FCC Test Report

Report No.: RF170223D06

FCC ID: NJC-FLY5M01

Test Model: FL-Y5M01

Received Date: Feb. 23, 2017

Test Date: Mar. 8 ~ 10, 2017

Issued Date: Mar. 14, 2017

Applicant: Foxlink Image Technology CO., LTD

Address: No.49,SEC 4 JHONGYANG RD., TUCHENG DISTRICT, NEW TAIPEI CITY 236, TAIWAN(R.O.C.)

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
RF170223D06	Original release.	Mar. 14, 2017

1 Certificate of Conformity

Product: RF module

Test Model: FL-Y5M01

Sample Status: Engineering sample

Applicant: Foxlink Image Technology CO., LTD

Test Date: Mar. 8 ~ 10, 2017

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan 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 : Jessica Cheng , **Date:** Mar. 14, 2017
Jessica Cheng / Senior Specialist

Approved by : Rex. Lai , **Date:** Mar. 14, 2017
Rex Lai / Assistant Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (SECTION 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -23.13dB at 0.40781MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.28dB at 2483.50MHz
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted 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	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.77 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.38 dB
	30MHz ~ 1000MHz	5.54 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	4.77 dB
	6GHz ~ 18GHz	5.48 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	RF module
Test Model	FL-Y5M01
Status of EUT	Engineering sample
Power Supply Rating	5Vdc (host equipment)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps
Operating Frequency	2.412 ~ 2.472GHz
Number of Channel	13 for 802.11b, 802.11g, 802.11n (20MHz) 9 for 802.11n (40MHz)
Output Power	287.078mW (Peak Power)
Antenna Type	Refer to note as below
Antenna Connector	N/A
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

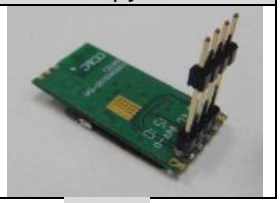
1. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

2. The antenna provided to the EUT, please refer to the following table:

Brand	Model	Antenna Type	Antenna Gain (dBi)
ACX	AT3216-B2R7HAA	Multilayer Chip	0.5

3. The EUT has three types of interface and their were pre-tested:

Interface		
Tpye1	Tpye2	Tpye3
		

The worst emission level was found tested under **Tpye2** therefore, only its test data was recorded in this report.

4. 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

13 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

Channel	Frequency	Channel	Frequency
1	2412MHz	8	2447MHz
2	2417MHz	9	2452MHz
3	2422MHz	10	2457MHz
4	2427MHz	11	2462MHz
5	2432MHz	12	2467MHz
6	2437MHz	13	2472MHz
7	2442MHz		

9 channels are provided for 802.11n (40MHz):

Channel	Frequency	Channel	Frequency
3	2422MHz	8	2447MHz
4	2427MHz	9	2452MHz
5	2432MHz	10	2457MHz
6	2437MHz	11	2462MHz
7	2442MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

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 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)
-	802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6
-	802.11n (20MHz)	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.5
-	802.11n (40MHz)	3 to 11	3, 6, 9, 10, 11	OFDM	BPSK	13.5

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 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)
-	802.11n (20MHz)	1 to 13	1	OFDM	BPSK	6.5

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)
-	802.11n (20MHz)	1 to 13	1	OFDM	BPSK	6.5

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)
-	802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6
-	802.11n (20MHz)	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.5
-	802.11n (40MHz)	3 to 11	3, 6, 9, 10, 11	OFDM	BPSK	13.5

Test Condition:

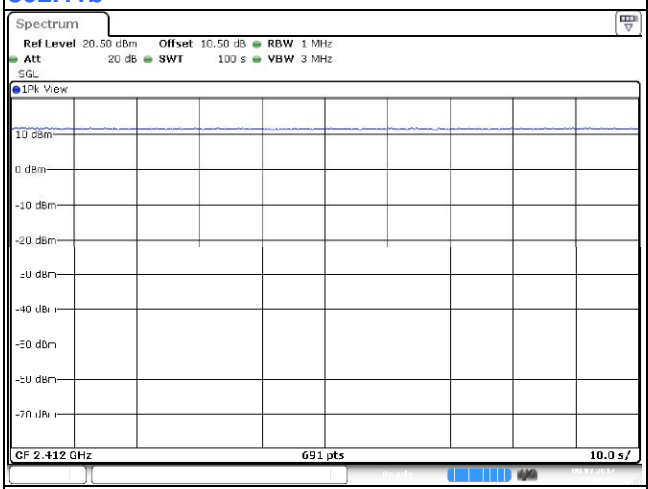
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	18deg. C, 66%RH & 17deg. C, 71%RH	120Vac, 60Hz (System)	Ian Chang
RE<1G	17deg. C, 65%RH	120Vac, 60Hz (System)	Ian Chang
PLC	21deg. C, 72%RH	120Vac, 60Hz (System)	Aaron You
APCM	25deg. C, 76%RH	120Vac, 60Hz (System)	Saxon Lee

3.3 Duty Cycle of Test Signal

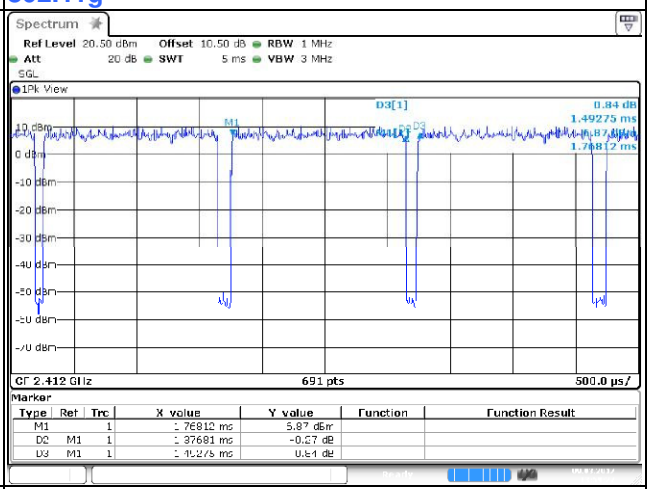
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = Duty cycle of test signal is 100 %.
802.11g: Duty cycle = 1.376/1.492 = 0.922, Duty factor = 10 * log(1/0.922) = 0.35
802.11n (20MHz): Duty cycle = 1.304/1.463 = 0.891, Duty factor = 10 * log(1/0.891) = 0.50
802.11n (40MHz): Duty cycle = 0.636/0.781 = 0.814, Duty factor = 10 * log(1/0.814) = 0.89

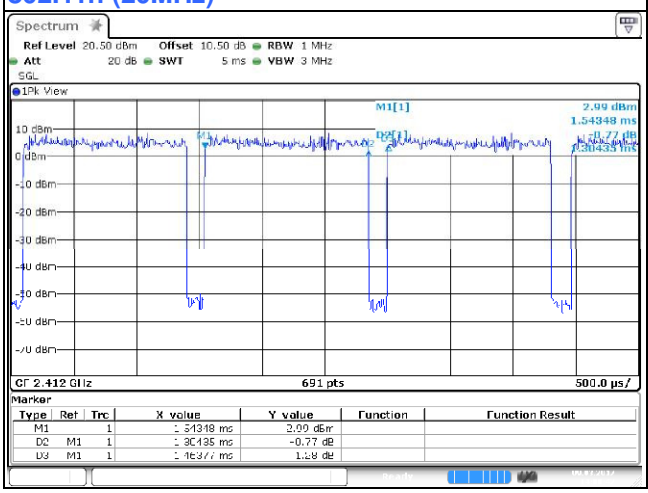
802.11b



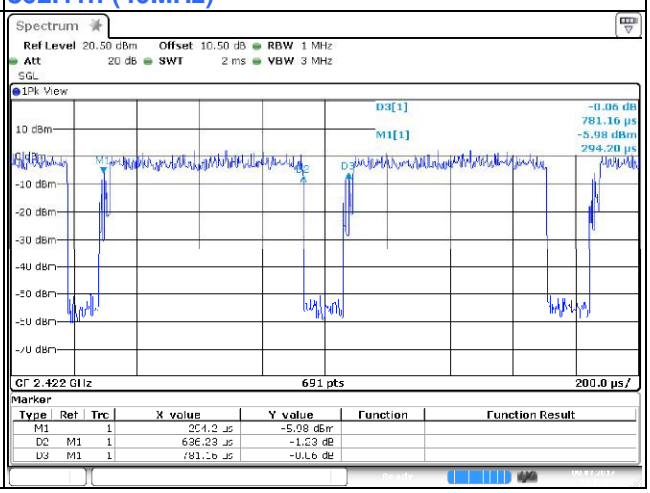
802.11g



802.11n (20MHz)



802.11n (40MHz)



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.

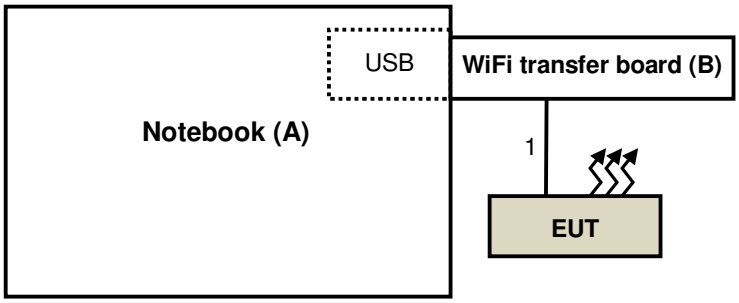
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	BW33YM1	FCC DoC Approved	Provided by Lab
B.	WiFi transfer board	N/A	N/A	N/A	N/A	Supplied by client

Note: All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC+Data cable	1	0.15	N	0	Supplied by client

Note: The core(s) is(are) originally attached to the cable(s).

3.4.1 Configuration of System under Test



3.5 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)
KDB 558074 D01 DTS Meas Guidance v04
ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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. 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.

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 21, 2017	Feb. 20, 2018
HP Preamplifier	8449B	3008A01201	Feb. 22, 2017	Feb. 21, 2018
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 21, 2017	Feb. 20, 2018
Agilent TEST RECEIVER	N9038A	MY51210129	Feb. 08, 2017	Feb. 07, 2018
Schwarzbeck Antenna	VULB 9168	139	Dec. 13, 2016	Dec. 12, 2017
Schwarzbeck Antenna	VHBA 9123	480	May 29, 2015	May 28, 2017
Schwarzbeck Horn Antenna	BBHA-9170	212	Dec. 30, 2016	Dec. 29, 2017
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Dec. 27, 2016	Dec. 26, 2017
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated_V7.6.15.9.5	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF104	CABLE-CH6	Aug. 15, 2016	Aug. 14, 2017
SUHNER RF cable With 3dB PAD	SF102	Cable-CH8-3.6m	Aug. 15, 2016	Aug. 14, 2017
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	May 25, 2016	May 24, 2017
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Jul. 26, 2016	Jul. 25, 2017
Loop Antenna EMCI	LPA600	270	Aug. 20, 2015	Aug. 19, 2017
EMCO Horn Antenna	3115	00028257	Dec. 15, 2016	Dec. 14, 2017
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 30, 2016	Sep. 29, 2017
Anritsu Power Sensor	MA2411B	0738404	Apr. 28, 2016	Apr. 27, 2017
Anritsu Power Meter	ML2495A	0842014	Apr. 28, 2016	Apr. 27, 2017

NOTE:
1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Chamber No. 6.
4. The Industry Canada Reference No. IC 7450E-6.
5. The FCC Site Registration No. is 447212.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. Both X and Y axes of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case 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 Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 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 height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

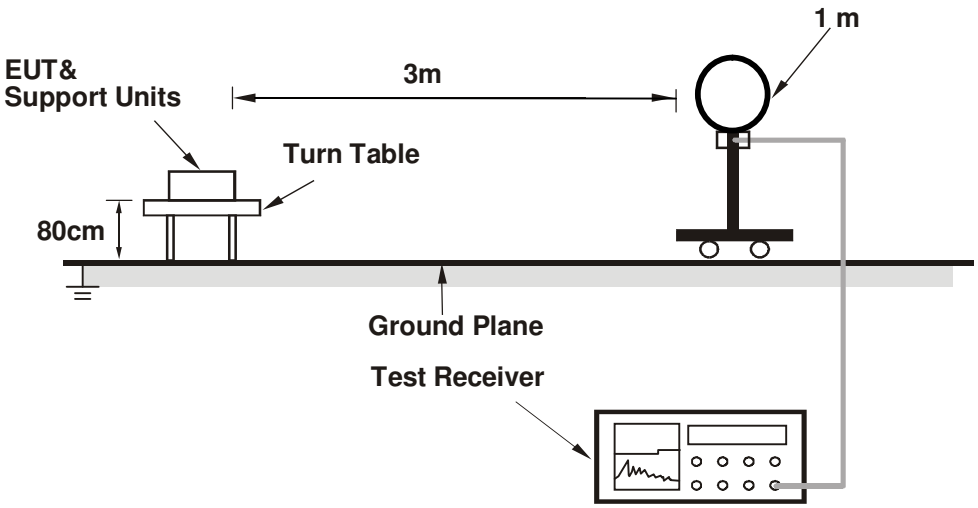
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

