Test Lab
Cert 2951.01

TEST REPORT

Applicant	Brightstar Corporation
Address:	9725 NW 117th Ave., Miami, Florida, United States

Manufacturer or Supplier	Shanghai Huaqin Telecom Technology Limited Company
Address	Room 1804, Tower A, No.1 of Creative Square, Chegongmiao, Futian District, Shenzhen City B&R
Product	GSM/WCDMA Smartphone
Brand Name	Avvio
Model	Avvio 760S
Additional Model & Model Difference	Avvio 760, See Section 3.1
Date of tests	Sep. 27 ~ Oct. 29, 2012

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

☒ **FCC Part 15, Subpart C (Section 15.247)**

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

Prepared by Glyn He Specialist / EMC Department	Approved by Sam Tung Manager / EMC Department
	 Date: Oct. 29, 2012

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 7

3.2.1. CONFIGURATION OF SYSTEM UNDER TEST 8

3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL 9

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS 11

3.4 DESCRIPTION OF SUPPORT UNITS 11

4. TEST TYPES AND RESULTS 12

4.1 CONDUCTED EMISSION MEASUREMENT 12

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT 12

4.1.2 TEST INSTRUMENTS 12

4.1.3 TEST PROCEDURES 13

4.1.4 DEVIATION FROM TEST STANDARD 13

4.1.5 TEST SETUP 14

4.1.6 EUT OPERATING CONDITIONS 14

4.1.7 TEST RESULTS 15

4.2 RADIATED EMISSION MEASUREMENT 17

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT 17

4.2.2 TEST INSTRUMENTS 18

4.2.3 TEST PROCEDURES 19

4.2.4 DEVIATION FROM TEST STANDARD 19

4.2.5 TEST SETUP 20

4.2.6 EUT OPERATING CONDITIONS 20

4.2.7 TEST RESULTS 21

4.3 6dB BANDWIDTH MEASUREMENT 37

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT 37

4.3.2 TEST INSTRUMENTS 37

4.3.3 TEST PROCEDURE 37

4.3.4 DEVIATION FROM TEST STANDARD 37

4.3.5 TEST SETUP 38

4.3.6 EUT OPERATING CONDITIONS 38
4.3.7 TEST RESULTS 38
4.4 CONDUCTED OUTPUT POWER 40
4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT 40
4.4.2 TEST SETUP 40
4.4.3 TEST INSTRUMENTS 40
4.4.4 TEST PROCEDURES 40
4.4.5 DEVIATION FROM TEST STANDARD 40
4.4.6 EUT OPERATING CONDITIONS 40
4.4.7 TEST RESULTS 41
4.5 POWER SPECTRAL DENSITY MEASUREMENT 43
4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT 43
4.5.2 TEST SETUP 43
4.5.3 TEST INSTRUMENTS 43
4.5.4 TEST PROCEDURE 43
4.5.5 DEVIATION FROM TEST STANDARD 43
4.5.6 EUT OPERATING CONDITION 43
4.5.7 TEST RESULTS 44
4.6 OUT OF BAND EMISSION MEASUREMENT 45
4.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT 45
4.6.2 TEST SETUP 45
4.6.3 TEST INSTRUMENTS 45
4.6.4 TEST PROCEDURE 45
4.6.5 DEVIATION FROM TEST STANDARD 46
4.6.6 EUT OPERATING CONDITION 46
4.6.7 TEST RESULTS 47
5 PHOTOGRAPHS OF THE TEST CONFIGURATION 52
6 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB 53

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120927N007	Original release	Oct. 29, 2012

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.89dB at 0.3263MHz.
15.205 15.209	Restricted bands of operation. & Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.2dB at 2390MHz-802.11b
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted output power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.247(d)	Out of Band Emission Measurement	PASS	Meet the requirement of limit.

2 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.94dB
Radiated emissions	30MHz ~ 1000MHz	3.6419dB
	1GHz ~ 18GHz	2.2dB
	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	GSM/WCDMA Smartphone
MODEL NO.	Avvio 760S/ Avvio 760
FCC ID	WVBA760X
NOMINAL VOLTAGE	5.0VDC (adapter or host equipment) ; 3.7VDC (battery)
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) 2422-2452MHz for 11n(HT40) 2402-2480GHz for BT-LE(GFSK)
PEAK POWER	21.60 dBm (Maximum)
ANTENNA TYPE	PIFA antenna with -4.5 dBi gain
I/O PORTS	USB Port, Earphone Port
DATA CABLE SUPPLIED	USB Cable: Shielded, Detachable, 1.0m Earphone Cable: Unshielded, Detachable, 1.55m

NOTE:

1. There are WLAN, Bluetooth, GSM technology used for the EUT. and the functions of EUT listed as below table:

Function	Report No.
WLAN	RF120927N007
Bluetooth	RF120927N007-1
2G & 3G (Part 22)	RF120927N007-2
2G & 3G (Part 24)	RF120927N007-3

2. The EUT was powered by the following adapters:

ADAPTER	
BRAND:	Avvio
MODEL:	ZT-666-E0500
INPUT:	AC 100-240V, 50/60Hz 0.2A
OUTPUT:	DC 5V, 500mA
DC LINE:	N/A

3. The EUT provides one completed transmitter and one receiver.

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

4. Additional model **Avvio 760** is identical with the test model **Avvio 760S** exceptthe Avvio 760S have two SIM card slots, Avvio 760 have one SIM card slot,

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

3.2 DESCRIPTION OF TEST MODES

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

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

7 channels are provided for 802.11n (HT40):

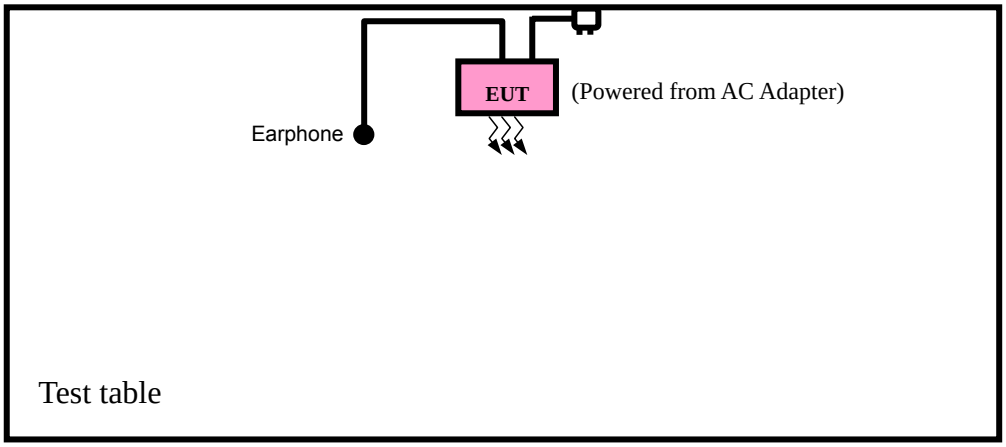
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

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

TEST MODE A



3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports
The worst case was found when positioned on X axis for radiated emission.
Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	**EUT + Adapter + Earphone with WIFI function**
B	-	√	NOTE	-	EUT + Battery + Earphone with WIFI function
C	-	√	√	-	EUT + USB Charger + Earphone with WIFI function

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 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 (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0	X
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	X
A	802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5	X
A	802.11n HT40	3 to 9	3, 6, 9	OFDM	BPSK	13.5	X
A	BT-LE	0 to 39	0, 19, 39	DTS	GFSK	13.5	X

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11b	1 to 11	6	CCK	DBPSK	1.0	X

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	6	CCK	DBPSK	1.0

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 11	CCK	DBPSK	1.0
A	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
A	802.11n HT20	1 to 11	1, 11	OFDM	BPSK	6.5
A	802.11n HT40	3 to 9	3, 9	OFDM	BPSK	13.5
A	BT-LE	0 to 39	0, 39	DTS	GFSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	802.11n HT20	1 to 11	1,6, 11	OFDM	BPSK	6.5
A	802.11n HT40	3 to 9	3,6, 9	OFDM	BPSK	13.5
A	BT-LE	0 to 39	0, 19, 39	DTS	GFSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 60%RH	120Vac, 60Hz	Venless Long
RE<1G	25deg. C, 60%RH	120Vac, 60Hz	Venless Long
PLC	25deg. C, 60%RH	120Vac, 60Hz	Venless Long
APCM	25deg. C, 60%RH	120Vac, 60Hz	Venless Long
BT-LE	25deg. C, 60%RH	120Vac, 60Hz	Venless Long

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)

ANSI C63.4-2003

ANSI C63.10-2009

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	N/A				

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

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
EMI Test Receiver Rohde&Schwarz	ESU26	100005	May 15,12	May 14,13
Artificial Mains Network Rohde&Schwarz	ENV216	101173	May 15,12	May 14,13
Artificial Mains Network Rohde&Schwarz	ESH2-Z5	100071	May 15,12	May 14,13
RF Cable FUJIKURA	3D-2W	553 Cable	May 15,12	May 14,13
Test software	ADT_Cond_V7.3.7	N/A	N/A	N/A

