



**BUREAU
VERITAS**

Test Report No.: RF140714N041-1



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 A319
MID	31900031
Additional Model & Model Difference	N/A
Date of tests	Jul. 14 ~ Aug. 15, 2014

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 Specialist / EMC Department	Approved by Sam Tung Manager / EMC Department
	
	Date: Aug. 18, 2014

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification



TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1 SUMMARY OF TEST RESULTS.....	5
2 MEASUREMENT UNCERTAINTY	5
3 GENERAL INFORMATION	6
3.1 GENERAL DESCRIPTION OF EUT.....	6
3.2 DESCRIPTION OF TEST MODES.....	8
3.2.1. CONFIGURATION OF SYSTEM UNDER TEST	9
3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	9
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	12
3.4 DESCRIPTION OF SUPPORT UNITS.....	12
4 TEST TYPES AND RESULTS.....	13
4.1 CONDUCTED EMISSION MEASUREMENT	13
4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	13
4.1.2 TEST INSTRUMENTS.....	13
4.1.3 TEST PROCEDURES	14
4.1.4 DEVIATION FROM TEST STANDARD	14
4.1.5 TEST SETUP	15
4.1.6 EUT OPERATING CONDITIONS	15
4.1.7 TEST RESULTS	16
4.2 RADIATED EMISSION MEASUREMENT	18
4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT	18
4.2.2 TEST INSTRUMENTS.....	19
4.2.3 TEST PROCEDURES	20
4.2.4 DEVIATION FROM TEST STANDARD	20
4.2.5 TEST SETUP	21
4.2.6 EUT OPERATING CONDITIONS	21
4.2.7 TEST RESULTS	22
4.3 6dB BANDWIDTH MEASUREMENT	41
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT	41
4.3.2 TEST INSTRUMENTS.....	41
4.3.3 TEST PROCEDURE.....	41
4.3.4 .DEVIATION FROM TEST STANDARD	41
4.3.5 TEST SETUP	42
4.3.6 EUT OPERATING CONDITIONS	42



4.3.7	TEST RESULTS	42
4.4	CONDUCTED OUTPUT POWER	47
4.4.1	LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT	47
4.4.2	TEST SETUP	47
4.4.3	TEST INSTRUMENTS	47
4.4.4	TEST PROCEDURES	47
4.4.5	DEVIATION FROM TEST STANDARD	47
4.4.6	EUT OPERATING CONDITIONS	47
4.4.7	TEST RESULTS	48
4.4.7.2	AVERAGE OUTPUT POWER (FOR REFERENCE)	50
4.5	POWER SPECTRAL DENSITY MEASUREMENT	52
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	52
4.5.2	TEST SETUP	52
4.5.3	TEST INSTRUMENTS	52
4.5.4	TEST PROCEDURE	52
4.5.5	DEVIATION FROM TEST STANDARD	52
4.5.6	EUT OPERATING CONDITION	52
4.5.7	TEST RESULTS	53
4.6	OUT OF BAND EMISSION MEASUREMENT	54
4.6.1	LIMITS OF OUT OF BAND EMISSION MEASUREMENT	54
4.6.2	TEST SETUP	54
4.6.3	TEST INSTRUMENTS	54
4.6.4	TEST PROCEDURE	54
4.6.5	DEVIATION FROM TEST STANDARD	55
4.6.6	EUT OPERATING CONDITION	55
4.6.7	TEST RESULTS	56
5	PHOTOGRAPHS OF THE TEST CONFIGURATION	61
6	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	62



Test Report No.: RF140714N041-1

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140714N041-1	Original release	Aug. 18, 2014



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 -14.02dB at 4.45384MHz
15.205 15.209	Restricted bands of operation & Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.4dB at 2483.50MHz
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	2.66dB
Radiated emissions	30MHz ~ 1GMHz	2.74dB
	1GHz ~ 18GHz	4.06dB
	18GHz ~ 40GHz	4.58dB

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 A319
MID	31900031
FCC ID	YCNA319
NOMINAL VOLTAGE	DC 5V (adapter or host equipment) DC 3.7V (Li-ion battery)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20); 2422-2452MHz for 11n(HT40) 2402-2480MHz for BT-LE(GFSK)
PEAK POWER	20.34dBm (Maximum) for WIFI -2.51dBm (Maximum) for BT-LE(GFSK)
ANTENNA TYPE	Dipole Antenna; -0.1dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: Shielded, Detachable, 1.0m Earphone cable: Unshielded, Detachable, 1.0m

NOTE:

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

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

3. The EUT provides one transmitter and one receiver.

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



Test Report No.: RF140714N041-1

4. The above EUT information is declared by manufacturer and for more detailed features description, please refers 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.
6. Spurious emission of the simultaneous operation (WLAN& BT&WWAN) has been evaluated and no non-compliance was found.



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		

Forty channels are provided for BT-LE(GFSK):

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



3.2.1. 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 Adapter with WIFI/BT function
B	√	-	-	-	Powered by Battery with WIFI/BT function
C	√	-	-	-	Powered by PC with WIFI/BT function

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
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	11	CCK	DBPSK	1.0	X
A	BT-LE	0 to 39	39	DTS	GFSK	1.0	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
A	BT-LE	0 to 39	0,19,39	DTS	GFSK	1	X

POWER LINE CONDUCTED EMISSION TEST:

The EUT was tested with the following mode:

EUT configure mode	TESTED CONDITION
-	BT Link+ WIFI (2.4G) Link + USB cable + Earphone + Adapter

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
A	802.11n HT40	3 to 9	3, 9	OFDM	BPSK	13.5
A	BT-LE	0 to 39	0,39	DTS	GFSK	1.0



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
A	BT-LE	0 to 39	0,19,39	DTS	GFSK	1.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	25deg. C, 55%RH	DC 5V (adapter or host equipment)	Robert Cheng
RE≥1G	25deg. C, 55%RH	DC 5V (adapter or host equipment)	Robert Cheng
PLC	25deg. C, 60%RH	DC 3.7V (Li-ion battery)	Yuqiang Yin
APCM	25deg. C, 60%RH	DC 3.7V (Li-ion battery)	Yuqiang Yin



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.

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
	N/A	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
	N/A



4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	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	ESCI	101418	Mar. 28,14	Mar. 27,15
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	May 14,14	May 13,15
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	May 14,14	May 13,15
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

NOTE:

1. The test was performed in shielded room 553.

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



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.

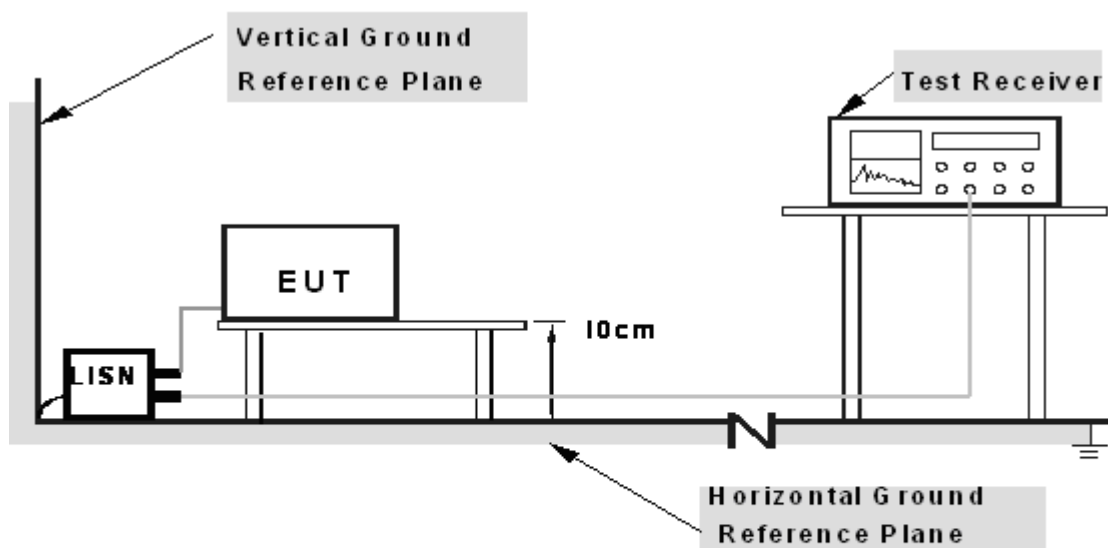
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

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.



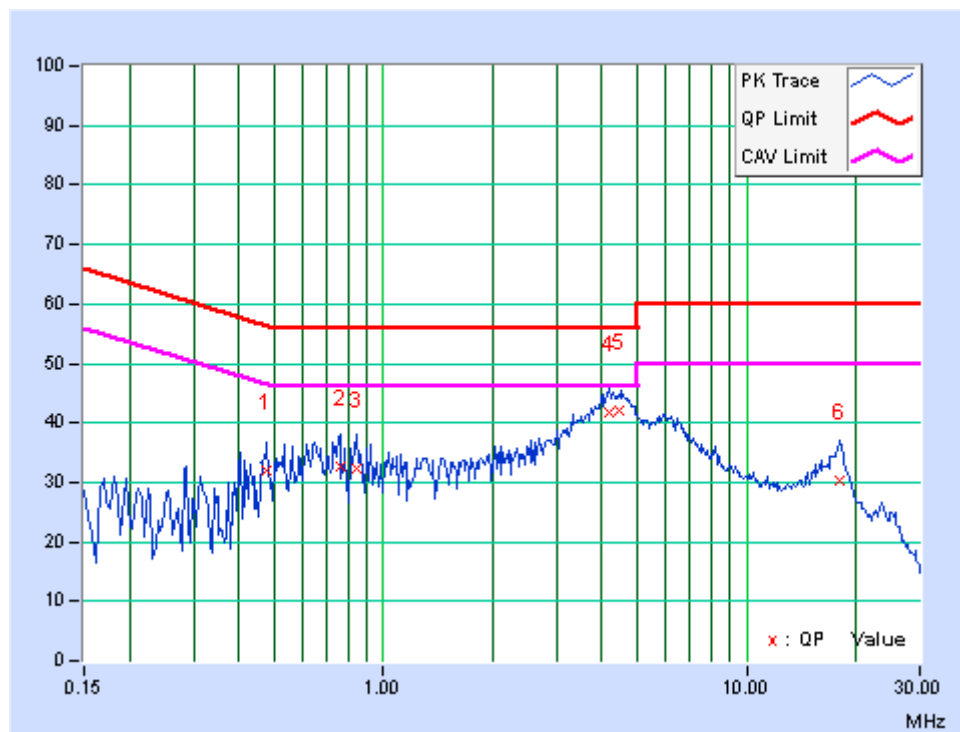
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g

PHASE	Line	6dB BANDWIDTH	9kHz
-------	------	---------------	------

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	0.47737	10.24	21.59	10.83	31.83	21.07	56.38	46.38	-24.56	-25.32
2	0.75889	10.09	22.48	13.72	32.57	23.81	56.00	46.00	-23.43	-22.19
3	0.84093	10.04	22.16	12.48	32.20	22.52	56.00	46.00	-23.80	-23.48
4	4.18796	9.84	32.03	17.86	41.87	27.70	56.00	46.00	-14.13	-18.30
5	4.45384	9.84	32.14	18.22	41.98	28.06	56.00	46.00	-14.02	-17.94
6	18.00199	10.03	20.16	12.97	30.19	23.00	60.00	50.00	-29.81	-27.00

- 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.





