

FCC Test Report

Report No.: RF180430E07

FCC ID: Q87-WLS040

Test Model: WLS040

Received Date: Apr. 30, 2018

Test Date: Sep. 01 to 09, 2018; Dec. 06, 2018

Issued Date: Jan. 15, 2019

Applicant: LINKSYS LLC

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF180430E07	Original release.	Jan. 15, 2019

1 Certificate of Conformity

Product: Wifi Smart Light Switch

Brand: WeMo

Test Model: WLS040

Sample Status: ENGINEERING SAMPLE

Applicant: LINKSYS LLC

Test Date: Sep. 01 to 09, 2018; Dec. 06, 2018

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 : Phoenix Huang , **Date:** Jan. 15, 2019
Phoenix Huang / Specialist

Approved by : May Chen , **Date:** Jan. 15, 2019
May Chen / 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 -21.69dB at 0.95859MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2483.50MHz and 2488.80MHz.
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) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.53 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.10 dB
	6GHz ~ 18GHz	4.85 dB
	18GHz ~ 40GHz	5.24 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wifi Smart Light Switch
Brand	WeMo
Test Model	WLS040
Status of EUT	ENGINEERING SAMPLE
Driver version	WeMo_WW_2.00.11083.DVT-OWRT-LSV2
Power Supply Rating	120Vac, 60Hz, 15A
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 150Mbps
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	454.988mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	MA

Note:

- The EUT must be supplied with an internal power supply, and following below different brand names could be chosen:

No.	Brand Name	Input Power Spec.	Output Power Spec.
1	Frecom	120Vac, 60Hz, 15A	120Vac, 15A, 600W
2	LEI	120Vac, 60Hz, 15A	120Vac, 15A, 600W

Note: For radiated emissions test, the EUT was pre-tested with above internal power supplies, the worst case was found in internal power supply No.: 1. Therefore only the test data of the internal power supply No.: 1 was recorded in this report.

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

Ant. Net Gain (dBi)	Freq. range (GHz)	Ant. Type	Connector Type
0	2.4~2.4835	PCB	NA

- The EUT incorporates a SISO function.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1TX	1RX
802.11g	6 ~ 54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX
802.11n (HT40)	MCS 0~7	1TX	1RX

- 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 (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

7 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	7	2442
4	2427	8	2447
5	2432	9	2452
6	2437		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE $<$ 1G	PLC	APCM	
1	√	√	√	√	Internal power supply No.: 1
2	-	-	√	-	Internal power supply No.: 2

Where **RE \geq 1G**: Radiated Emission above 1GHz & Bandedge Measurement **RE $<$ 1G**: Radiated Emission below 1GHz

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

Note: 1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
 2. "-" means no effect.

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	6	DSSS	DBPSK	1

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	6	DSSS	DBPSK	1

Antenna Port Conducted Measurement:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE \geq 1G	23deg. C, 68%RH	120Vac, 60Hz	Andy Ho
RE $<$ 1G	22deg. C, 67%RH	120Vac, 60Hz	Frank chuang
PLC	23deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

If duty cycle of test signal is $\geq 98\%$, duty factor is not required.

If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

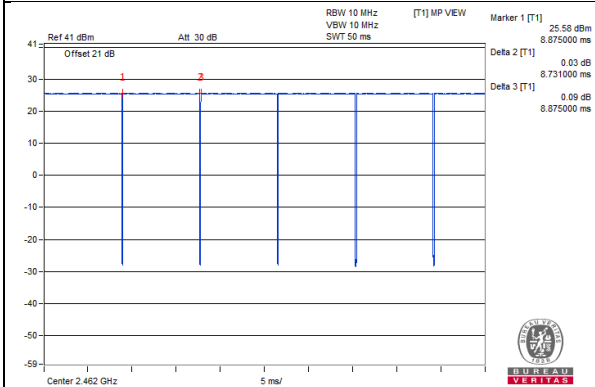
802.11b: Duty cycle = $8.731 \text{ ms} / 8.875 \text{ ms} = 0.984$

802.11g: Duty cycle = $1.439 \text{ ms} / 1.565 \text{ ms} = 0.919$, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.36$

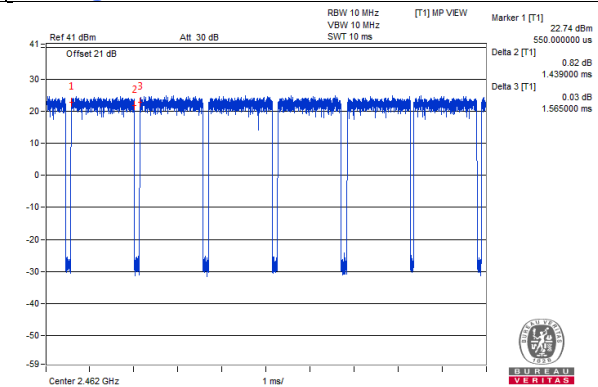
802.11n (HT20): Duty cycle = $1.348 \text{ ms} / 1.538 \text{ ms} = 0.876$, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.57$

802.11n (HT40): Duty cycle = $0.668 \text{ ms} / 0.766 \text{ ms} = 0.872$, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.59$

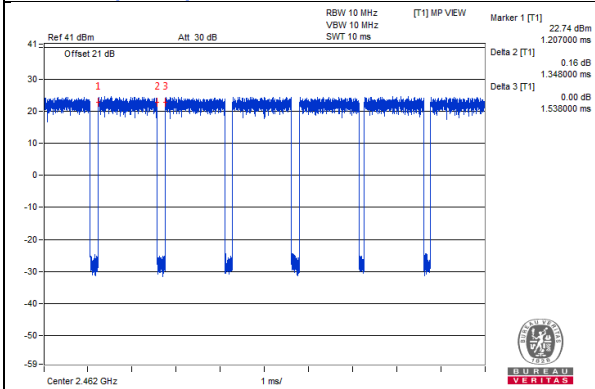
802.11b



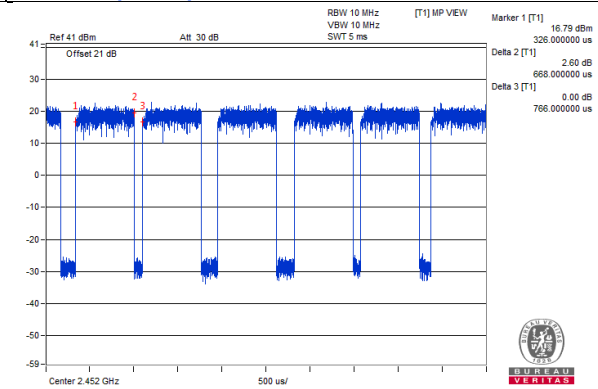
802.11g



802.11n (HT20)



802.11n (HT40)



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.

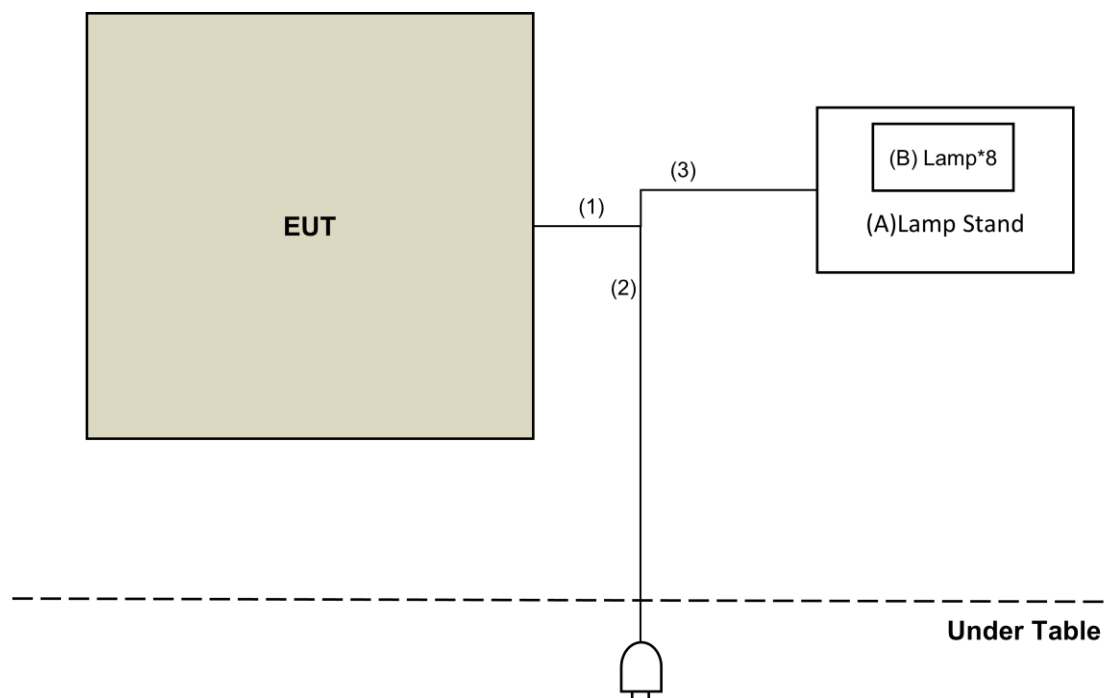
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Lamp Stand	NA	NA	NA	NA	Provided by Lab
B.	Lamp*8	NA	NA	NA	NA	Provided by Lab

