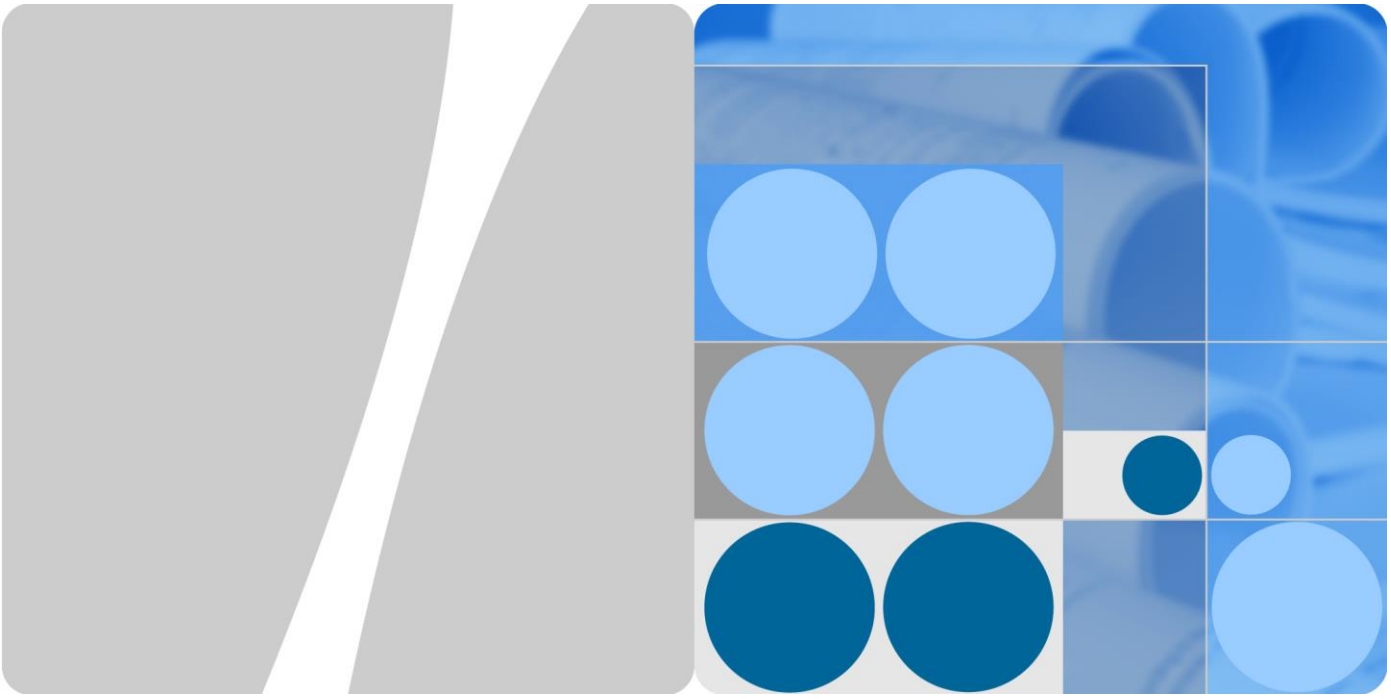

HUAWEI LTE CPE eA280-135

Product Description

Issue V2.3

Date 2017-08-28

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Contents

1 Overview

Introduction

The Huawei eA280 -135 CPE is the Long Term Evolution (LTE) customer premises equipments (CPE). As a wireless gateway, the eA280 -135 can be deployed indoors to provide services such as data collection and video surveillance.