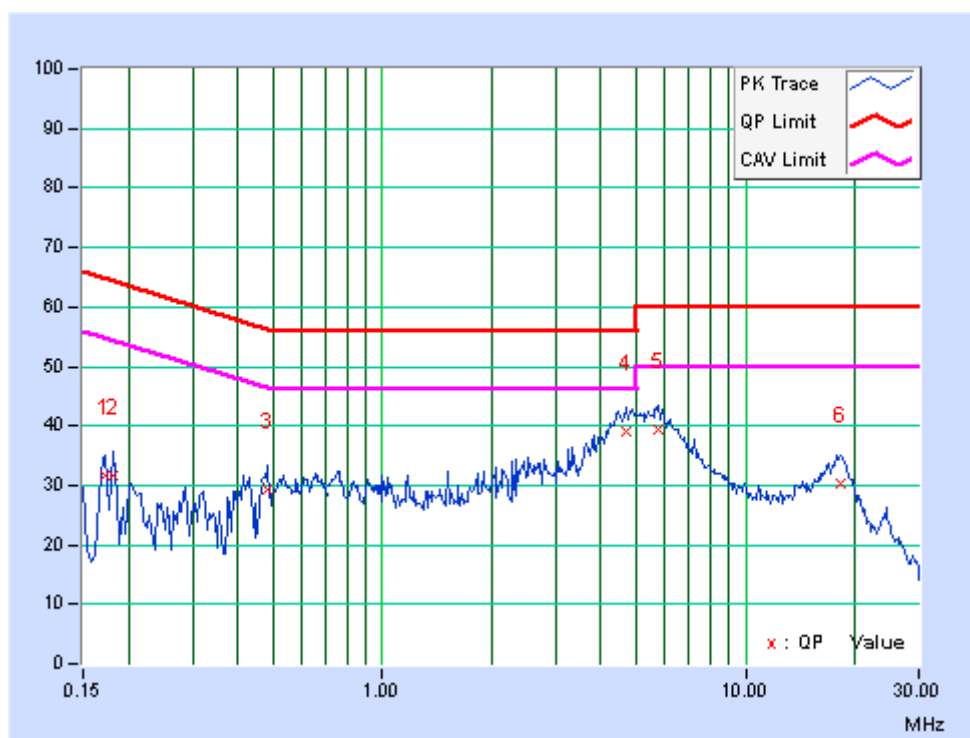
**BUREAU
VERITAS**

Test Report No.: RF140714N041-1

PHASE	Neutral	6dB BANDWIDTH	9kHz
--------------	---------	----------------------	------

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	0.17346	10.43	21.10	9.24	31.53	19.67	64.79	54.79	-33.27	-35.13
2	0.18128	10.39	21.14	10.31	31.53	20.70	64.43	54.43	-32.89	-33.72
3	0.48128	10.41	18.85	10.56	29.26	20.97	56.32	46.32	-27.05	-25.34
4	4.6728	9.63	29.36	17.70	38.99	27.33	56.00	46.00	-17.01	-18.67
5	5.747	9.67	29.59	20.65	39.26	30.32	60.00	50.00	-20.74	-19.68
6	18.18967	10.10	20.13	12.03	30.23	22.13	60.00	50.00	-29.77	-27.87

- 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	Apr. 29,14	Apr. 28,15
EMI Test Receiver	Rohde&Schwarz	ESVS10	841431/004	May 17,14	May 16,15
Loop antenna (9kHz~30MHz)	Daze	ZN30900A	0708	Dec. 05,13	Dec. 04,14
Bilog Antenna	Teseq	CBL 6111D	27089	Jun. 27, 14	Jun. 26, 15
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	Oct. 18, 12	Oct. 17, 14
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170242	Feb. 13,14	Feb. 12,15
Pre-Amplifier (9kHz~1GHz)	SONOMA	310D	186955	Mar. 05,14	Mar. 04,15
Signal Amplifier	Agilent	8447D	2944A10488	Jun. 25,14	Jun. 24,15
Pre-Amplifier (100MHz-26.5GHz)	Agilent	8449B	3008A00409	May 13,14	May 12,15
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,13	Nov. 03,14
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Jul. 27,14	Jul. 26, 15
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 30, 13	Oct. 29, 14
Test Software	ADT	ADT_Radiated _V7.6.15.9.2	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, GREGT/CHINA and NIM/CHINA.
2. The test was performed in 966 Chamber.
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:

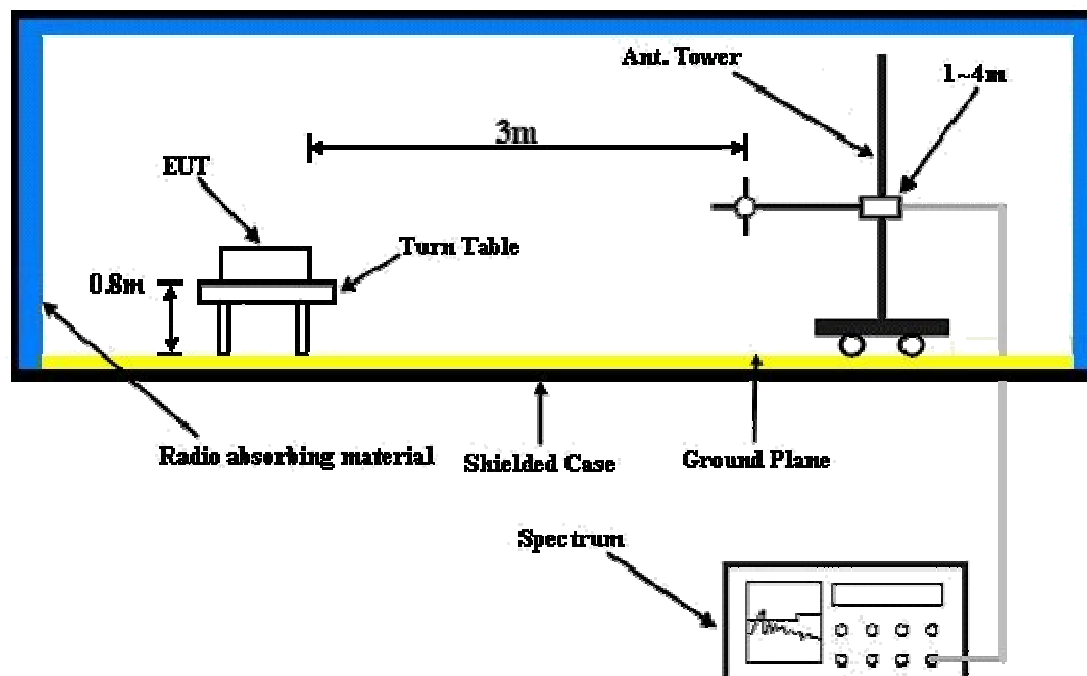
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

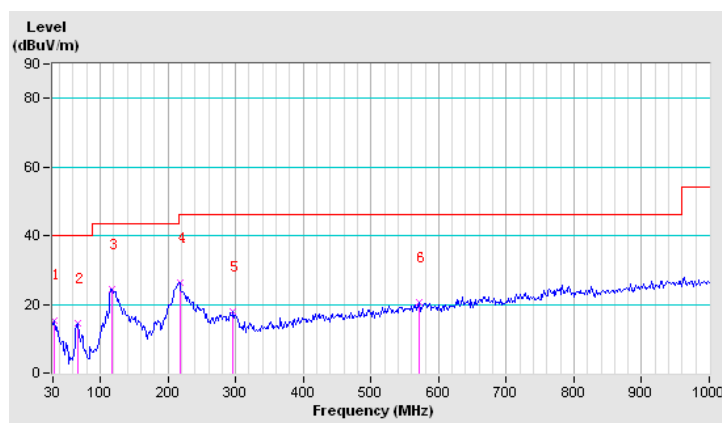
BELOW 1GHz WORST-CASE DATA: 802.11g

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.62	15.4 QP	40.0	-24.6	1.00 H	0	-3.40	18.83
2	67.18	14.4 QP	40.0	-25.6	1.00 H	0	7.21	7.17
3	117.30	24.3 QP	43.5	-19.2	1.00 H	0	11.03	13.29
4	217.53	26.3 QP	46.0	-19.7	1.00 H	0	14.64	11.66
5	296.75	18.1 QP	46.0	-28.0	1.00 H	0	1.79	16.26
6	571.58	20.7 QP	46.0	-25.3	1.00 H	0	-2.73	23.39

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.



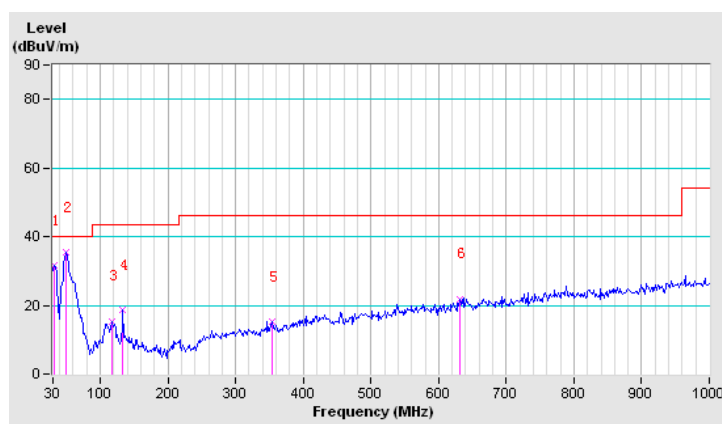


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	31.62	31.5 QP	40.0	-8.5	1.00 V	0	12.64	18.83
2	49.40	35.3 QP	40.0	-4.7	1.00 V	0	25.31	9.99
3	117.30	15.4 QP	43.5	-28.1	1.00 V	0	2.12	13.29
4	133.47	18.5 QP	43.5	-25.0	1.00 V	0	4.74	13.78
5	353.33	15.1 QP	46.0	-30.9	1.00 V	0	-3.22	18.34
6	631.40	21.9 QP	46.0	-24.1	1.00 V	0	-2.71	24.60

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.





