



BUREAU VERITAS

Test Report No.: RF140708N057-1



Test Lab
Cert 2951.01

TEST REPORT

Applicant	Lenovo (Shanghai) Electronics Technology Co., Ltd.
Address	No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ, Shanghai, China

Manufacturer or Supplier	Lenovo PC HK Limited
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Product	Portable Tablet Computer
Brand Name	lenovo
Model	Lenovo TAB S8-50F
Additional Model & Model Difference	N/A
Date of tests	July 09 ~ July 31, 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 Yuqiang Yin Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
	
	Date: July 31, 2014
<p><small>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</small></p>	



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..... 38

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT..... 38

4.3.2 TEST INSTRUMENTS..... 38

4.3.3 TEST PROCEDURE..... 38

4.3.4 DEVIATION FROM TEST STANDARD 38

4.3.5 TEST SETUP..... 39

4.3.6 EUT OPERATING CONDITIONS 39



4.3.7	TEST RESULTS	40
4.4	CONDUCTED OUTPUT POWER.....	40
4.4.1	LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT	44
4.4.2	TEST SETUP	44
4.4.3	TEST INSTRUMENTS.....	44
4.4.4	TEST PROCEDURES	44
4.4.5	DEVIATION FROM TEST STANDARD	45
4.4.6	EUT OPERATING CONDITIONS	45
4.4.7	TEST RESULTS	45
4.4.7.1	MAXIMUM PEAK OUTPUT POWER	45
4.4.7.2	AVERAGE OUTPUT POWER (FOR REFERENCE).....	45
4.5	POWER SPECTRAL DENSITY MEASUREMENT	48
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	48
4.5.2	TEST SETUP	48
4.5.3	TEST INSTRUMENTS.....	48
4.5.4	TEST PROCEDURE.....	48
4.5.5	DEVIATION FROM TEST STANDARD	48
4.5.6	EUT OPERATING CONDITION	48
4.5.7	TEST RESULTS	49
4.6	OUT OF BAND EMISSION MEASUREMENT	53
4.6.1	LIMITS OF OUT OF BAND EMISSION MEASUREMENT	53
4.6.2	TEST SETUP	53
4.6.3	TEST INSTRUMENTS.....	53
4.6.4	TEST PROCEDURE.....	53
4.6.5	DEVIATION FROM TEST STANDARD	54
4.6.6	EUT OPERATING CONDITION	54
4.6.7	TEST RESULTS	55
5	PHOTOGRAPHS OF THE TEST CONFIGURATION	59
6	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	60



BUREAU
VERITAS

Test Report No.: RF140708N057-1

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140708N057-1	Original release	July 31, 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 -6.22dB at 3.53108MHz
15.205 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.2dB at 4828.00MHz
15.247(d)	Out of band Emission 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	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	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.74dB
	30MHz ~ 1GMHz	4.06dB
	1GHz ~ 18GHz	4.58dB
	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	Portable Tablet Computer
MODEL NO.	Lenovo TAB S8-50F
FCC ID	O57TABS850F
NOMINAL VOLTAGE	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion, polymer)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM BT-LE(GFSK) for DTS
MODULATION TECHNOLOGY	DSSS, OFDM, DTS
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20) 2402-2480MHz for BT-LE(GFSK)
MAX. OUTPUT POWER	WLAN: 163.305mW (Maximum) BT-LE: 2.244mW (Maximum)
ANTENNA TYPE	Chip Antenna: 0.23dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	See note 3

NOTE:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT matched the following USB cable:

USB CABLE	
BRAND:	Yuqiu
MODEL:	CWUSB-0401Y6-01
SIGNAL LINE:	1.0 METER

- The EUT was powered by the following adapters:

ADAPTER 1	
BRAND:	lenovo
MODEL:	C-P62
INPUT:	AC 100-240V, 50/60Hz, 300mA
OUTPUT:	DC 5V, 1500mA
MANUFACTURER:	Huntkey



ADAPTER 2	
BRAND:	lenovo
MODEL:	C-P62
INPUT:	AC 100-240V, 50/60Hz, 300mA
OUTPUT:	DC 5V, 1500mA
MANUFACTURER:	Greatwall

ADAPTER 3	
BRAND:	Huntkey
MODEL:	HKA00905015-2C
INPUT:	AC 100-240V, 50/60Hz, 250mA
OUTPUT:	DC 5V, 1500mA
MANUFACTURER:	Huntkey

4. The EUT incorporates a SISO function. Physically, the EUT provides one transmitter and one receiver.

MODULATION MODE	TX/RX FUNCTION
802.11b	1TX /1RX
802.11g	1TX /1RX
802.11n (20MHz)	1TX /1RX

5. There were Sample A and Sample B for test. The difference between Sample A and B are listed as below:

	Sample A		Sample B	
Parts	Supplier	Model No.	Supplier	Model No.
Battery	XWD	L13D1P32	TWS	L13T1P32
LCD	GIS	N080JCE-G41	Laibao	TV080WUM-NL0
Rear Camera	Sunny	P8V10M	O-film	L8865A40
Memory	Samsung	K3QF2F20DM-AGCE	Hynix	H9CCNNNBPTALBR-NTM
Storage eMMC 32GB	Samsung	KLMBG4WEBC-B031	Toshiba	THGBMBG8D4KBAIR
Storage eMMC 16GB	Honghua	KL MAG2WEMB-B031	DAIN	THGBMBG7D2KBAIL
Speaker (left/Right)	Honghua	SB9558L/R	DAIN	B0916N14D01F/D02F

6. 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		

40 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 Y 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	
Sample A + Adapter	√	√	√	√	-
Sample B + Adapter	√	-	-	-	-

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

NOTE: No need to concern of Conducted Emission due to the EUT is powered by battery.

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1	CCK	DBPSK	1.0
BT-LE	0 to 39	39	DTS	GFSK	1

For the test results, only the worst case was shown in test report.



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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5
BT-LE	0 to 39	0,19, 39	DTS	GFSK	1

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 11	CCK	DBPSK	1.0
802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
802.11n HT20	1 to 11	1, 11	OFDM	BPSK	6.5
BT-LE	0 to 39	0, 39	DTS	GFSK	1



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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5
BT-LE	0 to 39	0, 19, 39	DTS	GFSK	1

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	22deg. C, 54%RH	DC 5V from adaptor	Blue Zheng
RE≥1G	22deg. C, 54%RH	DC 5V from adaptor	Blue Zheng
PLC	25deg. C, 60%RH	DC 5V from adaptor	Yuqiang Yin
APCM	25deg. C, 60%RH	DC 3.8V from 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, Section 15.247

558074 D01 DTS Meas Guidance v03r01

ANSI C63.10-2009

Note:

1. All test items have been performed and recorded as per the above standards.
2. The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B(DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	PC	HP	A6608CN	3CR83825X3	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m
2	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	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.

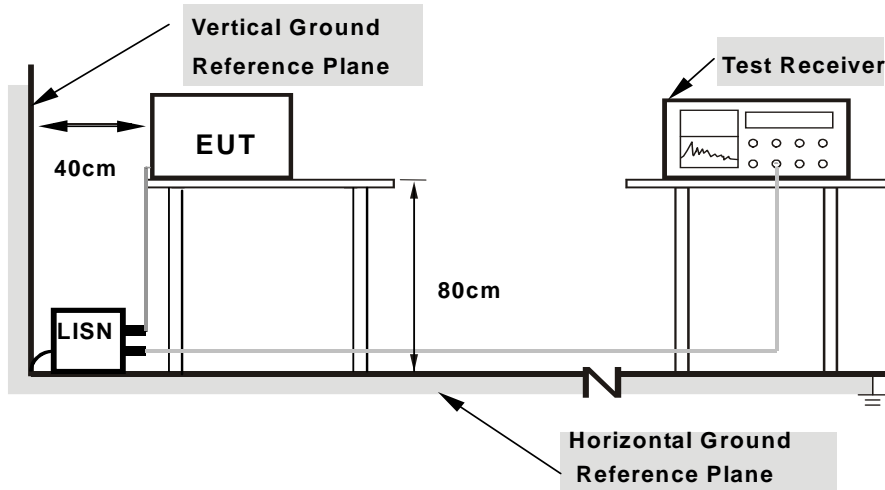
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

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

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

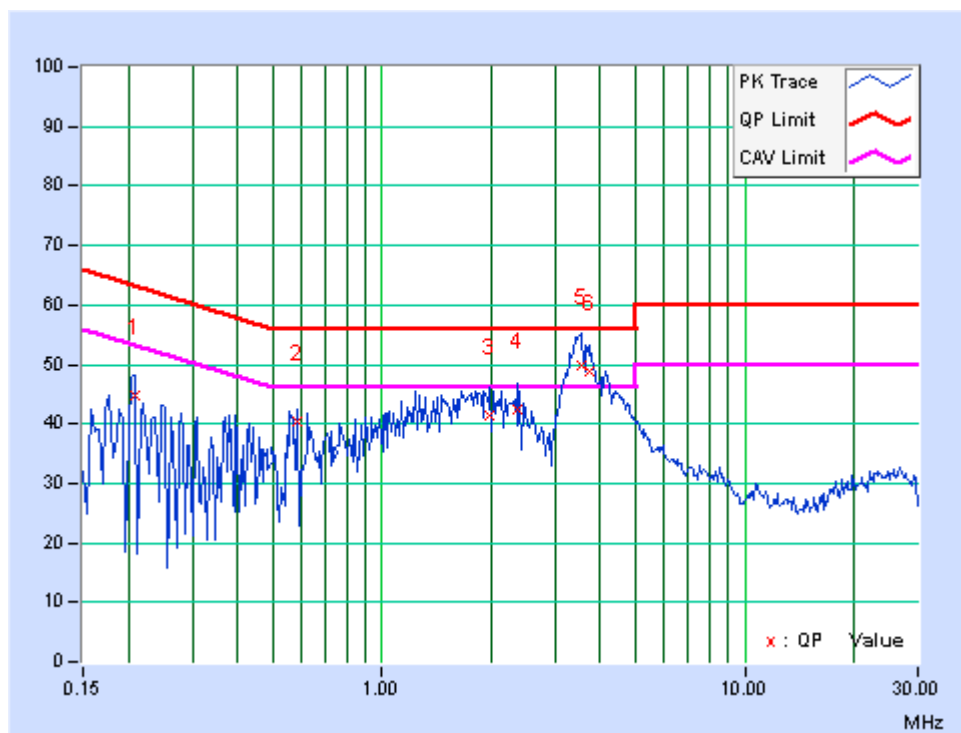


4.1.7 TEST RESULTS

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	0.20865	10.65	34.19	19.40	44.84	30.05	63.26	53.26	-18.42	-23.21
2	0.58331	10.47	30.09	18.17	40.56	28.64	56.00	46.00	-15.44	-17.36
3	1.97881	10.01	31.56	18.31	41.57	28.32	56.00	46.00	-14.43	-17.68
4	2.37372	10.02	32.31	14.03	42.33	24.05	56.00	46.00	-13.67	-21.95
5	3.53108	10.07	39.71	27.34	49.78	37.41	56.00	46.00	-6.22	-8.59
6	3.74613	10.07	38.60	22.16	48.67	32.23	56.00	46.00	-7.33	-13.77

- 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.

