FCC RF Exposure Report

FCC ID	:	**MXF-WAPD246ACN**
Equipment	:	**WAPD-246ACN_LoRa gateway**
Model No.	:	**WAPD-246ACN**
Brand Name	:	**Gemtek**
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	:	**Jul. 26, 2017**
Tested Date	:	**Jul. 26 ~ Aug. 23, 2017**

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
FA780201	Rev. 01	Initial issue	Sep. 06, 2017

1 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.

1.1 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

1.2 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

1.3 MPE EVALUATION RESULTS

Mode	Maximum Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
LoRa Card 0 923.3 ~ 927.5 MHz	26.12	0	20	0.081	0.616
LoRa Card 1 923.3 ~ 927.5 MHz	26.06	0	20	0.080	0.616

The device contains a certified wireless LTE module as below

FCC ID	QISME936
Operating Frequency Band and Channel Bandwidth	1850 MHz – 1910 MHz: 1.4 / 3 / 5 / 10 / 15 / 20 MHz 1710 MHz – 1755 MHz: 1.4 / 3 / 5 / 10 / 15 / 20 MHz 2500 MHz – 2570 MHz: 5 / 10 / 15 / 20 MHz
Antenna Type and Gain	Dipole antenna 1850 MHz – 1910 MHz: -0.05 dBi 1710 MHz – 1755 MHz: 0.34 dBi 2500 MHz – 2570 MHz: 1.89 dBi

Frequency Band (MHz)	Maximum Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
1850 MHz – 1910 MHz	22.53	-0.05	20	0.035	1
1710 MHz – 1755 MHz	22.62	0.34	20	0.039	1
2500 MHz – 2570 MHz	22.53	1.89	20	0.055	1

MPE Evaluation of Simultaneous Transmission

The device supports simultaneous transmission as below configurations

Lora Card 0 + Lora Card 1 + LTE

MPE evaluation is as below formula

PD1 / Limit1 + PD2 / Limit 2 + ….. < 1, PD = Power density

MPE Evaluation = 0.081 / 0.616 + 0.080 / 0.616 + 0.055 / 1 = 0.316 < 1

Conclusion

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

2 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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