BUREAU VERITAS Test Report No.: RF140714N041-1

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	48.7 PK	74.0	-25.4	1.19 H	152	12.68	35.97
2	2390.00	37.1 AV	54.0	-16.9	1.19 H	152	1.15	35.97
3	#2400.00	61.5 PK	80.3	-18.8	1.19 H	152	25.48	35.98
4	#2400.00	53.3 AV	76.7	-23.3	1.19 H	152	17.36	35.98
5	*2412.00	100.3 PK			1.19 H	152	64.25	36.00
6	*2412.00	96.7 AV			1.19 H	152	60.67	36.00
7	4824.00	45.2 PK	74.0	-28.8	1.00 H	0	5.82	39.36
8	4824.00	32.5 AV	54.0	-21.5	1.00 H	0	-6.82	39.36
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	47.4 PK	74.0	-26.6	1.00 V	269	11.41	35.97
2	2390.00	36.6 AV	54.0	-17.4	1.00 V	269	0.63	35.97
3	#2400.00	61.5 PK	78.5	-17.1	1.00 V	269	25.48	35.98
4	#2400.00	53.2 AV	75.8	-22.5	1.00 V	269	17.24	35.98
5	*2412.00	98.5 PK			1.00 V	269	62.51	36.00
6	*2412.00	95.8 AV			1.00 V	269	59.76	36.00
7	4824.00	56.2 PK	74.0	-17.8	1.00 V	0	16.84	39.36
8	4824.00	41.5 AV	54.0	-12.5	1.00 V	0	2.11	39.36

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	98.9 PK			1.19 H	161	62.90	36.03
2	*2437.00	95.5 AV			1.19 H	161	59.48	36.03
3	4874.00	43.5 PK	74.0	-30.5	1.00 H	360	4.14	39.37
4	4874.00	32.9 AV	54.0	-21.1	1.00 H	360	-6.50	39.37
5	7311.00	48.0 PK	74.0	-26.0	1.00 H	0	5.28	42.76
6	7311.00	35.7 AV	54.0	-18.4	1.00 H	0	-7.11	42.76
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	98.5 PK			1.30 V	269	62.48	36.03
2	*2437.00	90.7 AV			1.30 V	269	54.65	36.03
3	4874.00	43.2 PK	74.0	-30.9	1.00 V	295	3.78	39.37
4	4874.00	35.4 AV	54.0	-18.6	1.00 V	295	-4.01	39.37
5	7311.00	47.2 PK	74.0	-26.8	1.00 V	0	4.47	42.76
6	7311.00	35.5 AV	54.0	-18.5	1.00 V	0	-7.23	42.76

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	100.8 PK			1.17 H	155	64.70	36.06
2	*2462.00	97.4 AV			1.17 H	155	61.38	36.06
3	2483.50	47.5 PK	74.0	-26.5	1.17 H	155	11.41	36.09
4	2483.50	37.2 AV	54.0	-16.8	1.17 H	155	1.10	36.09
5	4924.00	43.6 PK	74.0	-30.4	1.00 H	258	4.23	39.38
6	4924.00	31.6 AV	54.0	-22.4	1.00 H	258	-7.82	39.38
7	7386.00	48.0 PK	74.0	-26.0	1.00 H	0	5.34	42.70
8	7386.00	36.7 AV	54.0	-17.3	1.00 H	0	-5.96	42.70
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			1.24 V	284	63.75	36.06
2	*2462.00	95.9 AV			1.24 V	284	59.87	36.06
3	2483.50	47.8 PK	74.0	-26.2	1.24 V	284	11.68	36.09
4	2483.50	36.8 AV	54.0	-17.2	1.24 V	284	0.74	36.09
5	4924.00	53.9 PK	74.0	-20.1	1.00 V	75	14.56	39.38
6	4924.00	42.5 AV	54.0	-11.5	1.00 V	75	3.16	39.38
7	7386.00	48.3 PK	74.0	-25.7	1.00 V	0	5.60	42.70
8	7386.00	35.5 AV	54.0	-18.6	1.00 V	0	-7.25	42.70

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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	60.1 PK	74.0	-13.9	1.19 H	152	24.15	35.97
2	2390.00	42.2 AV	54.0	-11.8	1.19 H	152	6.26	35.97
3	#2400.00	72.1 PK	80.8	-8.7	1.19 H	152	36.14	35.98
4	#2400.00	48.2 AV	75.3	-27.1	1.19 H	152	12.21	35.98
5	*2412.00	100.8 PK			1.19 H	152	64.79	36.00
6	*2412.00	95.3 AV			1.19 H	152	59.32	36.00
7	4824.00	44.8 PK	74.0	-29.2	1.00 H	0	5.40	39.36
8	4824.00	30.9 AV	54.0	-23.1	1.00 H	0	-8.48	39.36
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	54.8 PK	74.0	-19.2	1.00 V	269	18.87	35.97
2	2390.00	37.5 AV	54.0	-16.5	1.00 V	269	1.55	35.97
3	#2400.00	70.9 PK	78.1	-7.3	1.00 V	269	34.88	35.98
4	#2400.00	46.4 AV	68.1	-21.7	1.00 V	269	10.44	35.98
5	*2412.00	98.1 PK			1.00 V	269	62.13	36.00
6	*2412.00	88.1 AV			1.00 V	269	52.09	36.00
7	4824.00	44.3 PK	74.0	-29.7	1.00 V	0	4.90	39.36
8	4824.00	31.2 AV	54.0	-22.8	1.00 V	0	-8.16	39.36

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	99.7 PK			1.19 H	161	63.68	36.03
2	*2437.00	93.3 AV			1.19 H	161	57.22	36.03
3	4874.00	43.9 PK	74.0	-30.1	1.00 H	360	4.56	39.37
4	4874.00	30.8 AV	54.0	-23.2	1.00 H	360	-8.53	39.37
5	7311.00	48.4 PK	74.0	-25.6	1.00 H	295	5.62	42.76
6	7311.00	35.2 AV	54.0	-18.8	1.00 H	295	-7.55	42.76
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	98.8 PK			1.30 V	281	62.80	36.03
2	*2437.00	90.5 AV			1.30 V	281	54.51	36.03
3	4874.00	44.3 PK	74.0	-29.7	1.00 V	295	4.93	39.37
4	4874.00	34.3 AV	54.0	-19.8	1.00 V	295	-5.12	39.37
5	7311.00	46.3 PK	74.0	-27.7	1.00 V	0	3.56	42.76
6	7311.00	34.2 AV	54.0	-19.8	1.00 V	0	-8.55	42.76

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	100.1 PK			1.17 H	155	64.01	36.06
2	*2462.00	92.7 AV			1.17 H	155	56.62	36.06
3	2483.50	61.1 PK	74.0	-13.0	1.17 H	155	24.96	36.09
4	2483.50	50.6 AV	54.0	-3.4	1.17 H	155	14.47	36.09
5	4924.00	54.0 PK	74.0	-20.0	1.00 H	258	14.64	39.38
6	4924.00	42.4 AV	54.0	-11.6	1.00 H	258	2.98	39.38
7	7386.00	61.2 PK	74.0	-12.8	1.00 H	0	18.54	42.70
8	7386.00	49.5 AV	54.0	-4.5	1.00 H	0	6.83	42.70
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	89.4 AV			1.24 V	284	53.31	36.06
2	*2462.00	42.0 AV			1.24 V	284	5.89	36.06
3	2483.50	59.8 PK	74.0	-14.3	1.24 V	284	23.66	36.09
4	2483.50	42.0 AV	54.0	-12.0	1.24 V	284	5.87	36.09
5	4924.00	55.0 PK	74.0	-19.0	1.00 V	75	15.65	39.38
6	4924.00	43.1 AV	54.0	-10.9	1.00 V	75	3.75	39.38
7	7386.00	61.8 PK	74.0	-12.2	1.00 V	0	19.08	42.70
8	7386.00	49.4 AV	54.0	-4.7	1.00 V	0	6.65	42.70

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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	62.5 PK	74.0	-11.5	1.19 H	152	26.49	35.97
2	2390.00	43.7 AV	54.0	-10.3	1.19 H	152	7.74	35.97
3	#2400.00	74.5 PK	79.9	-5.4	1.19 H	152	38.55	35.98
4	#2400.00	51.1 AV	69.7	-18.6	1.19 H	152	15.07	35.98
5	*2412.00	99.9 PK			1.19 H	152	63.92	36.00
6	*2412.00	89.7 AV			1.19 H	152	53.65	36.00
7	4824.00	53.1 PK	74.0	-20.9	1.00 H	0	13.75	39.36
8	4824.00	41.5 AV	54.0	-12.5	1.00 H	0	2.17	39.36
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	59.1 PK	74.0	-14.9	1.00 V	269	23.10	35.97
2	2390.00	41.8 AV	54.0	-12.2	1.00 V	269	5.83	35.97
3	#2400.00	68.3 PK	79.4	-11.2	1.00 V	269	32.28	35.98
4	#2400.00	46.0 AV	69.5	-23.6	1.00 V	269	9.97	35.98
5	*2412.00	99.4 PK			1.00 V	269	63.43	36.00
6	*2412.00	89.5 AV			1.00 V	269	53.53	36.00
7	4824.00	52.8 PK	74.0	-21.2	1.00 V	0	13.44	39.36
8	4824.00	41.5 AV	54.0	-12.5	1.00 V	0	2.16	39.36

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	100.4 PK			1.19 H	147	64.32	36.03
2	*2437.00	90.3 AV			1.19 H	147	54.29	36.03
3	4874.00	55.4 PK	74.0	-18.6	1.00 H	360	16.00	39.37
4	4874.00	42.6 AV	54.0	-11.5	1.00 H	360	3.18	39.37
5	7311.00	61.4 PK	74.0	-12.6	1.00 H	0	18.64	42.76
6	7311.00	50.2 AV	54.0	-3.8	1.00 H	0	7.45	42.76
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	98.1 PK			1.30 V	269	62.04	36.03
2	*2437.00	86.7 AV			1.30 V	269	50.71	36.03
3	4874.00	55.6 PK	74.0	-18.4	1.00 V	295	16.27	39.37
4	4874.00	43.6 AV	54.0	-10.4	1.00 V	295	4.20	39.37
5	7311.00	61.7 PK	74.0	-12.3	1.00 V	0	18.95	42.76
6	7311.00	50.2 AV	54.0	-3.8	1.00 V	0	7.47	42.76

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	98.7 PK			1.17 H	155	62.60	36.06
2	*2462.00	87.7 AV			1.17 H	155	51.59	36.06
3	2483.50	59.3 PK	74.0	-14.8	1.17 H	155	23.16	36.09
4	2483.50	48.8 AV	54.0	-5.2	1.17 H	155	12.67	36.09
5	4924.00	54.6 PK	74.0	-19.4	1.00 H	258	15.18	39.38
6	4924.00	42.7 AV	54.0	-11.4	1.00 H	258	3.27	39.38
7	7386.00	61.1 PK	74.0	-12.9	1.00 H	0	18.43	42.70
8	7386.00	49.6 AV	54.0	-4.4	1.00 H	0	6.86	42.70
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			1.24 V	269	63.75	36.06
2	*2462.00	90.5 AV			1.24 V	269	54.48	36.06
3	2483.50	60.0 PK	74.0	-14.0	1.24 V	169	23.91	36.09
4	2483.50	42.3 AV	54.0	-11.7	1.24 V	169	6.21	36.09
5	4924.00	51.6 PK	74.0	-22.4	1.00 V	80	12.24	39.38
6	4924.00	40.5 AV	54.0	-13.5	1.00 V	80	1.09	39.38
7	7386.00	60.8 PK	74.0	-13.2	1.00 V	0	18.12	42.70
8	7386.00	49.7 AV	54.0	-4.3	1.00 V	0	6.98	42.70

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.