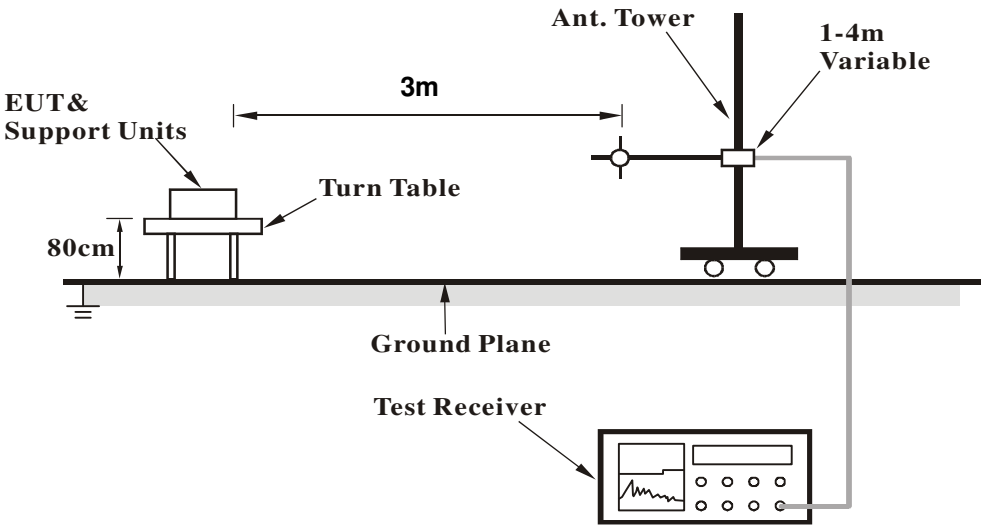
No deviation.

4.1.5 Test Setup

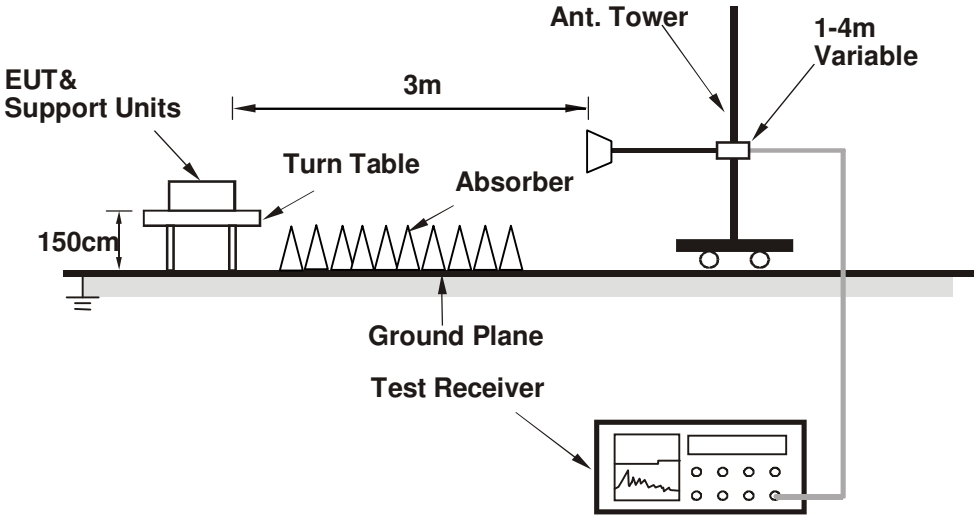
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. Connected the EUT to Notebook via Mechanical tool.
b. Set the EUT under transmitting condition.

4.1.7 Test Results

ABOVE 1GHz DATA

802.11b

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	54.52 PK	74.00	-19.48	2.01 H	332	55.11	-0.59
2	2390.00	40.92 AV	54.00	-13.08	2.01 H	332	41.51	-0.59
3	*2412.00	100.33 PK			2.01 H	332	100.78	-0.45
4	*2412.00	96.68 AV			2.01 H	332	97.13	-0.45
5	4824.00	47.57 PK	74.00	-26.43	1.02 H	223	40.65	6.92
6	4824.00	36.00 AV	54.00	-18.00	1.02 H	223	29.08	6.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2390.00	59.56 PK	74.00	-14.44	1.71 V	257	60.15	-0.59
2	2390.00	40.51 AV	54.00	-13.49	1.71 V	257	41.10	-0.59
3	*2412.00	99.07 PK			1.71 V	257	99.52	-0.45
4	*2412.00	95.39 AV			1.71 V	257	95.84	-0.45
5	4824.00	48.29 PK	74.00	-25.71	1.40 V	232	41.37	6.92
6	4824.00	38.68 AV	54.00	-15.32	1.40 V	232	31.76	6.92

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.68 PK			2.18 H	331	100.97	-0.29
2	*2437.00	97.00 AV			2.18 H	331	97.29	-0.29
3	4874.00	47.86 PK	74.00	-26.14	1.09 H	229	40.85	7.01
4	4874.00	36.86 AV	54.00	-17.14	1.09 H	229	29.85	7.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	99.29 PK			1.51 V	298	99.58	-0.29
2	*2437.00	95.58 AV			1.51 V	298	95.87	-0.29
3	4874.00	48.19 PK	74.00	-25.81	1.54 V	208	41.18	7.01
4	4874.00	37.89 AV	54.00	-16.11	1.54 V	208	30.88	7.01

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								
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	101.06 PK			1.76 H	325	101.20	-0.14
2	*2462.00	97.21 AV			1.76 H	325	97.35	-0.14
3	2483.50	54.77 PK	74.00	-19.23	1.76 H	325	54.77	0.00
4	2483.50	41.39 AV	54.00	-12.61	1.76 H	325	41.39	0.00
5	4924.00	47.67 PK	74.00	-26.33	2.84 H	279	40.54	7.13
6	4924.00	36.78 AV	54.00	-17.22	2.84 H	279	29.65	7.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.89 PK			1.82 V	263	100.03	-0.14
2	*2462.00	96.72 AV			1.82 V	263	96.86	-0.14
3	2483.50	54.03 PK	74.00	-19.97	1.82 V	263	54.03	0.00
4	2483.50	40.63 AV	54.00	-13.37	1.82 V	263	40.63	0.00
5	4924.00	49.00 PK	74.00	-25.00	1.54 V	118	41.87	7.13
6	4924.00	38.39 AV	54.00	-15.61	1.54 V	118	31.26	7.13

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 12	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	*2467.00	95.49 PK			2.88 H	329	95.59	-0.10
2	*2467.00	91.79 AV			2.88 H	329	91.89	-0.10
3	2483.50	61.48 PK	74.00	-12.52	2.88 H	329	61.48	0.00
4	2483.50	53.42 AV	54.00	-0.58	2.88 H	329	53.42	0.00
5	4934.00	47.33 PK	74.00	-26.67	1.64 H	223	40.19	7.14
6	4934.00	36.51 AV	54.00	-17.49	1.64 H	223	29.37	7.14
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	*2467.00	94.79 PK			1.68 V	263	94.89	-0.10
2	*2467.00	90.79 AV			1.68 V	263	90.89	-0.10
3	2483.50	60.10 PK	74.00	-13.90	1.68 V	263	60.10	0.00
4	2483.50	51.87 AV	54.00	-2.13	1.68 V	263	51.87	0.00
5	4934.00	48.19 PK	74.00	-25.81	1.77 V	209	41.05	7.14
6	4934.00	38.27 AV	54.00	-15.73	1.77 V	209	31.13	7.14

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 13	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	*2472.00	98.40 PK			1.11 H	336	98.47	-0.07
2	*2472.00	92.94 AV			1.11 H	336	93.01	-0.07
3	2483.50	64.95 PK	74.00	-9.05	1.11 H	336	64.95	0.00
4	**2483.50**	**53.72 AV**	**54.00**	**-0.28**	**1.11 H**	**336**	**53.72**	**0.00**
5	4944.00	47.37 PK	74.00	-26.63	1.06 H	241	40.19	7.18
6	4944.00	35.94 AV	54.00	-18.06	1.06 H	241	28.76	7.18
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	*2472.00	97.41 PK			1.85 V	251	97.48	-0.07
2	*2472.00	92.08 AV			1.85 V	251	92.15	-0.07
3	2483.50	62.60 PK	74.00	-11.40	1.85 V	251	62.60	0.00
4	2483.50	52.63 AV	54.00	-1.37	1.85 V	251	52.63	0.00
5	4944.00	49.06 PK	74.00	-24.94	1.84 V	205	41.88	7.18
6	4944.00	37.81 AV	54.00	-16.19	1.84 V	205	30.63	7.18

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								
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	60.79 PK	74.00	-13.21	1.99 H	330	61.38	-0.59
2	2390.00	41.55 AV	54.00	-12.45	1.99 H	330	42.14	-0.59
3	*2412.00	101.18 PK			1.99 H	330	101.63	-0.45
4	*2412.00	90.73 AV			1.99 H	330	91.18	-0.45
5	4824.00	47.08 PK	74.00	-26.92	1.62 H	243	40.16	6.92
6	4824.00	33.74 AV	54.00	-20.26	1.62 H	243	26.82	6.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.32 PK	74.00	-14.68	2.47 V	176	59.91	-0.59
2	2390.00	41.39 AV	54.00	-12.61	2.47 V	176	41.98	-0.59
3	*2412.00	100.99 PK			2.47 V	176	101.44	-0.45
4	*2412.00	90.36 AV			2.47 V	176	90.81	-0.45
5	4824.00	46.54 PK	74.00	-27.46	1.22 V	314	39.62	6.92
6	4824.00	32.50 AV	54.00	-21.50	1.22 V	314	25.58	6.92

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.36 PK			2.40 H	333	100.65	-0.29
2	*2437.00	90.28 AV			2.40 H	333	90.57	-0.29
3	4874.00	47.52 PK	74.00	-26.48	1.84 H	206	40.51	7.01
4	4874.00	33.52 AV	54.00	-20.48	1.84 H	206	26.51	7.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	99.60 PK			2.55 V	184	99.89	-0.29
2	*2437.00	89.58 AV			2.55 V	184	89.87	-0.29
3	4874.00	46.64 PK	74.00	-27.36	1.25 V	226	39.63	7.01
4	4874.00	32.66 AV	54.00	-21.34	1.25 V	226	25.65	7.01

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								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.25 PK			1.96 H	328	102.39	-0.14
2	*2462.00	91.77 AV			1.96 H	328	91.91	-0.14
3	2483.50	69.54 PK	74.00	-4.46	1.96 H	328	69.54	0.00
4	2483.50	46.51 AV	54.00	-7.49	1.96 H	328	46.51	0.00
5	4924.00	47.65 PK	74.00	-26.35	1.17 H	152	40.52	7.13
6	4924.00	33.98 AV	54.00	-20.02	1.17 H	152	26.85	7.13
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	101.70 PK			2.42 V	186	101.84	-0.14
2	*2462.00	90.55 AV			2.42 V	186	90.69	-0.14
3	2483.50	67.90 PK	74.00	-6.10	2.42 V	186	67.90	0.00
4	2483.50	44.65 AV	54.00	-9.35	2.42 V	186	44.65	0.00
5	4924.00	46.55 PK	74.00	-27.45	2.01 V	133	39.42	7.13
6	4924.00	32.98 AV	54.00	-21.02	2.01 V	133	25.85	7.13

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 12	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	*2467.00	102.83 PK			1.95 H	327	102.93	-0.10
2	*2467.00	92.16 AV			1.95 H	327	92.26	-0.10
3	2483.50	73.21 PK	74.00	-0.79	1.95 H	327	73.21	0.00
4	2483.50	45.47 AV	54.00	-8.53	1.95 H	327	45.47	0.00
5	4934.00	47.35 PK	74.00	-26.65	1.55 H	207	40.21	7.14
6	4934.00	33.71 AV	54.00	-20.29	1.55 H	207	26.57	7.14
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	*2467.00	101.47 PK			2.53 V	182	101.57	-0.10
2	*2467.00	91.53 AV			2.53 V	182	91.63	-0.10
3	2483.50	71.48 PK	74.00	-2.52	2.53 V	182	71.48	0.00
4	2483.50	43.89 AV	54.00	-10.11	2.53 V	182	43.89	0.00
5	4934.00	46.41 PK	74.00	-27.59	1.17 V	104	39.27	7.14
6	4934.00	32.95 AV	54.00	-21.05	1.17 V	104	25.81	7.14

