

RF Exposure Evaluation Declaration

Product Name : CBRS Wi-Fi Access Point with US power supply
Trade Name : **MULTITECH** 
Model No. : MTCAPW-L12G2-A600VA-CUA
FCC ID : AU792U21F04867

Applicant : Multi Tech Systems Inc.
Address : 2205 Woodale Drive, Mounds View, MN 55112 U.S.A

Date of Receipt : Aug. 23, 2021
Issued Date : Sep. 10, 2021
Report No. : 2180959R-RFUSMPEV02
Report Version : V0.1



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.

Test Result for Inspection



Product Name : CBRS Wi-Fi Access Point with US power supply
Applicant : Multi Tech Systems Inc.
Address : 2205 Woodale Drive, Mounds View, MN 55112 U.S.A
Manufacturer : Multi Tech Systems Inc.
Address : 2205 Woodale Drive, Mounds View, MN 55112 U.S.A
Trade Name : **MULTITECH** 
Model No. : MTCAPW-L12G2-A600VA-CUA
FCC ID : AU792U21F04867
EUT Voltage : DC 12V (adapter)
Testing Voltage : AC 120V / 60Hz
Applicable Standard : FCC 47 CFR Part 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.
Test Lab : Hsin Chu Laboratory
Address : No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958
Test Result : Complied
Approved By : 

(Louis Hsu / Deputy Manager)

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Revision History

Version	Description	Issued Date
V0.1	Initial issue of report	Sep. 10, 2021

1. General Information

1.1. EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
WLAN 2.4GHz	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)

This EUT contains a WWAN module and the detail as below.

Trade Name	Model	FCC ID	Bands	Channel Bandwidth	Operating Frequency Range (MHz)
Quectel	EG12-GT	XMR201909EG12GT	LTE Band 42 (CA)	20 MHz	TX: 3560-3590 RX: 3560-3590
				5 MHz	TX: 3552.5-3697.5 RX: 3552.5-3697.5
			LTE Band 48	10 MHz	TX: 3555-3695 RX: 3555-3695
				15 MHz	TX: 3557.5-3692.5 RX: 3557.5-3692.5
				20 MHz	TX: 3560-3590 RX: 3560-3590

Note: The above EUT information is declared by the manufacturer.

1.2. Test Facility

Laboratory Information

USA : **FCC Registration Number: TW3024**

Canada **CAB identifier : TW3024**

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our

Web site: <http://www.dekra.com.tw>

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	<ol style="list-style-type: none"> No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	<ol style="list-style-type: none"> +886-3-582-8001 +886-3-582-8001
Fax number	<ol style="list-style-type: none"> +886-3-582-8958 +886-3-582-8958
E mail address	info.tw@dekra.com
Website	http://www.dekra.com.tw
<p>Note: Test site number for address 1 includes SR2-H. Test site number for address 2 includes CB2-H, CB3-H, CB4-H, SR10-H and SR12-H.</p>	

2. RF Exposure Evaluation

2.1. Test Limit

(A) Test Limit 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 Time 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 ²)	<6
30-300	61.4	0.163	1.0	<6
300-1500	-	-	f/300	<6
1500-100,000	-	-	5	<6

(B) Test Limit 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 Time 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 ²)	<30
30-300	27.5	0.073	0.2	<30
300-1500	-	-	f/1500	<30
1500-100,000	-	-	1.0	<30

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

Power Density (S) is calculated by the following formula:

$$S=(P*G) /4\pi R^2$$

where:

S = power density (in appropriate units, e.g. mW/ cm²)

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

π = 3.1416

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

2.2. Test Result of RF Exposure Evaluation

Exposure Environment: General Population / Uncontrolled Exposure

Evaluation Mode	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	PASS / FAIL
WLAN 2.4GHz	20.231	105.463	0.021	1.000	PASS
LTE Band 42 (CA)	18.270	67.143	0.013	1.000	PASS
LTE Band 48	22.420	174.582	0.035	1.000	PASS

Distance (cm): 20

WLAN antenna gain: 3.39dBi, WWAN antenna gain: 1.27dBi.

Co-location
<p>Conclusion:</p> <p>The formula of calculated the MPE is: CPD1 / LPD1 + CPD2 / LPD2 +etc. < 1 CPD = Calculation power density LPD = Limit of power density</p> <p>WLAN 2.4GHz function + WWAN LTE function= 0.021 + 0.035 = 0.056, therefore the maximum calculations of above situations are less than the "1" limit.</p>

Note:

1. The above EUT information is declared by the manufacturer.
2. The results are evaluated using the maximum power.