Test Lab
Cert 2951.01

FCC TEST REPORT

(WIFI + BT LE)

Product:	LTE phone
Model Name:	XP5700
FCC ID:	WYPL23V013AA
Applicant:	Sonim Technologies, Inc.
Address:	1825 S. Grant St., Suite 200., San Mateo, CA, 94402
Manufacturer:	Sonim Technologies (Shenzhen) Limited
Address:	2nd Floor, No. 2 Building Phase B, Daqian Industrial park, Longchang Road, 67 District, Baoan, Shenzhen, P. R. China
Prepared by:	Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch
Lab Location:	No. 34, Chenwulu Section, Guantai Rd., Houjie Town, Dongguan City, Guangdong 523942, China
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Report No.:	RF160524W004-2
Received Date:	May 24, 2016
Test Date:	May 25, 2016 ~ Jun. 20, 2016
Issued Date:	Jun. 22, 2016

This report should not be used by the client to claim product certification, approval, or endorsement by A2LA or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF160524W004-2	Original release	Jun. 22, 2016

Bureau Veritas Shenzhen Co., Ltd.
Dongguan Branch

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1 CERTIFICATION

PRODUCT:	LTE phone
BRAND NAME:	Sonim
MODEL NAME:	XP5700
APPLICANT:	Sonim Technologies, Inc.
TESTED:	May 25, 2016 ~ Jun. 20, 2016
TEST SAMPLE:	Identical Prototype
STANDARDS:	**FCC Part 15, Subpart C. Section 15.247** ANSI C63.10-2013

The above equipment has been tested by **Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE:** Jun. 22, 2016
(Amyee Qian / Engineer)

APPROVED BY : _____ , **DATE:** Jun. 22, 2016
(William Chung / Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is 12.33dB at 1.366000MHz.
15.205 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.86dB at 2483.50MHz.
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

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.74dB
	30MHz ~ 1GMHz	3.55dB
	1GHz ~ 18GHz	4.84dB
	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	LTE phone
MODEL NAME	XP5700
TYPE NUMBER	L23V013AA
NOMINAL VOLTAGE	5.0Vdc (adapter or host equipment) 3.7Vdc dc (Li-ion, battery)
MODULATION TECHNOLOGY	DSSS, OFDM, DTS
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM BT-LE(GFSK) for DTS
TRANSMISSION RATE	802.11b: 11/ 5.5/ 2.0 / 1.0 Mbps 802.11g: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n: up to 135 Mbps
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20) 2402-2480MHz for BT-LE(GFSK)
MAX. OUTPUT POWER	WLAN: 84.528mW (Maximum) BT-LE: 1.845mW (Maximum)
ANTENNA TYPE	PIFA Antenna with 2dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: shielded, detachable, 1.1m Earphone Cable: Unshielded, Detachable, 1.2m

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	Sonim
MODEL:	S14C02
INPUT:	AC 100-240V, 200mA
OUTPUT:	DC 5V, 1200mA

3. The EUT matched the following USB cable and Earphone:

USB CABLE	
BRAND:	Sunway
MODEL:	N.A
SIGNAL LINE:	1.1 METER

EARPHONE	
BRAND:	Minami
MODEL:	ME-816B5-E
SIGNAL LINE:	1.2 METER

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. 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	
-	√	√	√	√	-

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 + Adapter + Earphone
-	BT Link+ WIFI (2.4G) Link + USB Cable + USB Link + Earphone

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	Alex Chen
RE≥1G	22deg. C, 54%RH	DC 5V from adaptor	Alex Chen
PLC	25deg. C, 60%RH	DC 5V from adaptor	Yuqiang Yin
APCM	25deg. C, 60%RH	3.7Vdc 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

KDB 558074 D01 DTS Meas Guidance v03r05

ANSI C63.10-2013

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 (Certification). 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	ESCS30	100340	May 11,15	May 10,17
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 04,16	Mar. 03,17
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 05,16	Apr. 04,17
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Jan. 08,16	Jan. 07,17
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.

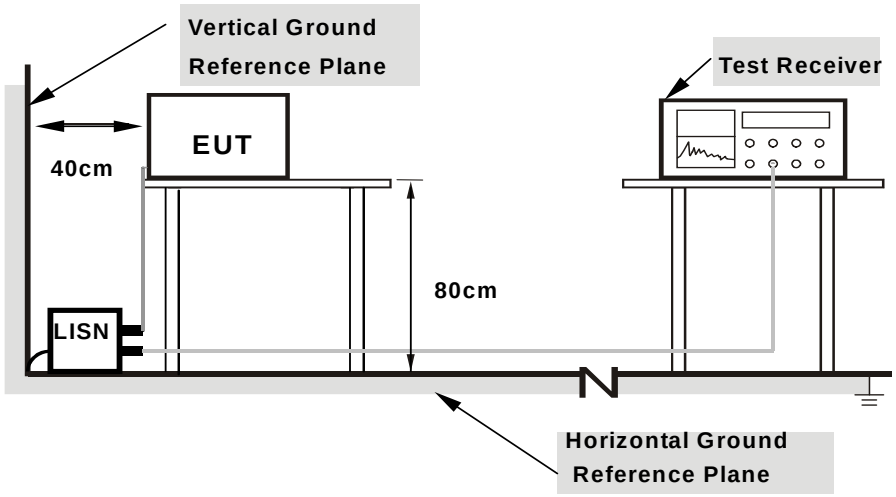
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

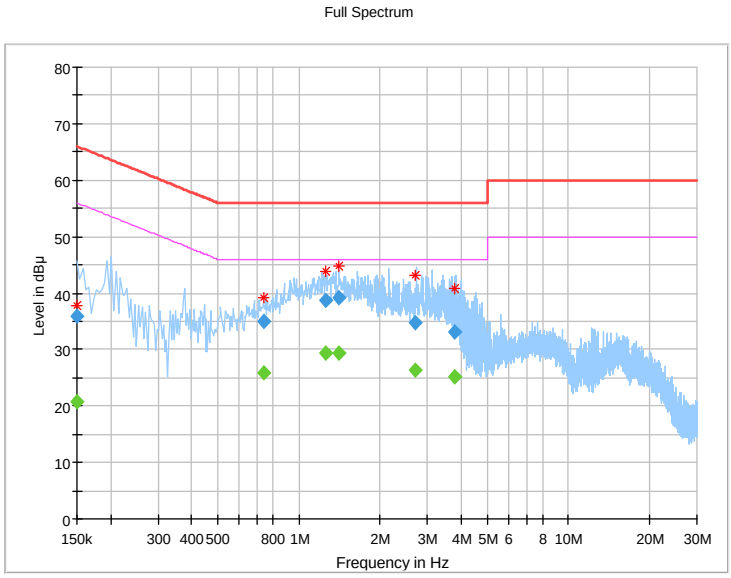
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA:

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

Frequency (MHz)	QuasiPeak (dB¦ìV)	CAverage (dB¦ìV)	Limit (dB¦ìV)	Margin (dB)	Line	Filter	Corr. (dB)
0.150000	---	20.86	56.00	35.14	L	ON	9.6
0.150000	35.82	---	66.00	30.18	L	ON	9.6
0.744000	---	25.90	46.00	20.10	L	ON	9.7
0.744000	35.02	---	56.00	20.98	L	ON	9.7
1.264000	---	29.33	46.00	16.67	L	ON	9.7
1.264000	38.73	---	56.00	17.27	L	ON	9.7
1.412000	---	29.36	46.00	16.64	L	ON	9.7
1.412000	39.10	---	56.00	16.90	L	ON	9.7
2.708000	---	26.42	46.00	19.58	L	ON	9.7
2.708000	34.74	---	56.00	21.26	L	ON	9.7
3.780000	---	25.11	46.00	20.89	L	ON	9.7
3.780000	33.09	---	56.00	22.91	L	ON	9.7

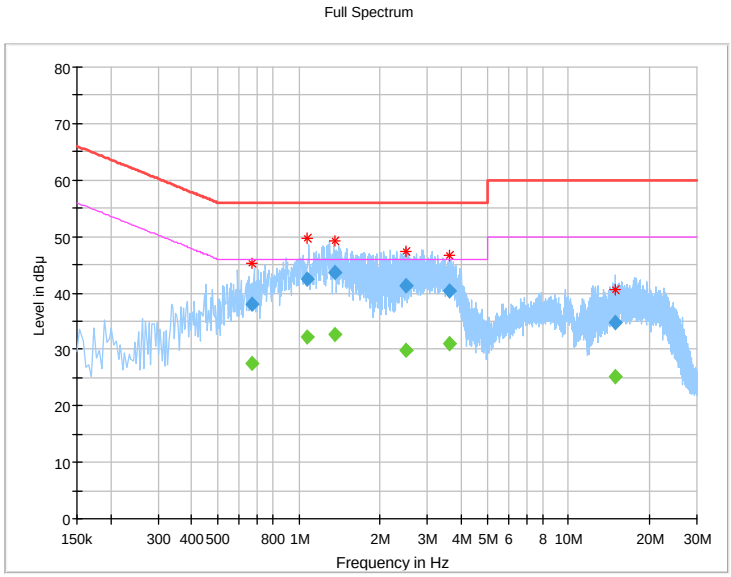
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.672000	---	27.58	46.00	18.42	N	ON	10.0
0.672000	38.05	---	56.00	17.95	N	ON	10.0
1.076000	---	32.24	46.00	13.76	N	ON	9.9
1.076000	42.42	---	56.00	13.58	N	ON	9.9
1.366000	---	32.64	46.00	13.36	N	ON	9.9
1.366000	**43.67**	**---**	**56.00**	**12.33**	**N**	**ON**	**9.9**
2.496000	---	29.81	46.00	16.19	N	ON	9.8
2.496000	41.26	---	56.00	14.74	N	ON	9.8
3.600000	---	31.08	46.00	14.92	N	ON	9.8
3.600000	40.38	---	56.00	15.62	N	ON	9.8
14.992000	---	25.12	50.00	24.88	N	ON	9.9
14.992000	34.65	---	60.00	25.35	N	ON	9.9

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.

