1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 General Information

Client Information

Applicant:	Global Telecom Corp
Address of applicant:	17901 Von Karman Ave, Suite 600, Irvine, California 92614 United States of America
Manufacturer:	Global Telecom Corp
Address of manufacturer:	17901 Von Karman Ave, Suite 600, Irvine, California 92614 United States of America

General Description of EUT:

Product Name:	LTE CPE
Brand Name:	Global Telecom
Model No.:	GTC-7243A
Adding Model(s):	OOMALTE460, Global-7243A
FCC ID:	S3KG7243A
Rated Voltage:	Adapter DC 48V
Adapter Model:	G0720-480-050 Input: AC100-240V, 50/60Hz, 0.75A; Output: DC48V, 0.5A

Technical Characteristics of EUT: Main board	
4G	
Support Networks:	FDD-LTE, TDD-LTE
Support Band:	FDD-LTE Band 25, 26, 41
Uplink Frequency:	FDD-LTE Band 25: Tx: 1850-1915MHz, FDD-LTE Band 26: Tx: 814-849 MHz, TDD-LTE Band 41: Tx: 2496-2690MHz,
Downlink Frequency:	FDD-LTE Band 25: Rx: 1930-1995MHz, FDD-LTE Band 26: Rx: 859-894MHz, TDD-LTE Band 41: Rx: 2496-2690MHz,
RF Output Power:	FDD-LTE Band 25: 24.64dBm, FDD-LTE Band 26(824-849MHz): 23.99dBm, TDD-LTE Band 41: 24.79dBm,
Type of Emission:	FDD-LTE Band 25: 17M9G7D, 17M9W7D FDD-LTE Band 26(824-849MHz): 13M4G7D, 13M4W7D TDD-LTE Band 41: 17M8G7D, 17M8W7D
Type of Modulation:	Uplink : QPSK, 16QAM, 64QAM Downlink : QPSK, 16QAM, 64QAM, 256QAM
Antenna Type:	Integral Antenna
Antenna Gain:	FDD-LTE Band 25: 4dBi,

	FDD-LTE Band 26(824-849MHz): 3dBi, TDD-LTE Band 41: 4dBi,
4G	
Support Networks:	FDD-LTE
Support Band:	FDD-LTE Band 26
Uplink Frequency:	FDD-LTE Band 26: Tx: 814-824MHz,
Downlink Frequency:	FDD-LTE Band 26: Rx: 859-869MHz,
RF Output Power:	FDD-LTE Band 26: 23.51dBm,
Type of Emission:	FDD-LTE Band 26: 8M94G7D, 8M94W7D
Type of Modulation:	Uplink : QPSK, 16QAM, 64QAM Downlink : QPSK, 16QAM, 64QAM, 256QAM
Antenna Type:	Integral Antenna
Antenna Gain:	FDD-LTE Band 26: 3.0dBi
Device Category:	Fixed Device

1.2 Standard Applicable

According to §1.1307(b)(1) and KDB 447498 D01 General RF Exposure Guidance v06, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100000	/	/	1	30

Note: f = frequency in MHz: * = Plane-wave equivalents power density

1.3 MPE Calculation Method

$S = (30*P*G) / (377*R^2)$

S = power density (in appropriate units, e.g., mw/cm^2)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

1.4 MPE Calculation Result

Only use one antenna to transmitting, simultaneous transmitting not support
Fixed Device
For FDD-LTE Band 25:
Maximum Tune-Up output power: 25.00 (dBm)
Maximum peak output power at antenna input terminal: 316.23 (mW)
Prediction distance: >20(cm)
Prediction frequency: 1882.5(MHz)
Antenna gain: 4(dBi)
Directional gain (numeric gain): 2.51
The worst case is power density at prediction frequency at 20cm: 0.16(mw/cm^2)
MPE limit for general population exposure at prediction frequency: 1 (mw/cm^2)

For TDD-LTE Band 41:
Maximum Tune-Up output power: 25.00 (dBm)
Maximum peak output power at antenna input terminal: 316.23 (mW)
Prediction distance: >20(cm)
Prediction frequency: 2593.0(MHz)
Antenna gain: 4(dBi)
Directional gain (numeric gain): 2.51
The worst case is power density at prediction frequency at 20cm: 0.16(mw/cm^2)
MPE limit for general population exposure at prediction frequency: 1 (mw/cm^2)

For FDD-LTE Band 26(824-849MHz):
Maximum Tune-Up output power: 24.50(dBm)
Maximum peak output power at antenna input terminal: 281.84 (mW)
Prediction distance: >20(cm)
Prediction frequency: 824.7(MHz)
Antenna gain: 3(dBi)
Directional gain (numeric gain): 1.99
The worst case is power density at prediction frequency at 20cm: 0.11(mw/cm^2)
MPE limit for general population exposure at prediction frequency: 0.55 (mw/cm^2)

For FDD-LTE Band 26(814-824MHz):
Maximum Tune-Up output power: 24.00(dBm)
Maximum peak output power at antenna input terminal: 251.19 (mW)
Prediction distance: >20(cm)
Prediction frequency: 814.7(MHz)
Antenna gain: 3(dBi)
Directional gain (numeric gain): 1.99
The worst case is power density at prediction frequency at 20cm: 0.10(mw/cm^2)
MPE limit for general population exposure at prediction frequency: 0.54 (mw/cm^2)

Result: Pass