

WLTMS-110 LTE Cat 6 B42_43_48 TD-LTE HE Outdoor CPE

Product Specification

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Chapter 1 – Introduction

Purpose and Scope

The purpose of this document is to define product specification of 3GPP Rel10/11 Compliant LTE Cat 6 HE Outdoor CPE, support carrier aggregation, and Giga PoE Ethernet.

It describes the HW and SW requirements of the following products:

Company	Model Name	Product Name
Gemtek	WLTS- 110_424348	WLTS-110 LTE Cat 6 B42_43_48 TD-LTE HE Outdoor CPE

Product Features

- Support TDD-LTE Mode Band 48
- Support 3GPP Release 10 compliant (Support Cat 6; 40MHz Carrier Aggregation) / Future Rel 11
- Support up to UE LTE Category 6 PHY Rate
- Support 1.8V and 3V SIM and USIM card for LTE Mode
- Support 1TX/2RX with TX switched diversity
- Supports Dynamic Host Configuration Protocol
- Built-in web server for web-based configuration
- Password protected access and configuration
- Supports IEEE 802.3, IEEE 802.3u, IEEE 802.3ab (10/100/1000 Mbps)
- Support Power over Ethernet of Outdoor WAN port {802.3 at}
- Supports VPN pass-through
- Support IP67 Environmental Proof

*B48 certification is in roadmap

** TDD Cat 6 with 40MHz carrier aggregation peak throughput is around 220Mbps @ TDD Config 2 SSF 7

Definitions, Acronyms and Abbreviations

LTE	Long Term Evolution
QoS	Quality of Service
MIMO	Multi-input Multi-output
OTA	Over the Air
RSRP	Reference Signal Received Power
RSRQ	Reference Signal Received Quality
RSSI	Received Signal Strength Indicator
CINR	Carrier to Interference plus Noise Ratio
SINR	Signal to Interference plus Noise Ratio

References

Date	Author	Document

Chapter 2 – Hardware Requirement

General Specification

No.	Feature	Description	Comments
	LTE BB ASIC	SQN3220	Sequans Communication
	LTE RF ASIC	SQN3242 x 2	Sequans Communication
	RAM (Embedded)	64MB	Sequans Communication
	SPI Flash	4Mb	
	Host	MT7621A	Mediatek
	DDR2	128MB	
	NAND Flash	128MB	
	Ethernet LAN port	One RJ-45 port 10/100/1000 auto-sensing, auto-MDX	
	LED Indicators	Signal Strength / LAN / SIM	
	Console	TTL signal	Pin header ➔ Removed in production unit
	Reset/Reboot button	Tact switch	In Indoor
	Power supply	Input: Universal range 100~240VAC Output: 56VDC	

ID design










Physical Size	Description
ODU Size	250 (L) 250 (W) 55(H)mm w/o mounting rib
ODU Weight	1.2kg