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 13	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	*2472.00	98.18 PK			1.41 H	335	98.25	-0.07
2	*2472.00	87.60 AV			1.41 H	335	87.67	-0.07
3	2483.50	73.56 PK	74.00	-0.44	1.41 H	335	73.56	0.00
4	2483.50	47.56 AV	54.00	-6.44	1.41 H	335	47.56	0.00
5	4944.00	47.43 PK	74.00	-26.57	1.66 H	205	40.25	7.18
6	4944.00	33.61 AV	54.00	-20.39	1.66 H	205	26.43	7.18
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	*2472.00	97.78 PK			2.39 V	215	97.85	-0.07
2	*2472.00	86.95 AV			2.39 V	215	87.02	-0.07
3	2483.50	71.46 PK	74.00	-2.54	2.39 V	215	71.46	0.00
4	2483.50	45.85 AV	54.00	-8.15	2.39 V	215	45.85	0.00
5	4944.00	46.82 PK	74.00	-27.18	1.72 V	215	39.64	7.18
6	4944.00	32.34 AV	54.00	-21.66	1.72 V	215	25.16	7.18

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 (HT20)

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	58.08 PK	74.00	-15.92	1.62 H	334	58.67	-0.59
2	2390.00	41.03 AV	54.00	-12.97	1.62 H	334	41.62	-0.59
3	*2412.00	99.29 PK			1.62 H	334	99.74	-0.45
4	*2412.00	88.23 AV			1.62 H	334	88.68	-0.45
5	4824.00	47.44 PK	74.00	-26.56	1.18 H	166	40.52	6.92
6	4824.00	33.45 AV	54.00	-20.55	1.18 H	166	26.53	6.92
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	55.77 PK	74.00	-18.23	1.71 V	259	56.36	-0.59
2	2390.00	40.64 AV	54.00	-13.36	1.71 V	259	41.23	-0.59
3	*2412.00	97.63 PK			1.71 V	259	98.08	-0.45
4	*2412.00	87.27 AV			1.71 V	259	87.72	-0.45
5	4824.00	46.17 PK	74.00	-27.83	1.87 V	145	39.25	6.92
6	4824.00	32.73 AV	54.00	-21.27	1.87 V	145	25.81	6.92

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	98.15 PK			1.76 H	333	98.44	-0.29
2	*2437.00	87.18 AV			1.76 H	333	87.47	-0.29
3	4874.00	47.70 PK	74.00	-26.30	1.99 H	315	40.69	7.01
4	4874.00	33.65 AV	54.00	-20.35	1.99 H	315	26.64	7.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	97.55 PK			1.81 V	245	97.84	-0.29
2	*2437.00	85.97 AV			1.81 V	245	86.26	-0.29
3	4874.00	46.47 PK	74.00	-27.53	1.26 V	284	39.46	7.01
4	4874.00	32.85 AV	54.00	-21.15	1.26 V	284	25.84	7.01

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								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.90 PK			1.76 H	334	100.04	-0.14
2	*2462.00	88.91 AV			1.76 H	334	89.05	-0.14
3	2483.50	64.24 PK	74.00	-9.76	1.76 H	334	64.24	0.00
4	2483.50	41.54 AV	54.00	-12.46	1.76 H	334	41.54	0.00
5	4924.00	47.95 PK	74.00	-26.05	1.59 H	100	40.82	7.13
6	4924.00	33.82 AV	54.00	-20.18	1.59 H	100	26.69	7.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.50 PK			1.88 V	256	99.64	-0.14
2	*2462.00	88.45 AV			1.88 V	256	88.59	-0.14
3	2483.50	62.48 PK	74.00	-11.52	1.88 V	256	62.48	0.00
4	2483.50	40.36 AV	54.00	-13.64	1.88 V	256	40.36	0.00
5	4924.00	46.28 PK	74.00	-27.72	2.36 V	339	39.15	7.13
6	4924.00	32.33 AV	54.00	-21.67	2.36 V	339	25.20	7.13

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 12	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	*2467.00	101.51 PK			1.75 H	325	101.61	-0.10
2	*2467.00	91.32 AV			1.75 H	325	91.42	-0.10
3	2483.50	73.34 PK	74.00	-0.66	1.75 H	325	73.34	0.00
4	2483.50	48.15 AV	54.00	-5.85	1.75 H	325	48.15	0.00
5	4934.00	47.69 PK	74.00	-26.31	1.48 H	167	40.55	7.14
6	4934.00	33.98 AV	54.00	-20.02	1.48 H	167	26.84	7.14
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	*2467.00	100.62 PK			1.80 V	248	100.72	-0.10
2	*2467.00	90.40 AV			1.80 V	248	90.50	-0.10
3	2483.50	71.48 PK	74.00	-2.52	1.80 V	248	71.48	0.00
4	2483.50	46.63 AV	54.00	-7.37	1.80 V	248	46.63	0.00
5	4934.00	46.48 PK	74.00	-27.52	1.26 V	116	39.34	7.14
6	4934.00	32.22 AV	54.00	-21.78	1.26 V	116	25.08	7.14

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 13	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	*2472.00	97.85 PK			1.40 H	334	97.92	-0.07
2	*2472.00	86.40 AV			1.40 H	334	86.47	-0.07
3	2483.50	73.41 PK	74.00	-0.59	1.40 H	334	73.41	0.00
4	2483.50	47.57 AV	54.00	-6.43	1.40 H	334	47.57	0.00
5	4944.00	47.54 PK	74.00	-26.46	2.13 H	304	40.36	7.18
6	4944.00	33.69 AV	54.00	-20.31	2.13 H	304	26.51	7.18
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	*2472.00	96.49 PK			1.88 V	248	96.56	-0.07
2	*2472.00	85.54 AV			1.88 V	248	85.61	-0.07
3	2483.50	71.48 PK	74.00	-2.52	1.88 V	248	71.48	0.00
4	2483.50	45.65 AV	54.00	-8.35	1.88 V	248	45.65	0.00
5	4944.00	46.31 PK	74.00	-27.69	1.00 V	25	39.13	7.18
6	4944.00	32.60 AV	54.00	-21.40	1.00 V	25	25.42	7.18

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 (HT40)

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	55.21 PK	74.00	-18.79	2.41 H	329	55.80	-0.59
2	2390.00	40.67 AV	54.00	-13.33	2.41 H	329	41.26	-0.59
3	*2422.00	95.57 PK			2.41 H	329	95.96	-0.39
4	*2422.00	85.34 AV			2.41 H	329	85.73	-0.39
5	4844.00	47.65 PK	74.00	-26.35	1.88 H	220	40.69	6.96
6	4844.00	33.29 AV	54.00	-20.71	1.88 H	220	26.33	6.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	53.68 PK	74.00	-20.32	1.96 V	239	54.27	-0.59
2	2390.00	39.57 AV	54.00	-14.43	1.96 V	239	40.16	-0.59
3	*2422.00	94.48 PK			1.96 V	239	94.87	-0.39
4	*2422.00	84.39 AV			1.96 V	239	84.78	-0.39
5	4844.00	46.16 PK	74.00	-27.84	1.08 V	341	39.20	6.96
6	4844.00	32.35 AV	54.00	-21.65	1.08 V	341	25.39	6.96

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								
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	96.04 PK			1.99 H	331	96.33	-0.29
2	*2437.00	86.17 AV			1.99 H	331	86.46	-0.29
3	4874.00	47.10 PK	74.00	-26.90	1.58 H	240	40.09	7.01
4	4874.00	33.47 AV	54.00	-20.53	1.58 H	240	26.46	7.01
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	95.22 PK			1.88 V	240	95.51	-0.29
2	*2437.00	84.97 AV			1.88 V	240	85.26	-0.29
3	4874.00	46.61 PK	74.00	-27.39	1.90 V	105	39.60	7.01
4	4874.00	32.09 AV	54.00	-21.91	1.90 V	105	25.08	7.01

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 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	97.34 PK			2.37 H	327	97.53	-0.19
2	*2452.00	86.70 AV			2.37 H	327	86.89	-0.19
3	2483.50	66.34 PK	74.00	-7.66	2.37 H	327	66.34	0.00
4	2483.50	42.88 AV	54.00	-11.12	2.37 H	327	42.88	0.00
5	4904.00	47.29 PK	74.00	-26.71	1.40 H	200	40.22	7.07
6	4904.00	33.44 AV	54.00	-20.56	1.40 H	200	26.37	7.07
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	96.45 PK			1.88 V	241	96.64	-0.19
2	*2452.00	85.84 AV			1.88 V	241	86.03	-0.19
3	2483.50	64.87 PK	74.00	-9.13	1.88 V	241	64.87	0.00
4	2483.50	41.06 AV	54.00	-12.94	1.88 V	241	41.06	0.00
5	4904.00	46.28 PK	74.00	-27.72	1.74 V	220	39.21	7.07
6	4904.00	32.15 AV	54.00	-21.85	1.74 V	220	25.08	7.07

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 10	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	*2457.00	98.22 PK			2.64 H	328	98.38	-0.16
2	*2457.00	87.92 AV			2.64 H	328	88.08	-0.16
3	2483.50	73.12 PK	74.00	-0.88	2.64 H	328	73.12	0.00
4	2483.50	51.50 AV	54.00	-2.50	2.64 H	328	51.50	0.00
5	4914.00	47.29 PK	74.00	-26.71	1.33 H	22	40.19	7.10
6	4914.00	33.91 AV	54.00	-20.09	1.33 H	22	26.81	7.10
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	*2457.00	97.38 PK			1.77 V	239	97.54	-0.16
2	*2457.00	87.12 AV			1.77 V	239	87.28	-0.16
3	2483.50	71.08 PK	74.00	-2.92	1.77 V	239	71.08	0.00
4	2483.50	49.36 AV	54.00	-4.64	1.77 V	239	49.36	0.00
5	4914.00	46.54 PK	74.00	-27.46	1.90 V	356	39.44	7.10
6	4914.00	32.38 AV	54.00	-21.62	1.90 V	356	25.28	7.10

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								
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	96.83 PK			1.40 H	333	96.97	-0.14
2	*2462.00	86.48 AV			1.40 H	333	86.62	-0.14
3	2483.50	71.15 PK	74.00	-2.85	1.40 H	333	71.15	0.00
4	2483.50	53.41 AV	54.00	-0.59	1.40 H	333	53.41	0.00
5	4924.00	47.84 PK	74.00	-26.16	1.55 H	221	40.71	7.13
6	4924.00	33.74 AV	54.00	-20.26	1.55 H	221	26.61	7.13
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	95.42 PK			1.78 V	239	95.56	-0.14
2	*2462.00	85.19 AV			1.78 V	239	85.33	-0.14
3	2483.50	70.10 PK	74.00	-3.90	1.78 V	239	70.10	0.00
4	2483.50	51.63 AV	54.00	-2.37	1.78 V	239	51.63	0.00
5	4924.00	46.77 PK	74.00	-27.23	1.10 V	274	39.64	7.13
6	4924.00	32.22 AV	54.00	-21.78	1.10 V	274	25.09	7.13

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 Data: 802.11n (20MHz)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 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	38.88	18.78 QP	40.00	-21.22	1.34 H	55	28.91	-10.13
2	126.18	17.91 QP	43.50	-25.59	2.15 H	47	29.23	-11.32
3	155.81	17.98 QP	43.50	-25.52	1.17 H	120	26.88	-8.90
4	265.81	19.84 QP	46.00	-26.16	1.64 H	235	28.32	-8.48
5	344.04	21.14 QP	46.00	-24.86	1.18 H	195	27.75	-6.61
6	441.28	23.26 QP	46.00	-22.74	2.07 H	222	27.43	-4.17
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	38.34	20.12 QP	40.00	-19.88	2.19 V	41	30.36	-10.24
2	125.35	18.06 QP	43.50	-25.44	1.97 V	123	29.37	-11.31
3	197.76	16.61 QP	43.50	-26.89	1.88 V	1	28.18	-11.57
4	304.22	20.02 QP	46.00	-25.98	2.06 V	281	27.24	-7.22
5	427.60	22.97 QP	46.00	-23.03	1.24 V	300	27.46	-4.49
6	531.39	25.74 QP	46.00	-20.26	1.10 V	155	28.30	-2.56

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	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.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	838251/021	Oct. 24, 2016	Oct. 23, 2017
ROHDE & SCHWARZ Artificial Mains Network (For EUT)	ENV216	101195	Apr. 25, 2016	Apr. 24, 2017
LISN With Adapter (for EUT)	AD10	C03Ada-002	Apr. 25, 2016	Apr. 24, 2017
EMCO L.I.S.N. (For peripherals)	3825/2	9504-2359	Jul. 25, 2016	Jul. 24, 2017
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 04, 2016	May 03, 2017
Software	Cond_V7.3.7.4	NA	NA	NA
RF cable (JYEBAO) With10dB PAD	5D-FB	Cable-C03.01	Sep. 22, 2016	Sep. 21, 2017
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-300	Jan. 18, 2017	Jan. 17, 2018
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-301	Jan. 18, 2017	Jan. 17, 2018
ROHDE & SCHWARZ Artificial Mains Network (For TV EUT)	ESH3-Z5	100220	Nov. 08, 2016	Nov. 07, 2017
LISN With Adapter (for TV EUT)	100220	N/A	Nov. 08, 2016	Nov. 07, 2017

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 3.
3. The VCCI Site Registration No. C-274.
4. Tested Date: Mar. 10, 2017

4.2.3 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.

