



BUREAU
VERITAS

Test Report No.: RF131118N067



TEST REPORT



Applicant	Lenovo Mobile Communication Technology Ltd.
Address	No.999, Qishan North 2nd Road, Information & Optoelectronics Park, Torch Hi-tech Industry Development Zone, Xiamen, P.R.China

Manufacturer or Supplier	Lenovo PC HK Limited
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Product	Lenovo Mobile Phone
Brand Name	lenovo
Model	Lenovo A316i
MID	31630031
FCC ID	YCNA316I
Additional Model & Model Difference	N/A
Date of tests	Nov. 18, 2013 ~ Nov. 21, 2013

the tests have been carried out according to the requirements of the following standard:

FCC Part 15, Subpart C (Section 15.247)

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Glyn He Project Engineer/ EMC Department	Approved by Sam Tung Manager / EMC Department
	 Date: Nov. 21, 2013

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Test Report No.: RF131118N067

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131118N067	Original release	Nov. 21, 2013



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.85dB at 4.54093MHz.
15.205 15.209	Restricted bands of operation & Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.6dB at 2400.00MHz
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted output power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.247(d)	Out of Band Emission Measurement	PASS	Meet the requirement of limit.

2 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	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.67dB
Radiated emissions	30MHz ~ 1GMHz	4.81dB
	1GHz ~ 18GHz	4.3dB
	18GHz ~ 40GHz	1.94dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Lenovo Mobile Phone
MODEL NO.	Lenovo A316i
MID	31630031
FCC ID	YCNA316I
NOMINAL VOLTAGE	5.0Vdc (adapter or host equipment) 3.7Vdc (Li-ion battery)
MODULATION TECHNOLOGY	DSSS, OFDM
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20)
PEAK POWER	20.94 dBm (Maximum)
ANTENNA TYPE	PIFA antenna with 1.7dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable 1: Shielded, Detachable, 1.0m USB cable 2: Shielded, Detachable, 0.6m Earphone cable: Unshielded, Detachable, 1.0m

NOTE:

1. WLAN, GSM, WCDMA technologies are used for the EUT.
2. The EUT was powered by the following adapter and USB cables:

ADAPTER	
BRAND:	Lenovo
MODEL:	C-P56
INPUT:	AC 100-240V, 50/60Hz,150mA
OUTPUT:	DC 5V, 1000mA
DC LINE:	N/A

USB Cable	Brand Name	Model Name	Signal Line
USB Cable 1	LUXSHARE PRECISION LIMITED	L4QU2008-CS-B	1 meter
USB Cable 2	FOXCONN	CUND002B-T307-EH	0.6 meter



3. The EUT provides one transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11n (HT20)	1TX

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

5. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.



3.2 DESCRIPTION OF TEST MODES

13 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412 MHz	8	2447 MHz
2	2417 MHz	9	2452 MHz
3	2422 MHz	10	2457 MHz
4	2427 MHz	11	2462 MHz
5	2432 MHz	12	2467 MHz
6	2437 MHz	13	2472 MHz
7	2442 MHz		

3.2.1. CONFIGURATION OF SYSTEM UNDER TEST

Please see section 5 photographs of the test configuration for reference.



3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports
The worst case was found when positioned on X axis for radiated emission. Following test modes were selected for the final test, and the final worst case is marked in boldface and recorded in the report:

EUT CONFIGURE MODE	APPLICABLE TO				MODE
	RE<1G	RE≥1G	PLC	APCM	
A	√	√	√	-	Adapter mode with WIFI function
B	-	-	-	√	Battery mode with WIFI function

Where **RE<1G**: Radiated Emission below 1GHz **RE≥1G**: Radiated Emission above 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

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, XYZ axis 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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11g	1 to 11	1	OFDM	BPSK	6.0	-

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, XYZ axis 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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0	-
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	-
A	802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5	-



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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11g	1 to 11	1	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

- 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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 11	CCK	DBPSK	1.0
A	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
A	802.11n HT20	1 to 11	1, 11	OFDM	BPSK	6.5

ANTENNA PORT CONDUCTED MEASUREMENT:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- 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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	802.11n HT20	1 to 11	1,6, 11	OFDM	BPSK	6.5



TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	25deg. C, 55%RH	120Vac, 60Hz	Blue
RE≥1G	25deg. C, 55%RH	120Vac, 60Hz	Blue
PLC	25deg. C, 55%RH	120Vac, 60Hz	Blue
APCM	25deg. C, 60%RH	DC 3.7V From Battery	Venless Long

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

- FCC Part 15, Subpart C (15.247)**
- 558074 D01 DTS Meas Guidance**
- ANSI C63.10-2009**

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.

3.4 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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	5P2PM2X	12400120329	N/A
2	Mouse	DELL	M056UOA	01688082	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1.	AC Line :Unshielded, Detachable,1.5m;DC Line: Unshielded, Undetachable,1.8m;
2	USB Line: Unshielded, Undetachable,1.5m.



4 TEST TYPES AND RESULTS

4.4 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU 26	100005	May 14,13	May 13,14
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	May 14,13	May 13,14
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	May 14,13	May 13,14
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in Shielding Room 553.



4.1.3 TEST PROCEDURES

- a. 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.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