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

2. The test was performed in Dongguan Shielded Room 553.

4.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

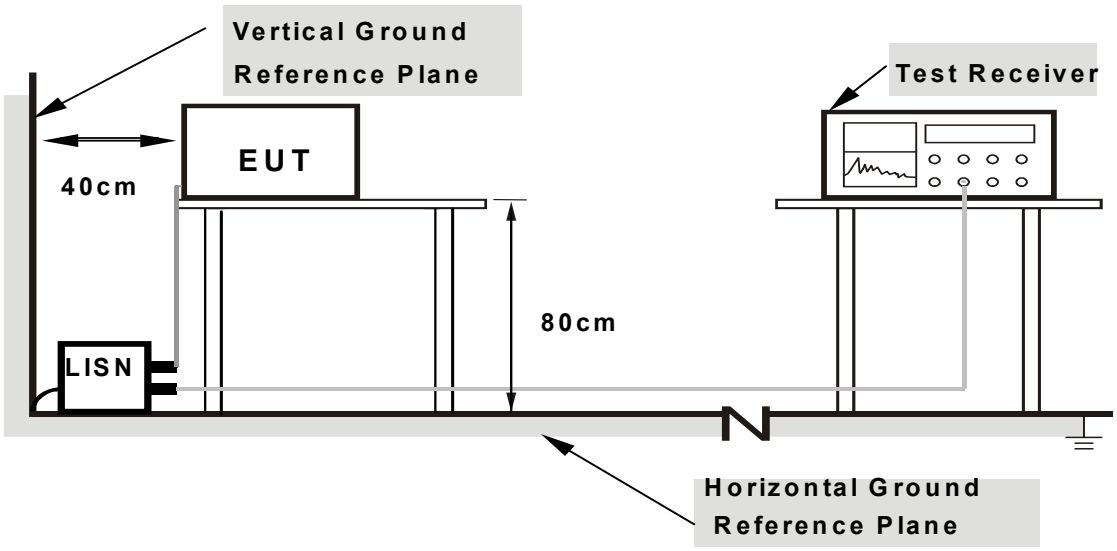
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

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.

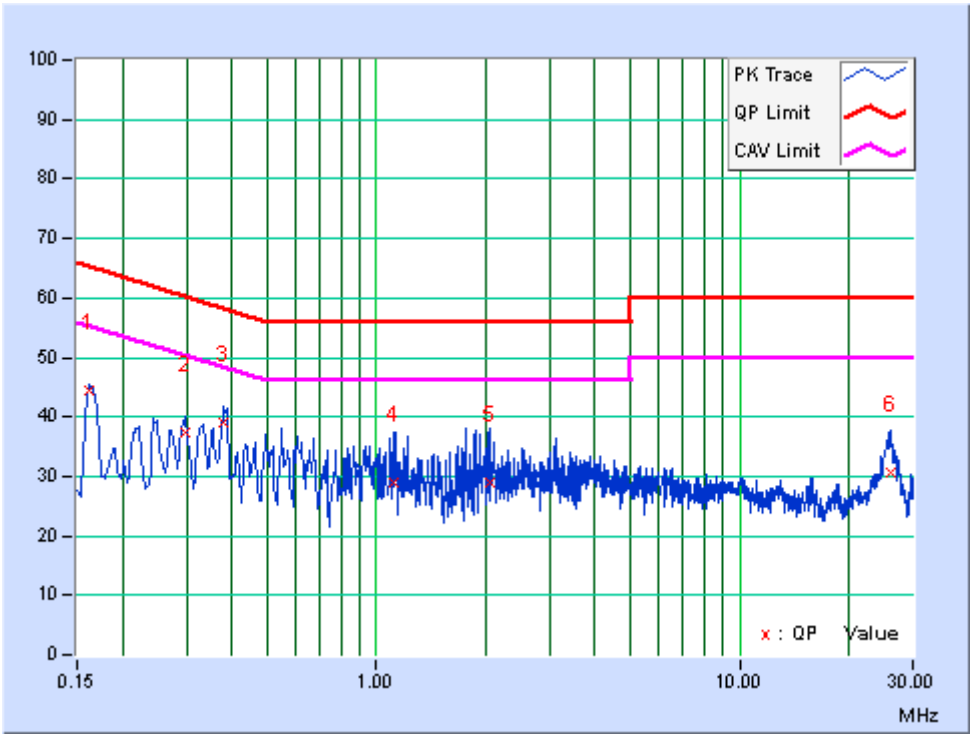
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11b-CH6

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	0.1619	9.89	34.44	25.36	44.33	35.25	65.37	55.37	-21.04	-20.12
2	0.298	9.79	27.67	18.09	37.46	27.88	60.3	50.3	-22.84	-22.42
3	0.37817	9.79	29.36	23.42	39.15	33.21	58.32	48.32	-19.17	-15.11
4	1.11	9.79	19.18	14.16	28.97	23.95	56	46	-27.03	-22.05
5	2.042	9.86	19.16	13.89	29.02	23.75	56	46	-26.98	-22.25
6	26.022	10.43	20.19	7.02	30.62	17.45	60	50	-29.38	-32.55

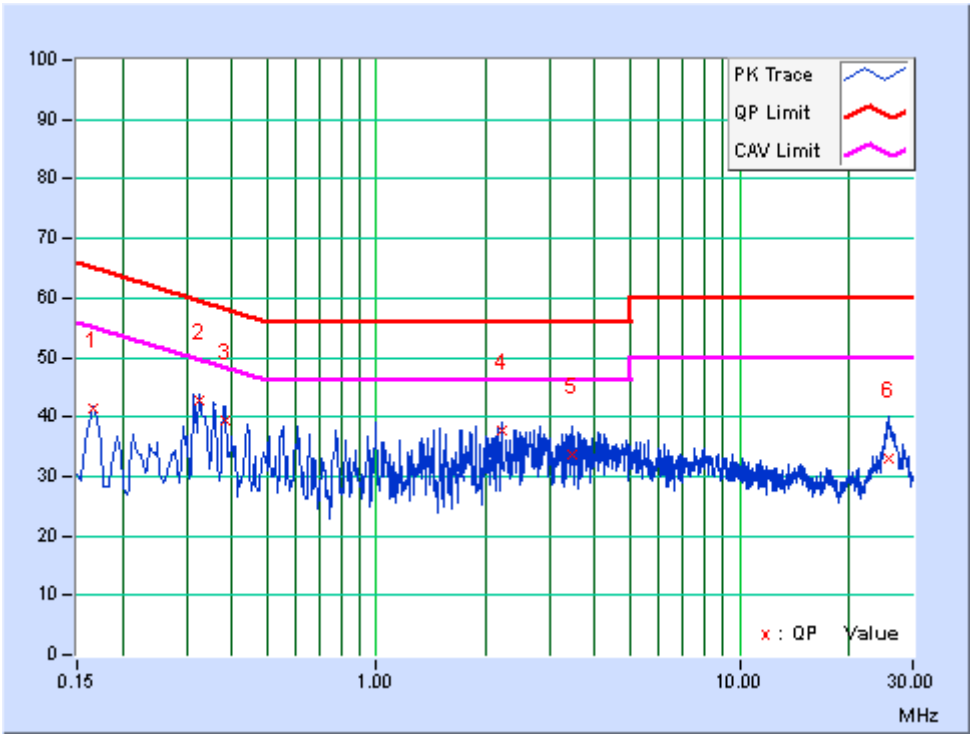
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission 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	0.16579	9.81	31.68	25.14	41.49	34.95	65.17	55.17	-23.68	-20.22
2	**0.3263**	**9.77**	**32.86**	**26.89**	**42.63**	**36.66**	**59.54**	**49.54**	**-16.92**	**-12.89**
3	0.38218	9.77	29.72	24.91	39.49	34.68	58.23	48.23	-18.74	-13.55
4	2.20949	9.88	27.68	17	37.56	26.88	56	46	-18.44	-19.12
5	3.466	9.93	23.8	10.24	33.73	20.17	56	46	-22.27	-25.83
6	25.65	10.31	22.77	10.79	33.08	21.1	60	50	-26.92	-28.9

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.



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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer ROHDE & SCHWARZ	E4446A	MY46180622	May 02, 12	May 01, 13
Test Receiver ROHDE & SCHWARZ	ESVD	847398/004	May 15,12	May 14,13
Bilog Antenna TESEQ	CBL 6111D	27089	July 16,12	July 15,13
Horn Antenna EMCO	3117	00062558	Oct.18,12	Oct.17,13
10m Semi-anechoic Chamber ETS-LINDGREN	21.4m*12.1m*8.8m	NSEMC006	Mar 24,12	Mar 23,13
RF Cable IMRO	IMRO-400	10m Cable 1#10m	May 16,12	May 15,13
RF Cable IMRO	IMRO-400	10m Cable 2#3m	May 16,12	May 15,13
Signal Amplifier EMCI	EMC330	980095	Nov 02,12	Nov 01,13
Signal Amplifier HP	8449B	3008A00409	May 31,12	May 30,13
RF Cable DRAKA	M06/25-RG102	10m Cable 2#	May 16,12	May 15,13
Test software ADT	ADT_Radiated_V7.6.15	N/A	N/A	N/A

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

2. The test was performed in Dongguan Chamber 10m.

3. The horn antenna are used only for the measurement of emission frequency above 1GHz if tested.

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.

