



BUREAU
VERITAS

Test Report No.: RF130807N055



Test Lab
Cert 2951.01

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	Wireless Display Adapter
Brand Name	lenovo
Model	WD100
Additional Model & Model Difference	N/A
Date of tests	Aug. 08 ~ Aug. 26 , 2013

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

FCC Part 15, Subpart C, Section 15.247(Oct. 09, 2012)

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

Tested by Venless Long Project Engineer / EMC Department	Approved by Glyn He Supervisor/ EMC Department
	 Date: Aug. 26, 2013

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Test Report No.: RF130807N055

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130807N055	Original release	Aug. 26 , 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 -18.21dB at 0.18519MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.4dB at 2390MHz
15.247(d)	Out of band Measurement	PASS	Meet the requirement of limit.
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.
15.203	Antenna Requirement	PASS	WLAN No antenna connector is used

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	9KHz ~ 30MHz	1.24dB
	30MHz ~ 1GMHz	4.81dB
	1GHz ~ 18GHz	4.3 dB
	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	Wireless Display Adapter
MODEL NO.	WD100
FCC ID	YCNWD100
NOMINAL VOLTAGE	DC 5V from USB
SW VERSION	1.2.00.30N
HW VERSION	MAP220_TACO_DONGLE_20130703-R-02
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) 2422-2452MHz for 11n(HT40)
PEAK POWER	21.49dBm (Maximum)
ANTENNA TYPE	PCB antenna; 0.7dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: shielded, detachable, 1m, with one core HDMI cable: shielded detachable, 0.2m

NOTE:

1. The EUT provides one transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX/1RX
802.11g	1TX/1RX
802.11n (HT20)	1TX/1RX
802.11n (HT40)	1TX/1RX

2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. 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

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

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

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		



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	√	√	√	√	Powered by USB with wifi link

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	X

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	X
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	X
A	802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5	X
A	802.11n HT40	3 to 9	3, 6, 9	OFDM	BPSK	13.5	X



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	11	OFDM	BPSK	6.0

OUT OF BAND 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
A	802.11n HT40	3 to 9	3, 9	OFDM	BPSK	13.5

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
A	802.11n HT40	3 to 9	3,6, 9	OFDM	BPSK	13.5



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TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	24deg. C, 54%RH	120Vac, 60Hz	Endy.Xie
RE≥1G	24deg. C, 54%RH	120Vac, 60Hz	Endy.Xie
PLC	27deg. C, 65%RH	120Vac, 60Hz	Bin Wei
APCM	25deg. C, 60%RH	120Vac, 60Hz	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, Section 15.247(2012-10)

558074 D01 DTS Meas Guidance v03r01

ANSI C63.10-2009

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

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	Monitor	Lenovo	LT2452pwC	3M05184C4200186	N/A
2	Adapter	KPTEC	K06S050100U	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable, 1.5m



4 TEST TYPES AND RESULTS

4.1 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_Conc_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.

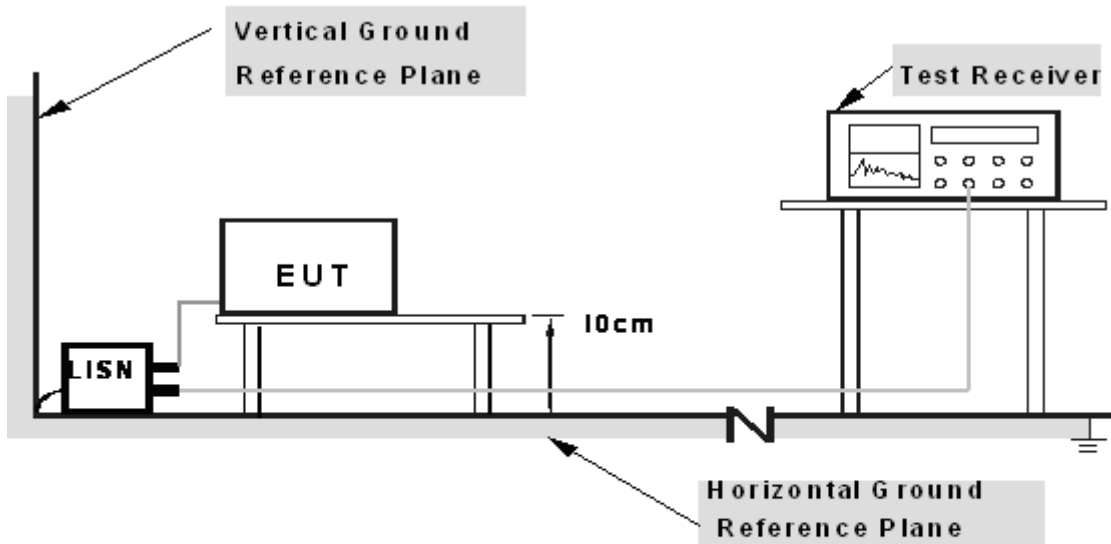
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

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 all equipment.
- EUT was operated according to the type described in manufacturer's specifications or the user's manual.



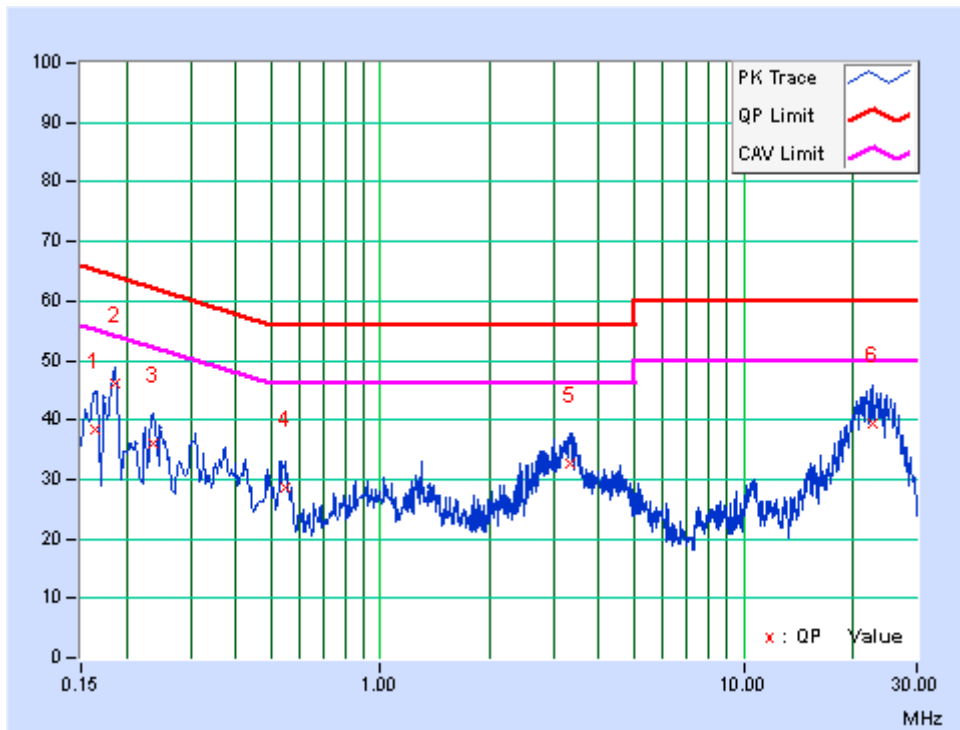
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g-CH1

PHASE	Line	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	0.16482	10.6	27.87	13.08	38.47	23.68	65.22	55.22	-26.75	-31.54
2	0.18519	10.56	35.48	19.71	46.04	30.27	64.25	54.25	-18.21	-23.98
3	0.23586	10.44	25.57	12.86	36.01	23.3	62.24	52.24	-26.23	-28.94
4	0.54491	10.29	18.38	11.57	28.67	21.86	56	46	-27.33	-24.14
5	3.3171	9.83	22.77	14.89	32.6	24.72	56	46	-23.4	-21.28
6	22.58949	10.25	29.01	21.08	39.26	31.33	60	50	-20.74	-18.67

- 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.

