FCC Test Report
(Co-Located)

Report No.:	RFBHDI-WTW-P22040138-5
FCC ID:	2ARXKVHH10
Test Model:	VHH10
Series Model:	VHH10XXX (X=A-Z, 0-9, blank or "-")
Received Date:	Apr. 15, 2022
Test Date:	Apr. 18 ~ Aug. 23, 2022
Issued Date:	Sep. 07, 2022
Applicant:	Veea Inc
Address:	164 E 83rd Street, New York NY, 10028, USA
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

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RFBHDI-WTW-P22040138-5	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. 18 ~ Aug. 23, 2022
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407) FCC Part 22, Subpart H FCC Part 24, Subpart E FCC Part 27, Subpart C, H, F, L, M FCC Part 90, Subpart I, S ANSI 63.26-2015 ANSI C63.10-2013

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.

Pettie Chen

Prepared by : _____ , **Date:** Sep. 07, 2022

Pettie Chen / Senior Specialist

Jeremy Lin

Approved by : _____ , **Date:** Sep. 07, 2022

Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407) FCC Part 22, Subpart H FCC Part 24, Subpart E FCC Part 27, Subpart C, H, F, L, M FCC Part 90, Subpart I, S ANSI 63.26-2015 ANSI C63.10-2013		
FCC Clause	Test Item	Result	Remarks
15.205 / 15.209 / 15.247(d) 15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -1.30dB at 12350.00MHz.
2.1053 27.53(h) 90.691	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -31.60dB at 42.61MHz.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	veeaHub	
Brand	veeaHub™	
Test Model	VHH10	
Series Model	VHH10XXX (X=A-Z, 0-9, blank or "-")	
Model Difference	Marketing purposes	
Status of EUT	Engineering sample	
Power Supply Rating	48Vdc (Adapter and POE)	
Operating Frequency	WLAN	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5720MHz, 5745 ~ 5825MHz
	Bluetooth EDR	2402 ~ 2480MHz
	Bluetooth LE	2402 ~ 2480MHz
	GSM 850	824.2 ~ 848.8MHz
	GSM 1900	1850.2 ~ 1909.8 MHz
	WCDMA Band 2	1852.4~1907.6MHz
	WCDMA Band 4	1712.4 ~ 1752.6 MHz
	WCDMA Band 5	826.4 ~ 846.6MHz
	LTE Band 5 (Channel Bandwidth 1.4MHz)	824.7 ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth 3MHz)	825.5 ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth 5MHz)	826.5 ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth 10MHz)	829.0 ~ 844.0MHz
	LTE Band 26 (Channel Bandwidth 1.4MHz) (Part 22)	824.7 ~ 848.3MHz
	LTE Band 26 (Channel Bandwidth 3MHz) (Part 22)	825.5 ~ 847.5MHz
	LTE Band 26 (Channel Bandwidth 5MHz) (Part 22)	826.5 ~ 846.5MHz
	LTE Band 26 (Channel Bandwidth 10MHz) (Part 22)	829.0 ~ 844.0MHz
	LTE Band 26 (Channel Bandwidth 15MHz) (Part 22)	831.5 ~ 841.5MHz
	LTE Band 26 (Channel Bandwidth: 1.4 MHz) (Part 90)	814.7 ~ 823.3 MHz
	LTE Band 26 (Channel Bandwidth: 3 MHz) (Part 90)	815.5 ~ 822.5 MHz
	LTE Band 26 (Channel Bandwidth: 5 MHz) (Part 90)	816.5 ~ 821.5 MHz
	LTE Band 26 (Channel Bandwidth: 10 MHz) (Part 90)	819 MHz

Operating Frequency	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	1850.7 ~ 1909.3 MHz
	LTE Band 2 (Channel Bandwidth: 3 MHz)	1851.5 ~ 1908.5 MHz
	LTE Band 2 (Channel Bandwidth: 5 MHz)	1852.5 ~ 1907.5 MHz
	LTE Band 2 (Channel Bandwidth: 10 MHz)	1855.0 ~ 1905.0 MHz
	LTE Band 2 (Channel Bandwidth: 15 MHz)	1857.5 ~ 1902.5 MHz
	LTE Band 2 (Channel Bandwidth: 20 MHz)	1860.0 ~ 1900.0 MHz
	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	1850.7 ~ 1914.3 MHz
	LTE Band 25 (Channel Bandwidth: 3 MHz)	1851.5 ~ 1913.5 MHz
	LTE Band 25 (Channel Bandwidth: 5 MHz)	1852.5 ~ 1912.5 MHz
	LTE Band 25 (Channel Bandwidth: 10 MHz)	1855.0 ~ 1910.0 MHz
	LTE Band 25 (Channel Bandwidth: 15 MHz)	1857.5 ~ 1907.5 MHz
	LTE Band 25 (Channel Bandwidth: 20 MHz)	1860.0 ~ 1905.0 MHz
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1754.3 MHz
	LTE Band 4 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1753.5 MHz
	LTE Band 4 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1752.5 MHz
	LTE Band 4 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1750.0 MHz
	LTE Band 4 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1747.5 MHz
	LTE Band 4 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1745.0 MHz
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	699.7 ~ 715.3 MHz
	LTE Band 12 (Channel Bandwidth: 3 MHz)	700.5 ~ 714.5 MHz
	LTE Band 12 (Channel Bandwidth: 5 MHz)	701.5 ~ 713.5 MHz
	LTE Band 12 (Channel Bandwidth: 10 MHz)	704.0 ~ 711.0 MHz
	LTE Band 13 (Channel Bandwidth: 5 MHz)	779.5 ~ 784.5 MHz
	LTE Band 13 (Channel Bandwidth: 10 MHz)	782.0 MHz
	LTE Band 7 (Channel Bandwidth: 5 MHz)	2502.5 ~ 2567.5 MHz
	LTE Band 7 (Channel Bandwidth: 10 MHz)	2505 ~ 2565 MHz
	LTE Band 7 (Channel Bandwidth: 15 MHz)	2507.5 ~ 2562.5 MHz
	LTE Band 7 (Channel Bandwidth: 20 MHz)	2510 ~ 2560 MHz
	LTE Band 38 (Channel Bandwidth: 5 MHz)	2572.5 ~ 2617.5 MHz
	LTE Band 38 (Channel Bandwidth: 10 MHz)	2575.0 ~ 2615.0 MHz
	LTE Band 38 (Channel Bandwidth: 15 MHz)	2577.5 ~ 2612.5 MHz
	LTE Band 38 (Channel Bandwidth: 20 MHz)	2580.0 ~ 2610.0 MHz
	LTE Band 41 (Channel Bandwidth: 5 MHz)	2498.5 ~ 2687.5 MHz
	LTE Band 41 (Channel Bandwidth: 10 MHz)	2501.0 ~ 2685.0 MHz
	LTE Band 41 (Channel Bandwidth: 15 MHz)	2503.5 ~ 2682.5 MHz
	LTE Band 41 (Channel Bandwidth: 20 MHz)	2506.0 ~ 2680.0 MHz
Accessory Device	NA	
Data Cable Supplied	NA	

