FCC Test Report

(Co-Located)

Report No.:	RFBEIP-WTW-P23060540
FCC ID:	DGI-NX-H3003
Test Model:	NX-H3003
Series Model:	NX-H3003A (refer to item 3.1 for more details)
Received Date:	Jun. 20, 2023
Test Date:	Sep. 23, 2023
Issued Date:	Jan. 29, 2024
Applicant:	Inventec Corporation
Address:	No. 66, Hougang Street, Shilin District, Taipei City
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
RFBEIP-WTW-P23060540	Original release	Jan. 29, 2024

1 Certificate of Conformity

Product:	Edge server
Brand:	Inventec
Test Model:	NX-H3003
Series Model:	NX-H3003A (refer to item 3.1 for more details)
Sample Status:	Mass product
Applicant:	Inventec Corporation
Test Date:	Sep. 23, 2023
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, D, F, H, L, M, N, O, Q FCC Part 90, Subpart I, R, S FCC Part 96 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.

Prepared by : Polly Chien , **Date:** Jan. 29, 2024

Polly Chien / Specialist

Approved by : Jeremy Lin , **Date:** Jan. 29, 2024

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, D, F, H, L, M, N, O, Q FCC Part 90, Subpart I, R, S FCC Part 96 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)/9) 2.1053 22.917 24.238 27.53(a) 27.53(c) 27.53(h) 27.53(m) 90.691 96.41(e)	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -3.2dB at 5926.40MHz.

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

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	Edge server		
Brand	Inventec		
Test Model	NX-H3003		
Series Model	NX-H3003A		
Model Difference	Refer to Note as below		
Sample Status	Mass product		
Power Supply Rating	12 Vdc (Host equipment) 3.135Vdc~3.63Vdc (Module)		
Modulation Type	WCDMA	BPSK, QPSK	
	LTE	QPSK, 16QAM, 64QAM, 256QAM	
	5G NR	$\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM	
Operating Frequency	WCDMA	WCDMA Band 2	1852.4-1907.6 MHz
		WCDMA Band 4	1712.4-1752.6 MHz
		WCDMA Band 5	826.4~846.6 MHz
	LTE	LTE Band 2	1850.7-1909.3 MHz
		LTE Band 4	1710.7-1754.3 MHz
		LTE Band 5	824.7-848.3 MHz
		LTE Band 7	2502.5-2567.5 MHz
		LTE Band 12	699.7-715.3 MHz
		LTE Band 13	779.5-784.5 MHz
		LTE Band 14	790.5-795.5 MHz
		LTE Band 17	706.5-713.5 MHz
		LTE Band 25	1850.7-1914.3 MHz
		LTE Band 26 (Part 22)	824.7-848.3 MHz
		LTE Band 26 (Part 90)	814.7-823.3 MHz
		LTE Band 30	2307.5-2312.5 MHz
		LTE Band 38	2572.5-2617.5 MHz
		LTE Band 41	2498.5-2687.5 MHz
		LTE Band 42 (Full Power)	3552.5-3597.5
		LTE Band 48 (Full Power)	3552.5-3697.5
		LTE Band 66	1710.7-1779.3 MHz
		LTE Band 71	665.5-695.5 MHz
	5GNR	5GNR (n2)	1852.5-1907.5 MHz
		5GNR (n5)	826.5-846.5 MHz
		5GNR (n7)	2502.5-2567.5 MHz
		5GNR (n12)	699.7-715.3 MHz
		5GNR (n25)	1852.5-1912.5 MHz
		5GNR (n38)	2580.0-2610.0 MHz
		5GNR (n41)	2506.02-2679.99 MHz
		5GNR (n66)	1712.5-1777.5 MHz
		5GNR (n71)	665.5-695.5 MHz
		5GNR n77, n78 (Part 27O)	3700.0-3980.0 MHz
		5GNR n77, n78 (Part 27Q)	3450.0-3550.0 MHz

Antenna Type	WCDMA	Refer to note
	LTE	Refer to note
	5G NR	Refer to note
Antenna Connector	WCDMA	Refer to note
	LTE	Refer to note
	5G NR	Refer to note
Accessory Device	NA	
Cable Supplied	NA	

For 9260NGW module

Modulation Type	WLAN	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
	BT EDR	GFSK, π/4-DQPSK, 8DPSK
	BT LE	GFSK
Modulation Technology	WLAN	DSSS, OFDM
Transfer Rate	WLAN	802.11b:11/5.5/2/1Mbps 802.11g/a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to HT0 (SISO) 802.11n: up to HT8 (MIMO) 802.11ac: up to VHT0 (SISO/MIMO)
	BT EDR	1/2/3 Mbps
	BT LE	1Mbps
Operating Frequency	WLAN	2.4GHz: 2412~2462MHz 5.0GHz: 5180 ~ 5320MHz, 5500 ~ 5720MHz, 5745 ~ 5825MHz
	BT EDR	2402 ~ 2480MHz
	BT LE	2402 ~ 2480MHz
Antenna Type	WLAN/BT	Refer to note
Antenna Connector	WLAN/BT	Refer to Note
Accessory Device	NA	
Cable Supplied	NA	

Note:

1. The EUT is authorized for use in specific End-product. The model of the NX-H3003 was chosen for final test.

Model	Purpose	SKU list				
		DDR4	Acceleration Card	3G/4G/5G module	WLAN/BT/ WI-FI module	NVMe SSD
NX-H3003	FWA	16G	N/A	Cinterion® MV31-W	9260NGW	1T
NX-H3003A	Edge computing	32G	Qualcomm Cloud AI 100			2T

2. The End-product uses following accessories.

AC Adapter		
Brand	Model	Specification
Switching Power Adapter	FSP096-AHAN3	Input: 100-240 Vac, 1.8 A, 50-60 Hz Output: 12.0Vdc, 8.0 A, 96.0 W DC Power Line: 0.8 m with one core attach on adapter AC Power Cord: 1.2 m without one core

3. The following modules can be chosen to be configured in the End-product.

Brand Name	Model No.	Specification	FCC ID
Intel® Wireless-AC 9260	9260NGW	802.11 a/b/g/n/ac WLAN + Bluetooth 5	PD99260NG

4. The module (brand: Intel® Wireless-AC 9260, model: 9260NGW) might be collocated in the End-product. The module provides 2 completed transmitters and 2 receivers.