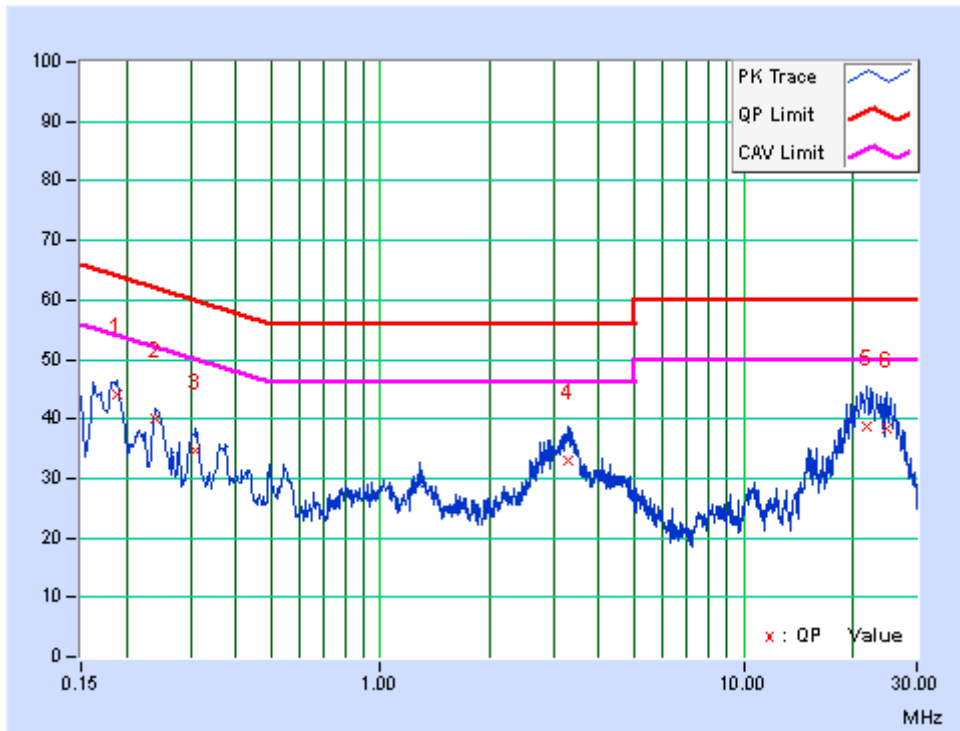




PHASE	Neutral	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18903	10.45	33.66	17.47	44.11	27.92	64.08	54.08	-19.97	-26.16
2	0.24025	10.37	29.56	15.25	39.93	25.62	62.09	52.09	-22.16	-26.47
3	0.31031	10.45	24.08	13.63	34.53	24.08	59.96	49.96	-25.43	-25.88
4	3.29364	9.63	23.4	15.02	33.03	24.65	56	46	-22.97	-21.35
5	21.78403	10.23	28.62	20.8	38.85	31.03	60	50	-21.15	-18.97
6	24.79864	10.29	27.96	20.33	38.25	30.62	60	50	-21.75	-19.38

- 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.





4.2 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	April 24,13	April 23,14
EMI Test Receiver	Rohde&Schwarz	ESVD	847398/003	May 14,13	May 13,14
Bilog Antenna	Teseq	CBL 6111D	25757	Nov. 22,12	Nov. 21,13
Horn Antenna (1GHz -18GHz)	EMCO	3117	00062558	Oct.18,12	Oct.17,13
Pre-Amplifier (20MHz-3GHz)	EMCI	EMC 330	980095	Nov. 02,12	Nov.01,13
Pre-Amplifier (100MHz-26.5GHz)	Agilent	8449B	3008A00409	May 14,13	May 13,14
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 04,11	Jan. 03,14
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,12	Nov. 03,13
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8 .8m	NSEMC006	Mar. 24,13	Mar. 23,14
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 31,12	Oct. 30,13
Loop antenna (9kHz~30MHz)	Daze	ZN30900A	0708	Nov. 28,12	Nov. 27,13
Pre-Amplifier (9kHz~1GHz)	SONOMA	310D	186955	Mar. 06,13	Mar. 05,14
Test Software	ADT	ADT_Radiated V7.6.15	N/A	N/A	N/A
Spectrum Analyzer	Agilent	E4446A	MY46180622	April 24,13	April 23,14

- 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 Chamber 10m.
 3. The horn antenna are used only for the measurement of emission frequency above 1GHz if tested.
 4. 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:

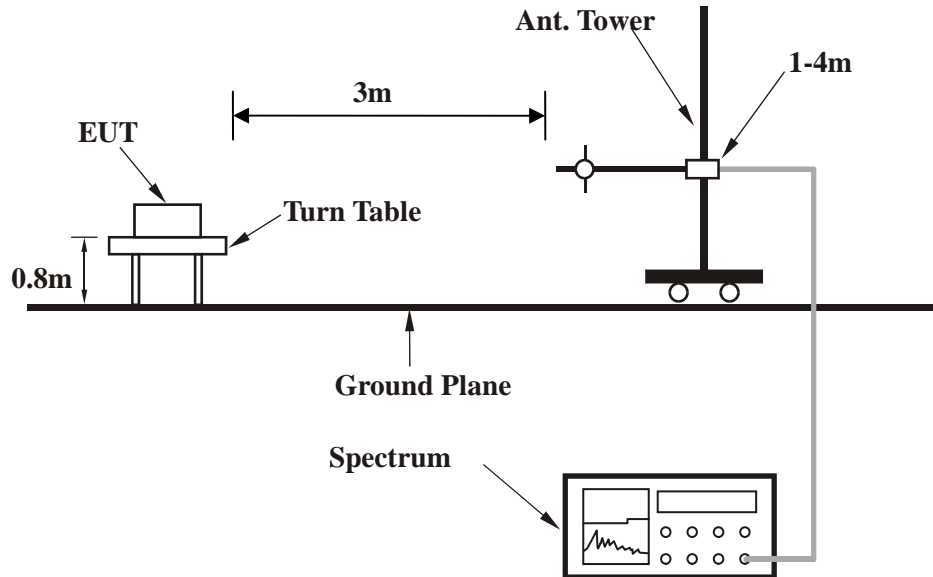
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution 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

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



4.2.7 TEST RESULTS

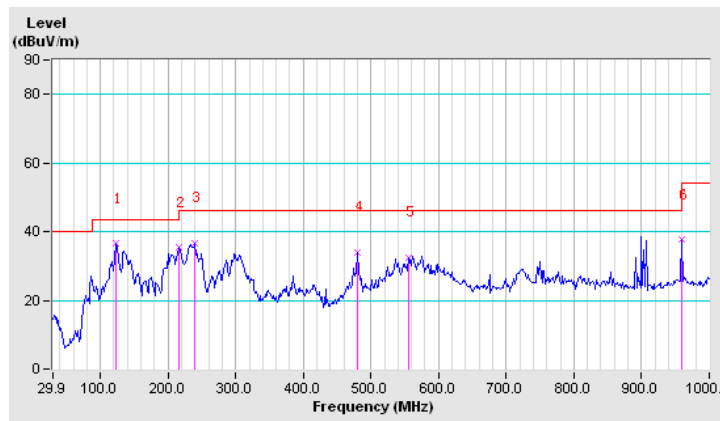
BELOW 1GHz WORST-CASE DATA: 802.11g- CH1

CHANNEL	TX Channel 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	122.07	36.6 QP	43.5	-7.0	1.00 H	156	23.66	12.89
2	215.85	35.4 QP	43.5	-8.2	1.00 H	127	24.23	11.12
3	240.11	36.8 QP	46.0	-9.2	1.00 H	200	23.63	13.17
4	479.43	34.1 QP	46.0	-11.9	1.00 H	266	13.64	20.47
5	555.42	32.6 QP	46.0	-13.4	1.00 H	17	9.81	22.77
6	959.67	37.6 QP	46.0	-8.4	1.00 H	309	8.16	29.45

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. For the test results, the EUT had been tested from 9KHz ~25GHz. But only the worst case was shown in test report.



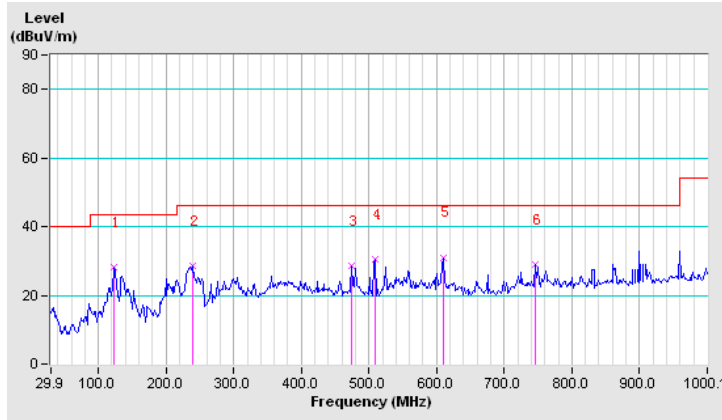


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	123.69	28.2 QP	43.5	-15.3	1.50 V	248	15.18	12.98
2	240.11	28.6 QP	46.0	-17.4	1.50 V	271	15.43	13.17
3	474.57	28.7 QP	46.0	-17.3	1.50 V	138	8.39	20.35
4	508.53	30.4 QP	46.0	-15.6	1.50 V	223	9.30	21.06
5	610.40	31.1 QP	46.0	-14.9	1.50 V	294	7.63	23.43
6	746.23	29.1 QP	46.0	-16.9	1.50 V	187	3.23	25.89

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. For the test results, the EUT had been tested from 9KHz ~25GHz. But only the worst case was shown in test report.