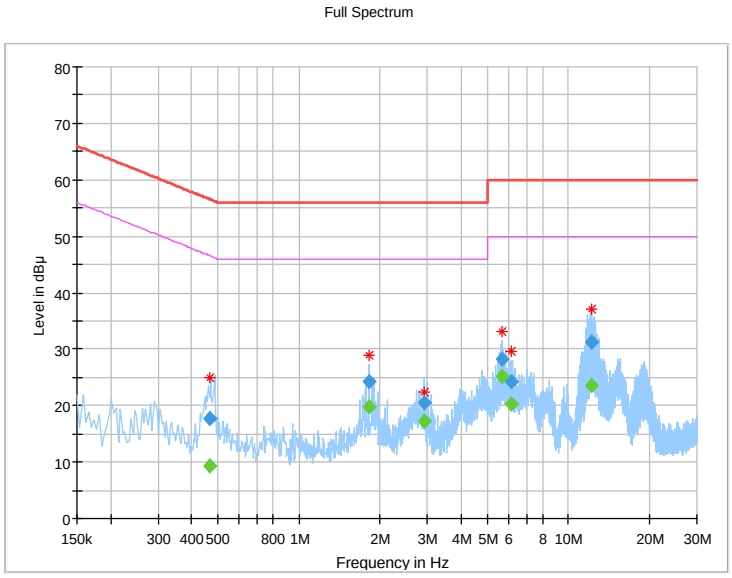


POWER LINE EMISSION DATA:

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

Frequency (MHz)	QuasiPeak (dB¦ìV)	CAverage (dB¦ìV)	Limit (dB¦ìV)	Margin (dB)	Line	Filter	Corr. (dB)
0.468000	---	9.36	46.55	37.19	L1	ON	9.7
0.468000	17.83	---	56.55	38.72	L1	ON	9.7
1.820000	---	19.91	46.00	26.09	L1	ON	9.7
1.820000	24.15	---	56.00	31.85	L1	ON	9.7
2.924000	---	17.29	46.00	28.71	L1	ON	9.7
2.924000	20.59	---	56.00	35.41	L1	ON	9.7
5.692000	---	25.17	50.00	24.83	L1	ON	9.8
5.692000	28.22	---	60.00	31.78	L1	ON	9.8
6.148000	---	20.34	50.00	29.66	L1	ON	9.8
6.148000	24.14	---	60.00	35.86	L1	ON	9.8
12.148000	---	23.66	50.00	26.34	L1	ON	9.9
12.148000	31.20	---	60.00	28.80	L1	ON	9.9

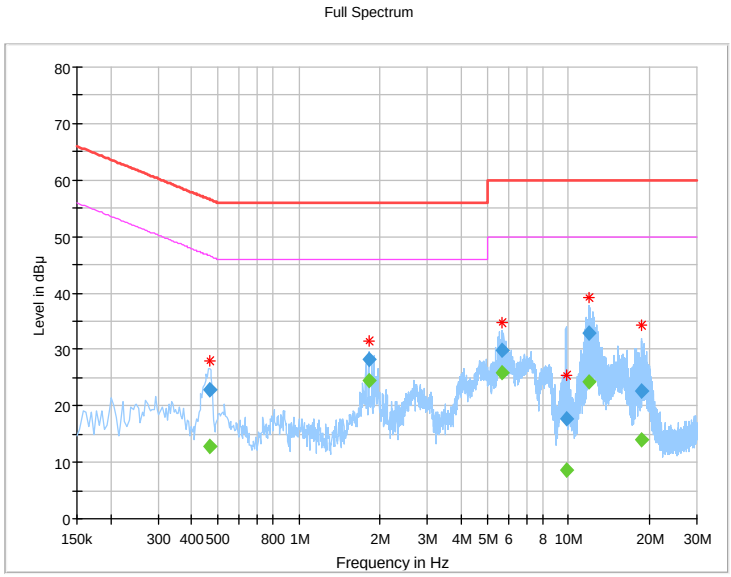
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.468000	---	12.87	46.55	33.68	N	ON	10.1
0.468000	22.96	---	56.55	33.59	N	ON	10.1
1.820000	---	24.53	46.00	21.47	N	ON	9.8
1.820000	28.21	---	56.00	27.79	N	ON	9.8
5.692000	---	25.87	50.00	24.13	N	ON	9.8
5.692000	29.91	---	60.00	30.09	N	ON	9.8
9.796000	---	8.65	50.00	41.35	N	ON	9.9
9.796000	17.76	---	60.00	42.24	N	ON	9.9
11.916000	---	24.16	50.00	25.84	N	ON	9.9
11.916000	32.90	---	60.00	27.10	N	ON	9.9
18.708000	---	14.11	50.00	35.89	N	ON	10.0
18.708000	22.74	---	60.00	37.26	N	ON	10.0

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.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Apr. 05,16	Apr. 04,17
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 16, 15	Jul. 15, 16
Loop Antenna	Daze	ZN30900A	0708	Dec. 30, 15	Dec. 29, 16
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 30, 15	May 29, 17
Amplifier	Burgeon	BPA-530	100220	Apr. 05,16	Apr. 04,17
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 20,15	Nov. 19,17
Pre-Amplifier	HP	8449B	3008A00409	Apr. 25,15	Apr. 24,17
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Aug. 08, 14	Aug. 07, 16
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Mar. 12,16	Mar. 11,18
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 (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The 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:

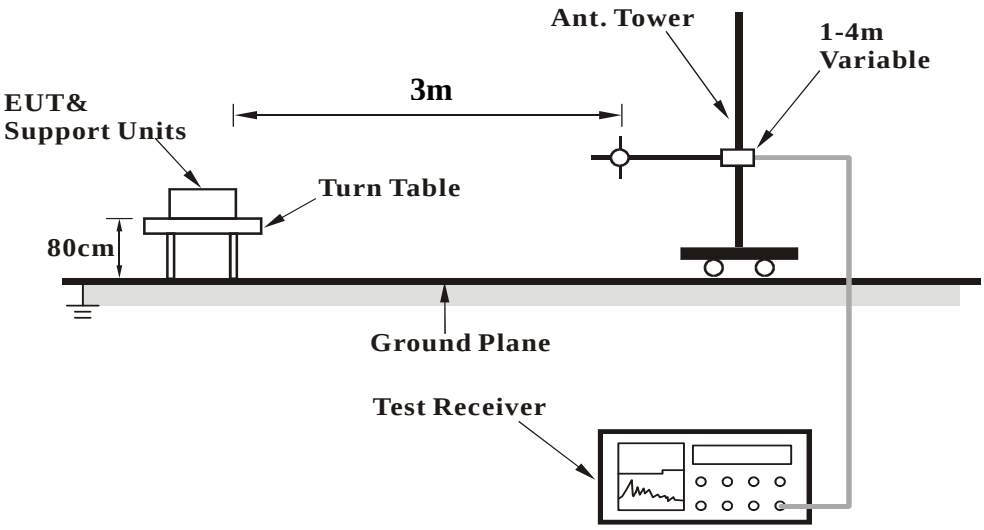
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

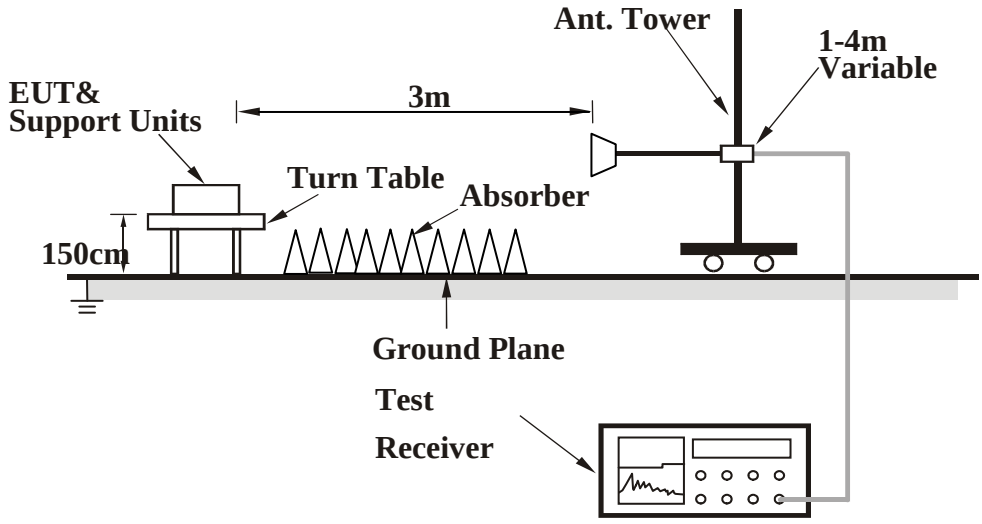
No deviation

4.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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:

9 KHz – 30 KHz data: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

30 MHz – 1GHz data:

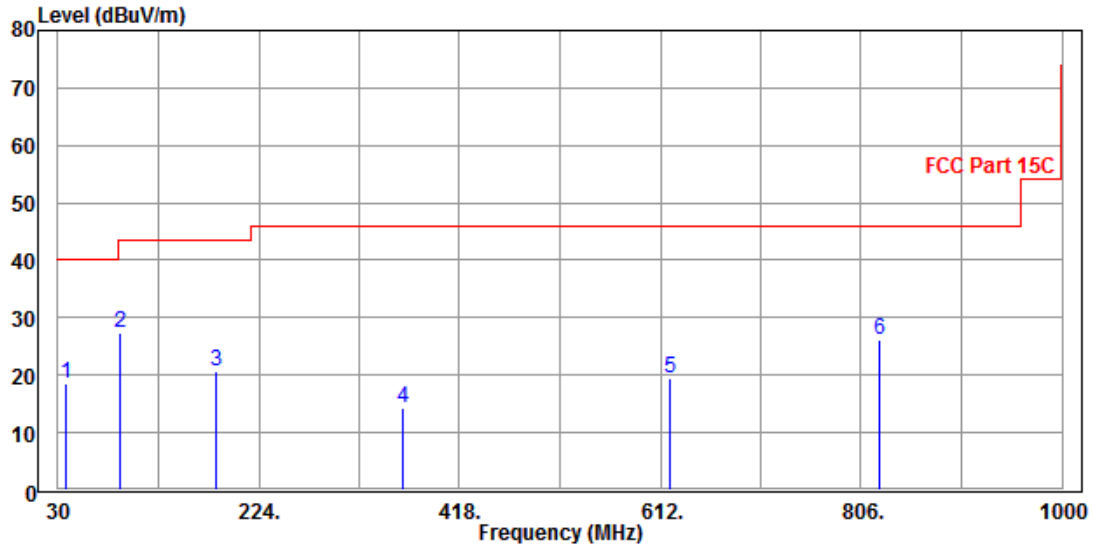
802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
37.76	18.44	43.28	40.00	-21.56	11.75	0.91	37.50	101	180	QP
89.17	27.24	55.96	43.50	-16.26	6.88	1.45	37.05	101	180	QP
183.26	20.54	45.20	43.50	-22.96	9.93	2.08	36.67	101	180	QP
362.71	14.40	32.42	46.00	-31.60	15.63	2.99	36.64	101	180	QP
620.73	19.43	31.75	46.00	-26.57	20.88	4.07	37.27	101	180	QP
824.43	26.19	36.06	46.00	-19.81	23.00	4.75	37.62	101	180	QP

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.

