

HUAWEI LTE CPE eA380-135 Product Description

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1 Product Overview

Introduction

The Huawei eA380-135 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 eA380-135 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 eA380-135 main features are as follows:

- LTE band 42(3400~3600MHz)、band43(3600~3800MHz)
- 1T4R
- 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

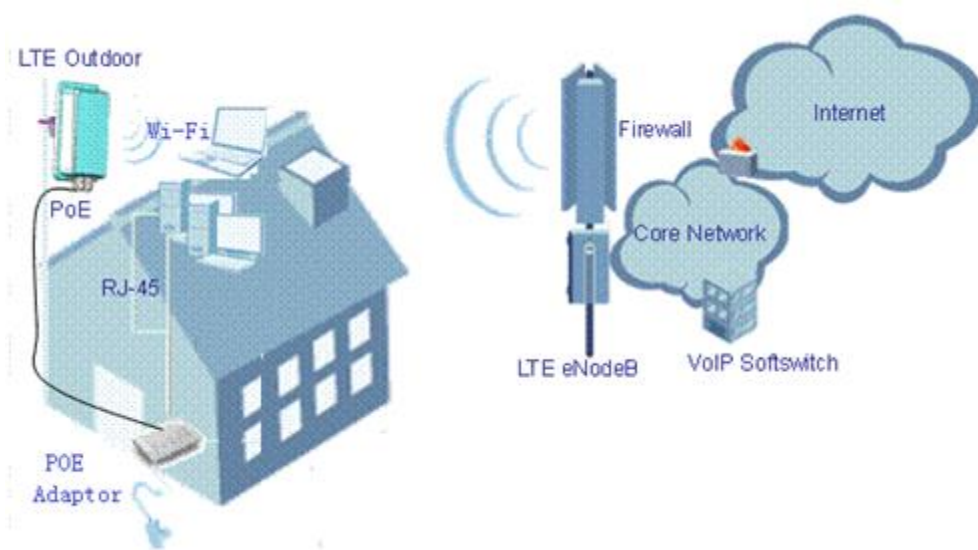


Figure 2-2 The eA380 deployed in industrial network

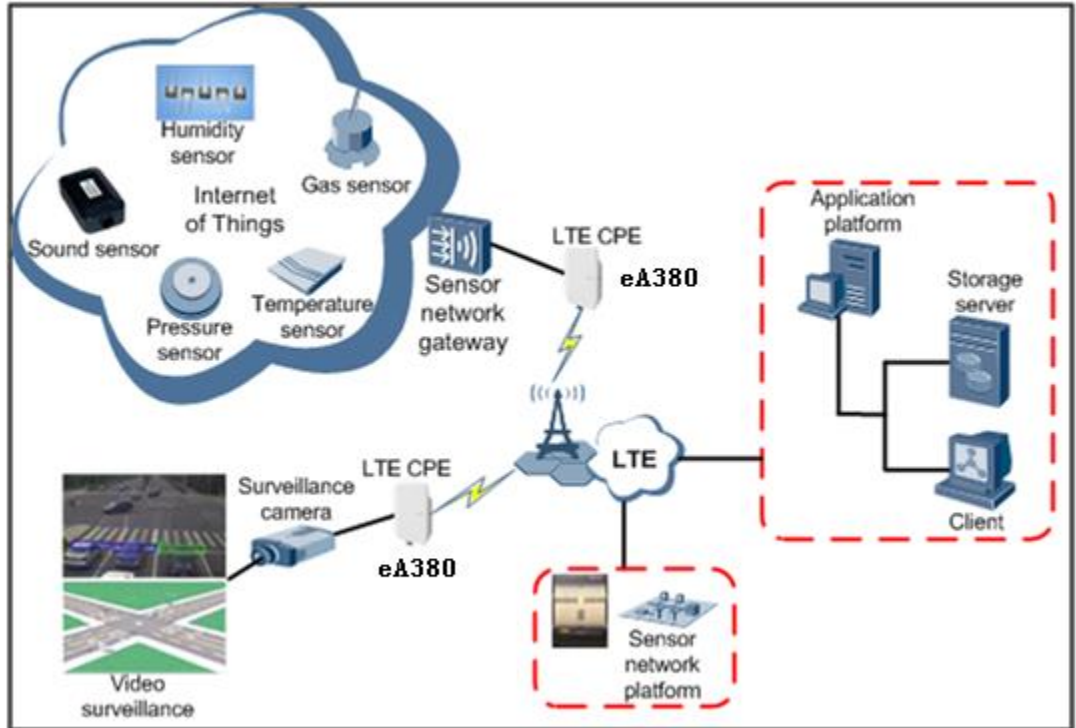


Figure 2-3 The eA380 connected to a video camera.