Note:

1. This report is prepared for FCC class II permissive change. The differences compared with the original report (BV CPS report no.: RF190918C14A) are changing LTE module. All tests had been re-tested.
2. The EUT incorporates a MIMO function. Physically, the EUT provides 4 completed transmitters and 4 receivers.

Band	Modulation Mode	Beamforming Mode	TX Function
2.4G	802.11b	Not Support	2TX
	802.11g	Not Support	2TX
	802.11n (HT20)	Not Support	2TX
	802.11n (HT40)	Not Support	2TX
5GHz	802.11a	Not Support	4TX
	802.11n (HT20)	Support	4TX
	802.11n (HT40)	Support	4TX
	802.11ac (VHT20)	Support	4TX
	802.11ac (VHT40)	Support	4TX
	802.11ac (VHT80)	Support	4TX

3. The EUT has two sale types.

Type	Description
A	Without LTE function, BT internal ant.
B	With LTE function, BT external ant.

4. The following RF Modules are for the EUT.

RF Module	Band
Module 1	5180 ~ 5240MHz, 5260 ~ 5320MHz
Module 2	5500 ~ 5720MHz, 5745 ~ 5825MHz
Module 3	2412 ~ 2462MHz

5. The EUT uses following adapter and POE.

Adapter (Support unit)	
Brand	EDACPOWER ELEC.
Model	EA1062SGR-480
Input Power	100-240Vac, 50-60Hz, 2.5A
Output Power	48Vdc, 1.35A
Power Line	1.2m DC cable with one core

POE (Support unit)	
Model	APOE02-WM
Output Power	48Vdc

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

3.2 Description of Test Modes

For WLAN:

For 2.4GHz

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

For 5180 ~ 5240MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

For 5260 ~ 5320MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

For 5500 ~ 5720MHz:

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz
138	5690 MHz		

For 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

For Bluetooth EDR:

79 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

For Bluetooth LE:

40 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

For Zigbee:

15 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
11	2405	15	2425	19	2445	23	2465
12	2410	16	2430	20	2450	24	2470
13	2415	17	2435	21	2455	25	2475
14	2420	18	2440	22	2460		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to		Description
	RE≥1G	RE<1G	
A	√	√	Power from adapter
B	-	√	Power from POE

Where **RE≥1G:** Radiated Emission above 1GHz & Bandedge Measurement **RE<1G:** Radiated Emission below 1GHz

Radiated Emission Test (Above 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology
A	802.11n (HT40) + BT + Zigbee + 802.11n (HT20) + 802.11a + GSM 850	2412-2462	3 to 9	6 + 0 + 24 + 40 + 157 + 189	OFDM
		2402-2480	0 to 78		GFSK
		2405-2475	11 to 25		O-QPSK
		5180-5240	36 to 48		OFDM
		5260-5320	52 to 64		OFDM
		5500 -5720	100 to 144		OFDM
		5745-5825	149 to 165		OFDM
		824.2-848.8	128 to 251		GMSK

Radiated Emission Test (Below 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology
A, B	802.11n (HT40) + BT + Zigbee + 802.11n (HT20) + 802.11a + GSM 850	2412-2462	3 to 9	6 + 0 + 24 + 40 + 157 + 189	OFDM
		2402-2480	0 to 78		GFSK
		2405-2475	11 to 25		O-QPSK
		5180-5240	36 to 48		OFDM
		5260-5320	52 to 64		OFDM
		5500 -5720	100 to 144		OFDM
		5745-5825	149 to 165		OFDM
		824.2-848.8	128 to 251		GMSK

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	26deg. C, 61%RH	120Vac, 60Hz	Tim Chen
RE<1G	22deg. C, 70%RH	120Vac, 60Hz	Rex Wang