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	62.6 PK	74.0	-11.4	1.00 H	20	25.35	37.25
2	2390.00	50.6 AV	54.0	-3.4	1.00 H	20	13.35	37.25
3	2398.16	63.7 PK	93.3	-29.6	1.00 H	240	26.43	37.27
4	*2412.00	113.3 PK			1.00 H	20	76.01	37.29
5	*2412.00	109.3 AV			1.00 H	20	72.01	37.29
6	4824.00	51.2 PK	74.0	-22.8	1.00 H	230	9.57	41.63
7	4824.00	39.6 AV	54.0	-14.4	1.00 H	230	-2.03	41.63

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	52.4 PK	74.0	-21.6	1.00 V	290	15.15	37.25
2	2390.00	40.4 AV	54.0	-13.6	1.00 V	290	3.15	37.25
3	2398.15	54.5 PK	84.7	-30.2	1.00 V	185	17.23	37.27
4	*2412.00	104.7 PK			1.00 V	290	67.41	37.29
5	*2412.00	100.3 AV			1.00 V	290	63.01	37.29
6	4824.00	54.5 PK	74.0	-19.5	1.00 V	152	12.87	41.63
7	4824.00	49.4 AV	54.0	-4.6	1.00 V	152	7.77	41.63

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 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	113.2 PK			1.00 H	18	75.87	37.33
2	*2437.00	109.3 AV			1.00 H	18	71.97	37.33
3	4874.00	52.5 PK	74.0	-21.5	1.00 H	241	10.81	41.69
4	4874.00	41.1 AV	54.0	-12.9	1.00 H	241	-0.59	41.69
5	7311.00	54.4 PK	74.0	-19.6	1.00 H	173	8.61	45.79
6	7311.00	42.1 AV	54.0	-11.9	1.00 H	173	-3.69	45.79

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	104.3 PK			1.00 V	291	66.97	37.33
2	*2437.00	101.0 AV			1.00 V	291	63.67	37.33
3	4874.00	53.9 PK	74.0	-20.1	1.00 V	270	12.21	41.69
4	4874.00	45.3 AV	54.0	-8.7	1.00 V	270	3.61	41.69
5	7311.00	54.6 PK	74.0	-19.4	1.00 V	251	8.81	45.79
6	7311.00	42.0 AV	54.0	-12.0	1.00 V	251	-3.79	45.79

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	109.6 PK			1.00 H	296	72.23	37.37
2	*2462.00	105.1 AV			1.00 H	296	67.73	37.37
3	2483.50	59.4 PK	74.0	-14.6	1.00 H	295	21.99	37.41
4	2483.50	48.7 AV	54.0	-5.3	1.00 H	295	11.29	37.41
5	4924.00	51.1 PK	74.0	-22.9	1.00 H	24	9.34	41.76
6	4924.00	39.7 AV	54.0	-14.3	1.00 H	24	-2.06	41.76
7	7386.00	54.2 PK	74.0	-19.8	1.00 H	198	8.39	45.81
8	7386.00	43.2 AV	54.0	-10.8	1.00 H	198	-2.61	45.81
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	102.7 PK			1.00 V	295	65.33	37.37
2	*2462.00	98.2 AV			1.00 V	295	60.83	37.37
3	2483.50	59.2 PK	74.0	-14.8	1.00 V	295	21.79	37.41
4	2483.50	47.2 AV	54.0	-6.8	1.00 V	295	9.79	37.41
5	4924.00	52.2 PK	74.0	-21.8	1.00 V	246	10.44	41.76
6	4924.00	42.3 AV	54.0	-11.7	1.00 V	246	0.54	41.76
7	7386.00	54.5 PK	74.0	-19.5	1.00 V	286	8.69	45.81
8	7386.00	42.5 AV	54.0	-11.5	1.00 V	286	-3.31	45.81

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	58.8 PK	74.0	-15.2	1.00 H	264	21.55	37.25
2	2390.00	44.4 AV	54.0	-9.6	1.00 H	264	7.15	37.25
3	2398.15	59.4 PK	86.2	-26.8	1.00 H	182	22.13	37.27
4	*2412.00	106.2 PK			1.00 H	264	68.91	37.29
5	*2412.00	97.8 AV			1.00 H	264	60.51	37.29
6	4824.00	51.5 PK	74.0	-22.5	1.00 H	256	9.87	41.63
7	4824.00	44.2 AV	54.0	-9.8	1.00 H	256	2.57	41.63

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.3 PK	74.0	-15.7	1.07 V	200	21.05	37.25
2	2390.00	45.2 AV	54.0	-8.8	1.07 V	200	7.95	37.25
3	2398.15	59.1 PK	82.0	-22.9	1.00 V	83	21.83	37.27
4	*2412.00	102.0 PK			1.07 V	200	64.71	37.29
5	*2412.00	93.5 AV			1.07 V	200	56.21	37.29
6	4824.00	52.2 PK	74.0	-21.8	1.00 V	215	10.57	41.63
7	4824.00	44.6 AV	54.0	-9.4	1.00 V	215	2.97	41.63

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 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	109.0 PK			1.00 H	272	71.67	37.33
2	*2437.00	101.2 AV			1.00 H	272	63.87	37.33
3	4874.00	50.5 PK	74.0	-23.5	1.00 H	270	8.81	41.69
4	4874.00	39.7 AV	54.0	-14.3	1.00 H	270	-1.99	41.69
5	7311.00	54.2 PK	74.0	-19.8	1.00 H	265	8.41	45.79
6	7311.00	42.5 AV	54.0	-11.5	1.00 H	265	-3.29	45.79
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	103.8 PK			1.06 V	200	66.47	37.33
2	*2437.00	94.2 AV			1.06 V	200	56.87	37.33
3	4874.00	49.8 PK	74.0	-24.2	1.10 V	225	8.11	41.69
4	4874.00	38.8 AV	54.0	-15.2	1.10 V	225	-2.89	41.69
5	7311.00	53.6 PK	74.0	-20.4	1.05 V	215	7.81	45.79
6	7311.00	41.5 AV	54.0	-12.5	1.05 V	215	-4.29	45.79

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	106.5 PK			1.00 H	270	69.13	37.37
2	*2462.00	98.3 AV			1.00 H	270	60.93	37.37
3	2483.50	67.0 PK	74.0	-7.0	1.00 H	270	29.59	37.41
4	2483.50	47.9 AV	54.0	-6.1	1.00 H	270	10.49	37.41
5	4924.00	49.6 PK	74.0	-24.4	1.00 H	255	7.84	41.76
6	4924.00	37.2 AV	54.0	-16.8	1.00 H	255	-4.56	41.76
7	7386.00	53.9 PK	74.0	-20.1	1.00 H	220	8.09	45.81
8	7386.00	41.2 AV	54.0	-12.8	1.00 H	220	-4.61	45.81
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	99.8 PK			1.03 V	198	62.43	37.37
2	*2462.00	92.5 AV			1.03 V	198	55.13	37.37
3	2483.50	60.7 PK	74.0	-13.3	1.03 V	198	23.29	37.41
4	2483.50	42.1 AV	54.0	-11.9	1.03 V	198	4.69	37.41
5	4924.00	48.8 PK	74.0	-25.2	1.05 V	200	7.04	41.76
6	4924.00	36.9 AV	54.0	-17.1	1.05 V	200	-4.86	41.76
7	7386.00	54.1 PK	74.0	-19.9	1.05 V	210	8.29	45.81
8	7386.00	41.3 AV	54.0	-12.7	1.05 V	210	-4.51	45.81

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	67.5 PK	74.0	-6.5	1.00 H	290	30.25	37.25
2	2390.00	49.7 AV	54.0	-4.3	1.00 H	290	12.45	37.25
3	2398.15	67.9 PK	89.8	-21.9	1.00 H	203	30.63	37.27
4	*2412.00	109.8 PK			1.00 H	290	72.51	37.29
5	*2412.00	100.8 AV			1.00 H	290	63.51	37.29
6	4824.00	50.5 PK	74.0	-23.5	1.00 H	300	8.87	41.63
7	4824.00	40.2 AV	54.0	-13.8	1.00 H	300	-1.43	41.63
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	62.2 PK	74.0	-11.8	1.10 V	198	24.95	37.25
2	2390.00	44.0 AV	54.0	-10.0	1.10 V	198	6.75	37.25
3	2398.15	63.5 PK	80.5	-17.0	1.00 V	135	26.23	37.27
4	*2412.00	100.5 PK			1.10 V	198	63.21	37.29
5	*2412.00	92.7 AV			1.10 V	198	55.41	37.29
6	4824.00	50.1 PK	74.0	-23.9	1.10 V	190	8.47	41.63
7	4824.00	39.4 AV	54.0	-14.6	1.10 V	190	-2.23	41.63

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 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	109.7 PK			1.00 H	287	72.37	37.33
2	*2437.00	100.0 AV			1.00 H	287	62.67	37.33
3	4874.00	51.4 PK	74.0	-22.6	1.00 H	280	9.71	41.69
4	4874.00	38.9 AV	54.0	-15.1	1.00 H	280	-2.79	41.69
5	7311.00	54.2 PK	74.0	-19.8	1.00 H	280	8.41	45.79
6	7311.00	41.8 AV	54.0	-12.2	1.00 H	280	-3.99	45.79

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	107.4 PK			1.00 V	250	70.07	37.33
2	*2437.00	99.1 AV			1.00 V	250	61.77	37.33
3	4874.00	50.3 PK	74.0	-23.7	1.05 V	245	8.61	41.69
4	4874.00	38.7 AV	54.0	-15.3	1.05 V	245	-2.99	41.69
5	7311.00	53.8 PK	74.0	-20.2	1.04 V	255	8.01	45.79
6	7311.00	41.2 AV	54.0	-12.8	1.04 V	255	-4.59	45.79

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	108.9 PK			1.00 H	289	71.53	37.37
2	*2462.00	99.7 AV			1.00 H	289	62.33	37.37
3	2483.50	67.8 PK	74.0	-6.2	1.00 H	289	30.39	37.41
4	2483.50	50.1 AV	54.0	-3.9	1.00 H	289	12.69	37.41
5	4924.00	50.8 PK	74.0	-23.2	1.00 H	285	9.04	41.76
6	4924.00	40.2 AV	54.0	-13.8	1.00 H	285	-1.56	41.76
7	7386.00	54.2 PK	74.0	-19.8	1.00 H	288	8.39	45.81
8	7386.00	41.8 AV	54.0	-12.2	1.00 H	288	-4.01	45.81
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	100.8 PK			1.00 V	202	63.43	37.37
2	*2462.00	91.0 AV			1.00 V	202	53.63	37.37
3	2483.50	62.4 PK	74.0	-11.6	1.00 V	202	24.99	37.41
4	2483.50	44.2 AV	54.0	-9.8	1.00 V	202	6.79	37.41
5	4924.00	50.8 PK	74.0	-23.2	1.06 V	200	9.04	41.76
6	4924.00	38.8 AV	54.0	-15.2	1.06 V	200	-2.96	41.76
7	7386.00	53.6 PK	74.0	-20.4	1.05 V	198	7.79	45.81
8	7386.00	40.8 AV	54.0	-13.2	1.05 V	198	-5.01	45.81