Note:

1. 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.	AC Cable	1	0.1	No	0	Supplied by client
2.	AC Cable	1	1.8	No	0	Provided by Lab
3.	AC Cable	1	0.2	No	0	Provided by Lab

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 15.247 Meas Guidance v05

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

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 05, 2018	July 04, 2019
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 12, 2017	Dec. 11, 2018
Pre-Amplifier Mini-Circuits	ZVA-183-S+	AMP-ZVA-03	May 10, 2018	May 09, 2019
RF Cable	EMC104-SM-SM-1200	160923	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-2000	150318	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-5000	150321	Jan. 29, 2018	Jan. 28, 2019
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 14, 2017	Dec. 13, 2018
RF Cable	EMC102-KM-KM-1200	160925	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 20, 2018	June 19, 2019
Power meter Anritsu	ML2495A	1014008	May 09, 2018	May 08, 2019
Power sensor Anritsu	MA2411B	0917122	May 09, 2018	May 08, 2019

Note:

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 966 Chamber No. 4.
3. The CANADA Site Registration No. is 20331-2
4. Tested Date: Sep. 01 to 09, 2018

For radiated emission test (below 1GHz test):

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 12, 2018	July 11, 2019
Pre-Amplifier EMCI	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001	Jan. 15, 2018	Jan. 14, 2019
RF Cable	NA	LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	May 05, 2018	May 04, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-3-1	Mar. 20, 2018	Mar. 19, 2019
RF Cable	8D	966-3-2	Mar. 20, 2018	Mar. 19, 2019
RF Cable	8D	966-3-3	Mar. 20, 2018	Mar. 19, 2019
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 27, 2018	Sep. 26, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA

Note:

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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 3.
4. The CANADA Site Registration No. is 20331-1
5. Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: Dec. 06, 2018

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. Parallel, perpendicular, and ground-parallel orientations 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 detects 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:

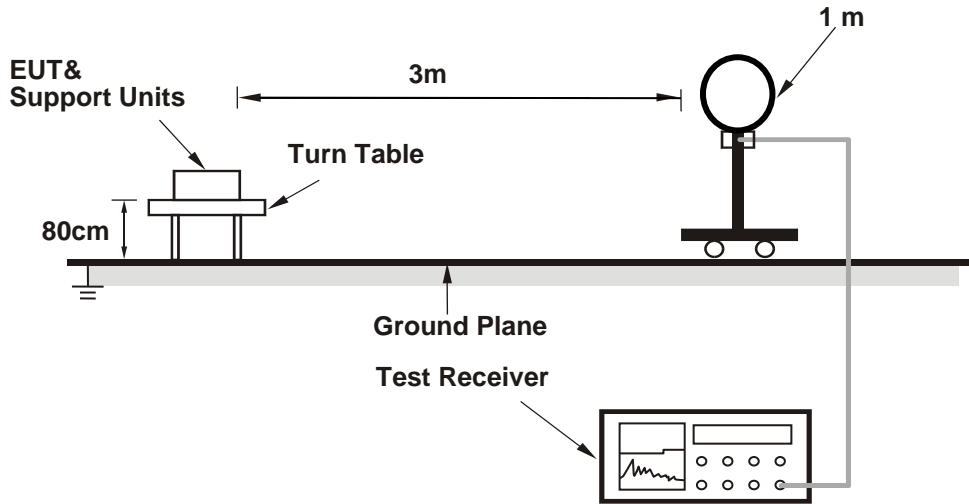
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) 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

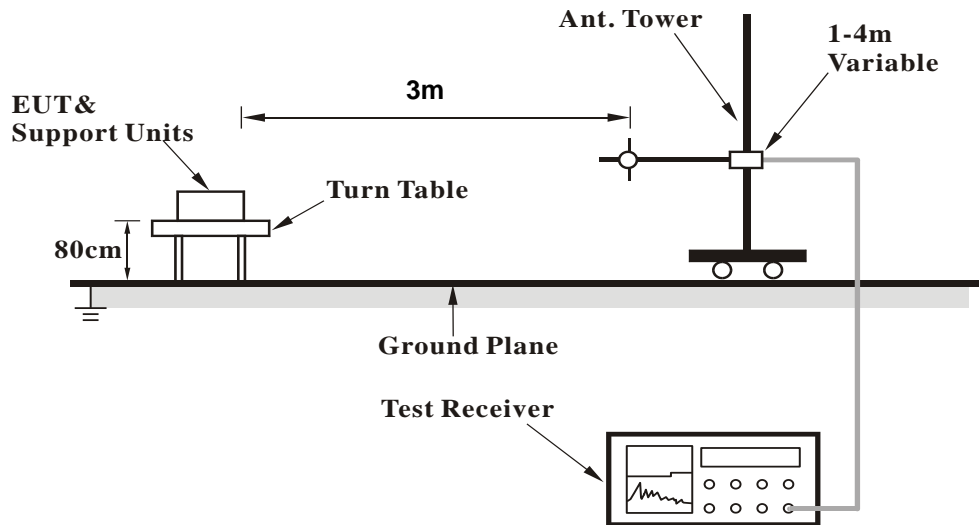
No deviation.

4.1.5 Test Setup

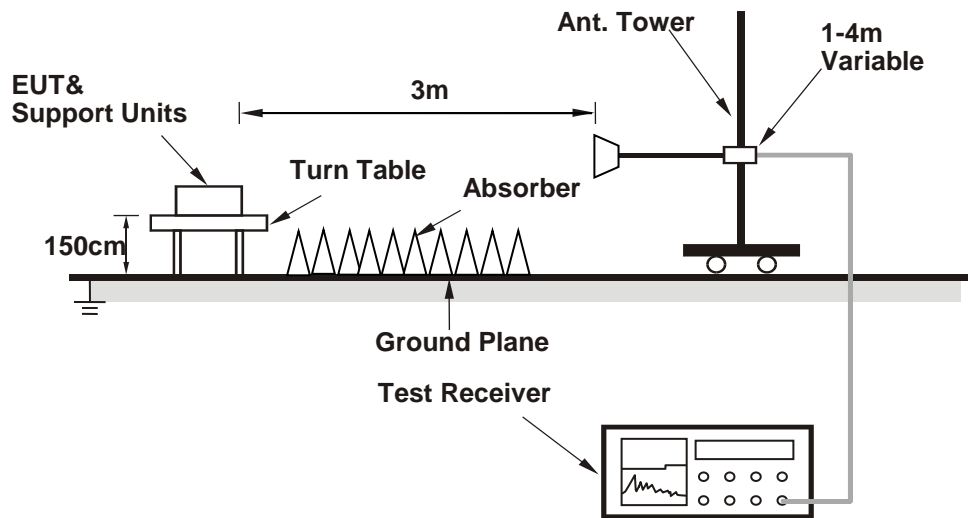
For Radiated emission below 30MHz



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 with the Laptop which is placed on the testing table.
- b. Controlling software (HyperTerminal paste WLS040_2.4G Tx_CMD.txt) has been activated to set the EUT on specific status.