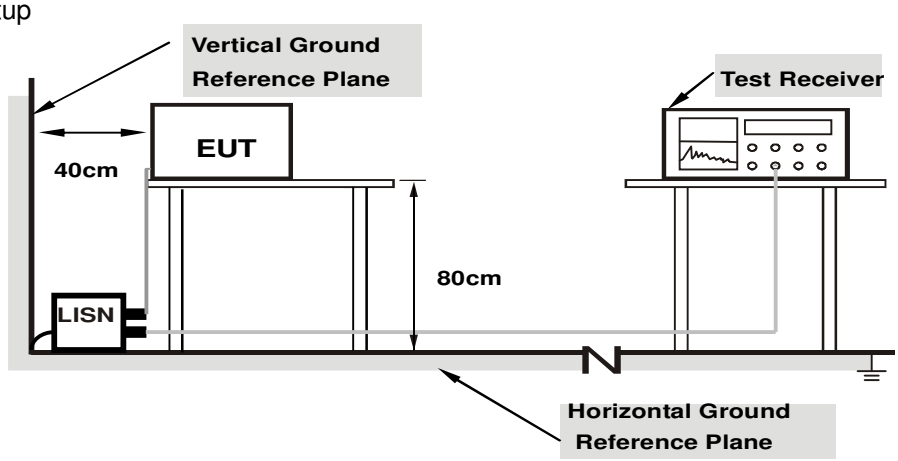
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

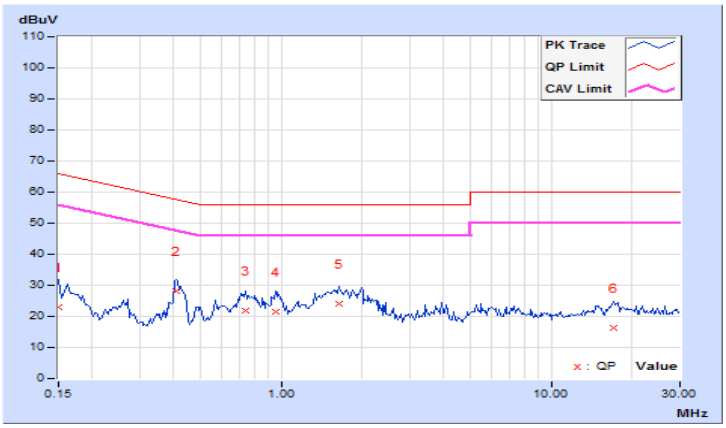
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15001	9.74	13.18	6.90	22.92	16.64	66.00	56.00	-43.08	-39.36
2	**0.40781**	**9.75**	**18.30**	**14.81**	**28.05**	**24.56**	**57.69**	**47.69**	**-29.64**	**-23.13**
3	0.73984	9.77	12.00	7.07	21.77	16.84	56.00	46.00	-34.23	-29.16
4	0.95469	9.78	11.71	6.85	21.49	16.63	56.00	46.00	-34.51	-29.37
5	1.64063	9.80	14.22	10.45	24.02	20.25	56.00	46.00	-31.98	-25.75
6	17.13281	9.98	6.40	1.19	16.38	11.17	60.00	50.00	-43.62	-38.83

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

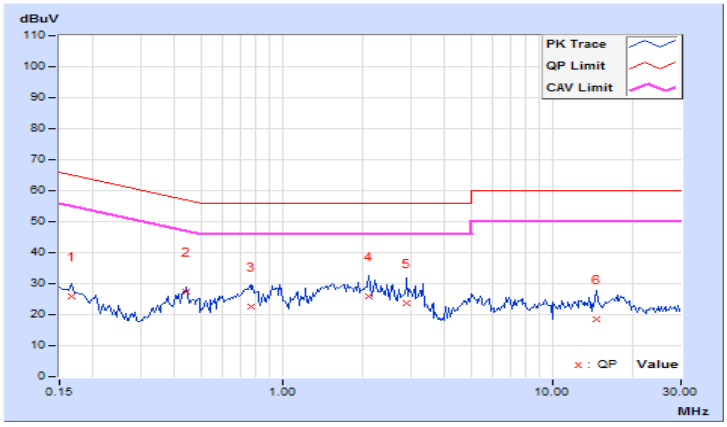


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	9.70	16.29	9.24	25.99	18.94	65.18	55.18	-39.19	-36.24
2	0.44297	9.72	17.55	10.72	27.27	20.44	57.01	47.01	-29.74	-26.57
3	0.76328	9.71	12.92	8.15	22.63	17.86	56.00	46.00	-33.37	-28.14
4	2.08203	9.75	16.18	12.67	25.93	22.42	56.00	46.00	-30.07	-23.58
5	2.88672	9.75	13.84	8.93	23.59	18.68	56.00	46.00	-32.41	-27.32
6	14.57031	9.95	8.54	3.16	18.49	13.11	60.00	50.00	-41.51	-36.89

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

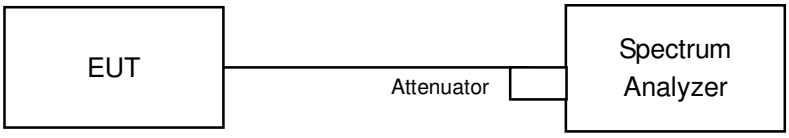


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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

4.3.5 Deviation fromTest Standard

No deviation.

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 Result

802.11b

Channel	Frequency (MHz)	6db Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	9.59	0.5	PASS
6	2437	10.07	0.5	PASS
11	2462	10.05	0.5	PASS
12	2467	10.08	0.5	PASS
13	2472	10.08	0.5	PASS

802.11g

Channel	Frequency (MHz)	6db Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	16.39	0.5	PASS
6	2437	16.39	0.5	PASS
11	2462	16.40	0.5	PASS
12	2467	16.39	0.5	PASS
13	2472	16.39	0.5	PASS

802.11n (20MHz)

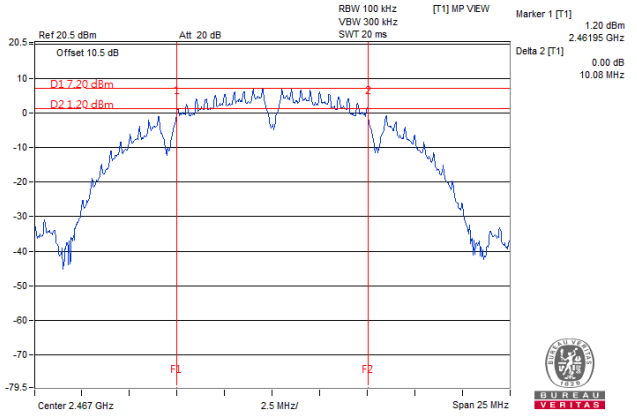
Channel	Frequency (MHz)	6db Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	17.61	0.5	PASS
6	2437	17.61	0.5	PASS
11	2462	17.61	0.5	PASS
12	2467	17.61	0.5	PASS
13	2472	17.61	0.5	PASS

802.11n (40MHz)

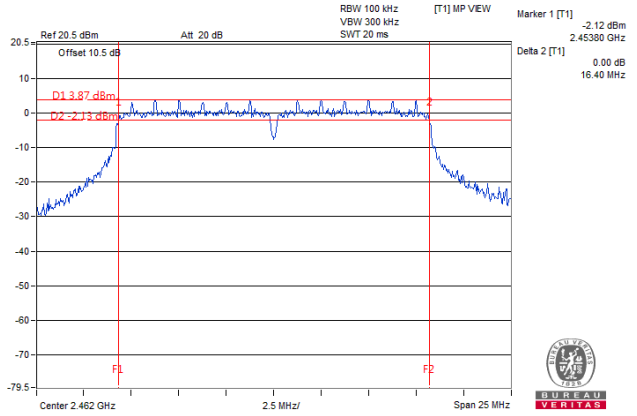
Channel	Frequency (MHz)	6db Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	35.27	0.5	Pass
6	2437	35.27	0.5	Pass
9	2452	35.26	0.5	Pass
10	2457	35.27	0.5	Pass
11	2462	35.27	0.5	Pass

Spectrum Plot of Worst Value

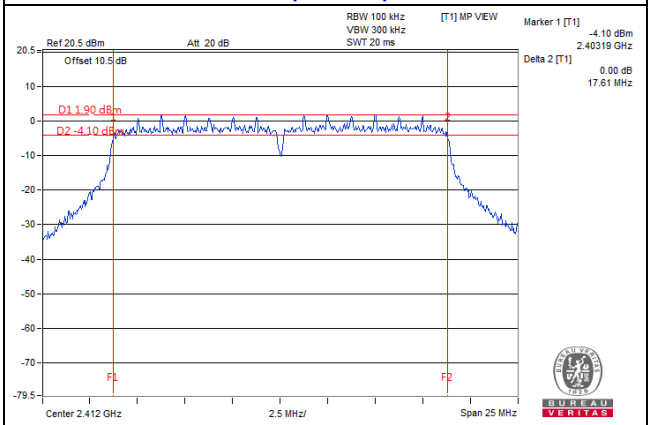
802.11b /CH12



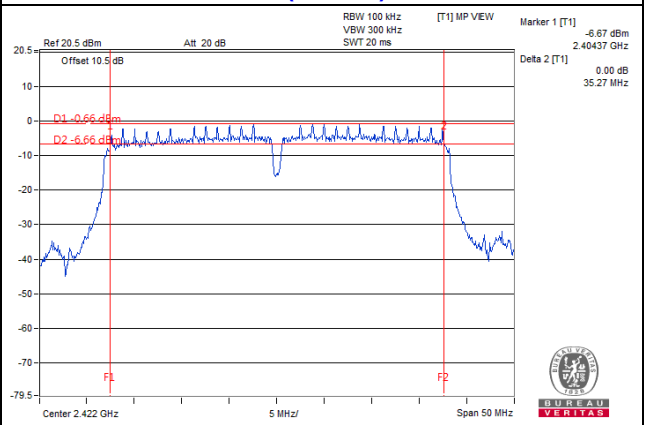
802.11g / CH11



802.11n (20MHz) / CH1



802.11n (40MHz) / CH3

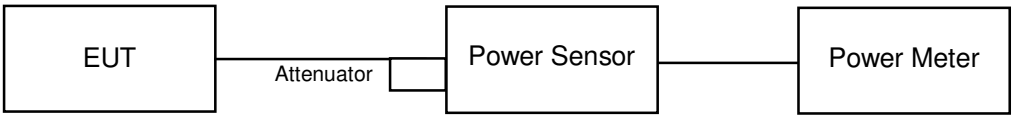


4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

A peak / average power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak / average 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

FOR PEAK POWER

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	89.125	19.50	30	Pass
6	2437	90.365	19.56	30	Pass
11	2462	88.716	19.48	30	Pass
12	2467	89.331	19.51	30	Pass
13	2472	47.973	16.81	30	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	285.759	24.56	30	Pass
6	2437	**287.078**	24.58	30	Pass
11	2462	285.759	24.56	30	Pass
12	2467	238.781	23.78	30	Pass
13	2472	79.25	18.99	30	Pass

802.11n (20MHz)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	249.459	23.97	30	Pass
6	2437	248.886	23.96	30	Pass
11	2462	252.348	24.02	30	Pass
12	2467	255.27	24.07	30	Pass
13	2472	66.374	18.22	30	Pass

802.11n (40MHz)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
3	2422	197.697	22.96	30	Pass
6	2437	196.789	22.94	30	Pass
9	2452	203.704	23.09	30	Pass
10	2457	206.538	23.15	30	Pass
11	2462	81.47	19.11	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	50.234	17.01
6	2437	50.699	17.05
11	2462	50.119	17.00
12	2467	50.350	17.02
13	2472	28.510	14.55

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	40.087	16.03
6	2437	40.458	16.07
11	2462	40.179	16.04
12	2467	33.189	15.21
13	2472	11.220	10.50

802.11n (20MHz)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	27.733	14.43
6	2437	27.797	14.44
11	2462	28.119	14.49
12	2467	28.314	14.52
13	2472	9.727	9.88

802.11n (40MHz)

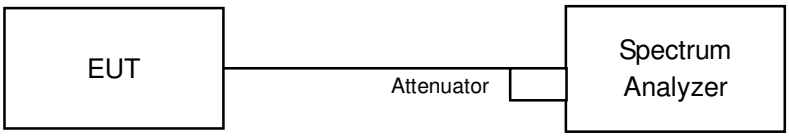
Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
3	2422	25.351	14.04
6	2437	25.119	14.00
9	2452	25.645	14.09
10	2457	25.823	14.12
11	2462	10.139	10.06

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

a. Set analyzer center frequency to DTS channel center frequency.
b. Set the span to 1.5 times the DTS bandwidth.
c. Set the RBW to: 3 kHz ≤ RBW ≤ 10 kHz.
d. Set the VBW ≥ 3 × RBW.
e. Detector = peak.
f. Sweep time = auto couple.
g. Trace mode = max hold.
h. Allow trace to fully stabilize.
i. Use the peak marker function to determine the maximum amplitude level within the RBW.