The eA280 -135 support LTE Release 11/12. The eA280 provide the following functions:

- Data service
- Voice service
- Security service
- Local and remote maintenance and management
- Data routing

Product Features

The eA280's main features are as follows:

- Multiple LTE band connectivity
  Support multiple LTE TDD /LTE FDD Band:
  eA280-135: Band 38/40/41/7/42/ 43
- B38/B41/B42/B43/ B7 support 1T4R，B40 support 1T2R
- Built-in LTE high-gain antenna
- Wi-Fi 2.4 GHz (802.11b/g/n) and 5 GHz (802.11a/n/ac)，Built-in dual-band antenna
- WPS 2.0
- 2CC CA (Intra-band Contiguous)
- 4×4 MIMO
- High speed experience
  LTE DL Category12,UL Category 13
- Two Ethernet ports
- VoIP services
- Dynamic Host Configuration Protocol (DHCP) and Network Address Translation (NAT)
- Routing Behind MS
- VxLAN
- UE direct connect
- Soft SIM

-
- Frequency lock
- Firewall functions
- Compatible with IE, Firefox, Chrome, and Safari
- Management over the web UI
- Device management using TR-069
- LED indicators that show device status

Product Appearance

Figure 1-1 shows the appearance of the eA280.

Figure 1-1 eA280 appearance

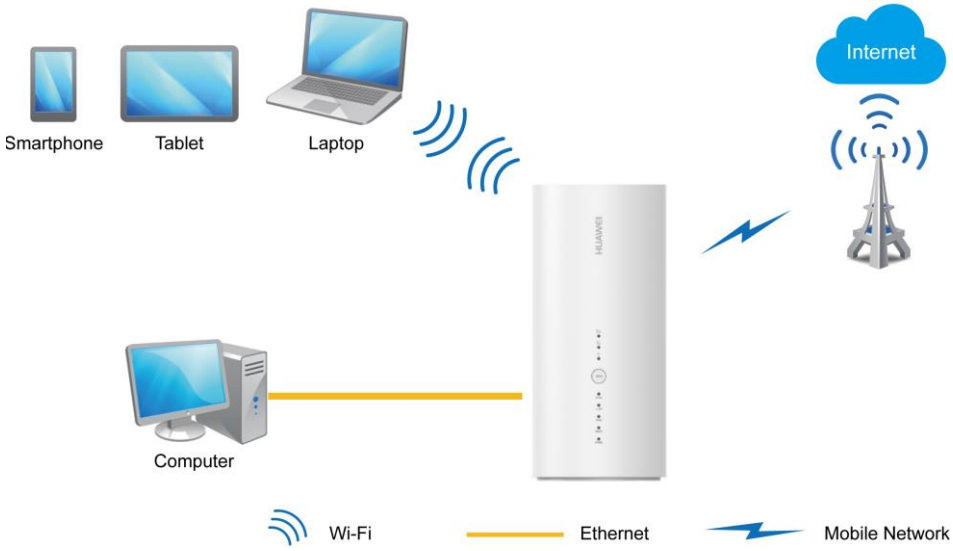
2 Application Scenarios

The eA280-135 is mainly intended to provide users with wireless broadband data access services for wISP market,.

The eA280-135 provide LTE-TDD wireless routing and translating LTE wireless data into wired Ethernet data, and vice versa.

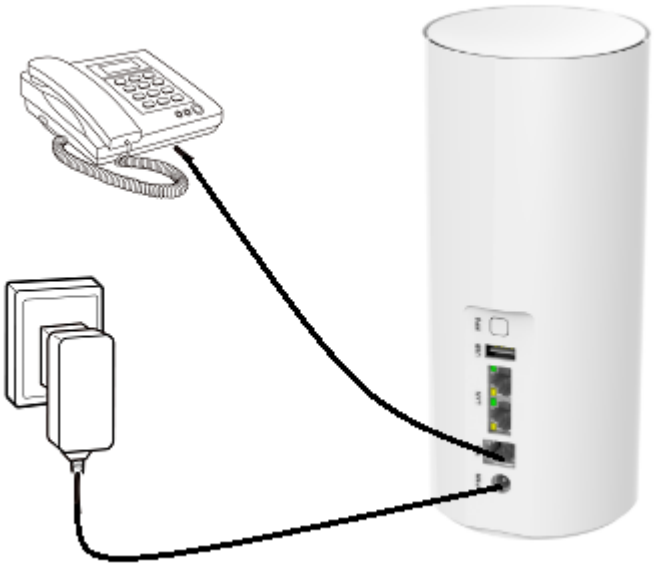
The eA280-135 can simultaneously set up wireless connections with 64 Wi-Fi devices（32 devices for2.4G and 32 for 5G） and establish a local area network (LAN) by connecting to concentrators and switches.

