RF Exposure Report

Report No.:	SABCKS-WTW-P21123558
FCC ID:	2AAAS-CP06
Test Model:	CP06
Received Date:	Dec. 28, 2021
Test Date:	Jan. 03 ~ Jan. 22, 2022
Issued Date:	Feb. 14, 2022
Applicant:	Vivint. Inc.
Address:	4931 N. 300 W. Provo, UT 84604 USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location (1):	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003
Test Location (2):	No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
FCC Registration / Designation Number:	281270 / TW0032

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
SABCKS-WTW-P21123558	Original release	Feb. 14, 2022

1 Certificate of Conformity

Product:	Vivint Smart Hub Lite
Brand:	Vivint, Inc.
Test Model:	CP06
Sample Status:	Engineering sample
Applicant:	Vivint. Inc.
Test Date:	Jan. 03 ~ Jan. 22, 2022
Standards:	FCC Part 2 (Section 2.1091)
References Test Guidance:	KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Celine Chou , **Date:** Feb. 14, 2022

Celine Chou / Senior Specialist

Approved by : Jeremy Lin , **Date:** Feb. 14, 2022

Jeremy Lin / Project Engineer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$
where
Pd = power density in mW/cm^2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
pi = 3.1416
r = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

WLAN and BT LE

Function	Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN	2412-2462	29.72	2.50	20	0.332	1.00
	AP Mode					
	5180-5240	29.34	3.84	20	0.414	1.00
	5745-5825	29.62	3.84	20	0.441	1.00
	Client Mode					
	5180-5240	23.43	3.84	20	0.106	1.00
	5260-5320	22.92	3.84	20	0.094	1.00
	5500-5720	23.38	3.84	20	0.105	1.00
	5745-5825	29.62	3.84	20	0.441	1.00
BT LE	2402-2480	8.56	-1.24	20	0.001	1.00

Note:
1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

Z-wave

Function	Frequency Band (MHz)	Radiated Electric field (dBuV/m) @3m	Radiated Electric field (dBuV/m) @0.2m	EIRP Power (dBm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
Z-wave	908.40-916.00	92.97	116.49	-2.261	0.00012	0.60

Note:
1. 92.97 + 20log(3/0.2) = 116.49dBuV/m
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

DECT

Function	Frequency Band (MHz)	Peak Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
DECT	1921.536-1928.448	19.53	2.15	20	0.029	1.00

Note:
1. Antenna information for DECT function: Brand: DSPG/Synaptics, Model: XKAB-N02.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

WWAN (Base on WWAN module, Brand: Vivint, Inc., Model: EG91-NAX, FCC ID: 2AAAS-CC06)

Function	Band	Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WWAN	LTE B2	24.42	1.33	20	0.075	1.00
	LTE B4	24.24	1.24	20	0.070	1.00
	LTE B5	24.19	0.04	20	0.053	0.54
	LTE B12	24.10	0.10	20	0.052	0.46
	LTE B13	23.61	0.53	20	0.052	0.51

Note:

1. The WWAN antenna information for this EUT is listed as below.

No.	Type	Connector	Gain (dBi)				
			B2	B4	B5	B12	B13
1	PIFA	NA	1.33	1.24	0.04	0.10	0.53
2	Dipole (RX only)	ipex(MHF)	1.42	0.91	-2.97	-4.21	-4.50

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2. This EUT doesn't enabled WCDMA function.
3. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Simultaneously transmission condition.

Condition	Technology
1	BLE + WWAN + Z-wave + DECT = 0.001 / 1 + 0.052 / 0.46 + 0.00012 / 0.60 + 0.029 / 1 = 0.143
2	WLAN 2.4G + BLE + Z-wave + DECT = 0.332 / 1 + 0.001 / 0.51 + 0.00012 / 0.60 + 0.029 / 1 = 0.363
3	WLAN 5G + BLE + Z-wave + DECT = 0.441 / 1 + 0.001 / 0.51 + 0.00012 / 0.60 + 0.029 / 1 = 0.472

Therefore the maximum calculations of above situations are less than the "1" limit.

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