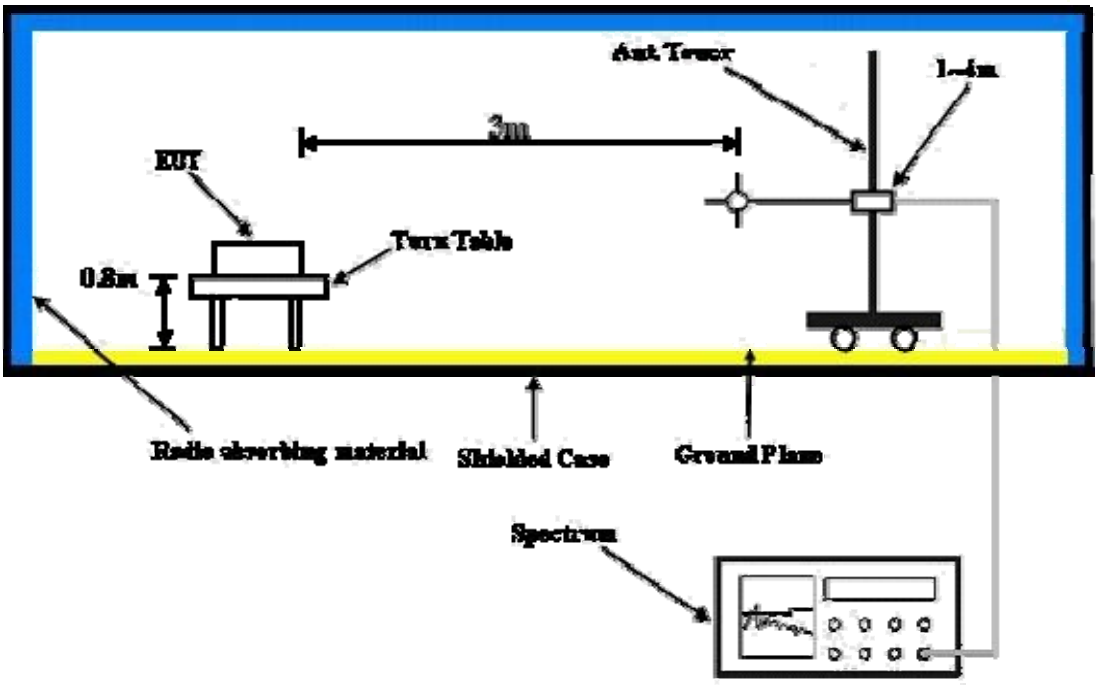
NOTE:

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- CH6

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	88.20	21.5 QP	43.5	-22.0	2.02 H	0	12.00	9.48
2	130.23	31.3 QP	43.5	-12.2	3.29 H	61	18.51	12.80
3	207.83	27.2 QP	43.5	-16.3	3.43 H	40	16.59	10.59
4	235.32	27.0 QP	46.0	-19.0	3.56 H	20	14.58	12.38
5	285.43	24.1 QP	46.0	-21.9	2.86 H	0	9.34	14.80
6	414.77	28.2 QP	46.0	-17.8	2.72 H	2	9.84	18.38
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	**41.32**	**34.7 QP**	**40.0**	**-5.3**	**1.00 V**	**89**	**21.23**	**13.50**
2	68.80	20.8 QP	40.0	-19.2	1.00 V	182	13.36	7.45
3	110.83	23.1 QP	43.5	-20.4	1.00 V	114	10.99	12.11
4	270.88	19.7 QP	46.0	-26.3	1.00 V	138	4.64	15.03
5	392.13	19.3 QP	46.0	-26.7	1.00 V	228	1.80	17.53
6	456.80	21.6 QP	46.0	-24.4	1.00 V	204	2.35	19.27

REMARKS: 1. Emission level (dBuV/m) = Reading (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

EUT TEST CONDITION		MEASUREMENT DETAIL	
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	61.9 PK	74.0	-12.1	2.50 H	80	25.49	36.41
2	2390.00	51.3 AV	54.0	-2.7	2.50 H	80	14.89	36.41
3	*2412.00	106.9 PK	-	-	2.00 H	80	70.29	36.61
4	*2412.00	104.0 AV	-	-	2.00 H	80	67.39	36.61
5	4824.00	52.3 PK	74.0	-21.7	2.00 H	80	3.05	49.25
6	4824.00	46.7 AV	54.0	-7.3	2.00 H	80	-2.55	49.25
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	63.0 PK	74.0	-11.0	1.00 V	120	26.59	36.41
2	**2390.00**	**51.8 AV**	**54.0**	**-2.2**	**1.00 V**	**120**	**15.39**	**36.41**
3	*2412.00	109.9 PK	-	-	1.00 V	250	73.29	36.61
4	*2412.00	104.3 AV	-	-	1.00 V	250	67.69	36.61
5	4824.00	53.2 PK	74.0	-20.8	1.00 V	250	3.95	49.25
6	4824.00	48.5 AV	54.0	-5.5	1.00 V	250	-0.75	49.25

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	107.1 PK	-	-	3.35 H	101	70.27	36.83
2	*2437.00	104.2 AV	-	-	3.35 H	101	67.37	36.83
3	4874.00	52.4 PK	74.0	-21.6	3.08 H	104	3.16	49.24
4	4874.00	46.5 AV	54.0	-7.5	3.08 H	104	-2.74	49.24
5	7311.00	53.5 PK	74.0	-20.5	3.10 H	101	6.90	46.60
6	7311.00	46.7 AV	54.0	-7.3	3.10 H	101	0.10	46.60
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	110.0 PK	-	-	1.00 V	130	73.17	36.83
2	*2437.00	104.2 AV	-	-	1.00 V	130	67.37	36.83
3	4874.00	53.7 PK	74.0	-20.3	1.00 V	130	4.46	49.24
4	4874.00	49.0 AV	54.0	-5.0	1.00 V	130	-0.24	49.24
5	7311.00	54.3 PK	74.0	-19.7	1.00 V	100	7.70	46.60
6	7311.00	49.2 AV	54.0	-4.8	1.00 V	100	2.60	46.60

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
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	107.3 PK	-	-	3.03 H	90	70.25	37.05
2	*2462.00	104.6 AV	-	-	3.03 H	90	67.55	37.05
3	2483.50	62.8 PK	74.0	-11.2	3.00 H	120	25.56	37.24
4	2483.50	50.7 AV	54.0	-3.3	3.00 H	120	13.46	37.24
5	4924.00	52.1 PK	74.0	-21.9	3.00 H	230	2.88	49.22
6	4924.00	46.4 AV	54.0	-7.6	3.00 H	230	-2.82	49.22
7	7386.00	54.6 PK	74.0	-19.4	3.00 H	120	7.94	46.66
8	7386.00	45.8 AV	54.0	-8.2	3.00 H	120	-0.86	46.66
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.5 PK	-	-	1.05 V	110	73.45	37.05
2	*2462.00	103.9 AV	-	-	1.05 V	110	66.85	37.05
3	2483.50	62.1 PK	74.0	-11.9	1.00 V	230	24.86	37.24
4	2483.50	50.3 AV	54.0	-3.7	1.00 V	230	13.06	37.24
5	4924.00	54.3 PK	74.0	-19.7	1.05 V	120	5.08	49.22
6	4924.00	48.9 AV	54.0	-5.1	1.05 V	120	-0.32	49.22
7	7386.00	54.7 PK	74.0	-19.3	1.00 V	120	8.04	46.66
8	7386.00	48.8 AV	54.0	-5.2	1.00 V	120	2.14	46.66

REMARKS:

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

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
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	63.3 PK	74.0	-10.7	3.25 H	90	26.89	36.41
2	2390.00	51.2 AV	54.0	-2.8	3.25 H	90	14.79	36.41
3	*2412.00	104.0 PK	-	-	3.49 H	230	67.39	36.61
4	*2412.00	101.2 AV	-	-	3.49 H	230	64.59	36.61
5	4824.00	53.3 PK	74.0	-20.7	3.00 H	230	4.05	49.25
6	4824.00	48.8 AV	54.0	-5.2	3.00 H	230	-0.45	49.25
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	60.4 PK	74.0	-13.6	1.02 V	120	23.99	36.41
2	2390.00	50.2 AV	54.0	-3.8	1.02 V	120	13.79	36.41
3	*2412.00	108.0 PK	-	-	1.03 V	240	71.39	36.61
4	*2412.00	104.8 AV	-	-	1.03 V	240	68.19	36.61
5	4824.00	53.2 PK	74.0	-20.8	1.00 V	110	3.95	49.25
6	4824.00	48.3 AV	54.0	-5.7	1.00 V	110	-0.95	49.25