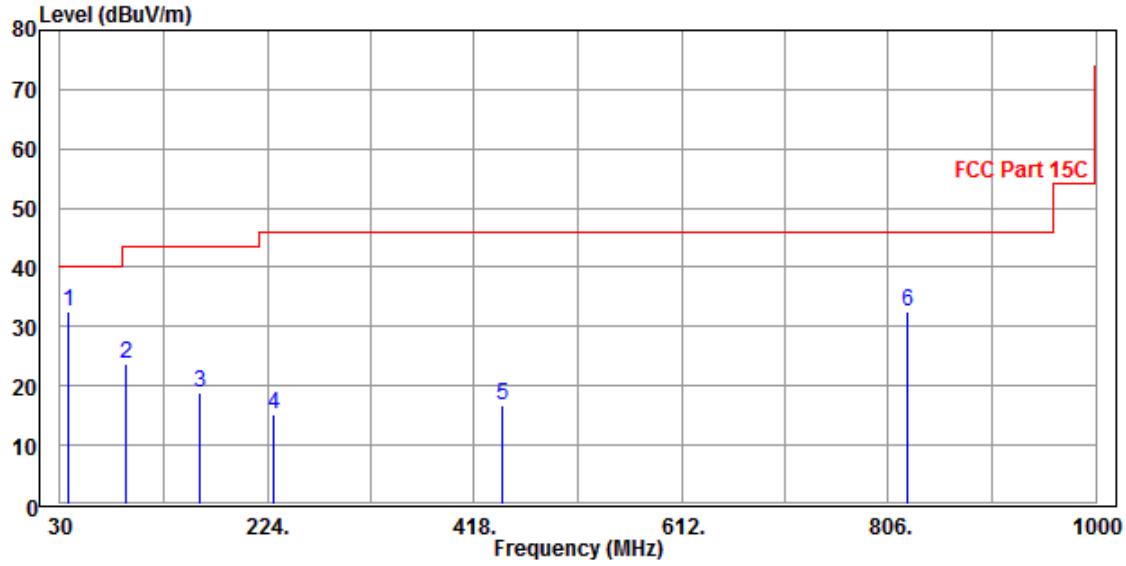


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
37.76	32.47	57.31	40.00	-7.53	11.75	0.91	37.50	101	265	QP
92.08	23.62	52.04	43.50	-19.88	7.13	1.48	37.03	101	265	QP
159.98	18.77	43.38	43.50	-24.73	10.20	1.93	36.74	101	265	QP
229.82	15.09	37.81	46.00	-30.91	11.47	2.34	36.53	101	265	QP
444.19	16.78	32.59	46.00	-29.22	17.73	3.29	36.83	101	265	QP
824.43	32.61	42.48	46.00	-13.39	23.00	4.75	37.62	101	265	QP

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   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										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	40.24	48.11	54.00	-13.76	32.29	8.15	48.31	100	168	Average
2390	49.67	57.54	74.00	-24.33	32.29	8.15	48.31	100	168	Peak
*2412	100.51	108.32			32.31	8.19	48.31	100	168	Average
*2412	102.78	110.59			32.31	8.19	48.31	100	168	Peak
2483.5	46.07	53.67	74.00	-27.93	32.38	8.32	48.30	100	168	Peak
2483.5	34.39	41.99	54.00	-19.61	32.38	8.32	48.30	100	168	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.60	45.47	54.00	-16.40	32.29	8.15	48.31	100	310	Average
2390	50.17	58.04	74.00	-23.83	32.29	8.15	48.31	100	310	Peak
*2412	96.24	104.05			32.31	8.19	48.31	100	310	Average
*2412	98.57	106.38			32.31	8.19	48.31	100	310	Peak
2497.6	35.18	42.73	54.00	-18.82	32.40	8.35	48.30	100	310	Average
2497.6	47.09	54.64	74.00	-26.91	32.40	8.35	48.30	100	310	Peak

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.43	45.30	54.00	-16.57	32.29	8.15	48.31	105	308	Average
2390	49.01	56.88	74.00	-24.99	32.29	8.15	48.31	105	308	Peak
*2437	96.99	104.72			32.34	8.24	48.31	105	308	Average
*2437	99.23	106.96			32.34	8.24	48.31	105	308	Peak
2483.8	35.97	43.57	54.00	-18.03	32.38	8.32	48.30	105	308	Average
2483.8	48.27	55.87	74.00	-25.73	32.38	8.32	48.30	105	308	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.05	44.92	54.00	-16.95	32.29	8.15	48.31	102	170	Average
2390	47.38	55.25	74.00	-26.62	32.29	8.15	48.31	102	170	Peak
*2437	100.86	108.59			32.34	8.24	48.31	102	170	Average
*2437	102.29	110.02			32.34	8.24	48.31	102	170	Peak
2483.5	35.79	43.39	54.00	-18.21	32.38	8.32	48.30	102	170	Average
2483.5	48.26	55.86	74.00	-25.74	32.38	8.32	48.30	102	170	Peak

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) – Pre-Amplifier 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2372.8	38.62	46.54	54.00	-15.38	32.27	8.12	48.31	108	164	Average
2372.8	46.83	54.75	74.00	-27.17	32.27	8.12	48.31	108	164	Peak
*2462	99.79	107.45			32.36	8.28	48.30	108	164	Average
*2462	102.13	109.79			32.36	8.28	48.30	108	164	Peak
2486.4	40.93	48.51	54.00	-13.07	32.39	8.33	48.30	108	164	Average
2486.4	47.16	54.74	74.00	-26.84	32.39	8.33	48.30	108	164	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	35.45	43.32	54.00	-18.55	32.29	8.15	48.31	305	100	Average
2390	48.84	56.71	74.00	-25.16	32.29	8.15	48.31	305	100	Peak
*2462	97.36	105.02			32.36	8.28	48.30	305	100	Average
*2462	99.57	107.23			32.36	8.28	48.30	305	100	Peak
2487.3	37.94	45.52	54.00	-16.06	32.39	8.33	48.30	305	100	Average
2487.3	48.42	56.00	74.00	-25.58	32.39	8.33	48.30	305	100	Peak

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) – Pre-Amplifier 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.40	57.27	54.00	-4.60	32.29	8.15	48.31	100	170	Average
2390	64.93	72.80	74.00	-9.07	32.29	8.15	48.31	100	170	Peak
*2412	92.21	100.02			32.31	8.19	48.31	100	170	Average
*2412	102.21	110.02			32.31	8.19	48.31	100	170	Peak
2483.8	35.54	43.14	54.00	-18.46	32.38	8.32	48.30	100	170	Average
2483.8	47.33	54.93	74.00	-26.67	32.38	8.32	48.30	100	170	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	42.65	50.52	54.00	-11.35	32.29	8.15	48.31	105	312	Average
2390	57.09	64.96	74.00	-16.91	32.29	8.15	48.31	105	312	Peak
*2412	88.45	96.26			32.31	8.19	48.31	105	312	Average
*2412	97.93	105.74			32.31	8.19	48.31	105	312	Peak
2483.5	35.53	43.13	54.00	-18.47	32.38	8.32	48.30	105	312	Average
2483.5	48.22	55.82	74.00	-25.78	32.38	8.32	48.30	105	312	Peak

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2384.9	38.05	45.94	54.00	-15.95	32.28	8.14	48.31	100	166	Average
2384.9	49.19	57.08	74.00	-24.81	32.28	8.14	48.31	100	166	Peak
*2437	93.13	100.86			32.34	8.24	48.31	100	166	Average
*2437	103.59	111.32			32.34	8.24	48.31	100	166	Peak
2489.4	36.59	44.17	54.00	-17.41	32.39	8.33	48.30	100	166	Average
2489.4	47.88	55.46	74.00	-26.12	32.39	8.33	48.30	100	166	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.84	45.71	54.00	-16.16	32.29	8.15	48.31	105	306	Average
2390	52.42	60.29	74.00	-21.58	32.29	8.15	48.31	105	306	Peak
*2437	89.13	96.86			32.34	8.24	48.31	105	306	Average
*2437	98.76	106.49			32.34	8.24	48.31	105	306	Peak
2484.5	35.75	43.35	54.00	-18.25	32.38	8.32	48.30	105	306	Average
2484.5	47.57	55.17	74.00	-26.43	32.38	8.32	48.30	105	306	Peak

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) – Pre-Amplifier 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	36.80	44.67	54.00	-17.20	32.29	8.15	48.31	100	172	Average
2390	48.04	55.91	74.00	-25.96	32.29	8.15	48.31	100	172	Peak
*2462	91.48	99.14			32.36	8.28	48.30	100	172	Average
*2462	101.70	109.36			32.36	8.28	48.30	100	172	Peak
2483.5	48.06	55.66	54.00	-5.94	32.38	8.32	48.30	100	172	Average
2483.5	66.35	73.95	74.00	-7.65	32.38	8.32	48.30	100	172	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.06	44.93	54.00	-16.94	32.29	8.15	48.31	108	314	Average
2390	48.60	56.47	74.00	-25.40	32.29	8.15	48.31	108	314	Peak
*2462	89.11	96.77			32.36	8.28	48.30	108	314	Average
*2462	99.11	106.77			32.36	8.28	48.30	108	314	Peak
2483.5	43.31	50.91	54.00	-10.69	32.38	8.32	48.30	108	314	Average
2483.5	60.29	67.89	74.00	-13.71	32.38	8.32	48.30	108	314	Peak

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) – Pre-Amplifier 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.54	58.41	54.00	-3.46	32.29	8.15	48.31	108	162	Average
2390	66.36	74.23	74.00	-7.64	32.29	8.15	48.31	108	162	Peak
*2412	93.70	101.51			32.31	8.19	48.31	108	162	Average
*2412	103.15	110.96			32.31	8.19	48.31	108	162	Peak
2483.5	35.05	42.65	54.00	-18.95	32.38	8.32	48.30	108	162	Average
2483.5	46.74	54.34	74.00	-27.26	32.38	8.32	48.30	108	162	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	48.87	56.74	54.00	-5.13	32.29	8.15	48.31	105	310	Average
2390	66.34	74.21	74.00	-7.66	32.29	8.15	48.31	105	310	Peak
*2412	89.82	97.63			32.31	8.19	48.31	105	310	Average
*2412	100.24	108.05			32.31	8.19	48.31	105	310	Peak
2486.9	35.40	42.98	54.00	-18.60	32.39	8.33	48.30	105	310	Average
2486.9	47.99	55.57	74.00	-26.01	32.39	8.33	48.30	105	310	Peak