Figure 2-1 eA280-135 connected to multiple devices



eA280-135 provide one telephone interface. You can connect a telephone to achieve the basic voice capabilities.

Figure 2-2 eA280-135 connected to telephones



3 Technical Specifications

3.1 Hardware Specifications

Table 3-1 lists the hardware specifications of the eA280.

Table 3-1 Hardware specifications

Item	Description
Technical standards	WAN: LTE3GPP Release 11/12
	LAN: IEEE 802.3/802.3u
	IEEE 802.11b/g/n、802.11a/n/ac
Working bands	LTE TDD Band38 (2570 MHz to 2620 MHz)[1] LTE TDD Band40 (2300 MHz to 2400 MHz)[1] LTE TDD Band41 (2496 MHz to 2690 MHz)[1] LTE FDD Band 7 (2500 MHz to 2570 MHz(UL)/ 2620 MHz to 2690 MHz(DL）) [1] LTE TDD Band42 (3400 MHz to 3600 MHz) LTE TDD Band43 (3600 MHz to 3800 MHz)
	• 2.4 GHz (802.11b/g/n)：2.400 GHz ~ 2.4835 GHz • 5 GHz (802.11a/n/ac)：5.150 GHz ~ 5.850 GHz
External ports	One power port
	One telephone ports (RJ11), One phone number
	Two LAN ports (RJ45)
	One USB 2.0 slave port(for local maintenance only)
	One Universal Subscriber Identity Module (USIM) card port
Buttons	One PWR power button
	One WPS button

Item	Description		
	One reset button		
LED indicators	One power indicator		
	One WIFI indicator		
	One SIM indicator		
	One LTE indicator		
	One STATUS indicator		
	Three signal strength indicator		
Maximum transmit power	LTE	(23±2) dBm	
	WLAN	802.11b	(16±3) @11 Mbps
		802.11g	(16±3) @54 Mbps
		802.11n	(16±3) @2.4G MCS0 (16±3) @2.4G MCS7
		802.11a/n/ac high band	(16±3)@MCS0 (16±3) @MCS7 (16±3) @MCS9
		802.11a/n/ac low band	(16±3) @MCS0 (16±3) @MCS7 (16±3) @MCS9
EIRP	WiFi	2.4G	< 20 dBm
		5G	5150 to 5350：< 23 dBm 5470 to 5725：< 30 dBm
Receiving sensitivity	LTE	LTE: Confirm 3GPP TS 36.101 V12.2.0 Requirements	
	WLAN	802.11b	-92 dBm@1 Mbps -85 dBm@11 Mbps
		802.11g	-88 dBm@6 Mbps -73 dBm@54 Mbps
		802.11n HT20 (2.4GHz)	-87 dBm@MCS0 -71 dBm@MCS7
		802.11n HT40 (2.4GHz)	-84 dBm@MCS0 -68 dBm@MCS7
		802.11n HT20 (5GHz)	-88 dBm@MCS0 -68 dBm@MCS7
		802.11n HT40 (5GHz)	-85 dBm@MCS0 -64 dBm@MCS7

Item	Description		
		802.11ac 20M (5GHz)	-87 dBm@MCS0 -68 dBm@MCS7
		802.11ac 40M (5GHz)	-83 dBm@MCS0 -66 dBm@MCS7 -59 dBm@MCS9
		802.11ac 80M (5GHz)	-80 dBm@MCS0 -63 dBm@MCS7
		802.11ac 80M (5GHz)	-56 dBm@MCS9
Power consumption	< 12 W		
Power supply	Input AC: 100V～240V		
	Output DC: 12 V/2 A		
Dimensions (D x H)	95mm×210mm		
Weight	About 530 g (excluding the power adapter)		
Temperature	Working temperature: 0°C to +40°C		
	Storage temperature: –20°C to +70°C		
Humidity	5%–95% RH		
Note：(WLAN CH1-CH10 is unavailable when LTE works at band 40)			

