution Protocol (ARP)
	Supports domain name service (DNS)
	Supports Internet Control Message Protocol (ICMP)

Item	Description
	NAT • Supports Network Address Translation (NAT) and Network Address Port Translation (NAPT). (Compatible with RFC2663/RFC3022/RFC3027) • Supports fragment message identification for normal NAT • Supports NAT traverse
	DHCP server • The default DHCP server address ranges from 192.168.1.2 to 192.168.1.254. The default gateway address is 192.168.1.1. • The default DHCP lease is 24 hours. • The DHCP server can be enabled or disabled. • The DHCP server's address pool can be configured. • The DHCP lease can be configured. • IP address status such as the hostname, Media Access Control (MAC) address, IP address, and remaining DHCP lease can be displayed. • Supports static IP address reservation • Support DHCP relay.
	Routing behind MS UE direct connect
Firewall	Firewall switch LAN MAC address filtering IP address filtering URL filtering Security Parameter Index (SPI) filtering Demilitarized Zone (DMZ) Port forwarding Service access control
LAN	Auto-negotiation between 10 Mbit/s /100 Mbit/s/1000 Mbit/s MDI/MDIX auto-sensing Compatible with IEEE 802.3/802.3u
WLAN	SSID broadcast and hiding is supported.
	Authentication: • Open System authentication • Shared Key authentication • 64/128-digit WEP encryption • 256-digit WPA-PSK/ WPA2-PSK encryption • AES ciphering algorithm • TKIP and AES ciphering algorithm synchronously

Item	Description
	MAC address authentication: • Up to 16 MAC address items.
	Ratio adjustment: • Automatically • Manually
	STA management: • Supports limit of access users (up to 32 users)
Upgrade	Supports TR-069 upgrade and local upgrade.
SIM	Supports PIN management and SIM card authentication soft SIM
Dial-up connection	Supports automatic and manual connection
Importing and exporting configuration	Encrypt and back up the current configuration, and then restore from a backup configuration

3.4 Accessories and software

3.4.1 LTE built-in antenna：

Part Number	Part Description	Model	Trademark
27162598	Terminal Build-In Antenna,2.3G-2.7GHz,13+/-1dBi,Direction,<2,20W,Terminal Dedicated	C15N16Z100HZ	HUAWEI

3.4.2 Power Adapter：

Part Number	Part Description	Model	Trademark
02220369	Adapter,-40degC,50degC,90V,264V,54V/0.65A,C8/RJ45,GE	POE35-54A	HUAWEI

3.4.3 Software version：

Huawei Part 05014KKV - Terminal Software,eA380-123 ews,EA380123EWS003,eA380-123 Upgrade software A

4 Services and Applications

Data Services

The eA380 provide access to LTE wireless broadband networks with high-speed data services.

Small-Scale LAN

Devices can connect to the eA380 by wired connection to use data services. A LAN consisting of multiple computers can be built using external hubs, Ethernet switches, or routers.

Security Services

The eA380 have firewall functions which enable users to protect their computers when accessing the Internet.

Firewall

The following firewall functions are provided:

- Firewall switch: Enable or disable the network connection's firewall.
- LAN MAC address filtering: Prevent devices with specified MAC addresses from accessing the network.
- LAN IP filtering: Prevent devices with specified IP addresses from accessing computers on the LAN.
- URL filtering: Prevent computers on the LAN from visiting specified URLs.

Local Management and Maintenance

The eA380 support local configuration to manage devices, configure network parameters, and help ensure that the device functions properly and stably.

Remote Management and Maintenance

The eA380 support remote configuration to manage devices, configure network parameters, and query the status by TR069.

5 Adopted Standards

Communication Protocols

Table 5-1 lists the standards and communication protocols supported by the eA380.

Table 5-1 eA380' standards and communication protocols

| Item	Description
Physical layer	RFC894
ARP	RFC826
IP	RFC791, RFC1122, RFC1071, RFC1141, RFC1624, RFC792, RFC950, RFC1256
ICMP	RFC792, RFC950, RFC1256
TCP	RFC793
UDP	RFC768
DHCP	RFC1531, RFC1533
NAT	RFC1631

Wireless Port

The eA380's wireless Uu port complies with LTE R11/R12.

Authentication band

According to the FCC/IC certification, the following bands are used for product certification：

Band40：2305MHz～2320MHz & 2345MHz～2360MHz（FCC&IC）

Band41：2496 MHz～2690 MHz（FCC）、2500MHz～2690MHz（IC）

6 Packing List

Table 6-1 describes the eA380' packing list.

Table 6-1 eA380' packing list

Item	Quantity	Description
eA380	1	Standard
Quick installation guide	1	Standard
Installation accessory	1	Standard

7 Acronyms and Abbreviations

This section lists the acronyms and abbreviations related to the eA380.

Table 7-1 List of acronyms and abbreviations

Acronym/Abbreviation	Full Name
ARP	Address Resolution Protocol
CPE	Customer Premises Equipment
DHCP	Dynamic Host Configuration Protocol
DMZ	Demilitarized Zone
DNS	Domain Name Service
ICS	Implementation Conformance Statement
ICMP	Internet Control Message Protocol
LTE	Long Term Evolution
MAC	Media Access Control
MSN	Windows Messenger
NAPT	Network Address Port Translation
NAS	Non-Access-Stratum
NAT	Network Address Translation
PDCP	Packet Data Convergence Protocol
RLC	Radio Link Control
RRC	Radio Resource Control
RTU	Remote Terminal Unit
SPI	Security Parameter Index
SSID	Service Set Identifier
UE	User Equipment

Acronym/Abbreviation	Full Name
USIM	Universal Subscriber Identity Module