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) – Pre-Amplifier 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	38.17	46.04	54.00	-15.83	32.29	8.15	48.31	106	305	Average
2390	48.02	55.89	74.00	-25.98	32.29	8.15	48.31	106	305	Peak
*2437	90.62	98.35			32.34	8.24	48.31	106	305	Average
*2437	100.71	108.44			32.34	8.24	48.31	106	305	Peak
2489.2	37.21	44.79	54.00	-16.79	32.39	8.33	48.30	106	305	Average
2489.2	48.15	55.73	74.00	-25.85	32.39	8.33	48.30	106	305	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	41.16	49.03	54.00	-12.84	32.29	8.15	48.31	100	168	Average
2390	48.84	56.71	74.00	-25.16	32.29	8.15	48.31	100	168	Peak
*2437	94.39	102.12			32.34	8.24	48.31	100	168	Average
*2437	105.13	112.86			32.34	8.24	48.31	100	168	Peak
2488.6	37.86	45.44	54.00	-16.14	32.39	8.33	48.30	100	168	Average
2488.6	48.29	55.87	74.00	-25.71	32.39	8.33	48.30	100	168	Peak

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) – Pre-Amplifier 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	36.40	44.27	54.00	-17.60	32.29	8.15	48.31	100	166	Average
2390	46.06	53.93	74.00	-27.94	32.29	8.15	48.31	100	166	Peak
*2462	91.35	99.01			32.36	8.28	48.30	100	166	Average
*2462	101.13	108.79			32.36	8.28	48.30	100	166	Peak
2483.5	**51.14**	**58.74**	**54.00**	**-2.86**	**32.38**	**8.32**	**48.30**	**100**	**166**	**Average**
2483.5	65.43	73.03	74.00	-8.57	32.38	8.32	48.30	100	166	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	36.17	44.04	54.00	-17.83	32.29	8.15	48.31	102	314	Average
2390	50.16	58.03	74.00	-23.84	32.29	8.15	48.31	102	314	Peak
*2462	90.63	98.29			32.36	8.28	48.30	102	314	Average
*2462	100.30	107.96			32.36	8.28	48.30	102	314	Peak
2483.5	48.93	56.53	54.00	-5.07	32.38	8.32	48.30	102	314	Average
2483.5	65.17	72.77	74.00	-8.83	32.38	8.32	48.30	102	314	Peak

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) – Pre-Amplifier 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:

9 KHz – 30 KHz data: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

30 MHz – 1GHz data:

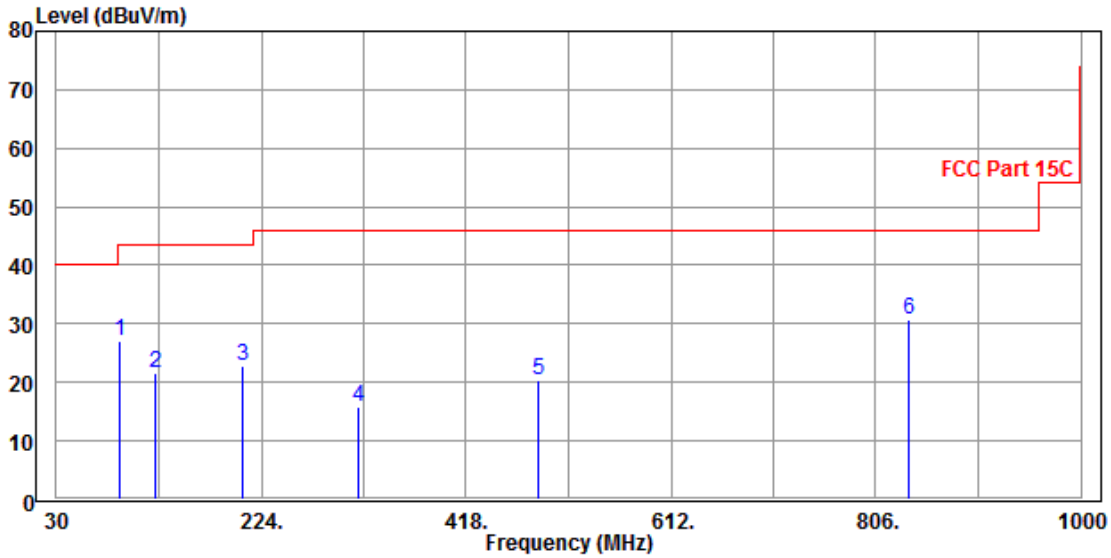
BT-LE (GFSK)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
89.17	27.04	55.76	43.50	-16.46	6.88	1.45	37.05	101	360	QP
124.09	21.74	49.53	43.50	-21.76	7.42	1.71	36.92	101	360	QP
205.57	22.72	46.70	43.50	-20.78	10.36	2.20	36.54	101	360	QP
316.15	15.96	36.03	46.00	-30.04	13.68	2.79	36.54	101	360	QP
486.87	20.43	35.70	46.00	-25.57	18.24	3.42	36.93	101	360	QP
837.04	30.77	40.60	46.00	-15.23	23.00	4.79	37.62	101	360	QP

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

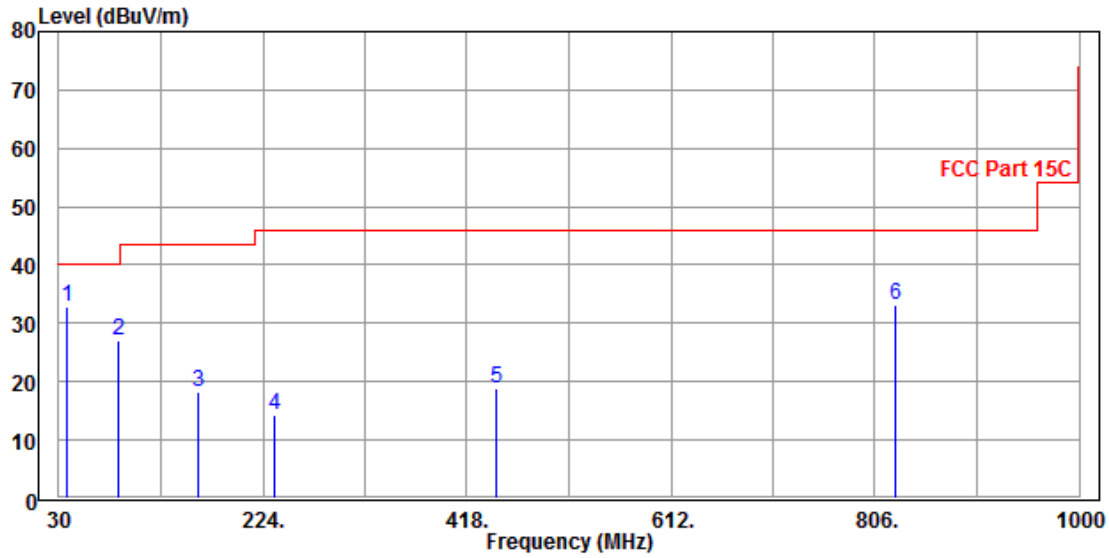


CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
37.76	32.93	57.77	40.00	-7.07	11.75	0.91	37.50	101	120	QP
86.26	27.02	55.88	40.00	-12.98	6.79	1.43	37.08	101	150	QP
161.92	18.34	42.97	43.50	-25.16	10.17	1.94	36.74	101	138	QP
235.64	14.33	36.75	46.00	-31.67	11.74	2.37	36.53	101	100	QP
446.13	18.74	34.53	46.00	-27.26	17.75	3.29	36.83	101	100	QP
825.4	33.23	43.10	46.00	-12.77	23.00	4.75	37.62	101	100	QP

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) – Pre-Amplifier 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										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	34.10	41.97	54.00	-19.90	32.29	8.15	48.31	145	25	Average
2390	46.16	54.03	74.00	-27.84	32.29	8.15	48.31	145	25	Peak
*2402	96.52	104.36			32.30	8.17	48.31	145	25	Average
*2402	101.51	109.35			32.30	8.17	48.31	145	25	Peak
2487.8	34.23	41.81	54.00	-19.77	32.39	8.33	48.30	145	25	Average
2487.8	47.05	54.63	74.00	-26.95	32.39	8.33	48.30	145	25	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2358.6	33.99	41.94	54.00	-20.01	32.26	8.10	48.31	100	308	Average
2358.6	44.35	52.30	74.00	-29.65	32.26	8.10	48.31	100	308	Peak
*2402	91.92	99.76			32.30	8.17	48.31	100	308	Average
*2402	97.12	104.96			32.30	8.17	48.31	100	308	Peak
2493.8	34.22	41.79	54.00	-19.78	32.39	8.34	48.30	100	308	Average
2493.8	46.21	53.78	74.00	-27.79	32.39	8.34	48.30	100	308	Peak

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) – Pre-Amplifier 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 19	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2386.5	33.78	41.65	54.00	-20.22	32.29	8.15	48.31	148	28	Average
2386.5	44.40	52.27	74.00	-29.60	32.29	8.15	48.31	148	28	Peak
*2440	98.33	106.06			32.34	8.24	48.31	148	28	Average
*2440	103.33	111.06			32.34	8.24	48.31	148	28	Peak
2483.6	34.12	41.72	54.00	-19.88	32.38	8.32	48.30	148	28	Average
2483.6	47.07	54.67	74.00	-26.93	32.38	8.32	48.30	148	28	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	34.22	42.09	54.00	-19.78	32.29	8.15	48.31	100	305	Average
2390	52.02	59.89	74.00	-21.98	32.29	8.15	48.31	100	305	Peak
*2440	89.64	97.37			32.34	8.24	48.31	100	305	Average
*2440	98.17	105.90			32.34	8.24	48.31	100	305	Peak
2491.6	34.97	42.55	54.00	-19.03	32.39	8.33	48.30	100	305	Average
2491.6	45.49	53.07	74.00	-28.51	32.39	8.33	48.30	100	305	Peak

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) – Pre-Amplifier 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	34.29	42.16	54.00	-19.71	32.29	8.15	48.31	145	26	Average
2390	45.99	53.86	74.00	-28.01	32.29	8.15	48.31	145	26	Peak
*2480	96.84	104.45			32.38	8.31	48.30	145	26	Average
*2480	102.06	109.67			32.38	8.31	48.30	145	26	Peak
2488.6	35.61	43.19	54.00	-18.39	32.39	8.33	48.30	145	26	Average
2488.6	55.40	62.98	74.00	-18.60	32.39	8.33	48.30	145	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.39	45.26	54.00	-16.61	32.29	8.15	48.31	105	148	Average
2390	55.67	63.54	74.00	-18.33	32.29	8.15	48.31	105	148	Peak
*2480	92.82	100.43			32.38	8.31	48.30	105	148	Average
*2480	97.82	105.43			32.38	8.31	48.30	105	148	Peak
2488.1	35.75	43.33	54.00	-18.25	32.39	8.33	48.30	105	148	Average
2488.1	53.39	60.97	74.00	-20.61	32.39	8.33	48.30	105	148	Peak

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) – Pre-Amplifier 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 6 dB 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. 05,16	Apr. 04,17
Power Meter	Anritsu	ML2495A	1139001	Feb.19,16	Feb. 18,17
Power Sensor	Anritsu	MA2411B	1126068	Feb.19,16	Feb. 18,17
Power Sensor	Keysight	U2021XA	MY55060016	May 27,15	May 26,17
Power Sensor	Keysight	U2021XA	MY55060018	May 27,15	May 26,17
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 12, 15	Oct.11, 16

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.