4.1.7 Test Results

Above 1GHz Data:

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2387.30	59.2 PK	74.0	-14.8	1.50 H	240	61.4	-2.2
2	2387.30	53.6 AV	54.0	-0.4	1.50 H	240	55.8	-2.2
3	2390.00	54.2 PK	74.0	-19.8	1.50 H	240	56.4	-2.2
4	2390.00	44.4 AV	54.0	-9.6	1.50 H	240	46.6	-2.2
5	*2412.00	108.1 PK			1.50 H	240	110.5	-2.4
6	*2412.00	105.4 AV			1.50 H	240	107.8	-2.4
7	4824.00	49.6 PK	74.0	-24.4	2.34 H	52	47.8	1.8
8	4824.00	48.8 AV	54.0	-5.2	2.34 H	52	47.0	1.8

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	2387.30	57.6 PK	74.0	-16.4	1.26 V	238	59.8	-2.2
2	2387.30	48.5 AV	54.0	-5.5	1.26 V	238	50.7	-2.2
3	2390.00	52.3 PK	74.0	-21.7	1.26 V	238	54.5	-2.2
4	2390.00	43.1 AV	54.0	-10.9	1.26 V	238	45.3	-2.2
5	*2412.00	107.1 PK			1.26 V	238	109.5	-2.4
6	*2412.00	104.6 AV			1.26 V	238	107.0	-2.4
7	4824.00	53.0 PK	74.0	-21.0	1.02 V	130	51.2	1.8
8	4824.00	51.6 AV	54.0	-2.4	1.02 V	130	49.8	1.8

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.5 PK	74.0	-18.5	2.49 H	240	57.7	-2.2
2	2390.00	43.3 AV	54.0	-10.7	2.49 H	240	45.5	-2.2
3	*2437.00	109.0 PK			2.49 H	240	111.6	-2.6
4	*2437.00	106.2 AV			2.49 H	240	108.8	-2.6
5	2483.50	56.6 PK	74.0	-17.4	2.49 H	240	59.0	-2.4
6	2483.50	47.8 AV	54.0	-6.2	2.49 H	240	50.2	-2.4
7	4874.00	51.8 PK	74.0	-22.2	2.40 H	165	49.8	2.0
8	4874.00	50.9 AV	54.0	-3.1	2.40 H	165	48.9	2.0
9	7311.00	50.4 PK	74.0	-23.6	1.04 H	166	42.0	8.4
10	7311.00	44.1 AV	54.0	-9.9	1.04 H	166	35.7	8.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.5 PK	74.0	-19.5	1.23 V	237	56.7	-2.2
2	2390.00	41.9 AV	54.0	-12.1	1.23 V	237	44.1	-2.2
3	*2437.00	108.1 PK			1.23 V	237	110.7	-2.6
4	*2437.00	105.1 AV			1.23 V	237	107.7	-2.6
5	2483.50	57.2 PK	74.0	-16.8	1.23 V	237	59.6	-2.4
6	2483.50	47.9 AV	54.0	-6.1	1.23 V	237	50.3	-2.4
7	4874.00	53.7 PK	74.0	-20.3	1.01 V	119	51.7	2.0
8	4874.00	52.8 AV	54.0	-1.2	1.01 V	119	50.8	2.0
9	7311.00	50.6 PK	74.0	-23.4	1.09 V	132	42.2	8.4
10	7311.00	44.9 AV	54.0	-9.1	1.09 V	132	36.5	8.4

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)
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	108.9 PK			1.52 H	239	111.5	-2.6
2	*2462.00	105.9 AV			1.52 H	239	108.5	-2.6
3	2483.50	53.5 PK	74.0	-20.5	1.52 H	239	55.9	-2.4
4	2483.50	44.6 AV	54.0	-9.4	1.52 H	239	47.0	-2.4
5	2488.80	58.3 PK	74.0	-15.7	1.52 H	239	60.7	-2.4
6	2488.80	53.9 AV	54.0	-0.1	1.52 H	239	56.3	-2.4
7	4924.00	50.0 PK	74.0	-24.0	2.29 H	56	48.0	2.0
8	4924.00	49.6 AV	54.0	-4.4	2.29 H	56	47.6	2.0
9	7386.00	50.1 PK	74.0	-23.9	1.07 H	164	41.5	8.6
10	7386.00	43.6 AV	54.0	-10.4	1.07 H	164	35.0	8.6

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	107.3 PK			1.90 V	222	109.9	-2.6
2	*2462.00	104.8 AV			1.90 V	222	107.4	-2.6
3	2483.50	52.9 PK	74.0	-21.1	1.90 V	222	55.3	-2.4
4	2483.50	44.4 AV	54.0	-9.6	1.90 V	222	46.8	-2.4
5	2488.80	61.2 PK	74.0	-12.8	1.90 V	222	63.6	-2.4
6	2488.80	53.7 AV	54.0	-0.3	1.90 V	222	56.1	-2.4
7	4924.00	53.6 PK	74.0	-20.4	1.00 V	115	51.6	2.0
8	4924.00	52.1 AV	54.0	-1.9	1.00 V	115	50.1	2.0
9	7386.00	50.4 PK	74.0	-23.6	1.11 V	120	41.8	8.6
10	7386.00	44.7 AV	54.0	-9.3	1.11 V	120	36.1	8.6

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)
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	69.4 PK	74.0	-4.6	2.07 H	240	71.6	-2.2
2	2390.00	53.6 AV	54.0	-0.4	2.07 H	240	55.8	-2.2
3	*2412.00	108.6 PK			2.07 H	240	111.0	-2.4
4	*2412.00	99.3 AV			2.07 H	240	101.7	-2.4
5	4824.00	56.1 PK	74.0	-17.9	2.41 H	167	54.3	1.8
6	4824.00	46.2 AV	54.0	-7.8	2.41 H	167	44.4	1.8

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	69.1 PK	74.0	-4.9	1.89 V	227	71.3	-2.2
2	2390.00	53.2 AV	54.0	-0.8	1.89 V	227	55.4	-2.2
3	*2412.00	108.3 PK			1.89 V	227	110.7	-2.4
4	*2412.00	98.8 AV			1.89 V	227	101.2	-2.4
5	4824.00	59.4 PK	74.0	-14.6	1.04 V	147	57.6	1.8
6	4824.00	48.3 AV	54.0	-5.7	1.04 V	147	46.5	1.8

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.1 PK	74.0	-18.9	2.53 H	240	57.3	-2.2
2	2390.00	43.6 AV	54.0	-10.4	2.53 H	240	45.8	-2.2
3	*2437.00	108.8 PK			2.53 H	240	111.4	-2.6
4	*2437.00	99.9 AV			2.53 H	240	102.5	-2.6
5	2483.50	54.8 PK	74.0	-19.2	2.53 H	240	57.2	-2.4
6	2483.50	42.8 AV	54.0	-11.2	2.53 H	240	45.2	-2.4
7	4874.00	56.6 PK	74.0	-17.4	2.41 H	151	54.6	2.0
8	4874.00	46.5 AV	54.0	-7.5	2.41 H	151	44.5	2.0
9	7311.00	51.1 PK	74.0	-22.9	1.00 H	158	42.7	8.4
10	7311.00	40.3 AV	54.0	-13.7	1.00 H	158	31.9	8.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.6 PK	74.0	-19.4	1.88 V	224	56.8	-2.2
2	2390.00	43.4 AV	54.0	-10.6	1.88 V	224	45.6	-2.2
3	*2437.00	107.9 PK			1.88 V	224	110.5	-2.6
4	*2437.00	99.3 AV			1.88 V	224	101.9	-2.6
5	2483.50	54.2 PK	74.0	-19.8	1.88 V	224	56.6	-2.4
6	2483.50	42.1 AV	54.0	-11.9	1.88 V	224	44.5	-2.4
7	4874.00	60.2 PK	74.0	-13.8	1.03 V	133	58.2	2.0
8	4874.00	49.1 AV	54.0	-4.9	1.03 V	133	47.1	2.0
9	7311.00	51.7 PK	74.0	-22.3	1.04 V	130	43.3	8.4
10	7311.00	40.6 AV	54.0	-13.4	1.04 V	130	32.2	8.4

