Product Spec

LTE Cat.5/ 6 Outdoor Gateway
OH-735

TD-LTE Band 38, 41 (or 40), 42, 43

FDD-LTE Band 3, 7

Version	V1.1
Date	Feb. 22, 2018

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1. Overview

OH-735 comes with double system capacity by either 4x4 MIMO or Carrier Aggregation; providing increased data rate, downlink up to 300 Mbps.

4x4 MIMO technology transmits 4 signal streams at the same time, using 4 antenna, over the same frequency. For operator who has limited spectrum, it helps make the most of spectral efficiency (bps/ MHz) and improve data capacity as well.

A high quality patch antenna is integrated inside to ensure stable connectivity and extended coverage. Peak gain can reach 16 dBi if it is pure 3.4~3.8GHz model.

OH-735 is compliant with IP-66 (Ingress Protection ratings), and its operating temperature is from -30 to +55 degree C. All those factors contribute to a rugged yet cost-effective solution to operate in extreme weather condition.

2. <u>Hardware Specifications</u>

2.1 Basic Description

Feature	Description	Remarks
3GPP Release Version	Release 10	
UE Category	Cat. 5, DL MIMO 4x4 Cat. 6, 2CA	DL up to 300 Mbps
LTE supported bands	TDD B38, B41 (or B40), B42, B43	**Different band combination may result in extra cost.** **For details, please contact us.**
	FDD B3, 7	
CA Combination	**Inter-Band CA** B3-B7, B3-B38, B3-B40, B3-B41, B3-B42, B3-B43, B7-B38, B7-B40, B7-B41, B7-B42, B7-B43, B38-B40, B38-B41, B38-B42, B38-B43, B41-B42, B41-B43, B42-B43	
	Intra-Band CA Band 3/7/38/41 (or 40) /42/43. B3-B3, B7-B7, B38-B38, B40-B40, B41-B41, B42-B42, B43-B43	
DL MIMO 4x4	Band 3/7/38/41 (or 40) /42/43	
Ethernet port	Gigabit RJ-45 port x 1	
Antenna Number	4	
Antenna Gain	Peak gain 16dBi	Pure 3.4~3.8GHz model.
LED Indicators	Power, SIM/ Internet, LAN, Signal Strength x 4	8 LEDs in total
Reset/ Reboot button	Tact switch	In side the housing
Power supply	Input: Universal range 100~240VAC Output: 12V/ 2A DC	
WG-1200 Indoor unit, Wi-Fi VoIP Router	11 ac/b/g/n compliant	**WG-1200 is optional item.** For details, please see <u>3. Appendix</u>.
	Gigabit WAN RJ-45 port x1 (for PoE injector)	
	Fast Ethernet LAN RJ-45x 1	
	RJ-11 port x 1	
	LED indicator: Phone, LAN, WAN, WLAN	

2.2 ID Design

2.2.1 Appearance Index_OH-735

Index	Description
Dimension	288(H)x 288 (W)x 88 (T) mm
Weight	About 2.5 kg
Color	Grey

Front view   **Side view**

2.2.2 Appearance Index_WG-1200

Index	Description
Dimension	148 x 85 x 23 mm (W/D/H) mm
Weight	146g
Color	White

2.3 Interface and Button

OH-735

Interface	Description
RJ-45 x 1	Gigabit RJ45 x 1
SIM Slot x 1	Mini SIM. Support 1.8V and 3.3V SIM and USIM)
Reset/ Reboot button	Tact switch

WG-1200

Interface	Description
RJ-45 WAN x 1	Gigabit WAN X 1
RJ-45 LAN x 1	Fast Ethernet LAN X 1
WPS	X 1
Reset	X 1
DC Jack	12V / 2A
LED indicator	Phone, LAN, WAN, WLAN