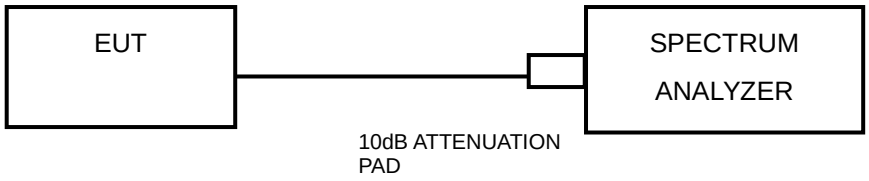
4.3.3 TEST PROCEDURE

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



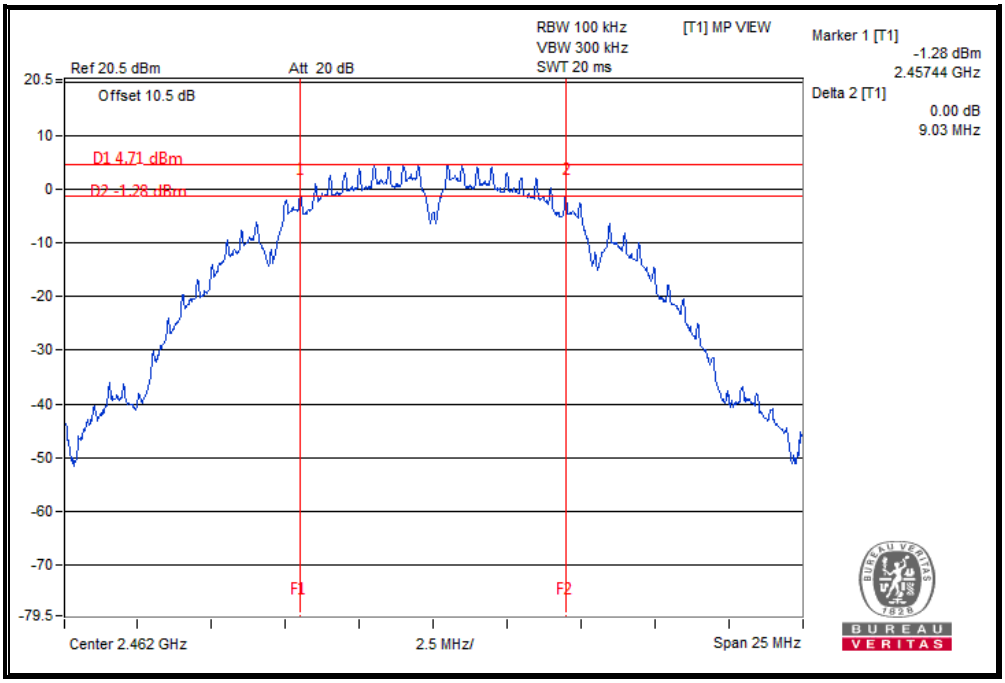
4.3.6 EUT OPERATING CONDITIONS

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

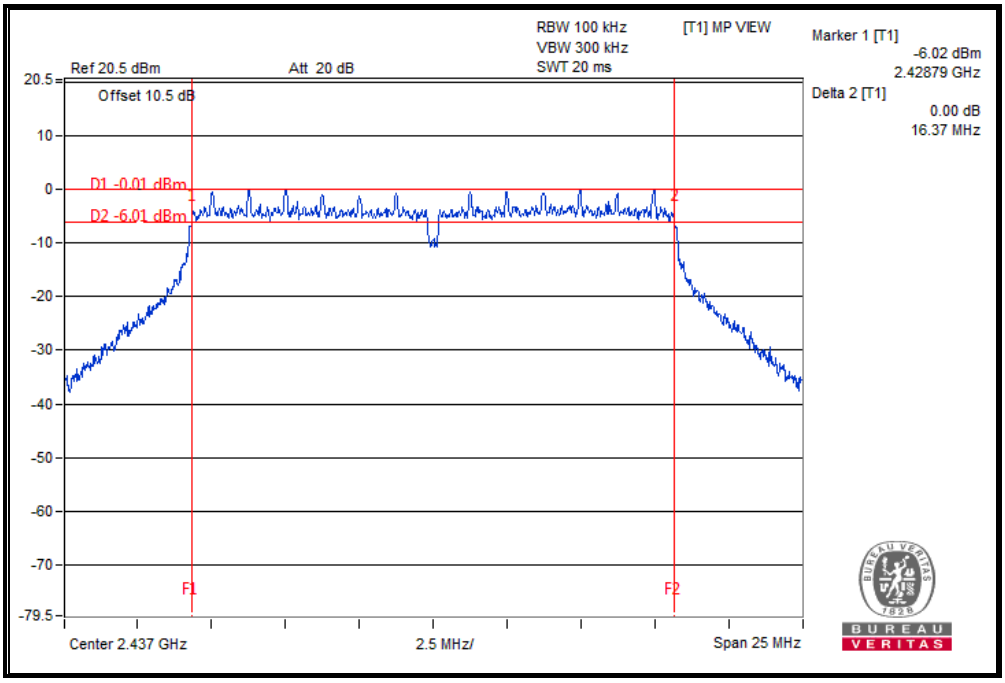
802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	9.01	0.5	PASS
6	2437	8.54	0.5	PASS
11	2462	9.03	0.5	PASS



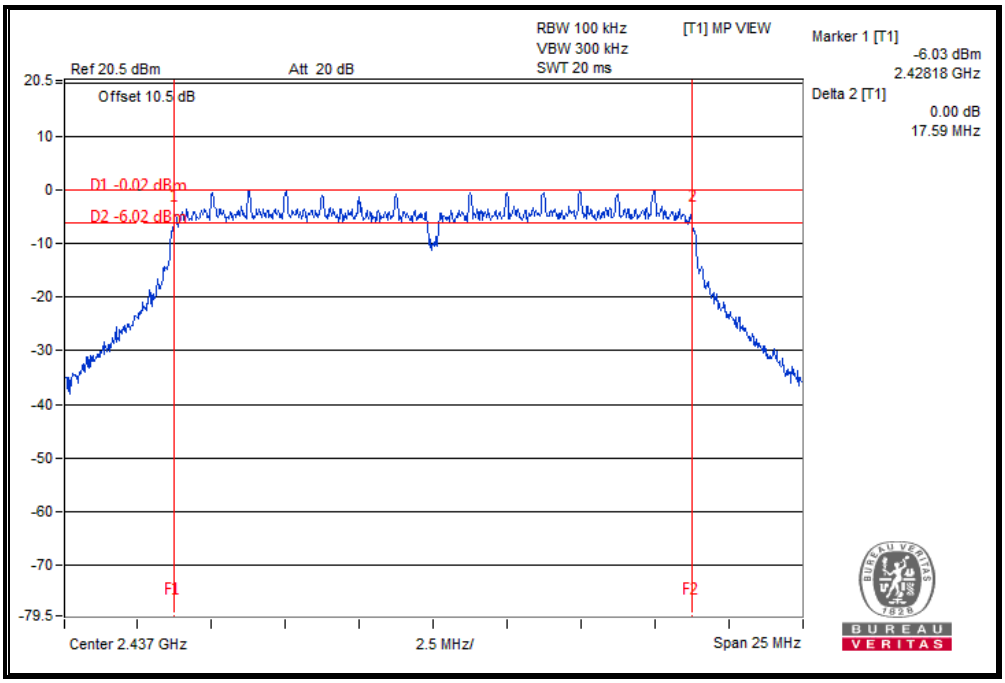
802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.35	0.5	PASS
6	2437	16.37	0.5	PASS
11	2462	16.35	0.5	PASS



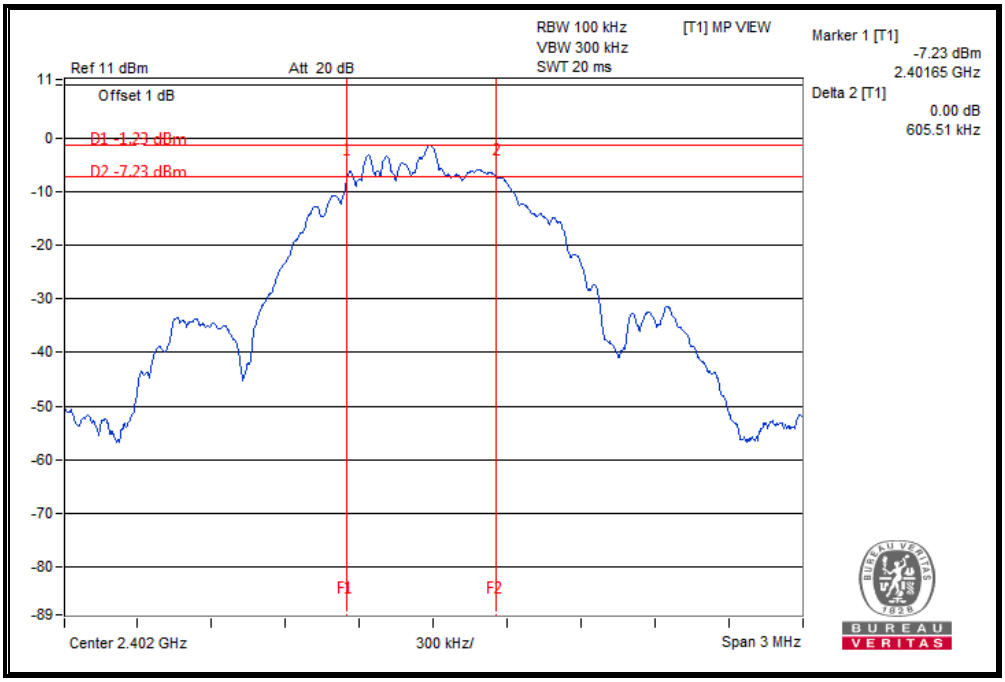
802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.58	0.5	PASS
6	2437	17.59	0.5	PASS
11	2462	17.58	0.5	PASS



BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.61	0.5	PASS
19	2440	0.60	0.5	PASS
39	2480	0.60	0.5	PASS