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.5 PK	-	-	3.35 H	320	66.67	36.83
2	*2437.00	100.9 AV	-	-	3.35 H	320	64.07	36.83
3	4874.00	53.9 PK	74.0	-20.1	3.52 H	320	4.66	49.24
4	4874.00	48.1 AV	54.0	-5.9	3.52 H	320	-1.14	49.24
5	7311.00	52.9 PK	74.0	-21.1	3.10 H	210	6.30	46.60
6	7311.00	46.0 AV	54.0	-8.0	3.10 H	210	-0.60	46.60
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	106.7 PK	-	-	1.06 V	210	69.87	36.83
2	*2437.00	104.0 AV	-	-	1.06 V	210	67.17	36.83
3	4874.00	52.6 PK	74.0	-21.4	1.06 V	200	3.36	49.24
4	4874.00	48.0 AV	54.0	-6.0	1.06 V	200	-1.24	49.24
5	7311.00	54.4 PK	74.0	-19.6	1.00 V	320	7.80	46.60
6	7311.00	49.4 AV	54.0	-4.6	1.00 V	320	2.80	46.60

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
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	105.2 PK	-	-	2.65 H	120	68.15	37.05
2	*2462.00	101.8 AV	-	-	2.65 H	120	64.75	37.05
3	2483.50	63.5 PK	74.0	-10.5	3.05 H	230	26.26	37.24
4	2483.50	50.0 AV	54.0	-4.0	3.05 H	230	12.76	37.24
5	4924.00	51.8 PK	74.0	-22.2	3.15 H	120	2.58	49.22
6	4924.00	46.3 AV	54.0	-7.7	3.15 H	120	-2.92	49.22
7	7386.00	53.6 PK	74.0	-20.4	3.00 H	320	6.94	46.66
8	7386.00	46.4 AV	54.0	-7.6	3.00 H	320	-0.26	46.66
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.2 PK	-	-	1.12 V	20	70.15	37.05
2	*2462.00	103.6 AV	-	-	1.12 V	20	66.55	37.05
3	2483.50	61.7 PK	74.0	-12.3	1.00 V	89	24.46	37.24
4	2483.50	50.9 AV	54.0	-3.1	1.00 V	89	13.66	37.24
5	4924.00	52.9 PK	74.0	-21.1	1.12 V	20	3.68	49.22
6	4924.00	48.0 AV	54.0	-6.0	1.12 V	20	-1.22	49.22
7	7386.00	54.7 PK	74.0	-19.3	1.12 V	0	8.04	46.66
8	7386.00	49.8 AV	54.0	-4.2	1.12 V	0	3.14	46.66

REMARKS:

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

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								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.3 PK	74.0	-11.7	3.20 H	200	25.89	36.41
2	2390.00	50.7 AV	54.0	-3.3	3.20 H	200	14.29	36.41
3	*2412.00	103.8 PK	-	-	3.01 H	260	67.19	36.61
4	*2412.00	98.2 AV	-	-	3.01 H	260	61.59	36.61
5	4824.00	52.4 PK	74.0	-21.6	3.01 H	262	3.15	49.25
6	4824.00	48.6 AV	54.0	-5.4	3.01 H	262	-0.65	49.25
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.6 PK	74.0	-11.4	1.00 V	200	26.19	36.41
2	2390.00	50.9 AV	54.0	-3.1	1.00 V	200	14.49	36.41
3	*2412.00	105.4 PK	-	-	1.00 V	230	68.79	36.61
4	*2412.00	101.2 AV	-	-	1.00 V	230	64.59	36.61
5	4824.00	52.9 PK	74.0	-21.1	1.00 V	230	3.65	49.25
6	4824.00	48.4 AV	54.0	-5.6	1.00 V	230	-0.85	49.25

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.5 PK	-	-	3.45 H	274	67.67	36.83
2	*2437.00	100.2 AV	-	-	3.45 H	274	63.37	36.83
3	4874.00	52.7 PK	74.0	-21.3	3.15 H	274	3.46	49.24
4	4874.00	48.5 AV	54.0	-5.5	3.15 H	274	-0.74	49.24
5	7311.00	52.5 PK	74.0	-21.5	3.00 H	360	5.90	46.60
6	7311.00	45.8 AV	54.0	-8.2	3.00 H	360	-0.80	46.60
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	106.7 PK	-	-	1.00 V	230	69.87	36.83
2	*2437.00	102.2 AV	-	-	1.00 V	230	65.37	36.83
3	4874.00	52.6 PK	74.0	-21.4	1.00 V	120	3.36	49.24
4	4874.00	48.2 AV	54.0	-5.8	1.00 V	120	-1.04	49.24
5	7311.00	53.6 PK	74.0	-20.4	1.00 V	120	7.00	46.60
6	7311.00	49.5 AV	54.0	-4.5	1.00 V	120	2.90	46.60

REMARKS:

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

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

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	104.2 PK	-	-	3.50 H	200	67.15	37.05
2	*2462.00	98.8 AV	-	-	3.50 H	200	61.75	37.05
3	2483.50	62.9 PK	74.0	-11.1	2.85 H	230	25.66	37.24
4	2483.50	49.9 AV	54.0	-4.1	2.85 H	230	12.66	37.24
5	4924.00	53.5 PK	74.0	-20.5	3.00 H	200	4.28	49.22
6	4924.00	49.2 AV	54.0	-4.8	3.00 H	200	-0.02	49.22
7	7386.00	52.4 PK	74.0	-21.6	3.30 H	210	5.74	46.66
8	7386.00	46.1 AV	54.0	-7.9	3.30 H	210	-0.56	46.66
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.4 PK	-	-	1.00 V	200	68.35	37.05
2	*2462.00	99.7 AV	-	-	1.00 V	200	62.65	37.05
3	2483.50	61.7 PK	74.0	-12.3	1.00 V	260	24.46	37.24
4	2483.50	50.6 AV	54.0	-3.4	1.00 V	260	13.36	37.24
5	4924.00	52.8 PK	74.0	-21.2	1.00 V	150	3.58	49.22
6	4924.00	47.2 AV	54.0	-6.8	1.00 V	150	-2.02	49.22
7	7386.00	53.8 PK	74.0	-20.2	1.00 V	120	7.14	46.66
8	7386.00	48.6 AV	54.0	-5.4	1.00 V	120	1.94	46.66

REMARKS:

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

802.11n (40MHz)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	59.2 PK	74.0	-14.8	3.00 H	240	22.79	36.41
2	2390.00	48.6 AV	54.0	-5.4	3.00 H	240	12.19	36.41
3	*2422.00	98.6 PK	-	-	3.45 H	20	61.90	36.70
4	*2422.00	89.3 AV	-	-	3.45 H	20	52.60	36.70
5	4844.00	46.5 PK	74.0	-27.5	3.10 H	20	-2.74	49.24
6	4844.00	35.2 AV	54.0	-18.8	3.10 H	20	-14.04	49.24
7	7266.00	45.6 PK	74.0	-28.4	3.00 H	320	-0.97	46.57
8	7266.00	34.7 AV	54.0	-19.3	3.00 H	320	-11.87	46.57
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	63.0 PK	74.0	-11.0	1.00 V	21	26.59	36.41
2	2390.00	50.5 AV	54.0	-3.5	1.00 V	21	14.09	36.41
3	*2422.00	102.5 PK	-	-	1.21 V	96	65.80	36.70
4	*2422.00	92.2 AV	-	-	1.21 V	96	55.50	36.70
5	4844.00	47.6 PK	74.0	-26.4	1.21 V	220	-1.64	49.24
6	4844.00	36.3 AV	54.0	-17.7	1.21 V	220	-12.94	49.24
7	7266.00	46.3 PK	74.0	-27.7	1.21 V	170	-0.27	46.57
8	7266.00	35.0 AV	54.0	-19.0	1.21 V	170	-11.57	46.57

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	97.6 PK	-	-	3.30 H	240	60.77	36.83
2	*2437.00	88.3 AV	-	-	3.30 H	240	51.47	36.83
3	4874.00	45.8 PK	74.0	-28.2	3.10 H	250	-3.44	49.24
4	4874.00	34.9 AV	54.0	-19.1	3.10 H	250	-14.34	49.24
5	7311.00	44.5 PK	74.0	-29.5	3.00 H	300	-2.10	46.60
6	7311.00	33.9 AV	54.0	-20.1	3.00 H	300	-12.70	46.60
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	101.8 PK	-	-	1.20 V	140	64.97	36.83
2	*2437.00	92.6 AV	-	-	1.20 V	140	55.77	36.83
3	4874.00	48.2 PK	74.0	-25.8	1.00 V	260	-1.04	49.24
4	4874.00	36.3 AV	54.0	-17.7	1.00 V	260	-12.94	49.24
5	7311.00	45.7 PK	74.0	-28.3	1.20 V	230	-0.90	46.60
6	7311.00	34.6 AV	54.0	-19.4	1.20 V	230	-12.00	46.60