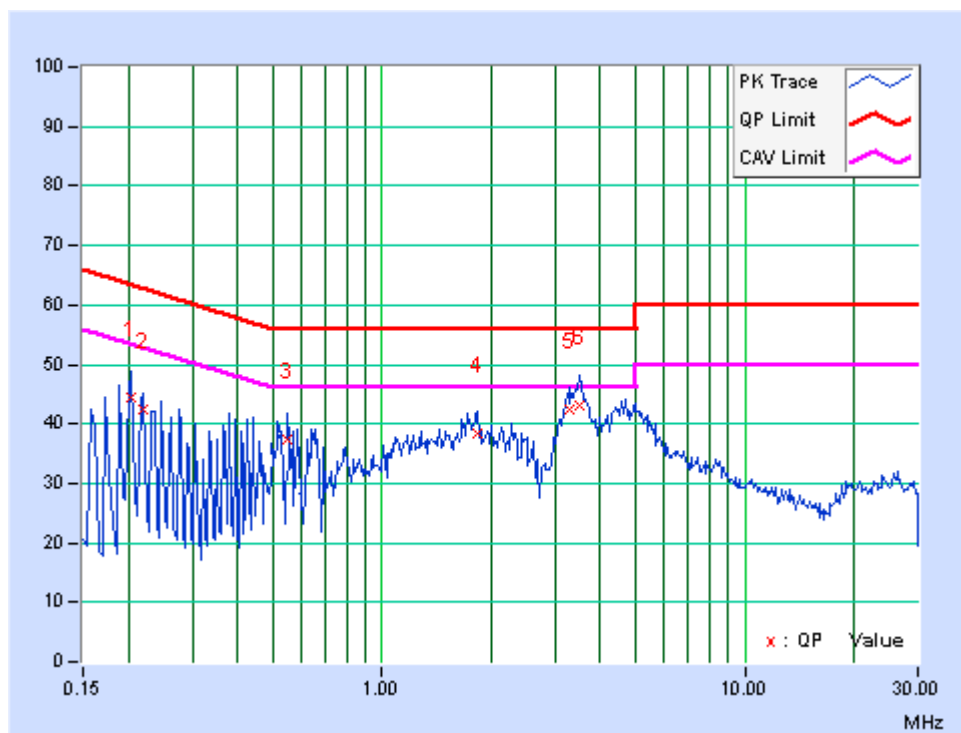




PHASE	Neutral	6dB BANDWIDTH	9kHz
--------------	---------	----------------------	------

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	0.20474	10.55	33.73	21.04	44.28	31.59	63.42	53.42	-19.14	-21.83
2	0.22038	10.55	31.96	17.95	42.51	28.50	62.80	52.80	-20.30	-24.31
3	0.55166	10.46	26.86	15.10	37.32	25.56	56.00	46.00	-18.68	-20.44
4	1.83023	9.86	28.51	16.65	38.37	26.51	56.00	46.00	-17.63	-19.49
5	3.30821	9.81	32.56	24.04	42.37	33.85	56.00	46.00	-13.63	-12.15
6	3.49589	9.81	33.44	23.88	43.25	33.69	56.00	46.00	-12.75	-12.31

- 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 (20MHz -2GHz)	Teseq	CBL 6111D	30643	Jul. 27, 14	Jul. 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. 27,13	Jul. 26, 14
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, GRGT/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:

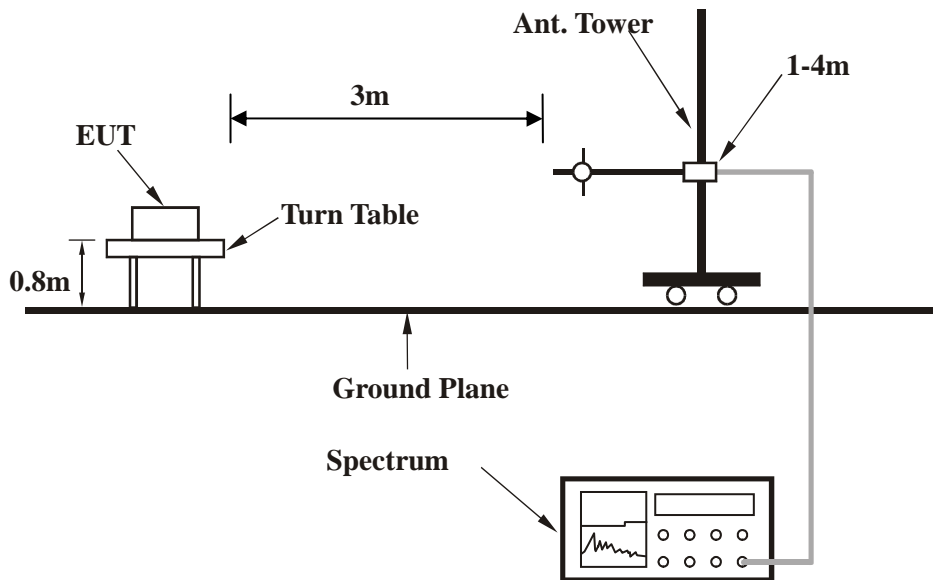
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

- 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:

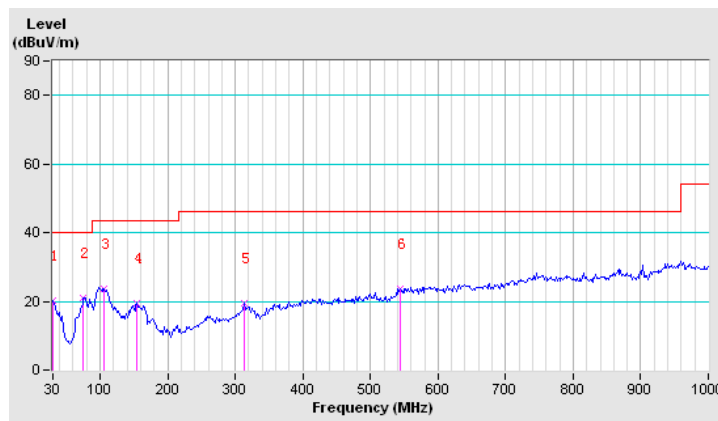
802.11b

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	30.00	20.3 QP	40.0	-19.7	1.00 H	146	0.51	19.75
2	75.27	20.9 QP	40.0	-19.1	1.00 H	195	13.67	7.19
3	105.98	23.6 QP	43.5	-19.9	1.00 H	216	10.98	12.61
4	154.48	19.5 QP	43.5	-24.0	1.00 H	182	6.51	13.00
5	312.92	19.3 QP	46.0	-26.7	1.00 H	163	2.47	16.87
6	544.10	23.8 QP	46.0	-22.2	1.00 H	123	-0.26	24.04

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.



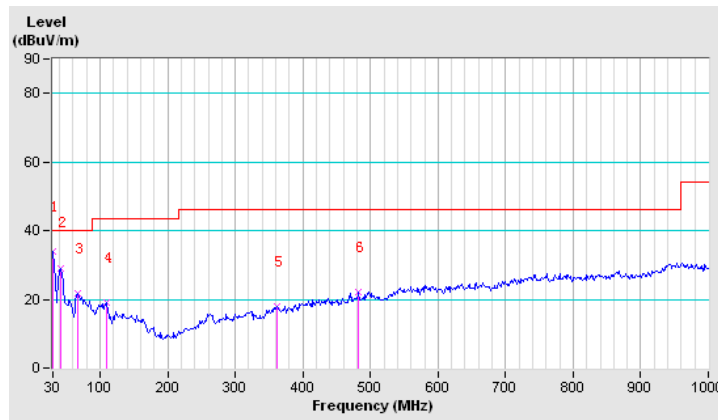


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	30.00	34.0 QP	40.0	-6.0	1.00 V	140	14.25	19.75
2	41.32	29.1 QP	40.0	-10.9	1.00 V	151	14.84	14.30
3	67.18	21.8 QP	40.0	-18.2	1.00 V	164	15.54	6.29
4	109.22	19.2 QP	43.5	-24.3	1.00 V	177	6.24	12.95
5	361.42	18.0 QP	46.0	-28.0	1.00 V	193	-0.46	18.46
6	482.67	22.2 QP	46.0	-23.8	1.00 V	215	0.28	21.92

REMARKS:

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





ABOVE 1GHz DATA

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	44.4 PK	74.0	-29.6	1.89 H	338	8.42	35.97
2	2390.00	31.9 AV	54.0	-22.1	1.89 H	338	-4.10	35.97
3	#2400.00	55.7 PK	81.1	-25.5	1.89 H	338	19.69	35.98
4	#2400.00	49.9 AV	77.0	-27.1	1.89 H	338	13.90	35.98
5	*2412.00	101.1 PK			1.89 H	338	65.13	36.00
6	*2412.00	97.0 AV			1.89 H	338	60.96	36.00
7	4824.00	56.5 PK	74.0	-17.5	1.38 H	13	17.13	39.36
8	4824.00	50.9 AV	54.0	-3.2	1.38 H	13	11.49	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	46.5 PK	74.0	-27.5	1.44 V	265	10.53	35.97
2	2390.00	33.9 AV	54.0	-20.2	1.44 V	265	-2.12	35.97
3	#2400.00	58.8 PK	83.7	-24.9	1.44 V	265	22.78	35.98
4	#2400.00	52.8 AV	78.8	-25.9	1.44 V	265	16.86	35.98
5	*2412.00	103.7 PK			1.44 V	265	67.66	36.00
6	*2412.00	98.8 AV			1.44 V	265	62.77	36.00
7	4824.00	55.4 PK	74.0	-18.6	1.00 V	249	16.07	39.36
8	4824.00	50.4 AV	54.0	-3.6	1.00 V	249	11.05	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			1.27 H	23	62.91	36.03
2	*2437.00	94.0 AV			1.27 H	23	57.99	36.03
3	4874.00	52.4 PK	74.0	-21.6	1.24 H	32	13.01	39.37
4	4874.00	46.8 AV	54.0	-7.2	1.24 H	32	7.43	39.37
5	7311.00	54.8 PK	74.0	-19.2	1.00 H	340	12.00	42.76
6	7311.00	44.1 AV	54.0	-9.9	1.00 H	340	1.36	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	101.1 PK			1.65 V	266	65.04	36.03
2	*2437.00	96.5 AV			1.65 V	266	60.50	36.03
3	4874.00	51.1 PK	74.0	-22.9	1.00 V	360	11.77	39.37
4	4874.00	42.5 AV	54.0	-11.5	1.00 V	360	3.14	39.37
5	7311.00	54.3 PK	74.0	-19.7	1.00 V	55	11.57	42.76
6	7311.00	39.3 AV	54.0	-14.7	1.00 V	55	-3.46	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	98.4 PK			2.26 H	13	62.37	36.06
2	*2462.00	93.9 AV			2.26 H	13	57.82	36.06
3	2483.50	46.6 PK	74.0	-27.5	2.26 H	13	10.46	36.09
4	2483.50	33.4 AV	54.0	-20.6	2.26 H	13	-2.69	36.09
5	4924.00	53.0 PK	74.0	-21.0	1.58 H	0	13.58	39.38
6	4924.00	47.0 AV	54.0	-7.0	1.58 H	0	7.63	39.38
7	7386.00	54.8 PK	74.0	-19.2	1.10 H	358	12.13	42.70
8	7386.00	42.7 AV	54.0	-11.4	1.10 H	358	-0.05	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			1.32 V	265	63.76	36.06
2	*2462.00	95.3 AV			1.32 V	265	59.25	36.06
3	2483.50	47.7 PK	74.0	-26.3	1.32 V	265	11.58	36.09
4	2483.50	34.9 AV	54.0	-19.1	1.32 V	265	-1.21	36.09
5	4924.00	50.8 PK	74.0	-23.2	1.00 V	292	11.42	39.38
6	4924.00	41.2 AV	54.0	-12.8	1.00 V	292	1.85	39.38
7	7386.00	54.0 PK	74.0	-20.0	1.00 V	162	11.27	42.70
8	7386.00	38.7 AV	54.0	-15.3	1.00 V	162	-4.03	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	55.7 PK	74.0	-18.3	1.45 H	211	19.77	35.97
2	2390.00	35.5 AV	54.0	-18.5	1.45 H	211	-0.46	35.97
3	#2400.00	66.4 PK	79.1	-12.7	1.45 H	211	30.46	35.98
4	#2400.00	42.6 AV	63.7	-21.1	1.45 H	211	6.62	35.98
5	*2412.00	99.1 PK			1.45 H	211	63.10	36.00
6	*2412.00	83.7 AV			1.45 H	211	47.73	36.00
7	4824.00	52.8 PK	74.0	-21.2	1.00 H	0	13.44	39.36
8	4824.00	36.5 AV	54.0	-17.5	1.00 H	0	-2.90	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	60.8 PK	74.0	-13.2	1.65 V	86	24.87	35.97
2	2390.00	36.7 AV	54.0	-17.3	1.65 V	86	0.73	35.97
3	#2400.00	74.7 PK	83.4	-8.8	1.65 V	86	38.71	35.98
4	#2400.00	48.9 AV	68.0	-19.1	1.65 V	86	12.91	35.98
5	*2412.00	103.4 PK			1.65 V	86	67.44	36.00
6	*2412.00	88.0 AV			1.65 V	86	51.97	36.00
7	4824.00	53.1 PK	74.0	-20.9	1.00 V	359	13.70	39.36
8	4824.00	36.8 AV	54.0	-17.2	1.00 V	359	-2.54	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	99.3 PK			1.96 H	349	63.31	36.03
2	*2437.00	84.1 AV			1.96 H	349	48.09	36.03
3	4874.00	52.6 PK	74.0	-21.4	1.32 H	275	13.27	39.37
4	4874.00	34.5 AV	54.0	-19.5	1.32 H	275	-4.89	39.37
5	7311.00	60.3 PK	74.0	-13.7	1.40 H	75	17.53	42.76
6	7311.00	41.6 AV	54.0	-12.4	1.40 H	75	-1.18	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	104.1 PK			1.65 V	266	68.03	36.03
2	*2437.00	89.1 AV			1.65 V	266	53.05	36.03
3	4874.00	50.3 PK	74.0	-23.8	1.16 V	45	10.88	39.37
4	4874.00	33.7 AV	54.0	-20.3	1.16 V	45	-5.64	39.37
5	7311.00	54.7 PK	74.0	-19.3	1.00 V	290	11.90	42.76
6	7311.00	39.9 AV	54.0	-14.1	1.00 V	290	-2.82	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	97.5 PK			1.89 H	76	61.41	36.06
2	*2462.00	82.1 AV			1.89 H	76	46.06	36.06
3	2483.50	56.5 PK	74.0	-17.5	1.89 H	76	20.41	36.09
4	2483.50	35.4 AV	54.0	-18.6	1.89 H	76	-0.71	36.09
5	4924.00	53.2 PK	74.0	-20.8	1.23 H	26	13.79	39.38
6	4924.00	36.5 AV	54.0	-17.5	1.23 H	26	-2.92	39.38
7	7386.00	64.0 PK	74.0	-10.1	1.35 H	322	21.25	42.70
8	7386.00	45.6 AV	54.0	-8.4	1.35 H	322	2.91	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	102.4 PK			1.59 V	309	66.33	36.06
2	*2462.00	87.1 AV			1.59 V	309	51.03	36.06
3	2483.50	62.9 PK	74.0	-11.1	1.59 V	309	26.78	36.09
4	2483.50	41.6 AV	54.0	-12.4	1.59 V	309	5.48	36.09
5	4924.00	50.7 PK	74.0	-23.3	1.46 V	2	11.30	39.38
6	4924.00	35.2 AV	54.0	-18.8	1.46 V	2	-4.16	39.38
7	7386.00	54.1 PK	74.0	-19.9	1.00 V	44	11.39	42.70
8	7386.00	38.4 AV	54.0	-15.6	1.00 V	44	-4.27	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	51.9 PK	74.0	-22.1	1.29 H	351	15.92	35.97
2	2390.00	35.7 AV	54.0	-18.4	1.29 H	351	-0.32	35.97
3	#2400.00	64.1 PK	79.1	-15.0	1.29 H	351	28.09	35.98
4	#2400.00	41.4 AV	63.5	-22.1	1.29 H	351	5.44	35.98
5	*2412.00	99.1 PK			1.29 H	351	63.07	36.00
6	*2412.00	83.5 AV			1.29 H	351	47.49	36.00
7	4824.00	50.4 PK	74.0	-23.6	1.00 H	0	11.01	39.36
8	4824.00	34.5 AV	54.0	-19.5	1.00 H	0	-4.90	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	57.0 PK	74.0	-17.0	1.59 V	102	21.04	35.97
2	2390.00	35.6 AV	54.0	-18.4	1.59 V	102	-0.35	35.97
3	#2400.00	71.7 PK	82.0	-10.2	1.59 V	102	35.76	35.98
4	#2400.00	47.0 AV	66.9	-20.0	1.59 V	102	11.00	35.98
5	*2412.00	102.0 PK			1.59 V	102	65.98	36.00
6	*2412.00	86.9 AV			1.59 V	102	50.94	36.00
7	4824.00	52.3 PK	74.0	-21.7	1.00 V	282	12.94	39.36
8	4824.00	36.0 AV	54.0	-18.1	1.00 V	282	-3.41	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	99.9 PK			1.85 H	354	63.85	36.03
2	*2437.00	84.5 AV			1.85 H	354	48.45	36.03
3	4874.00	51.8 PK	74.0	-22.2	1.19 H	360	12.45	39.37
4	4874.00	35.6 AV	54.0	-18.4	1.19 H	360	-3.77	39.37
5	7311.00	56.8 PK	74.0	-17.3	1.00 H	40	13.99	42.76
6	7311.00	40.7 AV	54.0	-13.3	1.00 H	40	-2.08	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	99.9 PK			1.40 V	312	63.88	36.03
2	*2437.00	80.4 AV			1.40 V	312	44.38	36.03
3	4874.00	50.1 PK	74.0	-23.9	1.00 V	0	10.72	39.37
4	4874.00	35.9 AV	54.0	-18.1	1.00 V	0	-3.43	39.37
5	7311.00	54.0 PK	74.0	-20.0	1.00 V	242	11.21	42.76
6	7311.00	37.5 AV	54.0	-16.5	1.00 V	242	-5.22	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 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	100.3 PK			1.94 H	15	64.24	36.06
2	*2462.00	85.0 AV			1.94 H	15	48.92	36.06
3	2483.50	53.0 PK	74.0	-21.0	1.94 H	14	16.92	36.09
4	2483.50	38.7 AV	54.0	-15.3	1.94 H	14	2.58	36.09
5	4924.00	45.5 PK	74.0	-28.5	1.66 H	298	6.13	39.38
6	4924.00	34.3 AV	54.0	-19.7	1.66 H	298	-5.10	39.38
7	7386.00	58.9 PK	74.0	-15.1	1.20 H	284	16.16	42.70
8	7386.00	41.3 AV	54.0	-12.7	1.20 H	284	-1.40	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	98.4 PK			1.68 V	336	62.33	36.06
2	*2462.00	83.4 AV			1.68 V	336	47.30	36.06
3	2483.50	58.8 PK	74.0	-15.2	1.68 V	336	22.73	36.09
4	2483.50	38.6 AV	54.0	-15.4	1.68 V	336	2.55	36.09
5	4924.00	51.2 PK	74.0	-22.8	1.11 V	190	11.81	39.38
6	4924.00	35.4 AV	54.0	-18.6	1.11 V	190	-3.99	39.38
7	7386.00	55.4 PK	74.0	-18.6	1.18 V	295	12.72	42.70
8	7386.00	39.5 AV	54.0	-14.5	1.18 V	295	-3.20	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.