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)	Limit (dBm)	Pass /Fail
1	2412	-7.15	8	Pass
6	2437	-6.08	8	Pass
11	2462	-6.71	8	Pass
12	2467	-6.61	8	Pass
13	2472	-7.96	8	Pass

802.11g

Channel	Freq. (MHz)	PSD (dBm)	Limit (dBm)	Pass /Fail
1	2412	-8.71	8	Pass
6	2437	-10.02	8	Pass
11	2462	-9.77	8	Pass
12	2467	-10.60	8	Pass
13	2472	-16.07	8	Pass

802.11n (20MHz)

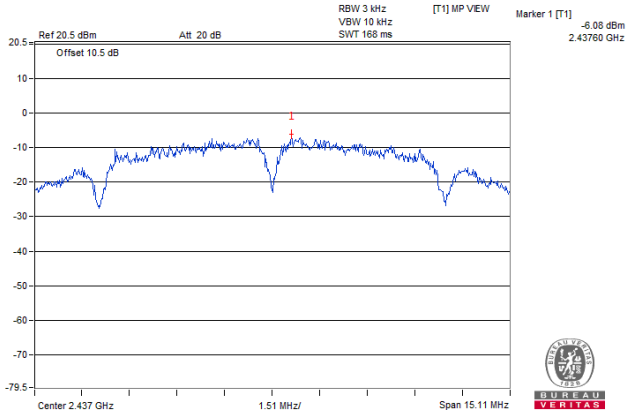
Channel	Freq. (MHz)	PSD (dBm)	Limit (dBm)	Pass /Fail
1	2412	-12.16	8	Pass
6	2437	-11.56	8	Pass
11	2462	-11.33	8	Pass
12	2467	-11.95	8	Pass
13	2472	-16.65	8	Pass

802.11n (40MHz)

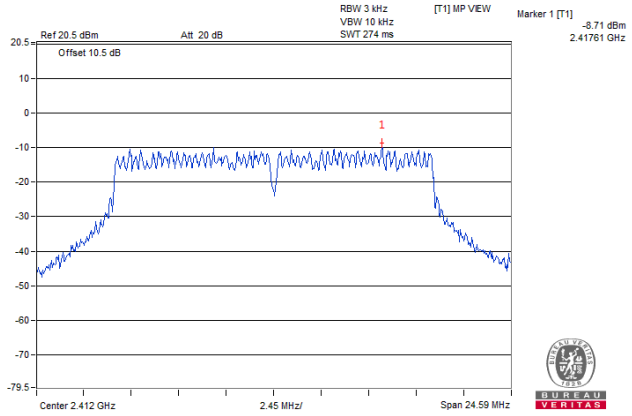
Channel	Freq. (MHz)	PSD (dBm)	Limit (dBm)	Pass /Fail
3	2422	-14.53	8	Pass
6	2437	-14.80	8	Pass
9	2452	-15.23	8	Pass
10	2457	-15.50	8	Pass
11	2462	-18.83	8	Pass

Spectrum Plot of Worst Value

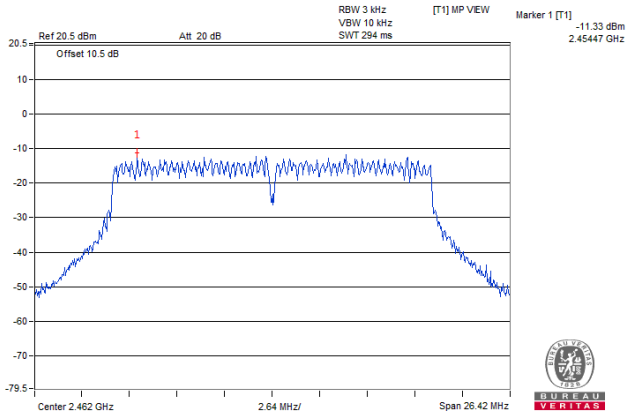
802.11b / CH6



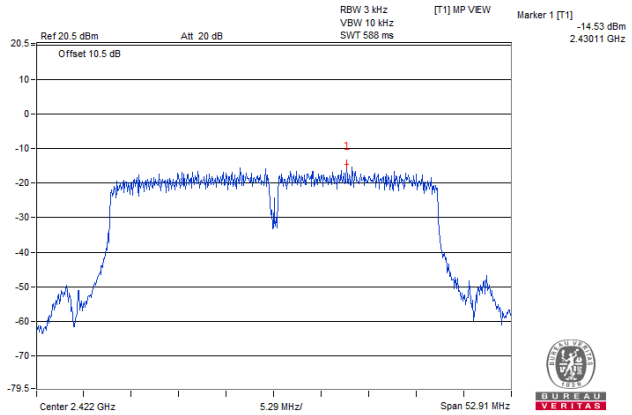
802.11g / CH1



802.11n (20MHz) / CH11



802.11n (40MHz) / CH3

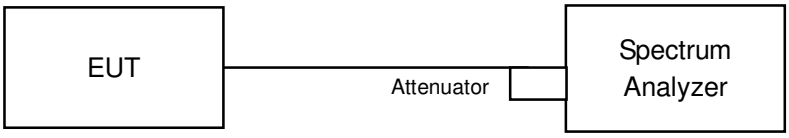


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 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. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

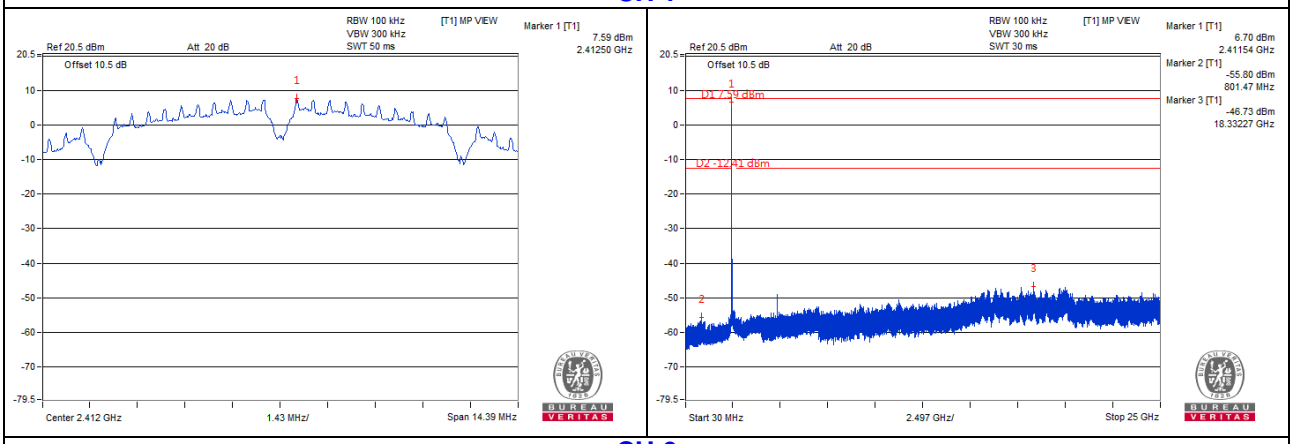
Same as Item 4.3.6

4.6.7 Test Results

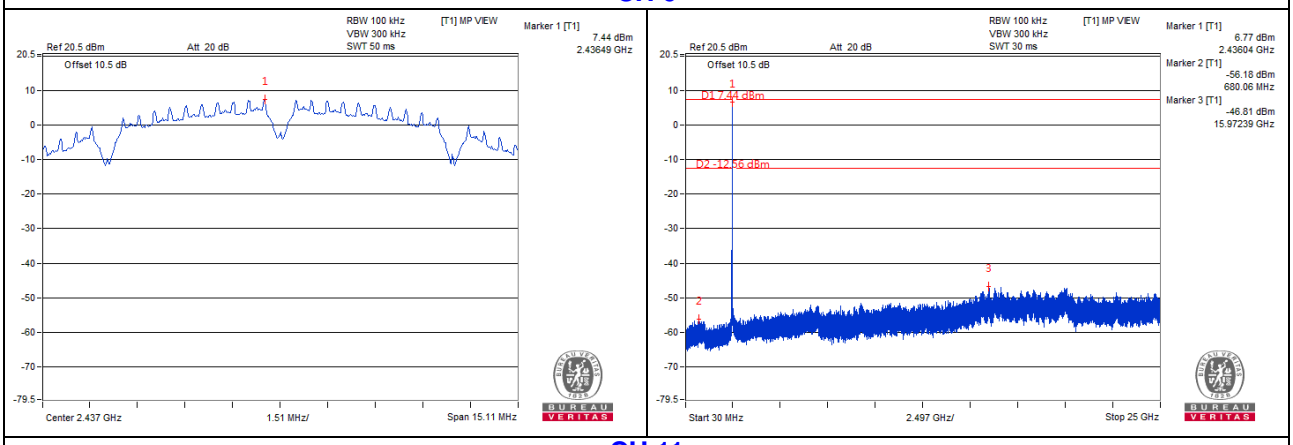
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dBoffset below D1. It shows compliance with the requirement.