REMARKS:

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

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	99.2 PK	-	-	3.20 H	270	62.24	36.96
2	*2452.00	88.7 AV	-	-	3.20 H	270	51.74	36.96
3	2483.50	62.3 PK	74.0	-11.7	3.15 H	270	25.06	37.24
4	2483.50	50.1 AV	54.0	-3.9	3.15 H	270	12.86	37.24
5	4904.00	48.5 PK	74.0	-25.5	3.05 H	210	-0.73	49.23
6	4904.00	34.7 AV	54.0	-19.3	3.05 H	210	-14.53	49.23
7	7356.00	49.2 PK	74.0	-24.8	3.20 H	200	2.57	46.63
8	7356.00	35.4 AV	54.0	-18.6	3.20 H	200	-11.23	46.63
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	95.7 PK	-	-	1.00 V	240	58.74	36.96
2	*2452.00	84.8 AV	-	-	1.00 V	240	47.84	36.96
3	2483.50	62.7 PK	74.0	-11.3	1.00 V	240	25.46	37.24
4	2483.50	49.5 AV	54.0	-4.5	1.00 V	240	12.26	37.24
5	4904.00	45.8 PK	74.0	-28.2	1.00 V	230	-3.43	49.23
6	4904.00	35.2 AV	54.0	-18.8	1.00 V	230	-14.03	49.23
7	7356.00	44.4 PK	74.0	-29.6	1.00 V	250	-2.23	46.63
8	7356.00	34.7 AV	54.0	-19.3	1.00 V	250	-11.93	46.63

REMARKS:

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

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	45.8 PK	74.0	-28.2	3.67 H	302	9.39	36.41
2	2390.00	33.4 AV	54.0	-20.6	3.67 H	302	-3.01	36.41
3	*2402.00	91.1 PK	-	-	3.55 H	302	54.58	36.52
4	*2402.00	57.3 AV	-	-	3.55 H	302	20.78	36.52
5	4804.00	58.2 PK	74.0	-15.8	3.23 H	230	8.95	49.25
6	4804.00	45.6 AV	54.0	-8.4	3.23 H	230	-3.65	49.25
7	7206.00	53.6 PK	74.0	-20.4	3.10 H	270	7.08	46.52
8	7206.00	42.5 AV	54.0	-11.5	3.10 H	270	-4.02	46.52
9	9608.00	54.3 PK	74.0	-19.7	3.30 H	142	9.40	44.90
10	9608.00	42.6 AV	54.0	-11.4	3.30 H	142	-2.30	44.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	52.1 PK	74.0	-21.9	1.00 V	334	15.69	36.41
2	2390.00	39.5 AV	54.0	-14.5	1.00 V	334	3.09	36.41
3	*2402.00	96.8 PK	-	-	1.00 V	334	60.28	36.52
4	*2402.00	59.4 AV	-	-	1.00 V	334	22.88	36.52
5	4804.00	58.4 PK	74.0	-15.6	1.00 V	260	9.15	49.25
6	4804.00	45.6 AV	54.0	-8.4	1.00 V	260	-3.65	49.25
7	7206.00	54.9 PK	74.0	-19.1	1.00 V	146	8.38	46.52
8	7206.00	42.5 AV	54.0	-11.5	1.00 V	146	-4.02	46.52
9	9608.00	54.2 PK	74.0	-19.8	1.00 V	310	9.30	44.90
10	9608.00	42.5 AV	54.0	-11.5	1.00 V	310	-2.40	44.90

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	96.3 PK	-	-	3.20 H	5	59.44	36.86
2	*2440.00	62.4 AV	-	-	3.20 H	5	25.54	36.86
3	4880.00	58.0 PK	74.0	-16.0	3.45 H	230	8.77	49.23
4	4880.00	45.3 AV	54.0	-8.7	3.45 H	230	-3.93	49.23
5	7320.00	53.4 PK	74.0	-20.6	3.00 H	156	6.79	46.61
6	7320.00	42.0 AV	54.0	-12.0	3.00 H	156	-4.61	46.61
7	9760.00	54.2 PK	74.0	-19.8	3.10 H	340	9.39	44.81
8	9760.00	42.1 AV	54.0	-11.9	3.10 H	340	-2.71	44.81
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2440.00	91.8 PK	-	-	1.00 V	340	54.94	36.86
2	*2440.00	54.5 AV	-	-	1.00 V	340	17.64	36.86
3	4880.00	57.0 PK	74.0	-17.0	1.00 V	320	7.77	49.23
4	4880.00	45.3 AV	54.0	-8.7	1.00 V	320	-3.93	49.23
5	7320.00	54.7 PK	74.0	-19.3	1.00 V	247	8.09	46.61
6	7320.00	41.8 AV	54.0	-12.2	1.00 V	247	-4.81	46.61
7	9760.00	54.5 PK	74.0	-19.5	1.00 V	165	9.69	44.81
8	9760.00	41.9 AV	54.0	-12.1	1.00 V	165	-2.91	44.81

REMARKS:

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

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	96.4 PK	-	-	3.45 H	324	59.19	37.21
2	*2480.00	58.6 AV	-	-	3.45 H	324	21.39	37.21
3	2483.50	48.6 PK	74.0	-25.4	3.22 H	324	11.36	37.24
4	2483.50	34.5 AV	54.0	-19.5	3.22 H	324	-2.74	37.24
5	4960.00	58.6 PK	74.0	-15.4	3.50 H	246	9.39	49.21
6	4960.00	45.3 AV	54.0	-8.7	3.50 H	246	-3.91	49.21
7	7440.00	55.2 PK	74.0	-18.8	3.40 H	158	8.50	46.70
8	7440.00	42.2 AV	54.0	-11.8	3.40 H	158	-4.50	46.70
9	9920.00	55.4 PK	74.0	-18.6	3.15 H	310	10.69	44.71
10	9920.00	42.4 AV	54.0	-11.6	3.15 H	310	-2.31	44.71
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	97.1 PK	-	-	1.06 V	352	59.89	37.21
2	*2480.00	65.8 AV	-	-	1.06 V	352	28.59	37.21
3	2483.50	51.6 PK	74.0	-22.4	1.06 V	352	14.36	37.24
4	2483.50	35.5 AV	54.0	-18.5	1.06 V	352	-1.74	37.24
5	4960.00	57.5 PK	74.0	-16.5	1.00 V	360	8.29	49.21
6	4960.00	45.3 AV	54.0	-8.7	1.00 V	360	-3.91	49.21
7	7440.00	53.5 PK	74.0	-20.5	1.00 V	220	6.80	46.70
8	7440.00	42.0 AV	54.0	-12.0	1.00 V	220	-4.70	46.70
9	9920.00	55.5 PK	74.0	-18.5	1.00 V	145	10.79	44.71
10	9920.00	42.4 AV	54.0	-11.6	1.00 V	145	-2.31	44.71

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.

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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E7405A	MY45118807	May 15,12	May 14,13

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

2. The test was performed in Dongguan RF Chamber.

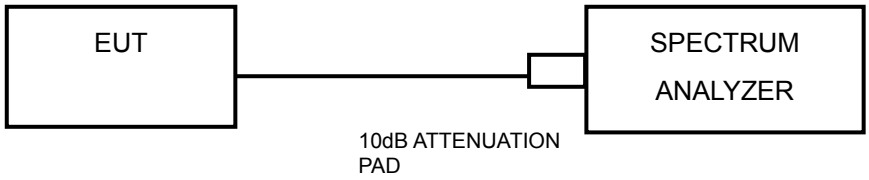
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	10.20	0.5	PASS
6	2437	10.20	0.5	PASS
11	2462	10.20	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.71	0.5	PASS
6	2437	16.73	0.5	PASS
11	2462	16.71	0.5	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.80	0.5	PASS
6	2437	17.78	0.5	PASS
11	2462	17.79	0.5	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	36.96	0.5	PASS
6	2437	36.90	0.5	PASS
9	2452	36.68	0.5	PASS

BT-LE

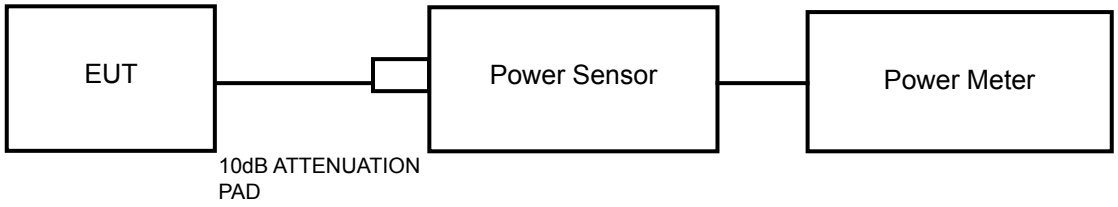
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.697	0.5	PASS
19	2440	0.695	0.5	PASS
39	2480	0.697	0.5	PASS

