

FCC Test Report (Co-Located)

Report No.: RF161004D09-7

FCC ID: HFS-C401U

Test Model: C401U

Received Date: Oct. 04, 2016

Test Date: Jan. 16 ~ Jan. 18, 2017

Issued Date: Jan. 19, 2017

Applicant: QUANTA COMPUTER INC.

Address: 188, WEN HUA 2ND RD., GUISHAN DIST., TAO YUAN CITY 33377,
TAIWAN

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.)



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Release Control Record

Issue No.	Description	Date Issued
RF161004D09-7	Original release	Jan. 19, 2017

1 Certificate of Conformity

Product: Clover Flex

Brand: clover

Test Model: C401U

Sample Status: Engineering sample

Applicant: QUANTA COMPUTER INC.

Test Date: Jan. 16 ~ Jan. 18, 2017

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)
47 CFR FCC Part 15, Subpart C (Section 15.225)
47 CFR FCC Part 15, Subpart C (Section 15.215)
FCC Part 22, Subpart H
FCC Part 24, Subpart E
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 EMC characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Jan. 19, 2017

Pettie Chen / Senior Specialist

Approved by :  , **Date:** Jan. 19, 2017

Ken Liu / Senior Manager

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) 47 CFR FCC Part 15, Subpart C (Section 15.225) 47 CFR FCC Part 15, Subpart C (Section 15.215) FCC Part 22, Subpart H FCC Part 24, Subpart E		
FCC Clause	Test Item	Result	Remarks
15.207 15.407(b)(6)	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -17.47dB at 0.15391MHz.
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 -0.7dB at 2390.0MHz.
15.225 (a)	The field strength of any emissions within the band 13.553-13.567 MHz	Pass	Meet the requirement of limit. Minimum passing margin is -43.40dB at 13.56MHz.
15.225 (d)	The field strength of any emissions appearing outside of the 13.110-14.010 MHz band	Pass	Meet the requirement of limit. Minimum passing margin is -26.50dB at 24.471MHz.
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -17.0dB at 826.4MHz.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -7.8dB at 1880.00MHz.

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) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 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	Clover Flex	
Brand	clover	
Test Model	C401U	
Status of EUT	Engineering sample	
Power Supply Rating	7.6 Vdc (Battery) 12Vdc (Adapter)	
Modulation Type	WLAN	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	Bluetooth EDR	GFSK, $\pi/4$ -DQPSK, 8DPSK
	Bluetooth LE	GFSK
	NFC	ASK
	WWAN	WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK
Modulation Technology	WLAN	DSSS, OFDM
Transfer Rate	WLAN	802.11b: 11/5.5/2/1Mbps 802.11a/g: 54/48/36/24/18/12/9/6Mbps 802.11n (2.4GHz): up to 72.2Mbps 802.11n (5GHz): up to 150Mbps
	Bluetooth EDR	1/2/3Mbps
	Bluetooth LE	1Mbps
Operating Frequency	WLAN	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5180 ~ 5240MHz, 5745 ~ 5825MHz
	Bluetooth EDR	2402 ~ 2480MHz
	Bluetooth LE	2402 ~ 2480MHz
	NFC	13.56MHz
	WWAN	WCDMA Band V: 826.4MHz ~ 846.6MHz WCDMA Band II: 1852.4MHz ~ 1907.6MHz
Number of Channel	WLAN	2412 ~ 2462MHz: 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40) 5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
	Bluetooth EDR	79
	Bluetooth LE	40
	NFC	1

Output Power	WLAN	2412 ~ 2462MHz: 83.946mW 5180 ~ 5240MHz: 39.537mW 5745 ~ 5825MHz: 38.459mW
	Bluetooth EDR	8.356mW
	Bluetooth LE	2.239mW
Max. ERP Power	WCDMA Band V: 123.027mW (20.9dBm)	
Max. EIRP Power	WCDMA Band II: 251.189mW (24.0dBm)	
Antenna Type	Refer to note	
Antenna Connector	Refer to note	
Accessory Device	Charging Dock (Brand: Clover, Model: K400) Microhub (Brand: Clover, Model: H400)	
Data Cable Supplied	0.8m shielded Type-C cable without core	

Note:

1. The EUT provides 1 completed transmitter and 1 receiver.

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX

2. The EUT consumes power from the following battery and adapter.

Battery	
Brand	LG Chem, Ltd.
Model	MPPCLOYJ4
Rating	7.6Vdc, 2170mAh (Typ)

Adapter	
Brand	clover
Model	FSP040-RHBN2 A
Input Power	100-240Vac~, 1.5A, 50-60Hz
Output Power	12.0Vdc / 3.33A
Power Line	1.2m shielded DC cable with one core

3. The EUT uses following antennas.

WLAN & Bluetooth					
Ant. Type	Connector	Antenna Gain (dBi)			
		Frequency (GHz)			
		2.4	5.150	5.470	5.850
PIFA	NA	-2.5	4.0	4.4	3.4
NFC					
Ant. Type	Loop Antenna				
WCDMA Band V					
Ant. Type	PIFA antenna with -5.7dBi gain				
WCDMA Band II					
Ant. Type	PIFA antenna with -1.9dBi gain				

4. 2.4GHz and 5GHz technology cannot transmit at same time.
5. Spurious emission of the simultaneous operation (WLAN+WWAN+NFC or BT+WWAN+NFC) has been evaluated and no non-compliance was found.

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):

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

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 NFC

1 channel is provided to this EUT

Channel	Freq. (MHz)
1	13.56

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	RE \geq 1G	RE $<$ 1G	PLC	
-	√	√	√	-

Where **RE \geq 1G**: Radiated Emission above 1GHz & Bandedge Measurement
RE $<$ 1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

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	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
-	802.11g + WCDMA Band V + NFC	2412 ~ 2462	1 to 11	1 + 4132 + 1	BPSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	802.11g + WCDMA Band II + NFC	2412 ~ 2462	1 to 11	1 + 9400 + 1	BPSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK
-	802.11n (HT20) + WCDMA Band V + NFC	5180 ~ 5240, 5745 ~ 5825	36 to 48, 149 to 165	157 + 4132 + 1	BPSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	802.11n (HT20) + WCDMA Band II + NFC	5180 ~ 5240, 5745 ~ 5825	36 to 48, 149 to 165	157 + 9400 + 1	BPSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK
-	BT LE + WCDMA Band V + NFC	2402 ~ 2480	0 to 39	39 + 4132 + 1	GFSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	BT LE + WCDMA Band II + NFC	2402 ~ 2480	0 to 39	39 + 9400 + 1	GFSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK

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	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
-	802.11g + WCDMA Band V + NFC	2412 ~ 2462	1 to 11	1 + 4132 + 1	BPSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	802.11g + WCDMA Band II + NFC	2412 ~ 2462	1 to 11	1 + 9400 + 1	BPSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK
-	802.11n (HT20) + WCDMA Band V + NFC	5180 ~ 5240, 5745 ~ 5825	36 to 48, 149 to 165	157 + 4132 + 1	BPSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	802.11n (HT20) + WCDMA Band II + NFC	5180 ~ 5240, 5745 ~ 5825	36 to 48, 149 to 165	157 + 9400 + 1	BPSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK
-	BT LE + WCDMA Band V + NFC	2402 ~ 2480	0 to 39	39 + 4132 + 1	GFSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	BT LE + WCDMA Band II + NFC	2402 ~ 2480	0 to 39	39 + 9400 + 1	GFSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK

Power Line Conducted Emission Test:

- 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	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
-	802.11g + WCDMA Band V + NFC	2412 ~ 2462	1 to 11	1 + 4132 + 1	BPSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	802.11g + WCDMA Band II + NFC	2412 ~ 2462	1 to 11	1 + 9400 + 1	BPSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK
-	802.11n (HT20) + WCDMA Band V + NFC	5180 ~ 5240, 5745 ~ 5825	36 to 48, 149 to 165	157 + 4132 + 1	BPSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	802.11n (HT20) + WCDMA Band II + NFC	5180 ~ 5240, 5745 ~ 5825	36 to 48, 149 to 165	157 + 9400 + 1	BPSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK
-	BT LE + WCDMA Band V + NFC	2402 ~ 2480	0 to 39	39 + 4132 + 1	GFSK
		826.4 ~ 846.6	4132 to 4233		BPSK
		13.56	1		ASK
-	BT LE + WCDMA Band II + NFC	2402 ~ 2480	0 to 39	39 + 9400 + 1	GFSK
		1852.4 ~ 1907.6	9262 to 9538		BPSK
		13.56	1		ASK

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE _≥ 1G	20deg. C, 66%RH	120Vac, 60Hz	Jones Chang
RE _{<} 1G	21deg. C, 70%RH	120Vac, 60Hz	Jones Chang
PLC	20deg. C, 70%RH	120Vac, 60Hz	Jones Chang

3.3 Description of Support Units

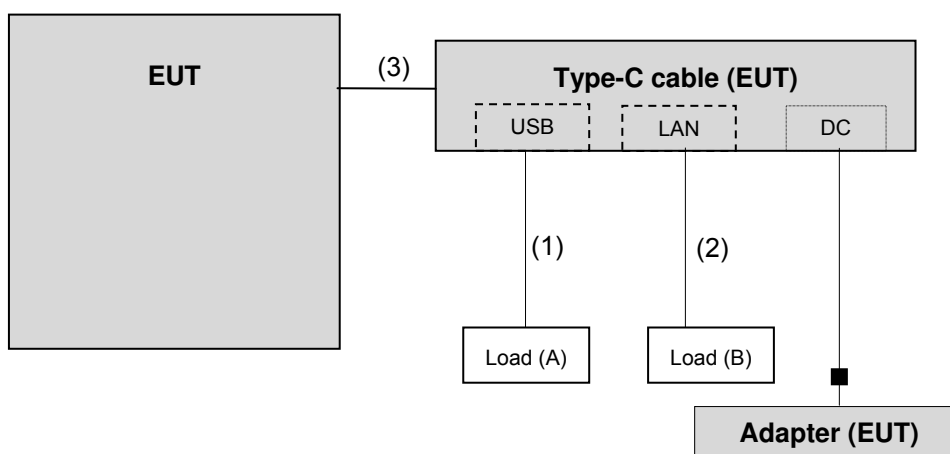
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Load	N/A	N/A	N/A	N/A	-
B.	Load	N/A	N/A	N/A	N/A	-

Note: All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	1.8	N	0	-
2.	LAN cable	1	1.8	N	0	-
3.	Type-C cable	1	0.8	Y	0	Accessory of EUT

3.3.1 Configuration of System under Test



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)
- 47 CFR FCC Part 15, Subpart C (Section 15.225)
- 47 CFR FCC Part 15, Subpart C (Section 15.215)
- FCC Part 22, Subpart H
- FCC Part 24, Subpart E
- ANSI C63.10-2013

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

Note: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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.

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v01r03		Field Strength at 3m	
		PK:74 (dBuV/m)	AV:54 (dBuV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	<input checked="" type="checkbox"/> 15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2(dBuV/m) ^{*1} PK:105.2 (dBuV/m) ^{*2} PK: 110.8(dBuV/m) ^{*3} PK:122.2 (dBuV/m) ^{*4}
	<input type="checkbox"/> 15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*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:

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 18, 2016	Apr. 17, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Nov. 16, 2016	Nov. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-151	Dec. 16, 2016	Dec. 15, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 12, 2016	Dec. 13, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8447D	2944A10738	Aug. 22, 2016	Aug. 21, 2017
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (214378)	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 22, 2016	Aug. 21, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 17, 2016	Oct. 16, 2017

- 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 3.
 3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 988962.
 5. The IC Site Registration No. is IC 7450F-3.

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. Both X and Y axes 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:

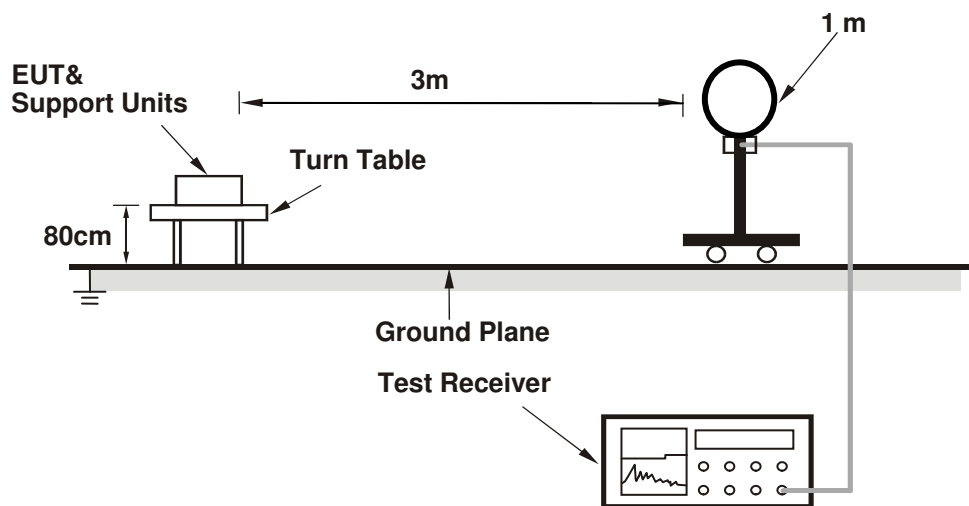
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) 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

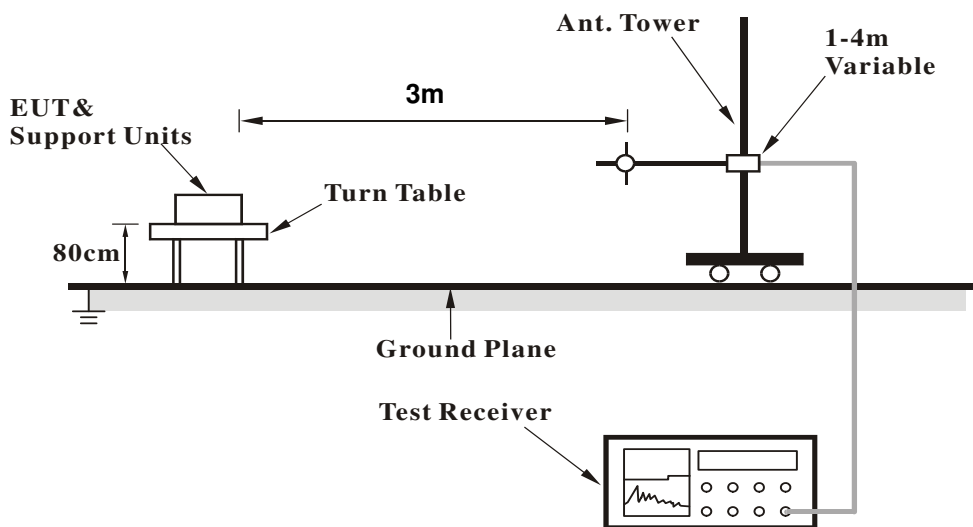
No deviation.