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)
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	107.8 PK			1.95 H	239	110.4	-2.6
2	*2462.00	98.6 AV			1.95 H	239	101.2	-2.6
3	2483.50	69.6 PK	74.0	-4.4	1.95 H	239	72.0	-2.4
4	2483.50	53.9 AV	54.0	-0.1	1.95 H	239	56.3	-2.4
5	4924.00	56.4 PK	74.0	-17.6	2.39 H	148	54.4	2.0
6	4924.00	46.5 AV	54.0	-7.5	2.39 H	148	44.5	2.0
7	7386.00	51.6 PK	74.0	-22.4	1.06 H	143	43.0	8.6
8	7386.00	40.8 AV	54.0	-13.2	1.06 H	143	32.2	8.6

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	107.3 PK			1.94 V	224	109.9	-2.6
2	*2462.00	98.1 AV			1.94 V	224	100.7	-2.6
3	2483.50	67.2 PK	74.0	-6.8	1.94 V	224	69.6	-2.4
4	2483.50	53.7 AV	54.0	-0.3	1.94 V	224	56.1	-2.4
5	4924.00	60.6 PK	74.0	-13.4	1.03 V	133	58.6	2.0
6	4924.00	49.4 AV	54.0	-4.6	1.03 V	133	47.4	2.0
7	7386.00	51.5 PK	74.0	-22.5	1.07 V	144	42.9	8.6
8	7386.00	40.2 AV	54.0	-13.8	1.07 V	144	31.6	8.6

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)
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	69.3 PK	74.0	-4.7	2.12 H	226	71.5	-2.2
2	2390.00	53.3 AV	54.0	-0.7	2.12 H	226	55.5	-2.2
3	*2412.00	107.6 PK			2.11 H	235	110.0	-2.4
4	*2412.00	97.8 AV			2.11 H	235	100.2	-2.4
5	4824.00	55.8 PK	74.0	-18.2	2.47 H	159	54.0	1.8
6	4824.00	45.8 AV	54.0	-8.2	2.47 H	159	44.0	1.8

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	68.4 PK	74.0	-5.6	1.89 V	245	70.6	-2.2
2	2390.00	53.1 AV	54.0	-0.9	1.89 V	245	55.3	-2.2
3	*2412.00	106.9 PK			1.89 V	245	109.3	-2.4
4	*2412.00	97.3 AV			1.89 V	245	99.7	-2.4
5	4824.00	58.6 PK	74.0	-15.4	1.04 V	137	56.8	1.8
6	4824.00	47.8 AV	54.0	-6.2	1.04 V	137	46.0	1.8

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.4 PK	74.0	-18.6	2.55 H	230	57.6	-2.2
2	2390.00	44.1 AV	54.0	-9.9	2.55 H	230	46.3	-2.2
3	*2437.00	108.9 PK			2.57 H	239	111.5	-2.6
4	*2437.00	98.6 AV			2.57 H	239	101.2	-2.6
5	2483.50	54.9 PK	74.0	-19.1	2.59 H	232	57.3	-2.4
6	2483.50	43.1 AV	54.0	-10.9	2.59 H	232	45.5	-2.4
7	4874.00	56.4 PK	74.0	-17.6	2.39 H	161	54.4	2.0
8	4874.00	46.1 AV	54.0	-7.9	2.39 H	161	44.1	2.0
9	7311.00	51.5 PK	74.0	-22.5	1.08 H	173	43.1	8.4
10	7311.00	40.5 AV	54.0	-13.5	1.08 H	173	32.1	8.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.6 PK	74.0	-19.4	1.94 V	232	56.8	-2.2
2	2390.00	43.8 AV	54.0	-10.2	1.94 V	232	46.0	-2.2
3	*2437.00	108.1 PK			1.94 V	232	110.7	-2.6
4	*2437.00	97.9 AV			1.94 V	232	100.5	-2.6
5	2483.50	53.6 PK	74.0	-20.4	1.94 V	232	56.0	-2.4
6	2483.50	42.9 AV	54.0	-11.1	1.94 V	232	45.3	-2.4
7	4874.00	59.4 PK	74.0	-14.6	1.08 V	140	57.4	2.0
8	4874.00	48.9 AV	54.0	-5.1	1.08 V	140	46.9	2.0
9	7311.00	51.7 PK	74.0	-22.3	1.09 V	129	43.3	8.4
10	7311.00	40.8 AV	54.0	-13.2	1.09 V	129	32.4	8.4

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)
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	108.8 PK			1.92 H	239	111.4	-2.6
2	*2462.00	98.3 AV			1.92 H	239	100.9	-2.6
3	2483.50	69.5 PK	74.0	-4.5	1.92 H	226	71.9	-2.4
4	2483.50	53.5 AV	54.0	-0.5	1.92 H	226	55.9	-2.4
5	4924.00	56.6 PK	74.0	-17.4	2.36 H	154	54.6	2.0
6	4924.00	46.6 AV	54.0	-7.4	2.36 H	154	44.6	2.0
7	7386.00	52.1 PK	74.0	-21.9	1.07 H	180	43.5	8.6
8	7386.00	41.5 AV	54.0	-12.5	1.07 H	180	32.9	8.6

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	107.9 PK			1.95 V	231	110.5	-2.6
2	*2462.00	97.6 AV			1.95 V	231	100.2	-2.6
3	2483.50	68.3 PK	74.0	-5.7	1.95 V	231	70.7	-2.4
4	2483.50	53.1 AV	54.0	-0.9	1.95 V	231	55.5	-2.4
5	4924.00	59.6 PK	74.0	-14.4	1.12 V	134	57.6	2.0
6	4924.00	49.0 AV	54.0	-5.0	1.12 V	134	47.0	2.0
7	7386.00	51.9 PK	74.0	-22.1	1.14 V	119	43.3	8.6
8	7386.00	40.9 AV	54.0	-13.1	1.14 V	119	32.3	8.6

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)
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	66.5 PK	74.0	-7.5	1.19 H	238	68.7	-2.2
2	2390.00	53.7 AV	54.0	-0.3	1.19 H	238	55.9	-2.2
3	*2422.00	102.3 PK			1.19 H	238	104.8	-2.5
4	*2422.00	93.6 AV			1.19 H	238	96.1	-2.5
5	4844.00	50.8 PK	74.0	-23.2	2.45 H	145	49.0	1.8
6	4844.00	40.2 AV	54.0	-13.8	2.45 H	145	38.4	1.8
7	7266.00	46.3 PK	74.0	-27.7	1.14 H	190	38.1	8.2
8	7266.00	35.1 AV	54.0	-18.9	1.14 H	190	26.9	8.2

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	65.7 PK	74.0	-8.3	1.94 V	227	67.9	-2.2
2	2390.00	52.6 AV	54.0	-1.4	1.94 V	227	54.8	-2.2
3	*2422.00	101.9 PK			1.94 V	227	104.4	-2.5
4	*2422.00	92.7 AV			1.94 V	227	95.2	-2.5
5	4844.00	51.9 PK	74.0	-22.1	1.11 V	140	50.1	1.8
6	4844.00	44.5 AV	54.0	-9.5	1.11 V	140	42.7	1.8
7	7266.00	45.2 PK	74.0	-28.8	1.15 V	140	37.0	8.2
8	7266.00	37.6 AV	54.0	-16.4	1.15 V	140	29.4	8.2