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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Power Meter Anritsu	ML2495A	1139001	Nov.07,11	Nov.07,12

4.4.4 TEST PROCEDURES

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.02	30	PASS
6	2437	17.74	30	PASS
11	2462	17.23	30	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	21.20	30	PASS
6	2437	20.21	30	PASS
11	2462	21.02	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
1	2412	21.03	30	PASS
6	2437	20.14	30	PASS
11	2462	20.14	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
3	2422	21.60	30	PASS
6	2437	21.00	30	PASS
9	2452	20.74	30	PASS

BT-LE

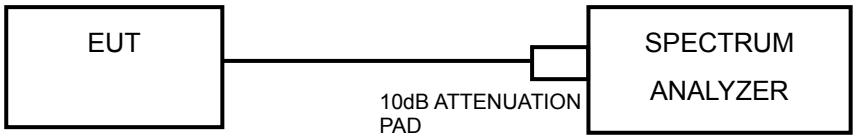
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
0	2402	-1.91	30	PASS
19	2440	-3.31	30	PASS
39	2480	-0.18	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-10.58	8	PASS
6	2437	-11.79	8	PASS
11	2462	-12.05	8	PASS

802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-17.40	8	PASS
6	2437	-17.55	8	PASS
11	2462	-17.88	8	PASS

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-17.12	8	PASS
6	2437	-17.01	8	PASS
11	2462	-17.45	8	PASS

802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-20.08	8	PASS
6	2437	-21.05	8	PASS
9	2452	-20.98	8	PASS

BT-LE

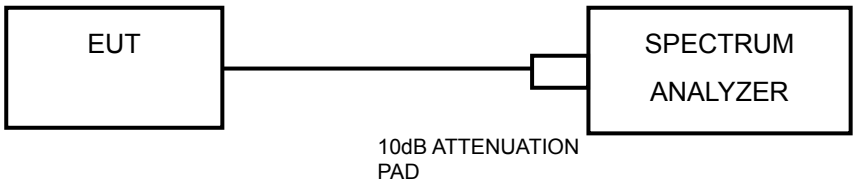
Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-17.85	8	PASS
19	2440	-19.47	8	PASS
39	2480	-18.46	8	PASS

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.

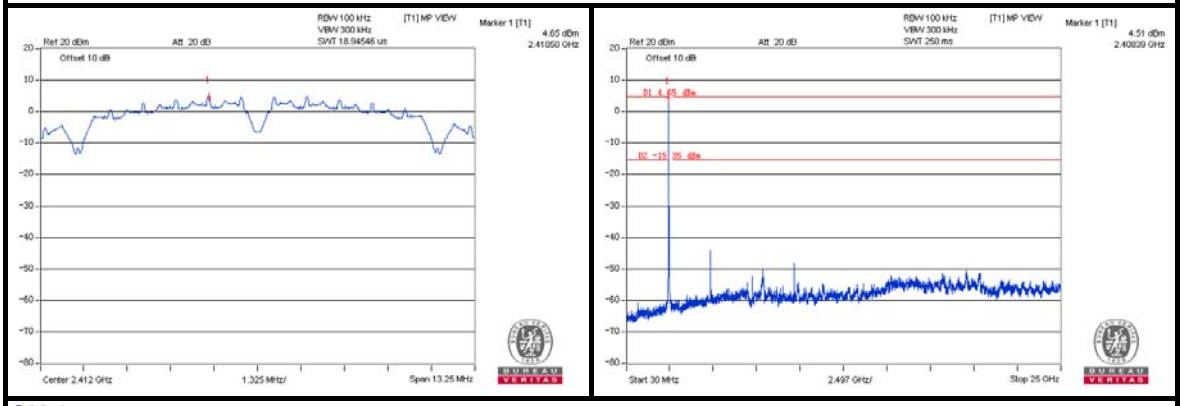
4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