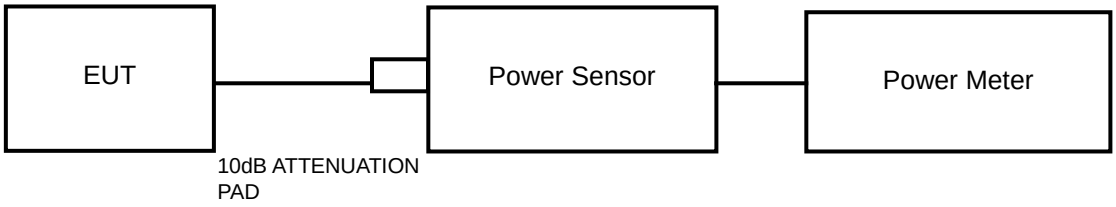


4.4 CONDUCTED OUTPUT POWER

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 4.3.3 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

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	17.84	60.814	1	PASS
6	2437	17.73	59.293	1	PASS
11	2462	17.89	61.518	1	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	17.56	57.016	1	PASS
6	2437	17.49	56.105	1	PASS
11	2462	17.62	57.810	1	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	19.27	**84.528**	1	PASS
6	2437	19.23	83.753	1	PASS
11	2462	19.17	82.604	1	PASS

BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	2.15	1.641	1	PASS
19	2440	2.66	**1.845**	1	PASS
39	2480	1.39	1.377	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	15.10	N/A
6	2437	15.07	N/A
11	2462	15.17	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	10.43	N/A
6	2437	10.36	N/A
11	2462	10.51	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	12.97	N/A
6	2437	12.94	N/A
11	2462	12.79	N/A

BT-LE (GFSK)

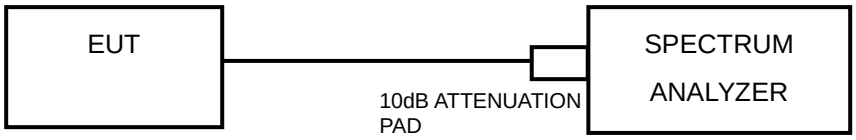
CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	1.96	N/A
19	2440	2.48	N/A
39	2480	1.19	N/A

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 = 3 kHz, VBW ≥ 3 x 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.

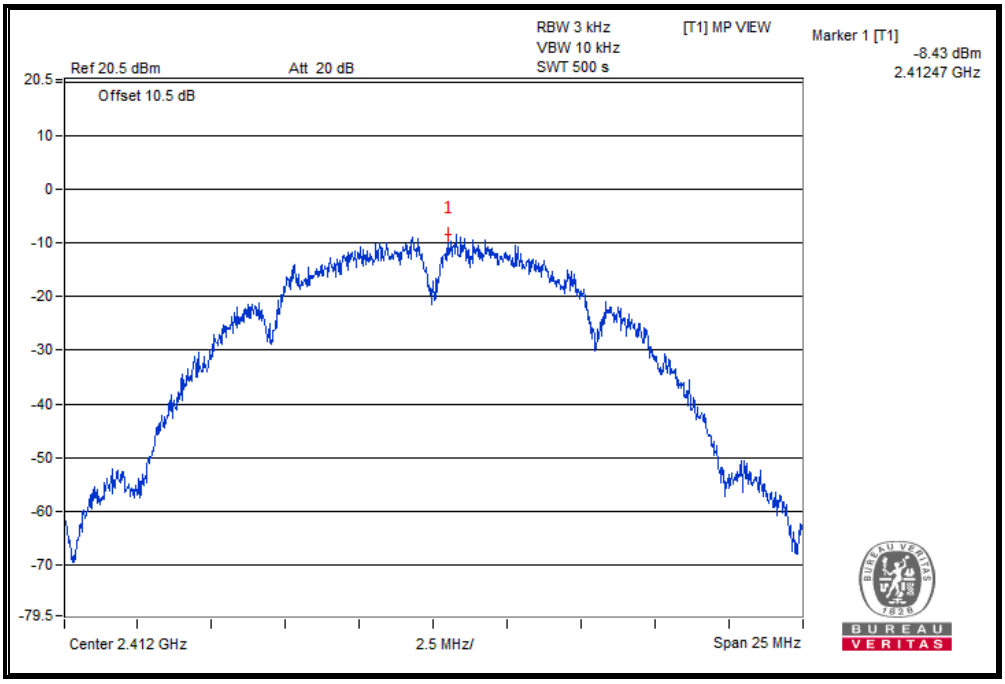
4.5.6 EUT OPERATING CONDITION

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

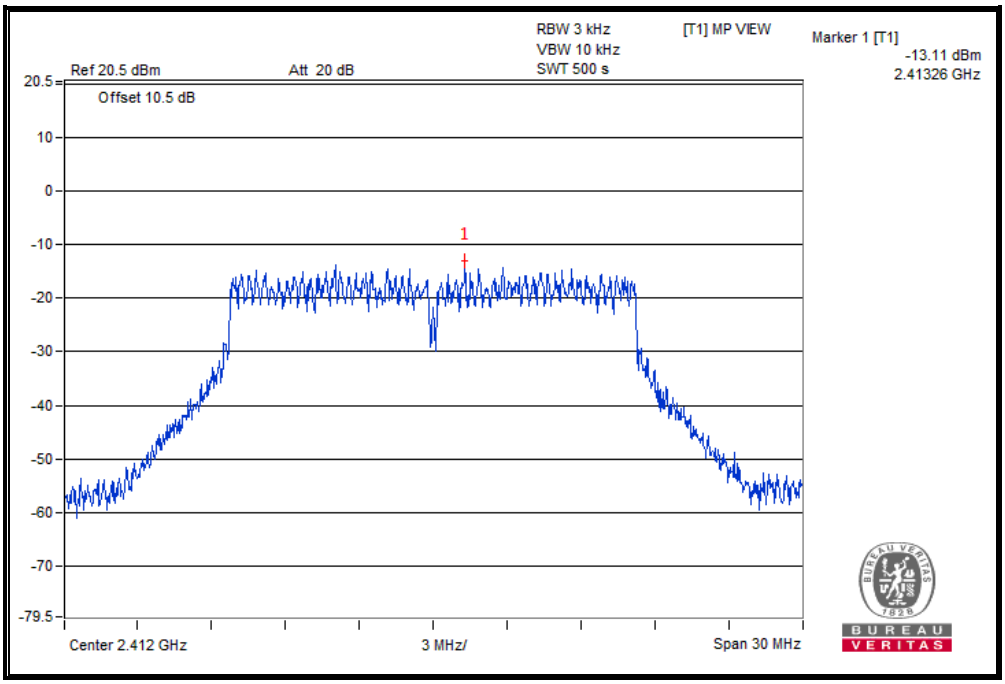
802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-8.43	8	PASS
6	2437	-10.00	8	PASS
11	2462	-9.38	8	PASS



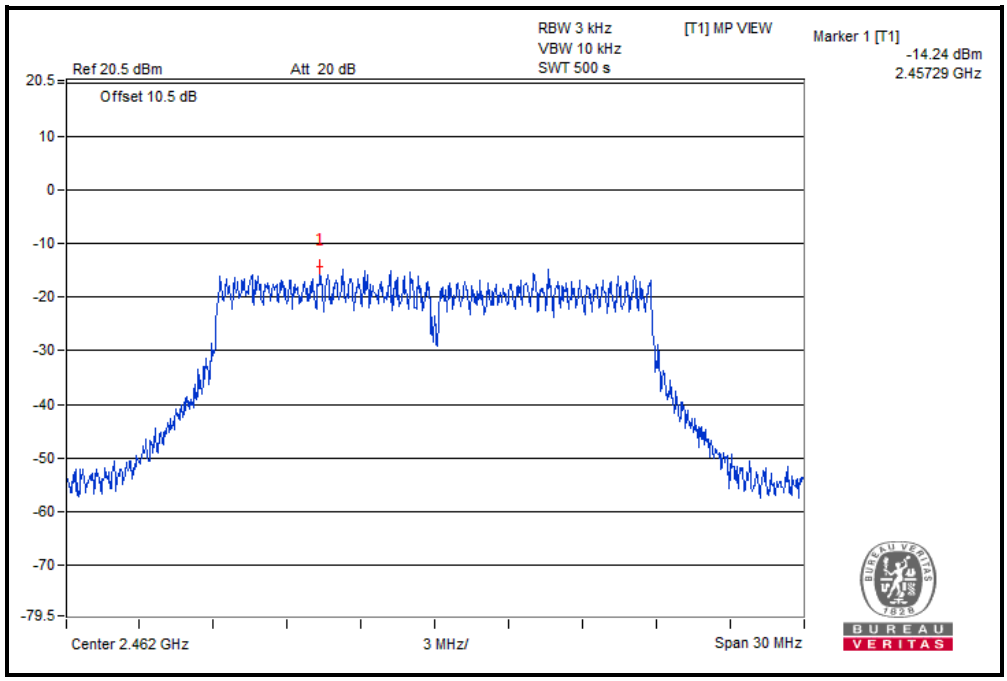
802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-13.11	8	PASS
6	2437	-15.00	8	PASS
11	2462	-14.79	8	PASS



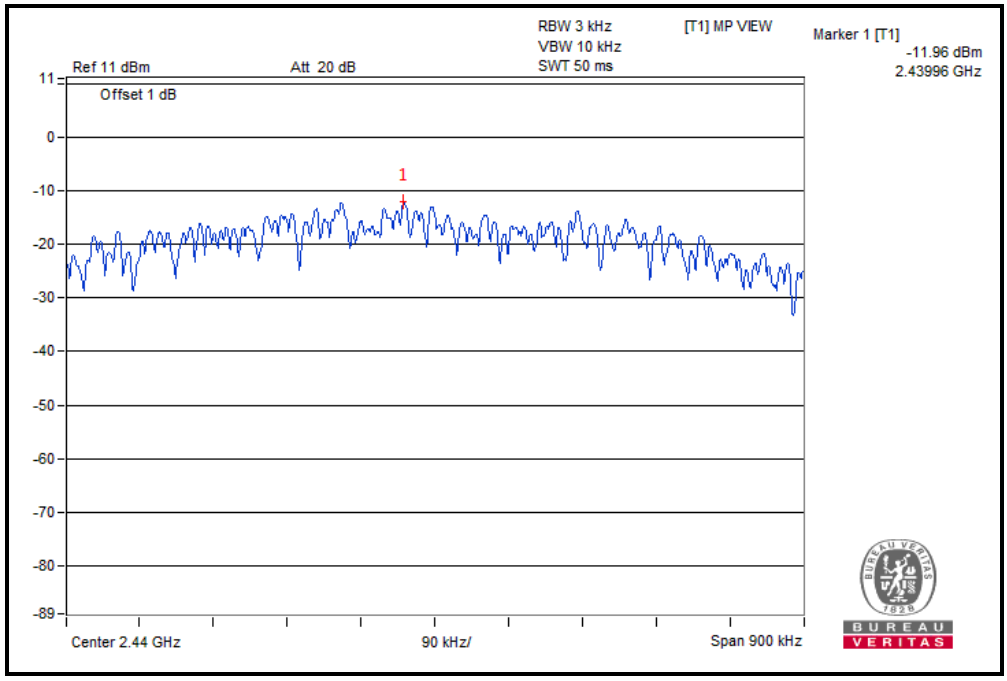
802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-14.41	8	PASS
6	2437	-14.79	8	PASS
11	2462	-14.24	8	PASS



BT-LE (GFSK)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-12.69	8	PASS
19	2440	-11.96	8	PASS
39	2480	-13.31	8	PASS

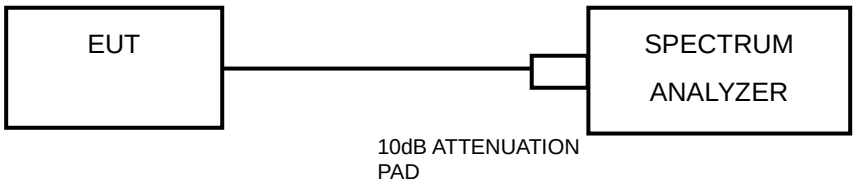


4.6 OUT OF BAND EMISSION MEASUREMENT

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 ≥ 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 OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 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.