4.1.5 Test Setup

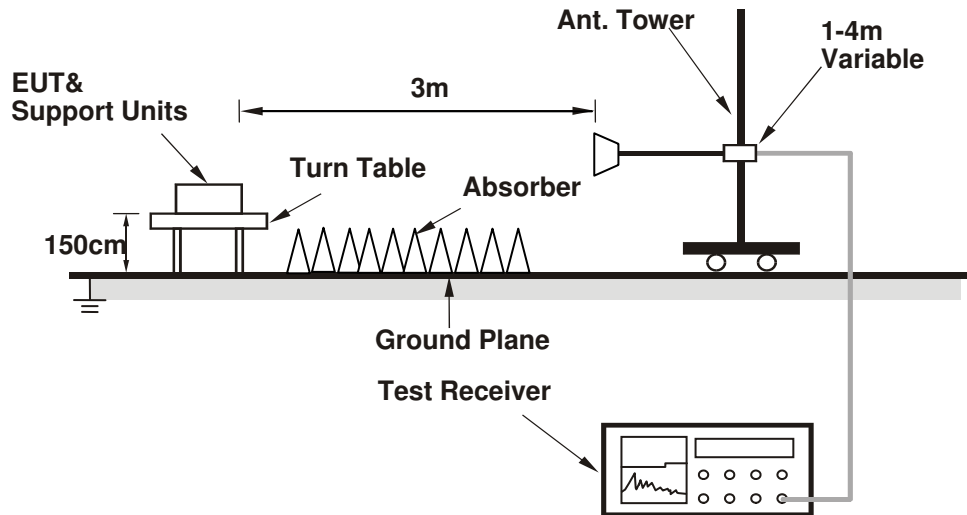
For Radiated emission below 30MHz



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

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

4.1.7 Test Results

Above 1GHz Data:

802.11g + WCDMA Band V + NFC

CHANNEL	CH 1 + CH 4132 + CH 1	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	69.8 PK	74.0	-4.2	1.55 H	350	38.8	31.0
2	2390.00	53.3 AV	54.0	-0.7	1.55 H	355	22.3	31.0
3	*2412.00	100.2 PK			1.77 H	292	69.0	31.2
4	*2412.00	89.2 AV			1.77 H	292	58.0	31.2
5	4824.00	46.7 PK	74.0	-27.3	1.59 H	200	42.1	4.6
6	4824.00	34.0 AV	54.0	-20.0	1.59 H	200	29.4	4.6

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	66.5 PK	74.0	-7.5	1.90 V	33	35.5	31.0
2	2390.00	48.9 AV	54.0	-5.1	1.91 V	33	17.9	31.0
3	*2412.00	97.1 PK			2.00 V	280	65.9	31.2
4	*2412.00	86.8 AV			2.00 V	280	55.6	31.2
5	4824.00	46.6 PK	74.0	-27.4	1.60 V	345	42.0	4.6
6	4824.00	33.5 AV	54.0	-20.5	1.60 V	345	28.9	4.6

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL		CH 1 + CH 4132 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-13.5	21.1	0.0	21.1	38.5	-17.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-19.0	15.1	0.0	15.1	38.5	-23.4

CHANNEL		CH 1 + CH 4132 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1652.80	-59.8	-63.3	5.5	-57.8	-13.0	-44.8
2	2509.20	-63.2	-63.4	6.4	-57.0	-13.0	-44.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1672.80	-59.8	-61.8	5.5	-56.3	-13.0	-43.3
2	2509.20	-62.9	-62.0	6.4	-55.6	-13.0	-42.6

CHANNEL	CH 1 + CH 4132 + CH 1
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Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	13.56	80.40	124.00	-43.60	1.00	345	83.70	-3.30

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	13.56	76.90	124.00	-47.10	1.00	259	80.20	-3.30

Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	3.555	34.4	69.5	-35.1	1.00	13	37.3	-2.9
2	6.500	31.1	69.5	-38.4	1.00	13	34.1	-3.0
3	14.674	34.2	69.5	-35.3	1.00	157	37.7	-3.5
4	23.028	35.2	69.5	-34.3	1.00	333	39.0	-3.8
5	27.120	30.0	69.5	-39.5	1.00	342	32.8	-2.8
6	29.038	32.9	69.5	-36.6	1.00	70	35.4	-2.5

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	3.555	35.1	69.5	-34.4	1.00	85	38.0	-2.9
2	6.500	31.2	69.5	-38.3	1.00	51	34.2	-3.0
3	16.898	34.5	69.5	-35.0	1.00	48	38.4	-3.9
4	22.848	40.3	69.5	-29.2	1.00	4	44.1	-3.8
5	27.120	31.3	69.5	-38.2	1.00	284	34.1	-2.8
6	29.038	33.2	69.5	-36.3	1.00	13	35.7	-2.5

802.11g + WCDMA Band II + NFC

CHANNEL	CH 1 + CH 9400 + CH 1	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	69.0 PK	74.0	-5.0	1.53 H	359	38.0	31.0
2	2390.00	52.9 AV	54.0	-1.1	1.53 H	359	21.9	31.0
3	*2412.00	100.2 PK			1.60 H	288	69.0	31.2
4	*2412.00	89.8 AV			1.60 H	288	58.6	31.2
5	4824.00	47.0 PK	74.0	-27.0	1.70 H	211	42.4	4.6
6	4824.00	34.5 AV	54.0	-19.5	1.70 H	211	29.9	4.6

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	66.9 PK	74.0	-7.1	1.85 V	25	35.9	31.0
2	2390.00	49.2 AV	54.0	-4.8	1.85 V	25	18.2	31.0
3	*2412.00	97.4 PK			2.06 V	274	66.2	31.2
4	*2412.00	87.1 AV			2.06 V	274	55.9	31.2
5	4824.00	47.1 PK	74.0	-26.9	1.50 V	352	42.5	4.6
6	4824.00	33.6 AV	54.0	-20.4	1.50 V	352	29.0	4.6

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL		CH 1 + CH 9400 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-17.5	21.8	1.1	22.9	33.0	-10.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-14.5	23.9	1.1	25.0	33.0	-8.0

CHANNEL		CH 1 + CH 9400 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-57.5	-51.7	7.1	-44.6	-13.0	-31.6
2	5640.00	-67.1	-54.8	6.7	-48.1	-13.0	-35.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-68.7	-62.8	7.1	-55.7	-13.0	-42.7
2	5640.00	-62.2	-51.9	6.7	-45.2	-13.0	-32.2

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

CHANNEL	CH 1 + CH 9400 + CH 1
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Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	13.56	80.00	124.00	-44.00	1.00	359	83.30	-3.30

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	13.56	76.40	124.00	-47.60	1.00	260	79.70	-3.30

Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	3.856	31.2	69.5	-38.3	1.00	204	34.1	-2.9
2	8.423	29.6	69.5	-39.9	1.00	254	32.4	-2.8
3	18.641	29.7	69.5	-39.8	1.00	19	33.9	-4.2
4	23.028	35.2	69.5	-34.3	1.00	333	39.0	-3.8
5	27.120	30.5	69.5	-39.0	1.00	111	33.3	-2.8
6	29.760	26.9	69.5	-42.6	1.00	144	29.3	-2.4

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	4.396	28.8	69.5	-40.7	1.00	76	31.7	-2.9
2	6.200	29.9	69.5	-39.6	1.00	26	32.8	-2.9
3	12.630	31.7	69.5	-37.8	1.00	247	34.8	-3.1
4	17.439	35.5	69.5	-34.0	1.00	13	39.5	-4.0
5	27.120	34.6	69.5	-34.9	1.00	243	37.4	-2.8
6	29.279	29.9	69.5	-39.6	1.00	6	32.4	-2.5

802.11n (HT20) + WCDMA Band V + NFC

CHANNEL	CH 157 + CH 4132 + CH 1	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	*5785.00	111.3 PK			1.23 H	266	71.2	40.1
2	*5785.00	100.3 AV			1.23 H	266	60.2	40.1
3	11570.00	62.4 PK	74.0	-11.6	2.45 H	290	43.4	19.0
4	11570.00	48.9 AV	54.0	-5.1	2.45 H	290	29.9	19.0

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	*5785.00	101.6 PK			2.20 V	49	61.5	40.1
2	*5785.00	89.7 AV			2.20 V	49	49.6	40.1
3	11570.00	62.6 PK	74.0	-11.4	2.31 V	210	43.6	19.0
4	11570.00	49.7 AV	54.0	-4.3	2.31 V	211	30.7	19.0