3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Radio Communication Analyzer	Anritsu	MT8820C	6201240432	NA	For LTE
		R&S	CMU200	101095	NA	For GSM, WCDMA
B	Adapter	EDACPOWER ELEC.	EA1062SGR-480	NA	NA	Supplied by applicant
C	PoE	OPEN-MESH	APOE02-WM	NA	NA	Supplied by applicant
D	Notebook	DELL	Inspiron 14R	NA	NA	-
E	LTE Module	Hawkeye Tech Co., Ltd.	EG25-G MINIPCIE		2ATM8EG25G	Supplied by applicant

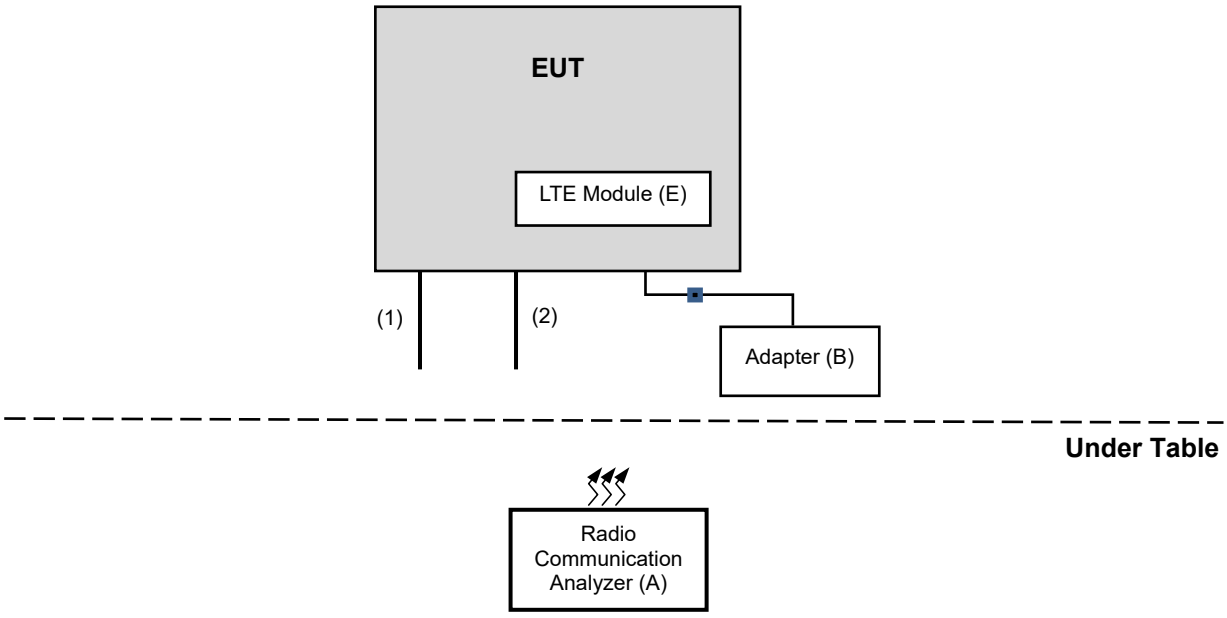
Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items A acted as communication partners to transfer data.

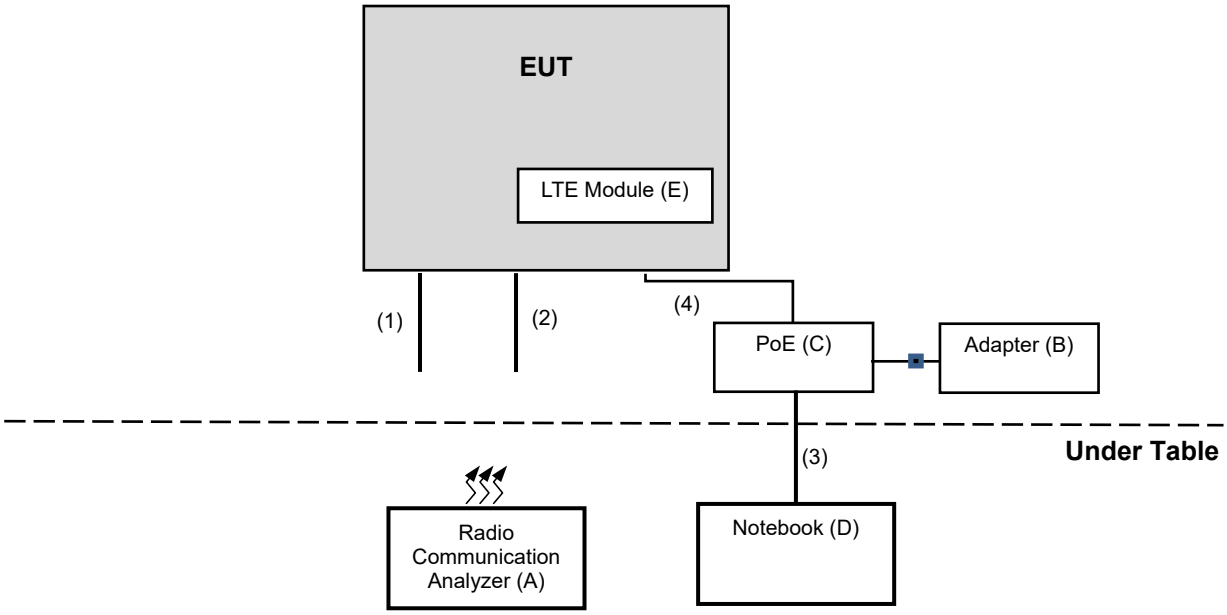
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RS232 Cable	1	0.5	N	0	Supplied by applicant
2.	LAN Cable	2	0.5	N	0	Supplied by applicant
3.	LAN Cable	1	10	N	0	Provided by Lab
4.	LAN Cable	1	0.5	N	0	Supplied by applicant