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

Built-in Antenna

Table 3-2 Specifications of the LTE main antenna

Item	Description
Frequency range	2300–3800 MHz
Input impedance	50 Ω

Standing wave ratio (SWR)	< 2
Efficiency	> 50%
Gain	4dBi(3400~3800 MHz)，3dBi(2300~2700 MHz)
Polarization type	Linear polarization
Direction	Omni-directional

Table 3-3 WLAN antenna specifications

Item	Description
Frequency	2400~2500MHz/5150~5850MHz
Input impedance	50 Ω
Standing wave ratio	< 3
H side gain	2 dBi
Efficiency	> 60%
Polarization	Linear polarization

3.3 Software Specifications

Table 3-45 lists the software specifications of the eA280.

Table 3-4 Software specifications

Item	Description	
Gateway	Supports the default route, namely, the route with the IP address **0.0.0.0**.	
	Supports the Address Resolution Protocol (ARP).	
	Supports the Internet Control Message Protocol (ICMP).	
	Supports the domain name service (DNS).	
	NAT	Supports NAT and Network Address and Port Translation (NAPT), which complies with RFC2663, RFC3022, and RFC3027.
	DHCP server	Enables and disables the DHCP server.
		Configures DHCP server address pools.
		Sets the lease time.
		Supports DHCP relay

Item	Description	
		Displays the status of the DHCP server address pools, including host names, Media Access Control (MAC) addresses, IP addresses, and remaining lease time.
	Routing Behind MS	Supports routing Behind MS
	UE direct connect	UE direct connect
Firewall	Enables and disables the firewall.	
	Filters LAN MAC addresses.	
	Filters LAN IP addresses.	
	Filters URLs.	
	Supports port forwarding.	
	Supports demilitarized zone (DMZ).	
	Supports Application Level Gateway (ALG) settings.	
	Service access control	
LAN	Supports 10/100 Mbit/s/1000Mbit/s autonegotiation.	
	Supports auto MDI/MDIX. MDI stands for Medium Dependent Interface, and MDIX stands for Medium Dependent Interface Crossover.	
	Complies with IEEE 802.3 and IEEE 802.3u.	
	If you connect to multiple hosts via Hub or switch, the number of host devices under CPE should not exceed 32	
VOIP	Supports G.729, G.711a and G.711u(auto negotiated by CPE)	
	Supports SIP (RFC3261)	
	Supports SDP (RFC2327)	
	Supports DNS	
	Supports DTMF	
	Supports SIP ALG	
Upgrade	Supports TR-069 upgrade and local upgrade.	
SIM	Supports PIN management and SIM card authentication soft SIM	
Frequency Lock	Support intra-band frequency lock	
Dial-up connection	Supports automatic and manual connection	

Item	Description	
Importing and exporting configuration	Encrypt and back up the current configuration, and then restore from a backup configuration	
WLAN	Broadcasts and hides service set identifiers (SSIDs).	
	Complies with IEEE 802.11b/g/n, 802.11a/n/ac	
	Supports WPS.	
	Authentication	Supports OpenSystem authentication.
		Supports encryption using wired equivalent privacy (WEP), Wi-Fi protected access preshared key (WPA-PSK), and WPA2-PSK keys.
		Supports the Advanced Encryption Standard (AES) encryption algorithm.
		Supports the TKIP and AES hybrid encryption algorithm.
	MAC address authentication	Supports the MAC address authentication whitelist.
		Supports the MAC address authentication blacklist.
		Supports a maximum of 16 MAC address entries.
	Supports automatic transmission rate adjustment.	
	Station management	Supports station status queries.
		Supports a maximum of 32 connected stations at 2.4 GHz. Supports a maximum of 32 connected stations at 5 GHz.