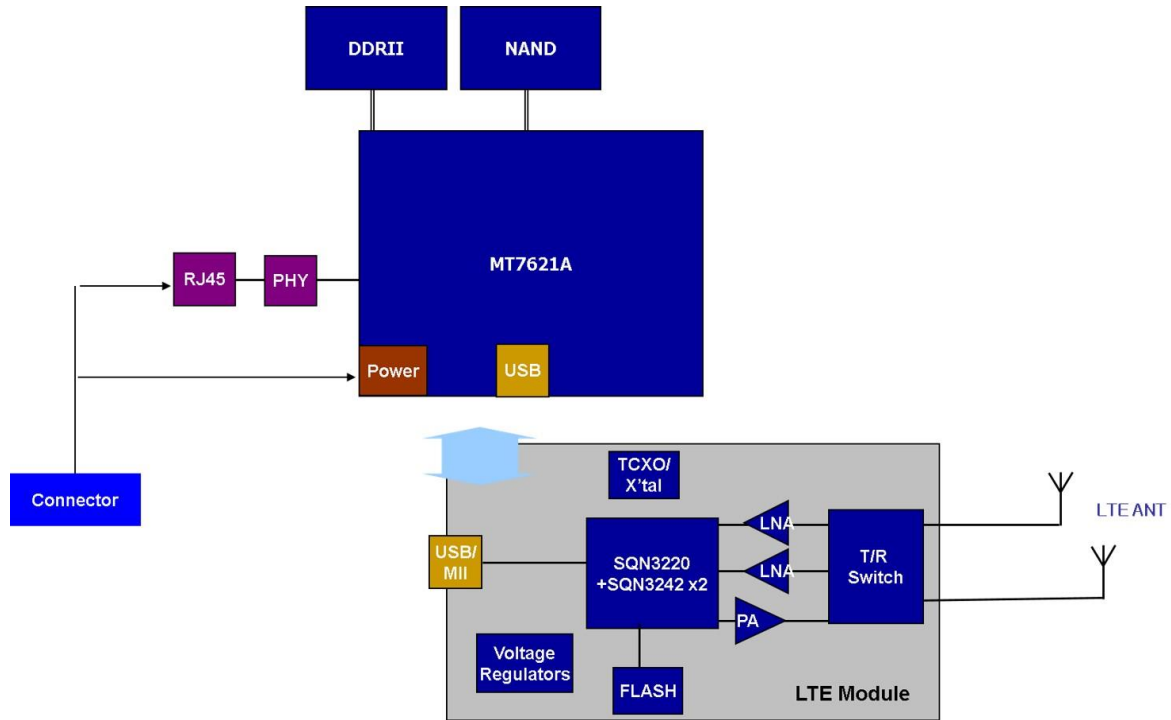
Unit Interface_ODU

Connector	Description
LAN – RJ 45	The LAN port allows you to connect Modem to indoor power over Ethernet injector to support power / data
USIM Slot	Support standard 1.8V / 3V USIM
Lightening Grounding Screw	

LED Indicators_ODU

LED name	Location	Color	LED Behavior	Status Indication
LED List				
MAIN power		Blue	ON	Power On
			OFF	Power Off
Ethernet status		Yellow	Steady ON	Detect Ethernet Device Connected
			Blinking	N/A
			OFF	No Ethernet action
SIM status		Green	Steady ON	SIM Detected
			Blinking when On-hook	PUK / PIN Code
			OFF	No SIM Detected
LTE Status LED : Link Status			When CPE is power on, each LED indicates each link status	
LTE 1		Red	Steady ON	SINR < 11dB
LTE 2		Red/ Yellow	Steady ON	11dB ≤ SINR < 18dB
LTE 3		Red/ Yellow/ Green	Steady ON	SINR ≥ 18dB

Architecture _ ODU



HW / Radio Specification _ ODU

No	Feature	Capability				Comments
		Min	Typ	Max	Unit	
1	LTE Supported Bands	48				Band 48 – 3550MHz~3700MHz
2	LTE Channel Band Width	10/20			MHz	
5	LTE Output Power @ 25 °C		23		dBm	
6	LTE Transmit Power Dynamic Range	63			dB	Based on 3GPP 36.524 worst case
7	Receiver Sensitivity@ 20MHz		-95	-93	dBm	Based on 3GPP 36.524 worst case
8	Standard	Comply with 3GPP Release 10				All RF specification should reference with 3GPP Release9 TS 36.101
9	LTE Antenna Support Frequency	3400		3800	MHz	2 antenna for LTE
10	Peak Gain			21+/- 1dBi	dBi	
11	Peak Power Consumption (System)		10		W	Can be powered by 802.3af / 15W PoE

Environmental Specification_ODU

No	Feature	Capability				Comments
		min	Typ	max	units	
1	Operating temperature	-40		55	°C	
2	Storage temperature	-40		60	°C	
3	Operating humidity	5		95	%	
4	Storage humidity	5		95	%	
5	Environmental		IP67			

Regulatory Specification_ODU CE

No.	Feature	Requirement Specification	Comments
1	Radio_LTE	EN 301 908-1 V11.1.1 EN 301 908-13 V11.1.1	
2	Safety	IEC 60950-1/EN 60950-1	
3	EMC	Draft EN 301 489-52 V.1.1.0	
4	RF exposure	EN 50385:2002 EN 62311:2008	User or Installer require minimum of 50 cm distance from the device

Regulatory Specification_ODU FCC

No.	Feature	Requirement Specification	Comments
1	Radio_LTE	FCC Part 90z	3650~3700 only
2	Radio_LTE	FCC part 96	Waiting FCC
3	EMC	FCC Part 15B	
4	Safety	IEC 60950-1/EN 60950-1	
5	Outdoor	EN 60950-22	
6	RF exposure	FCC part 2	User or Installer require minimum of 50 cm distance from the device