3.3.1 Configuration of System under Test

Adapter Mode
Test Mode A



Test Mode B



3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specification of the EUT declared by the manufacturer, it must comply with the requirements of the following standards:

47 CFR FCC Part 15, Subpart C (Section 15.247)

47 CFR FCC Part 15, Subpart E (Section 15.407)

FCC Part 22, Subpart H

FCC Part 24, Subpart E

FCC Part 27, Subpart C, H, F, L, M

FCC Part 90, Subpart I, S

ANSI 63.26-2015

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Dec. 30, 2021	Dec. 29, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 15, 2021	Sep. 14, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Oct. 28, 2021	Oct. 27, 2022
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Oct. 26, 2021	Oct. 25, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 05, 2021	Jun. 04, 2022
			May 14, 2022	May 13, 2023
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 16, 2022	Feb. 15, 2023
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 05, 2021	Jun. 04, 2022
			May 14, 2022	May 13, 2023
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/MY55190007/MY55210005	Jul. 12, 2021	Jul. 11, 2022
			Jul. 13, 2022	Jul. 12, 2023
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 01, 2021	May 31, 2022
			May 30, 2022	May 29, 2023
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	376	43860087WS	Feb. 20, 2022	Feb. 19, 2023

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.

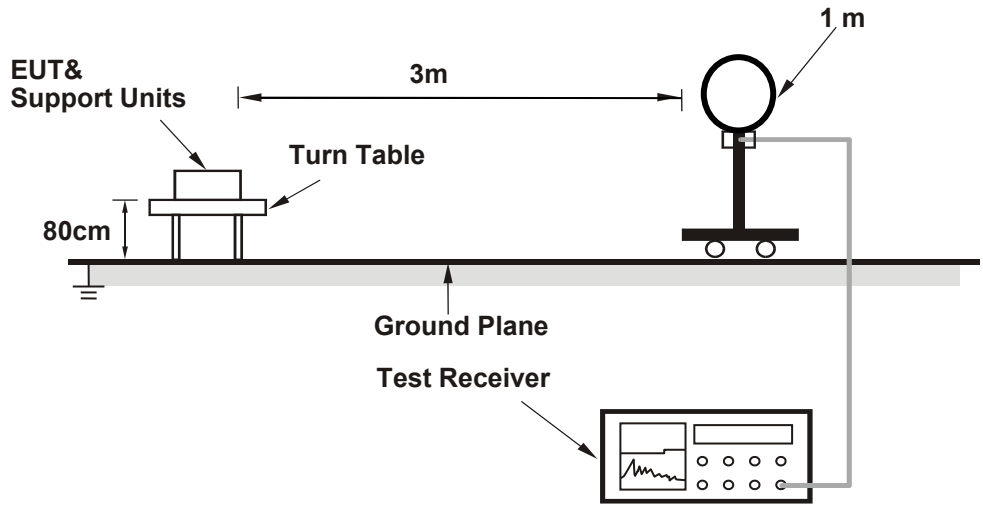
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

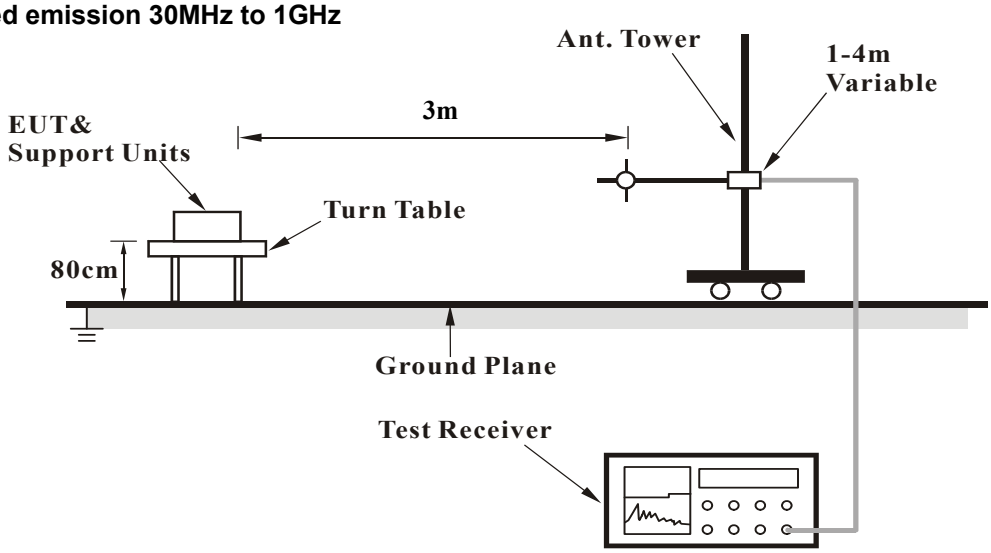
No deviation.