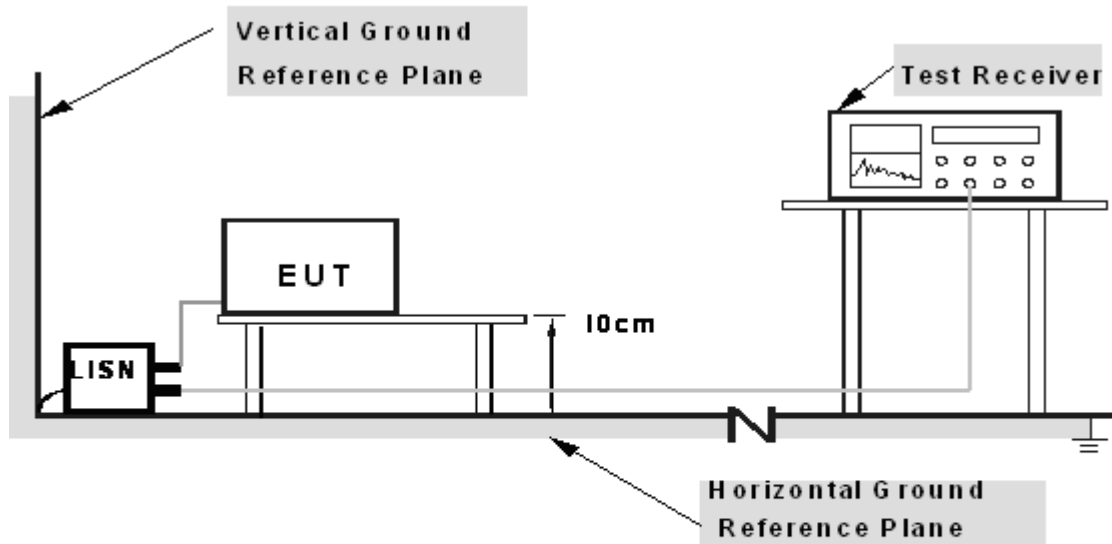
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.



4.1.5 TEST SETUP



- Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

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

4.1.6 EUT OPERATING CONDITIONS

- Turned on the power and connected of all equipment.
- EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.



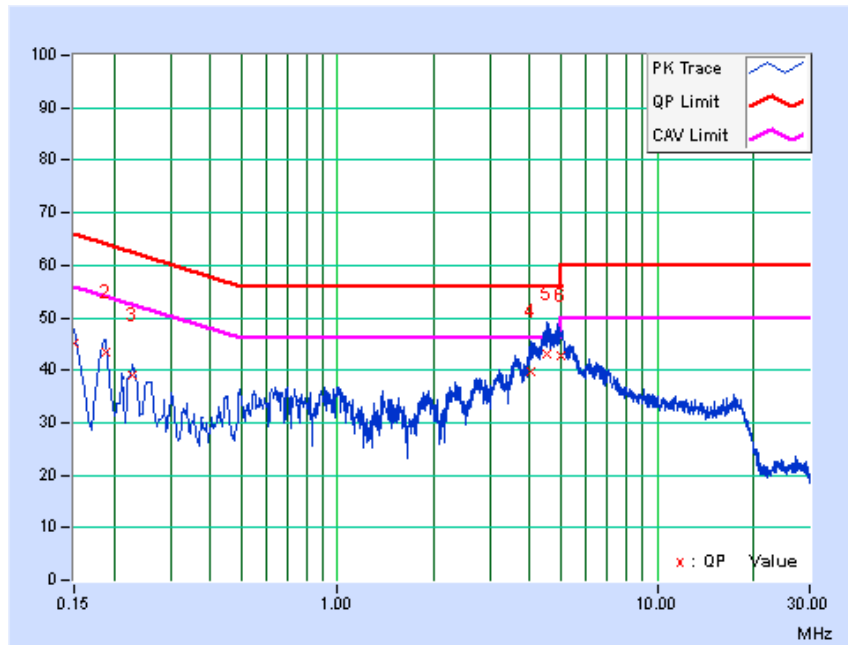
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA:

PHASE	Line (L)	6dB BANDWIDTH	9kHz
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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	10.64	34.56	22.76	45.20	33.40	66.00	56.00	-20.80	-22.60
2	0.18910	10.56	32.71	22.99	43.27	33.55	64.08	54.08	-20.80	-20.52
3	0.22851	10.47	28.65	19.32	39.12	29.79	62.50	52.50	-23.38	-22.71
4	4.05218	9.93	29.78	17.27	39.71	27.20	56.00	46.00	-16.29	-18.80
5	4.54093	9.94	33.21	20.46	43.15	30.40	56.00	46.00	-12.85	-15.60
6	5.00000	9.95	32.75	21.09	42.70	31.04	56.00	46.00	-13.30	-14.96

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

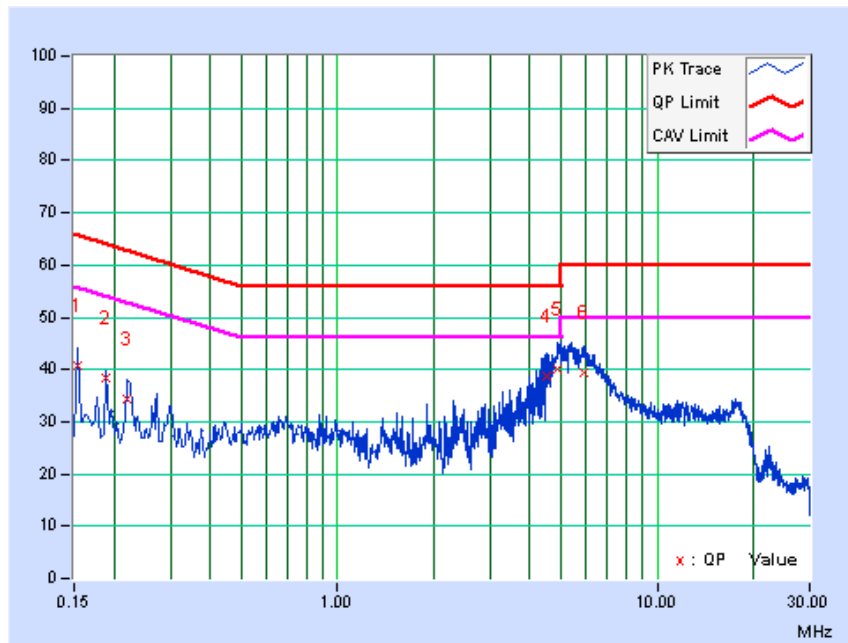




PHASE	Neutral (N)	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.53	30.27	17.54	40.80	28.07	65.79	55.79	-24.98	-27.71
2	0.18910	10.45	27.93	16.84	38.38	27.29	64.08	54.08	-25.69	-26.78
3	0.22024	10.40	23.82	12.98	34.22	23.38	62.81	52.81	-28.59	-29.43
4	4.51747	9.76	28.92	17.44	38.68	27.20	56.00	46.00	-17.32	-18.80
5	4.86933	9.77	30.21	18.33	39.98	28.10	56.00	46.00	-16.02	-17.90
6	5.87424	9.86	29.64	22.14	39.50	32.00	60.00	50.00	-20.50	-18.00

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.