Reliability Specification

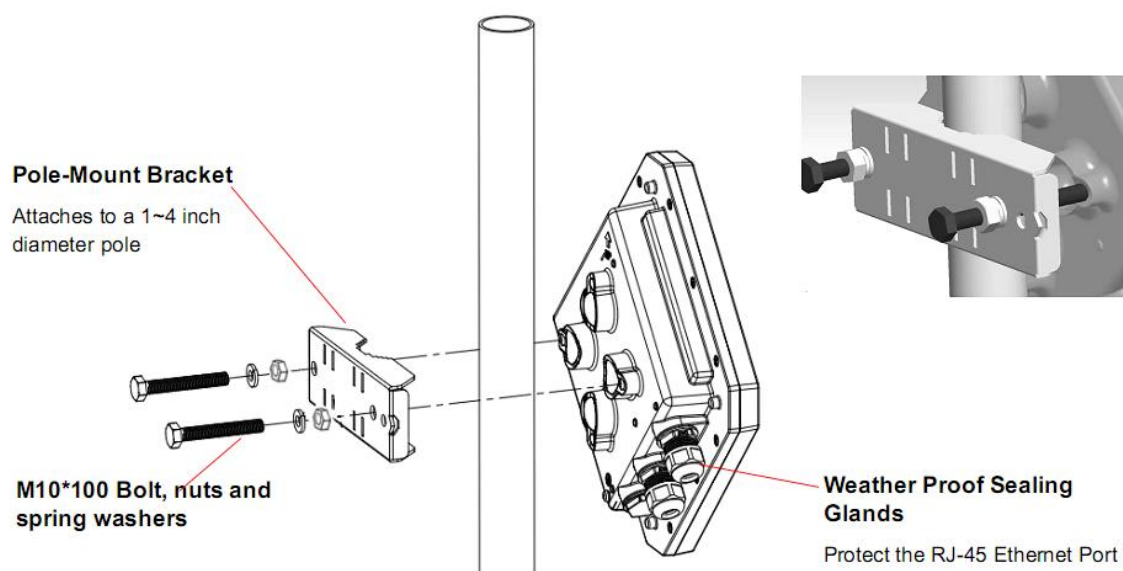
No.	Feature	Requirement Specification	Comments
	MTBF ODU	300,000 @ 55 °C	

Chapter 3 – Software Requirement

LTE			
No	Feature	Status	Comments
1	3GPP Release 10 & 11	Ready with Chipset	Detail LTE-A features will be defined with customer & eNB readiness
2	MIMO Support	Ready with Chipset	DL MIMO 2x2 & 4x2
3	UE Cat 6	Ready with Chipset	
4	1TX/2RX	Ready with Chipset	
5	Full band search	Ready with Chipset	
6	APN Configuration	Ready with Chipset	Multiple APN Manual Configure
7	SIM function (1.8V and 3V SIM and USIM card)	Ready with Chipset	
8	PIN/PUK Code	Ready with Chipset	
Networking			
No	Feature	Status	Comments
1	IPv4	Ready	
2	IPv6	Ready	
3	IPv4/v6 dual stack	Ready	
4	NAT Mode	Ready	
5	Bridge Mode	Customization	
6	Tunnel Mode - GRE - L2TP / L2TP w/ IPsec - PPTP	Customization	
7	Router Mode	Ready	
8	DHCP Server in LAN	Ready	For NAT Mode, Supports 253 clients max.
9	NTP Client	Ready	
10	DNS Relay	Ready	For NAT Mode
11	DDNS Client	Ready	For NAT Mode
12	VPN Pass-through – IPSec/PPTP/L2TP	Ready	For NAT Mode
13	UPNP	Ready	
14	HTTP(s) Server	Ready	
15	Dynamic NAT/NAPT	Ready	For NAT Mode
16	ALG Support (FTP/SIP/etc...)	Ready	
Device Management			
No	Feature	Status	Comments
1	Web Access (Remote/Local)	Ready	
2	SNMP Agent	Customization	
3	TR069	Ready for IOT	
4	TR-143	Customization	

5	OMA-DM	N/A	Customization
6	FOTA Firmware Upgrade	Ready	IOT with different network
Security			
No	Feature	Status	Comments
1	User Name/Password configuration	Ready	
2	L2/L3 Firewall <ul style="list-style-type: none"> ● - Basic firewall ● - Port Forwarding ● - Port trigger ● - DMZ ● - Remote WAN Ping ● - Remote Web Access Control 	Ready	
System/Debug Utility			
No	Feature	Status	Comments
1	Software reset button	Ready	Reset to factory default
2	Configuration Wizard	Ready	Customized, need customers to provide the configuration procedure
3	Time Zone Configuration	Ready	80+ Countries/Cities selection
4	Networking Debug <ul style="list-style-type: none"> - Iperf - Ping - Traceroute 	Ready	
5	System log & Diagnostic & Monitoring	Ready	Forward system information to specified network device. - Supported with special IPK w/ chipset DM tool
6	Dual Image - Firmware Upgrade fail protection	Ready	Switchable
7	Firmware Verification	Ready	Use digital signature to verify the installed firmware
8	Multilanguage	Customization	Default English

Pole Mount



Appendix A - Supplements

Supplements

Article Number	Package Contents	Comments
WLTMS-110 _424348	<ul style="list-style-type: none"> - 1x Assembled product ODU - 1x 56 V PoE Injector (30W) - 1x Quick installer guide 	Detail Deliverables need to be defined by customer agreement

* To be discussion

Installation Quick Guide

Customization manual

Packaging

Gift Box, Customization manual, model name, serial number, product name