FCC RF Exposure Report

FCC ID	:	**MXF-WLTFQT141GN**
Equipment	:	**Cat4 Indoor CPE**
Model No.	:	**WLTFQT-141GN**
Brand Name	:	**Gemtek**
Multiple Listing	:	**Refer to item 1.1.1 for more details.**
Applicant	:	**Gemtek Technology Co., Ltd.**
Address	:	**No. 15-1 Zhonghua Road, Hsinchu Industrial Park, Hukou, Hsinchu, Taiwan, 30352.**
Standard	:	**47 CFR FCC Part 2.1091**
Received Date	:	**May 17, 2018**
Tested Date	:	**Nov. 22 ~ Nov. 25, 2016** **May 24 ~ May 30, 2018**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by: **Approved by:**

Along Chen / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
FA851703	Rev. 01	Initial issue	Jun. 27, 2018

1 General Description

1.1 INFORMATION

1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Gemtek	WLTFQT-141GN	Cat4 Indoor CPE	Main tested model.
Blu-Castle	BC-4GMCPGa		For marketing purpose.
✦ All models are electrically identical, different model names are for marketing purpose.			

2 MPE EVALUATION OF MOBILE DEVICES

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

2.1 LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE

Frequency Range (MHz)	Power Density (mW /cm^2)	Averaging Time (minutes)
300~1500	F/1500	30
1500~100000	1.0	30

2.2 MPE EVALUATION FORMULA

$$\mathbf{Pd} = \frac{Pt}{4 * Pi * R^2}$$

Where

Pd= Power density in mW/cm^2
Pt= EIRP in mW
Pi= 3.1416
R= Measurement distance

2.3 MPE EVALUATION RESULTS

GPRS / EGPRS: Frequency band: 850 MHz

Mode	Maximum Peak Conducted Power (dBm)	Rated Power (dBm)	Time slot	Maximum Average Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio
GPRS 8 (GMSK, 1 slot)	32.93	33	1	23.97	1.56	20	0.071	0.549	0.129
GPRS 10 (GMSK, 2 slots)	32.88	33	2	26.98	1.56	20	0.142	0.549	0.259
GPRS 11 (GMSK, 3 slots)	32.75	33	3	28.74	1.56	20	0.213	0.549	0.388
GPRS 12 (GMSK, 4 slots)	32.57	33	4	29.99	1.56	20	0.284	0.549	**0.517**
EDGE 8 (8PSK , 1 slot)	29.90	30	1	20.97	1.56	20	0.036	0.549	0.065
EDGE 10 (8PSK, 2 slots)	29.80	30	2	23.98	1.56	20	0.071	0.549	0.130
EDGE 11 (8PSK, 3 slots)	29.76	30	3	25.74	1.56	20	0.107	0.549	0.194
EDGE 12 (8PSK, 4 slots)	29.72	30	4	26.99	1.56	20	0.142	0.549	0.259
GPRS 30 (GMSK, 1 slot)	32.91	33	1	23.97	1.56	20	0.071	0.549	0.129
GPRS 31 (GMSK, 2 slots)	32.88	33	2	26.98	1.56	20	0.142	0.549	0.259
GPRS 32 (GMSK, 3 slots)	32.75	33	3	28.74	1.56	20	0.213	0.549	0.388
GPRS 33 (GMSK, 4 slots)	32.57	33	4	29.99	1.56	20	0.284	0.549	**0.517**
EDGE 30 (8PSK, 1 slot)	29.88	30	1	20.97	1.56	20	0.036	0.549	0.065
EDGE 31 (8PSK, 2 slots)	29.81	30	2	23.98	1.56	20	0.071	0.549	0.130
EDGE 32 (8PSK, 3 slots)	29.78	30	3	25.74	1.56	20	0.107	0.549	0.194
EDGE 33 (8PSK, 4 slots)	29.71	30	4	26.99	1.56	20	0.142	0.549	0.259