802.11b

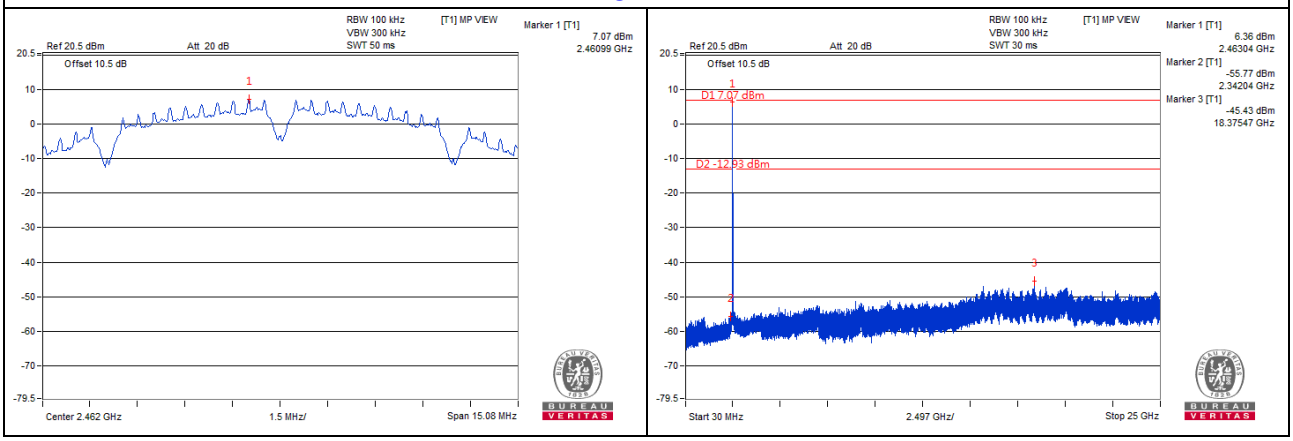
CH 1



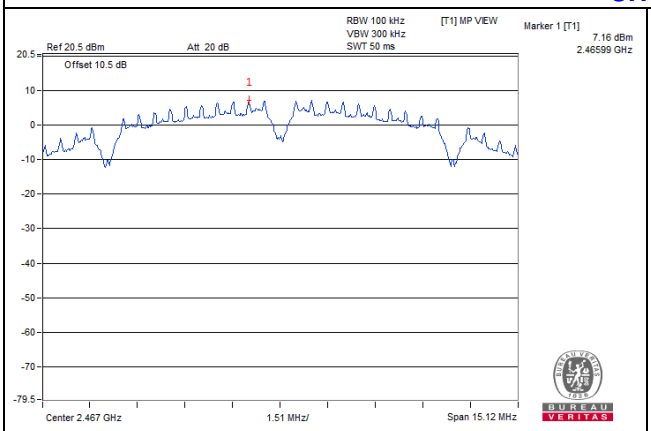
CH 6

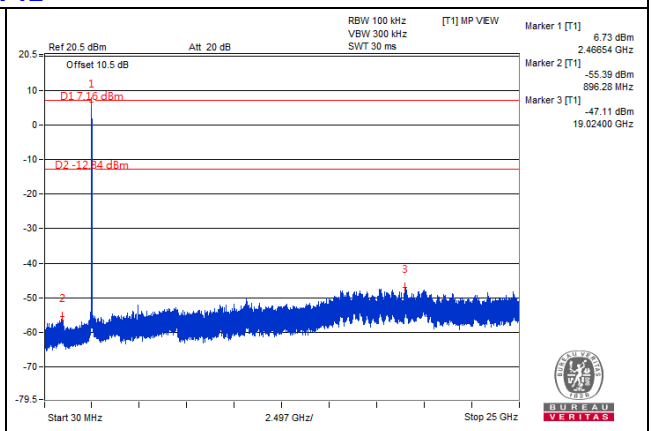


CH 11

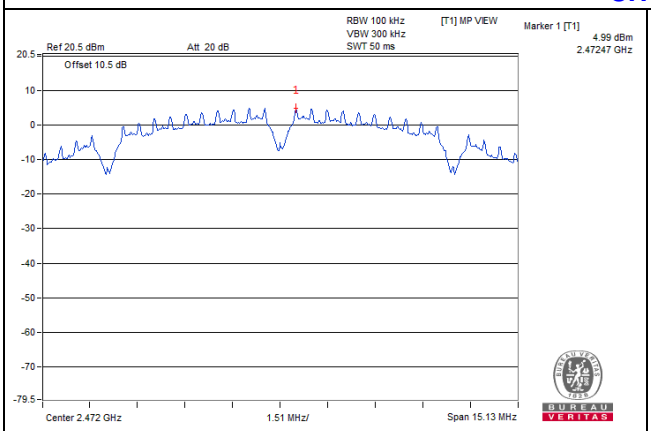


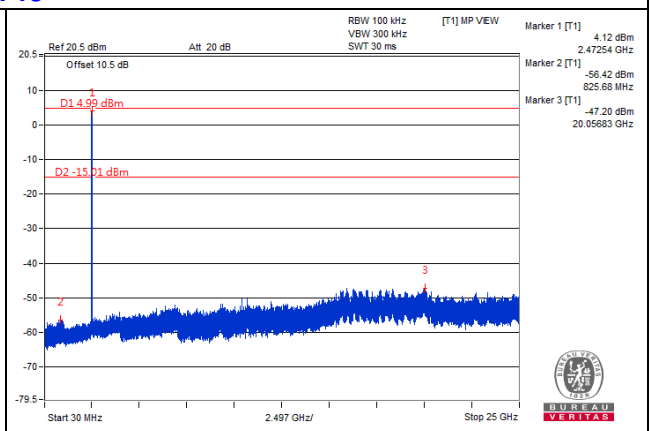
CH 12



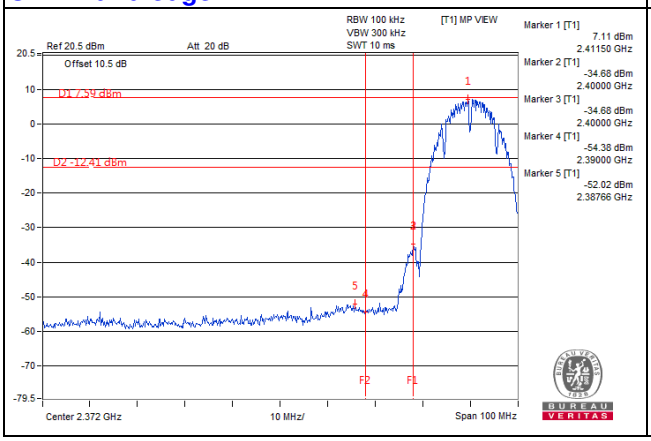


CH 13

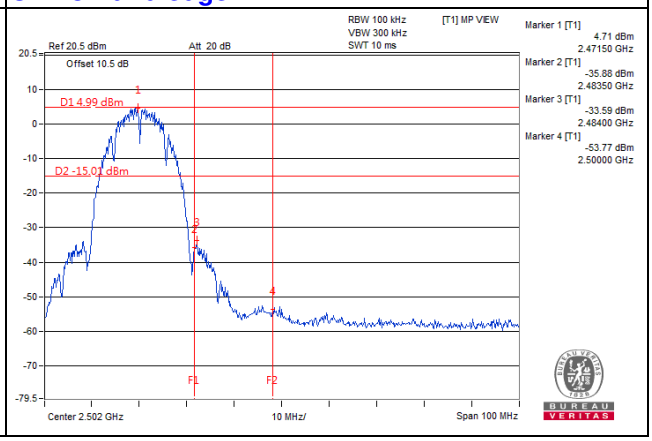




CH 1 Band edge

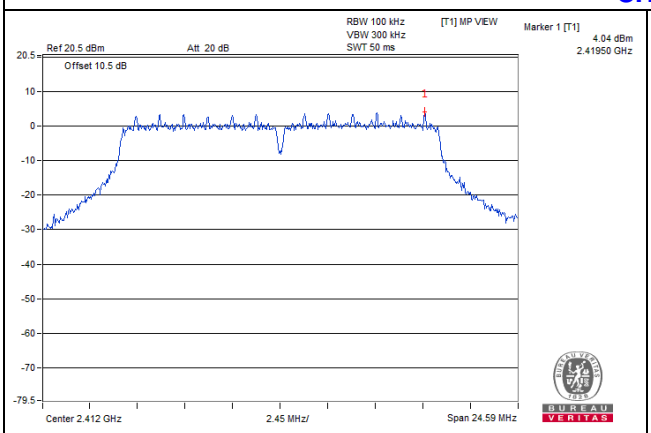


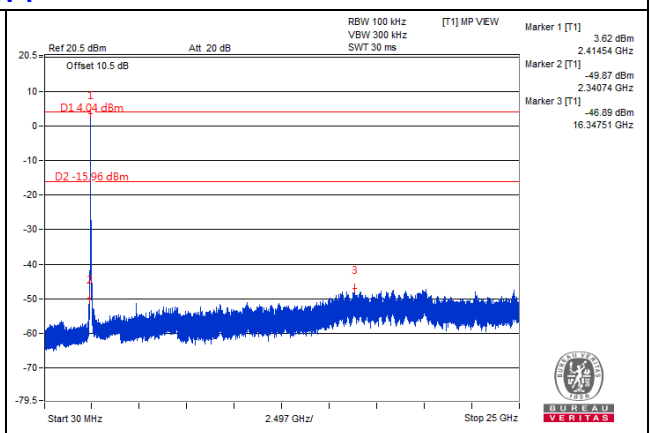
CH 13 Band edge



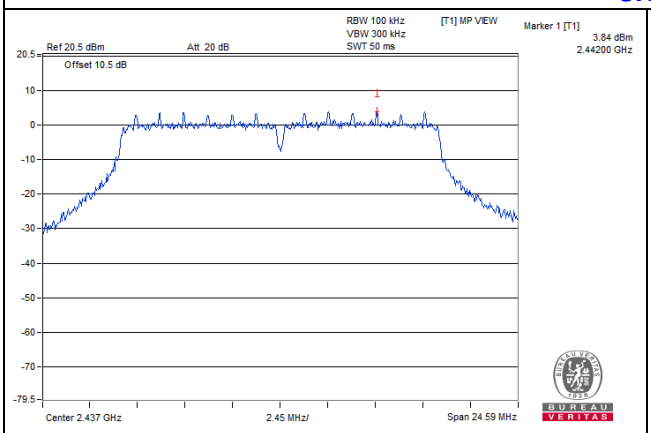
802.11g:

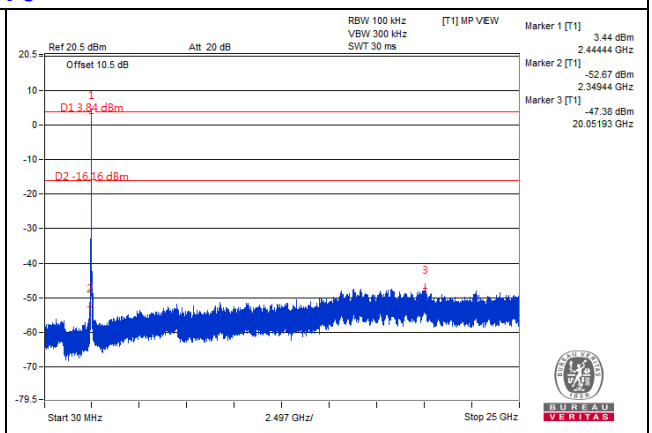
CH 1



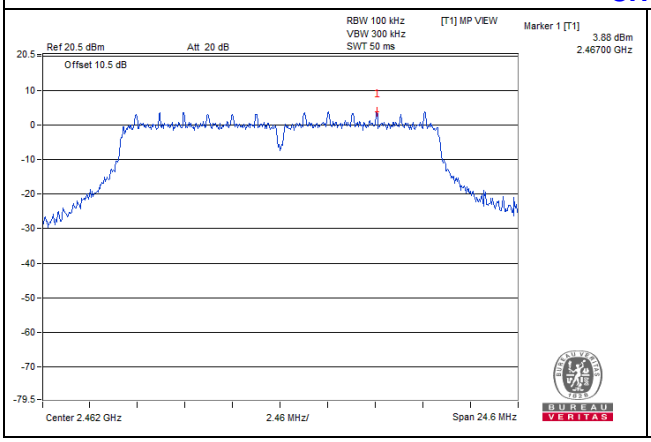


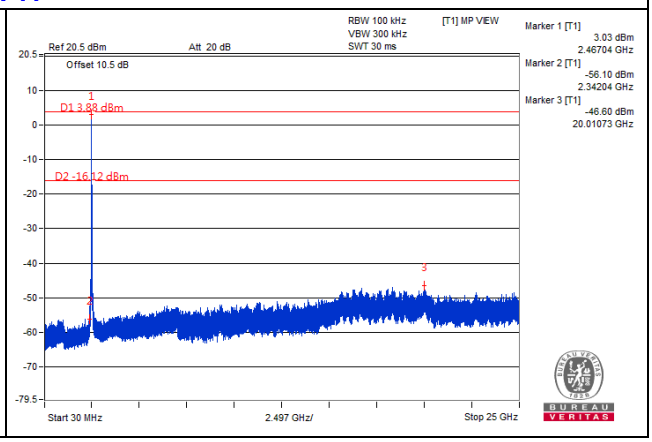
CH 6



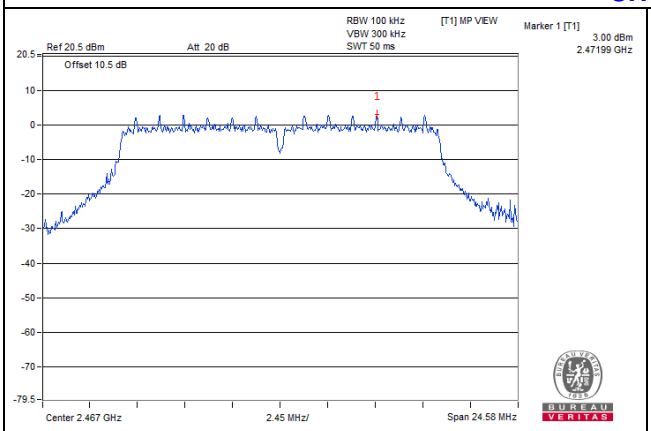


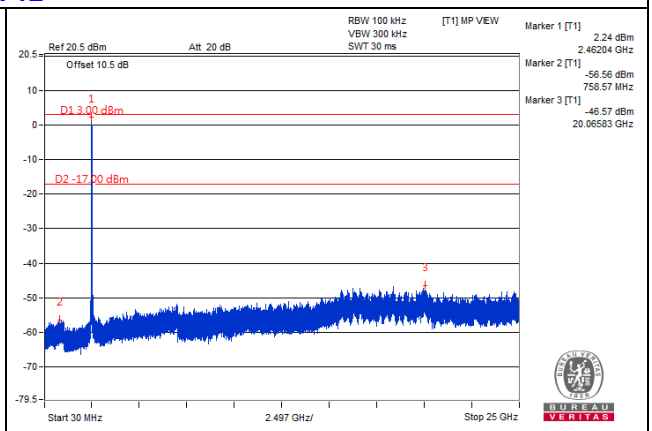
CH 11



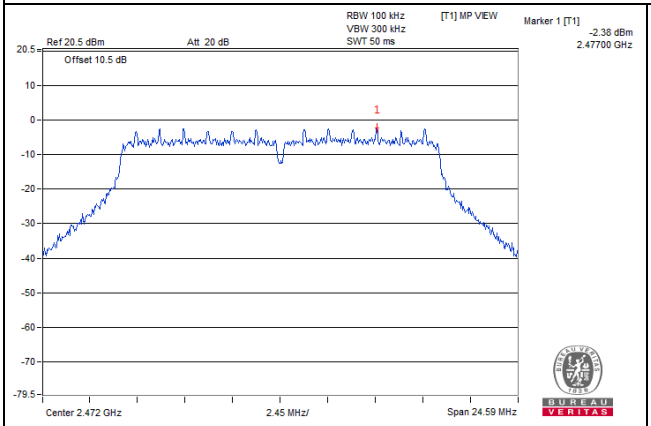


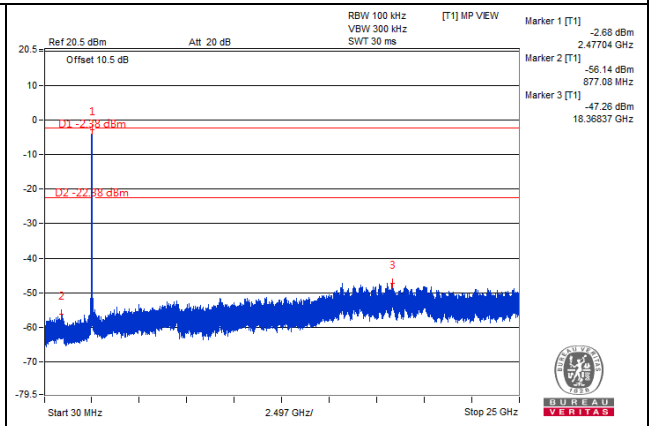
CH 12



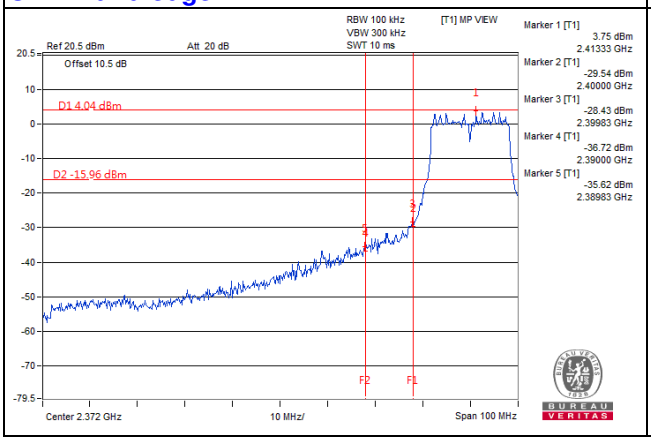


CH 13

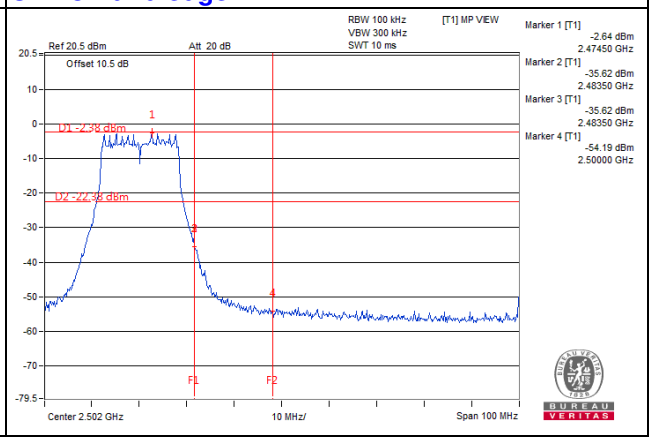




CH 1 Band edge

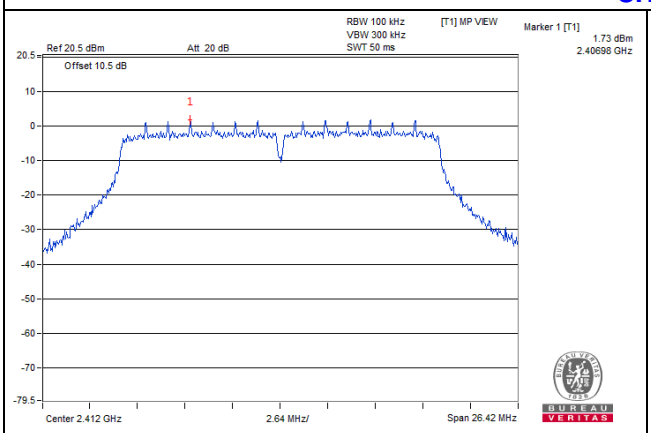


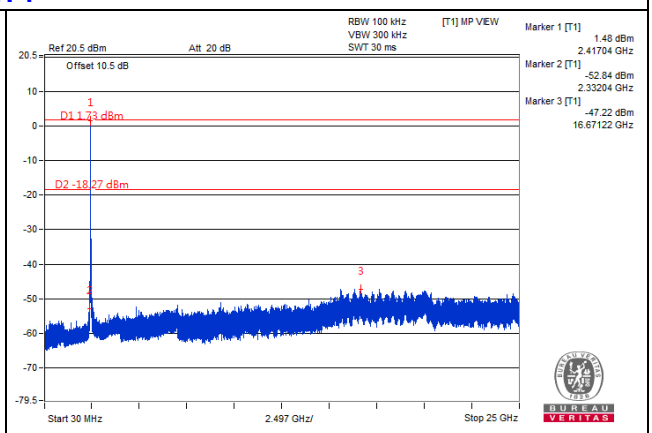
CH 13 Band edge



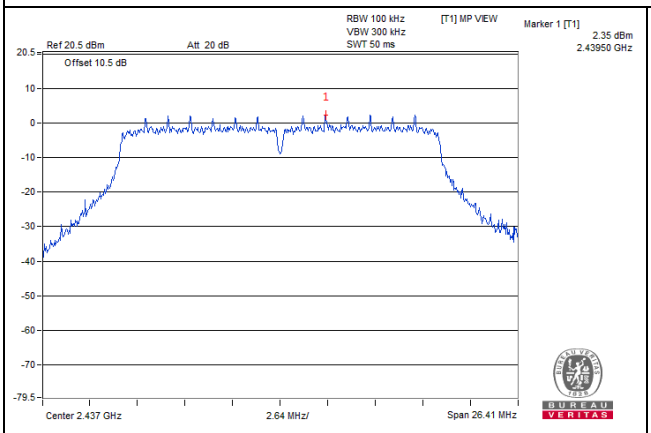
802.11n (20MHz)