4.4 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

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. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Agilent	E4446A	MY46180622	Apr. 24,13	Apr. 23,14
EMI Test Receiver	Rohde&Schwarz	ESVD	847398/003	May 14,13	May 13,14
Bilog Antenna	Teseq	CBL 6111D	27089	Jul. 27, 13	Jul. 26, 14
Horn Antenna (1GHz -18GHz)	EMCO	3117	00062558	Oct.18,12	Oct.17,14
Pre-Amplifier (20MHz-3GHz)	EMCI	EMC 330	980095	Nov. 02,13	Nov.01,14
Pre-Amplifier (100MHz-26.5GHz)	Agilent	8449B	3008A00409	May 14,13	May 13,14
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8 .8m	NSEMC006	Mar. 24,13	Mar. 23,14
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 31,13	Oct. 30,14
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	Feb. 18,13	Feb. 18,14
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,13	Nov. 03,14
Test Software	ADT	ADT_Radiated _V7.6.15	N/A	N/A	N/A

NOTE: 1. The calibration interval of the above test instruments is 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in Chamber 10m.

3. The FCC Site Registration No. is 502831.



4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. 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 antenna is a broadband antenna, and its height 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

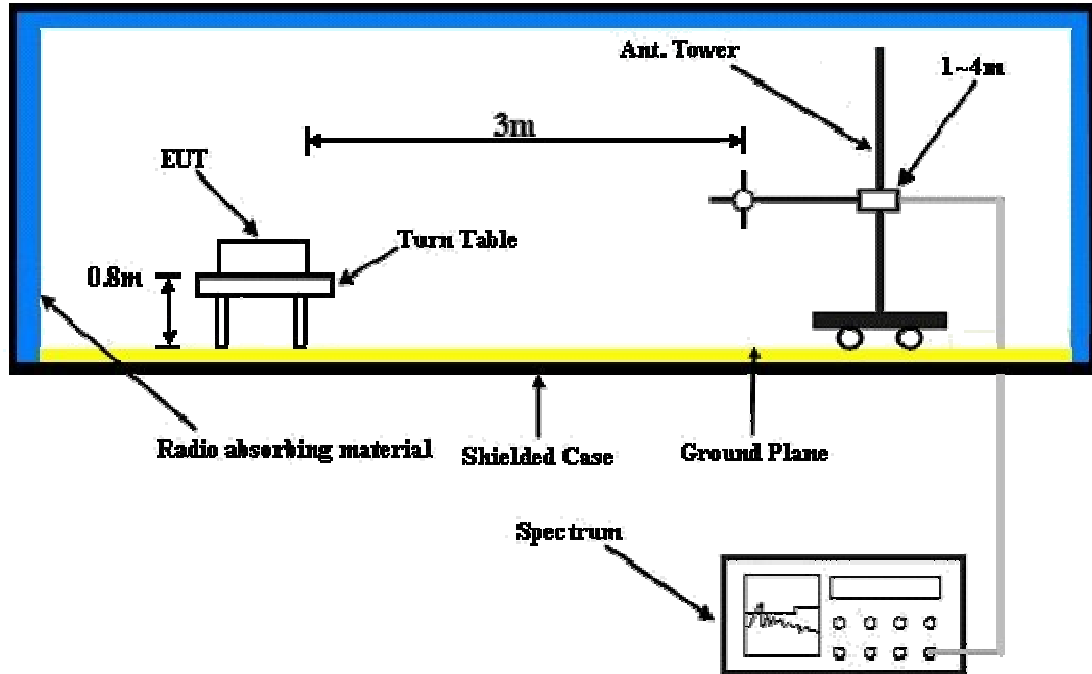
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation



4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

- Set the EUT under full load condition and placed them on a testing table.
- Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.



4.2.7 TEST RESULTS

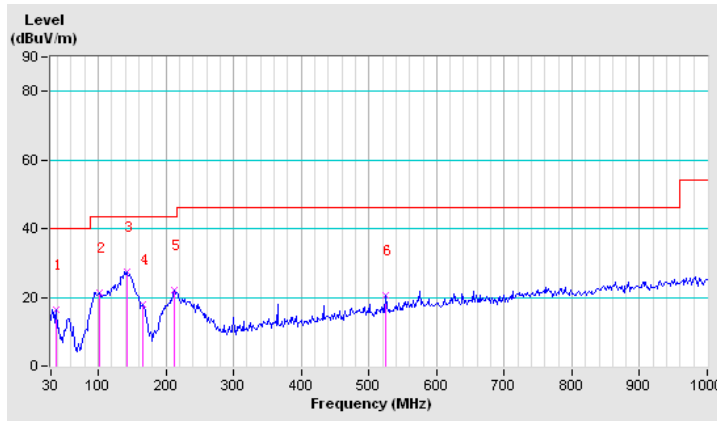
BELOW 1GHz WORST-CASE DATA: 802.11g- CH1

CHANNEL	TX Channel 6	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	38.08	16.5 QP	40.0	-23.6	1.00 H	190	0.95	15.50
2	101.13	21.3 QP	43.5	-22.2	1.00 H	205	9.84	11.45
3	141.55	27.5 QP	43.5	-16.0	1.00 H	219	14.73	12.81
4	165.80	17.9 QP	43.5	-25.6	1.00 H	158	6.47	11.44
5	212.68	22.0 QP	43.5	-21.5	1.00 H	173	11.00	11.00
6	524.70	20.7 QP	46.0	-25.3	1.00 H	135	-0.49	21.18

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.



