RF Exposure Report

Report No.:	SA190514C12
FCC ID:	2ARXKVHE10
Contains module FCC ID:	2ATM8EC25A
	2ATM8EC25V
Test Model:	VHE10
Series Model:	VHE10XXX (X=A-Z, 0-9, blank or "-")
Received Date:	May 14, 2019
Test Date:	Jun. 13 ~ Jul. 20, 2019
Issued Date:	Jul. 26, 2019
Applicant:	Veea Inc
Address:	164 E 83rd Street, New York NY, 10028, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA190514C12	Original release	Jul. 26, 2019

1 Certificate of Conformity

Product:	veeaHub
Brand:	veeaHub
Test Model:	VHE10
Series Model:	VHE10XXX (X=A-Z, 0-9, blank or "-")
Sample Status:	Engineering sample
Applicant:	Veea Inc
Test Date:	Jun. 13 ~ Jul. 20, 2019
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.3 -2002

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:** Jul. 26, 2019

Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Jul. 26, 2019

Bruce Chen / 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 28cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN, CDD Mode					
2412-2462	27.02	6.21	28	0.2135	1
5180-5240	28.96	8.12	28	0.5182	1
5745-5825	29.70	8.12	28	0.6144	1
WLAN, Beamforming Mode					
5180-5240	27.77	8.12	28	0.3940	1
5745-5825	27.87	8.12	28	0.4032	1
Bluetooth LE					
2402-2480	-2.94	6.00	28	0.0002	1
Bluetooth EDR					
2402-2480	5.92	6.00	28	0.0016	1
Zigbee					
2405-2475	20.02	3.20	28	0.0213	1
WWAN (module model: EC25-A)					
WCDMA Band 2 1850.2-1909.8MHz	23.50	1.50	28	0.0321	1
WCDMA Band 4 1712.4-1752.6MHz	23.50	1.50	28	0.0321	1
WCDMA Band 5 826.4-846.6MHz	23.50	-1.60	28	0.0157	0.549
LTE Band 2 1850.7-1909.3MHz	24.00	1.50	28	0.0360	1
LTE Band 4 1710.7-1754.3MHz	24.00	1.50	28	0.0360	1
LTE Band 12 699.7-715.3MHz	24.00	-1.60	28	0.0176	0.466
WWAN (module model: EC25-V)					
LTE Band 4 1710.7-1754.3MHz	23.50	1.50	28	0.0321	1
LTE Band 13 779.5-784.5MHz	23.50	-1.60	28	0.0157	0.521

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.4GHz: Directional Gain = 3.2dBi + 10log(2) = 6.21dBi

5GHz: Directional Gain = 2.1dBi + 10log(4)= 8.12dBi

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4G + WLAN 5G + Bluetooth + Zigbee = 0.2135 / 1 + 0.6144 / 1 + 0.0016 / 1 + 0.0213 / 1 = 0.8508
2. WLAN 2.4G + WLAN 5G + Bluetooth + Zigbee + WWAN (module model: EC25-A) = 0.2135 / 1 + 0.6144 / 1 + 0.0016 / 1 + 0.0213 / 1 + 0.0176 / 0.466 = 0.889
3. WLAN 2.4G + WLAN 5G + Bluetooth + Zigbee + WWAN (module model: EC25-V) = 0.2135 / 1 + 0.6144 / 1 + 0.0016 / 1 + 0.0213 / 1 + 0.0321 / 1 = 0.883

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

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