4.1.5 Test Setup

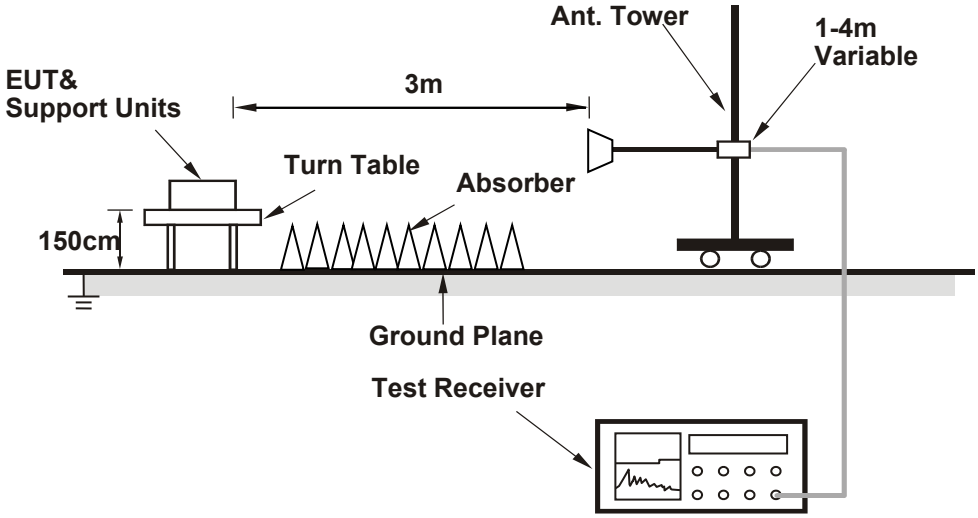
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (CMD) to enable EUT under transmission condition continuously at specific channel frequency.
d. The necessary accessories enable the system in full functions.

4.1.7 Test Results

Above 1GHz Data:

802.11n (HT40) + BT GFSK + Zigbee + 802.11n (HT20) + 802.11a + GSM 850

CHANNEL	CH 6 + CH 0 + CH 24 + CH 40 + CH 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.80 PK	74.00	-13.20	2.34 H	301	28.80	32.00
2	2390.00	49.10 AV	54.00	-4.90	2.34 H	301	17.10	32.00
3	*2402.00	104.00 PK			2.34 H	301	72.00	32.00
4	*2402.00	73.20 AV			2.34 H	301	41.20	32.00
5	*2437.00	113.60 PK			2.64 H	317	81.70	31.90
6	*2437.00	102.40 AV			2.64 H	317	70.50	31.90
7	*2470.00	104.40 PK			2.11 H	13	72.40	32.00
8	*2470.00	100.90 AV			2.11 H	13	68.90	32.00
9	2483.50	60.30 PK	74.00	-13.70	2.11 H	13	28.30	32.00
10	2483.50	48.80 AV	54.00	-5.20	2.11 H	13	16.80	32.00
11	4804.00	53.40 PK	74.00	-20.60	2.49 H	352	50.40	3.00
12	4804.00	22.60 AV	54.00	-31.40	2.49 H	352	19.60	3.00
13	4874.00	51.20 PK	74.00	-22.80	1.54 H	124	48.40	2.80
14	4874.00	40.40 AV	54.00	-13.60	1.54 H	124	37.60	2.80
15	4940.00	58.50 PK	74.00	-15.50	1.00 H	77	55.70	2.80
16	4940.00	49.30 AV	54.00	-4.70	1.00 H	77	46.50	2.80
17	7410.00	55.10 PK	74.00	-18.90	3.10 H	287	46.80	8.30
18	7410.00	43.50 AV	54.00	-10.50	3.10 H	287	35.20	8.30
19	12350.00	63.00 PK	74.00	-11.00	1.52 H	262	53.50	9.50
20	**12350.00**	**52.70 AV**	**54.00**	**-1.30**	**1.52 H**	**262**	**43.20**	**9.50**
21	*5200.00	113.30 PK			1.70 H	312	73.10	40.20
22	*5200.00	101.40 AV			1.70 H	312	61.20	40.20
23	#5648.80	59.40 PK			1.78 H	360	56.00	3.40
24	*5785.00	115.00 PK			1.78 H	360	73.20	41.80
25	*5785.00	104.50 AV			1.78 H	360	62.70	41.80
26	#5976.00	59.60 PK			1.78 H	360	55.60	4.00
27	#10400.00	58.10 PK			2.15 H	100	49.70	8.40
28	11570.00	58.60 PK	74.00	-15.40	2.36 H	178	49.00	9.60
29	11570.00	44.50 AV	54.00	-9.50	2.36 H	178	34.90	9.60
30	#17355.00	62.70 PK			1.23 H	165	53.00	9.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. Margin value = Emission Level – Limit value.
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 0 + CH 24 + CH 40 + CH 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.60 PK	74.00	-15.40	2.18 V	69	26.60	32.00
2	2390.00	49.30 AV	54.00	-4.70	2.18 V	69	17.30	32.00
3	*2402.00	101.30 PK			2.18 V	69	69.30	32.00
4	*2402.00	70.50 AV			2.18 V	69	38.50	32.00
5	*2437.00	111.50 PK			2.16 V	334	79.60	31.90
6	*2437.00	100.30 AV			2.16 V	334	68.40	31.90
7	*2470.00	102.80 PK			1.82 V	224	70.80	32.00
8	*2470.00	99.10 AV			1.82 V	224	67.10	32.00
9	2483.50	59.70 PK	74.00	-14.30	1.82 V	224	27.70	32.00
10	2483.50	48.40 AV	54.00	-5.60	1.82 V	224	16.40	32.00
11	4804.00	52.40 PK	74.00	-21.60	2.77 V	289	49.40	3.00
12	4804.00	21.60 AV	54.00	-32.40	2.77 V	289	18.60	3.00
13	4874.00	53.10 PK	74.00	-20.90	2.99 V	14	50.30	2.80
14	4874.00	41.40 AV	54.00	-12.60	2.99 V	14	38.60	2.80
15	4940.00	54.60 PK	74.00	-19.40	1.48 V	49	51.80	2.80
16	4940.00	45.10 AV	54.00	-8.90	1.48 V	49	42.30	2.80
17	12350.00	60.30 PK	74.00	-13.70	2.35 V	249	50.80	9.50
18	12350.00	50.10 AV	54.00	-3.90	2.35 V	249	40.60	9.50
19	*5200.00	109.50 PK			2.94 V	17	69.30	40.20
20	*5200.00	99.80 AV			2.94 V	17	59.60	40.20
21	#5623.60	59.70 PK			2.54 V	34	56.40	3.30
22	*5785.00	120.10 PK			2.54 V	34	78.30	41.80
23	*5785.00	109.00 AV			2.54 V	34	67.20	41.80
24	#5932.80	59.20 PK			2.54 V	34	55.50	3.70
25	#10400.00	58.30 PK			2.69 V	344	49.90	8.40
26	11570.00	59.20 PK	74.00	-14.80	2.13 V	169	49.60	9.60
27	11570.00	44.90 AV	54.00	-9.10	2.13 V	169	35.30	9.60
28	#17355.00	63.20 PK			1.33 V	214	53.50	9.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. Margin value = Emission Level – Limit value.
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 189

