



FCC RADIO EXPOSURE TEST REPORT

FCC ID : 2ASQM-CE05
Equipment : Pandora
Brand Name : vivint.Internet
Model Name : CE05
Applicant : Vivint Internet
4931 N. 300 W. Provo Utah United States 84604
Manufacturer : Vivint Internet
4931 N. 300 W. Provo Utah United States 84604
Standard : 47 CFR Part 2.1091

The product was received on Mar. 11, 2019, and testing was started from Mar. 11, 2019 and completed on Mar. 23, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 EUT General Information	5
1.2 Testing Location	5
2 Maximum Permissible Exposure	6
2.1 Limit of Maximum Permissible Exposure	6
2.2 MPE Calculation Method.....	6
2.3 Calculated Result and Limit.....	7
Photographs of EUT v01	



History of this test report

Report No.	Version	Description	Issued Date
FA930724	01	Initial issue of report	May 10, 2019



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

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:

None

Reviewed by: Sam Chen

Report Producer: Sandy Chuang



1 General Description

1.1 EUT General Information

The Channel Plan(s)		
Channel	Operating Frequency (GHz)	Modulation Type
1	58.32 GHz	π /-2BPSK, π /-2QPSK, π /2-16QAM
2	60.48 GHz	π /-2BPSK, π /-2QPSK, π /2-16QAM
3	62.64 GHz	π /-2BPSK, π /-2QPSK, π /2-16QAM

Note: The EUT contains certified module (FCC ID: XF6-RS9113SB).

1.2 Testing Location

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL : 886-3-327-3456 FAX : 886-3-327-0973
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085



2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits 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)*	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

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)*	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

2.2 MPE Calculation Method

The MPE was calculated at 29 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



2.3 Calculated Result and Limit

Exposure Environment	General Population / Uncontrolled Exposure								
Separation Distance (cm)	29								
Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4GHz	0.50	16.72	17.22	0.50	17.72	0.05916	29	0.00560	1
Zigbee	0.50	13.07	13.57	0.50	14.07	0.02556	29	0.00242	1
Bluetooth	0.50	17.10	17.60	0.50	18.10	0.06458	29	0.00611	1
60GHz (60.48)	24.90	14.66	39.56	0.50	40.06	10.13911	29	0.95937	1

Simultaneous Transmission Analysis Mode:

(WLAN 2.4GHz + Zigbee + Bluetooth (FCC ID: XF6-RS9113SB)) + 60GHz (FCC ID: 2ASQM-CE05)

Exposure Environment	General Population / Uncontrolled Exposure									
Separation Distance (cm)	29									
Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio (S/Limit)
2.4GHz	0.50	16.72	17.22	0.50	17.72	0.05916	29	0.00560	1	0.00560
Zigbee	0.50	13.07	13.57	0.50	14.07	0.02556	29	0.00242	1	0.00242
Bluetooth	0.50	17.10	17.60	0.50	18.10	0.06458	29	0.00611	1	0.00611
60GHz (60.48)	24.90	14.66	39.56	0.50	40.06	10.13911	29	0.95937	1	0.95937
								Sum Ratio		0.97350
								Ratio Limit		1

—————THE END—————