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.0 PK	74.0	-19.0	1.50 H	238	57.2	-2.2
2	2390.00	44.1 AV	54.0	-9.9	1.50 H	238	46.3	-2.2
3	*2437.00	104.7 PK			1.50 H	238	107.3	-2.6
4	*2437.00	96.2 AV			1.50 H	238	98.8	-2.6
5	2483.50	54.6 PK	74.0	-19.4	1.50 H	238	57.0	-2.4
6	2483.50	43.2 AV	54.0	-10.8	1.50 H	238	45.6	-2.4
7	4874.00	52.6 PK	74.0	-21.4	2.42 H	156	50.6	2.0
8	4874.00	42.3 AV	54.0	-11.7	2.42 H	156	40.3	2.0
9	7311.00	46.8 PK	74.0	-27.2	1.09 H	186	38.4	8.4
10	7311.00	35.9 AV	54.0	-18.1	1.09 H	186	27.5	8.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.1 PK	74.0	-19.9	1.89 V	230	56.3	-2.2
2	2390.00	43.4 AV	54.0	-10.6	1.89 V	230	45.6	-2.2
3	*2437.00	104.3 PK			1.89 V	230	106.9	-2.6
4	*2437.00	95.8 AV			1.89 V	230	98.4	-2.6
5	2483.50	52.8 PK	74.0	-21.2	1.89 V	230	55.2	-2.4
6	2483.50	42.1 AV	54.0	-11.9	1.89 V	230	44.5	-2.4
7	4874.00	54.4 PK	74.0	-19.6	1.10 V	125	52.4	2.0
8	4874.00	47.0 AV	54.0	-7.0	1.10 V	125	45.0	2.0
9	7311.00	47.3 PK	74.0	-26.7	1.12 V	138	38.9	8.4
10	7311.00	39.6 AV	54.0	-14.4	1.12 V	138	31.2	8.4

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.5 PK			1.25 H	239	105.1	-2.6
2	*2452.00	94.2 AV			1.25 H	239	96.8	-2.6
3	2483.50	69.5 PK	74.0	-4.5	1.25 H	239	71.9	-2.4
4	2483.50	53.8 AV	54.0	-0.2	1.25 H	239	56.2	-2.4
5	4904.00	50.6 PK	74.0	-23.4	2.43 H	158	48.6	2.0
6	4904.00	40.5 AV	54.0	-13.5	2.43 H	158	38.5	2.0
7	7356.00	46.1 PK	74.0	-27.9	1.04 H	185	37.5	8.6
8	7356.00	35.6 AV	54.0	-18.4	1.04 H	185	27.0	8.6

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	102.1 PK			1.85 V	223	104.7	-2.6
2	*2452.00	93.9 AV			1.85 V	223	96.5	-2.6
3	2483.50	68.7 PK	74.0	-5.3	1.85 V	223	71.1	-2.4
4	2483.50	52.6 AV	54.0	-1.4	1.85 V	223	55.0	-2.4
5	4904.00	53.0 PK	74.0	-21.0	1.14 V	129	51.0	2.0
6	4904.00	45.3 AV	54.0	-8.7	1.14 V	129	43.3	2.0
7	7356.00	47.1 PK	74.0	-26.9	1.17 V	137	38.5	8.6
8	7356.00	38.1 AV	54.0	-15.9	1.17 V	137	29.5	8.6

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:

802.11b

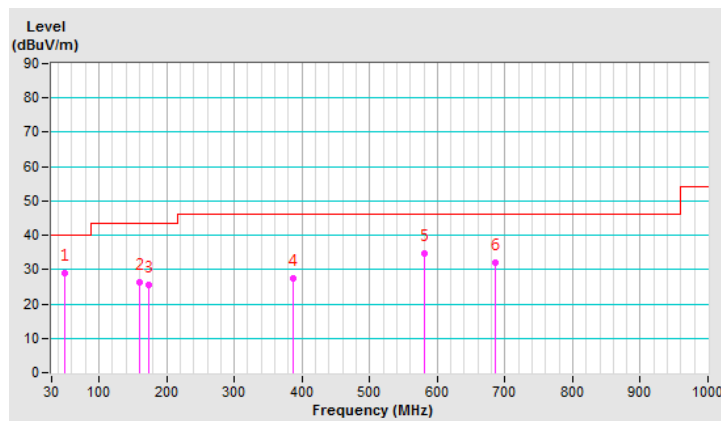
CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	49.50	29.1 QP	40.0	-10.9	1.00 H	216	38.0	-8.9
2	159.52	26.2 QP	43.5	-17.3	1.50 H	251	34.5	-8.3
3	172.64	25.4 QP	43.5	-18.1	1.00 H	360	34.6	-9.2
4	386.69	27.5 QP	46.0	-18.5	1.00 H	166	32.4	-4.9
5	579.99	34.8 QP	46.0	-11.2	1.50 H	146	35.3	-0.5
6	685.26	32.1 QP	46.0	-13.9	1.50 H	360	30.6	1.5

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. Margin value = Emission Level – Limit value
4. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



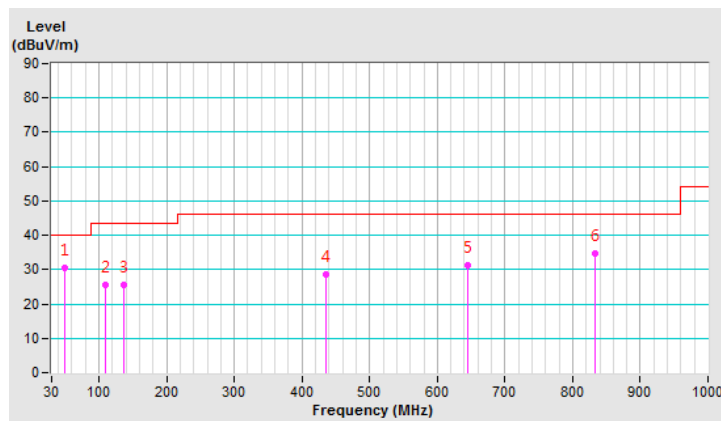
CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.81	30.6 QP	40.0	-9.4	1.00 V	34	39.5	-8.9
2	108.59	25.4 QP	43.5	-18.1	1.50 V	113	36.6	-11.2
3	137.43	25.5 QP	43.5	-18.0	1.50 V	0	34.2	-8.7
4	434.49	28.5 QP	46.0	-17.5	1.50 V	298	32.2	-3.7
5	644.35	31.4 QP	46.0	-14.6	1.00 V	360	30.4	1.0
6	833.28	34.7 QP	46.0	-11.3	1.50 V	211	30.7	4.0

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. Margin value = Emission Level – Limit value
4. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Nov. 01, 2017	Oct. 31, 2018
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Nov. 15, 2017	Nov. 14, 2018
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 04, 2018	June 03, 2019
50 ohms Terminator	N/A	EMC-02	Sep. 22, 2017	Sep. 21, 2018
RF Cable	5D-FB	COCCAB-001	Sep. 29, 2017	Sep. 28, 2018
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 16, 2018	Mar. 15, 2019
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
- 3 Tested Date: Sep. 01, 2018

4.2.3 Test Procedures

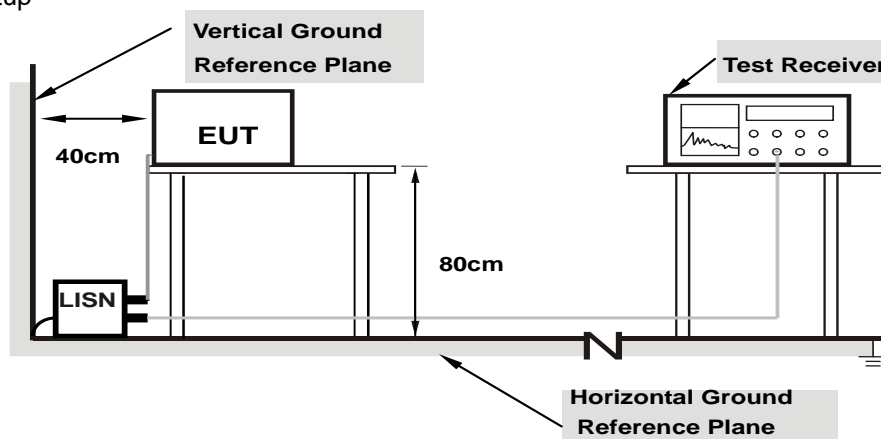
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