BELOW 1GHz WORST-CASE DATA:

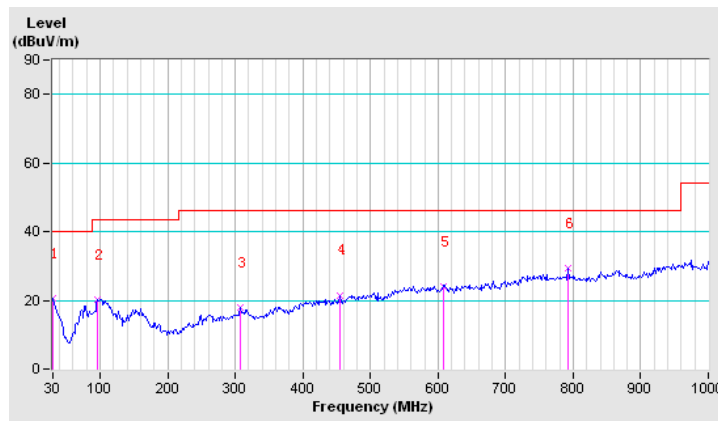
BT-LF (GFSK)

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	20.5 QP	40.0	-19.6	1.00 H	287	0.70	19.75
2	96.28	20.3 QP	43.5	-23.2	1.00 H	272	8.78	11.56
3	308.07	18.0 QP	46.0	-28.0	1.00 H	256	1.31	16.72
4	455.18	21.5 QP	46.0	-24.5	1.00 H	240	0.54	21.00
5	608.77	24.1 QP	46.0	-22.0	1.00 H	225	-0.70	24.75
6	793.07	29.3 QP	46.0	-16.7	1.00 H	210	1.23	28.06

REMARKS:

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



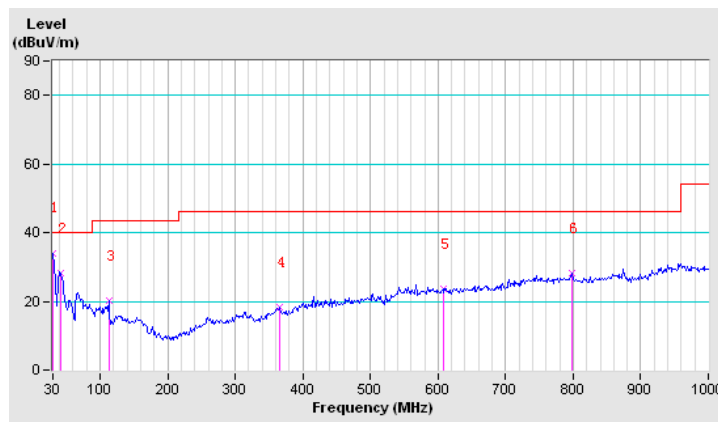


CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	30.00	34.1 QP	40.0	-5.9	1.00 V	49	14.36	19.75
2	41.32	28.2 QP	40.0	-11.8	1.00 V	68	13.92	14.30
3	112.45	20.3 QP	43.5	-23.2	1.00 V	210	7.08	13.20
4	366.27	18.5 QP	46.0	-27.6	1.00 V	227	0.01	18.44
5	607.15	23.5 QP	46.0	-22.5	1.00 V	240	-1.20	24.71
6	797.92	28.1 QP	46.0	-17.9	1.00 V	265	0.31	27.83

REMARKS:

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





ABOVE 1GHz 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	42.0 PK	74.0	-32.0	1.29 H	176	6.04	35.97
2	2390.00	29.0 AV	54.0	-25.0	1.29 H	176	-6.95	35.97
3	#2400.00	63.4 PK	76.3	-12.9	1.29 H	176	27.39	35.98
4	#2400.00	40.7 AV	51.4	-10.7	1.29 H	176	4.69	35.98
5	*2402.00	96.3 PK			1.29 H	176	60.27	35.98
6	*2402.00	71.4 AV			1.29 H	176	35.39	35.98
7	4804.00	50.8 PK	74.0	-23.2	1.34 H	360	11.42	39.36
8	4804.00	38.0 AV	54.0	-16.0	1.34 H	360	-1.32	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	41.7 PK	74.0	-32.3	1.03 V	241	5.77	35.97
2	2390.00	29.1 AV	54.0	-24.9	1.03 V	241	-6.85	35.97
3	#2400.00	58.9 PK	71.6	-12.7	1.03 V	241	22.93	35.98
4	#2400.00	37.7 AV	47.8	-10.1	1.03 V	241	1.70	35.98
5	*2402.00	91.6 PK			1.03 V	241	55.61	35.98
6	*2402.00	67.8 AV			1.03 V	241	31.82	35.98
7	4804.00	50.4 PK	74.0	-23.6	1.41 V	0	11.01	39.36
8	4804.00	34.8 AV	54.0	-19.2	1.41 V	0	-4.52	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	97.5 PK			1.59 H	204	61.48	36.03
2	*2440.00	71.5 AV			1.59 H	204	35.48	36.03
3	4880.00	49.8 PK	74.0	-24.2	1.11 H	360	10.46	39.38
4	4880.00	37.0 AV	54.0	-17.0	1.11 H	360	-2.42	39.38
5	7320.00	53.8 PK	74.0	-20.2	1.00 H	185	11.04	42.75
6	7320.00	41.7 AV	54.0	-12.4	1.00 H	185	-1.10	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	99.2 PK			1.38 V	33	63.13	36.03
2	*2440.00	72.5 AV			1.38 V	33	36.48	36.03
3	4880.00	50.5 PK	74.0	-23.5	1.23 V	320	11.16	39.38
4	4880.00	37.6 AV	54.0	-16.5	1.23 V	320	-1.83	39.38
5	7320.00	53.6 PK	74.0	-20.4	1.00 V	225	10.81	42.75
6	7320.00	40.3 AV	54.0	-13.7	1.00 V	225	-2.43	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	97.1 PK			1.26 H	200	61.00	36.08
2	*2480.00	70.8 AV			1.26 H	200	34.71	36.08
3	2483.50	45.0 PK	74.0	-29.0	1.26 H	200	8.90	36.09
4	2483.50	29.5 AV	54.0	-24.5	1.26 H	200	-6.57	36.09
5	4960.00	49.8 PK	74.0	-24.2	1.00 H	359	10.39	39.39
6	4960.00	36.2 AV	54.0	-17.8	1.00 H	359	-3.18	39.39
7	7440.00	50.5 PK	74.0	-23.5	1.00 H	294	7.88	42.65
8	7440.00	36.6 AV	54.0	-17.4	1.00 H	294	-6.08	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	97.5 PK			1.38 V	108	61.44	36.08
2	*2480.00	62.7 AV			1.38 V	108	26.61	36.08
3	2483.50	30.0 PK	74.0	-44.0	1.38 V	108	-6.06	36.09
4	2483.50	19.4 AV	54.0	-34.6	1.38 V	108	-16.65	36.09
5	4960.00	49.0 PK	74.0	-25.0	1.20 V	56	9.59	39.39
6	4960.00	35.8 AV	54.0	-18.2	1.20 V	56	-3.63	39.39
7	7440.00	52.2 PK	74.0	-21.8	1.10 V	183	9.56	42.65
8	7440.00	39.3 AV	54.0	-14.8	1.10 V	183	-3.40	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

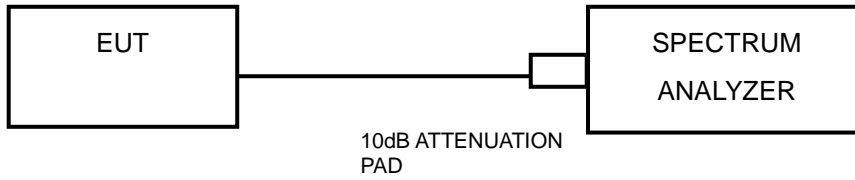
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points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