BUREAU VERITAS Test Report No.: RF140714N041-1

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	57.6 PK	74.0	-16.4	1.57 H	360	21.67	35.97
2	2390.00	40.5 AV	54.0	-13.5	1.57 H	360	4.50	35.97
3	#2400.00	60.8 PK	78.3	-17.5	1.57 H	360	24.78	35.98
4	#2400.00	41.9 AV	68.3	-26.4	1.57 H	360	5.94	35.98
5	*2422.00	98.3 PK			1.57 H	360	62.30	36.01
6	*2422.00	88.3 AV			1.57 H	360	52.28	36.01
7	4844.00	43.5 PK	74.0	-30.6	1.00 H	321	4.08	39.37
8	4844.00	32.0 AV	54.0	-22.0	1.00 H	321	-7.39	39.37
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	53.8 PK	74.0	-20.2	1.00 V	279	17.79	35.97
2	2390.00	42.8 AV	54.0	-11.2	1.00 V	279	6.86	35.97
3	#2400.00	56.4 PK	78.4	-22.0	1.00 V	279	20.44	35.98
4	#2400.00	39.0 AV	66.6	-27.6	1.00 V	279	2.98	35.98
5	*2422.00	98.4 PK			1.00 V	279	62.36	36.01
6	*2422.00	86.6 AV			1.00 V	279	50.56	36.01
7	4844.00	44.2 PK	74.0	-29.8	1.00 V	247	4.83	39.37
8	4844.00	32.7 AV	54.0	-21.3	1.00 V	247	-6.63	39.37

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	98.9 PK			1.54 H	337	62.84	36.03
2	*2437.00	88.7 AV			1.54 H	337	52.67	36.03
3	4874.00	44.8 PK	74.0	-29.2	1.00 H	67	5.42	39.37
4	4874.00	33.0 AV	54.0	-21.0	1.00 H	67	-6.39	39.37
5	7311.00	46.3 PK	74.0	-27.7	1.00 H	15	3.51	42.76
6	7311.00	39.7 AV	54.0	-14.4	1.00 H	15	-3.11	42.76
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	98.0 PK			1.00 V	270	62.00	36.03
2	*2437.00	85.8 AV			1.00 V	270	49.73	36.03
3	4874.00	44.6 PK	74.0	-29.4	1.00 V	0	5.23	39.37
4	4874.00	36.9 AV	54.0	-17.1	1.00 V	0	-2.48	39.37
5	7311.00	46.9 PK	74.0	-27.1	1.00 V	0	4.17	42.76
6	7311.00	36.5 AV	54.0	-17.5	1.00 V	0	-6.22	42.76

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	98.8 PK			1.25 H	17	62.74	36.05
2	*2452.00	87.9 AV			1.25 H	17	51.81	36.05
3	2483.50	53.4 PK	74.0	-20.6	1.25 H	17	17.30	36.09
4	2483.50	41.7 AV	54.0	-12.3	1.25 H	17	5.59	36.09
5	4904.00	53.5 PK	74.0	-20.5	1.00 H	57	14.13	39.38
6	4904.00	45.7 AV	54.0	-8.3	1.00 H	57	6.30	39.38
7	7356.00	60.0 PK	74.0	-14.0	1.20 H	138	17.26	42.72
8	7356.00	48.6 AV	54.0	-5.4	1.20 H	138	5.84	42.72
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	97.6 PK			1.23 V	266	61.51	36.05
2	*2452.00	87.0 AV			1.23 V	266	50.92	36.05
3	2483.50	54.9 PK	74.0	-19.1	1.23 V	266	18.85	36.09
4	2483.50	42.9 AV	54.0	-11.1	1.23 V	266	6.77	36.09
5	4904.00	50.9 PK	74.0	-23.1	1.00 V	116	11.49	39.38
6	4904.00	40.2 AV	54.0	-13.8	1.00 V	116	0.85	39.38
7	7356.00	60.0 PK	74.0	-14.0	1.00 V	274	17.24	42.72
8	7356.00	47.6 AV	54.0	-6.4	1.00 V	274	4.84	42.72

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.



BELOW 1GHz WORST-CASE DATA

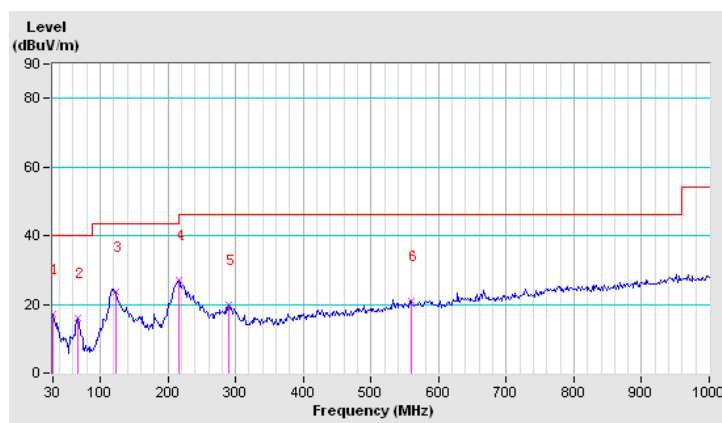
BT-LE (GFSK)

CHANNEL	TX Channel 39	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	30.00	17.0 QP	40.0	-23.0	1.00 H	24	-2.67	19.65
2	67.18	16.0 QP	40.0	-24.0	1.00 H	37	8.84	7.17
3	122.15	23.6 QP	43.5	-19.9	1.00 H	52	9.96	13.60
4	215.92	27.0 QP	43.5	-16.6	1.00 H	64	15.41	11.54
5	290.28	19.7 QP	46.0	-26.3	1.00 H	8	3.68	16.03
6	558.65	20.9 QP	46.0	-25.1	1.00 H	1	-2.59	23.51

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.



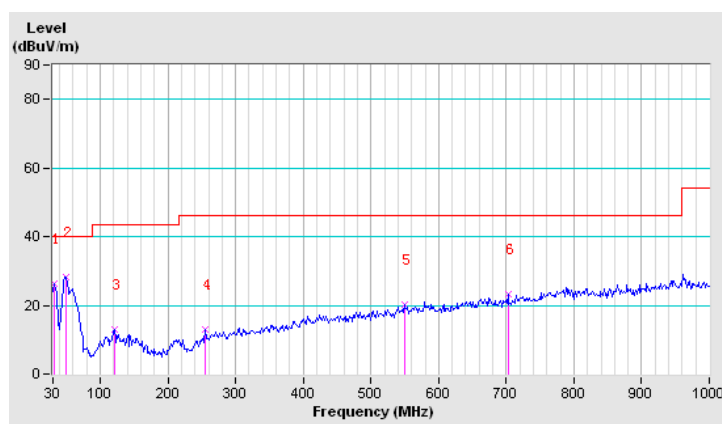


CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	31.62	26.4 QP	40.0	-13.6	1.00 V	0	7.54	18.83
2	49.40	28.3 QP	40.0	-11.7	1.00 V	0	18.27	9.99
3	120.53	13.0 QP	43.5	-30.5	1.00 V	0	-0.49	13.52
4	254.72	13.1 QP	46.0	-32.9	1.00 V	0	-2.34	15.40
5	548.95	20.2 QP	46.0	-25.8	1.00 V	0	-3.02	23.18
6	702.53	23.4 QP	46.0	-22.6	1.00 V	0	-2.26	25.62

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.





BUREAU VERITAS Test Report No.: RF140714N041-1

ABOVE 1GHz TEST DATA:

BT-LE (GFSK)

CHANNEL	TX Channel 0	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	38.3 PK	74.0	-35.7	1.23 H	153	2.35	35.97
2	2390.00	27.6 AV	54.0	-26.5	1.23 H	153	-8.42	35.97
3	#2400.00	49.4 PK	66.7	-17.3	1.23 H	153	13.46	35.98
4	#2400.00	34.5 AV	43.4	-9.0	1.23 H	153	-1.51	35.98
5	*2402.00	86.7 PK			1.23 H	153	50.75	35.98
6	*2402.00	63.4 AV			1.23 H	153	27.45	35.98
7	4804.00	42.9 PK	74.0	-31.1	1.00 H	26	3.52	39.36
8	4804.00	31.6 AV	54.0	-22.4	1.00 H	26	-7.79	39.36
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	39.4 PK	74.0	-34.6	1.04 V	286	3.39	35.97
2	2390.00	27.5 AV	54.0	-26.5	1.04 V	286	-8.50	35.97
3	#2400.00	47.3 PK	64.8	-17.5	1.04 V	286	11.33	35.98
4	#2400.00	33.2 AV	41.8	-8.6	1.04 V	286	-2.79	35.98
5	*2402.00	84.8 PK			1.04 V	286	48.84	35.98
6	*2402.00	61.8 AV			1.04 V	286	25.83	35.98
7	4804.00	43.6 PK	74.0	-30.4	1.00 V	175	4.26	39.36
8	4804.00	32.5 AV	54.0	-21.5	1.00 V	175	-6.86	39.36