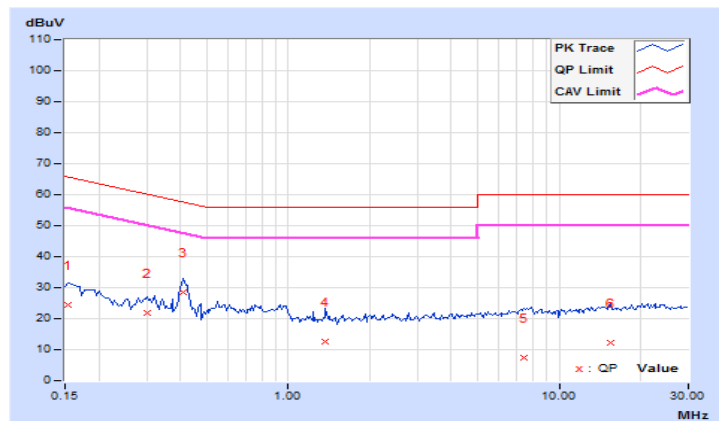
4.2.7 Test Results (Mode 1)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
	1	0.15391	10.04	14.47	3.28	24.51	13.32	65.79	55.79	-41.28
2	0.30234	10.09	11.60	2.44	21.69	12.53	60.18	50.18	-38.49	-37.65
3	0.41172	10.11	18.39	11.51	28.50	21.62	57.61	47.61	-29.11	-25.99
4	1.37500	10.16	2.37	-3.97	12.53	6.19	56.00	46.00	-43.47	-39.81
5	7.41406	10.42	-2.84	-8.20	7.58	2.22	60.00	50.00	-52.42	-47.78
6	15.46094	10.85	1.48	-7.94	12.33	2.91	60.00	50.00	-47.67	-47.09

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

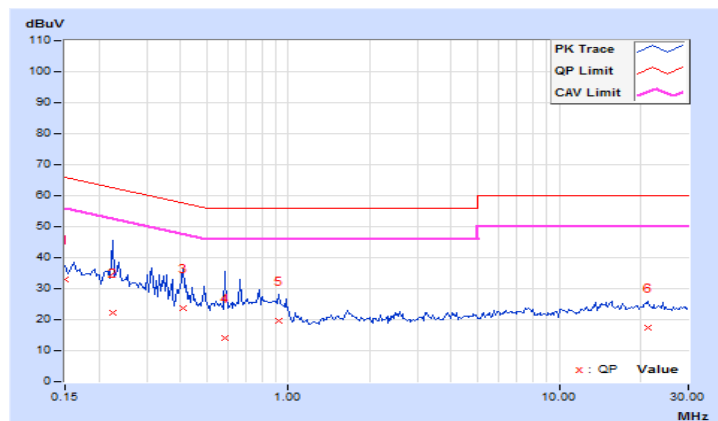


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.15000	9.94	22.95	-0.22	32.89	9.72	66.00	56.00	-33.11	-46.28
2	0.22422	9.96	12.13	-4.74	22.09	5.22	62.66	52.66	-40.57	-47.44
3	0.40781	10.00	13.72	7.30	23.72	17.30	57.69	47.69	-33.97	-30.39
4	0.58359	10.01	4.05	-3.01	14.06	7.00	56.00	46.00	-41.94	-39.00
5	0.91953	10.03	9.68	1.23	19.71	11.26	56.00	46.00	-36.29	-34.74
6	21.41797	10.91	6.43	0.33	17.34	11.24	60.00	50.00	-42.66	-38.76

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



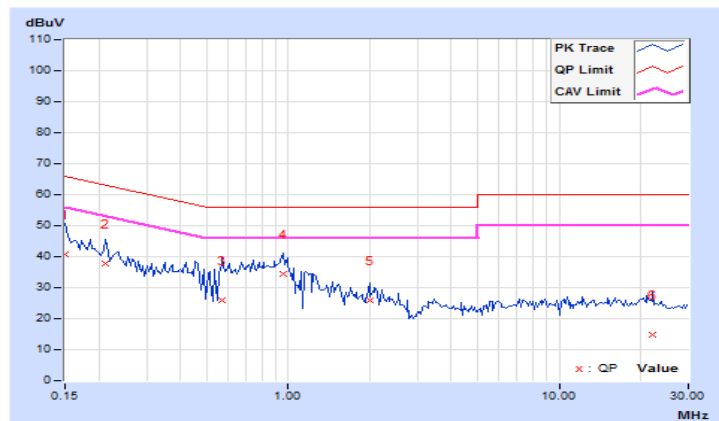
4.2.8 Test Results (Mode 2)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
	1	0.15000	10.03	30.87	14.63	40.90	24.66	66.00	56.00	-25.10
2	0.21250	10.06	27.55	13.72	37.61	23.78	63.11	53.11	-25.50	-29.33
3	0.57188	10.12	15.77	1.62	25.89	11.74	56.00	46.00	-30.11	-34.26
4	0.95859	10.15	24.16	12.32	34.31	22.47	56.00	46.00	-21.69	-23.53
5	1.99609	10.19	15.79	3.61	25.98	13.80	56.00	46.00	-30.02	-32.20
6	22.24609	11.12	3.82	-2.82	14.94	8.30	60.00	50.00	-45.06	-41.70

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

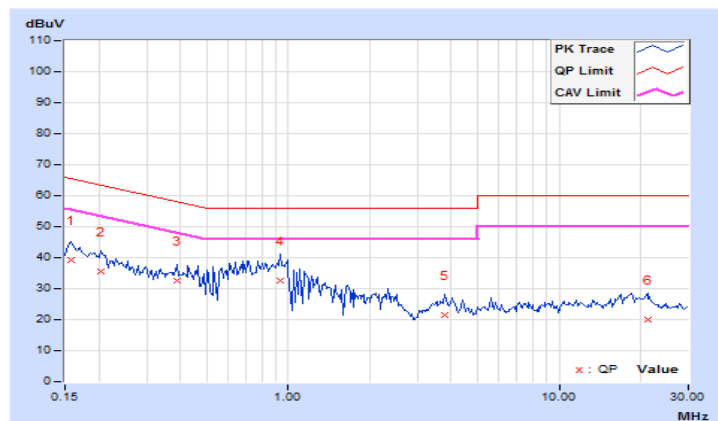


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.95	29.16	15.54	39.11	25.49	65.58	55.58	-26.47	-30.09
2	0.20469	9.96	25.52	12.41	35.48	22.37	63.42	53.42	-27.94	-31.05
3	0.38828	10.00	22.63	11.25	32.63	21.25	58.10	48.10	-25.47	-26.85
4	0.93906	10.03	22.62	9.09	32.65	19.12	56.00	46.00	-23.35	-26.88
5	3.79688	10.13	11.37	-0.07	21.50	10.06	56.00	46.00	-34.50	-35.94
6	21.24609	10.90	9.21	2.06	20.11	12.96	60.00	50.00	-39.89	-37.04

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

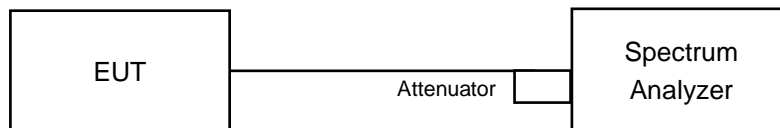


4.3 6dB Bandwidth Measurement

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) $\geq 3 \times$ 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 from Test 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	10.13	0.5	Pass
6	2437	10.18	0.5	Pass
11	2462	10.13	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.18	0.5	Pass
6	2437	15.18	0.5	Pass
11	2462	15.18	0.5	Pass

802.11n (HT20)

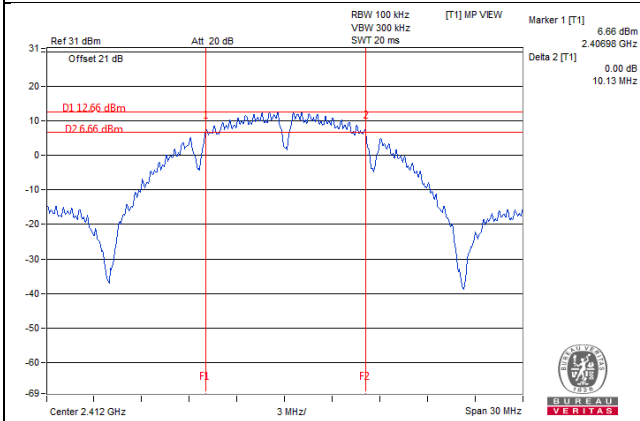
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.14	0.5	Pass
6	2437	15.18	0.5	Pass
11	2462	15.16	0.5	Pass

802.11n (HT40)