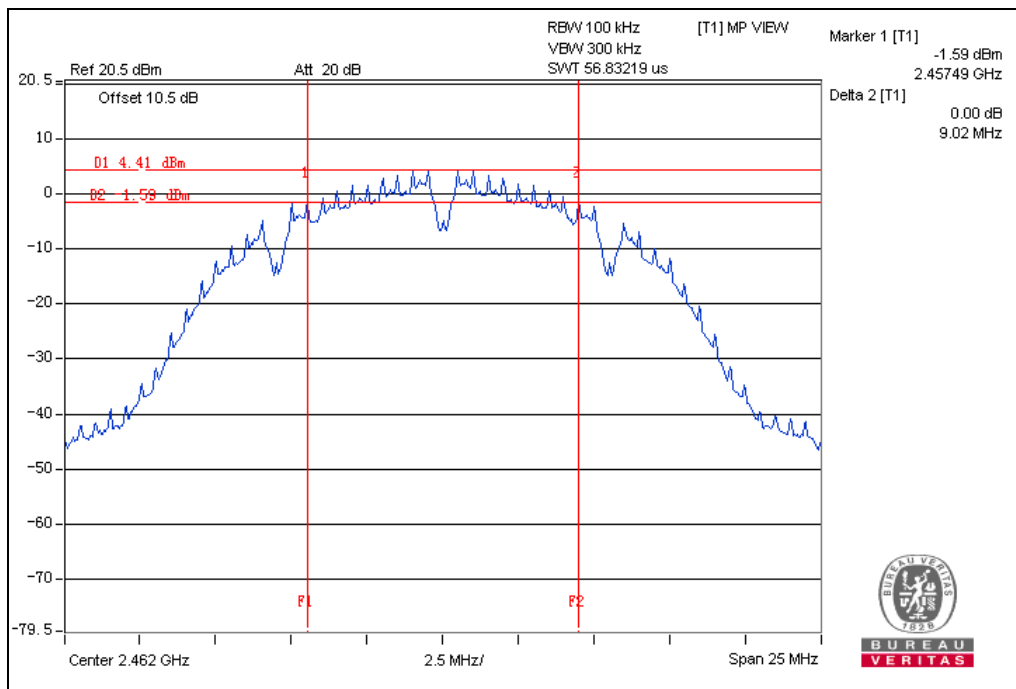
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	9.01	0.5	PASS
6	2437	7.58	0.5	PASS
11	2462	9.02	0.5	PASS



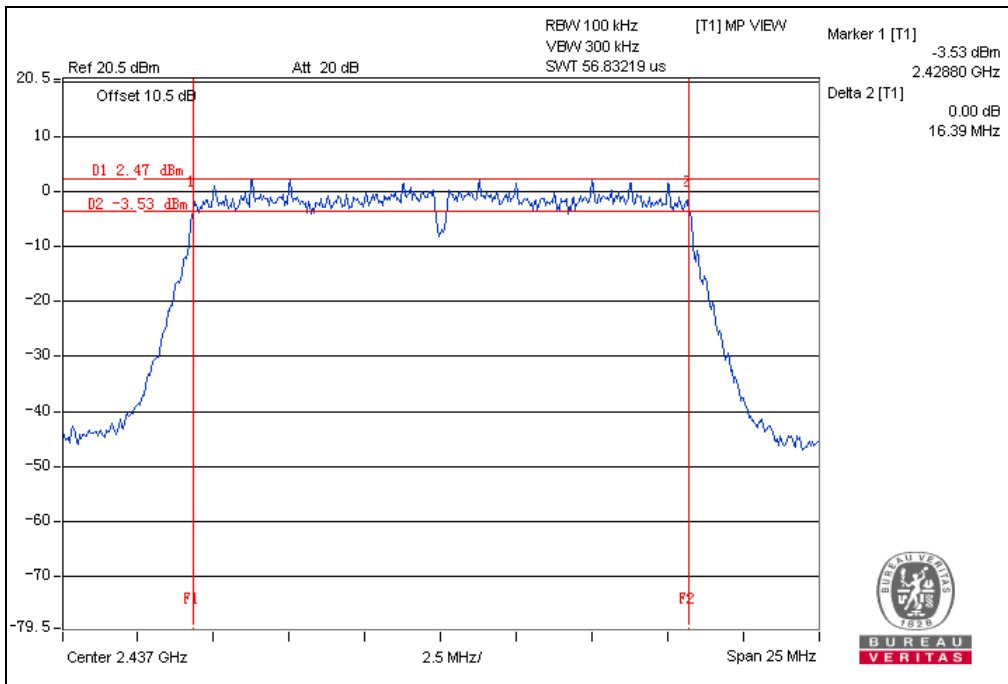


**BUREAU
VERITAS**

Test Report No.: RF140708N057-1

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.38	0.5	PASS
6	2437	16.39	0.5	PASS
11	2462	16.35	0.5	PASS



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

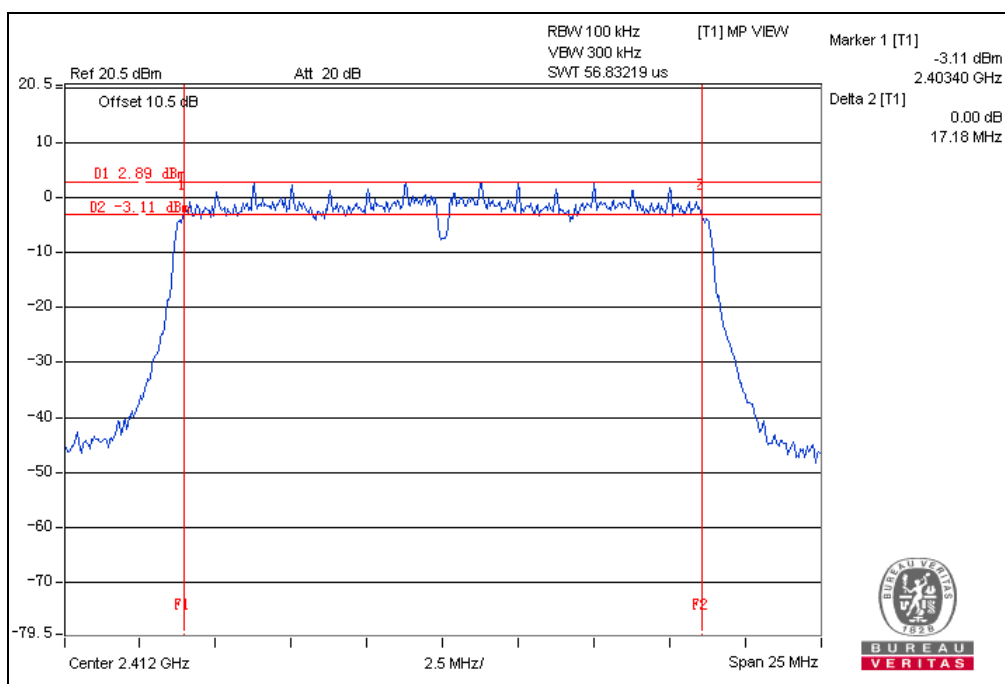


BUREAU VERITAS

Test Report No.: RF140708N057-1

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.18	0.5	PASS
6	2437	17.13	0.5	PASS
11	2462	17.16	0.5	PASS



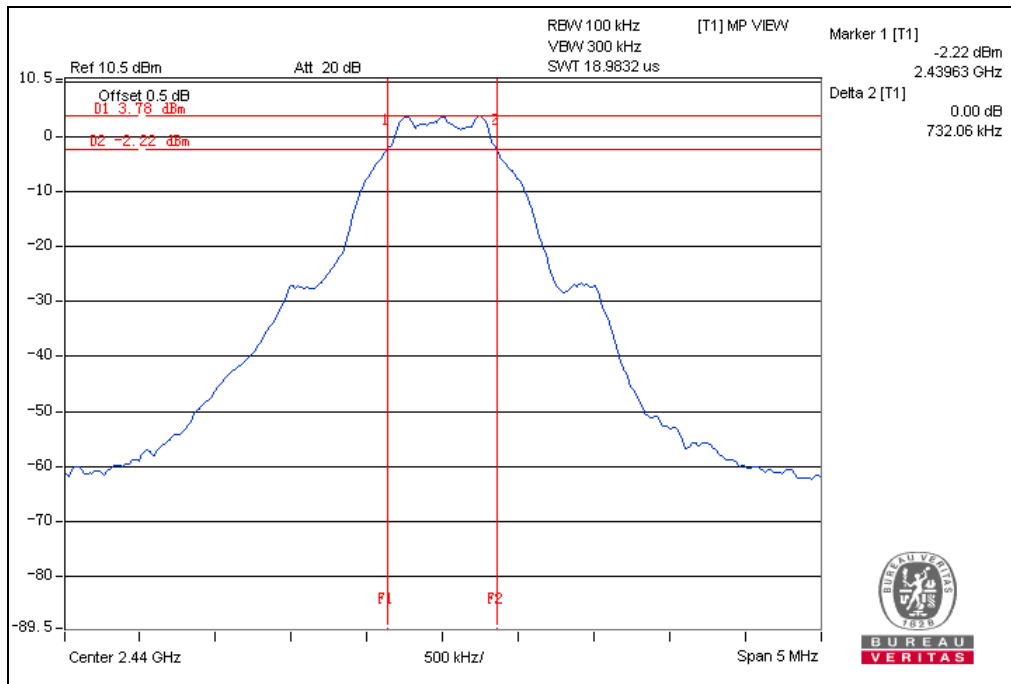


**BUREAU
VERITAS**

Test Report No.: RF140708N057-1

BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.73	0.5	PASS
19	2440	0.73	0.5	PASS
39	2480	0.73	0.5	PASS



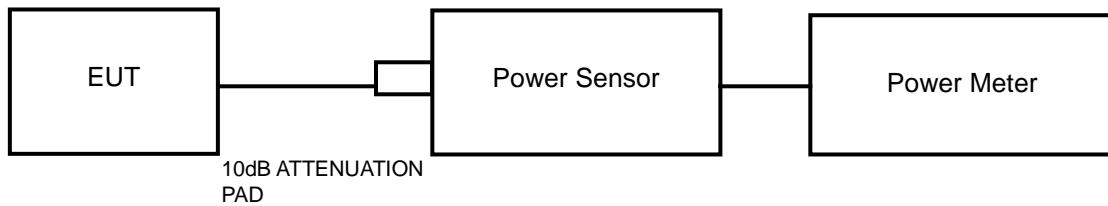


4.4 CONDUCTED OUTPUT POWER

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.
Spectrum Analyzer (9KHz–40GHz)	Agilent	E4446A	MY46180622	Apr. 29,14	Apr. 28,15
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	A1220010D G	Oct. 30, 13	Oct. 29, 14