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 (40MHz)

CHANNEL	TX Channel 3	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	63.2 PK	74.0	-10.8	1.00 H	289	25.95	37.25
2	2390.00	49.1 AV	54.0	-4.9	1.00 H	289	11.85	37.25
3	2398.15	64.8 PK	85.7	-20.9	1.00 H	210	27.53	37.27
4	*2422.00	105.7 PK			1.00 H	289	68.40	37.30
5	*2422.00	97.5 AV			1.00 H	289	60.20	37.30
6	4844.00	50.7 PK	74.0	-23.3	1.00 H	286	9.04	41.66
7	4844.00	39.2 AV	54.0	-14.8	1.00 H	286	-2.46	41.66

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	59.5 PK	74.0	-14.5	1.22 V	215	22.25	37.25
2	2390.00	46.8 AV	54.0	-7.2	1.22 V	215	9.55	37.25
3	2398.15	60.7 PK	76.8	-16.1	1.00 V	342	23.43	37.27
4	*2422.00	96.8 PK			1.22 V	215	59.50	37.30
5	*2422.00	88.4 AV			1.22 V	215	51.10	37.30
6	4844.00	49.8 PK	74.0	-24.2	1.20 V	200	8.14	41.66
7	4844.00	39.1 AV	54.0	-14.9	1.20 V	200	-2.56	41.66

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 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	104.2 PK			1.00 H	291	66.87	37.33
2	*2437.00	96.6 AV			1.00 H	291	59.27	37.33
3	4874.00	50.8 PK	74.0	-23.2	1.00 H	285	9.11	41.69
4	4874.00	39.5 AV	54.0	-14.5	1.00 H	285	-2.19	41.69
5	7311.00	54.2 PK	74.0	-19.8	1.00 H	290	8.41	45.79
6	7311.00	41.7 AV	54.0	-12.3	1.00 H	290	-4.09	45.79
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	97.2 PK			1.02 V	200	59.87	37.33
2	*2437.00	89.5 AV			1.02 V	200	52.17	37.33
3	4874.00	49.8 PK	74.0	-24.2	1.02 V	200	8.11	41.69
4	4874.00	37.9 AV	54.0	-16.1	1.02 V	200	-3.79	41.69
5	7311.00	53.4 PK	74.0	-20.6	1.00 V	195	7.61	45.79
6	7311.00	40.8 AV	54.0	-13.2	1.00 V	195	-4.99	45.79

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 9	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	*2452.00	104.4 PK			1.00 H	293	67.04	37.36
2	*2452.00	96.5 AV			1.00 H	293	59.14	37.36
3	2483.50	63.8 PK	74.0	-10.2	1.00 H	293	26.39	37.41
4	2483.50	50.1 AV	54.0	-3.9	1.00 H	293	12.69	37.41
5	4904.00	51.1 PK	74.0	-22.9	1.00 H	286	9.37	41.73
6	4904.00	40.8 AV	54.0	-13.2	1.00 H	286	-0.93	41.73
7	7356.00	55.1 PK	74.0	-18.9	1.00 H	286	9.30	45.80
8	7356.00	42.8 AV	54.0	-11.2	1.00 H	286	-3.00	45.80

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	*2452.00	97.8 PK			1.00 V	200	60.44	37.36
2	*2452.00	90.1 AV			1.00 V	200	52.74	37.36
3	2483.50	58.0 PK	74.0	-16.0	1.00 V	200	20.59	37.41
4	2483.50	47.4 AV	54.0	-6.6	1.00 V	200	9.99	37.41
5	4904.00	49.9 PK	74.0	-24.1	1.00 V	195	8.17	41.73
6	4904.00	38.2 AV	54.0	-15.8	1.00 V	195	-3.53	41.73
7	7356.00	53.4 PK	74.0	-20.6	1.00 V	199	7.60	45.80
8	7356.00	41.8 AV	54.0	-12.2	1.00 V	199	-4.00	45.80

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. 04,12	Nov. 03,13
Power Sensor	Anritsu	MA2411B	1126068	Nov. 04,12	Nov. 03,13
Digital Multimeter	FLUKE	15B	A1220010D G	Oct. 31,12	Oct. 30,13

- 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

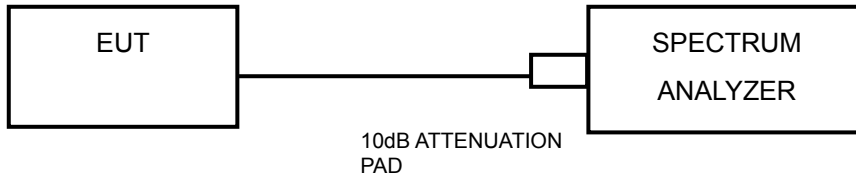
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points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



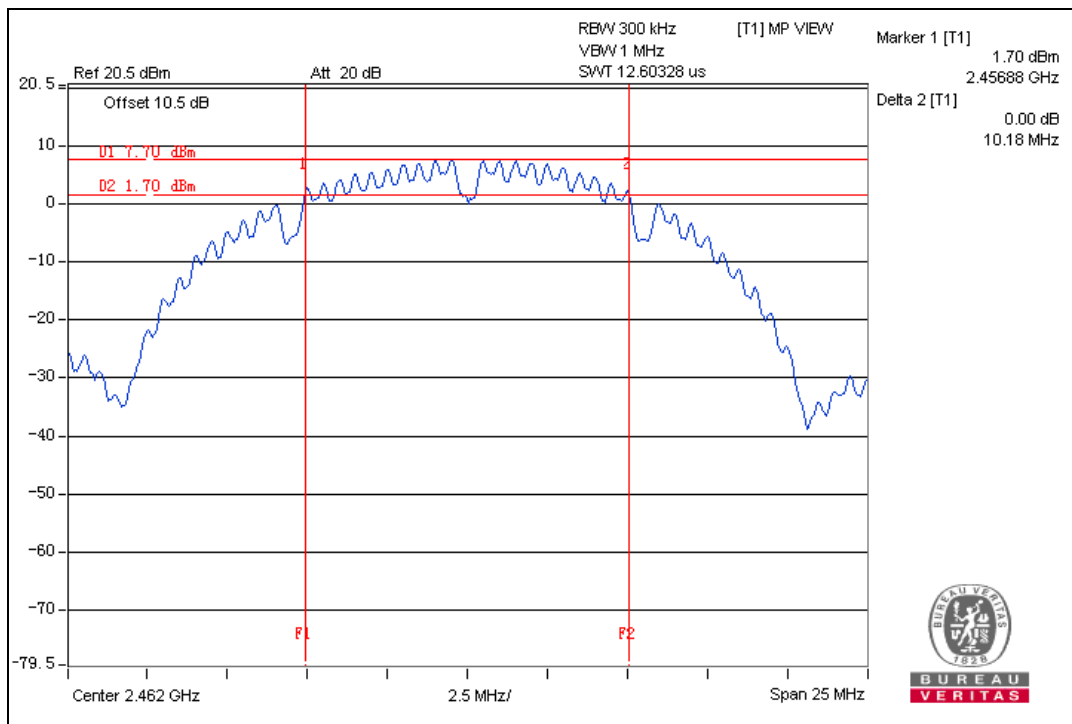
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4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	10.15	0.5	PASS
6	2437	10.17	0.5	PASS
11	2462	10.18	0.5	PASS



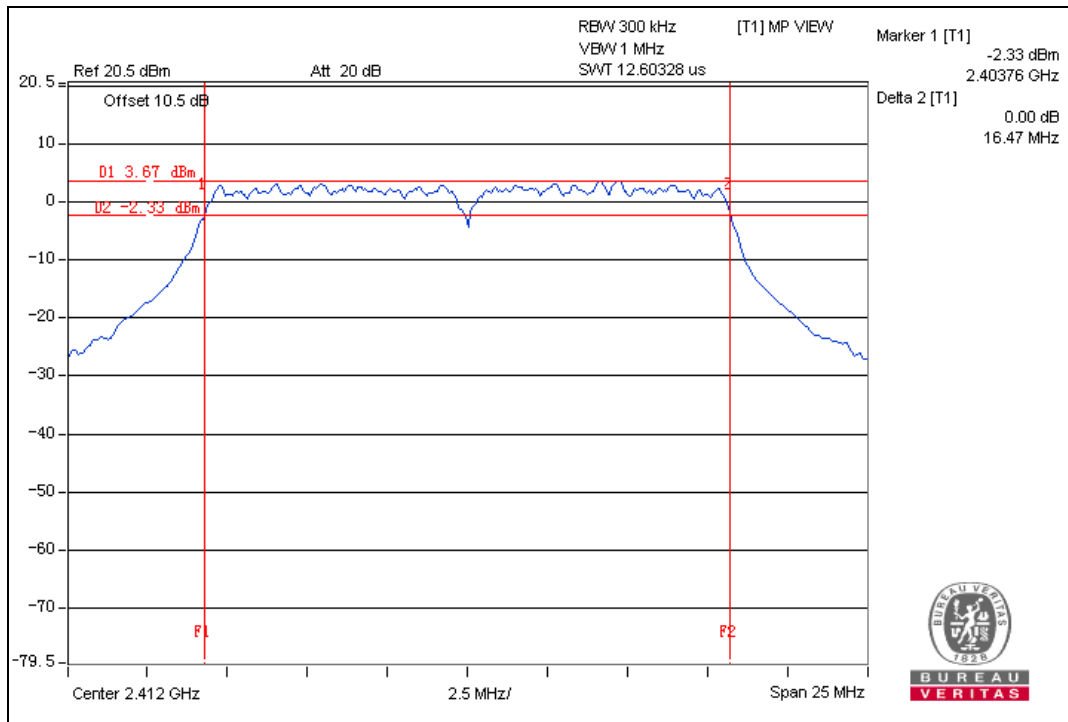


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802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.47	0.5	PASS
6	2437	16.47	0.5	PASS
11	2462	16.46	0.5	PASS