Band	Modulation Mode	TX Function
2.4GHz Band	802.11b	1TX (SISO)
	802.11g	1TX (SISO)
	802.11n (HT20)	1TX (SISO) / 2TX (MIMO)
	802.11n (HT40)	1TX (SISO) / 2TX (MIMO)
5GHz Band	802.11a	1TX (SISO)
	802.11n (HT20)	1TX (SISO) / 2TX (MIMO)
	802.11n (HT40)	1TX (SISO) / 2TX (MIMO)
	802.11ac (VHT80)	1TX (SISO) / 2TX (MIMO)
	802.11ac (VHT160)	1TX (SISO) / 2TX (MIMO)

5. The End-product uses following antennas.

WLAN/BT:

Antenna Type	Connector	Antenna Gain (dBi)				
		2400-2483.5 MHz	5150-5250 MHz	5250-5350 MHz	5470-5725 MHz	5725-5850 MHz
Dipole	RP-SMA(M)	2.80	2.37	2.18	1.37	0.85

WWAN:

Antenna Type	Dipole	
Antenna Connector	SMA	
Band	Frequency (MHz)	Gain(dBi)
WCDMA Band 2	1850.7-1909.3	2.8
WCDMA Band 4	1712.4-1752.6	3.3
WCDMA Band 5	826.4-846.6	1.22
LTE Band 2	1850.7-1909.3	2.8
LTE Band 4	1710.7-1754.3	3.3
LTE Band 5	824.7-848.3	1.22
LTE Band 7	2502.5-2567.5	2.8
LTE Band 12	699.7-715.3	0.95
LTE Band 13	779.5-784.5	1.29
LTE Band 14	790.5-795.5	1.29
LTE Band 17	706.5-713.5	1.29
LTE Band 25	1850.7-1914.3	2.8
LTE Band 26 (Part 22)	824.7-848.3	1.22
LTE Band 26 (Part 90)	814.7-823.3	1.22
LTE Band 30	2307.5-2312.5	2.86
LTE Band 38	2572.5-2617.5	2.84
LTE Band 41	2498.5-2687.5	2.84

Band	Frequency (MHz)	Gain(dBi)
LTE Band 42 (Full Power)	3552.5-3597.5	0.81
LTE Band 48 (Full Power)	3552.5-3697.5	0.78
LTE Band 66	1710.7-1779.3	3.3
LTE Band 71	665.5-695.5	0.77
5GNR (n2)	1852.5-1907.5	2.8
5GNR (n5)	826.5-846.5	1.22
5GNR (n7)	2502.5-2567.5	2.8
5GNR (n12)	699.7-715.3	0.95
5GNR (n25)	1852.5-1912.5	2.8
5GNR (n38)	2580-2610	2.84
5GNR (n41)	2506.02-2679.99	2.84
5GNR (n66)	1712.5-1777.5	3.3
5GNR (n71)	665.5-695.5	0.77
5GNR n77, n78 (Part 27O)	3700-3980	2.73
5GNR n77, n78 (Part 27Q)	3450-3550	3.09

* Detail antenna specification please refer to antenna datasheet an antenna gain measurement report.

3.2 Description of Test Modes

For WLAN:

For 2.4GHz

11 channels are provided for 802.11b, 802.11g, 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 ~ 5320MHz:

8 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

4 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz
54	5270 MHz	62	5310 MHz

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
42	5210MHz	58	5290MHz

1 channel is provided for 802.11ac (VHT160):

Channel	Frequency
50	5250MHz

For 5500 ~ 5720MHz:

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

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):

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		

1 channel is provided for 802.11ac (VHT160):

Channel	Frequency
114	5570MHz

For 5745 ~ 5825MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

BT 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		

BT 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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to		Description
	RE≥1G	RE<1G	
-	√	√	-

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
-	802.11n (HT20) + LTE Band 41	2412-2462	1 to 11	11 + 40620	OFDM
		2547.5-2652.5	39750 to 41490		BPSK
-	802.11n (HT20) + Bluetooth GFSK+ LTE Band 41	5745-5825	149 to 165	165 + 78 + 40620	OFDM
		2402-2480	0 to 78		GFSK
		2547.5-2652.5	39750 to 41490		BPSK

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
-	802.11n (HT20) + LTE Band 41	2412-2462	1 to 11	11 + 40620	OFDM
		2547.5-2652.5	39750 to 41490		BPSK
-	802.11n (HT20) + Bluetooth GFSK+ LTE Band 41	5745-5825	149 to 165	165 + 78 + 40620	OFDM
		2402-2480	0 to 78		GFSK
		2547.5-2652.5	39750 to 41490		BPSK

Test Condition:

Applicable to	Environmental Conditions	Input Power (System)	Tested by
RE≥1G	22 deg. C, 68% RH	120Vac, 60Hz	Vincent Chen
RE<1G	22 deg. C, 68% RH	120Vac, 60Hz	Vincent Chen

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.

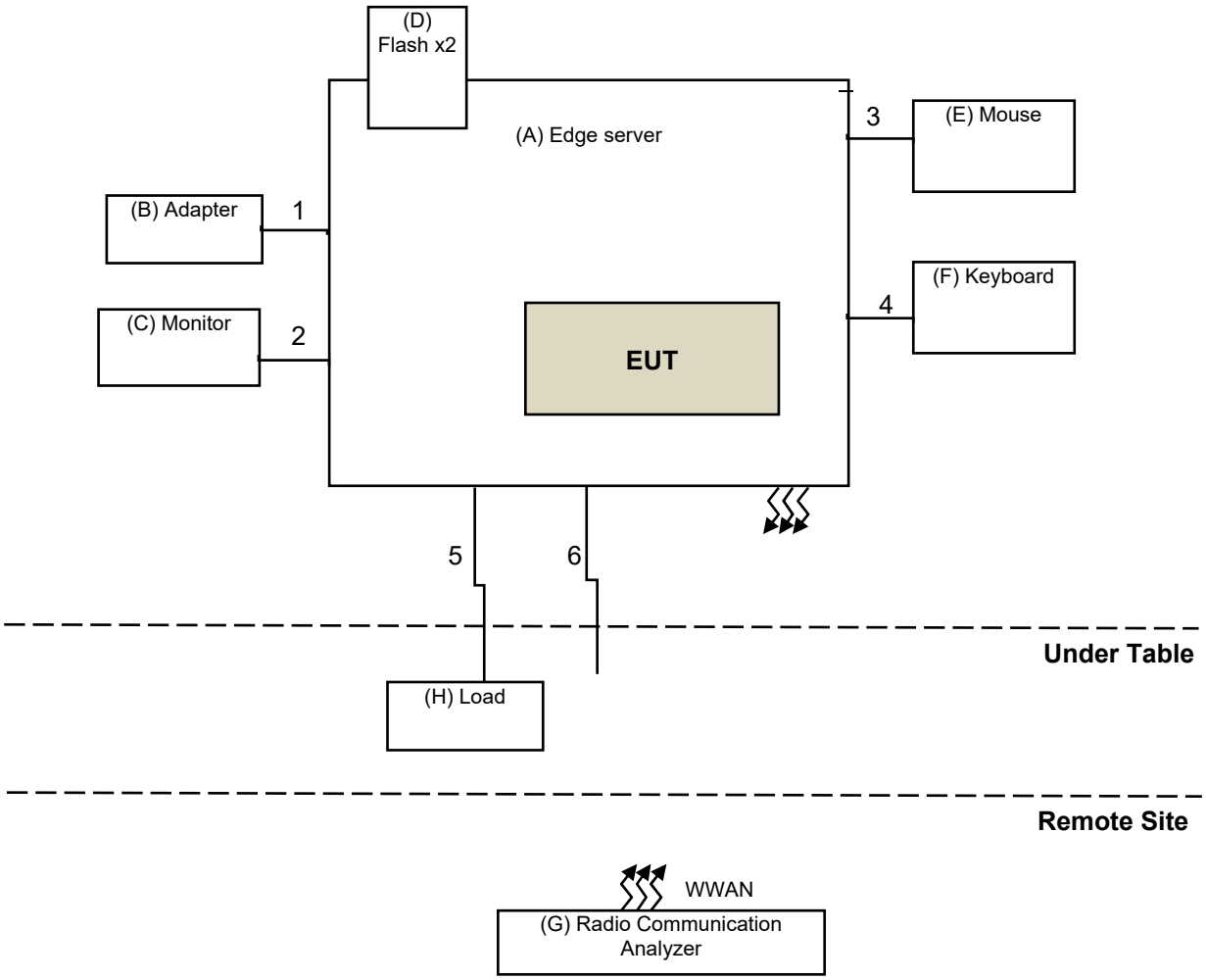
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Edge server	Inventec Corporation	NX-H3003	NA	NA	Supplied by applicant
B.	Adapter	Switching Power Adapter	FSP096-AHAN3	NA	NA	Supplied by applicant
C.	Monitor	DELL	A14S2421HSXmTW	CN-01KWFW-WSL00-24C-714B	NA	Provided by Lab
D.	Flash x2	SanDisk	SDDDC3-032G		NA	Provided by Lab
E.	Mouse	DELL	MS111-P	CN-011D3V-71581-1CJ-092E	NA	Provided by Lab
F.	Keyboard	LENOVO	KB1021	1493	NA	Provided by Lab
G.	Radio Communication Analyzer	Anritsu	MT8821C	6201462755	NA	Provided by Lab
H.	Load	BV ADT	NA	NA	NA	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item G acted as a communication partner to transfer data.