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL		CH 157 + CH 4132 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-13.3	21.3	0.0	21.3	38.5	-17.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-18.8	15.3	0.0	15.3	38.5	-23.2

CHANNEL		CH 157 + CH 4132 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1652.80	-60.2	-63.7	5.5	-58.2	-13.0	-45.2
2	2509.20	-63.4	-63.5	6.4	-57.1	-13.0	-44.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1672.80	-60.5	-62.5	5.5	-57.0	-13.0	-44.0
2	2509.20	-63.2	-62.4	6.4	-56.0	-13.0	-43.0

CHANNEL	CH 157 + CH 4132 + CH 1
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Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	13.56	80.10	124.00	-43.90	1.00	352	83.40	-3.30

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	13.56	76.30	124.00	-47.70	1.00	269	79.60	-3.30

Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	2.954	30.1	69.5	-39.4	1.00	17	32.7	-2.6
2	12.931	28.7	69.5	-40.8	1.00	345	31.9	-3.2
3	16.778	31.4	69.5	-38.1	1.00	330	35.3	-3.9
4	22.547	34.3	69.5	-35.2	1.00	200	38.2	-3.9
5	23.749	37.0	69.5	-32.5	1.00	274	40.6	-3.6
6	27.120	31.0	69.5	-38.5	1.00	37	33.8	-2.8

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	4.276	27.0	69.5	-42.5	1.00	299	29.8	-2.8
2	5.899	29.2	69.5	-40.3	1.00	140	32.1	-2.9
3	11.248	27.7	69.5	-41.8	1.00	189	30.6	-2.9
4	18.941	30.2	69.5	-39.3	1.00	245	34.5	-4.3
5	22.547	38.1	69.5	-31.4	1.00	121	42.0	-3.9
6	27.120	35.6	69.5	-33.9	1.00	301	38.4	-2.8

802.11n (HT20) + WCDMA Band II + NFC

CHANNEL	CH 157 + CH 9400 + CH 1	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	*5785.00	111.4 PK			1.20 H	281	71.3	40.1
2	*5785.00	100.2 AV			1.20 H	281	60.1	40.1
3	11570.00	61.9 PK	74.0	-12.1	2.26 H	287	42.9	19.0
4	11570.00	48.9 AV	54.0	-5.1	2.26 H	287	29.9	19.0

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	*5785.00	101.2 PK			2.26 V	40	61.1	40.1
2	*5785.00	89.3 AV			2.26 V	40	49.2	40.1
3	11570.00	62.3 PK	74.0	-11.7	2.11 V	201	43.3	19.0
4	11570.00	49.1 AV	54.0	-4.9	2.11 V	201	30.1	19.0

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL		CH 157 + CH 9400 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-17.9	21.4	1.1	22.5	33.0	-10.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-14.8	23.6	1.1	24.7	33.0	-8.3

CHANNEL		CH 157 + CH 9400 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-57.9	-52.1	7.1	-45.0	-13.0	-32.0
2	5640.00	-67.3	-55.0	6.7	-48.3	-13.0	-35.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-68.5	-62.6	7.1	-55.5	-13.0	-42.5
2	5640.00	-61.2	-50.9	6.7	-44.2	-13.0	-31.2

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

CHANNEL	CH 157 + CH 9400 + CH 1
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Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	13.56	80.60	124.00	-43.40	1.00	355	83.90	-3.30

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	13.56	77.00	124.00	-47.00	1.00	259	80.30	-3.30

Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	7.341	25.9	69.5	-43.6	1.00	163	28.8	-2.9
2	12.931	28.7	69.5	-40.8	1.00	345	31.9	-3.2
3	15.335	32.8	69.5	-36.7	1.00	59	36.4	-3.6
4	22.547	34.3	69.5	-35.2	1.00	200	38.2	-3.9
5	27.896	27.5	69.5	-42.0	1.00	120	30.2	-2.7
6	29.279	27.6	69.5	-41.9	1.00	13	30.1	-2.5

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	3.735	30.7	69.5	-38.8	1.00	44	33.6	-2.9
2	10.407	27.7	69.5	-41.8	1.00	13	30.5	-2.8
3	18.100	32.1	69.5	-37.4	1.00	0	36.2	-4.1
4	24.050	41.9	69.5	-27.6	1.00	79	45.4	-3.5
5	27.120	34.6	69.5	-34.9	1.00	243	37.4	-2.8
6	28.017	29.1	69.5	-40.4	1.00	111	31.8	-2.7

BT LE + WCDMA Band V + NFC

CHANNEL	CH 39 + CH 4132 + CH 1	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	*2441.00	99.2 PK			2.44 H	105	67.9	31.3
2	*2441.00	69.1 AV			2.44 H	105	37.8	31.3
3	4882.00	49.4 PK	74.0	-24.6	1.16 H	222	44.8	4.6
4	4882.00	19.3 AV	54.0	-34.7	1.16 H	222	14.7	4.6

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	*2441.00	97.8 PK			1.00 V	177	66.5	31.3
2	*2441.00	67.7 AV			1.00 V	177	36.4	31.3
3	4882.00	49.5 PK	74.0	-24.5	1.14 V	108	44.9	4.6
4	4882.00	19.4 AV	54.0	-34.6	1.14 V	108	14.8	4.6

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL		CH 39 + CH 4132 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-13.1	21.5	0.0	21.5	38.5	-17.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-19.1	15.0	0.0	15.0	38.5	-23.5

CHANNEL		CH 39 + CH 4132 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1652.80	-60.5	-64.0	5.5	-58.5	-13.0	-45.5
2	2509.20	-63.8	-63.9	6.4	-57.5	-13.0	-44.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1672.80	-60.0	-62.0	5.5	-56.5	-13.0	-43.5
2	2509.20	-63.5	-62.6	6.4	-56.2	-13.0	-43.2

CHANNEL	CH 39 + CH 4132 + CH 1
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Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	13.56	80.50	124.00	-43.50	1.00	347	83.80	-3.30

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	13.56	76.30	124.00	-47.70	1.00	258	79.60	-3.30

Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	11.248	26.6	69.5	-42.9	1.00	33	29.5	-2.9
2	15.335	32.8	69.5	-36.7	1.00	59	36.4	-3.6
3	17.859	29.3	69.5	-40.2	1.00	4	33.3	-4.0
4	21.946	31.9	69.5	-37.6	1.00	315	36.0	-4.1
5	24.471	43.0	69.5	-26.5	1.00	291	46.5	-3.5
6	27.120	28.7	69.5	-40.8	1.00	325	31.5	-2.8

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	2.593	25.8	69.5	-43.7	1.00	13	27.8	-2.0
2	10.407	27.7	69.5	-41.8	1.00	13	30.5	-2.8
3	18.581	30.2	69.5	-39.3	1.00	0	34.4	-4.2
4	21.045	32.2	69.5	-37.3	1.00	269	36.5	-4.3
5	24.050	41.9	69.5	-27.6	1.00	79	45.4	-3.5
6	27.120	28.7	69.5	-40.8	1.00	341	31.5	-2.8

BT LE + WCDMA Band II + NFC

CHANNEL	CH 39 + CH 9400 + CH 1	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	*2441.00	98.9 PK			2.36 H	118	67.6	31.3
2	*2441.00	68.8 AV			2.36 H	118	37.5	31.3
3	4882.00	49.0 PK	74.0	-25.0	1.10 H	211	44.4	4.6
4	4882.00	18.9 AV	54.0	-35.1	1.10 H	211	14.3	4.6

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	*2441.00	97.6 PK			1.01 V	160	66.3	31.3
2	*2441.00	67.5 AV			1.01 V	160	36.2	31.3
3	4882.00	49.9 PK	74.0	-24.1	1.09 V	130	45.3	4.6
4	4882.00	19.8 AV	54.0	-34.2	1.09 V	130	15.2	4.6