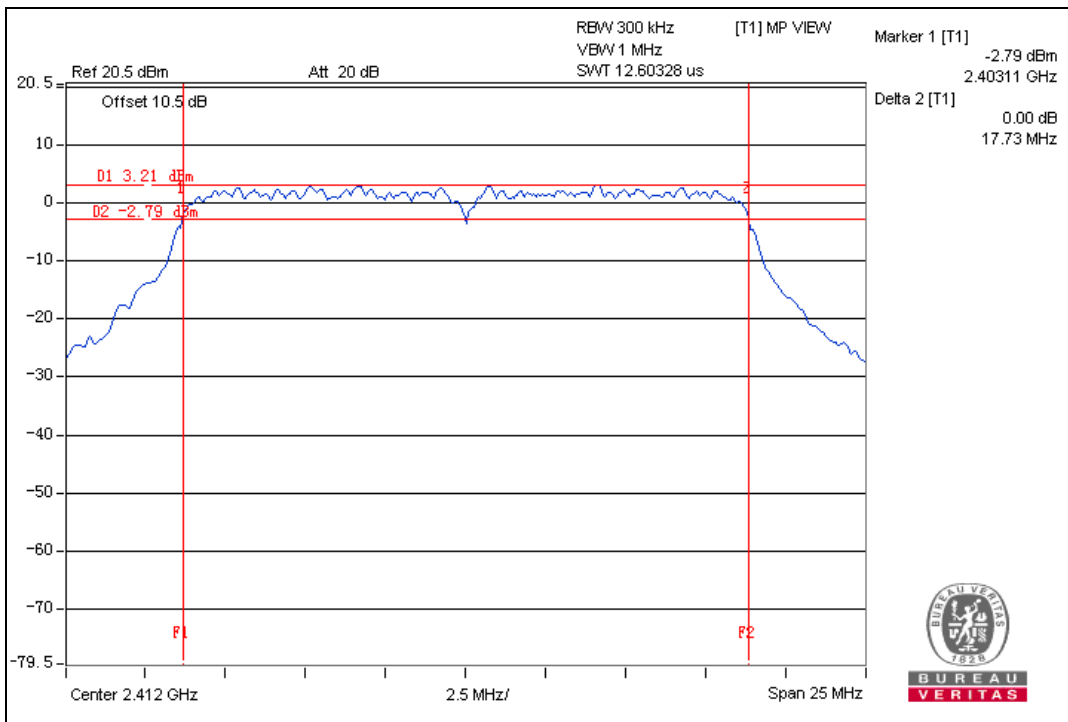


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802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.73	0.5	PASS
6	2437	17.73	0.5	PASS
11	2462	17.70	0.5	PASS



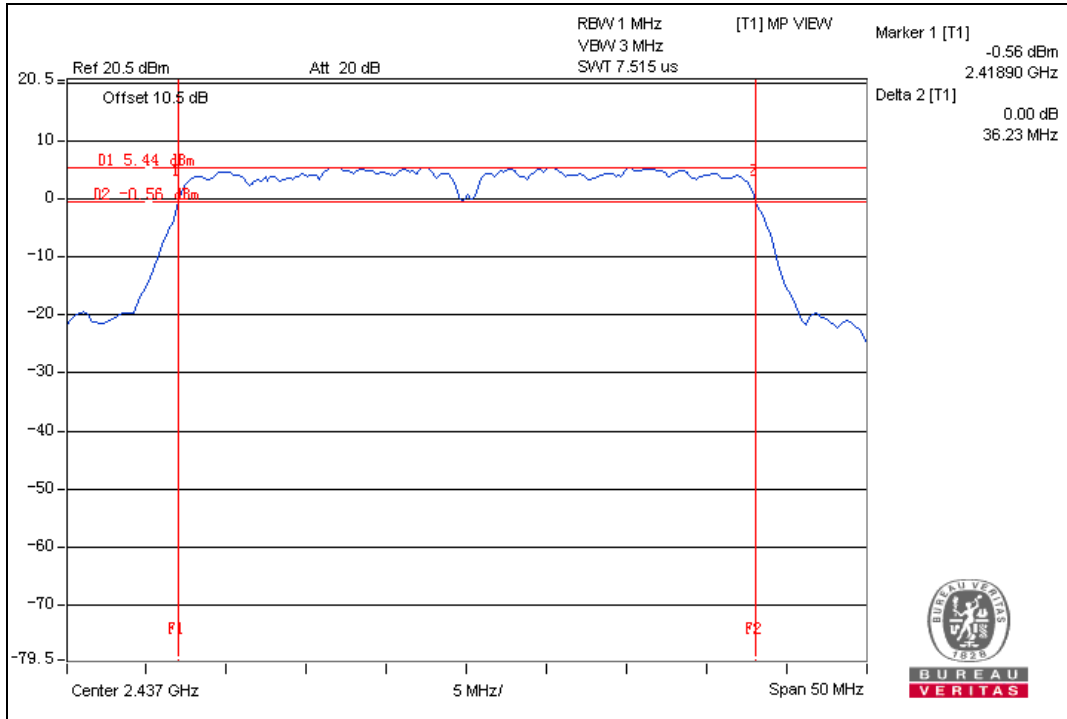


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Test Report No.: RF130807N055

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	36.12	0.5	PASS
6	2437	36.23	0.5	PASS
9	2452	36.09	0.5	PASS



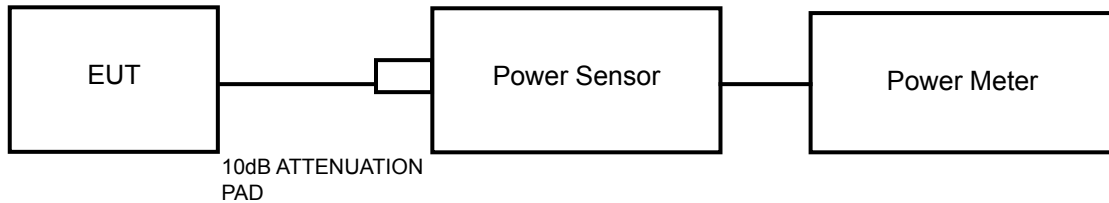


4.4 CONDUCTED OUTPUT POWER

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

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	Anritsu	ML2495A	1139001	Nov. 04,12	Nov. 03,13
Power Sensor	Anritsu	MA2411B	1126068	Nov. 04,12	Nov. 03,13

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

4.4.4 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	18.77	30	PASS
6	2437	18.89	30	PASS
11	2462	18.85	30	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	21.49	30	PASS
6	2437	21.20	30	PASS
11	2462	20.87	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
1	2412	20.45	30	PASS
6	2437	19.84	30	PASS
11	2462	19.73	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
3	2422	19.85	30	PASS
6	2437	19.81	30	PASS
9	2452	19.74	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	16.44	N/A
6	2437	16.51	N/A
11	2462	16.90	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	13.05	N/A
6	2437	13.35	N/A
11	2462	13.13	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	11.66	N/A
6	2437	12.15	N/A
11	2462	12.11	N/A

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
3	2422	11.66	N/A
6	2437	11.85	N/A
9	2452	11.52	N/A

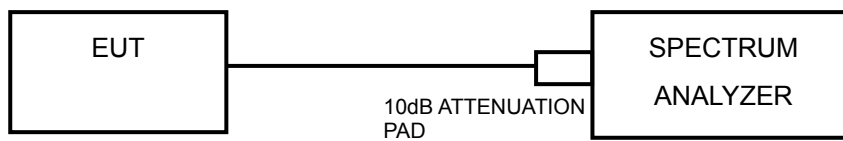


4.5 POWER SPECTRAL DENSITY MEASUREMENT

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 span to 1.5 times the DTS bandwidth
2. Set the RBW = 100 kHz, VBW $\geq 3 \times$ RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as item 4.3.6