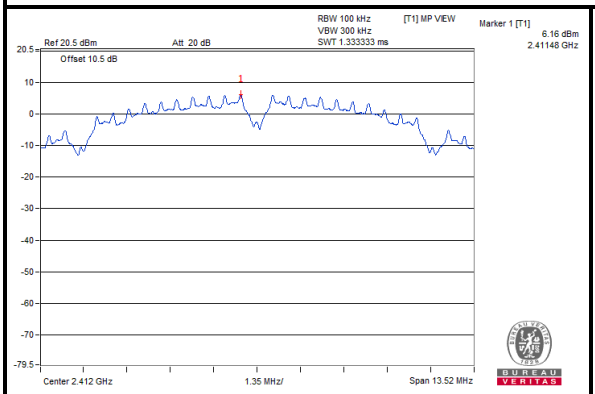
4.6.7 TEST RESULTS

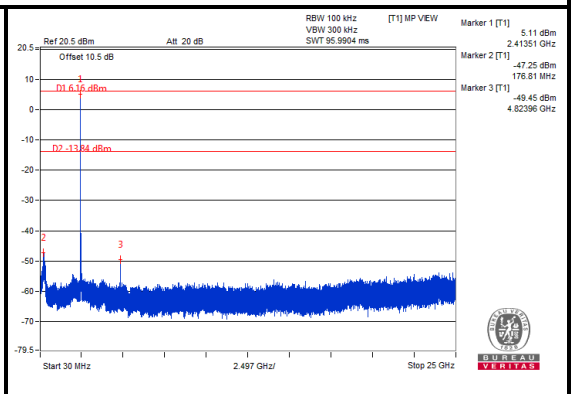
The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