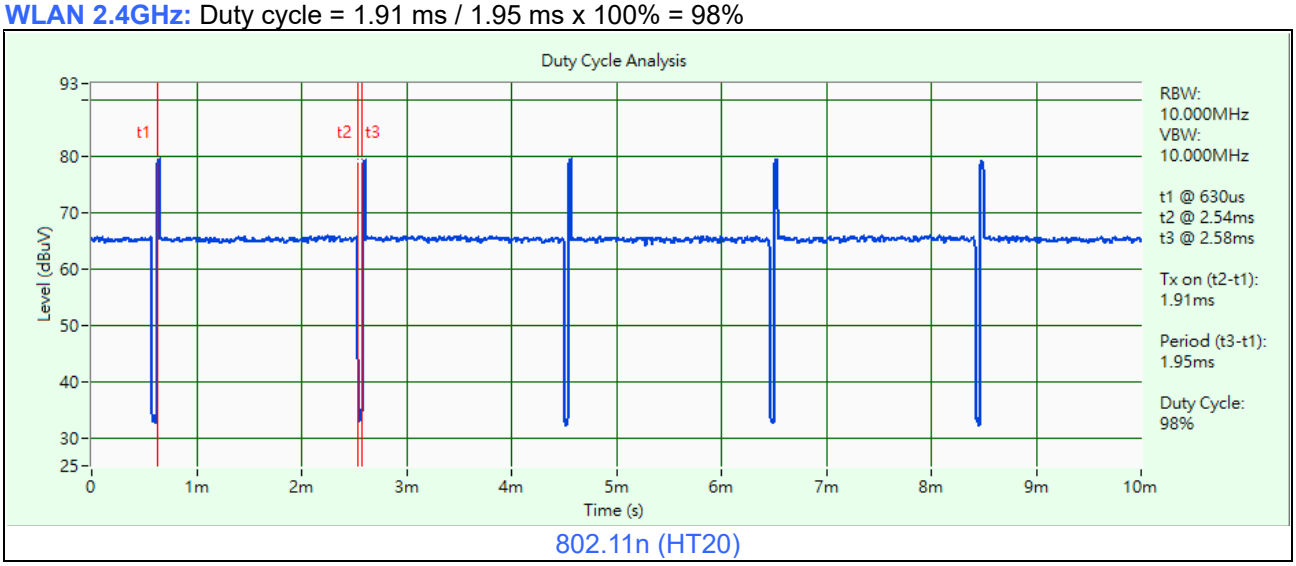
ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1.2	Y	1	Accessory of EUT
2.	HDMI cable	1	1.8	Y	0	Provided by Lab
3.	USB cable	1	1.8	Y	0	Provided by Lab
4.	USB cable	1	1.8	Y	0	Provided by Lab
5.	LAN cable	2	1.8	N	0	Provided by Lab
6.	RS232 cable	1	1.5	N	0	Provided by Lab