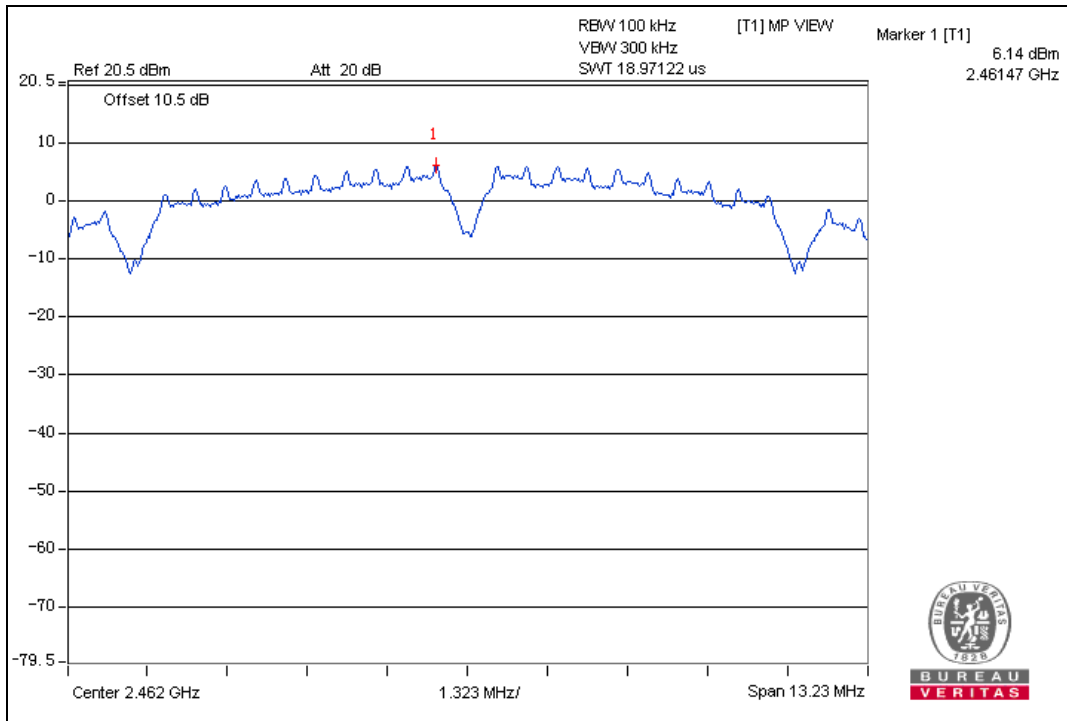
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4.5.7 TEST RESULTS

802.11b

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	6.07	8	PASS
6	2437	6.05	8	PASS
11	2462	6.14	8	PASS



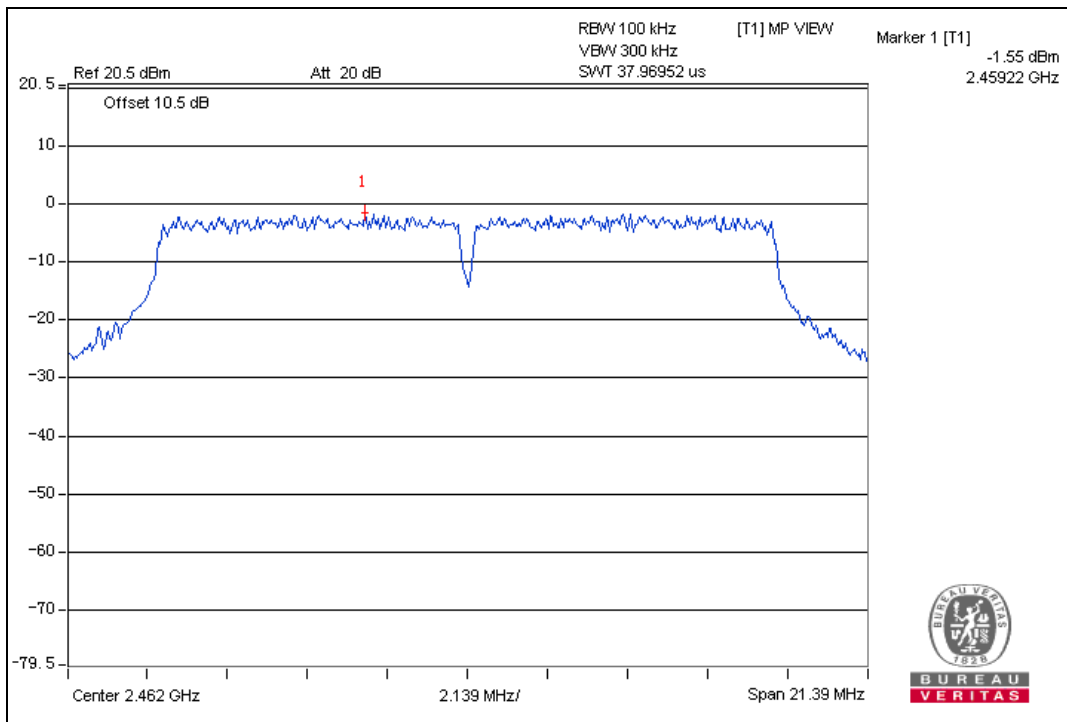


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802.11g

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-2.09	8	PASS
6	2437	-1.92	8	PASS
11	2462	-1.55	8	PASS



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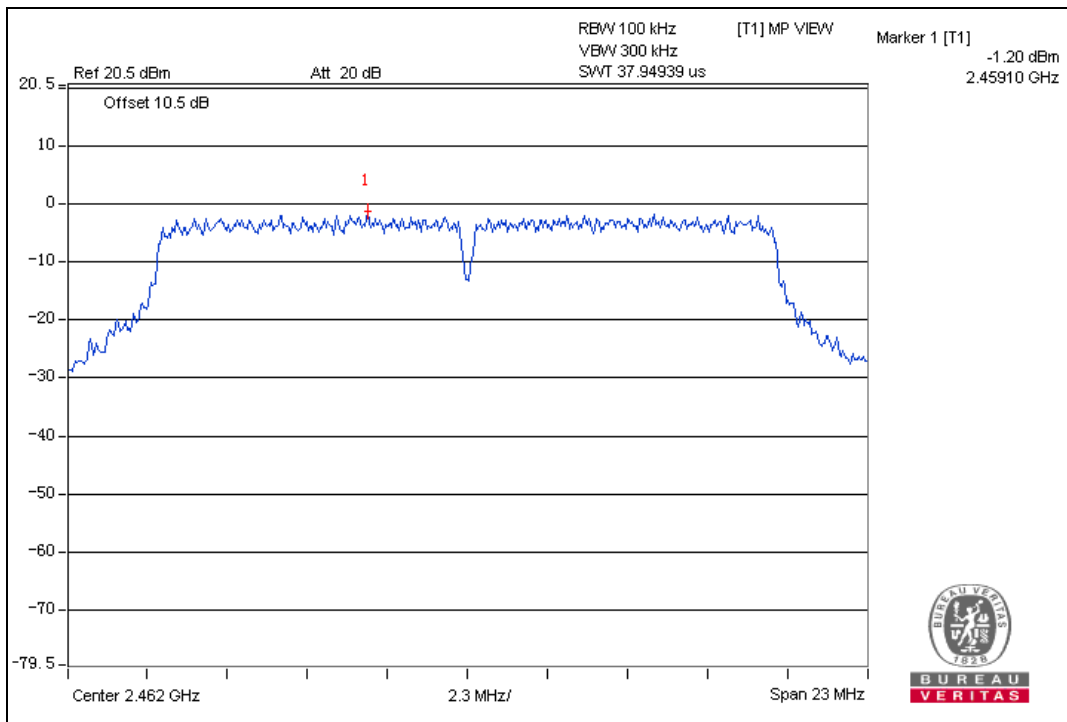


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802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-1.72	8	PASS
6	2437	-1.52	8	PASS
11	2462	-1.20	8	PASS



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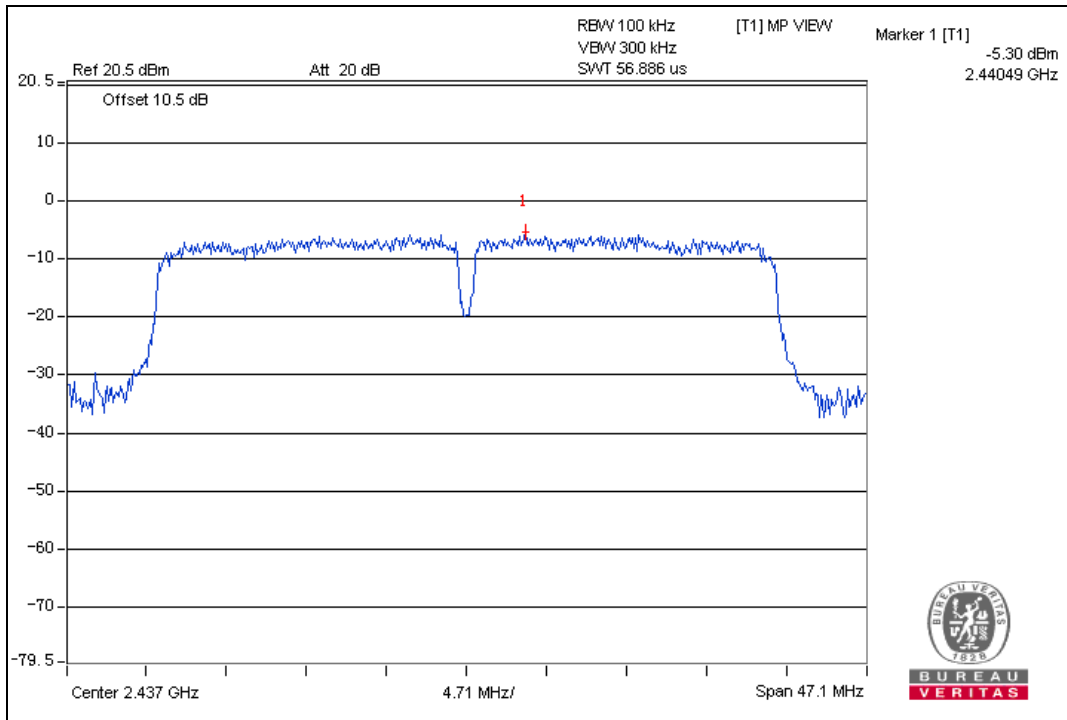


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802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-5.94	8	PASS
6	2437	-5.30	8	PASS
9	2452	-5.35	8	PASS



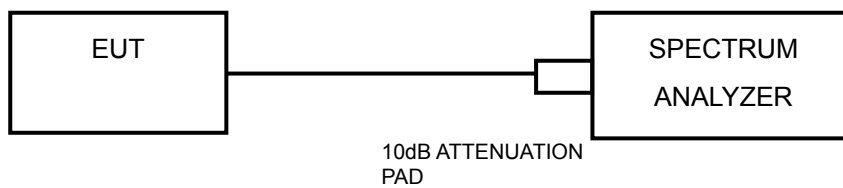


4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED 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 - Reference Level

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.