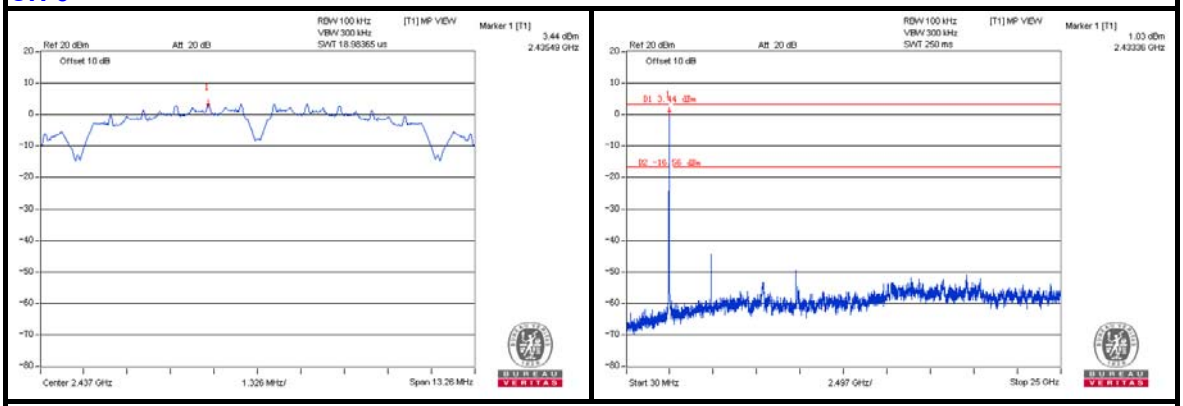
4.6.7 TEST RESULTS

802.11b

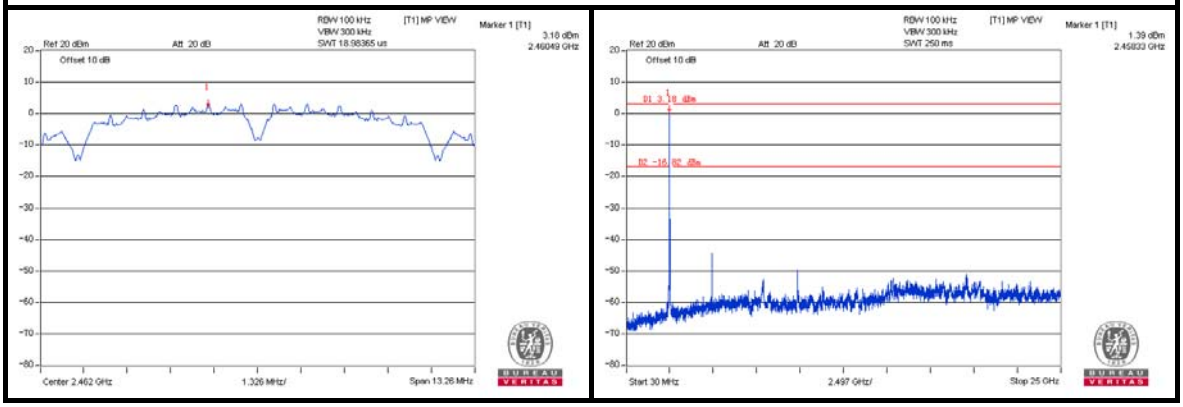
CH 1



CH 6

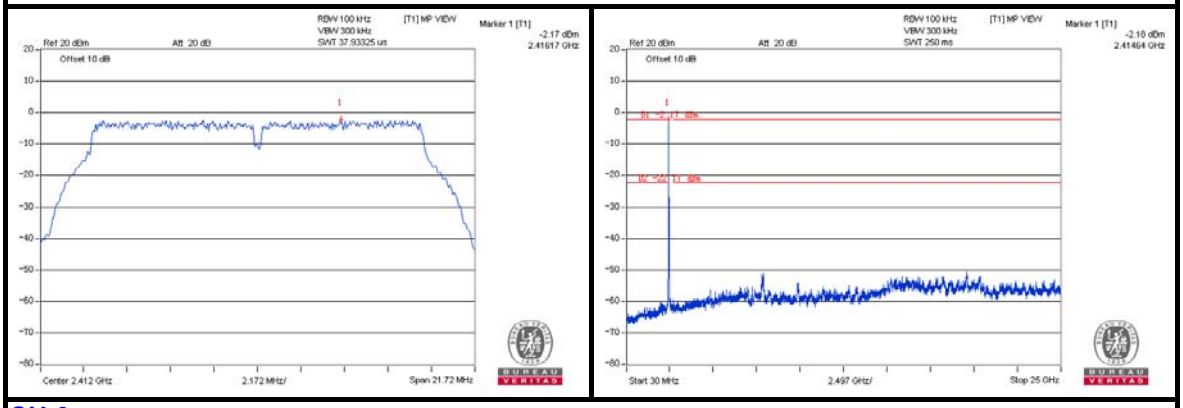


CH 11

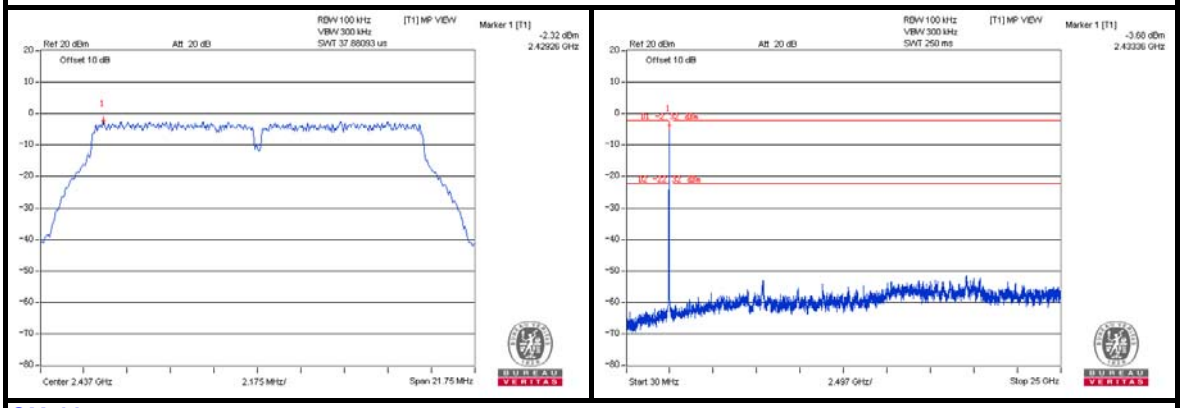


802.11g

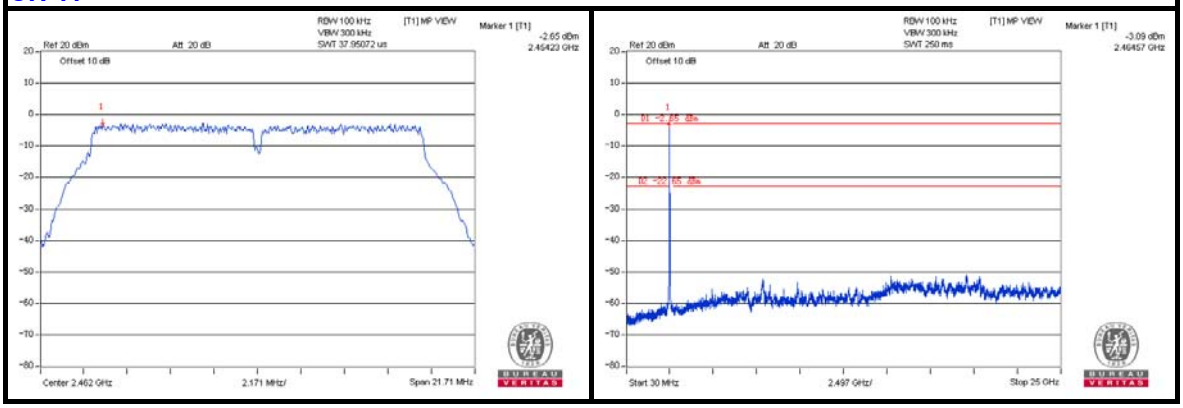
CH 1



CH 6

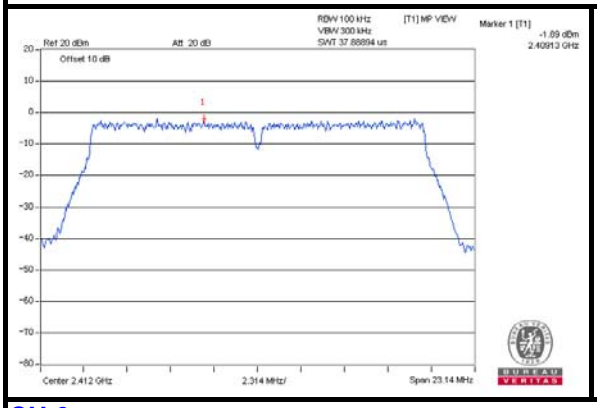


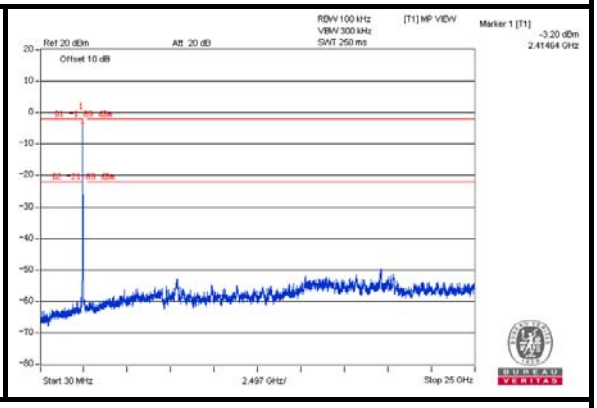
CH 11



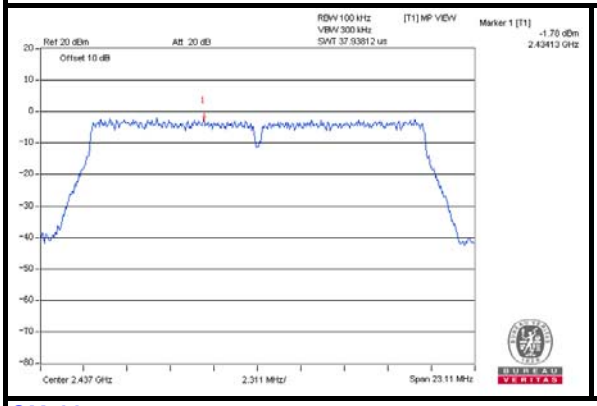
802.11n (20MHz)