3.3.1 Configuration of System under Test



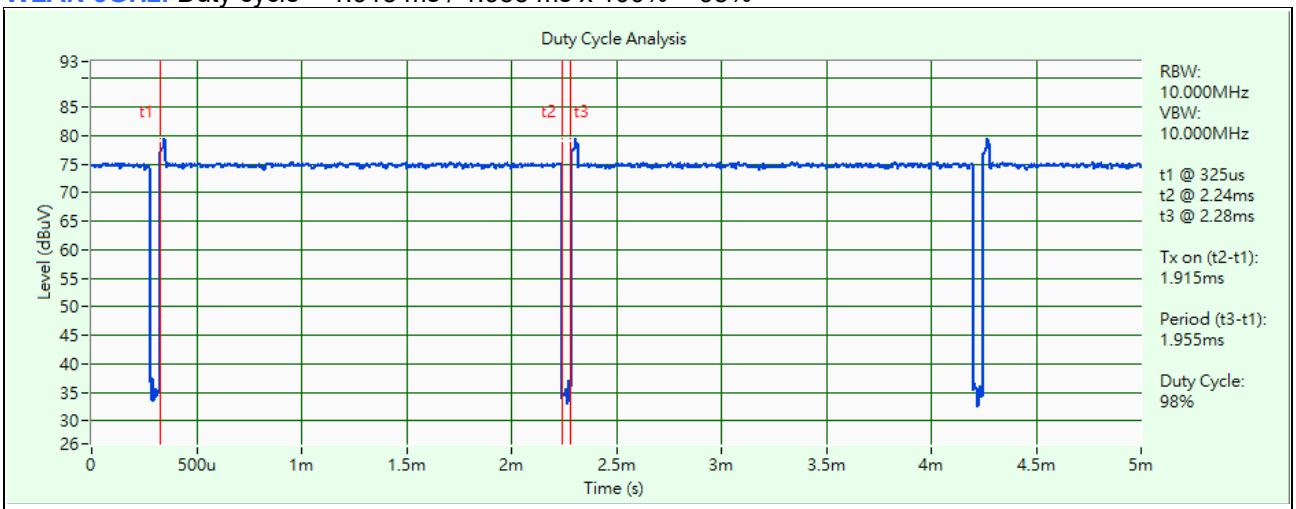
3.4 Duty Cycle of Test Signal

WLAN 2.4GHz: Duty cycle = 1.91 ms / 1.95 ms x 100% = 98%



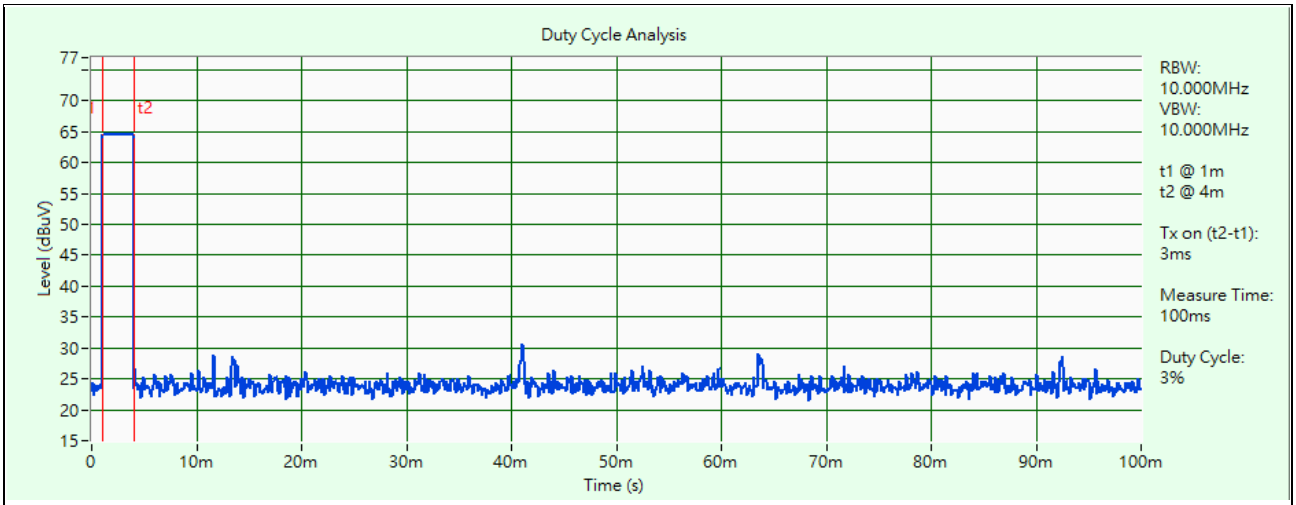
802.11n (HT20)

WLAN 5GHz: Duty cycle = 1.915 ms / 1.955 ms x 100% = 98%



802.11n (HT20)

GFSK: Duty cycle = 3 ms / 100 ms x 100% = 3%



GFSK

3.5 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, D, F, H, L, M, N, O, Q
FCC Part 90, Subpart I, R, S
FCC Part 96

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

For WLAN/BT:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

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.

Limits of unwanted emission out of the restricted bands

<table>
<tr><td colspan="3">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="3" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3m</td></tr>
<tr><td>PK: 74 (dBµV/m)</td><td>AV: 54 (dBµV/m)</td></tr>
<tr><td>Frequency Band</td><td colspan="2">Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3m</td></tr>
<tr><td>5150~5250 MHz</td><td colspan="2">15.407(b)(1)</td><td rowspan="3">PK: -27 (dBm/MHz)</td><td rowspan="3">PK: 68.2(dBµV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td colspan="2">15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td colspan="2">15.407(b)(3)</td></tr>
<tr><td rowspan="2">5725~5850 MHz</td><td>☒</td><td>15.407(b)(4)(i)</td><td>PK: -27 (dBm/MHz) *1
PK: 10 (dBm/MHz) *2
PK: 15.6 (dBm/MHz) *3
PK: 27 (dBm/MHz) *4</td><td>PK: 68.2(dBµV/m) *1
PK: 105.2 (dBµV/m) *2
PK: 110.8(dBµV/m) *3
PK: 122.2 (dBµV/m) *4</td></tr>
<tr><td>☐</td><td>15.407(b)(4)(ii)</td><td colspan="2">Emission limits in section 15.247(d)</td></tr>
</table>

*1 beyond 75 MHz or more above of the band edge.

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/m, where P is the eirp (Watts).

For WWAN

Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver Agilent	N9038A	MY51210129	Mar. 24, 2023	Mar. 23, 2024
Signal Analyzer Agilent	N9010A	MY52220314	Dec. 09, 2022	Dec. 08, 2023
Loop Antenna TESEQ	HLA 6121	45745	Aug. 08, 2023	Aug. 07, 2024
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	Jan. 07, 2023	Jan. 06, 2024
Preamplifier EMCI	EMC 330H	980112	Oct. 01, 2022	Sep. 30, 2023
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Oct. 21, 2022	Oct. 20, 2023
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 01, 2022	Sep. 30, 2023
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 13, 2022	Nov. 12, 2023
Preamplifier EMCI	EMC 012645	980115	Oct. 01, 2022	Sep. 30, 2023
RF Coaxial Cable EMCI	EMC104-SM-SM-8000	171005	Oct. 01, 2022	Sep. 30, 2023
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	Oct. 01, 2022	Sep. 30, 2023
RF FLITER MICRO-TRONICS	BRM50716	060	Jan. 11, 2023	Jan. 10, 2024
RF FLITER MICRO-TRONICS	BRM17690	004	Jan. 11, 2023	Jan. 10, 2024
Pre-Amplifier EMCI	EMC 184045	980116	Oct. 01, 2022	Sep. 30, 2023
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 13, 2022	Nov. 12, 2023
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower Max-Full	MFA-440H	AT93021705	NA	NA
Turn Table Max-Full	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller Max-Full	MF-7802	NA	NA	NA
Boresight antenna tower fixture BV	BAF-02	7	NA	NA
Radio Communication Analyzer Anritsu	MT8821C	6201462755	Mar. 03, 2023	Mar. 02, 2024

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 966 chamber 5.

4.1.3 Test Procedures

For WLAN/BT

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. (for WLAN)
4. According to ANSI C63.10 section 6.6.4 and 4.1.4.2.2. For fundamental and harmonic signal measurement, according to ANSI C63.10 section 7.5, the average value = peak value + duty cycle correction factor. For duty cycle correction factor values, see the Test Signal Duty Cycle section in this report. (for BT)
5. All modes of operation were investigated and the worst-case emissions are reported.