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1672.80	-55.03	-13.00	-42.03	1.74 H	158	47.46	-102.49
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1672.80	-52.98	-13.00	-39.98	1.62 V	18	49.51	-102.49

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Below 1GHz data

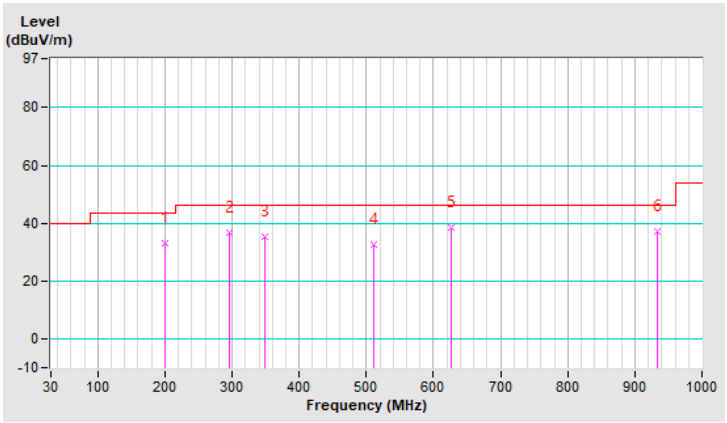
802.11n (HT40) + BT GFSK + Zigbee + 802.11n (HT20) + 802.11a + GSM 850

CHANNEL	CH 6 + CH 0 + CH 24 + CH 40 + CH 157	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	199.75	32.90 QP	43.50	-10.60	1.25 H	194	44.40	-11.50
2	295.78	36.50 QP	46.00	-9.50	1.00 H	12	43.60	-7.10
3	348.16	35.30 QP	46.00	-10.70	1.25 H	7	41.50	-6.20
4	511.12	32.60 QP	46.00	-13.40	1.00 H	310	34.80	-2.20
5	625.58	38.30 QP	46.00	-7.70	1.00 H	250	38.30	0.00
6	933.07	37.00 QP	46.00	-9.00	1.50 H	7	30.90	6.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

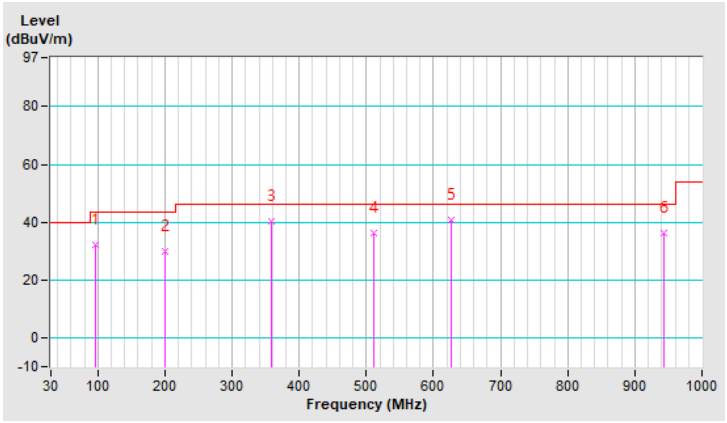


CHANNEL	CH 6 + CH 0 + CH 24 + CH 40 + CH 157	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	95.96	32.20 QP	43.50	-11.30	1.25 V	340	46.90	-14.70
2	199.75	30.00 QP	43.50	-13.50	1.00 V	189	41.50	-11.50
3	357.86	40.50 QP	46.00	-5.50	1.25 V	40	46.40	-5.90
4	510.15	36.20 QP	46.00	-9.80	1.00 V	15	38.40	-2.20
5	625.58	40.80 QP	46.00	-5.20	1.00 V	15	40.80	0.00
6	943.74	36.20 QP	46.00	-9.80	1.50 V	309	30.00	6.20