2.4 Software Specs

SW Spec	Description
LTE Standard	3GPP Release 10
Downlink MIMO	DL MIMO 2x2 & 4x4
UE Category	Cat.5/ Cat.6
Full band search	Support
Multiple APN	Support
SIM Lock	Support
SIM function	1.8V and 3.3V SIM and USIM card
PIN/ PUK Code	

2.5 Networking

Networking Spec	Description	Remarks
IPv4		
IPv6	only under LTE mode	
IPv4/IPv6 dual stack	only under LTE mode	
Network Mode - NAT Mode		
Network Mode - Tunnel Mode	supported L2/L3 L2TP, GRE VPN	Customization Feature
Network Mode - Bridge Mode		Customization Feature
Network Mode - Router Mode		supported NAT, VPN route
DHCP Client in WAN		supported, no DHCP client but get IP from LTE signaling
DHCP Server in LAN	For NAT Mode, Supports 253 clients max.	
NTP Client		
Network QoS		
DDNS Client		
UPNP		
HTTP(s) Server		
DSCP Tag		Customization Feature
ALG Support (FTP/SIP/ etc…)		
Port trigger/ Port forward		
Packet Counter		
VLAN Passthrough		
1Tx/ 4Rx		

2.6 Device Management

Spec	Description	Remarks
User Name / Password configuration	Support password configuration only	
Two-level User Name/ Password configuration	support 2 levels: user and admin	
Web Access (Remote/Local)	Supported.	
Local Firmware Update	Supported.	
SNMP Agent	Require customization.	
TR069	Ready for IOT	
TR-143	Not supported.	
OMA-DM	Not supported.	
FOTA Firmware Upgrade	Require IOT with different networks	

2.7 Security

Spec	Description	Remarks
User Name/Password configuration	Support password configuration only	
L2/L3 Firewall	MAC/IP Filter	
- Basic firewall	supported	
- Port Forwarding	supported	
- Port trigger	supported	
- DMZ	supported	
- Remote WAN Ping	supported	
- Remote Web Access Control	supported	

2.8 VoIP* Optional SW/HW feature (at WG-1200, Optional Item)

Feature	Description

Protocol
    SIP v2 (RFC 3261)
    SDP (RFC2327)
    RTP/RTCP(RFC1889/RFC 1890)	

Codecs
    G.711
    G.729 a/b	

Echo Cancellation G.168	
Caller ID	Caller ID is a feature that allows you to know who is calling you before answering the phone.
Call Hold	
Outgoing Caller ID block	hide caller name and number
Anonymous Incoming Call Rejection	It prevents anonymous calls from getting through
Call Waiting Indication (tone)	
Call Transfer	
Call Forward	
Call Waiting	
Three-way Conference Call	Can speak to two other persons at the same time, making a three-person conversation.
Dial Plan Support	defines the pattern that an end user can dial to create a valid phone number It is an ordered set of regular expressions
Do Not Disturb	
Redial	
Repeat Dialing on Busy	
G.711 fax send and receive	
T.38 fax send and receive	
MWI and VMWI	When the user has new messages waiting for him, an audible or visible indication is operated on the phone.

2.9 LED Indicators
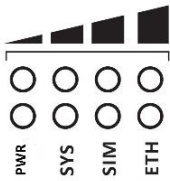
LED	State	Description	LED Behavior	LED illustration
Signal LEDs	Signal Strength weak	Signal strength is weak	Only first signal strength LED on, the other three off	● ○ ○ ○
	Signal Strength medium	Signal strength is normal	The first two lights on, the last two off	● ● ○ ○
	Signal Strength good	Signal strength is good	The first three lights on, the last one off	● ● ● ○
	Signal Strength strong	Signal strength is strong	Four signal LEDs on	● ● ● ●
SYS(internet) LED	No access in LTE network	CPE not register to LTE network	The SYS LED OFF, SIM LED on	○ ○ ● ○
	Access in LTE network	CPE register to LTE network	The SYS and SIM LED on	○ ● ● ○
SIM LED	No SIM card	Detect no SIM Card	The SIM LED Off	○ ○ ○ ○
	SIM card abnormal	SIM Card in abnormal state	The SIM LED Blinking	○ ○ ★ ○
	SIM card normal	SIM Card work well	The SIM LED on	○ ○ ● ○
LAN LED	LAN Connected	Device connect to CPE	The ETH LED on	○ ○ ○ ●
	LAN Disconnected	No device connects to CPE	The ETH LED off	○ ○ ● ○
PWR LED	Steady On	Power On	The PWR LED on	● ○ ○ ○
	Off	Power Off	The PWR LED off	○ ○ ○ ○
	Firmware Upgrading	CPE starting the firmware upgrading	The first four RF LEDs blinking alternately.	