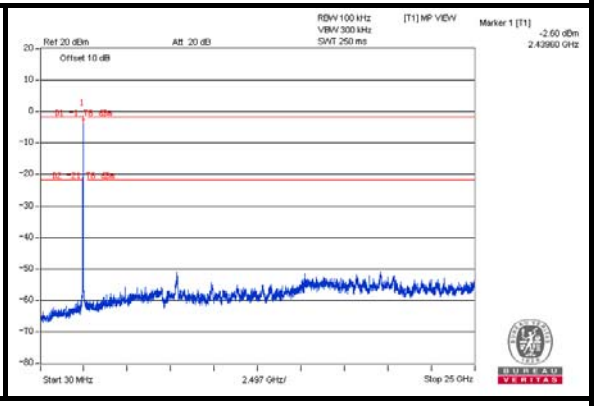
CH 1



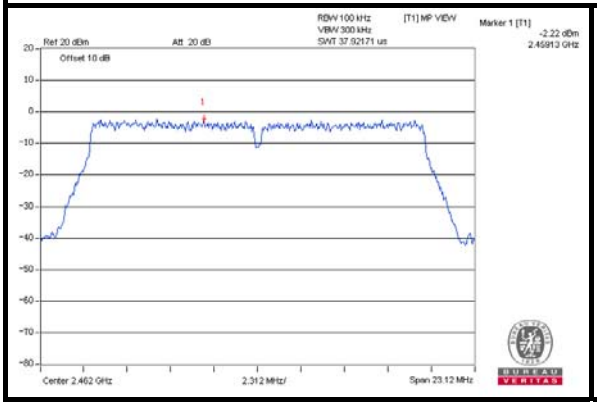


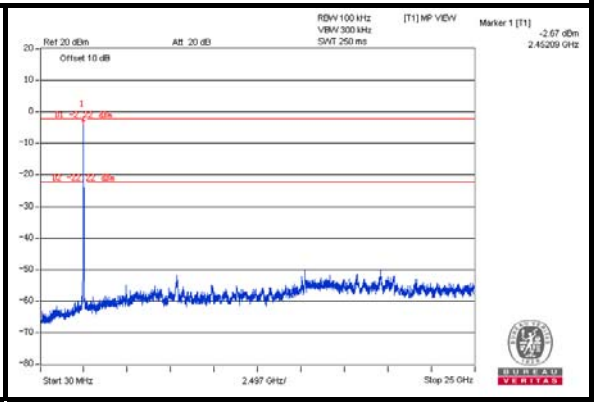
CH 6





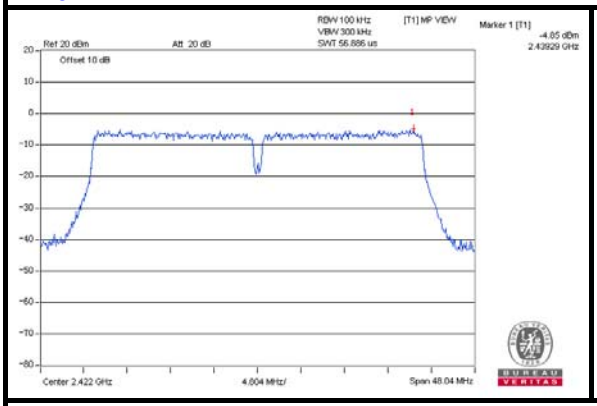
CH 11

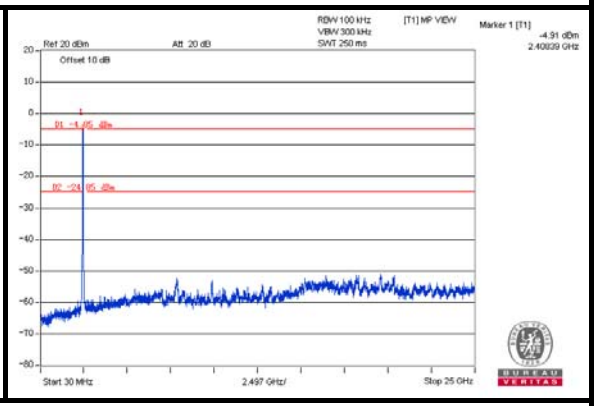




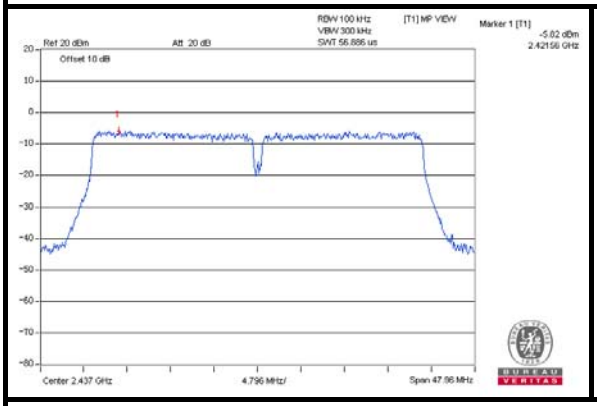
802.11n (40MHz)

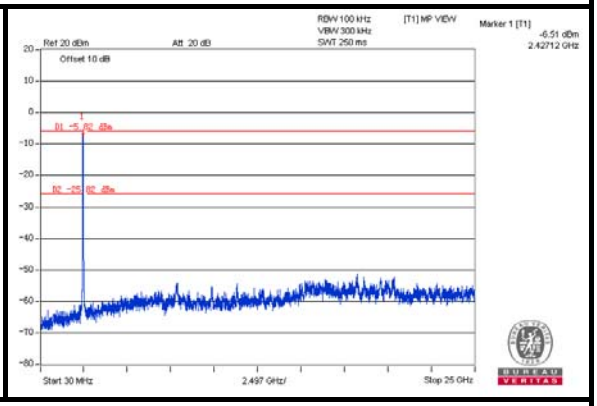
CH 3



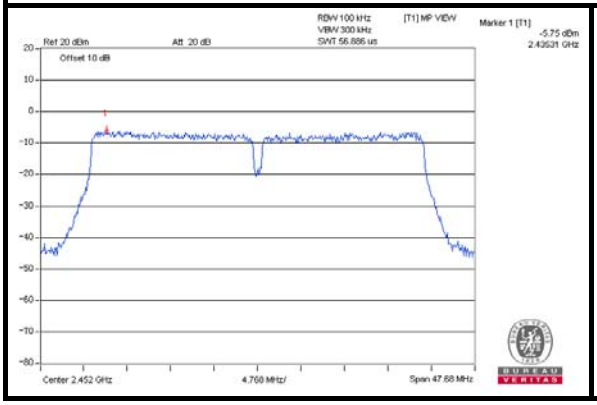


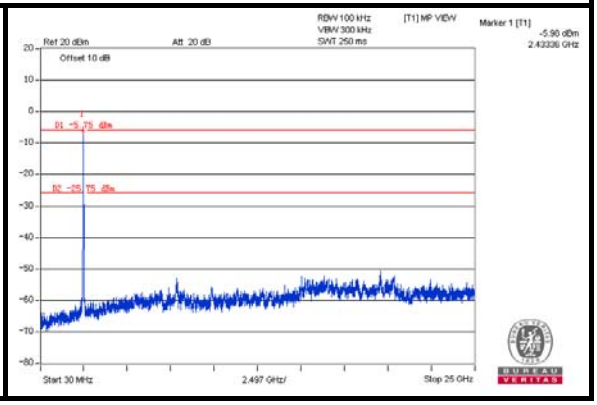
CH 6





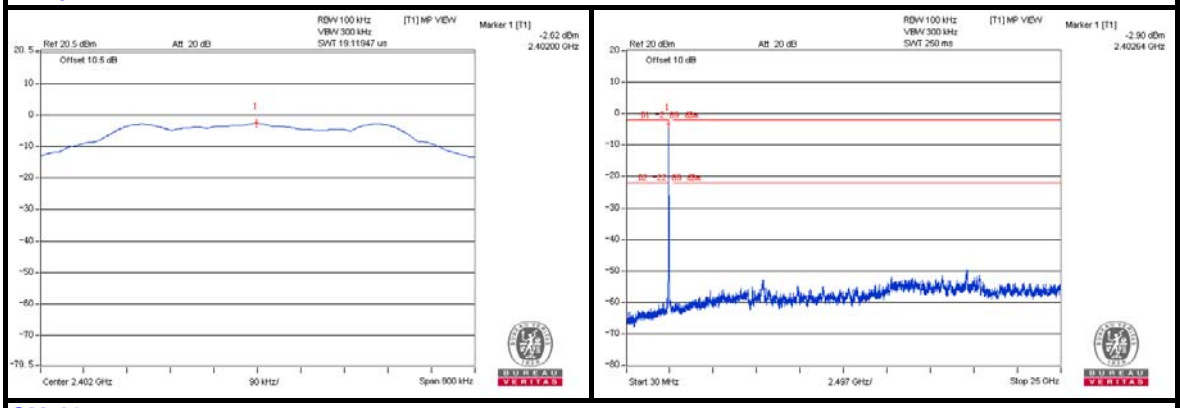
CH 9



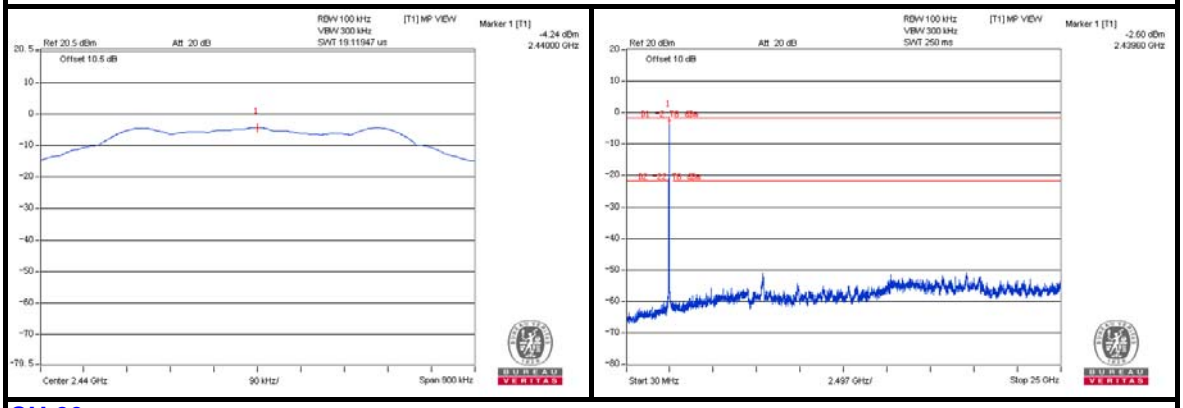


BT-LE

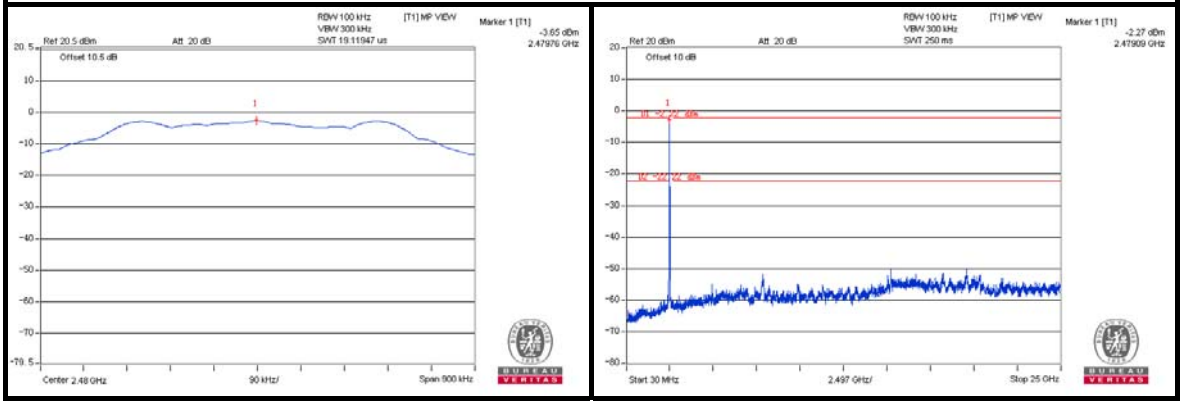
CH 0



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---