For WWAN

a. In the semi-anechoic chamber, EUT placed on the 0.8m (below or equal 1GHz) and/or 1.5m (above 1GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. 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.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following C63.26 section 5.5 and 5.2.7
   - EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.
   - ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

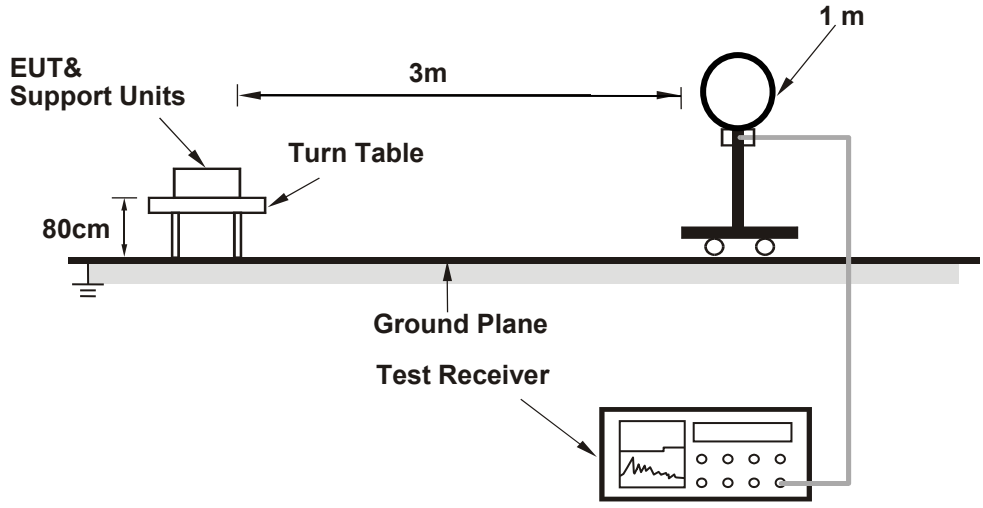
Note:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
   The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.1.4 Deviation from Test Standard

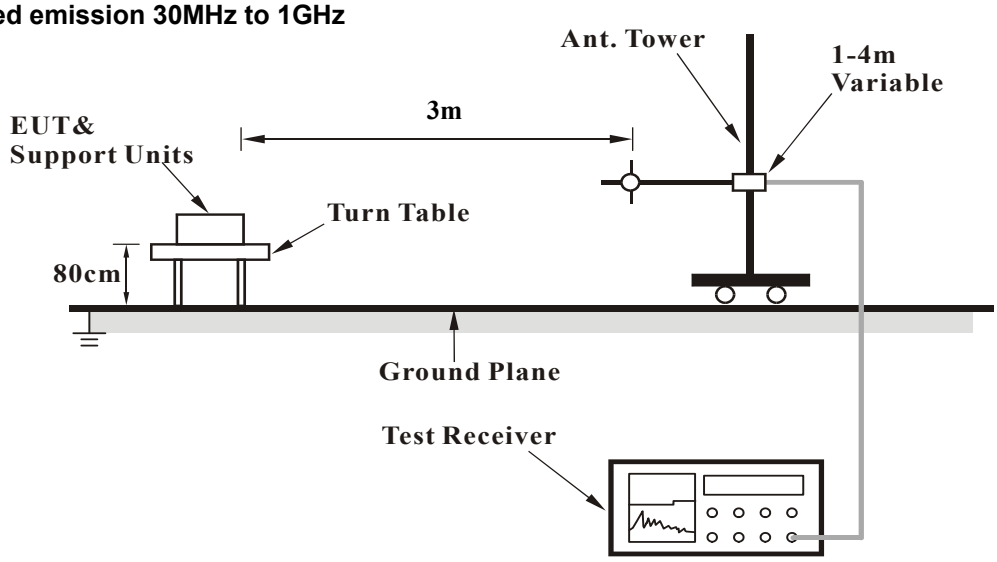
No deviation.

4.1.5 Test Setup

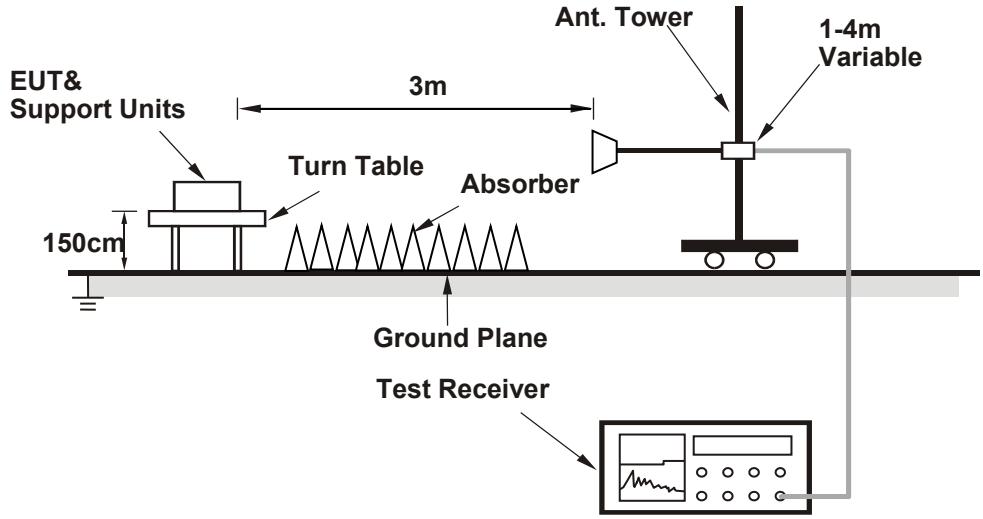
For Radiated emission below 30MHz



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. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

802.11n (HT20) + LTE Band 41

RF Mode	TX 802.11n (HT20)	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	105.1 PK			1.03 H	200	70.8	34.3
2	*2462.00	94.7 AV			1.03 H	200	60.4	34.3
3	2483.50	60.4 PK	74.0	-13.6	1.03 H	200	26.1	34.3
4	2483.50	46.4 AV	54.0	-7.6	1.03 H	200	12.1	34.3
5	4924.00	51.6 PK	74.0	-22.4	2.53 H	305	54.1	-2.5
6	4924.00	38.7 AV	54.0	-15.3	2.53 H	305	41.2	-2.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	112.4 PK			1.63 V	333	78.1	34.3
2	*2462.00	102.1 AV			1.63 V	333	67.8	34.3
3	2483.50	60.9 PK	74.0	-13.1	1.63 V	333	26.6	34.3
4	2483.50	47.9 AV	54.0	-6.1	1.63 V	333	13.6	34.3
5	4924.00	52.7 PK	74.0	-21.3	2.64 V	152	55.2	-2.5
6	4924.00	39.1 AV	54.0	-14.9	2.64 V	152	41.6	-2.5

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.