3.4 Accessories and software

3.4.1 LTE antenna：

Part Number	Part Description	Model	Trademark

27162502	Terminal Build-In Antenna,2300-3800MHZ,5dBi,isotropic,<2,4W ,eA280,Terminal Dedicated A	FAYEA280 M101A0	HUAWEI

3.4.2 WiFi antenna：

Part Number	Part Description	Model	Trademark
27162434	02220247 Terminal Build-In Antenna,2400~2500MHz/5150~5850MHz,<2dBi ,isotropic,<2,4W,B712u WIFI small Board antenna for softbank,Terminal Dedicated B	HW8677-15-000-R CPAD03705	HUAWEI

3.4.3 Power Adapter：

Part Number	Name	Model	Trademark
02220247	Adapter,-10degC-45degC,100V-240V,12V/2A,AC VDE 2PIN/DC H PLUG 2.1x5.5x9.5mm,Length of wire 1.5M ,CE,ERP V,HUAWEI Logo,Terminal Dedicated	HW-120200 E6W	HUAWEI

3.4.4 Software version：

eA280-135 software version is V100R001.

3.5 Use restrictions

The functions of Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) within the band 5150-5350 MHz for this device are restricted to indoor use only within all European Union countries (BE/BG/CZ/DK/DE/EE/IE/EL/ES/FR/HR/IT/CY/LV/LT/LU/HU/MT/NL/AT/PL/PT/RO/SI/SK/FI/SE/UK)

4 Services and Applications

Data Services

By connecting to the eA280 over a wireless or wired network, users can get access to high-speed Internet services.

Voice Services

The eA280-135 can provide high-quality VoIP services by connecting to a common telephone. It can also provide supplementary services enabled on the operator side, such as call waiting, call holding, and call transferring.

Security Services

The eA280-135 provides firewall functions which enable users to protect their computers when accessing the Internet.

Firewall

The eA280 has the following firewall functions:

- Firewall switch: Enable and disable the firewall.
- LAN MAC address filtering: Prevent specified MAC addresses on a LAN from accessing the network.
- LAN IP address filtering: Prevent specified IP addresses on a LAN from accessing the network.
- URL filtering: Prevent computers on a LAN from visiting specified URLs.

Local Management and Maintenance

The eA280 supports local configuration to manage devices, configure network parameters, and help ensure that the device functions properly and stably.

Remote management and maintenance

The eA280 allows users to remotely manage connected device by TR069 as well as WebUI.

5 Adopted Standards

Communication Protocols

Table 5-1 lists the standards and communication protocols supported by the eA280.

Table 5-1 eA280 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 eA280 wireless Uu port complies with LTE R11/12.

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）

Band42：3450MHz～3600MHz, and disable 3400MHz～3450MHz（IC）

Band43：3650MHz～3700MHz（FCC&IC）

6 Packing List

Table 6-1 lists the items included with the eA280.

Table 6-1 Items in the eA280 package

Item	Quantity	Remarks
LTE CPE	1	Mandatory
Power adapter	1	Mandatory
Quick Start	1	Mandatory
Safety Information	1	Mandatory
External antenna	2	Mandatory
Ethernet cable	1	Mandatory

7 Acronyms and Abbreviations

Numerics	
A	
AC	Alternating Current
AES	Advanced Encryption Standard
ALG	Application Level Gateway
ARP	Address Resolution Protocol
AP	Access Point
APN	Access Point Name
C	
CPE	Customer-Premises Equipment
D	
DDR	Double Data Rate
DHCP	Dynamic Host Configuration Protocol
DL	Down Link
DMZ	demilitarized zone
DNS	domain name service
I	
ICMP	Internet Control Message Protocol
IP	Internet Protocol
L	
LAN	Local Area Network
LED	Light Emitting Diode
LTE	Long Term Evolution

M	
MAC	Media Access Control
MDI	Medium Dependent Interface
MDIX	Medium Dependent Interface Crossover
N	
NAPT	Network Address and Port Translation
NAT	Network Address Translation
P	
PIN	Personal Identification Number
S	
SDRAM	Synchronous Dynamic Random Access Memory
SSID	service set identifier
T	
TDD	time division duplex
TKIP	Temporal Key Integrity Protocol
U	
UL	Up Link
URL	Uniform Resource Locator
USB	Universal Serial Bus
USIM	Universal Subscriber Identity Module
W	
WAN	Wide Area Network
Wi-Fi	Wireless Fidelity
WLAN	Wireless Local Area Network
WPA-PSK	Wi-Fi Protected Access Pre-shared Key
WPS	Wi-Fi Protected Setup