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 19	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	*2440.00	88.7 PK			1.16 H	155	52.68	36.03
2	*2440.00	74.7 AV			1.16 H	155	38.62	36.03
3	4880.00	42.8 PK	74.0	-31.2	1.00 H	12	3.41	39.38
4	4880.00	30.5 AV	54.0	-23.5	1.00 H	12	-8.84	39.38
5	7320.00	47.2 PK	74.0	-26.8	1.20 H	114	4.47	42.75
6	7320.00	34.6 AV	54.0	-19.4	1.20 H	114	-8.19	42.75
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	*2440.00	86.8 PK			1.27 V	284	50.80	36.03
2	*2440.00	72.7 AV			1.27 V	284	36.65	36.03
3	4880.00	44.9 PK	74.0	-29.1	1.35 V	0	5.49	39.38
4	4880.00	31.5 AV	54.0	-22.5	1.35 V	0	-7.84	39.38
5	7320.00	47.3 PK	74.0	-26.7	1.10 V	98	4.51	42.75
6	7320.00	32.5 AV	54.0	-21.5	1.10 V	98	-10.27	42.75

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 39	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	*2480.00	88.1 PK			1.22 H	150	52.05	36.08
2	*2480.00	65.8 AV			1.22 H	150	29.76	36.08
3	2483.50	39.8 PK	74.0	-34.2	1.22 H	150	3.71	36.09
4	2483.50	28.4 AV	54.0	-25.7	1.22 H	150	-7.74	36.09
5	4960.00	41.3 PK	74.0	-32.7	1.00 H	0	1.93	39.39
6	4960.00	30.1 AV	54.0	-23.9	1.00 H	0	-9.27	39.39
7	7440.00	46.9 PK	74.0	-27.2	1.11 H	360	4.20	42.65
8	7440.00	32.5 AV	54.0	-21.6	1.11 H	360	-10.20	42.65
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	*2480.00	88.2 PK			1.25 V	270	52.07	36.08
2	*2480.00	70.6 AV			1.25 V	270	34.48	36.08
3	2483.50	41.3 PK	74.0	-32.7	1.25 V	270	5.22	36.09
4	2483.50	30.2 AV	54.0	-23.8	1.25 V	270	-5.85	36.09
5	4960.00	43.8 PK	74.0	-30.2	1.00 V	24	4.42	39.39
6	4960.00	31.6 AV	54.0	-22.4	1.00 V	24	-7.75	39.39
7	7440.00	46.0 PK	74.0	-28.1	1.31 V	0	3.30	42.65
8	7440.00	32.6 AV	54.0	-21.4	1.31 V	0	-10.01	42.65

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 (10Hz–40GHz)	Rohde&Schwarz	FSV40	101003	Apr. 09,14	Apr. 08,15
Power Meter	Anritsu	ML2495A	1139001	Feb. 21,14	Feb. 20,15
Power Sensor	Anritsu	MA2411B	1126068	Feb. 21,14	Feb. 20,15
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 30,13	Oct. 29,14
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep. 17,13	Sep. 16,14
Oscilloscope	Agilent	DSO9254A	MY51260160	Oct. 17, 13	Oct. 16, 14
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 25,13	Nov. 24,14

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 RF Oven room.

4.3.3 TEST PROCEDURE

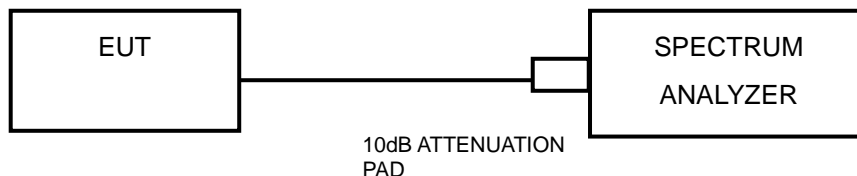
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points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



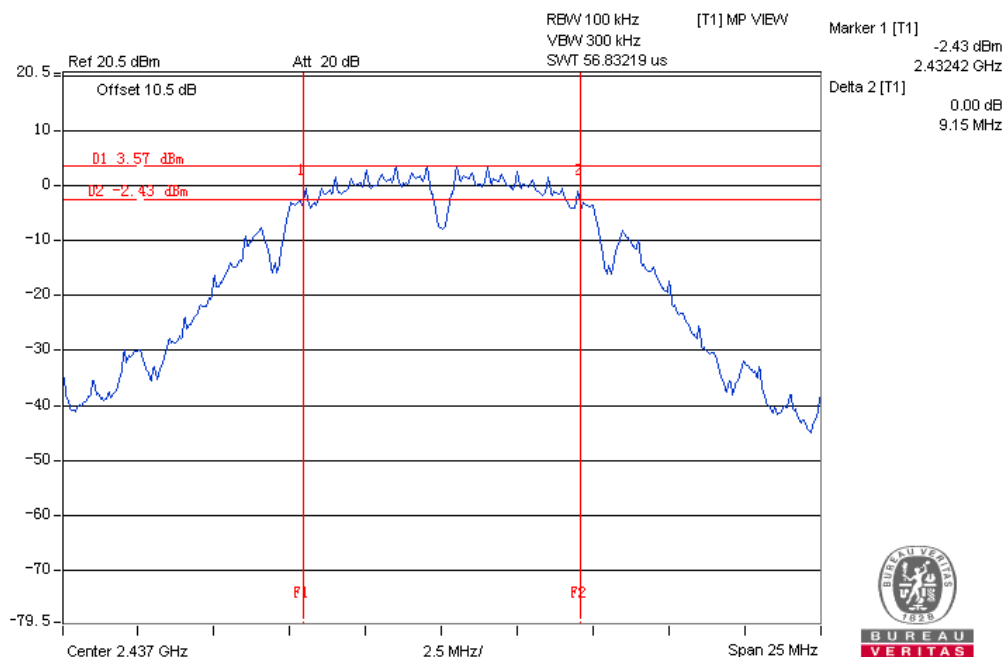
4.3.6 EUT OPERATING CONDITIONS

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

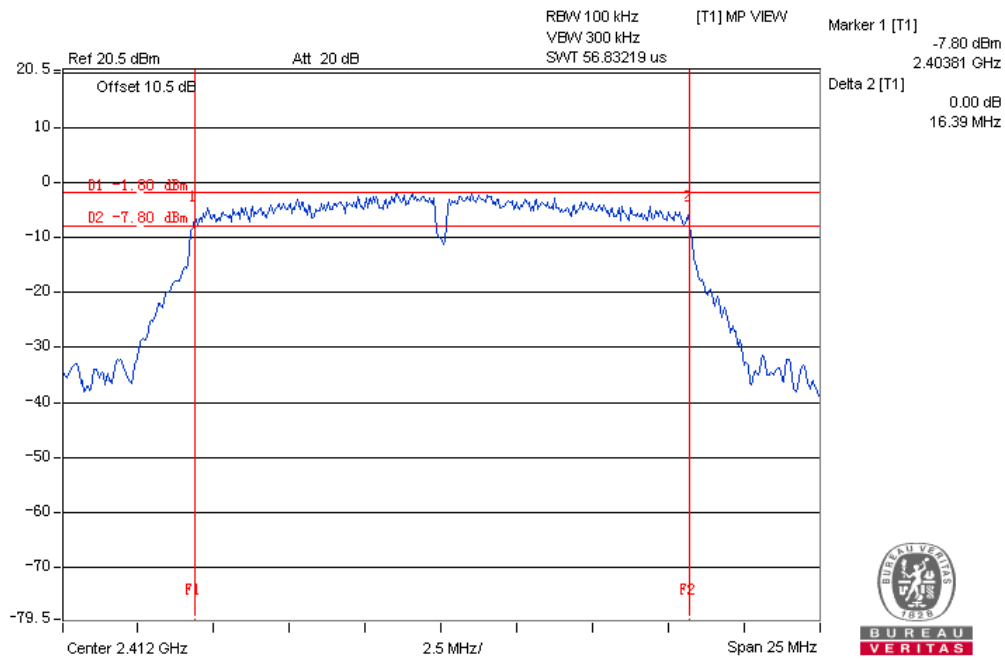
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	9.14	0.5	PASS
6	2437	9.15	0.5	PASS
11	2462	9.15	0.5	PASS





802.11g

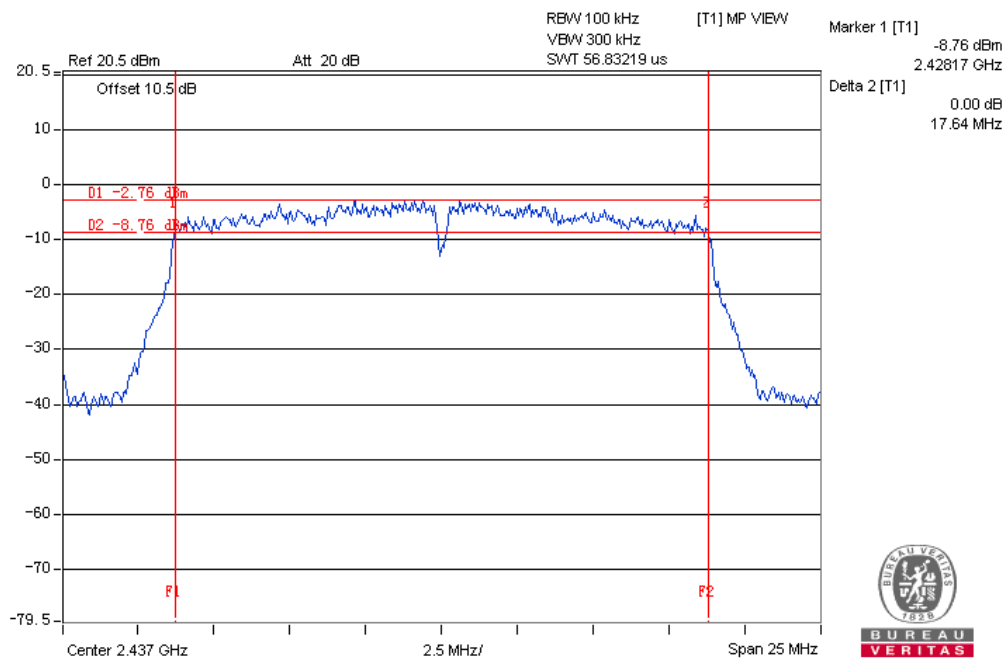
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.39	0.5	PASS
6	2437	16.39	0.5	PASS
11	2462	16.38	0.5	PASS





802.11n (20MHz)