4.6.8 TEST RESULTS

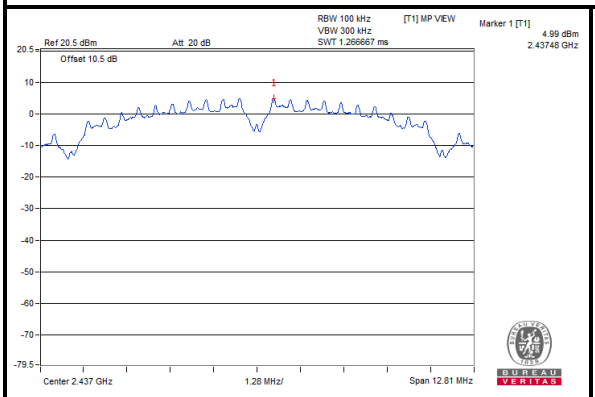
802.11b

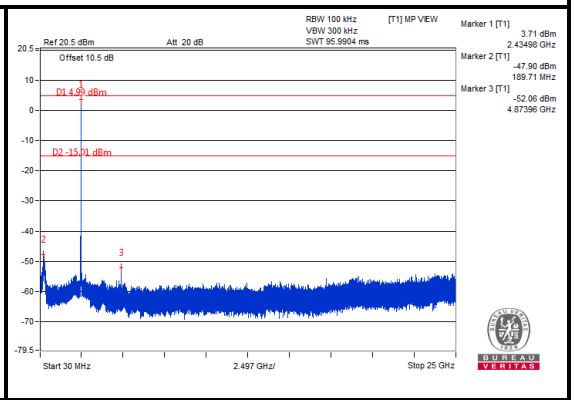
CH 1



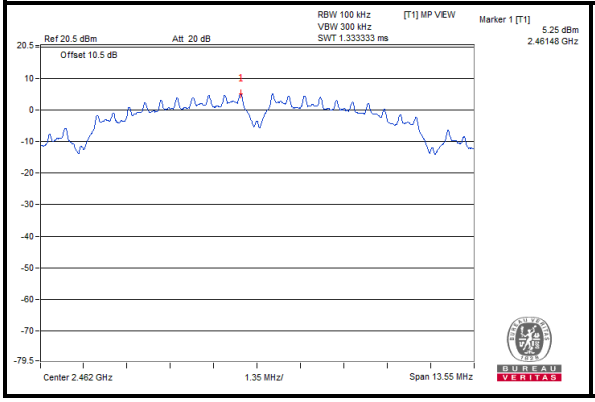


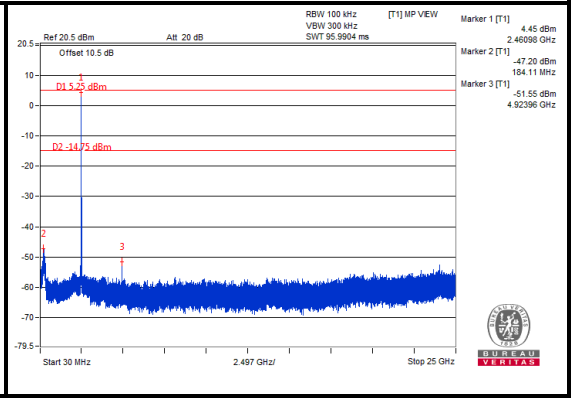
CH 6





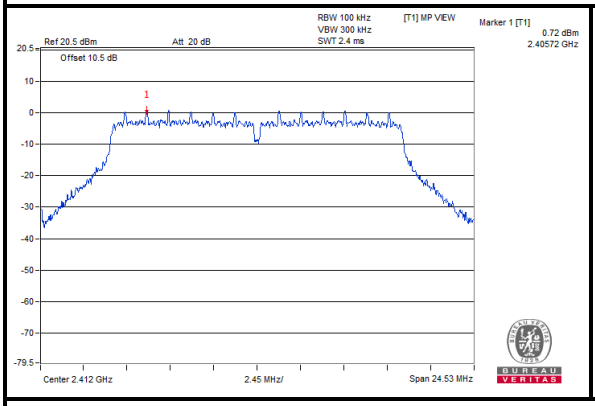
CH 11

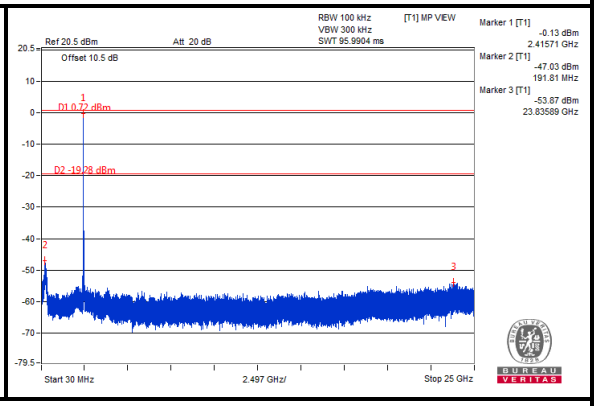




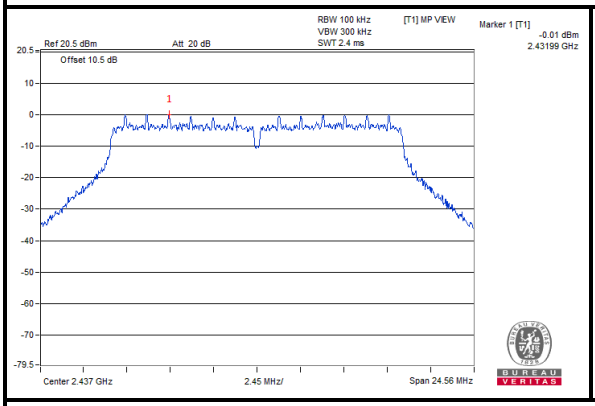
802.11g

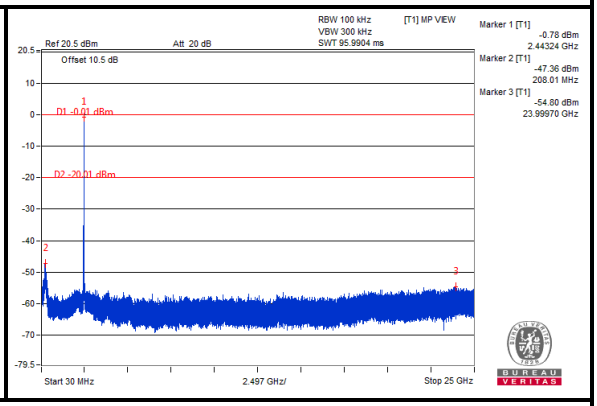
CH 1



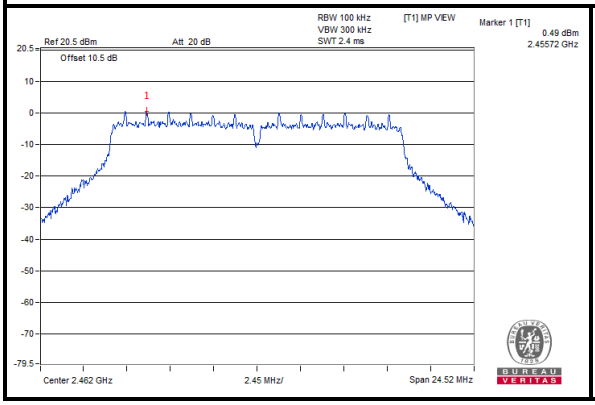


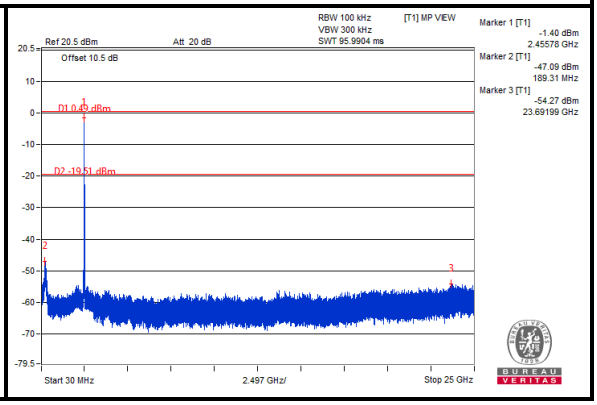
CH 6





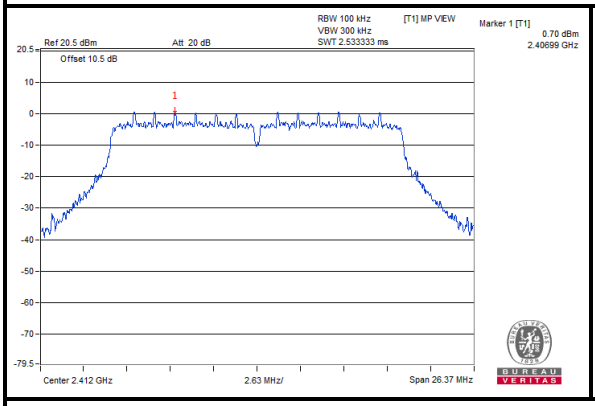
CH 11

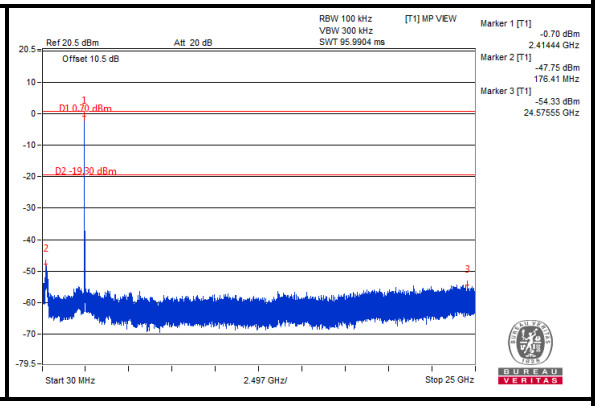




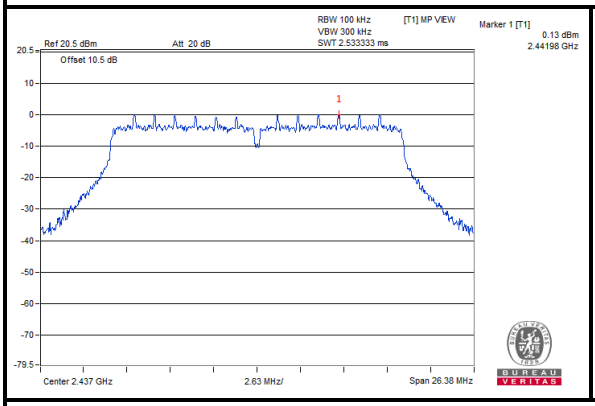
802.11n (20MHz)

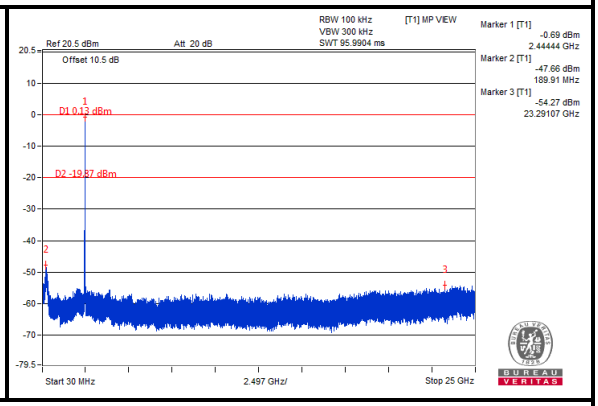
CH 1



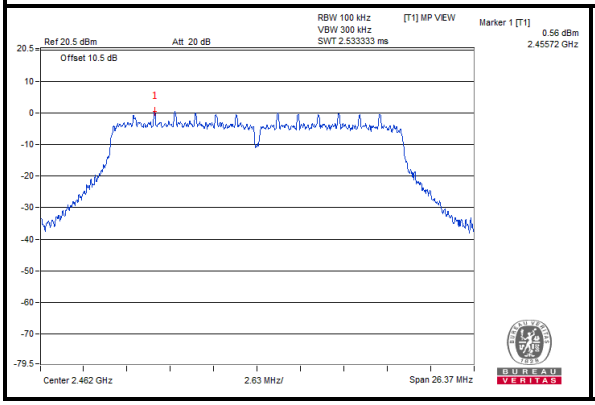


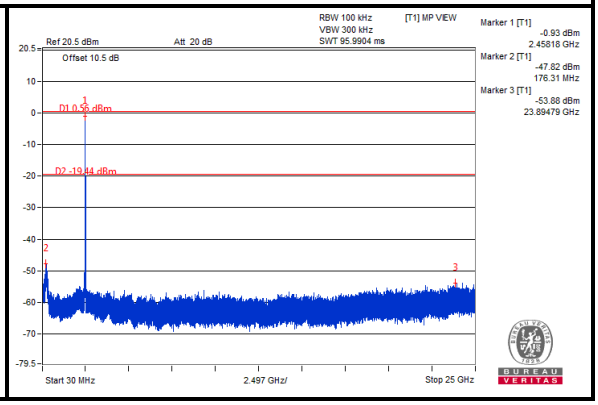
CH 6





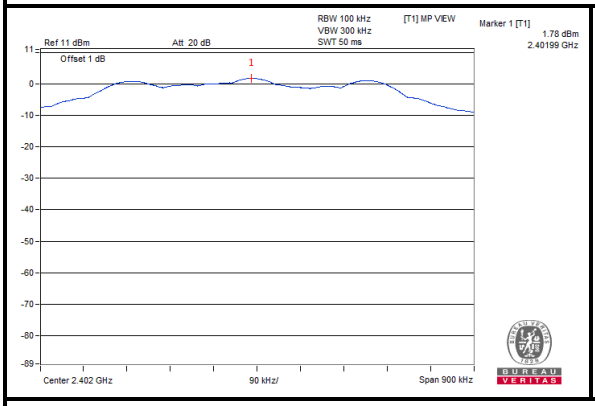
CH 11

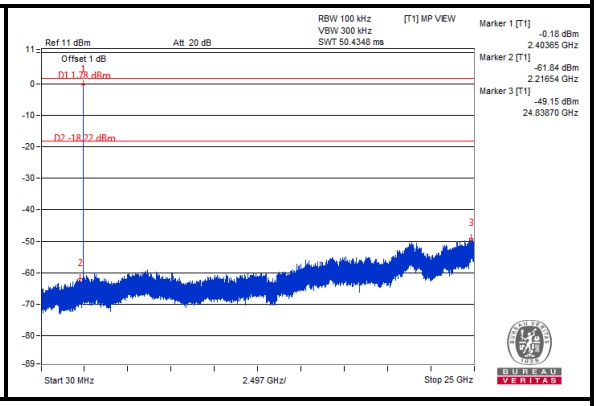




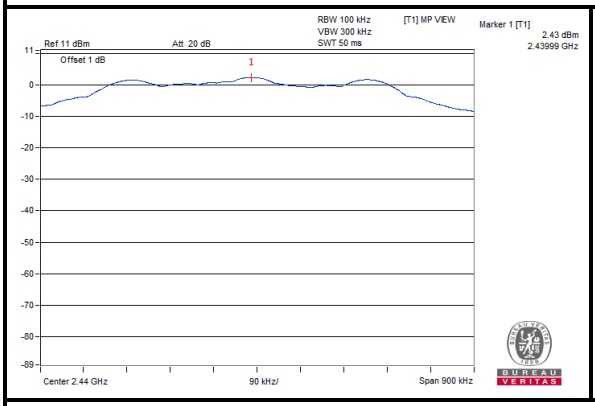
BT-LE (GFSK)

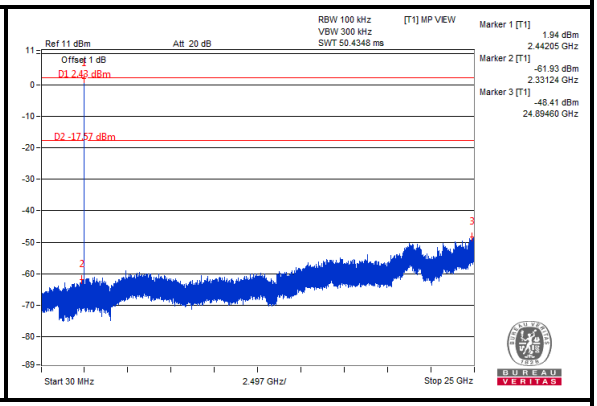
CH 0



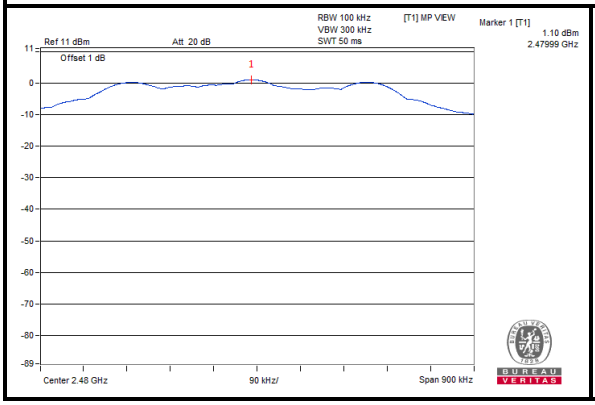


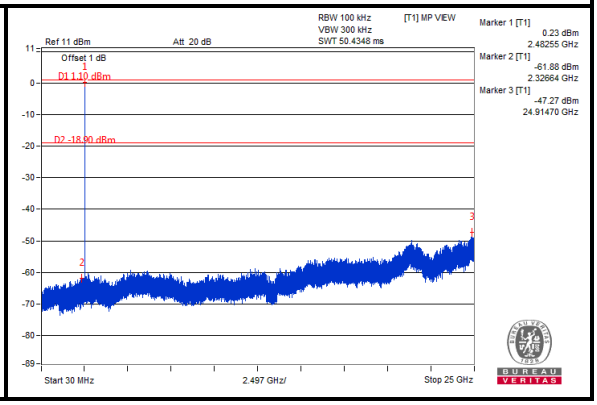
CH 19





CH 39





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---