CHANNEL	CH 40620

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5186.00	-51.76	-25.00	-26.76	2.63 H	142	55.30	-107.06

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5186.00	-50.46	-25.00	-25.46	1.53 V	267	56.60	-107.06

Remarks:

1. EIRP(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
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

802.11n (HT20) + Bluetooth GFSK + LTE Band 41

RF Mode	TX 802.11n (HT20)	Channel	CH 165：5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5606.80	62.5 PK	68.2	-5.7	1.15 H	64	54.2	8.3
2	*5825.00	109.3 PK			1.15 H	64	66.9	42.4
3	*5825.00	99.3 AV			1.15 H	64	56.9	42.4
4	#5992.80	64.6 PK	68.2	-3.6	1.15 H	64	54.9	9.7
5	11650.00	61.5 PK	74.0	-12.5	2.54 H	136	46.5	15.0
6	11650.00	48.8 AV	54.0	-5.2	2.54 H	136	33.8	15.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5626.00	62.9 PK	68.2	-5.3	2.38 V	356	54.5	8.4
2	*5825.00	118.4 PK			2.38 V	356	76.0	42.4
3	*5825.00	108.0 AV			2.38 V	356	65.6	42.4
4	**#5926.40**	**65.0 PK**	**68.2**	**-3.2**	**2.38 V**	**356**	**55.5**	**9.5**
5	11650.00	62.9 PK	74.0	-11.1	1.65 V	287	47.9	15.0
6	11650.00	49.9 AV	54.0	-4.1	1.65 V	287	34.9	15.0

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.

RF Mode	BT GFSK	Channel	CH 78：2480 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	101.1 PK			1.77 H	55	66.8	34.3
2	*2480.00	70.6 AV			1.77 H	55	36.3	34.3
3	2483.50	54.9 PK	74.0	-19.1	1.77 H	55	56.7	-1.8
4	2483.50	24.4 AV	54.0	-29.6	1.77 H	55	26.2	-1.8
5	4960.00	52.4 PK	74.0	-21.6	3.14 H	187	54.8	-2.4
6	4960.00	21.9 AV	54.0	-32.1	3.14 H	187	24.3	-2.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	107.8 PK			1.30 V	332	73.5	34.3
2	*2480.00	77.3 AV			1.30 V	332	43.0	34.3
3	2483.50	56.0 PK	74.0	-18.0	1.30 V	332	57.8	-1.8
4	2483.50	25.5 AV	54.0	-28.5	1.30 V	332	27.3	-1.8
5	4960.00	52.8 PK	74.0	-21.2	2.31 V	167	55.2	-2.4
6	4960.00	22.3 AV	54.0	-31.7	2.31 V	167	24.7	-2.4

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, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(3 ms / 100 ms) = -30.5 dB

CHANNEL	CH 40620

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5186.00	-51.83	-25.00	-26.83	2.54 H	137	55.23	-107.06

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5186.00	-50.63	-25.00	-25.63	1.43 V	252	56.43	-107.06

Remarks:

1. EIRP(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
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

Below 1GHz data

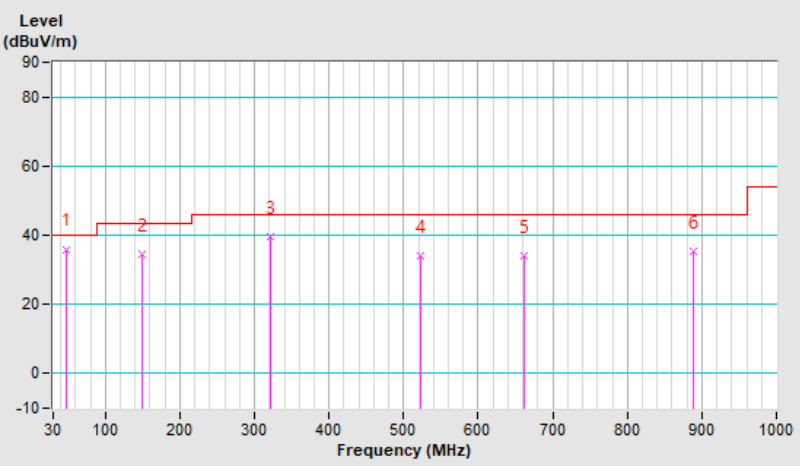
802.11n (HT20) + LTE Band 41

CHANNEL	CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	48.43	36.0 QP	40.0	-4.0	2.00 H	18	48.2	-12.2
2	148.34	34.6 QP	43.5	-8.9	2.00 H	89	47.0	-12.4
3	321.00	39.4 QP	46.0	-6.6	1.50 H	18	50.6	-11.2
4	522.76	34.2 QP	46.0	-11.8	1.00 H	208	40.7	-6.5
5	661.47	34.0 QP	46.0	-12.0	1.00 H	176	38.3	-4.3
6	889.42	35.4 QP	46.0	-10.6	2.00 H	245	36.5	-1.1

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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

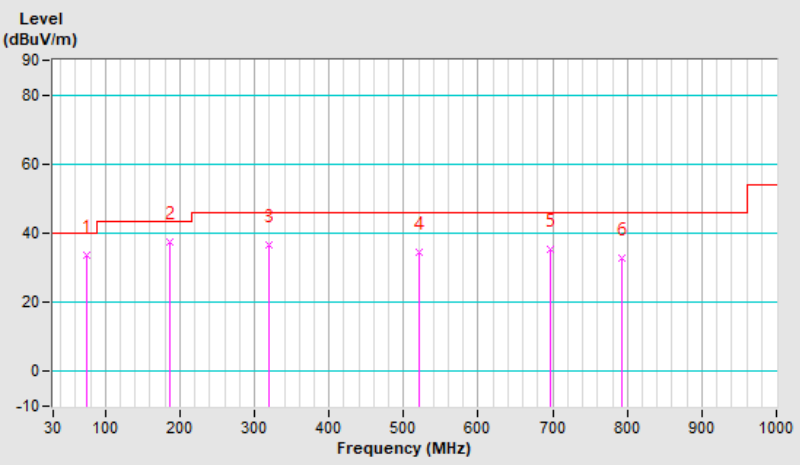


CHANNEL	CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	74.62	33.5 QP	40.0	-6.5	1.00 V	228	48.8	-15.3
2	186.17	37.5 QP	43.5	-6.0	1.50 V	18	52.2	-14.7
3	320.03	36.7 QP	46.0	-9.3	1.50 V	139	48.0	-11.3
4	520.82	34.7 QP	46.0	-11.3	1.50 V	203	41.2	-6.5
5	696.39	35.4 QP	46.0	-10.6	1.00 V	26	39.1	-3.7
6	792.42	32.8 QP	46.0	-13.2	2.00 V	18	34.4	-1.6