GPRS / EGPRS: Frequency band: 1900 MHz

Mode	Maximum Peak Conducted Power (dBm)	Rated Power (dBm)	Time slot	Maximum Average Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio
GPRS 8 (GMSK, 1 slot)	30.17	30.5	1	21.47	2.5	20	0.050	1.000	0.050
GPRS 10 (GMSK, 2 slots)	30.13	30.5	2	24.48	2.5	20	0.099	1.000	0.099
GPRS 11 (GMSK, 3 slots)	30.06	30.5	3	26.24	2.5	20	0.149	1.000	0.149
GPRS 12 (GMSK, 4 slots)	29.93	30.5	4	27.49	2.5	20	0.198	1.000	**0.198**
EDGE 8 (8PSK , 1 slot)	28.24	30	1	20.97	2.5	20	0.044	1.000	0.044
EDGE 10 (8PSK, 2 slots)	28.21	30	2	23.98	2.5	20	0.088	1.000	0.088
EDGE 11 (8PSK, 3 slots)	28.11	30	3	25.74	2.5	20	0.133	1.000	0.133
EDGE 12 (8PSK, 4 slots)	28.07	30	4	26.99	2.5	20	0.177	1.000	0.177
GPRS 30 (GMSK, 1 slot)	30.15	30.5	1	21.47	2.5	20	0.050	1.000	0.050
GPRS 31 (GMSK, 2 slots)	30.11	30.5	2	24.48	2.5	20	0.099	1.000	0.099
GPRS 32 (GMSK, 3 slots)	30.02	30.5	3	26.24	2.5	20	0.149	1.000	0.149
GPRS 33 (GMSK, 4 slots)	29.95	30.5	4	26.99	2.5	20	0.198	1.000	**0.198**
EDGE 30 (8PSK, 1 slot)	28.22	30	1	20.97	2.5	20	0.044	1.000	0.044
EDGE 31 (8PSK, 2 slots)	28.17	30	2	23.98	2.5	20	0.088	1.000	0.088
EDGE 32 (8PSK, 3 slots)	28.12	30	3	25.74	2.5	20	0.133	1.000	0.133
EDGE 33 (8PSK, 4 slots)	28.04	30	4	26.99	2.5	20	0.177	1.000	0.177

WCDMA

Mode	Maximum Conducted Power (dBm)	Rated Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm2)	Ratio
WCDMA 850	25.85	26	1.56	20	0.113	0.551	**0.206**
WCDMA 1900	25.59	26	2.5	20	0.141	1	0.141

LTE

Frequency range (MHz)	Maximum Conducted Power (dBm)	Rated Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm2)	Ratio
1850~1910 LTE Band 2	25.39	26	2.5	20	0.141	1	**0.141**
1710~1755 LTE Band 4	24.75	25	3.14	20	0.130	1	0.130

Wi-Fi

Frequency range (MHz)	Maximum Conducted Power (dBm)	Rated Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm2)	Ratio
2412~2462 (Wi-Fi)	20.16	20.5	2	20	0.035	1	**0.035**

MPE Evaluation of Simultaneous Transmission

The device supports simultaneous transmission as below configurations

1) Wi-Fi 2.4GHz and WWAN 2G
2) Wi-Fi 2.4GHz and WWAN 3G
3) Wi-Fi 2.4GHz and WWAN 4G

MPE evaluation is as below formula

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

MPE Evaluation for Wi-Fi 2.4GHz and WWAN 2G = 0.035 / 1 + 0.284 / 0.549 = 0.552
MPE Evaluation for Wi-Fi 2.4GHz and WWAN 3G = 0.035 / 1 + 0.113 / 0.551 = 0.241
MPE Evaluation for Wi-Fi 2.4GHz and WWAN 4G = 0.035 / 1 + 0.141 / 1 = 0.176

Conclusion

MPE evaluations of single and simultaneous transmission meet the requirement of standard.

3 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information.

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