

FCC RF Exposure Report

FCC ID : MXF-EL4000
Equipment : Wireless Home Internet
Model No. : EL4000
Brand Name : EarthLink
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 : Jan. 25, 2022
Tested Date : Jan. 26 ~ Feb. 15, 2022

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 shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:


Along Chen / Assistant Manager

Approved by:


Gary Chang / Manager

Table of Contents

1	MPE EVALUATION OF MOBILE DEVICES	4
1.1	LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE.....	4
1.2	MPE EVALUATION FORMULA	4
1.3	DEVIATION FROM TEST STANDARD AND MEASUREMENT PROCEDURE	4
1.4	MEASUREMENT UNCERTAINTY	4
1.5	MPE EVALUATION RESULTS	5
1.6	MPE EVALUATION OF SIMULTANEOUS TRANSMISSION.....	6
2	TEST LABORATORY INFORMATION	7

Release Record

Report No.	Version	Description	Issued Date
FA212101-01	Rev. 01	Initial issue	Mar. 28, 2022

1 MPE EVALUATION OF MOBILE DEVICES

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

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

Where

Pd= Power density in mW/cm²

Pt= EIRP in mW

Pi= 3.1416

R= Measurement distance

1.3 DEVIATION FROM TEST STANDARD AND MEASUREMENT PROCEDURE

None

1.4 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.

1.5 MPE EVALUATION RESULTS

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
Non-beamforming mode								
2412~2462 ^{Note1}	28.69	29.0	4.2	26	0.246	1	0.246	Pass
5180~5240 ^{Note1}	28.55	29.0	5.1	26	0.303	1	0.303	Pass
5745~5825 ^{Note1}	29.53	30.0	5	26	0.372	1	0.372	Pass
5250~5350	23.70	24	5	26	0.094	1	0.094	Pass
5470~5725	23.71	24	4.5	26	0.083	1	0.083	Pass
Beamforming mode								
2412~2462 ^{Note1}	27.03	27.5	6.82	26	0.318	1	0.318	Pass
5180~5240 ^{Note1}	27.89	28.0	8.01	26	0.470	1	0.470	Pass
5745~5825 ^{Note1}	28.02	28.5	7.62	26	0.482	1	0.482	Pass
5250~5350	22.00	22	7.81	26	0.113	1	0.113	Pass
5470~5725	22.86	23	7.07	26	0.120	1	0.12	Pass

Ratio* = Power density / Limit.

Note:

1. Test results of these frequency bands are leveraged from original MPE report, report no. FA1212101.

2.

For 2412 ~ 2462 MHz, Directional Gain = $10 * \log((10^{4.2/20} + 10^{3.4/20})^2 / 2) = 6.82$ dBi

For 5150 ~ 5250 MHz, Directional Gain = $10 * \log((10^{5.1/20} + 10^{4.9/20})^2 / 2) = 8.01$ dBi

For 5250 ~ 5350 MHz, Directional gain = $10 * \log((10^{4.6/20} + 10^{5/20})^2 / 2) = 7.81$ dBi.

For 5470 ~ 5725 MHz, Directional gain = $10 * \log((10^{3.6/20} + 10^{4.5/20})^2 / 2) = 7.07$ dBi.

For 5725 ~ 5850 MHz, Directional Gain = $10 * \log((10^{4.2/20} + 10^{5/20})^2 / 2) = 7.62$ dBi

The device contains a certified module, FCC ID: XMR202008EC25AFXD

Frequency Range (MHz)	Rated Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	*Ratio	Pass / Fail
WCDMA Band 2	25	3.4	26	0.081	1.000	0.081	Pass
WCDMA Band 4	25	3.5	26	0.083	1.000	0.083	Pass
WCDMA Band 5	25	3.5	26	0.083	0.549	0.152	Pass
LTE Band 2	25	3.4	26	0.081	1.000	0.081	Pass
LTE Band 4	25	3.5	26	0.083	1.000	0.083	Pass
LTE Band 5	25	3.5	26	0.083	0.549	0.152	Pass
LTE Band 12	25	2.3	26	0.063	0.466	0.136	Pass
LTE Band 13	25	3.5	26	0.083	0.518	0.161	Pass
LTE Band 14	25	3.5	26	0.083	0.525	0.159	Pass
LTE Band 66	25	3.5	26	0.083	1.000	0.083	Pass
LTE Band 71	25	1.7	26	0.055	1.000	0.055	Pass

1.6 MPE EVALUATION OF SIMULTANEOUS TRANSMISSION

Mode	Max Ratio of Each Mode	
	Non- Beamforming	Beamforming
2.4 GHz Wi-Fi	0.246	0.318
5 GHz Wi-Fi	0.372	0.482
WWAN	0.161	0.161
Sum	0.779	0.961
Limit	1	1
Pass / Fail	Pass	Pass

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 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

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(R.O.C.)

Kwei Shan

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City 33381, Taiwan (R.O.C.)
No.2-1, Lane 6, Wen San 3rd
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Kwei Shan Site II

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No.14-1, Lane 19, Wen San 3rd
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If you have any suggestion, please feel free to contact us as below information.

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