2.10 RF Specifications

LTE RF Spec	Capability		Remarks
	Description	Unit	
LTE Supported Bands	TDD Band 38, 41 (or 40), 42, 43 FDD Band 3, 7		
LTE Channel Band Width	1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz	MHz	3GPP compliant
DL MIMO 4x4	4x4 for Band 3, 7, 38, 41 (or 40), 42, 43		
Carrier Aggregation Combination	**Inter-Band CA** B3-B7, B3-B38, B3-B40, B3-B41, B3-B42, B3-B43, B7-B38, B7-B40, B7-B41, B7-B42, B7-B43, B38-B40, B38-B41, B38-B42, B38-B43, B41-B42, B41-B43, B42-B43		**Different band combination may result in extra cost.** **For details, please contact us.**
	Intra-Band CA Band 3/7/38/40/41/42/43. B3-B3, B7-B7, B38-B38, B40-B40, B41-B41, B42-B42, B43-B43		
	UL-CA: B42		(Intra-Band)
LTE Output Power @ 25 ℃	23	dBm	3GPP compliant mode will be 23dBm +/- 2dB
LTE Receiver Sensitivity	-102.7dBm/5MHz -99.7dBm/10MHz -97.9dBm/15MHz -96.7dBm/20MHz	dB	
LTE RF Standard	All RF specification should reference with 3GPP Release9 TS 36.101		Compliant with 3GPP with margin
LTE Antenna Efficiency	> 50%		

Wi-Fi Spec	Capability				(at WG-1200. Optional item)
	Min	Typical	Max	Unit	
2.4 GHz Wi-Fi	802.11b/g/n (2.4 GHz) 2T2R				
5 GHz Wi-Fi	802.11ac (5.0 GHz) 2T2R				
Wi-Fi Antenna Gain		5		dBi	Fixed external antenna
Wi-Fi Antenna number		2			x 2 units
Antenna Efficiency		> 50%			

2.11 **Environment Specifications**_OH-735

No.	Feature	Capability				Remarks
		Min	Typical	Max	units	
1	Operating temperature	-30		55	^{o}C	
2	Storage temperature	-40		60	^{o}C	
3	Operating humidity	0		95	%	
4	Storage humidity	0		95	%	
5	IP Rating		IP66			(to confirm if IP67 is feasible)

2.12 Regulatory Specification

Feature	Requirement Specification	Comments
Radio_LTE	EN 301 908-13 V 6.1.1	Follow CE regulatory
Radio_WiFi	EN 300 328 (V1.8.1)	Follow CE regulatory
Safety	EN 60950-1	Follow CE regulatory
EMC	EN 301 489-1/-4/-17/-24;	Follow CE regulatory

3. <u>Appendix-Deliverable</u>

Article Number	Content	Remark
OH-735	- 1 x Assembled product ODU - 1 x Quick installer guide - Mounting kit	Detail Deliverables need to be defined by customer agreement
*Option 1:	PoE Injector x 1 Power adapter 12V / 2A x 1	**Important note:** Package should include one of the optional items. There will be price difference among the optional items.
*Option 2:	WG-1200 Wi-Fi Router x 1 Power adapter 12V / 2A x 1	

Installation Quick Guide

QIG (Logo can be customized)

Packaging

White Box, Device Label, Box Label