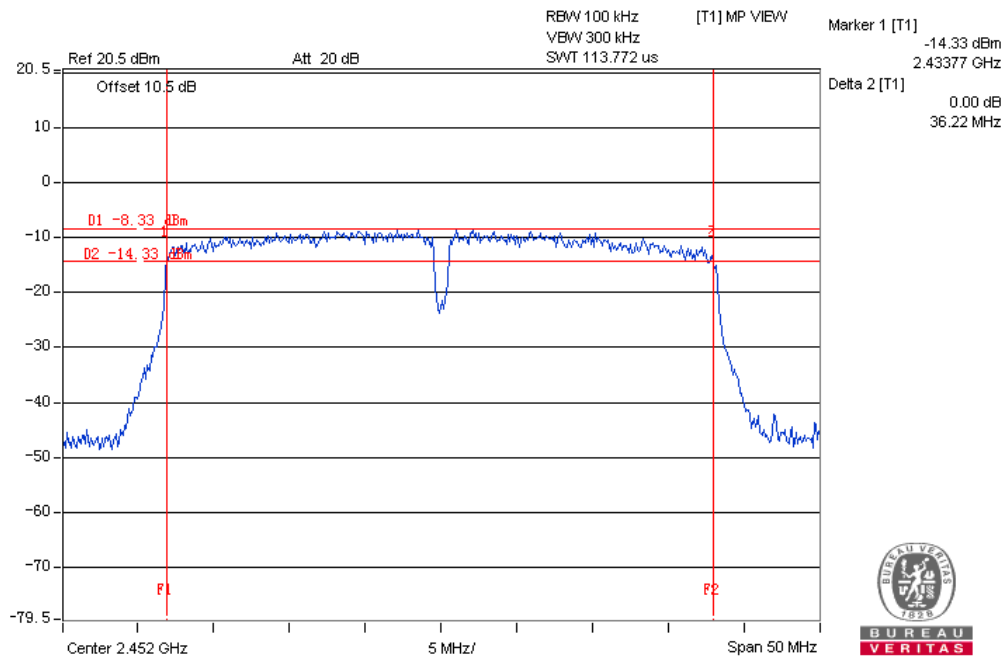
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.63	0.5	PASS
6	2437	17.64	0.5	PASS
11	2462	17.64	0.5	PASS





802.11n (40MHz)

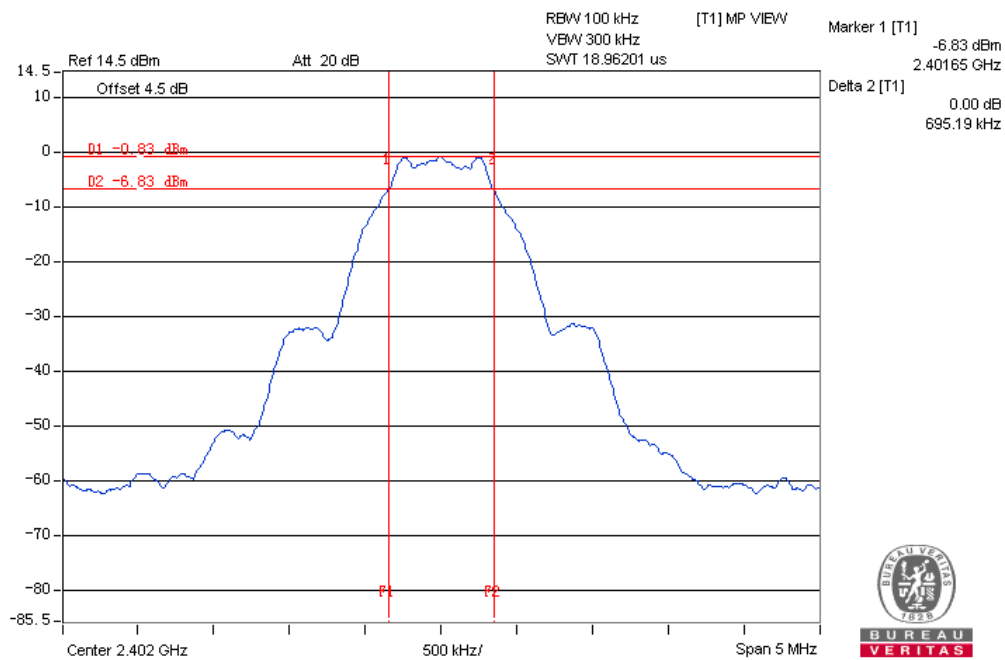
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	36.17	0.5	PASS
6	2437	36.13	0.5	PASS
9	2452	36.22	0.5	PASS





BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.70	0.5	PASS
19	2440	0.69	0.5	PASS
39	2480	0.70	0.5	PASS



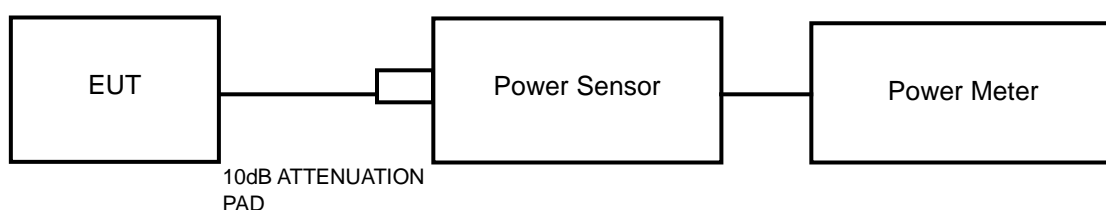


4.4 CONDUCTED OUTPUT POWER

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	18.27	30	PASS
6	2437	18.04	30	PASS
11	2462	17.86	30	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	19.94	30	PASS
6	2437	19.34	30	PASS
11	2462	18.82	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
1	2412	20.34	30	PASS
6	2437	19.69	30	PASS
11	2462	19.36	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
3	2422	18.48	30	PASS
6	2437	18.33	30	PASS
9	2452	18.09	30	PASS



Test Report No.: RF140714N041-1

BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
0	2402	-2.51	30	PASS
19	2440	-3.18	30	PASS
39	2480	-3.74	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	15.57	N/A
6	2437	15.42	N/A
11	2462	15.25	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	12.09	N/A
6	2437	11.51	N/A
11	2462	10.92	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	12.10	N/A
6	2437	11.61	N/A
11	2462	11.18	N/A

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
3	2422	10.48	N/A
6	2437	10.25	N/A
9	2452	10.08	N/A



BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-4.20	N/A
19	2440	-4.86	N/A
39	2480	-5.62	N/A

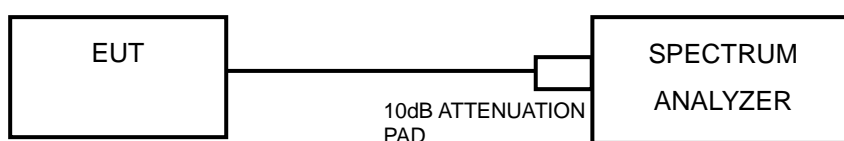


4.5 POWER SPECTRAL DENSITY MEASUREMENT

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	-11.48	8	PASS
6	2437	-11.65	8	PASS
11	2462	-12.40	8	PASS

802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-17.00	8	PASS
6	2437	-17.86	8	PASS
11	2462	-18.11	8	PASS

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-17.42	8	PASS
6	2437	-17.88	8	PASS
11	2462	-18.56	8	PASS

802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-22.93	8	PASS
6	2437	-23.37	8	PASS
9	2452	-23.67	8	PASS

BT-LE (GFSK)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-16.05	8	PASS
6	2437	-16.63	8	PASS
9	2452	-17.96	8	PASS

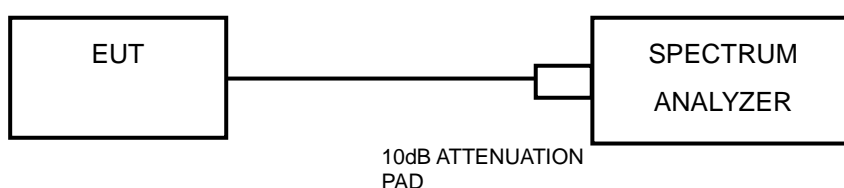


4.6 OUT OF BAND EMISSION MEASUREMENT

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. 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