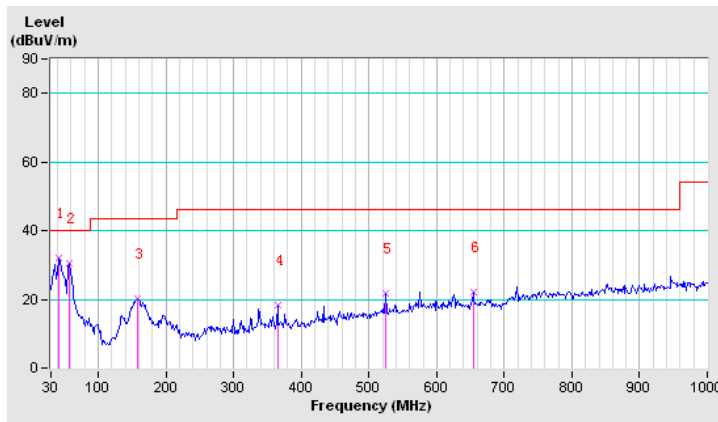


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	41.32	32.0 QP	40.0	-8.0	1.00 V	15	18.37	13.64
2	57.48	30.6 QP	40.0	-9.4	1.00 V	27	21.68	8.88
3	157.72	20.1 QP	43.5	-23.4	1.00 V	42	8.19	11.95
4	364.65	18.3 QP	46.0	-27.7	1.00 V	56	1.10	17.16
5	524.70	21.6 QP	46.0	-24.4	1.00 V	70	0.45	21.18
6	654.03	22.1 QP	46.0	-23.9	1.00 V	88	-1.91	23.97

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.





ABOVE 1GHz DATA

802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	48.4 PK	74.0	-25.6	1.00 H	176	9.96	38.44
2	2390.00	37.5 AV	54.0	-16.5	1.00 H	176	-0.94	38.44
3	#2400.00	62.2 PK	81.8	-19.6	1.00 H	176	23.74	38.46
4	#2400.00	56.5 AV	78.2	-21.7	1.00 H	176	18.04	38.46
5	*2412.00	101.8 PK			1.00 H	176	63.31	38.49
6	*2412.00	98.2 AV			1.00 H	176	59.71	38.49
7	4824.00	55.6 PK	74.0	-18.4	1.00 H	200	12.11	43.49
8	4824.00	41.5 AV	54.0	-12.5	1.00 H	200	-1.99	43.49

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	48.2 PK	74.0	-25.8	1.00 V	171	9.76	38.44
2	2390.00	35.8 AV	54.0	-18.2	1.00 V	171	-2.64	38.44
3	#2400.00	61.0 PK	80.5	-19.5	1.00 V	171	22.54	38.46
4	#2400.00	53.8 AV	77.2	-23.4	1.00 V	171	15.34	38.46
5	*2412.00	100.5 PK			1.00 V	171	62.01	38.49
6	*2412.00	97.2 AV			1.00 V	171	58.71	38.49
7	4824.00	53.4 PK	74.0	-20.6	1.00 V	320	9.91	43.49
8	4824.00	40.3 AV	54.0	-13.7	1.00 V	320	-3.19	43.49

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	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	102.3 PK			1.00 H	250	63.76	38.54
2	*2437.00	98.4 AV			1.00 H	250	59.86	38.54
3	4874.00	52.4 PK	74.0	-21.6	1.00 H	210	8.86	43.54
4	4874.00	38.7 AV	54.0	-15.3	1.00 H	210	-4.84	43.54
5	7311.00	57.6 PK	74.0	-16.4	1.00 H	175	9.54	48.06
6	7311.00	43.5 AV	54.0	-10.5	1.00 H	175	-4.56	48.06
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	*2437.00	100.0 PK			1.00 V	314	61.46	38.54
2	*2437.00	96.7 AV			1.00 V	314	58.16	38.54
3	4874.00	51.3 PK	74.0	-22.7	1.05 V	300	7.76	43.54
4	4874.00	37.6 AV	54.0	-16.4	1.05 V	300	-5.94	43.54
5	7311.00	56.8 PK	74.0	-17.2	1.10 V	325	8.74	48.06
6	7311.00	42.1 AV	54.0	-11.9	1.10 V	325	-5.96	48.06

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.



CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	101.2 PK			1.00 H	125	62.61	38.59
2	*2462.00	97.9 AV			1.00 H	125	59.31	38.59
3	2483.50	54.8 PK	74.0	-19.2	1.00 H	125	16.16	38.64
4	2483.50	46.0 AV	54.0	-8.0	1.00 H	125	7.36	38.64
5	4924.00	51.8 PK	74.0	-22.2	1.00 H	214	8.21	43.59
6	4924.00	38.6 AV	54.0	-15.4	1.00 H	214	-4.99	43.59
7	7386.00	55.5 PK	74.0	-18.5	1.00 H	155	7.39	48.11
8	7386.00	41.7 AV	54.0	-12.3	1.00 H	155	-6.41	48.11

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	*2462.00	98.8 PK			1.00 V	146	60.21	38.59
2	*2462.00	95.9 AV			1.00 V	146	57.31	38.59
3	2483.50	54.3 PK	74.0	-19.7	1.00 V	223	15.66	38.64
4	2483.50	45.2 AV	54.0	-8.8	1.00 V	223	6.56	38.64
5	4924.00	52.8 PK	74.0	-21.2	1.00 V	215	9.21	43.59
6	4924.00	39.6 AV	54.0	-14.4	1.00 V	215	-3.99	43.59
7	7386.00	56.2 PK	74.0	-17.8	1.00 V	250	8.09	48.11
8	7386.00	41.8 AV	54.0	-12.2	1.00 V	250	-6.31	48.11

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.