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL		CH 39 + CH 9400 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-17.1	22.2	1.1	23.3	33.0	-9.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-14.3	24.1	1.1	25.2	33.0	-7.8

CHANNEL		CH 39 + CH 9400 + CH 1					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-58.0	-52.2	7.1	-45.1	-13.0	-32.1
2	5640.00	-67.0	-54.7	6.7	-48.0	-13.0	-35.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-69.0	-63.1	7.1	-56.0	-13.0	-43.0
2	5640.00	-62.0	-51.7	6.7	-45.0	-13.0	-32.0

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

CHANNEL	CH 39 + CH 9400 + CH 1
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Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	13.56	80.40	124.00	-43.60	1.00	344	83.70	-3.30

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	13.56	76.80	124.00	-47.20	1.00	258	80.10	-3.30

Antenna Polarity & Test Distance: Loop Antenna Open At 3m

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	11.549	27.0	69.5	-42.5	1.00	206	30.0	-3.0
2	18.340	28.4	69.5	-41.1	1.00	166	32.5	-4.1
3	21.345	28.7	69.5	-40.8	1.00	184	32.9	-4.2
4	23.749	37.0	69.5	-32.5	1.00	274	40.6	-3.6
5	26.815	31.0	69.5	-38.5	1.00	37	33.9	-2.9
6	27.120	27.6	69.5	-41.9	1.00	341	30.4	-2.8

Antenna Polarity & Test Distance: Loop Antenna Close At 3m

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	6.740	24.7	69.5	-44.8	1.00	239	27.7	-3.0
2	11.428	26.1	69.5	-43.4	1.00	13	29.0	-2.9
3	15.335	32.6	69.5	-36.9	1.00	238	36.2	-3.6
4	21.526	32.1	69.5	-37.4	1.00	310	36.3	-4.2
5	23.208	37.6	69.5	-31.9	1.00	63	41.3	-3.7
6	27.120	26.7	69.5	-42.8	1.00	118	29.5	-2.8

Below 1GHz data

802.11g + WCDMA Band V + NFC

CHANNEL	CH 1 + CH 4132 + CH 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	57.12	26.8 QP	40.0	-13.2	2.00 H	137	41.3	-14.5
2	70.73	23.1 QP	40.0	-16.9	2.00 H	195	39.4	-16.3
3	94.06	25.1 QP	43.5	-18.4	2.00 H	291	44.4	-19.3
4	131.00	24.2 QP	43.5	-19.3	1.50 H	7	39.6	-15.4
5	249.60	19.3 QP	46.0	-26.7	1.50 H	286	33.2	-13.9
6	716.23	31.4 QP	46.0	-14.6	1.50 H	214	34.7	-3.3
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	31.84	24.4 QP	40.0	-15.6	1.99 V	117	40.4	-16.0
2	57.12	22.4 QP	40.0	-17.6	1.00 V	245	36.9	-14.5
3	101.84	24.6 QP	43.5	-18.9	1.00 V	155	42.8	-18.2
4	132.95	23.2 QP	43.5	-20.3	1.49 V	16	38.1	-14.9
5	185.44	18.8 QP	43.5	-24.7	1.00 V	181	34.0	-15.2
6	249.60	19.0 QP	46.0	-27.0	1.00 V	290	32.9	-13.9

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

802.11g + WCDMA Band II + NFC

CHANNEL	CH 1 + CH 9400 + CH 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	57.12	26.2 QP	40.0	-13.8	1.99 H	299	40.7	-14.5
2	70.73	23.3 QP	40.0	-16.7	1.99 H	229	39.6	-16.3
3	115.45	23.0 QP	43.5	-20.5	1.00 H	153	39.6	-16.6
4	131.00	23.5 QP	43.5	-20.0	1.99 H	4	38.9	-15.4
5	249.60	20.2 QP	46.0	-25.8	1.50 H	283	34.1	-13.9
6	722.07	31.5 QP	46.0	-14.5	1.00 H	168	34.7	-3.2

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	31.84	29.0 QP	40.0	-11.0	1.00 V	104	45.0	-16.0
2	57.12	22.0 QP	40.0	-18.0	1.00 V	333	36.5	-14.5
3	101.84	25.2 QP	43.5	-18.3	1.00 V	158	43.4	-18.2
4	134.89	20.9 QP	43.5	-22.6	1.00 V	319	35.6	-14.7
5	177.67	17.9 QP	43.5	-25.6	1.00 V	273	32.3	-14.4
6	249.60	19.2 QP	46.0	-26.8	1.00 V	292	33.1	-13.9

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

802.11n (HT20) + WCDMA Band V + NFC

CHANNEL	CH 157 + CH 4132 + CH 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	57.12	24.0 QP	40.0	-16.0	1.50 H	70	38.5	-14.5
2	70.73	21.3 QP	40.0	-18.7	1.50 H	272	37.6	-16.3
3	129.06	22.9 QP	43.5	-20.6	1.50 H	14	38.5	-15.6
4	185.44	18.7 QP	43.5	-24.8	1.00 H	112	33.9	-15.2
5	249.60	20.7 QP	46.0	-25.3	1.00 H	264	34.6	-13.9
6	714.29	33.9 QP	46.0	-12.1	2.00 H	29	37.3	-3.4

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	29.90	24.1 QP	40.0	-15.9	1.50 V	273	40.1	-16.0
2	61.01	26.3 QP	40.0	-13.7	1.00 V	307	41.2	-14.9
3	111.56	22.4 QP	43.5	-21.1	1.00 V	273	39.4	-17.0
4	131.00	21.4 QP	43.5	-22.1	1.00 V	15	36.8	-15.4
5	226.27	22.0 QP	46.0	-24.0	1.00 V	137	38.0	-16.0
6	722.07	36.9 QP	46.0	-9.1	2.00 V	15	40.1	-3.2

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

802.11n (HT20) + WCDMA Band II + NFC

CHANNEL	CH 157 + CH 9400 + CH 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	31.84	21.2 QP	40.0	-18.8	1.00 H	182	37.2	-16.0
2	57.12	24.2 QP	40.0	-15.8	1.50 H	234	38.7	-14.5
3	70.73	21.0 QP	40.0	-19.0	1.50 H	170	37.3	-16.3
4	131.00	23.1 QP	43.5	-20.4	1.50 H	19	38.5	-15.4
5	249.60	20.7 QP	46.0	-25.3	1.50 H	287	34.6	-13.9
6	714.29	29.7 QP	46.0	-16.3	2.00 H	333	33.1	-3.4

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	49.34	29.5 QP	40.0	-10.5	1.00 V	280	43.7	-14.2
2	103.78	21.7 QP	43.5	-21.8	1.00 V	33	39.6	-17.9
3	129.06	21.4 QP	43.5	-22.1	1.00 V	6	37.0	-15.6
4	181.55	17.1 QP	43.5	-26.4	1.00 V	201	31.8	-14.7
5	243.77	18.2 QP	46.0	-27.8	1.00 V	70	32.3	-14.1
6	722.07	35.9 QP	46.0	-10.1	2.00 V	6	39.1	-3.2

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

BT LE + WCDMA Band V + NFC

CHANNEL	CH 39 + CH 4132 + CH 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	31.84	19.7 QP	40.0	-20.3	1.49 H	181	35.7	-16.0
2	57.12	25.3 QP	40.0	-14.7	1.49 H	256	39.8	-14.5
3	70.73	21.0 QP	40.0	-19.0	1.49 H	209	37.3	-16.3
4	131.00	20.4 QP	43.5	-23.1	1.49 H	12	35.8	-15.4
5	255.44	19.5 QP	46.0	-26.5	1.00 H	283	33.2	-13.7
6	714.29	37.6 QP	46.0	-8.4	2.00 H	12	41.0	-3.4

