FCC C2PC RF Exposure Report

FCC ID	:	**MXF-C4000BG**
Equipment	:	**Residential Gateway Products**
Model No.	:	**C4000BG**
Brand Name	:	**CenturyLink**
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	:	**Aug. 22, 2020**
Tested Date	:	**Sep. 18 ~ Oct. 20, 2020**

We, International Certification Corporation, 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
FA082201-01	Rev. 01	Initial issue	Apr. 14, 2021

1 General Description

1.1 Information

This is a Class II Permissive Change report (C2PC).
This report is issued as a supplementary report to original ICC report no. FA082201. The modification is only concerned with adding 5250~5350MHz and 5470~5725 MHz band by software setting.

2 MPE EVALUATION OF MOBILE DEVICES

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 DEVIATION FROM TEST STANDARD AND MEASUREMENT PROCEDURE

None

2.4 MEASUREMENT UNCERTAINTY

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Parameters	Uncertainty
Conducted power	±0.808 dB

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

2.5 MPE EVALUATION RESULTS

Non-beamforming mode

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Rated Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	*Ratio	Pass / Fail
2412~2462** (Wi-Fi)	29.88	30	2.55	27	0.196	1	0.196	Pass
5180~5240** (Wi-Fi)	29.77	30	3.05	27	0.220	1	0.220	Pass
5745~5825** (Wi-Fi)	29.79	30	4.60	27	0.315	1	0.315	Pass
5250~5350 (Wi-Fi)	23.82	24	3.91	27	0.067	1	0.067	Pass
5470~5725 (Wi-Fi)	23.66	24	4.99	27	0.087	1	0.087	Pass

*Ratio = Power density / Limit.
**Test results are from original test report, FA082201

Beamforming mode

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Rated Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	*Ratio	Pass / Fail
2412~2462** (Wi-Fi)	29.65	30	5.17	27	0.359	1	0.359	Pass
5180~5240** (Wi-Fi)	29.66	30	5.47	27	0.385	1	0.385	Pass
5745~5825** (Wi-Fi)	29.15	29.5	6.73	27	0.458	1	0.458	Pass
5250~5350 (Wi-Fi)	23.73	24	6.15	27	0.113	1	0.113	Pass
5470~5725 (Wi-Fi)	22.87	23	7.03	27	0.110	1	0.110	Pass

*Ratio = Power density / Limit.
**Test results are from original test report, FA082201
For 2412 ~ 2462 MHz, Directional Gain=10 * log($(10^{1.75/20}+10^{2.55/20})^2/2$) =5.17 dBi
For 5180 ~ 5240 MHz , Directional Gain =10 * log($(10^{1.83/20}+10^{3.05/20})^2/2$) =5.47 dBi;
For 5250-5350 MHz , Directional Gain =10 * log($(10^{2.29/20}+10^{3.91/20})^2/2$) =6.15 dBi;
For 5470-5750 MHz, Directional Gain =10 * log($(10^{2.93/20}+10^{4.99/20})^2/2$) =7.03 dBi
For 5745 ~ 5825 MHz, Directional Gain =10 * log($(10^{2.73/20}+10^{4.6/20})^2/2$) =6.73 dBi

2.6 MPE EVALUATION OF SIMULTANEOUS TRANSMISSION

Mode	Max Ratio of Each Mode	
	Non-beamforming	***Beamforming mode***
Wi-Fi 2.4 GHz	0.196	0.359
Wi-Fi 5 GHz	0.315	0.458
Sum (Wi-Fi 2.4 GHz+ Wi-Fi 5 GHz)	0.511	0.817
Limit	1	1
Pass / Fail	Pass	Pass

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 Corporation (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 Dist., Tao Yuan City 33381, Taiwan (R.O.C.)	No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 333, Taiwan (R.O.C.)

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

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

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