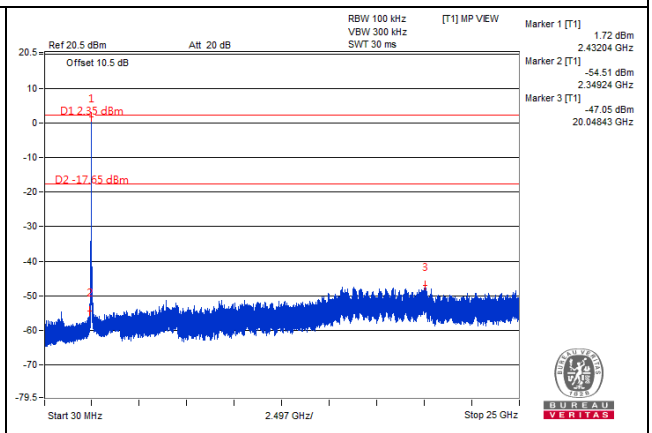
CH 1



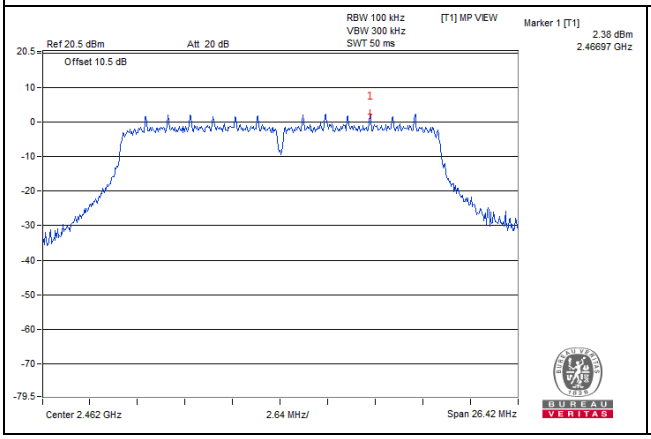


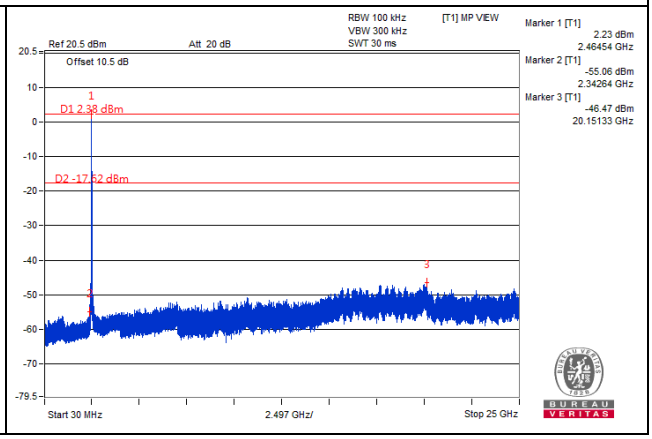
CH 6



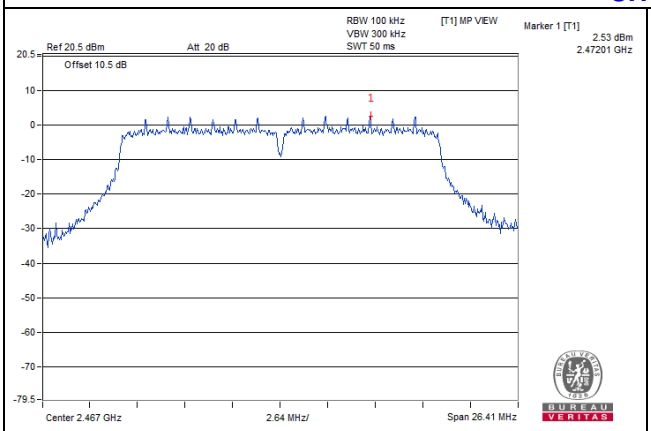


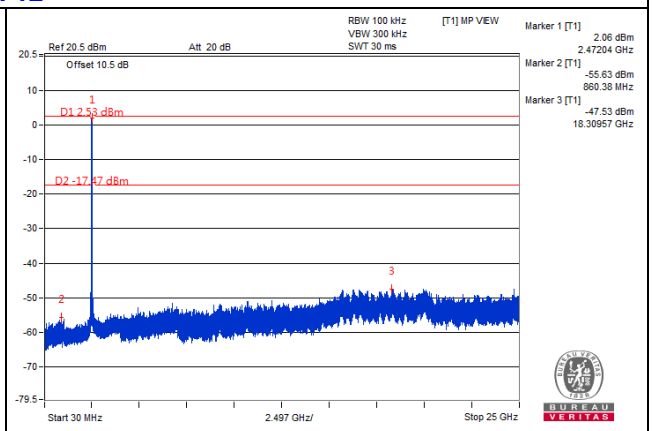
CH 11



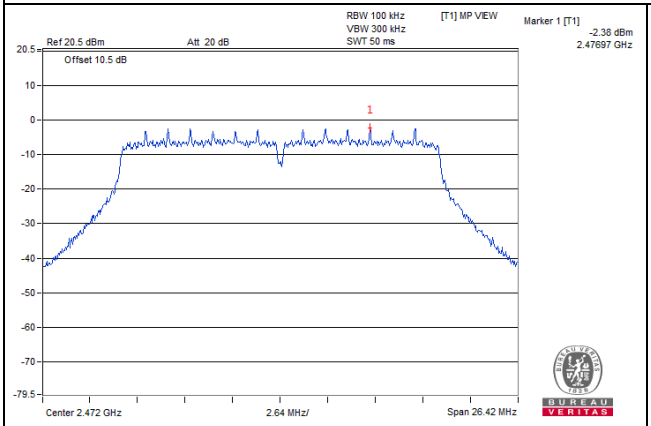


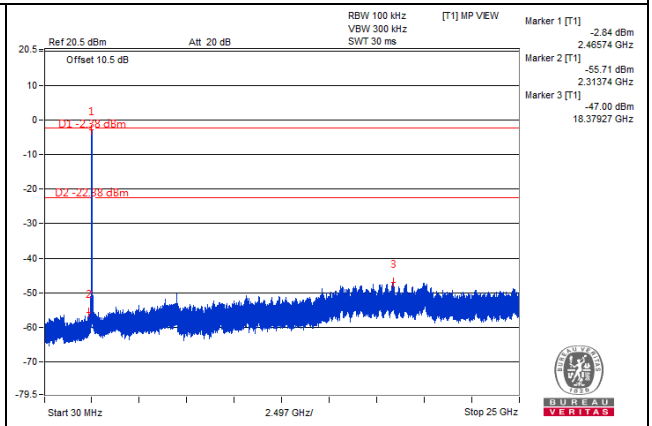
CH 12



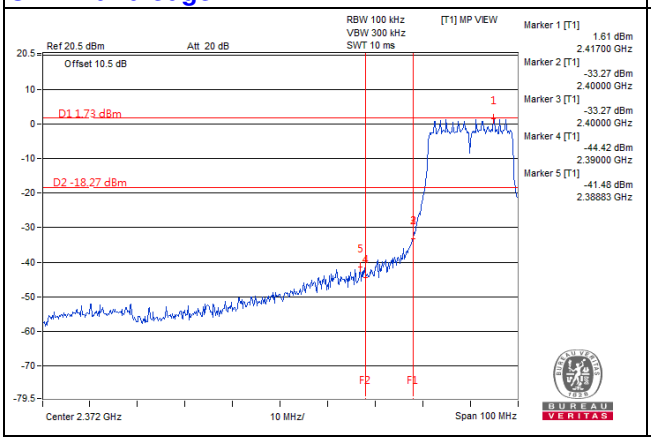


CH 13

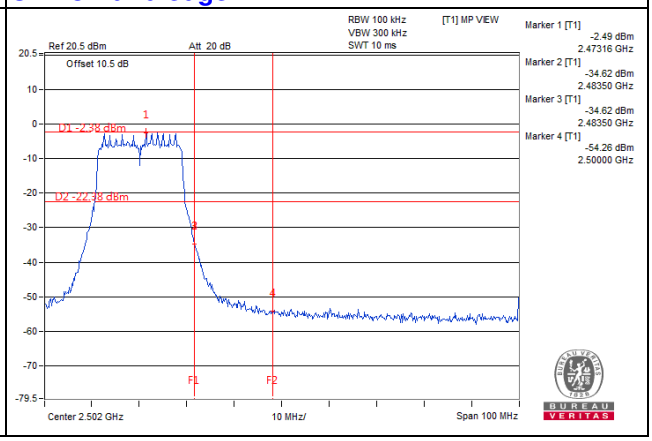




CH 1 Band edge

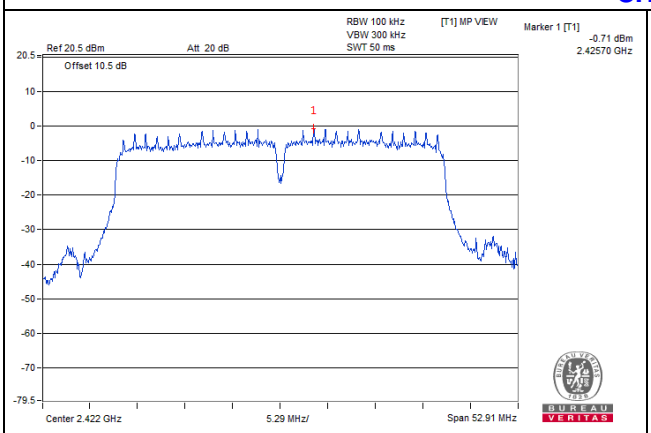


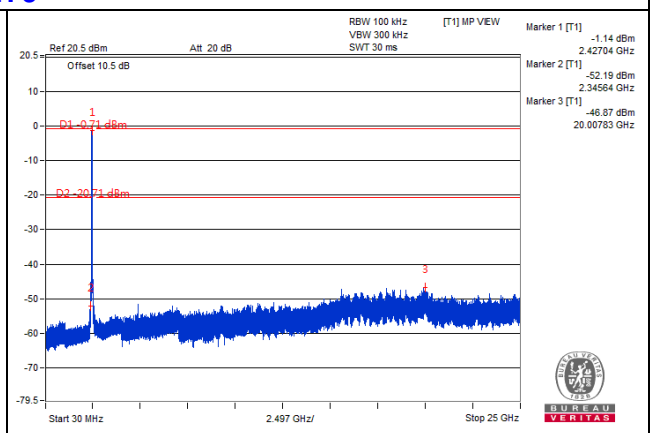
CH 13 Band edge



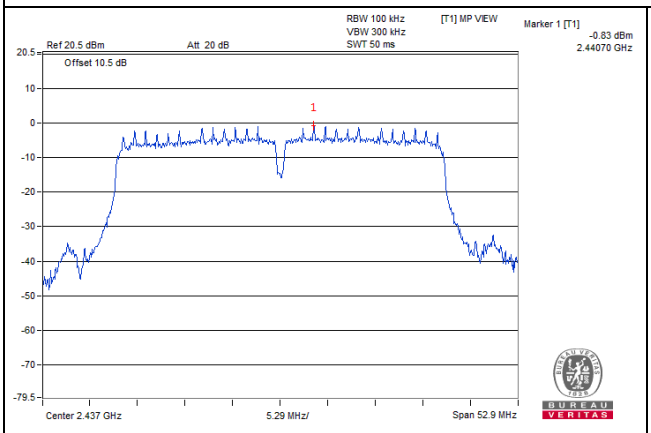
802.11n (40MHz):

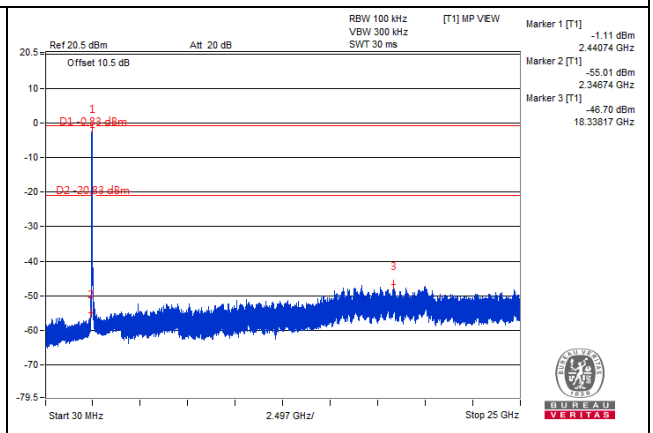
CH 3



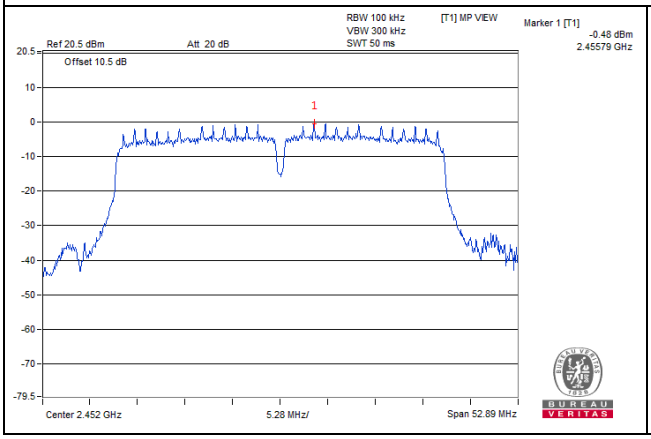


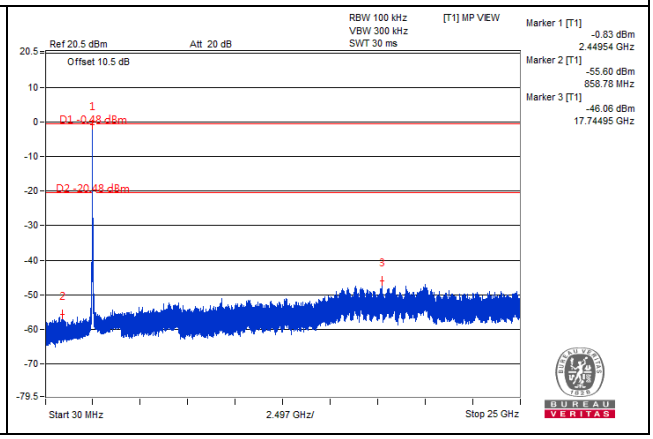
CH 6



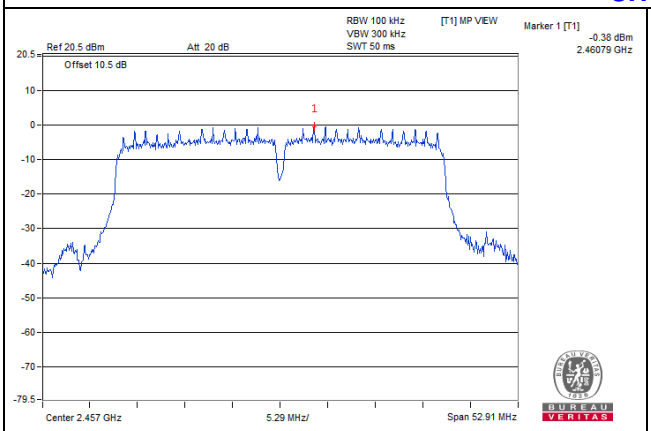


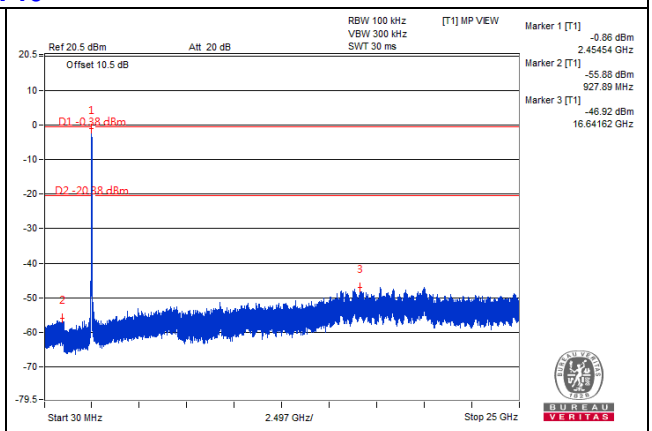
CH 9



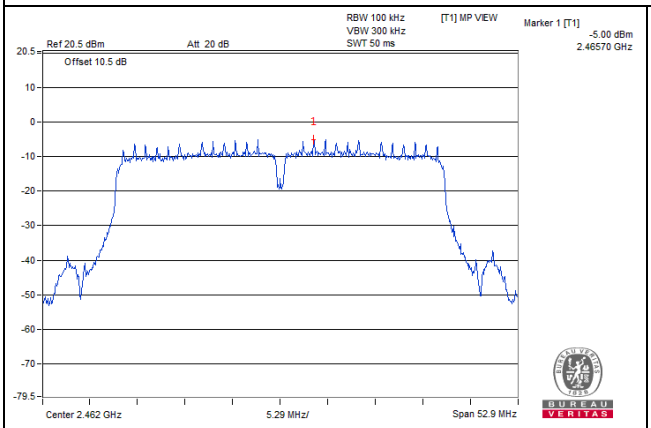


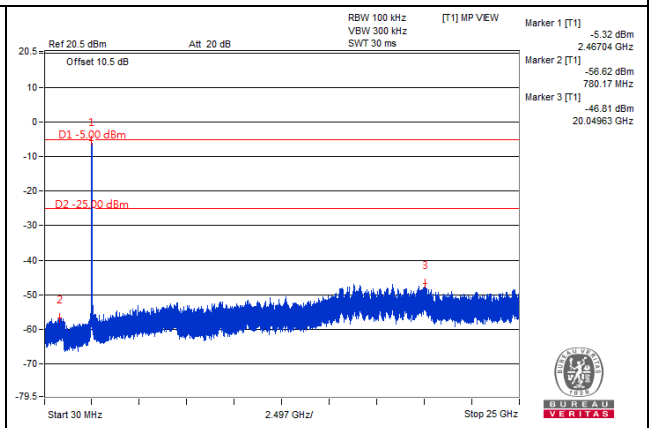
CH 10



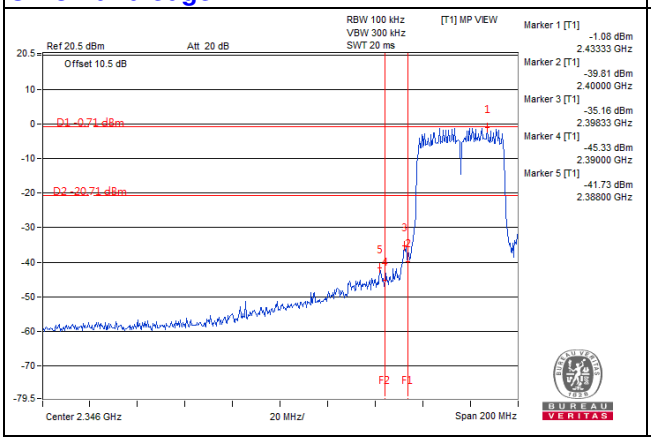


CH 11

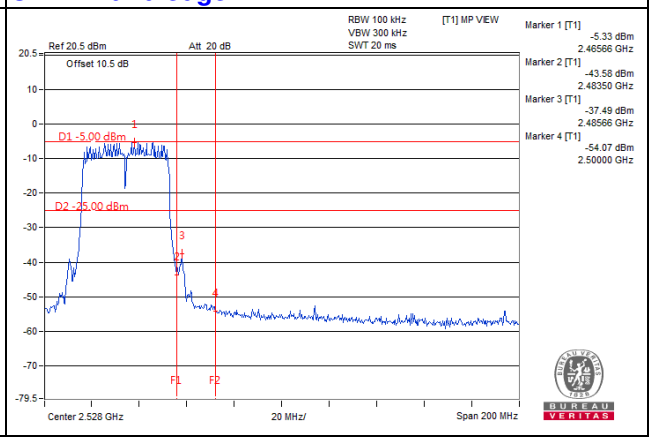




CH 3 Band edge



CH 11 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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