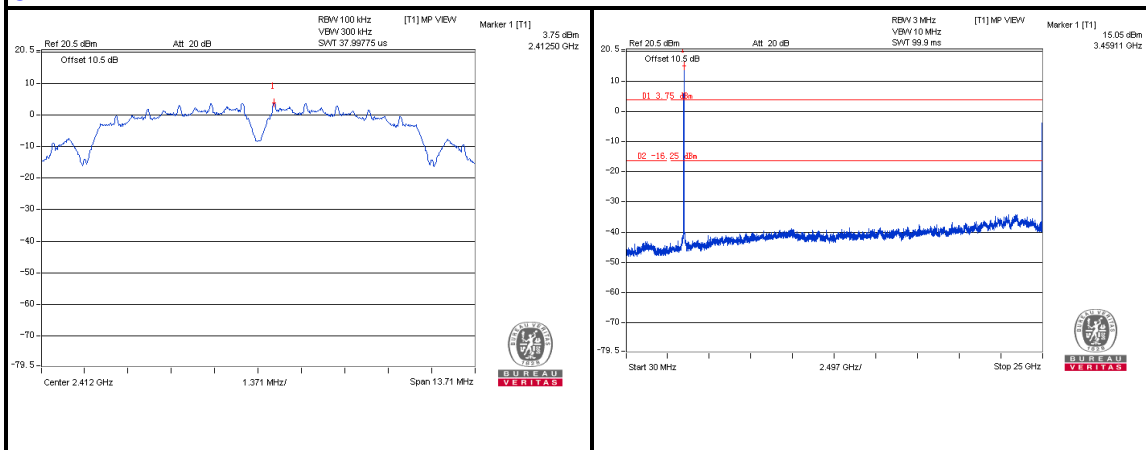
BUREAU
VERITAS

Test Report No.: RF140714N041-1

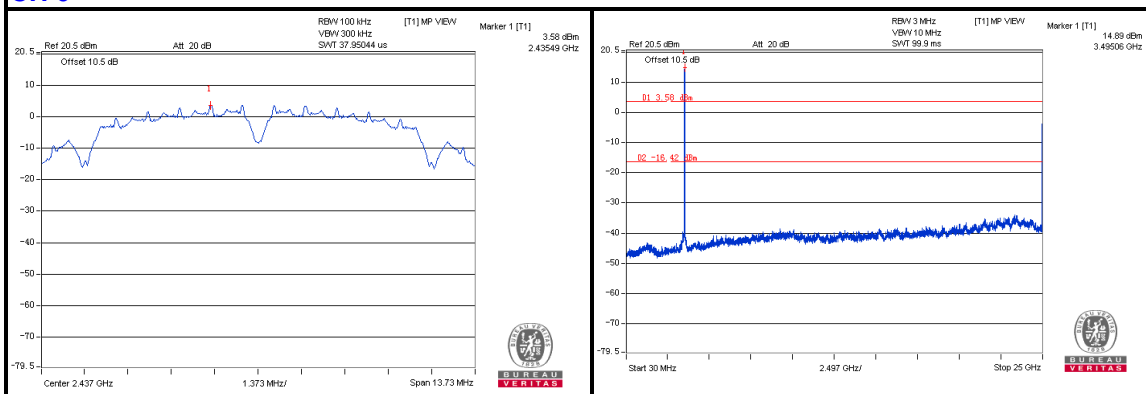
4.6.7 TEST RESULTS

802.11b

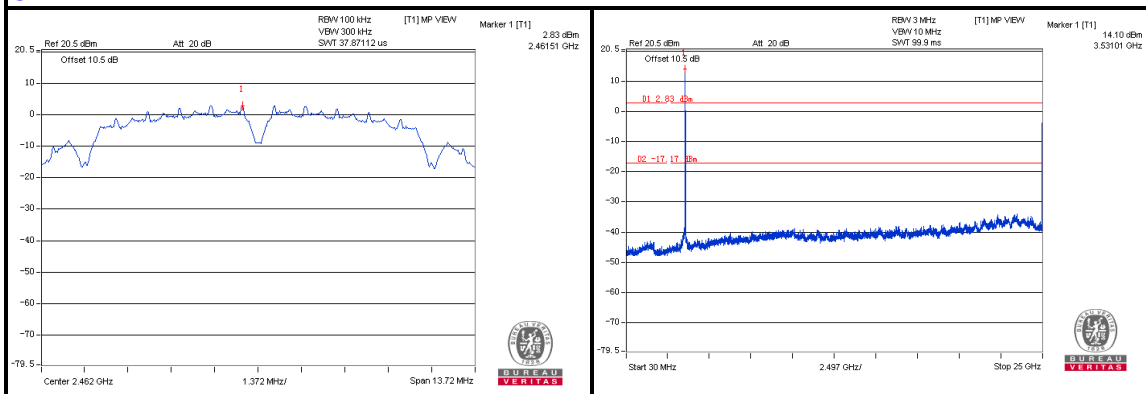
CH 1



CH 6



CH 11



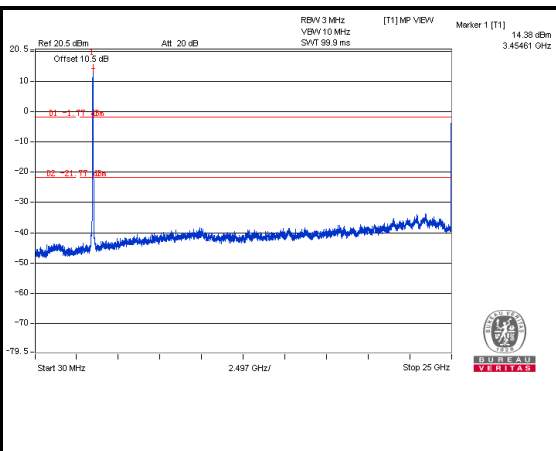
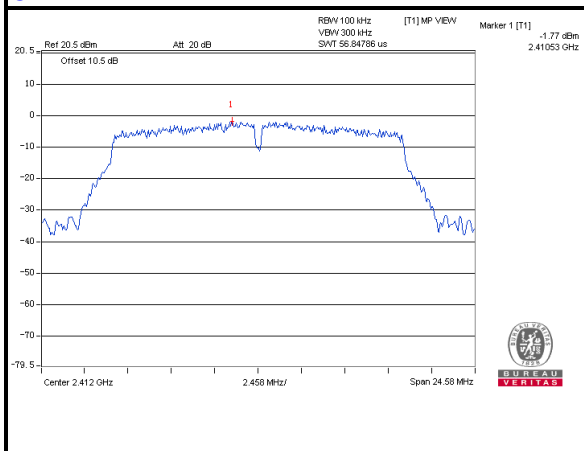


BUREAU
VERITAS

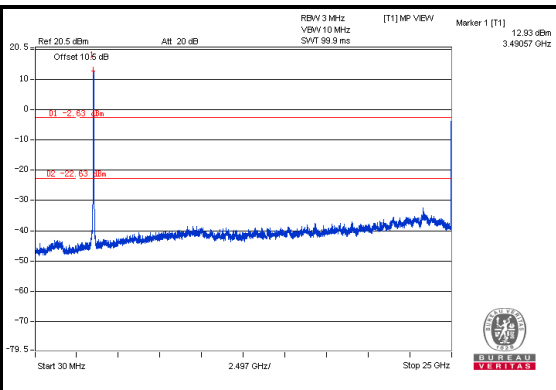
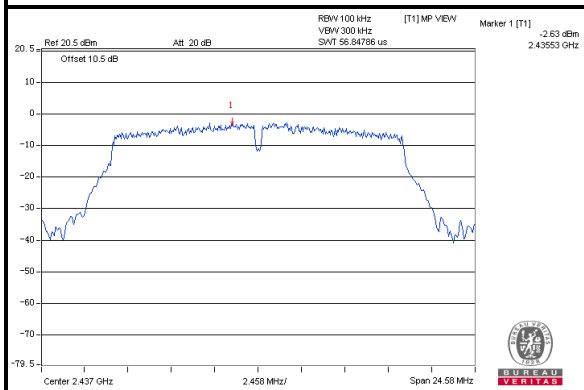
Test Report No.: RF140714N041-1

802.11g

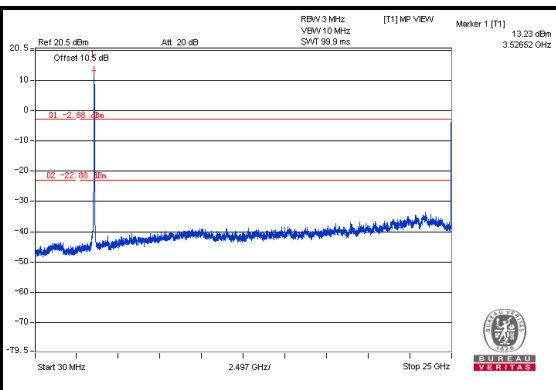
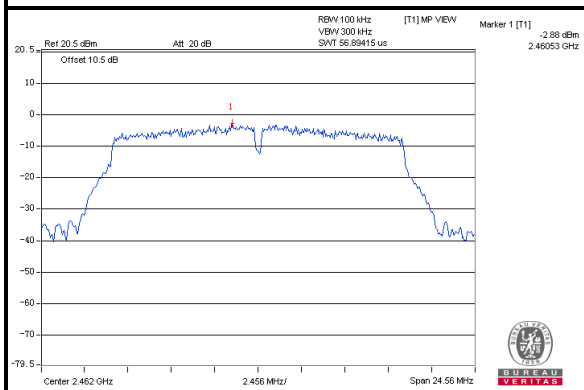
CH 1



CH 6



CH 11



Bureau Veritas Shenzhen Co., Ltd.
Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie
Town, Dongguan City,
Guangdong 523942, China

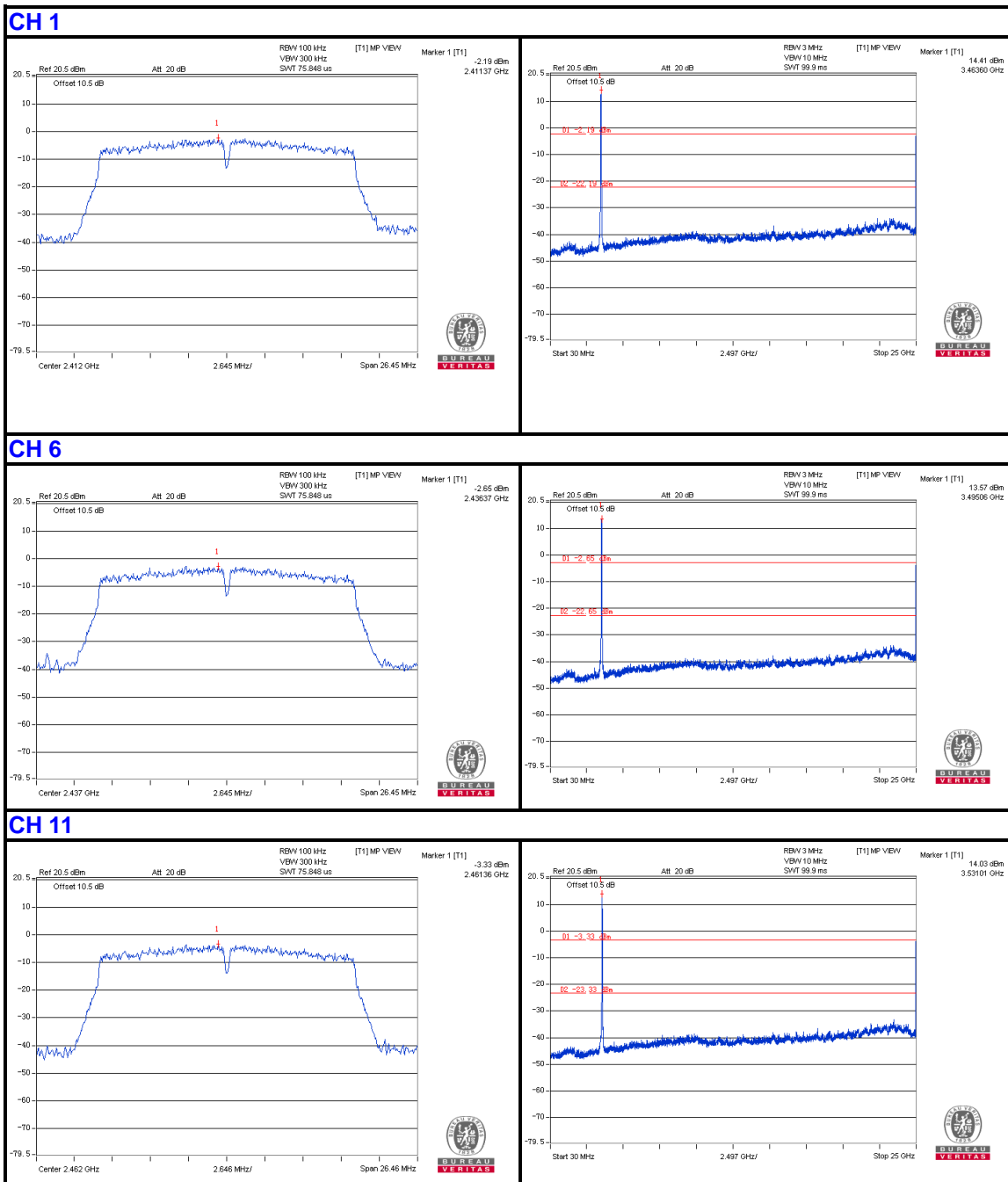
Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com