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

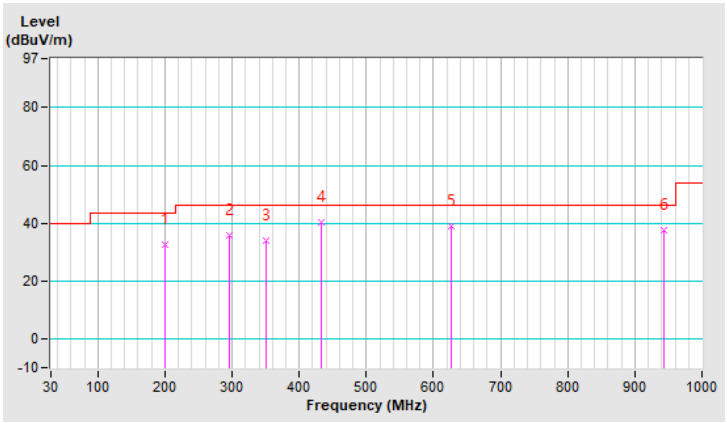


CHANNEL	CH 6 + CH 0 + CH 24 + CH 40 + CH 157	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	199.75	32.70 QP	43.50	-10.80	1.50 H	144	44.20	-11.50
2	295.78	35.90 QP	46.00	-10.10	1.25 H	12	43.00	-7.10
3	351.07	34.10 QP	46.00	-11.90	1.00 H	2	40.10	-6.00
4	433.52	40.10 QP	46.00	-5.90	1.00 H	102	43.90	-3.80
5	625.58	39.10 QP	46.00	-6.90	1.00 H	58	39.10	0.00
6	942.77	37.40 QP	46.00	-8.60	1.25 H	89	31.20	6.20

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

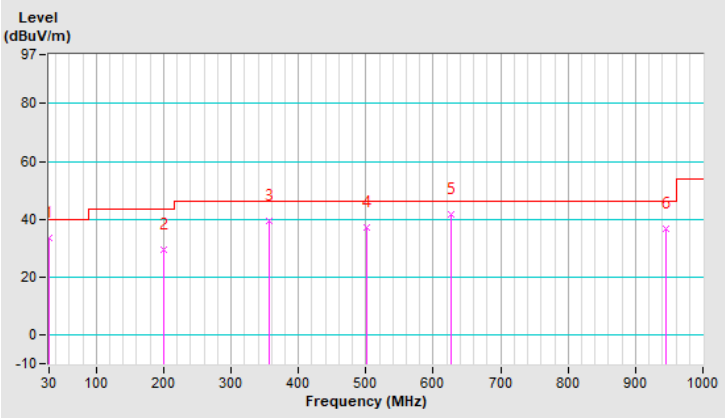


CHANNEL	CH 6 + CH 0 + CH 24 + CH 40 + CH 157 + CH 189	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.79	33.60 QP	40.00	-6.40	1.00 V	225	44.10	-10.50
2	199.75	29.40 QP	43.50	-14.10	1.00 V	186	40.90	-11.50
3	356.89	39.40 QP	46.00	-6.60	1.00 V	99	45.40	-6.00
4	500.45	37.20 QP	46.00	-8.80	1.00 V	353	39.70	-2.50
5	625.58	41.70 QP	46.00	-4.30	1.00 V	356	41.70	0.00
6	944.71	36.70 QP	46.00	-9.30	1.00 V	27	30.50	6.20

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

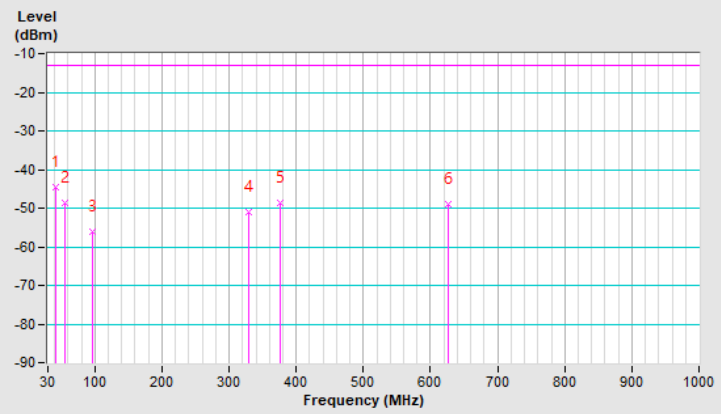


CHANNEL	CH 189	FREQUENCY RANGE	Below 1000 MHz
TEST MODE	A		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	**42.61**	**-44.60**	**-13.00**	**-31.60**	**1.00 H**	**218**	**62.30**	**-106.90**
2	56.19	-48.80	-13.00	-35.80	1.50 H	66	58.00	-106.80
3	95.96	-56.10	-13.00	-43.10	1.50 H	312	56.10	-112.20
4	328.76	-50.90	-13.00	-37.90	1.00 H	285	52.70	-103.60
5	375.32	-48.80	-13.00	-35.80	2.00 H	262	54.00	-102.80
6	625.58	-48.90	-13.00	-35.90	1.00 H	70	48.60	-97.50

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

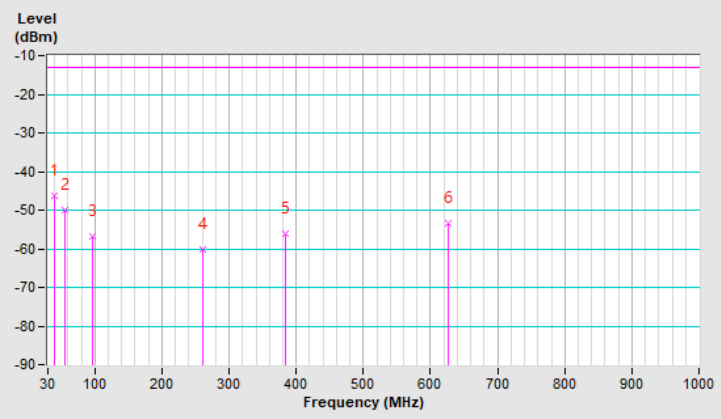


CHANNEL	CH 189	FREQUENCY RANGE	Below 1000 MHz
TEST MODE	A		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	40.67	-46.20	-13.00	-33.20	1.00 V	116	60.80	-107.00
2	56.19	-49.90	-13.00	-36.90	1.50 V	133	56.90	-106.80
3	96.93	-56.90	-13.00	-43.90	2.00 V	19	54.90	-111.80
4	260.86	-60.10	-13.00	-47.10	1.00 V	189	45.90	-106.00
5	384.05	-56.20	-13.00	-43.20	1.00 V	183	46.40	-102.60
6	625.58	-53.50	-13.00	-40.50	1.50 V	5	44.00	-97.50