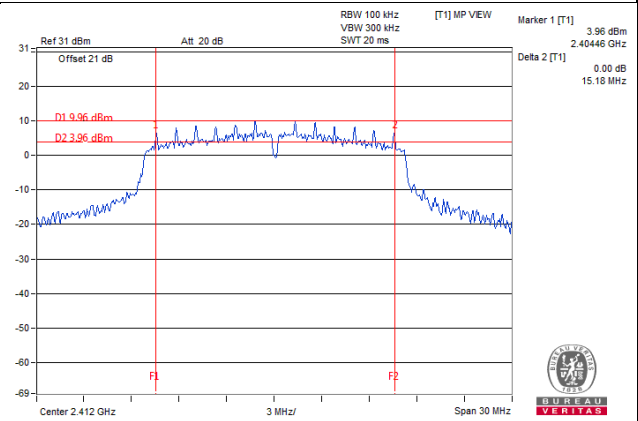
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	35.22	0.5	Pass
6	2437	35.20	0.5	Pass
9	2452	35.20	0.5	Pass

Spectrum Plot of Worst Value

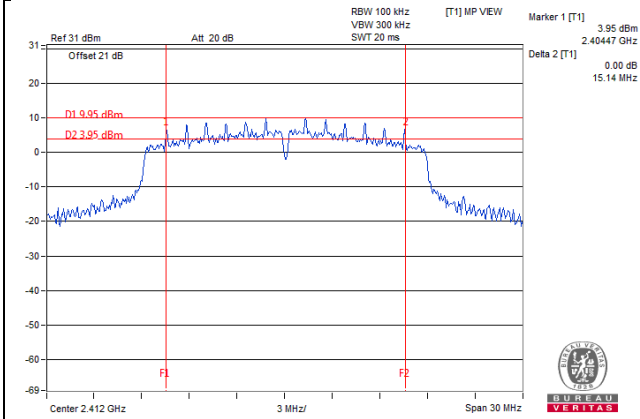
802.11b / CH1



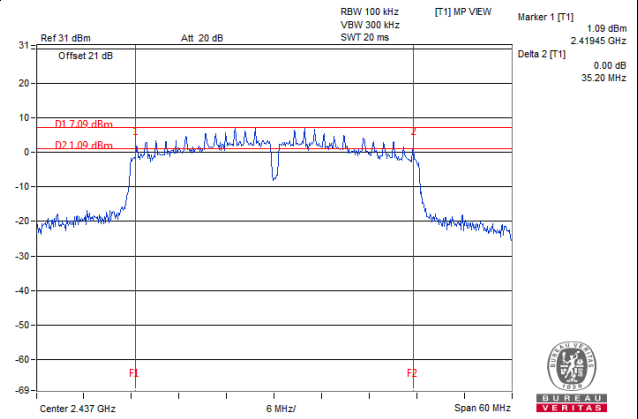
802.11g / CH1



802.11n (HT20) / CH1



802.11n (HT40) / CH6

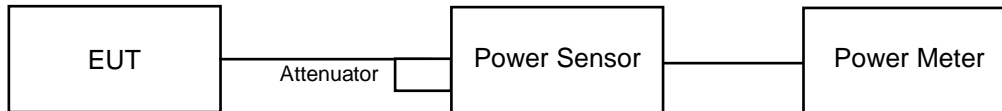


4.4 Conducted Output Power Measurement

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

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

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	291.743	24.65	30	Pass
6	2437	454.988	26.58	30	Pass
11	2462	365.595	25.63	30	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	367.282	25.65	30	Pass
6	2437	396.278	25.98	30	Pass
11	2462	387.258	25.88	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	358.096	25.54	30	Pass
6	2437	390.841	25.92	30	Pass
11	2462	364.754	25.62	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
3	2422	246.604	23.92	30	Pass
6	2437	364.754	25.62	30	Pass
9	2452	287.078	24.58	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	207.014	23.16
6	2437	355.631	25.51
11	2462	269.774	24.31

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	107.399	20.31
6	2437	121.339	20.84
11	2462	119.95	20.79

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	104.954	20.21
6	2437	114.551	20.59
11	2462	113.24	20.54

802.11n (HT40)

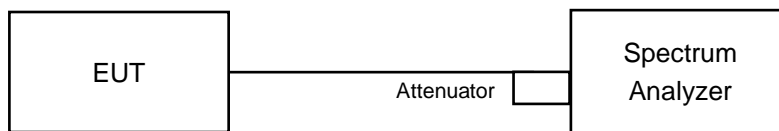
Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
3	2422	49.659	16.96
6	2437	96.605	19.85
9	2452	66.681	18.24

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm in any 3 kHz.

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: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d. Set the VBW $\geq 3 \times \text{RBW}$.
- 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	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-4.77	8	Pass
6	2437	-1.88	8	Pass
11	2462	-2.75	8	Pass

802.11g

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-6.83	8	Pass
6	2437	-7.31	8	Pass
11	2462	-6.93	8	Pass

802.11n (HT20)

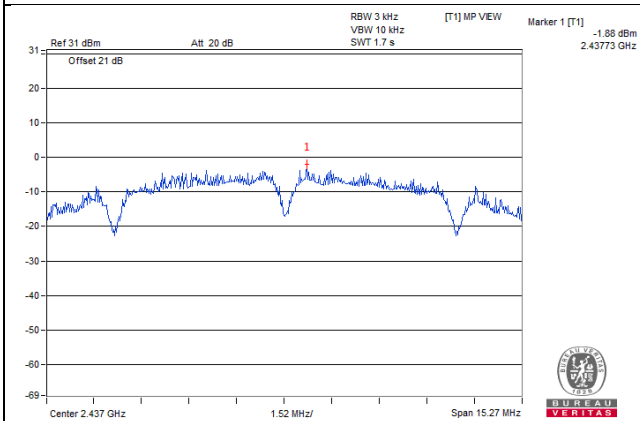
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-7.16	8	Pass
6	2437	-6.67	8	Pass
11	2462	-6.63	8	Pass

802.11n (HT40)

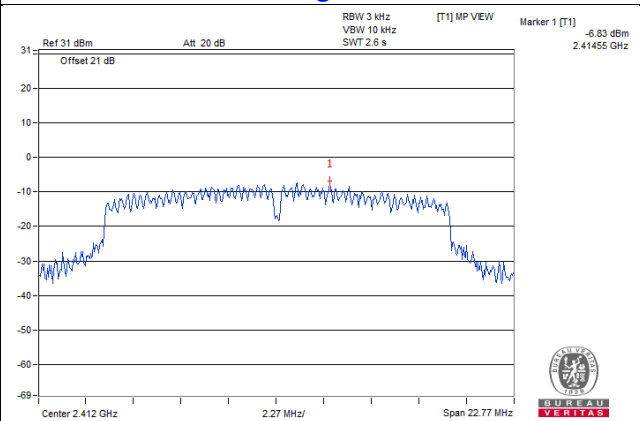
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
3	2422	-14.00	8	Pass
6	2437	-10.61	8	Pass
9	2452	-10.15	8	Pass

Spectrum Plot of Worst Value

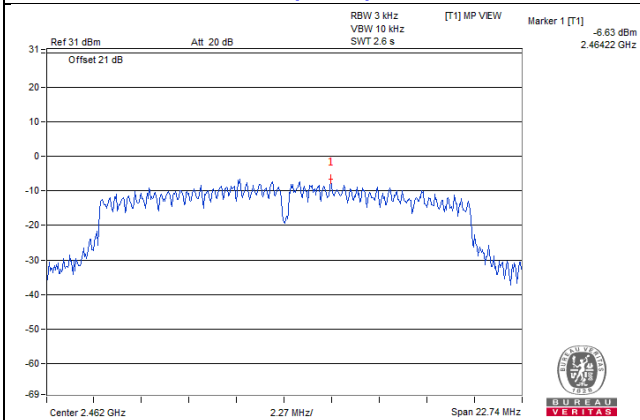
802.11b / CH6



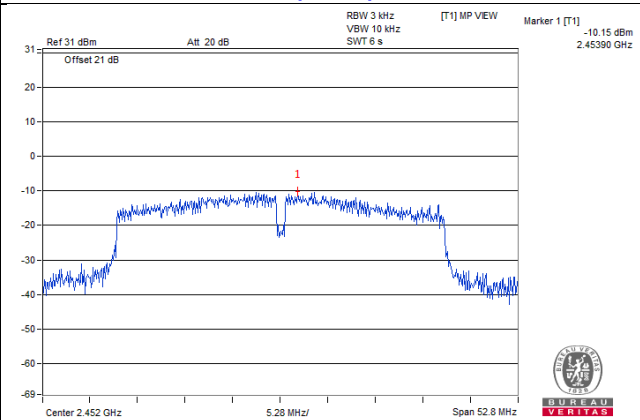
802.11g / CH1



802.11n (HT20) / CH11



802.11n (HT40) / CH9

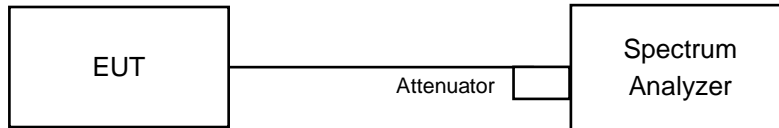


4.6 Conducted Out of Band Emission Measurement

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 \geq 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW \geq 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