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Measurement Procedure –Unwanted Emission Level

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as item 4.3.6

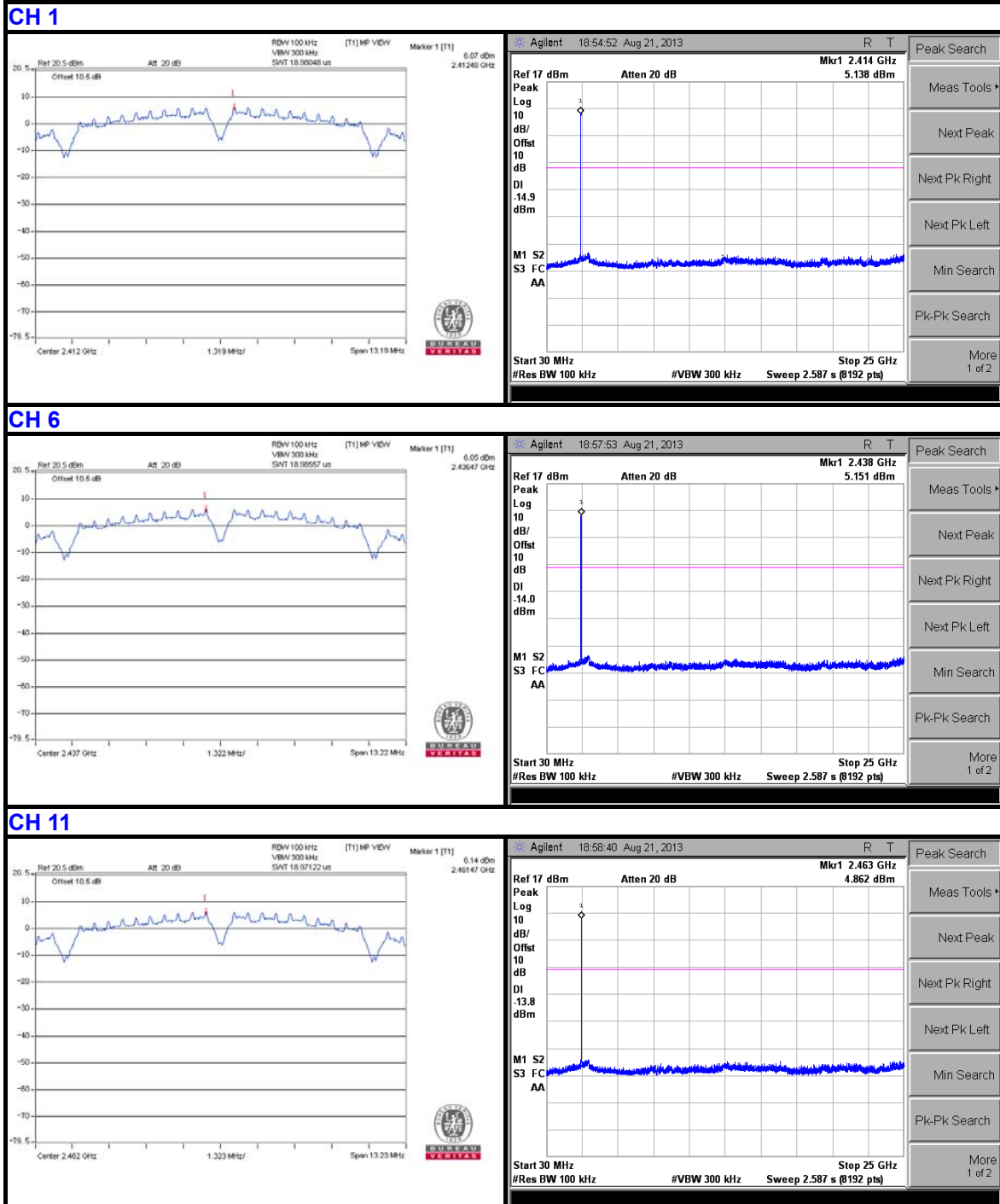


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4.6.7 TEST RESULTS

802.11b



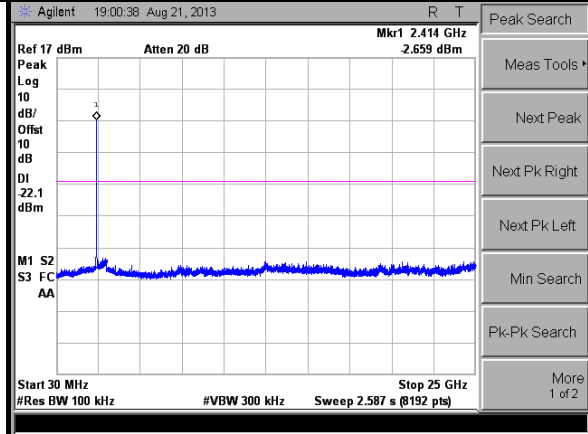
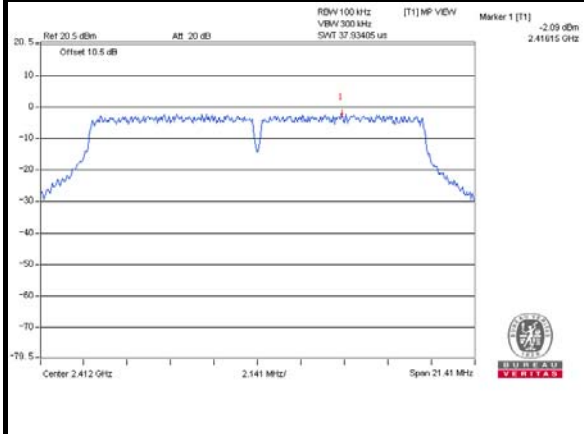


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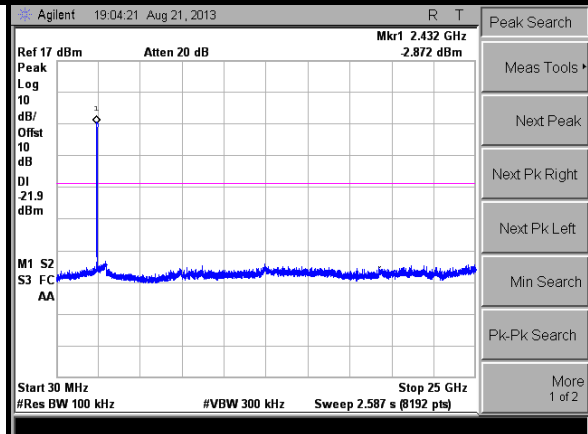
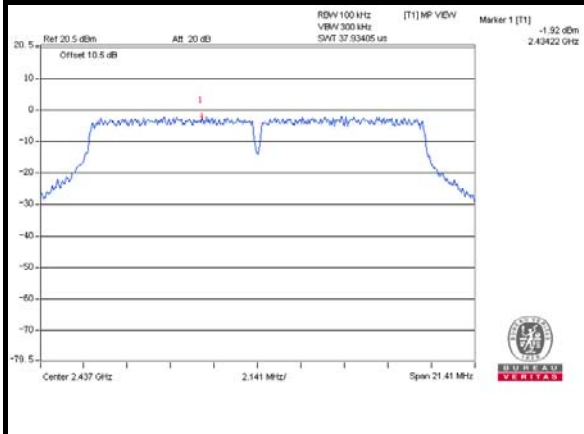
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802.11g

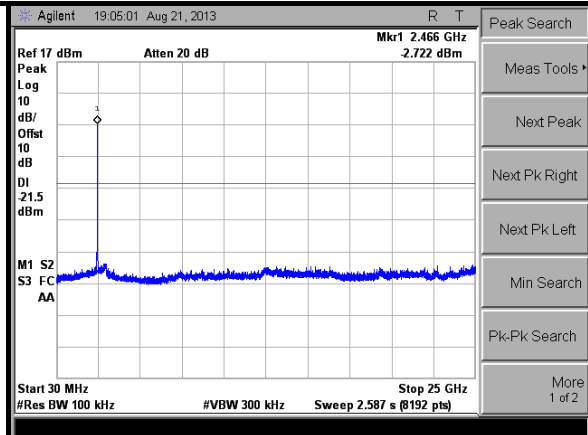
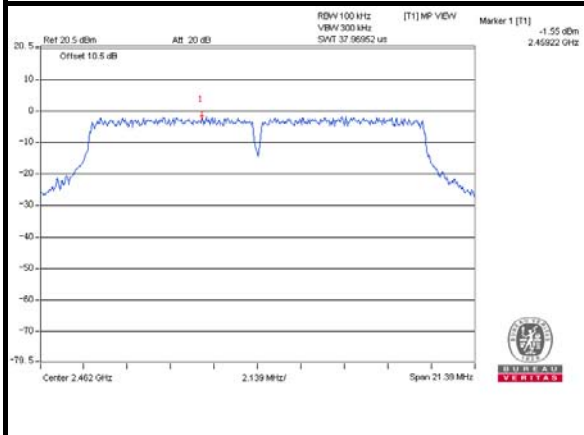
CH 1