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

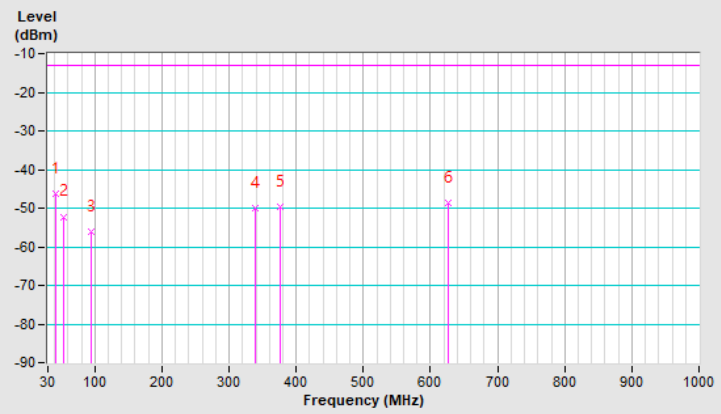


CHANNEL	CH 189	FREQUENCY RANGE	Below 1000 MHz
TEST MODE	B		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	41.64	-46.20	-13.00	-33.20	1.50 H	240	60.80	-107.00
2	54.25	-52.20	-13.00	-39.20	1.00 H	280	54.50	-106.70
3	94.02	-56.20	-13.00	-43.20	2.00 H	9	55.80	-112.00
4	339.43	-50.10	-13.00	-37.10	1.50 H	286	53.50	-103.60
5	375.32	-49.50	-13.00	-36.50	1.00 H	263	53.30	-102.80
6	625.58	-48.70	-13.00	-35.70	1.00 H	75	48.80	-97.50

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

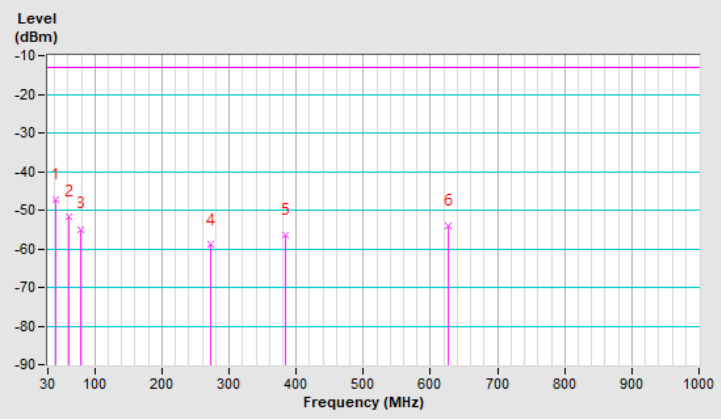


CHANNEL	CH 189	FREQUENCY RANGE	Below 1000 MHz
TEST MODE	B		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	42.61	-47.20	-13.00	-34.20	1.50 V	340	59.70	-106.90
2	61.04	-51.70	-13.00	-38.70	1.50 V	309	55.70	-107.40
3	78.50	-54.90	-13.00	-41.90	1.00 V	207	55.80	-110.70
4	272.50	-59.00	-13.00	-46.00	1.00 V	124	46.20	-105.20
5	384.05	-56.30	-13.00	-43.30	2.00 V	173	46.30	-102.60
6	625.58	-54.00	-13.00	-41.00	1.00 V	5	43.50	-97.50

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

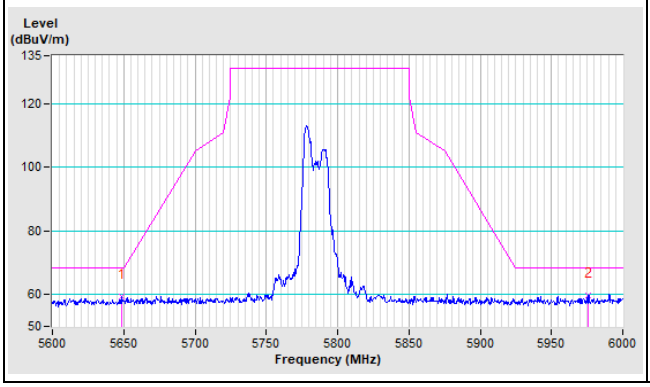
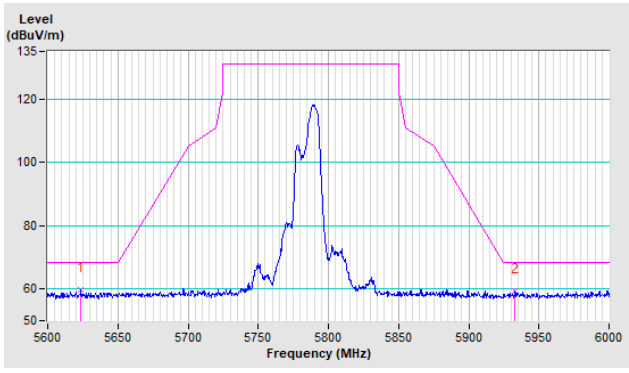


5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Annex A- Radiated out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

CH 157	
Horizontal	Vertical
	

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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