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

2. The test was performed in Oven room.

4.4.4 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

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

4.4.7 TEST RESULTS

4.4.7.1 MAXIMUM PEAK OUTPUT POWER

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
1	2412	16.05	40.272	1	PASS
6	2437	16.24	42.073	1	PASS
11	2462	16.11	40.832	1	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
1	2412	21.56	143.219	1	PASS
6	2437	22.13	163.305	1	PASS
11	2462	21.65	146.218	1	PASS



802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
1	2412	20.52	112.720	1	PASS
6	2437	20.65	116.145	1	PASS
11	2462	20.48	111.686	1	PASS

BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
0	2402	2.18	1.652	1	PASS
19	2440	3.51	2.244	1	PASS
39	2480	3.27	2.123	1	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	13.48	N/A
6	2437	13.96	N/A
11	2462	13.72	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	13.15	N/A
6	2437	13.73	N/A
11	2462	13.27	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	12.32	N/A
6	2437	12.43	N/A
11	2462	12.18	N/A

BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	1.26	N/A
19	2440	2.64	N/A
39	2480	2.21	N/A

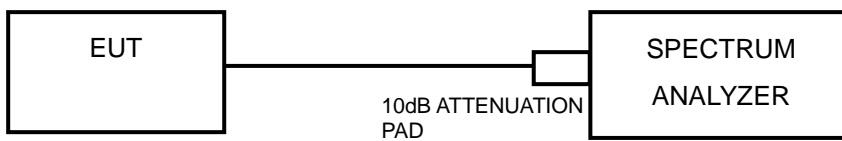


4.5 POWER SPECTRAL DENSITY MEASUREMENT

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

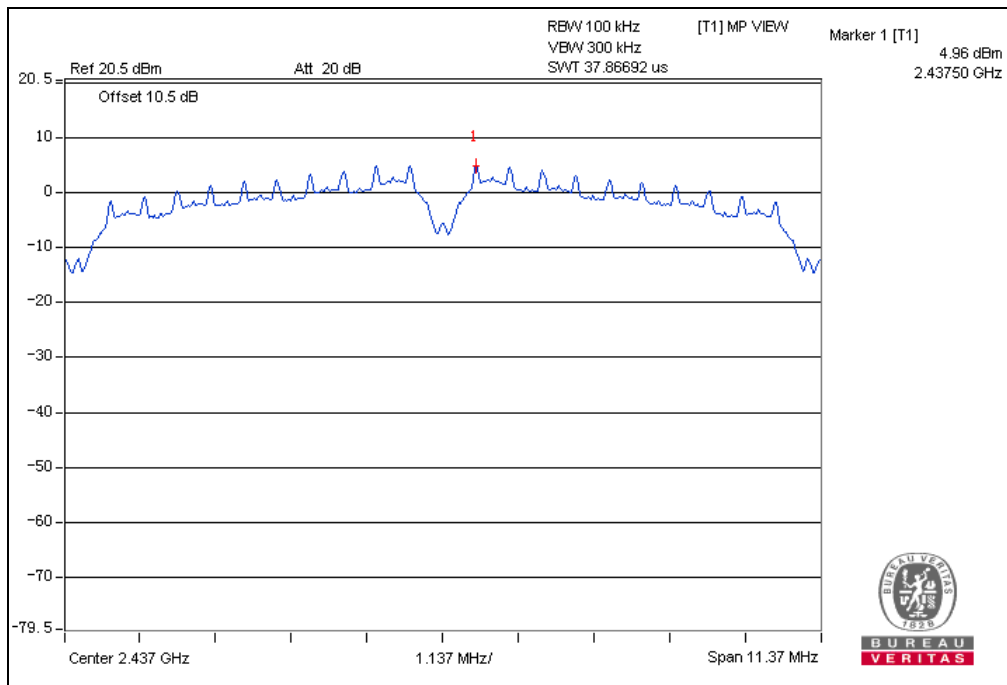
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



4.5.7 TEST RESULTS

802.11b

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	4.38	8	PASS
6	2437	4.96	8	PASS
11	2462	4.70	8	PASS



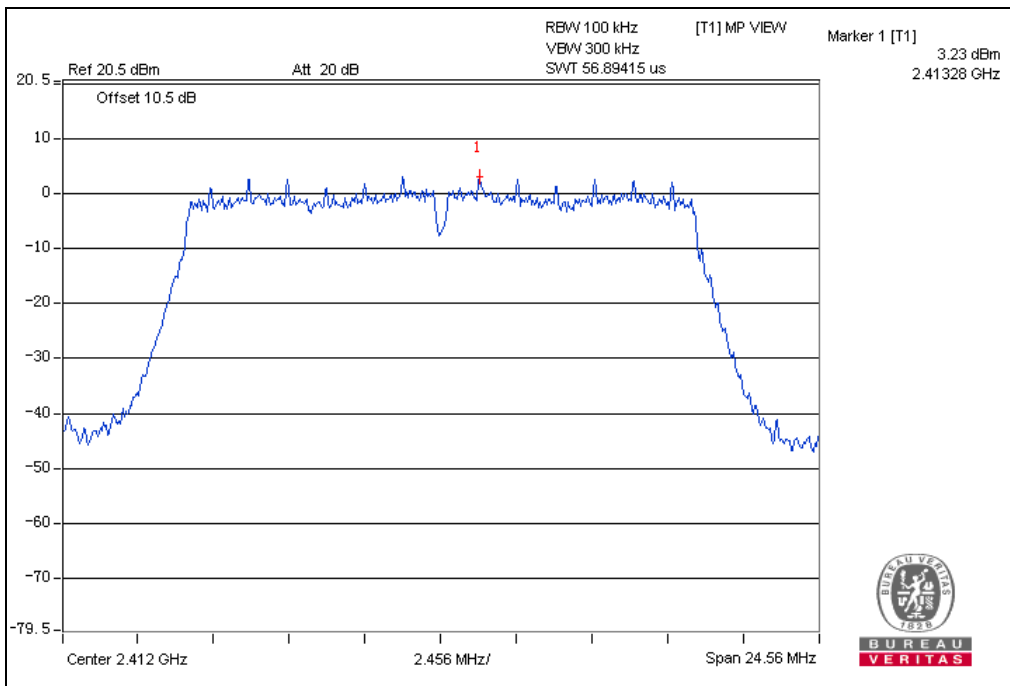


**BUREAU
VERITAS**

Test Report No.: RF140708N057-1

802.11g

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	3.23	8	PASS
6	2437	3.12	8	PASS
11	2462	3.12	8	PASS



**BUREAU
VERITAS**

**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

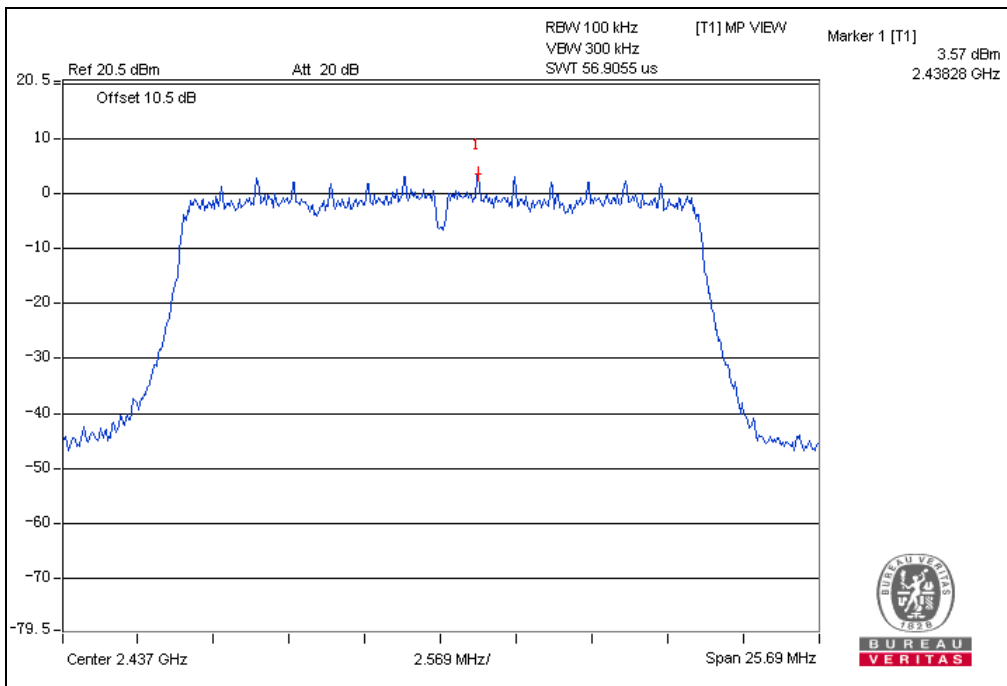


**BUREAU
VERITAS**

Test Report No.: RF140708N057-1

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	2.94	8	PASS
6	2437	3.57	8	PASS
11	2462	2.91	8	PASS