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	31.84	22.2 QP	40.0	-17.8	1.50 V	257	38.2	-16.0
2	43.51	22.4 QP	40.0	-17.6	1.00 V	274	37.0	-14.6
3	57.12	22.1 QP	40.0	-17.9	1.00 V	307	36.6	-14.5
4	123.23	21.7 QP	43.5	-21.8	1.00 V	93	37.6	-15.9
5	173.78	17.2 QP	43.5	-26.3	1.00 V	184	31.2	-14.0
6	249.60	17.5 QP	46.0	-28.5	1.00 V	299	31.4	-13.9

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

BT LE + WCDMA Band II + NFC

CHANNEL	CH 39 + CH 9400 + CH 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	57.12	24.6 QP	40.0	-15.4	1.49 H	204	39.1	-14.5
2	70.73	21.1 QP	40.0	-18.9	1.49 H	230	37.4	-16.3
3	129.06	21.3 QP	43.5	-22.2	1.01 H	13	36.9	-15.6
4	197.11	20.1 QP	43.5	-23.4	1.49 H	112	35.9	-15.8
5	243.77	19.3 QP	46.0	-26.7	1.49 H	294	33.4	-14.1
6	714.29	34.1 QP	46.0	-11.9	1.01 H	241	37.5	-3.4

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	29.90	27.1 QP	40.0	-12.9	1.50 V	107	43.1	-16.0
2	62.95	22.6 QP	40.0	-17.4	1.50 V	52	37.7	-15.1
3	127.11	21.6 QP	43.5	-21.9	1.00 V	286	37.4	-15.8
4	175.72	18.0 QP	43.5	-25.5	1.00 V	178	32.3	-14.3
5	239.88	16.9 QP	46.0	-29.1	1.00 V	71	31.3	-14.4
6	722.07	35.7 QP	46.0	-10.3	1.00 V	208	38.9	-3.2

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

- Note:** 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 24, 2016	Oct. 23, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2016	Feb. 25, 2017
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- 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 Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

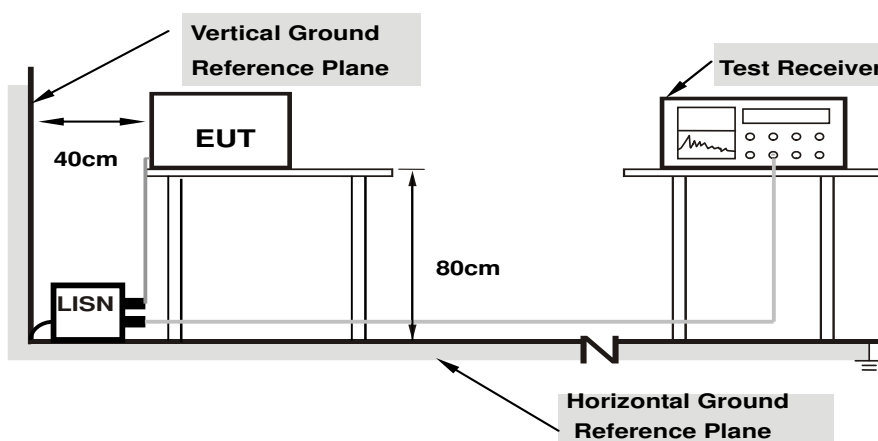
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

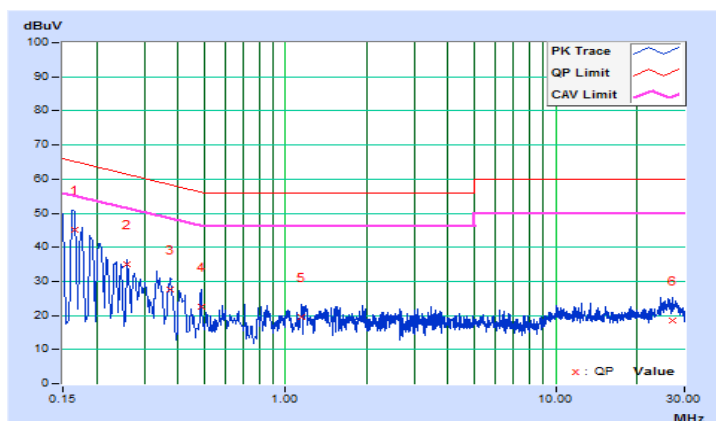
802.11g + WCDMA Band V + NFC

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 4132 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16564	10.18	35.01	19.96	45.19	30.14	65.18	55.18	-19.99	-25.04
2	0.25948	10.20	24.90	14.47	35.10	24.67	61.45	51.45	-26.35	-26.78
3	0.37678	10.22	17.33	12.69	27.55	22.91	58.35	48.35	-30.80	-25.44
4	0.48626	10.23	12.42	4.03	22.65	14.26	56.23	46.23	-33.58	-31.97
5	1.14614	10.28	9.16	2.14	19.44	12.42	56.00	46.00	-36.56	-33.58
6	27.06253	11.90	6.61	1.38	18.51	13.28	60.00	50.00	-41.49	-36.72

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

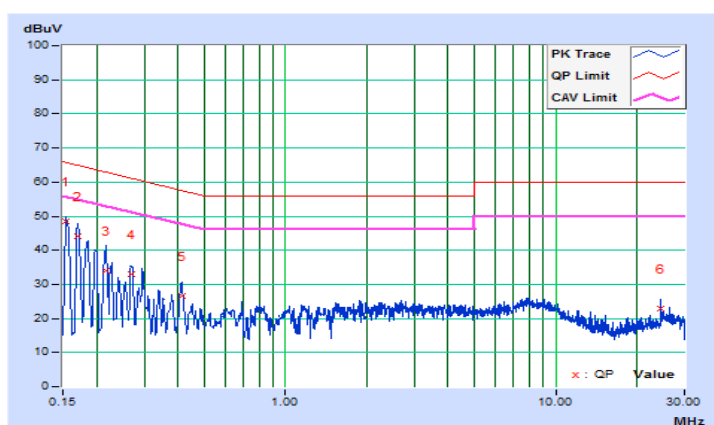


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 4132 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.19	38.13	23.34	48.32	33.53	65.79
2	0.16967	10.19	34.03	18.51	44.22	28.70	64.98	54.98	-20.76	-26.28
3	0.21647	10.20	23.96	11.45	34.16	21.65	62.95	52.95	-28.79	-31.30
4	0.26765	10.22	22.79	13.22	33.01	23.44	61.19	51.19	-28.18	-27.75
5	0.41197	10.29	16.31	8.42	26.60	18.71	57.61	47.61	-31.01	-28.90
6	24.49757	11.93	10.92	5.67	22.85	17.60	60.00	50.00	-37.15	-32.40

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



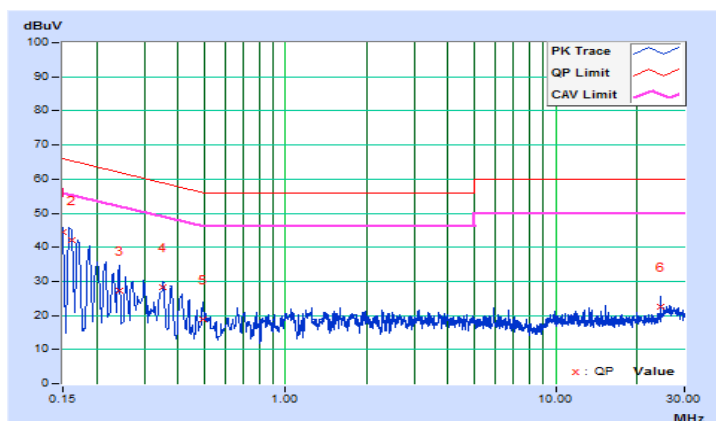
802.11g + WCDMA Band II + NFC

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 9400 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	10.17	34.20	20.77	44.37	30.94	66.00
2	0.16173	10.18	32.01	17.71	42.19	27.89	65.37	55.37	-23.18	-27.48
3	0.24384	10.20	17.12	6.68	27.32	16.88	61.96	51.96	-34.64	-35.08
4	0.35332	10.21	17.97	11.92	28.18	22.13	58.88	48.88	-30.70	-26.75
5	0.49454	10.23	8.72	2.73	18.95	12.96	56.09	46.09	-37.14	-33.13
6	24.47802	11.75	10.91	6.90	22.66	18.65	60.00	50.00	-37.34	-31.35

