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RF Exposure Evaluation Report

Report No. : CQASZ20200901133E-02

Applicant: Call Control LLC

Address of Applicant: 11711 NE 12th Street Suite 3A Bellevue Washington United States

Manufacturer: MTX LED Ltd

Address of Manufacturer: 414, 4F, Building A, Wolong Cambridge Spring, No.88 Luoyu East Road, Hongshan District, 430076 Wuhan City, Hubei, China

Equipment Under Test (EUT):

Product: Call Control Home

Model No.: CCH-20

Brand Name: N/A

FCC ID: 2AXA4-CCH20

Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01 General RF Exposure Guidance v06

Date of Test: 2020-09-17 to 2020-09-27

Date of Issue: 2020-10-15

Test Result : PASS*

Jun Li

Tested By:

(Jun Li)

Reviewed By:

Sheek Luo

(Sheek Luo)

Approved By:

Jack Ai

(Jack Ai)



* In the configuration tested, the EUT complied with the standards specified above.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200901133E-02	Rev.01	Initial report	2020-10-15

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3 RF Exposure Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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) Limits for General Population/Uncontrolled Exposure				
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

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3.2 EUT RF Exposure Evaluation

Calculated Result and Limit (For 2.4G WIFI)

Mode	Frequency (MHz)	output power (dBm)	output power (mW)	Target power (dBm)	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
					(dBi)	(Linear)			
IEEE 802.11b	2412	13.72	23.55	13±1	2	1.59	0.0079 2	1	Compiles
	2437	13.85	24.27	13±1	2	1.59	0.0079 2	1	Compiles
	2462	13.16	20.70	13±1	2	1.59	0.0079 2	1	Compiles
IEEE 802.11g	2412	8.81	7.60	9±1	2	1.59	0.0031 5	1	Compiles
	2437	9.12	8.17	9±1	2	1.59	0.0031 5	1	Compiles
	2462	8.46	7.01	9±1	2	1.59	0.0031 5	1	Compiles
IEEE 802.11n HT20	2412	8.63	7.30	9±1	2	1.59	0.0031 5	1	Compiles
	2437	8.83	7.64	9±1	2	1.59	0.0031 5	1	Compiles
	2462	8.76	7.52	9±1	2	1.59	0.0031 5	1	Compiles
IEEE 802.11n HT40	2422	6.71	4.69	7±1	2	1.59	0.0019 9	1	Compiles
	2437	6.43	4.40	7±1	2	1.59	0.0019 9	1	Compiles
	2452	6.60	4.57	7±1	2	1.59	0.0019 9	1	Compiles