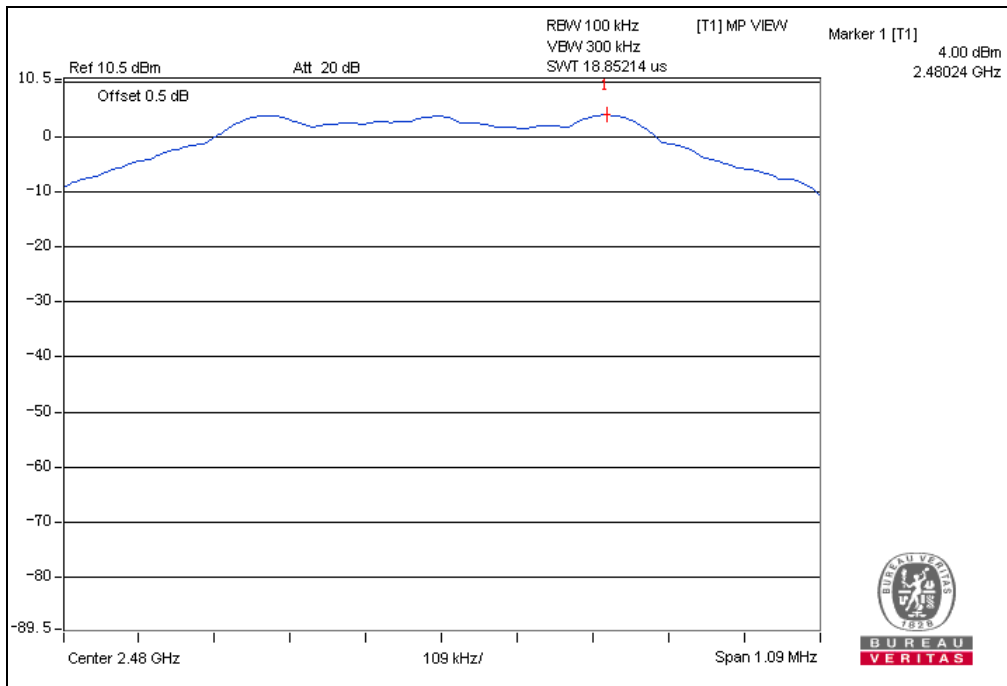


**BUREAU
VERITAS**

Test Report No.: RF140708N057-1

BT-LE (GFSK)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	3.13	8	PASS
19	2440	3.84	8	PASS
39	2480	4.00	8	PASS



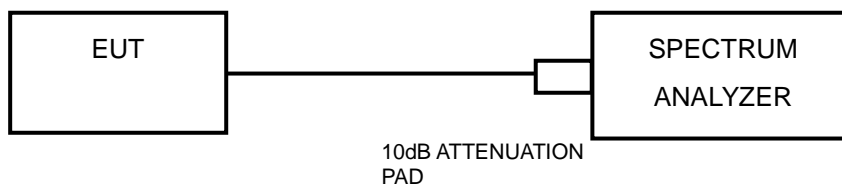


4.6 OUT OF BAND EMISSION MEASUREMENT

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

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

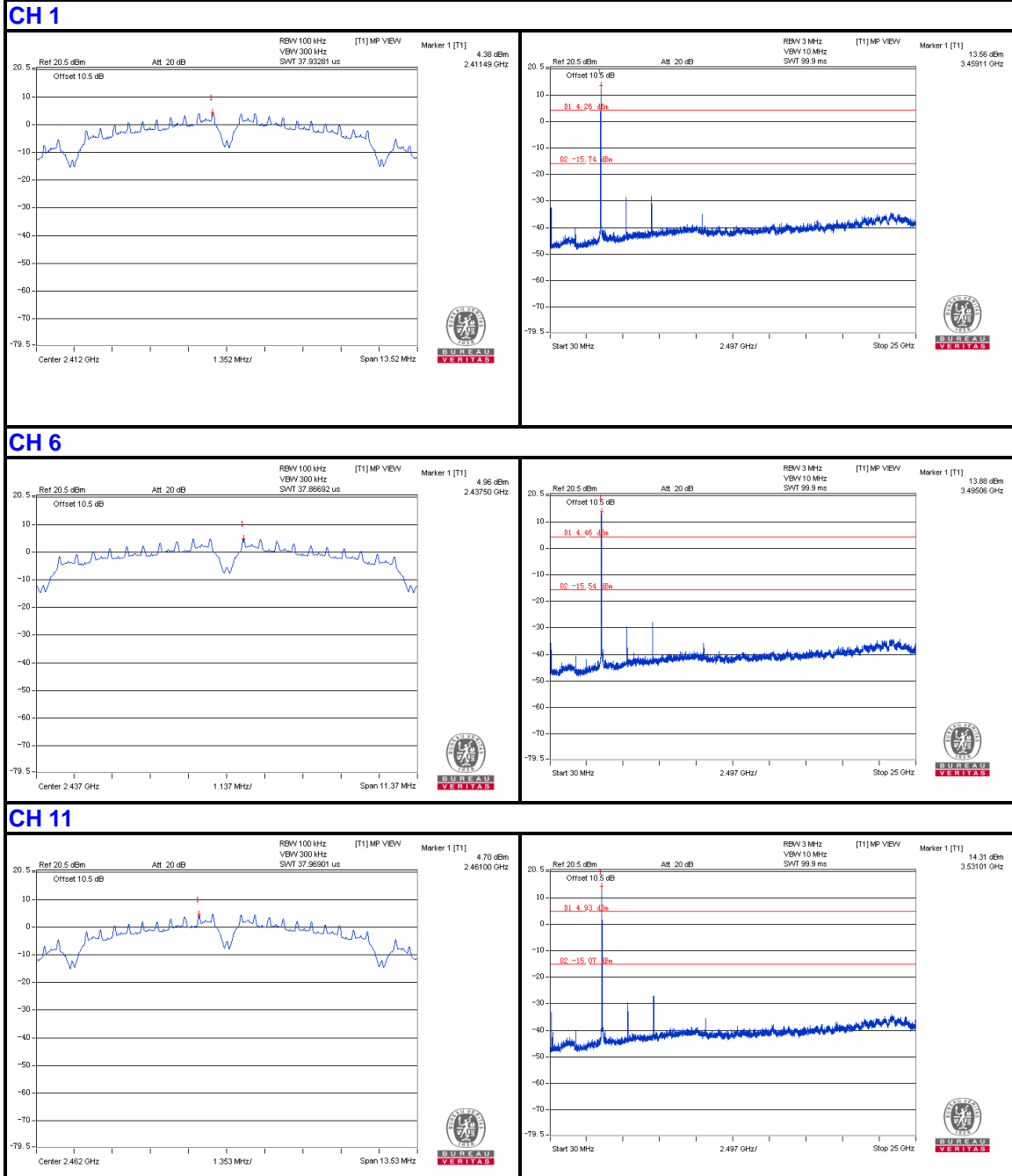


**BUREAU
VERITAS**

Test Report No.: RF140708N057-1

4.6.7 TEST RESULTS

802.11b



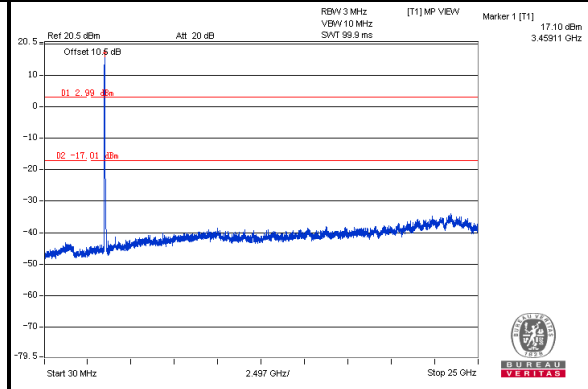
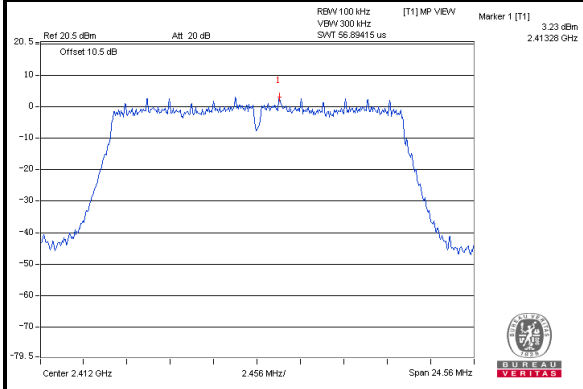


**BUREAU
VERITAS**

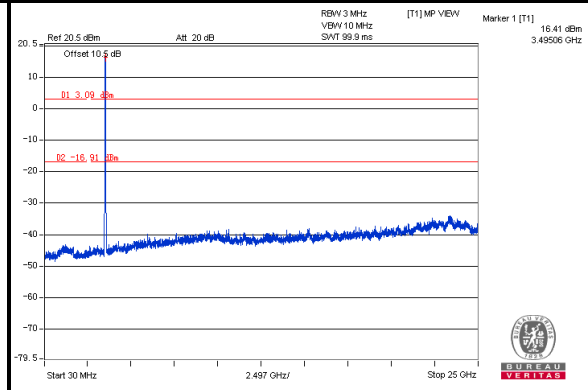
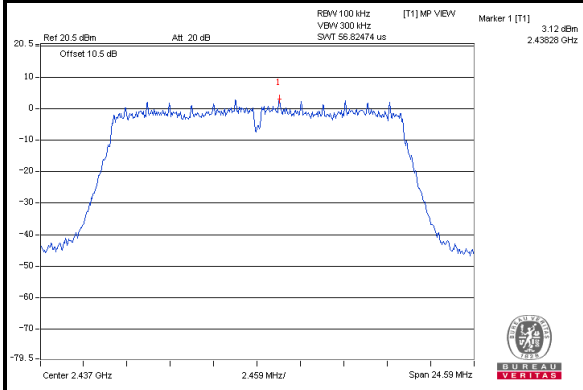
Test Report No.: RF140708N057-1