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

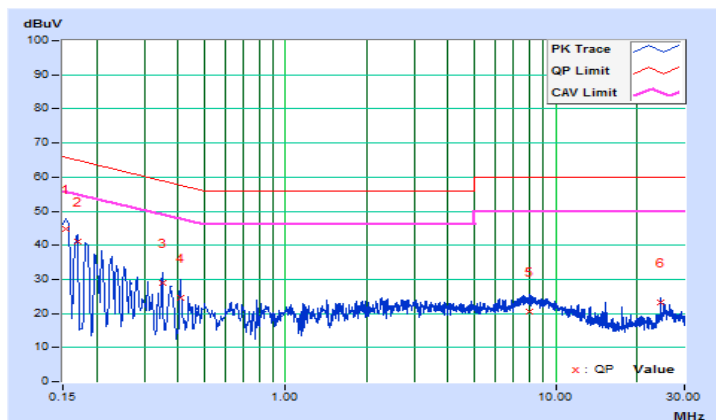


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 9400 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.19	34.67	20.98	44.86	31.17	65.79
2	0.16955	10.19	30.72	16.85	40.91	27.04	64.98	54.98	-24.07	-27.94
3	0.34941	10.26	18.83	10.44	29.09	20.70	58.98	48.98	-29.89	-28.28
4	0.40806	10.29	14.41	6.82	24.70	17.11	57.69	47.69	-32.99	-30.58
5	8.02083	10.73	9.73	4.33	20.46	15.06	60.00	50.00	-39.54	-34.94
6	24.48193	11.93	11.35	8.08	23.28	20.01	60.00	50.00	-36.72	-29.99

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



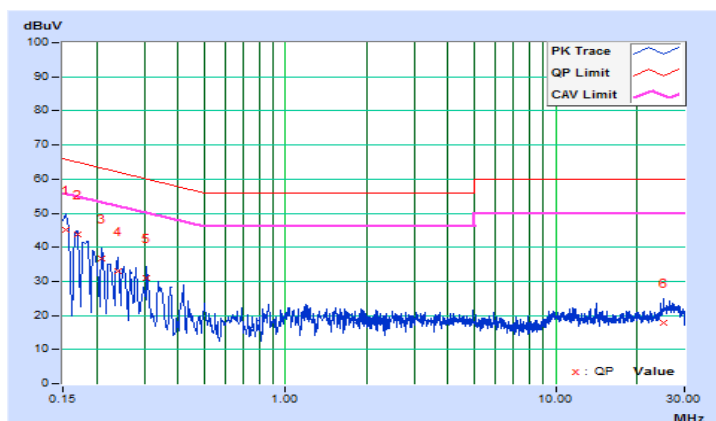
802.11n (HT20) + WCDMA Band V + NFC

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 157 + CH 9400 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.18	34.80	19.91	44.98	30.09	65.79
2	0.16955	10.18	33.60	19.45	43.78	29.63	64.98	54.98	-21.20	-25.35
3	0.20893	10.19	26.45	13.69	36.64	23.88	63.25	53.25	-26.61	-29.37
4	0.23993	10.20	22.85	12.24	33.05	22.44	62.10	52.10	-29.05	-29.66
5	0.30640	10.21	20.65	11.39	30.86	21.60	60.07	50.07	-29.21	-28.47
6	25.11535	11.78	5.92	0.44	17.70	12.22	60.00	50.00	-42.30	-37.78

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

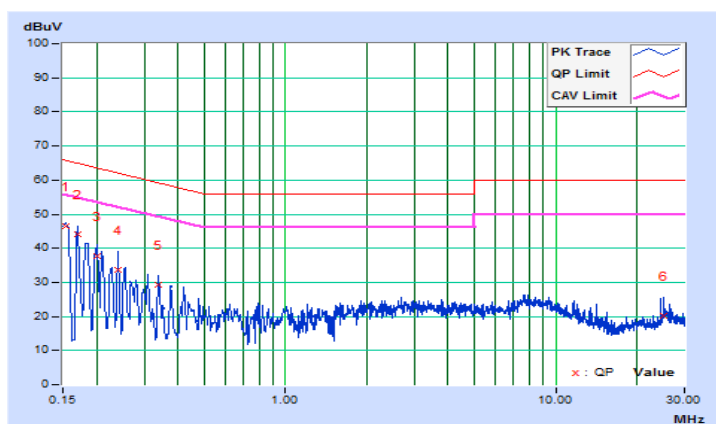


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 157 + CH 9400 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.19	36.11	20.48	46.30	30.67	65.79
2	0.16955	10.19	34.07	19.22	44.26	29.41	64.98	54.98	-20.72	-25.57
3	0.20084	10.19	27.45	14.98	37.64	25.17	63.58	53.58	-25.94	-28.41
4	0.23993	10.21	23.56	12.23	33.77	22.44	62.10	52.10	-28.33	-29.66
5	0.33768	10.26	18.87	8.51	29.13	18.77	59.26	49.26	-30.13	-30.49
6	25.20137	11.97	8.07	3.63	20.04	15.60	60.00	50.00	-39.96	-34.40

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



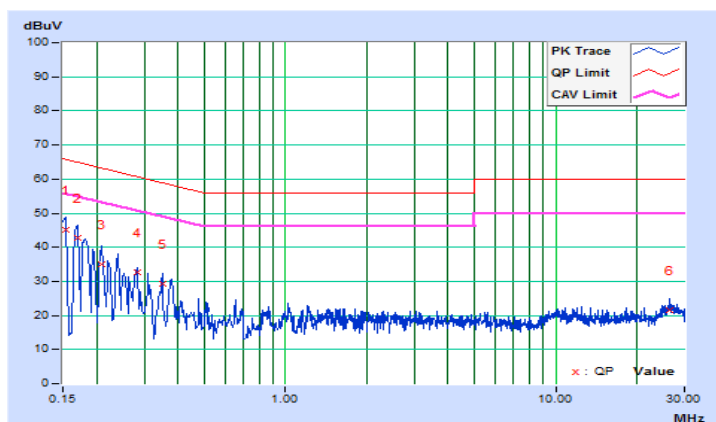
802.11n (HT20) + WCDMA Band II + NFC

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 157 + CH 9400 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.18	35.08	20.92	45.26	31.10	65.79	55.79	-20.53	-24.69
2	0.16955	10.18	32.52	18.57	42.70	28.75	64.98	54.98	-22.28	-26.23
3	0.20865	10.19	24.84	11.46	35.03	21.65	63.26	53.26	-28.23	-31.61
4	0.28288	10.20	22.59	14.04	32.79	24.24	60.73	50.73	-27.94	-26.49
5	0.34926	10.21	19.08	12.98	29.29	23.19	58.98	48.98	-29.69	-25.79
6	26.54641	11.87	9.64	2.59	21.51	14.46	60.00	50.00	-38.49	-35.54