802.11g

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	68.3 PK	74.0	-5.7	1.00 H	172	29.86	38.44
2	2390.00	49.3 AV	54.0	-4.7	1.00 H	172	10.86	38.44
3	#2400.00	77.6 PK	84.6	-7.0	1.00 H	172	39.14	38.46
4	#2400.00	64.7 AV	76.3	-11.6	1.00 H	172	26.24	38.46
5	*2412.00	104.6 PK			1.00 H	260	66.11	38.49
6	*2412.00	96.3 AV			1.00 H	260	57.81	38.49
7	4824.00	54.7 PK	74.0	-19.3	1.00 H	25	11.21	43.49
8	4824.00	39.4 AV	54.0	-14.6	1.00 H	25	-4.09	43.49

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	64.8 PK	74.0	-9.2	1.00 V	264	26.36	38.44
2	2390.00	48.9 AV	54.0	-5.1	1.00 V	264	10.46	38.44
3	#2400.00	78.3 PK	83.5	-5.2	1.00 V	264	39.84	38.46
4	#2400.00	62.3 AV	74.8	-12.5	1.00 V	264	23.84	38.46
5	*2412.00	103.5 PK			1.00 V	264	65.01	38.49
6	*2412.00	94.8 AV			1.00 V	264	56.31	38.49
7	4824.00	54.9 PK	74.0	-19.1	1.00 V	240	11.41	43.49
8	4824.00	38.8 AV	54.0	-15.2	1.00 V	240	-4.69	43.49

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	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	105.2 PK			1.00 H	185	66.66	38.54
2	*2437.00	96.8 AV			1.00 H	185	58.26	38.54
3	4874.00	54.1 PK	74.0	-19.9	1.00 H	295	10.56	43.54
4	4874.00	39.7 AV	54.0	-14.3	1.00 H	295	-3.84	43.54
5	7311.00	58.6 PK	74.0	-15.4	1.00 H	152	10.54	48.06
6	7311.00	44.5 AV	54.0	-9.5	1.00 H	152	-3.56	48.06
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	*2437.00	102.5 PK			1.00 V	142	63.96	38.54
2	*2437.00	94.5 AV			1.00 V	142	55.96	38.54
3	4874.00	54.3 PK	74.0	-19.7	1.00 V	140	10.76	43.54
4	4874.00	45.1 AV	54.0	-8.9	1.00 V	140	1.56	43.54
5	7311.00	57.6 PK	74.0	-16.4	1.00 V	0	9.54	48.06
6	7311.00	43.7 AV	54.0	-10.3	1.00 V	0	-4.36	48.06

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.



CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	108.7 PK			1.69 H	170	70.11	38.59
2	*2462.00	99.7 AV			1.69 H	170	61.11	38.59
3	2483.50	65.5 PK	74.0	-8.5	1.69 H	170	26.86	38.64
4	2483.50	48.9 AV	54.0	-5.1	1.69 H	170	10.26	38.64
5	4924.00	52.3 PK	74.0	-21.7	1.00 H	350	8.71	43.59
6	4924.00	41.4 AV	54.0	-12.6	1.00 H	350	-2.19	43.59
7	7386.00	55.2 PK	74.0	-18.8	1.00 H	325	7.09	48.11
8	7386.00	43.1 AV	54.0	-10.9	1.00 H	325	-5.01	48.11

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	*2462.00	105.2 PK			1.20 V	140	66.61	38.59
2	*2462.00	96.5 AV			1.20 V	140	57.91	38.59
3	2483.50	65.8 PK	74.0	-8.2	1.20 V	140	27.16	38.64
4	2483.50	47.3 AV	54.0	-6.7	1.20 V	140	8.66	38.64
5	4924.00	53.6 PK	74.0	-20.4	1.00 V	200	10.01	43.59
6	4924.00	41.7 AV	54.0	-12.3	1.00 V	200	-1.89	43.59
7	7386.00	54.8 PK	74.0	-19.2	1.00 V	211	6.69	48.11
8	7386.00	42.6 AV	54.0	-11.4	1.00 V	211	-5.51	48.11

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.



802.11n (20MHz)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	69.7 PK	74.0	-4.3	1.84 H	154	31.26	38.44
2	2390.00	50.0 AV	54.0	-4.0	1.84 H	154	11.56	38.44
3	#2400.00	76.5 PK	83.8	-7.3	1.84 H	154	38.04	38.46
4	#2400.00	59.3 AV	74.8	-15.5	1.84 H	154	20.84	38.46
5	*2412.00	103.8 PK			1.84 H	154	65.31	38.49
6	*2412.00	94.8 AV			1.84 H	154	56.31	38.49
7	4824.00	56.4 PK	74.0	-17.6	1.84 H	148	12.91	43.49
8	4824.00	42.7 AV	54.0	-11.3	1.84 H	148	-0.79	43.49
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	66.6 PK	74.0	-7.4	1.00 V	92	28.16	38.44
2	2390.00	48.2 AV	54.0	-5.8	1.00 V	92	9.76	38.44
3	#2400.00	71.0 PK	74.6	-3.6	1.00 V	92	32.54	38.46
4	#2400.00	54.1 AV	65.5	-11.4	1.00 V	92	15.64	38.46
5	*2412.00	94.6 PK			1.00 V	92	56.11	38.49
6	*2412.00	85.5 AV			1.00 V	92	47.01	38.49
7	4824.00	53.2 PK	74.0	-20.8	1.00 V	33	9.71	43.49
8	4824.00	40.4 AV	54.0	-13.6	1.00 V	33	-3.09	43.49

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	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	103.6 PK			1.68 H	177	65.06	38.54
2	*2437.00	93.4 AV			1.68 H	177	54.86	38.54
3	4874.00	58.1 PK	74.0	-15.9	1.68 H	156	14.56	43.54
4	4874.00	43.5 AV	54.0	-10.5	1.68 H	156	-0.04	43.54
5	7311.00	56.8 PK	74.0	-17.2	1.00 H	213	8.74	48.06
6	7311.00	43.8 AV	54.0	-10.2	1.00 H	213	-4.26	48.06
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	*2437.00	95.4 PK			1.00 V	75	56.86	38.54
2	*2437.00	85.1 AV			1.00 V	75	46.56	38.54
3	4874.00	51.5 PK	74.0	-22.5	1.00 V	56	7.96	43.54
4	4874.00	40.2 AV	54.0	-13.8	1.00 V	56	-3.34	43.54
5	7311.00	58.1 PK	74.0	-15.9	1.00 V	163	10.04	48.06
6	7311.00	43.9 AV	54.0	-10.1	1.00 V	163	-4.16	48.06

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.



CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	103.2 PK			1.77 H	161	64.61	38.59
2	*2462.00	93.5 AV			1.77 H	161	54.91	38.59
3	2483.50	64.1 PK	74.0	-9.9	1.77 H	161	25.46	38.64
4	2483.50	46.5 AV	54.0	-7.5	1.77 H	161	7.86	38.64
5	4924.00	57.3 PK	74.0	-16.7	1.77 H	150	13.71	43.59
6	4924.00	43.3 AV	54.0	-10.7	1.77 H	150	-0.29	43.59
7	7386.00	57.1 PK	74.0	-16.9	1.15 H	286	8.99	48.11
8	7386.00	44.8 AV	54.0	-9.2	1.15 H	286	-3.31	48.11

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	*2462.00	94.8 PK			1.00 V	80	56.21	38.59
2	*2462.00	85.0 AV			1.00 V	80	46.41	38.59
3	2483.50	57.8 PK	74.0	-16.2	1.00 V	80	19.16	38.64
4	2483.50	44.4 AV	54.0	-9.6	1.00 V	80	5.76	38.64
5	4924.00	51.8 PK	74.0	-22.2	1.00 V	57	8.21	43.59
6	4924.00	40.1 AV	54.0	-13.9	1.00 V	57	-3.49	43.59
7	7386.00	57.8 PK	74.0	-16.2	1.00 V	155	9.69	48.11
8	7386.00	44.9 AV	54.0	-9.1	1.00 V	155	-3.21	48.11

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.



4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer (9KHz-40GHz)	Agilent	E4446A	MY46180622	Apr. 24,13	Apr. 23,14
Spectrum Analyzer (9KHz-25GHz)	Agilent	E7405A	MY45118807	May 14,13	May 13,14
Power Meter	Anritsu	ML2495A	1139001	Nov. 04,13	Nov. 03,14
Power Sensor	Anritsu	MA2411B	1126068	Nov. 04,13	Nov. 03,14
Digital Multimeter	FLUKE	15B	A1220010D G	Oct. 31,13	Oct. 30,14

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in Oven room

4.3.3 TEST PROCEDURE

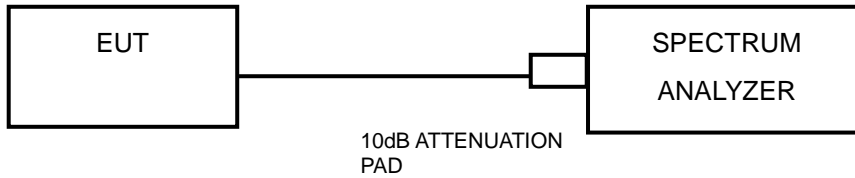
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.4 .DEVIATION FROM TEST STANDARD

No deviation.



4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	10.61	0.5	PASS
6	2437	11.09	0.5	PASS
11	2462	11.56	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.29	0.5	PASS
6	2437	16.08	0.5	PASS
11	2462	16.07	0.5	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.76	0.5	PASS
6	2437	15.68	0.5	PASS
11	2462	15.97	0.5	PASS

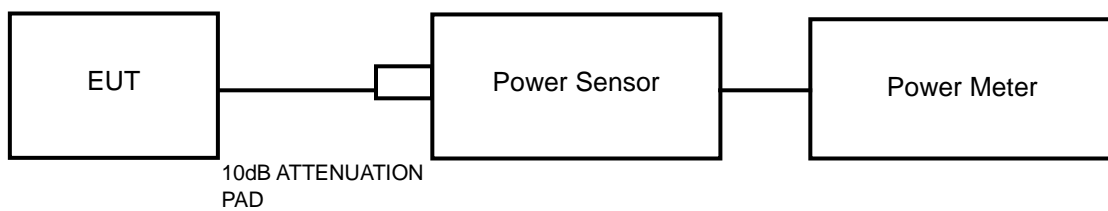


4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm)

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.4.4 TEST PROCEDURES

A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as item 4.3.6.



4.4.7 TEST RESULTS

4.4.7.1 MAXIMUM PEAK OUTPUT POWER

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.03	30	PASS
6	2437	18.47	30	PASS
11	2462	18.56	30	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	20.94	30	PASS
6	2437	20.76	30	PASS
11	2462	20.90	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.69	30	PASS
6	2437	18.68	30	PASS
11	2462	18.33	30	PASS



4.4.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	15.18	N/A
6	2437	15.50	N/A
11	2462	15.62	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	13.75	N/A
6	2437	13.52	N/A
11	2462	13.33	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	11.05	N/A
6	2437	10.87	N/A
11	2462	10.50	N/A

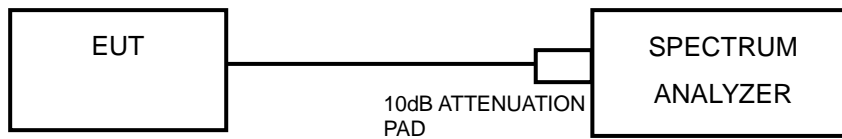


4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

1. Set the RBW = 100 kHz, VBW = 300 kHz, Detector = peak.
2. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
3. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(3 \text{ kHz}/100\text{kHz})$

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as item 4.3.6



4.5.7 TEST RESULTS

802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	5.14	8	PASS
6	2437	5.03	8	PASS
11	2462	5.19	8	PASS

802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	0.01	8	PASS
6	2437	-0.46	8	PASS
11	2462	-0.57	8	PASS

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-3.53	8	PASS
6	2437	-3.35	8	PASS
11	2462	-3.53	8	PASS

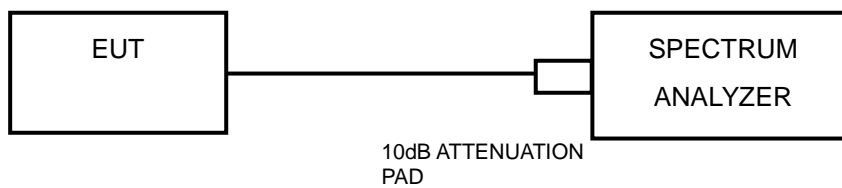


4.6 OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW \geq 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.



MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Ensure that the number of measurement points \geq span/RBW
4. According to measurement points to set differ measurement span.
5. Detector = peak.
6. Trace Mode = max hold.
7. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as item 4.3.6