802.11g

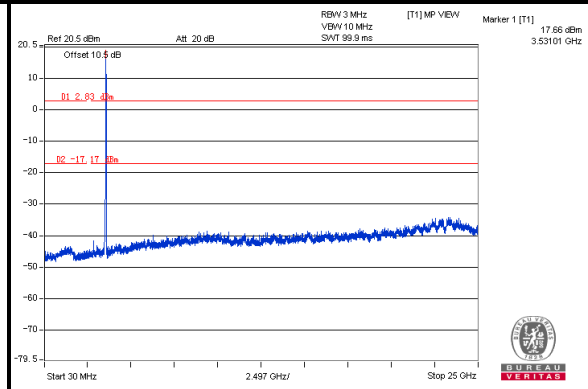
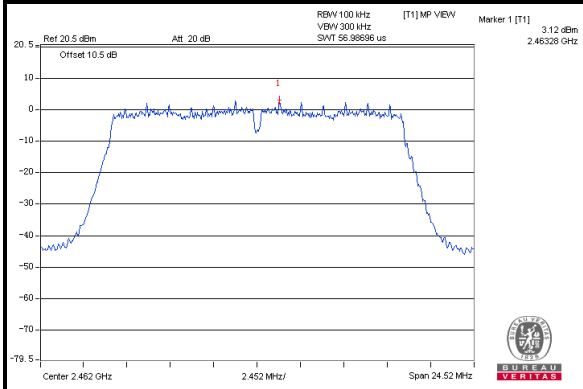
CH 1



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

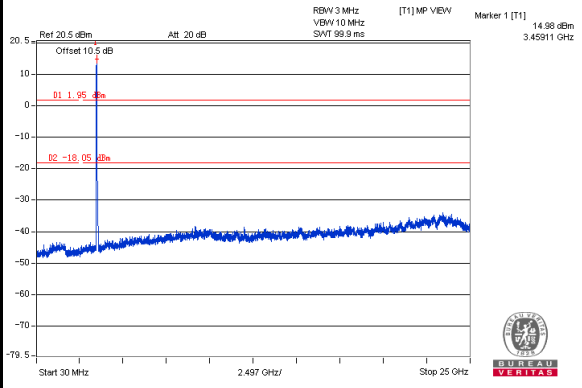
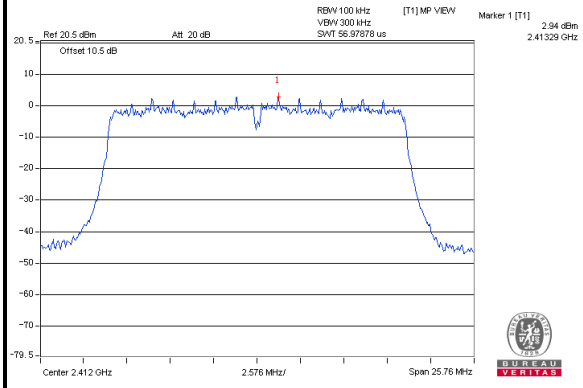


**BUREAU
VERITAS**

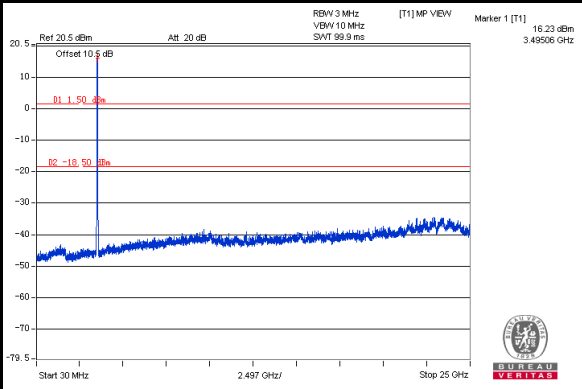
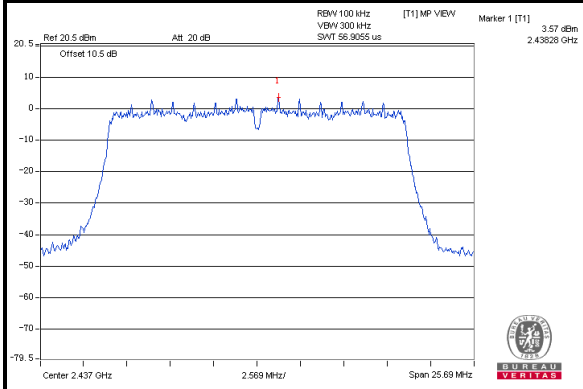
Test Report No.: RF140708N057-1

802.11n (20MHz)

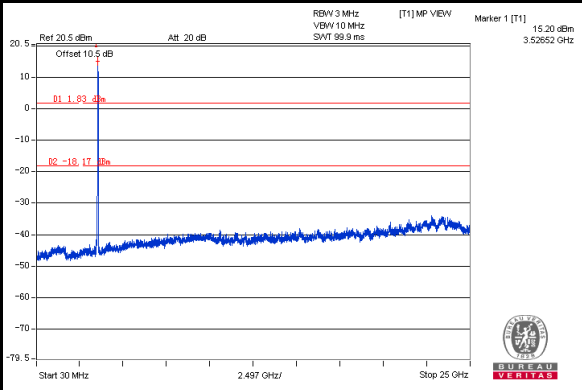
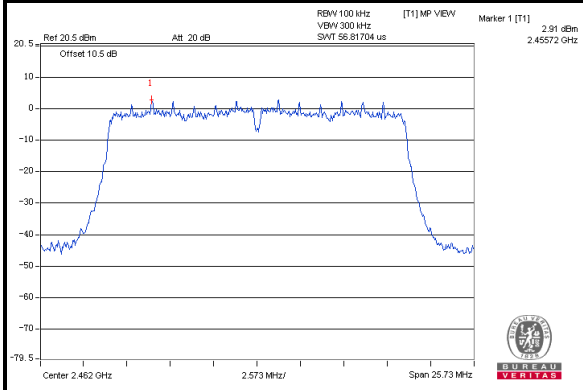
CH 1



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

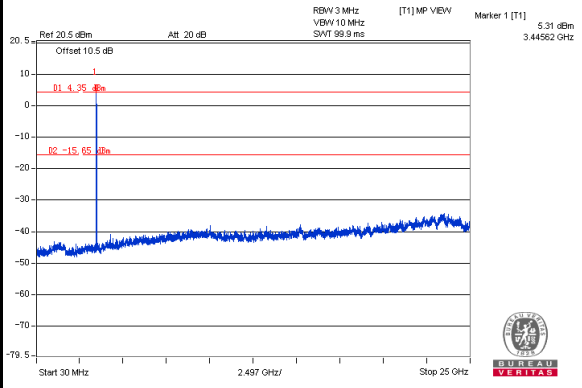
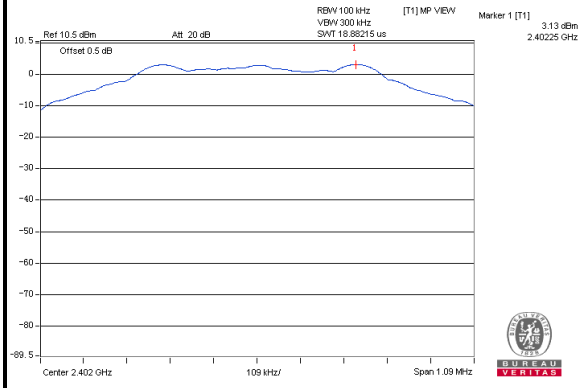


BUREAU VERITAS

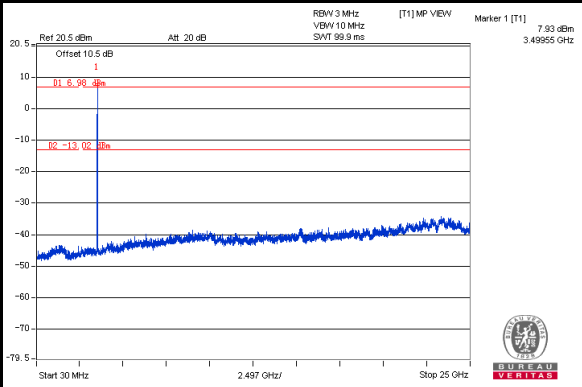
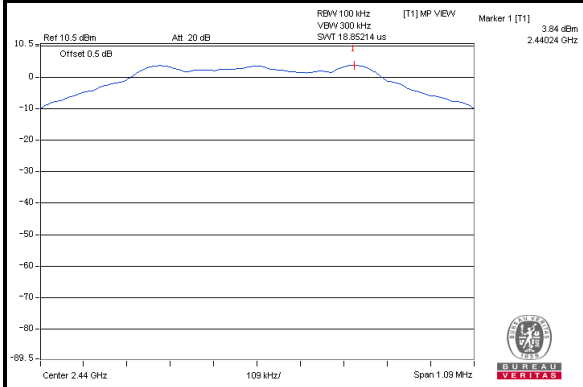
Test Report No.: RF140708N057-1

BT-LE (GFSK)

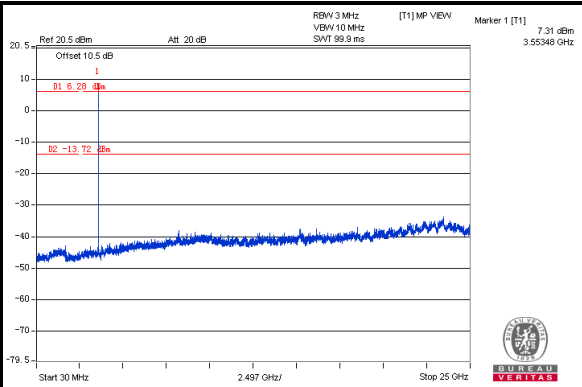
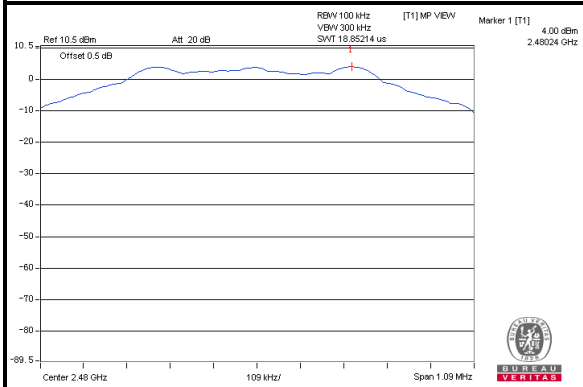
CH 0



CH 19



CH 39



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



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---