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

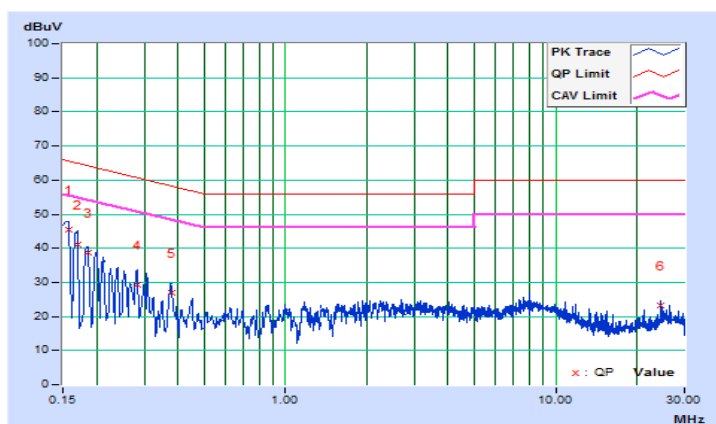


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 157 + CH 9400 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15782	10.19	35.33	20.50	45.52	30.69	65.58
2	0.16955	10.19	31.05	17.17	41.24	27.36	64.98	54.98	-23.74	-27.62
3	0.18508	10.19	28.42	15.38	38.61	25.57	64.25	54.25	-25.64	-28.68
4	0.28214	10.23	19.07	10.31	29.30	20.54	60.75	50.75	-31.45	-30.21
5	0.37700	10.28	16.50	12.59	26.78	22.87	58.35	48.35	-31.57	-25.48
6	24.48193	11.93	11.22	8.12	23.15	20.05	60.00	50.00	-36.85	-29.95

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



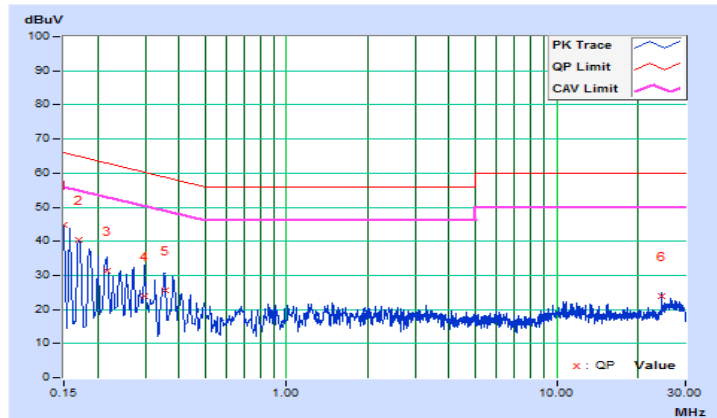
BT LE + WCDMA Band V + NFC

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 39 + CH 4132 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.17	34.71	20.02	44.88	30.19	66.00	56.00	-21.12	-25.81
2	0.16967	10.18	30.08	14.62	40.26	24.80	64.98	54.98	-24.72	-30.18
3	0.21621	10.19	21.26	6.90	31.45	17.09	62.96	52.96	-31.51	-35.87
4	0.29858	10.20	13.75	3.81	23.95	14.01	60.28	50.28	-36.33	-36.27
5	0.35389	10.21	15.34	8.10	25.55	18.31	58.87	48.87	-33.32	-30.56
6	24.47411	11.75	12.14	8.48	23.89	20.23	60.00	50.00	-36.11	-29.77

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

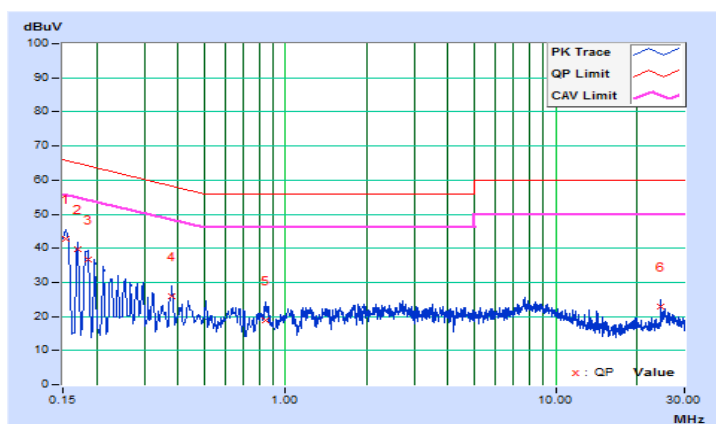


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 39 + CH 4132 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.19	32.70	19.24	42.89	29.43	65.79
2	0.16955	10.19	29.50	16.49	39.69	26.68	64.98	54.98	-25.29	-28.30
3	0.18508	10.19	26.53	13.79	36.72	23.98	64.25	54.25	-27.53	-30.27
4	0.38069	10.28	15.54	12.77	25.82	23.05	58.26	48.26	-32.44	-25.21
5	0.84598	10.28	8.44	3.24	18.72	13.52	56.00	46.00	-37.28	-32.48
6	24.47411	11.93	10.89	7.39	22.82	19.32	60.00	50.00	-37.18	-30.68

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



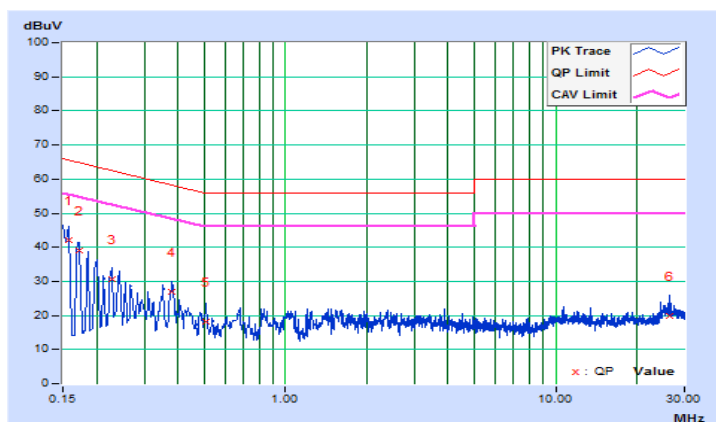
BT LE + WCDMA Band II + NFC

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 39 + CH 9400 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15782	10.18	31.97	17.93	42.15	28.11	65.58
2	0.17147	10.18	28.93	15.76	39.11	25.94	64.89	54.89	-25.78	-28.95
3	0.22820	10.19	20.29	9.80	30.48	19.99	62.51	52.51	-32.03	-32.52
4	0.38069	10.22	16.82	14.58	27.04	24.80	58.26	48.26	-31.22	-23.46
5	0.50972	10.23	8.07	2.10	18.30	12.33	56.00	46.00	-37.70	-33.67
6	26.53077	11.87	8.08	1.33	19.95	13.20	60.00	50.00	-40.05	-36.80

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

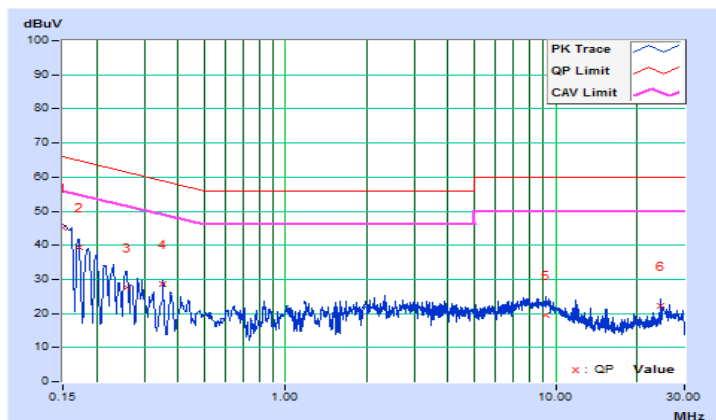


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 39 + CH 9400 + CH 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	10.18	34.88	21.00	45.06	31.18	66.00
2	0.17147	10.19	29.27	16.06	39.46	26.25	64.89	54.89	-25.43	-28.64
3	0.25948	10.22	17.26	6.36	27.48	16.58	61.45	51.45	-33.97	-34.87
4	0.35332	10.27	18.22	10.60	28.49	20.87	58.88	48.88	-30.39	-28.01
5	9.15864	10.78	8.59	3.74	19.37	14.52	60.00	50.00	-40.63	-35.48
6	24.47020	11.93	10.18	6.20	22.11	18.13	60.00	50.00	-37.89	-31.87

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



5 Pictures of Test Arrangements

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

Appendix – Information on 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 accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab

Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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