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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

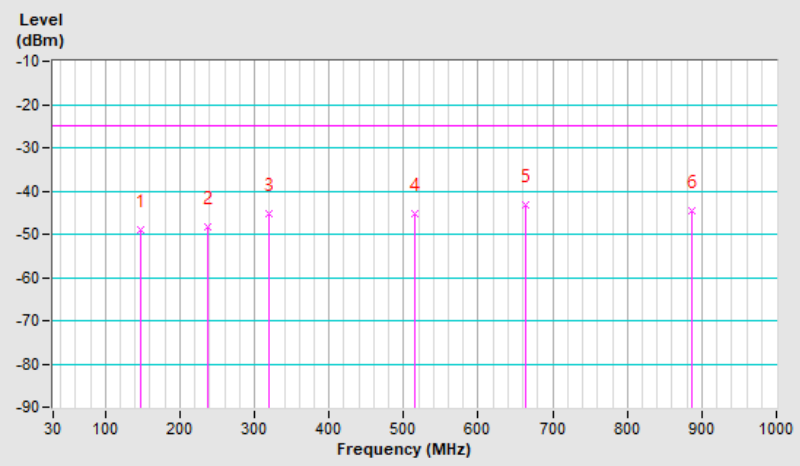


CHANNEL	CH 40620	FREQUENCY RANGE	Below 1000 MHz

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	147.37	-48.90	-25.00	-23.90	2.00 H	96	58.78	-107.68
2	237.58	-48.42	-25.00	-23.42	1.00 H	188	61.02	-109.44
3	320.03	-45.21	-25.00	-20.21	1.00 H	38	61.32	-106.53
4	514.03	-45.09	-25.00	-20.09	2.00 H	204	56.68	-101.77
5	664.38	-43.34	-25.00	-18.34	1.00 H	241	56.15	-99.49
6	887.48	-44.71	-25.00	-19.71	2.00 H	242	51.71	-96.42

Remarks:

1. EIRP(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
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

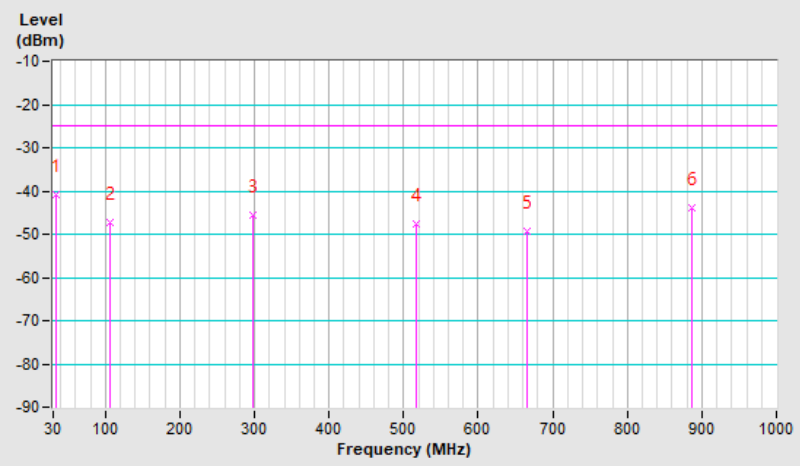


CHANNEL	CH 40620	FREQUENCY RANGE	Below 1000 MHz

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.85	-40.87	-25.00	-15.87	1.00 V	152	67.30	-108.17
2	105.66	-47.40	-25.00	-22.40	1.00 V	234	63.68	-111.08
3	297.72	-45.60	-25.00	-20.60	2.00 V	341	61.49	-107.09
4	516.94	-47.47	-25.00	-22.47	1.50 V	203	54.27	-101.74
5	666.32	-49.34	-25.00	-24.34	1.50 V	219	50.12	-99.46
6	887.48	-43.74	-25.00	-18.74	1.00 V	244	52.68	-96.42

Remarks:

1. EIRP(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
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



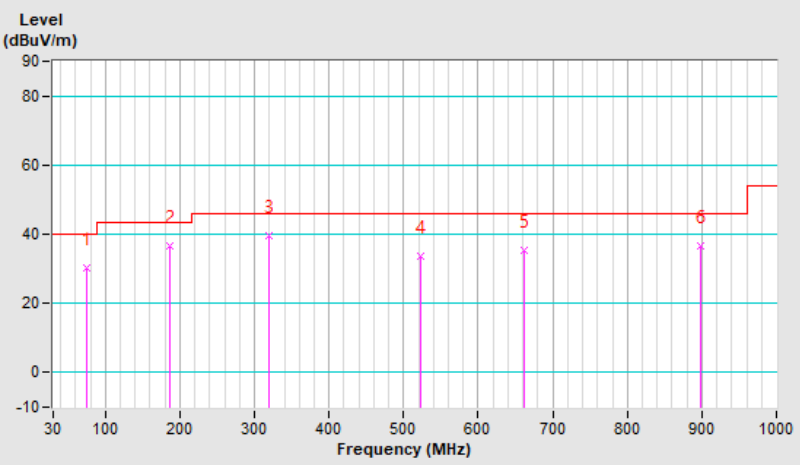
802.11n (HT20) + Bluetooth GFSK + LTE Band 41

CHANNEL	CH 165 + CH 78	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	74.62	30.3 QP	40.0	-9.7	2.00 H	119	45.6	-15.3
2	186.17	36.4 QP	43.5	-7.1	2.00 H	338	51.1	-14.7
3	320.03	39.7 QP	46.0	-6.3	1.00 H	43	51.0	-11.3
4	523.73	33.8 QP	46.0	-12.2	1.00 H	237	40.2	-6.4
5	662.44	35.4 QP	46.0	-10.6	1.50 H	228	39.7	-4.3
6	898.15	36.5 QP	46.0	-9.5	2.00 H	234	37.5	-1.0

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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