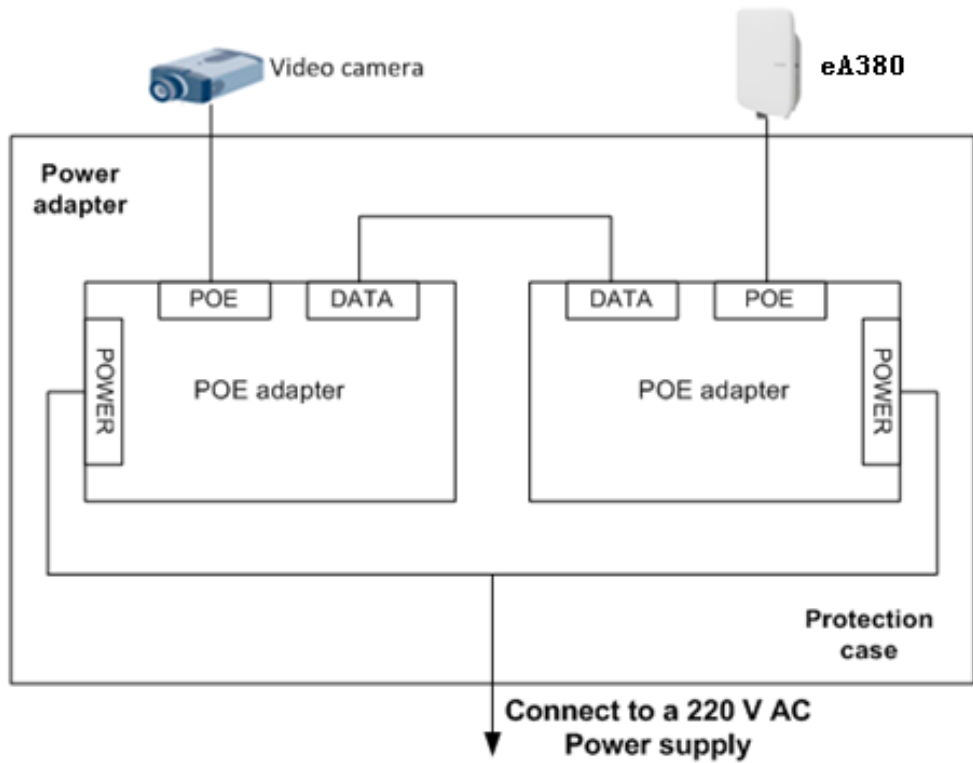
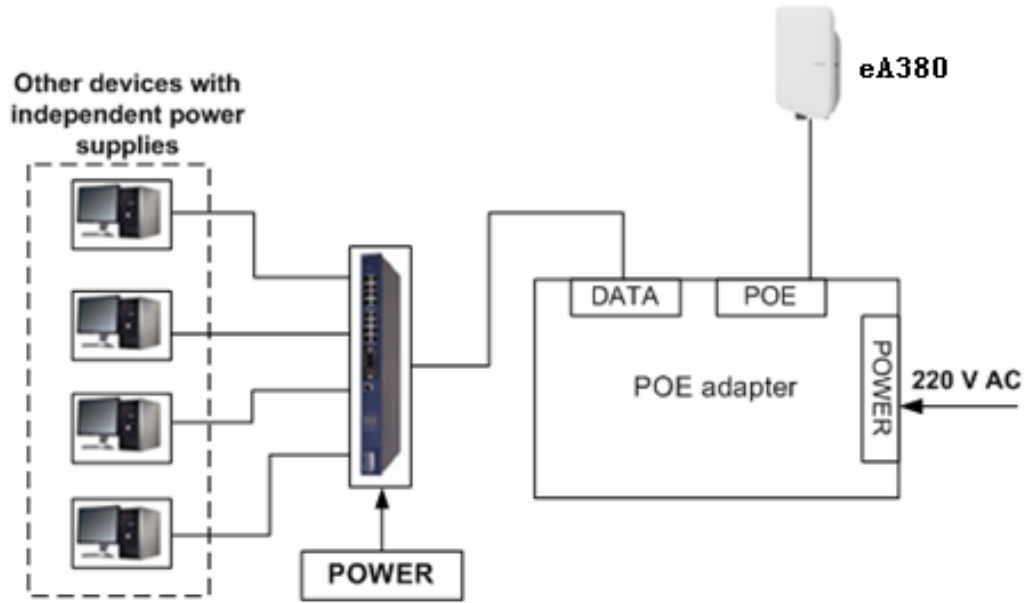


Figure 2-4 The eA380 connected to multiple devices



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 Band42: 3400 ~ 3600 MHz TDD Band43: 3600 ~ 3800 MHz
	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 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
Receiving sensitivity	LTE	< -99 dBm/5 MHz < -96 dBm/10 MHz < -93 dBm/20 MHz

Category		Description
	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 (should be powered by CAT-5e cable eight line); Input AC 100V ~ 240V, output DC 54V / 650mA	
Dimensions (W×D×H)	258mmx220mmx85mm	
Weight	About 1kg (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**

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	Description
Band	3400 MHz ~ 3800 MHz

Item	Description
Gain	13 ± 1 dBi
Input impedance	50 Ω
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)
	NAT <ul style="list-style-type: none"> Supports Network Address Translation (NAT) and Network Address Port Translation (NAPT). (Compatible with RFC2663/RFC3022/RFC3027)

Item	Description
	<ul style="list-style-type: none"> • Supports fragment message identification for normal NAT • Supports NAT traverse <p>DHCP server</p> <ul style="list-style-type: none"> • 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. <p>Routing behind MS UE direct connect</p>
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. <p>Authentication:</p> <ul style="list-style-type: none"> • 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 <p>MAC address authentication:</p> <ul style="list-style-type: none"> • Up to 16 MAC address items.

Item	Description
	Ratio adjustment: <ul style="list-style-type: none"> • Automatically • Manually
	STA management: <ul style="list-style-type: none"> • 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
27162477	Terminal Antenna,2.3-2.7G/3.4~3.8G,9+/-1dBi/11+/-1 dBi,Directional,Dual Polarization,<2,20W,IPx,eA380-135,Terminal Dedicated	C15N15Z100ER	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:

eA380-135 software version is V100R001.

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.

Authentication band

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

Band43: 3650MHz~3700MHz (FCC&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