CH 6



CH 11

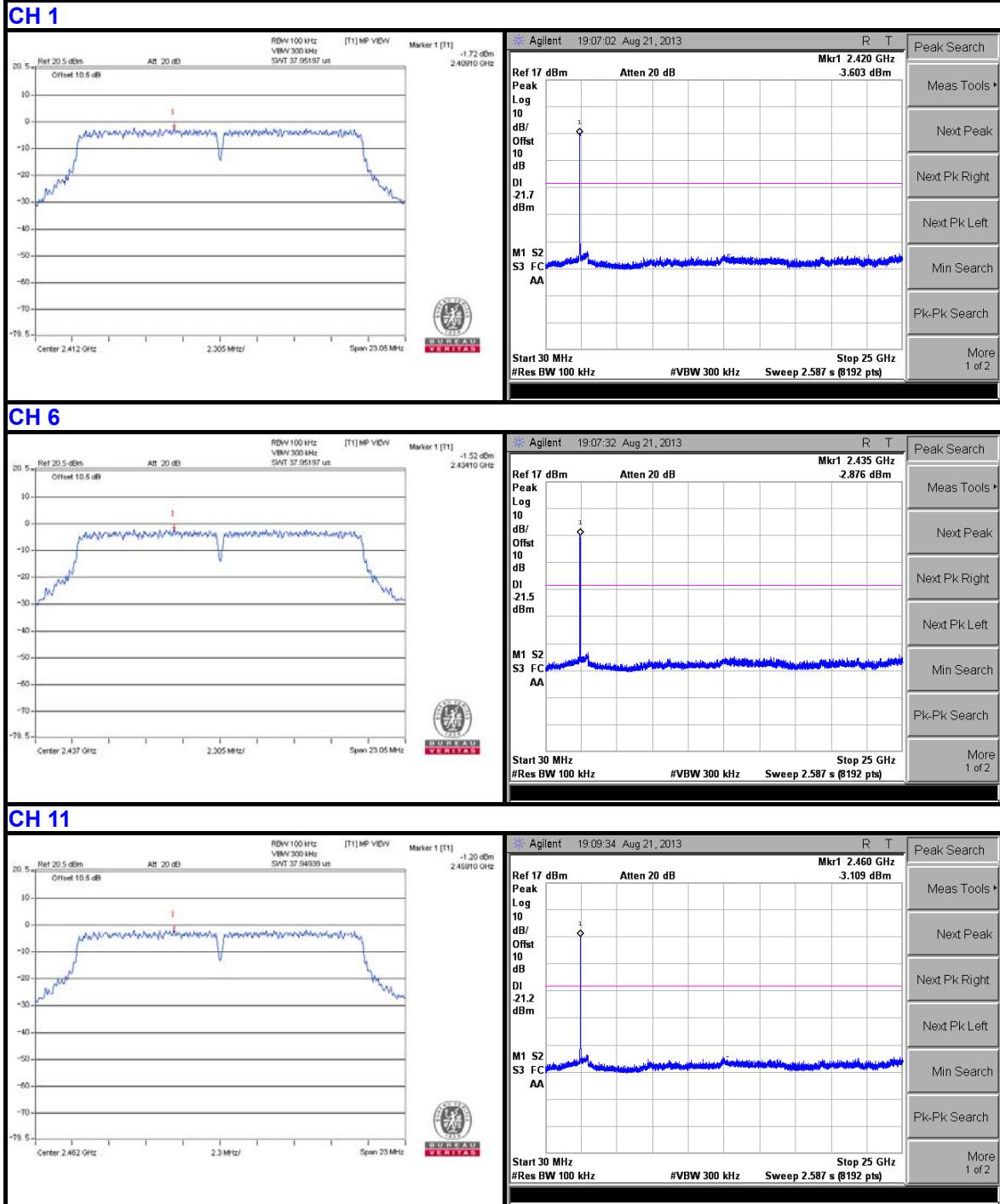




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802.11n (20MHz)



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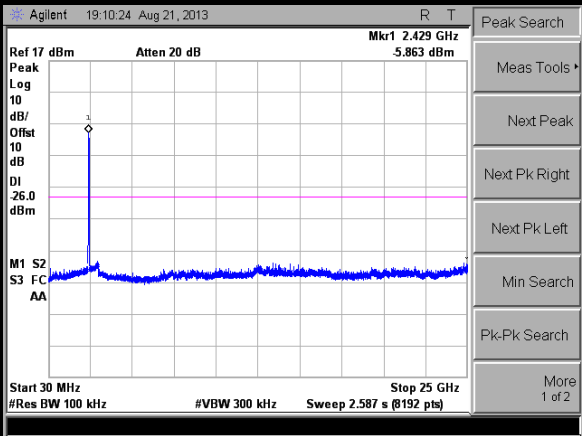
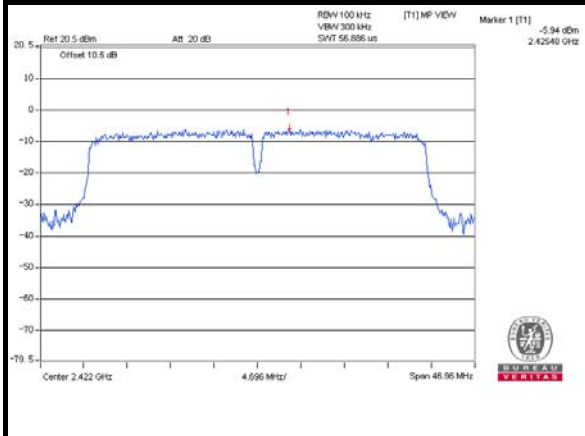


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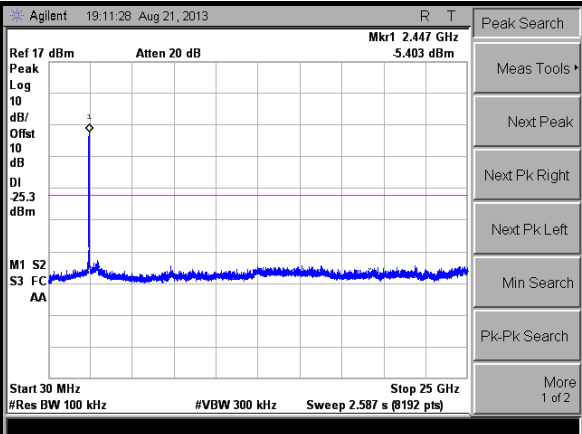
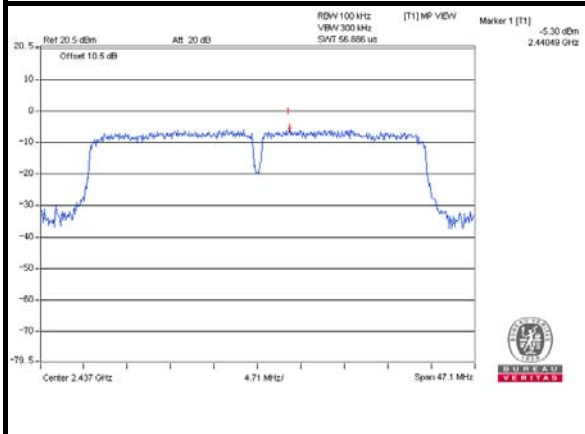
Test Report No.: RF130807N055

802.11n (40MHz)

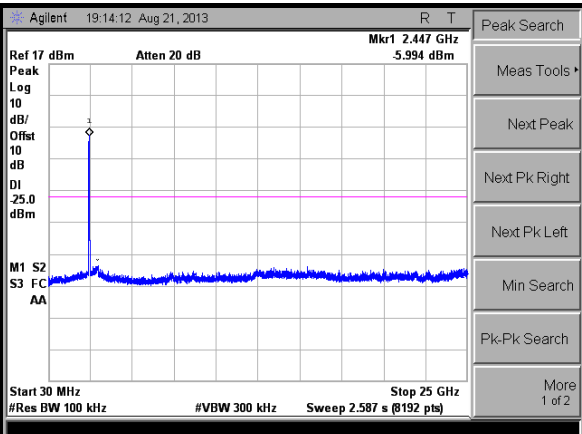
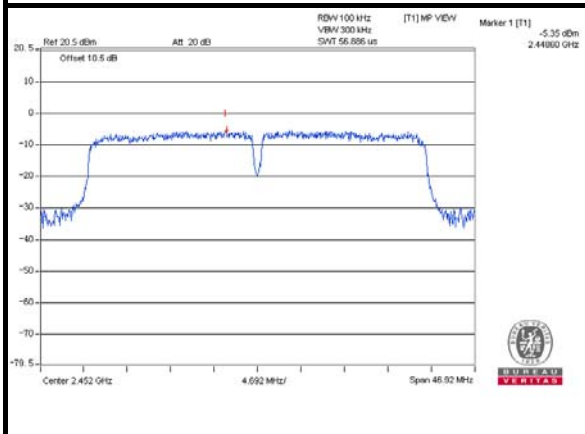
CH 3



CH 6



CH 9





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5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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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---