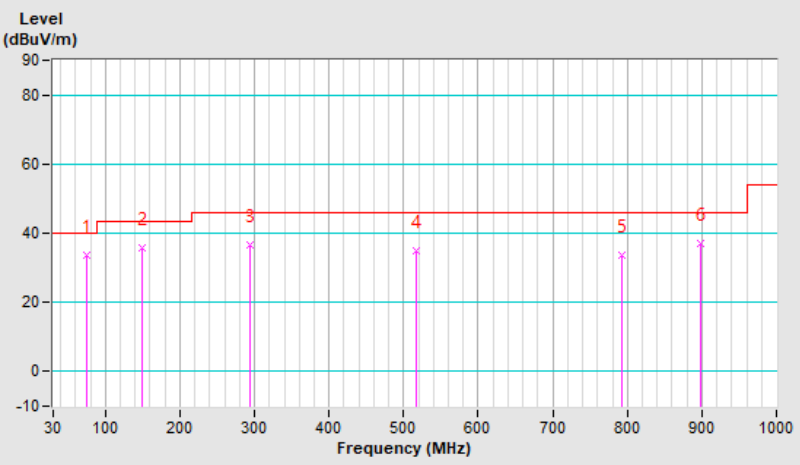


CHANNEL	CH 165 + CH 78	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	74.62	33.7 QP	40.0	-6.3	1.00 V	256	49.0	-15.3
2	148.34	35.6 QP	43.5	-7.9	1.00 V	38	48.0	-12.4
3	294.81	36.6 QP	46.0	-9.4	2.00 V	347	48.5	-11.9
4	516.94	34.8 QP	46.0	-11.2	1.50 V	206	41.3	-6.5
5	792.42	33.5 QP	46.0	-12.5	1.50 V	2	35.1	-1.6
6	898.15	37.2 QP	46.0	-8.8	1.00 V	232	38.2	-1.0

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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

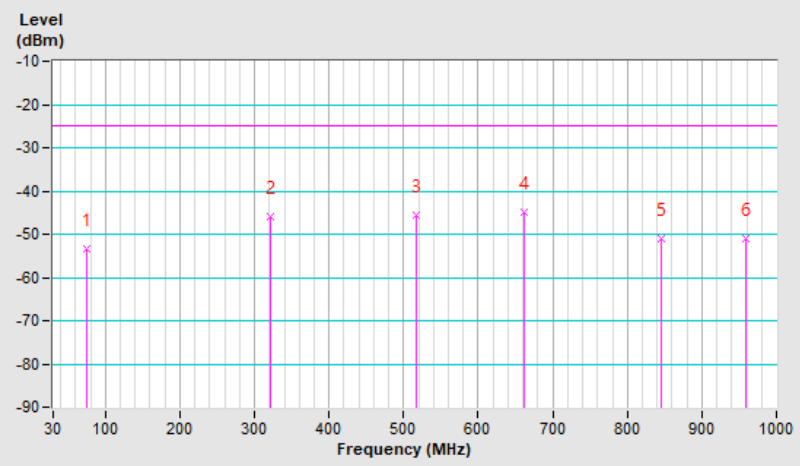


CHANNEL	CH 40620	FREQUENCY RANGE	Below 1000 MHz

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	74.62	-53.51	-25.00	-28.51	2.00 H	122	57.06	-110.57
2	321.00	-46.01	-25.00	-21.01	1.00 H	18	60.49	-106.50
3	516.94	-45.59	-25.00	-20.59	2.00 H	202	56.15	-101.74
4	661.47	-45.01	-25.00	-20.01	1.00 H	241	54.55	-99.56
5	844.80	-51.02	-25.00	-26.02	1.00 H	336	45.79	-96.81
6	959.26	-51.12	-25.00	-26.12	1.00 H	256	44.39	-95.51

Remarks:

1. EIRP(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
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

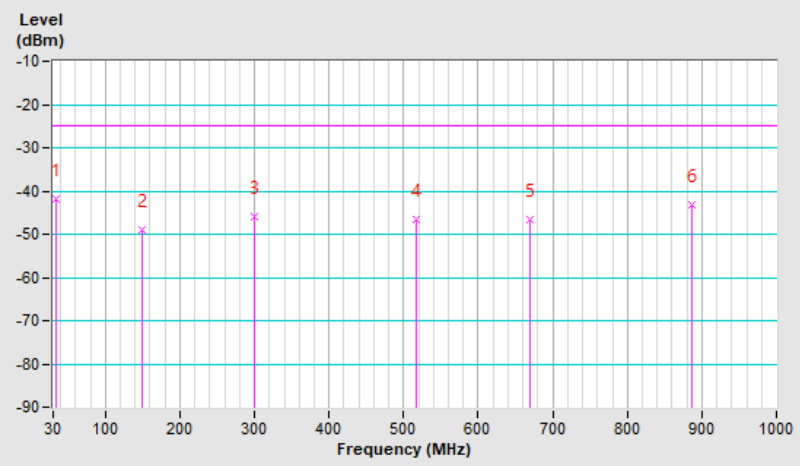


CHANNEL	CH 40620	FREQUENCY RANGE	Below 1000 MHz

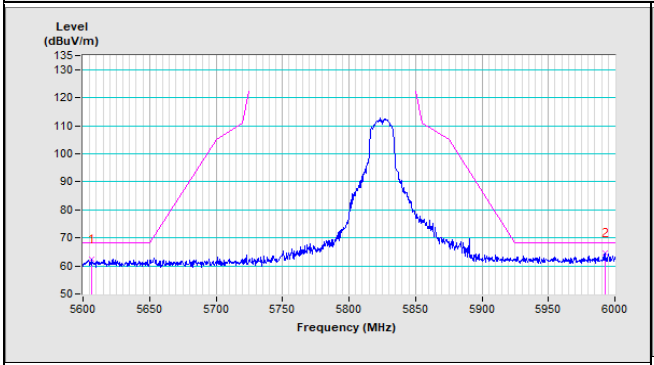
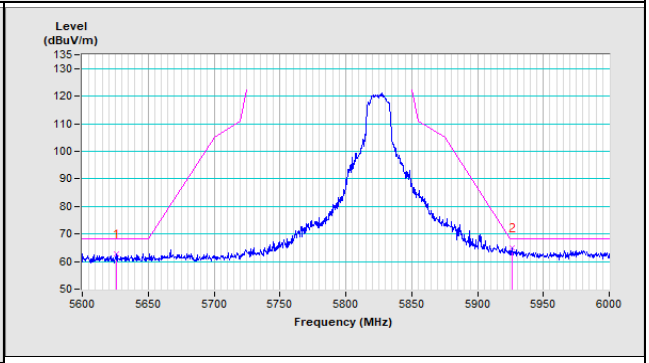
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.85	-41.85	-25.00	-16.85	1.00 V	78	66.32	-108.17
2	148.34	-48.92	-25.00	-23.92	2.00 V	169	58.84	-107.76
3	299.66	-45.80	-25.00	-20.80	2.00 V	2	61.23	-107.03
4	517.91	-46.50	-25.00	-21.50	1.50 V	199	55.23	-101.73
5	670.20	-46.72	-25.00	-21.72	1.50 V	301	52.69	-99.41
6	887.48	-43.17	-25.00	-18.17	1.00 V	248	53.25	-96.42

Remarks:

1. EIRP(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
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



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

802.11n (HT20) Channel 165	
	
Horizontal (Peak)	Vertical (Peak)

5 Pictures of Test Arrangements

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

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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Web Site: http://ee.bureauveritas.com.tw

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

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