BUREAU
VERITAS

Test Report No.: RF140714N041-1

802.11n (20MHz)



Bureau Veritas Shenzhen Co., Ltd.
Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie
Town, Dongguan City,
Guangdong 523942, China

Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

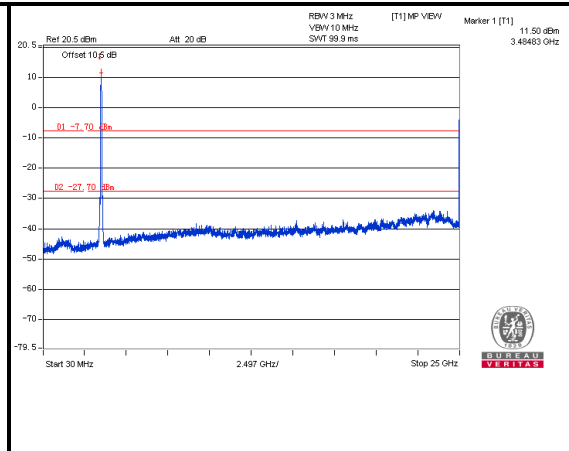
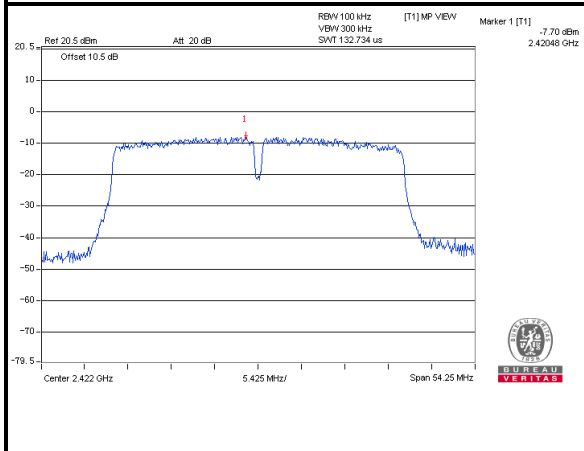


BUREAU
VERITAS

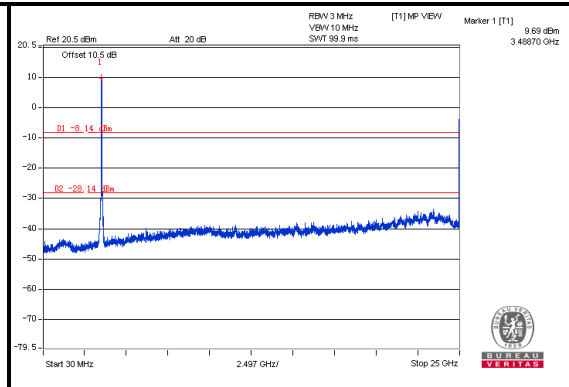
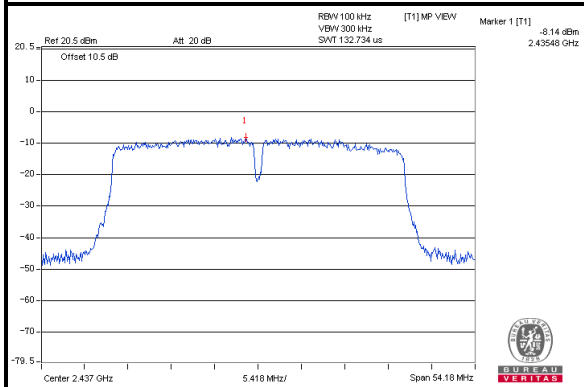
Test Report No.: RF140714N041-1

802.11n (40MHz)

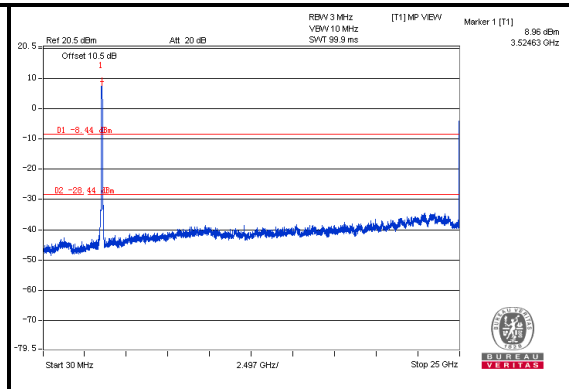
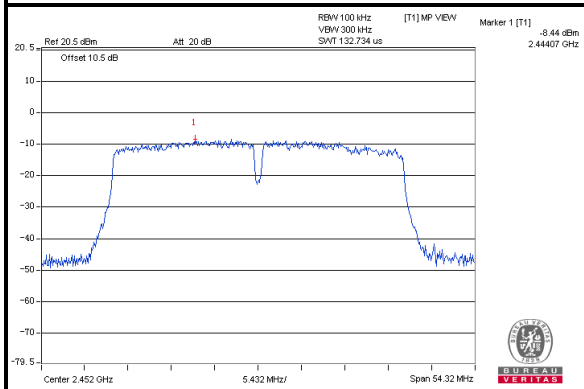
CH 1



CH 6



CH 11



Bureau Veritas Shenzhen Co., Ltd.
Dongguan Branch

No. 34, Chenwulu Section, Guantai Rd., Houjie
Town, Dongguan City,
Guangdong 523942, China

Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

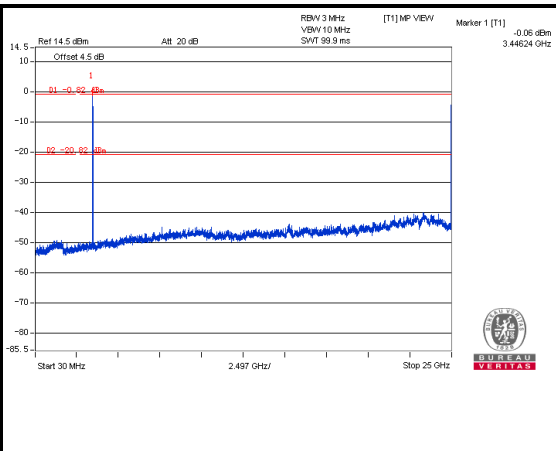
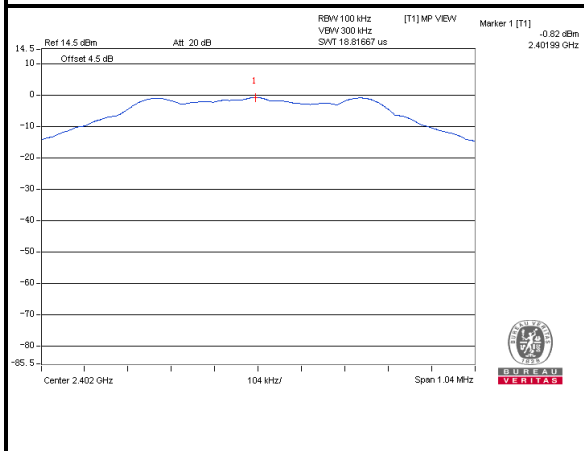


BUREAU
VERITAS

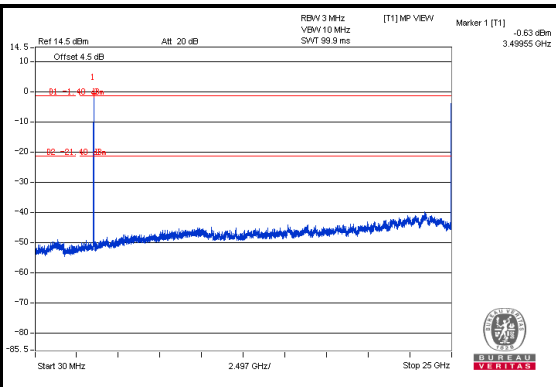
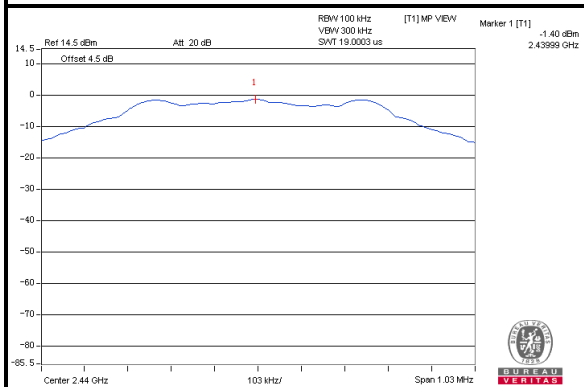
Test Report No.: RF140714N041-1

BT-LE (GFSK)

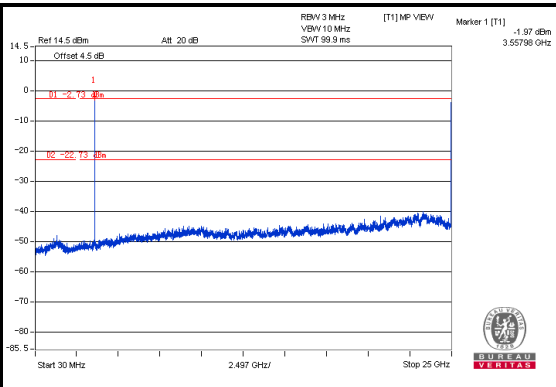
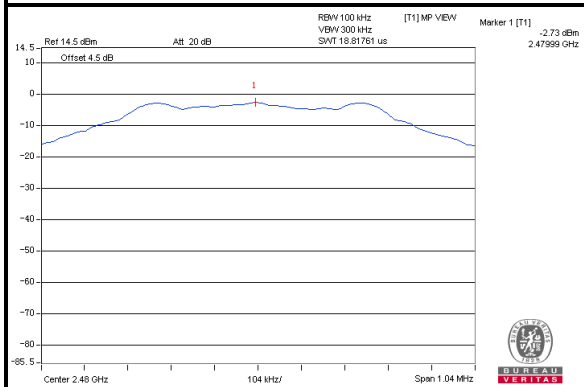
CH 1



CH 6



CH 11





5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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---