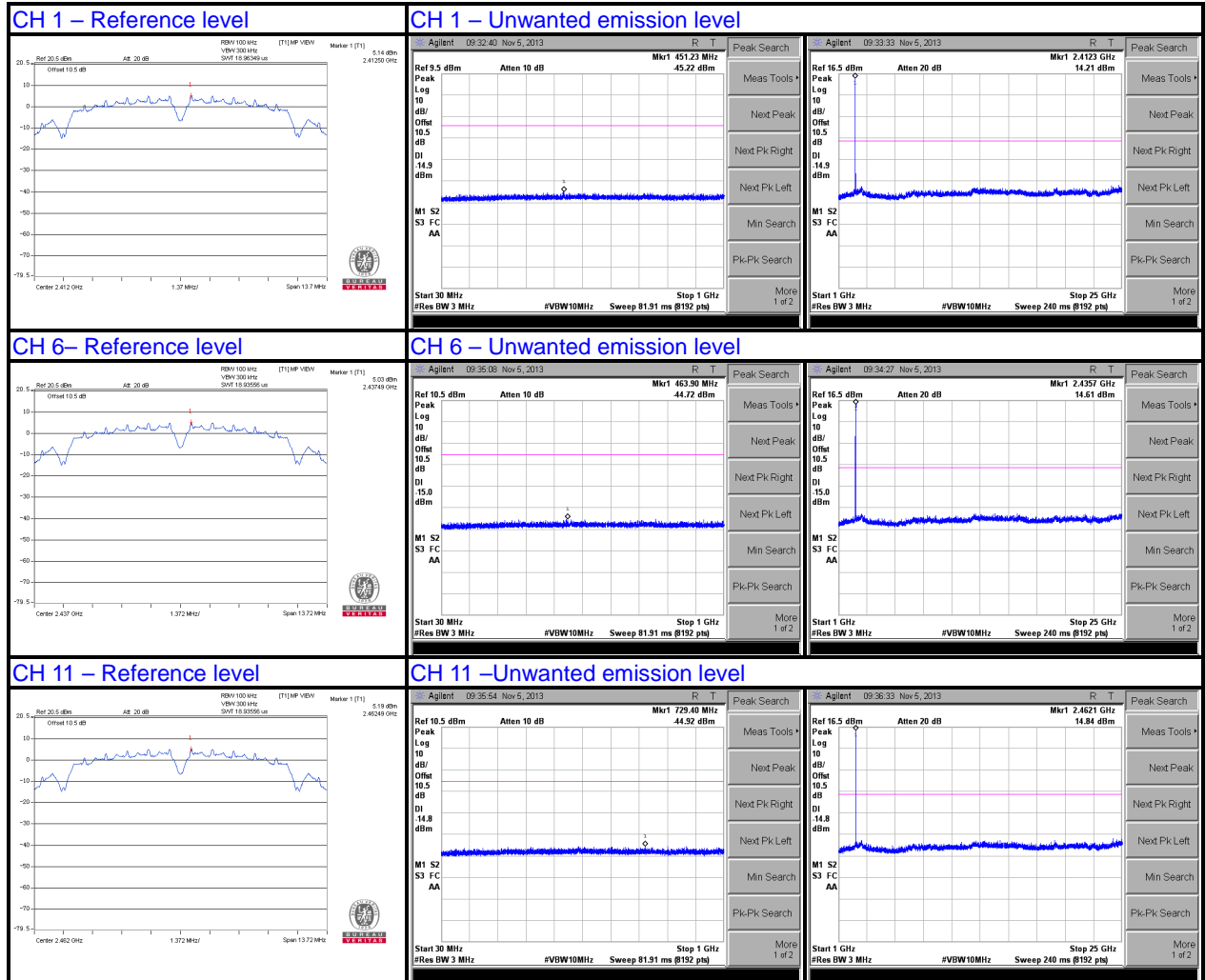


BUREAU VERITAS

Test Report No.: RF131118N067

4.6.7 TEST RESULTS

802.11b

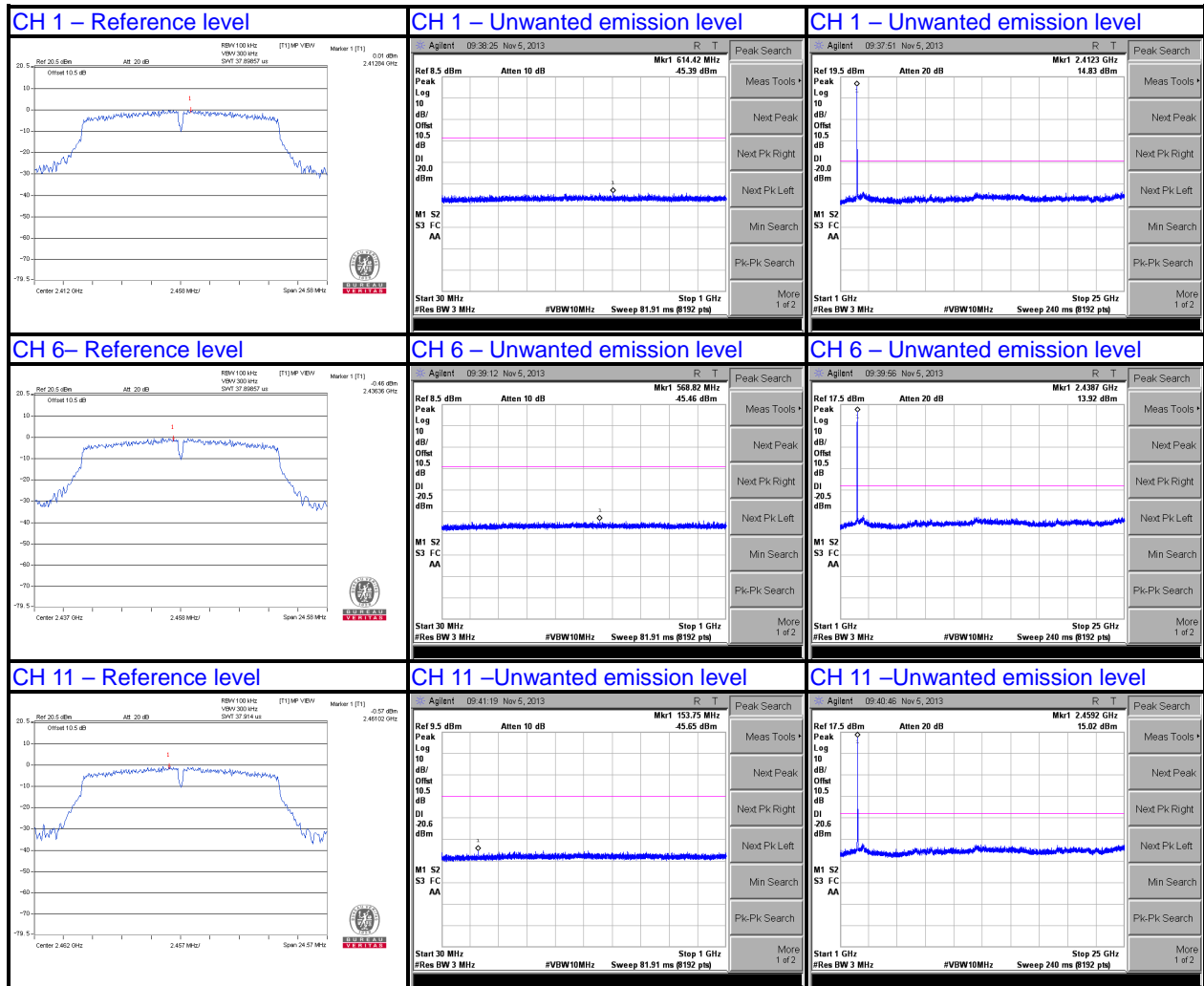




BUREAU VERITAS

Test Report No.: RF131118N067

802.11g

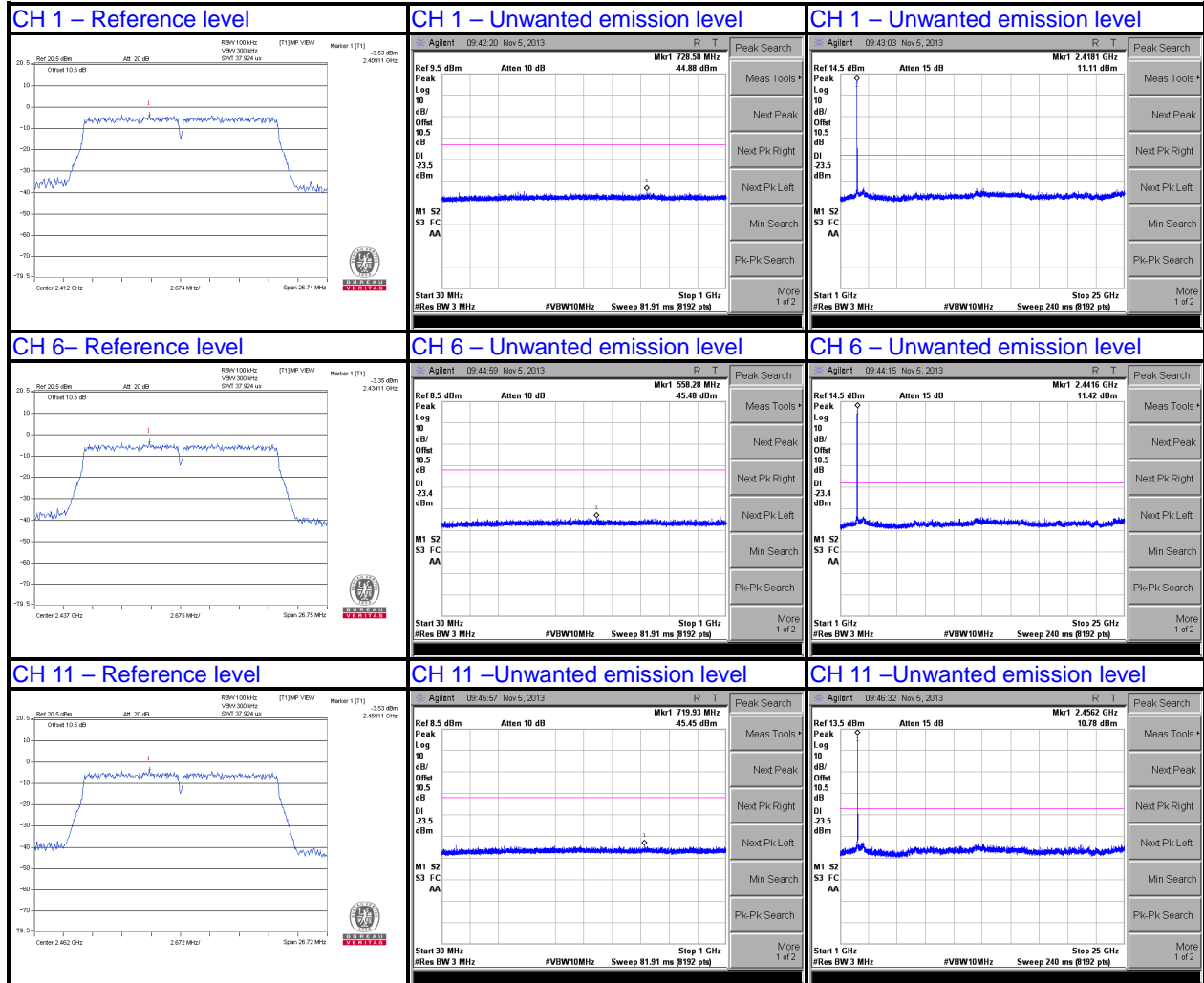




BUREAU VERITAS

Test Report No.: RF131118N067

802.11n (20MHz)





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Test Report No.: RF131118N067

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



**BUREAU
VERITAS**

Test Report No.: RF131118N067

6 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---