RF Exposure Report

Report No.:	MFBHDI-WTW-P22040138
FCC ID:	2ARXKVHH10
Test Model:	VHH10
Series Model:	VHH10XXX (X=A-Z, 0-9, blank or "-")
Received Date:	Apr. 15, 2022
Test Date:	Apr. 15 ~ Apr. 18, 2022
Issued Date:	Sep. 07, 2022
Applicant:	Veea Inc
Address:	164 E 83rd Street, New York NY, 10028, USA
FCC ID of Contained Module:	2ATM8EG25G
Model of Contained Module:	EG25-G MINIPCIE
Applicant of Contained Module:	Hawkeye Tech Co., Ltd.
Address of Contained Module:	13F. No. 736, Zhongzheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan

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:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
MFBHDI-WTW-P22040138	Original release	Sep. 07, 2022

1 Certificate of Conformity

Product:	veeaHub
Brand:	veeaHub
Test Model:	VHH10
Series Model:	VHH10XXX (X=A-Z, 0-9, blank or "-")
Sample Status:	Engineering sample
Applicant:	Veea Inc
Applicant of Contained Module:	Hawkeye Tech Co., Ltd.
Test Date:	Apr. 15 ~ Apr. 18, 2022
FCC Rule Part:	FCC Part 2 (Section 2.1091)
Standards:	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 : Pettie Chen , **Date:** Sep. 07, 2022

Pettie Chen / Senior Specialist

Approved by : Jeremy Lin , **Date:** Sep. 07, 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				
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; *Plane-wave equivalent power density

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 30cm 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	29.90	6.21	30	0.3610	1
5180-5240	18.78	8.12	30	0.0433	1
5745-5825	26.37	8.12	30	0.2486	1
WLAN, Beamforming Mode					
5180-5240	12.76	8.12	30	0.0108	1
5745-5825	19.96	8.12	30	0.0568	1
Bluetooth LE					
2402-2480	-5.02	6.00	30	0.0001	1
Bluetooth EDR					
2402-2480	7.77	6.00	30	0.0021	1
Zigbee					
2405-2475	19.18	3.20	30	0.0153	1

2.4GHz: Directional Gain = 3.2dBi + 10log(2) = 6.21dBi
5.0GHz: Directional Gain = 2.1dBi + 10log(4) = 8.12dBi

The EUT contains certified WWAN module which brand: Hawkeye Tech Co., Ltd., Model: EG25-G MINIPCIE, FCC ID: 2ATM8EG25G.

Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WWAN					
GSM 850 824.2-848.8MHz	30.55	32.70	30	0.1646	0.549
GSM 1900 1850.2-1909.8MHz	-	30.97	30	0.1105	1
WCDMA Band 2 1850.2-1909.8MHz	-	25.04	30	0.0282	1
WCDMA Band 4 1712.4-1752.6MHz	-	25.20	30	0.0293	1
WCDMA Band 5 826.4-846.6MHz	21.50	23.65	30	0.0205	0.549
LTE Band 2 1850.7-1909.3MHz	-	24.20	30	0.0233	1
LTE Band 4 1710.7-1754.3MHz	-	25.46	30	0.0311	1
LTE Band 5 824.7-848.3MHz	21.77	23.92	30	0.0218	0.550
LTE Band 7 2502.5-2567.5MHz	-	25.55	30	0.0317	1
LTE Band 12 699.7-715.3MHz	21.76	23.91	30	0.0218	0.466
LTE Band 13 779.5-784.5MHz	21.58	23.73	30	0.0209	0.520
LTE Band 25 1850.7-1914.3MHz	-	25.17	30	0.0291	1
LTE Band 26 824.7-848.3MHz	21.47	23.62	30	0.0203	0.550
LTE Band 38 2572.5-2617.5MHz	-	24.83	30	0.0269	1
LTE Band 41 2498.5-2687.5MHz	-	25.00	30	0.0280	1

Note:
1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. EIRP = ERP + 2.15dB

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 B1 + WLAN 5G B4 + Bluetooth + Zigbee = 0.3610 / 1 + 0.0433 / 1 + 0.2486 / 1 + 0.0021 / 1 + 0.0153 / 1 = 0.670
2. WLAN 2.4G + WLAN 5G B1 + WLAN 5G B4 + Bluetooth + Zigbee + WWAN = 0.3610 / 1 + 0.0433 / 1 + 0.2486 / 1 + 0.0021 / 1 + 0.0153 / 1 + 0.1646 / 0.549 = 0.970

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

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