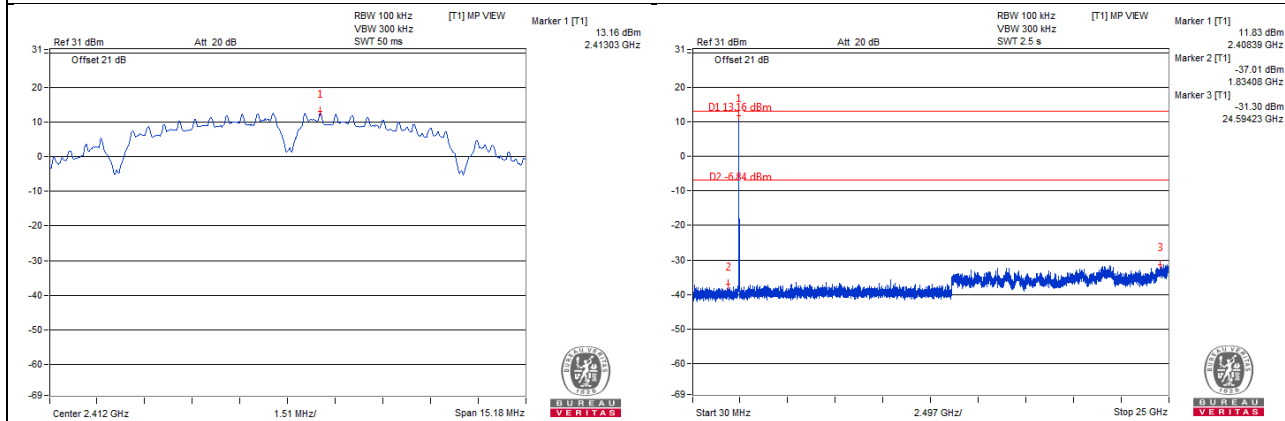
Same as Item 4.3.6

4.6.7 Test Results

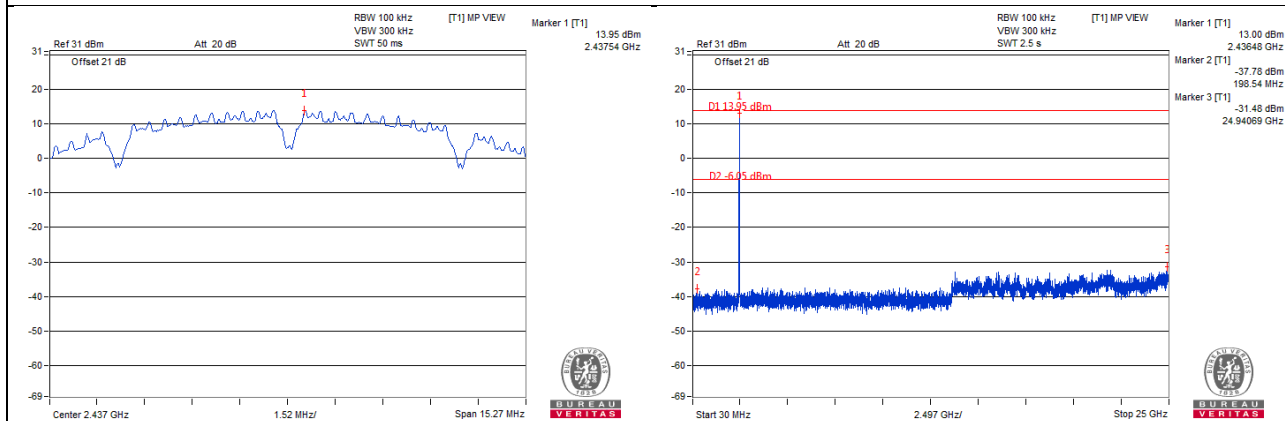
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b

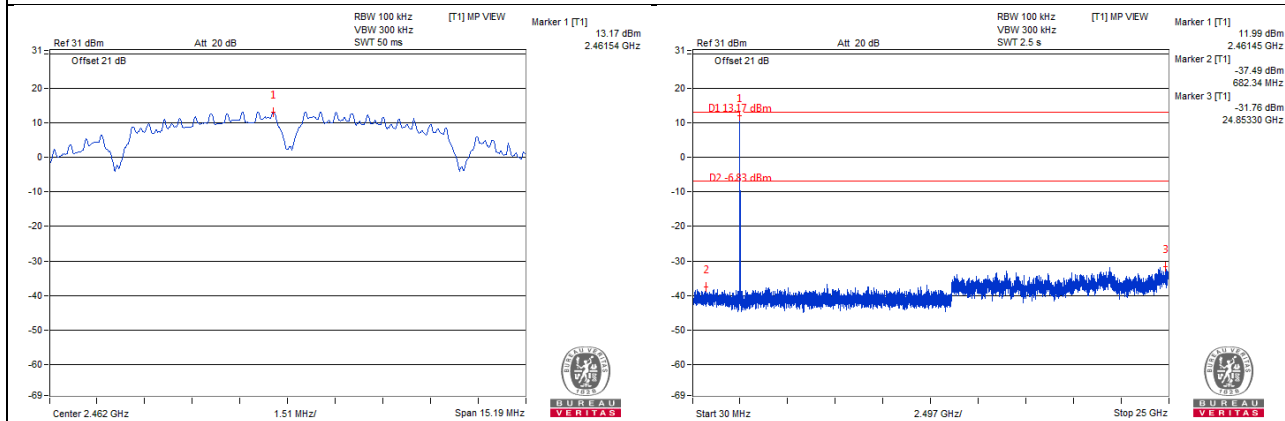
CH 1



CH 6

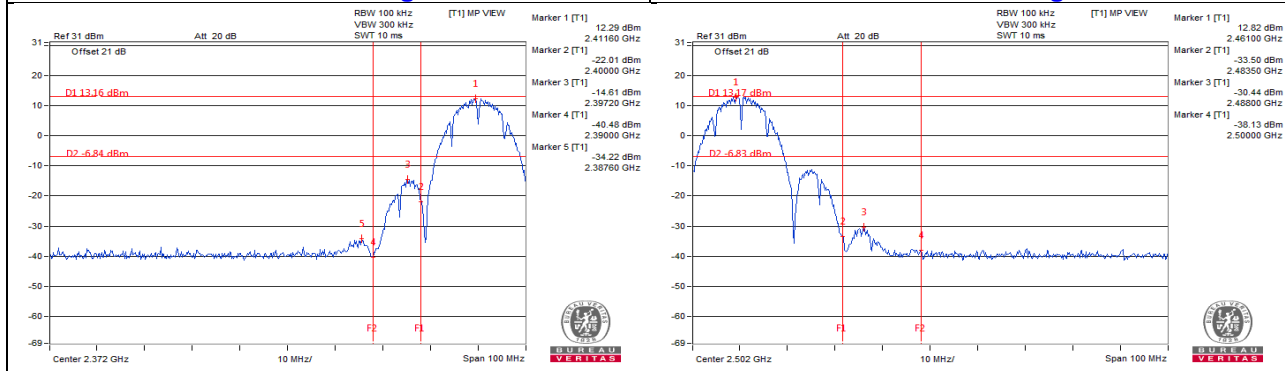


CH 11



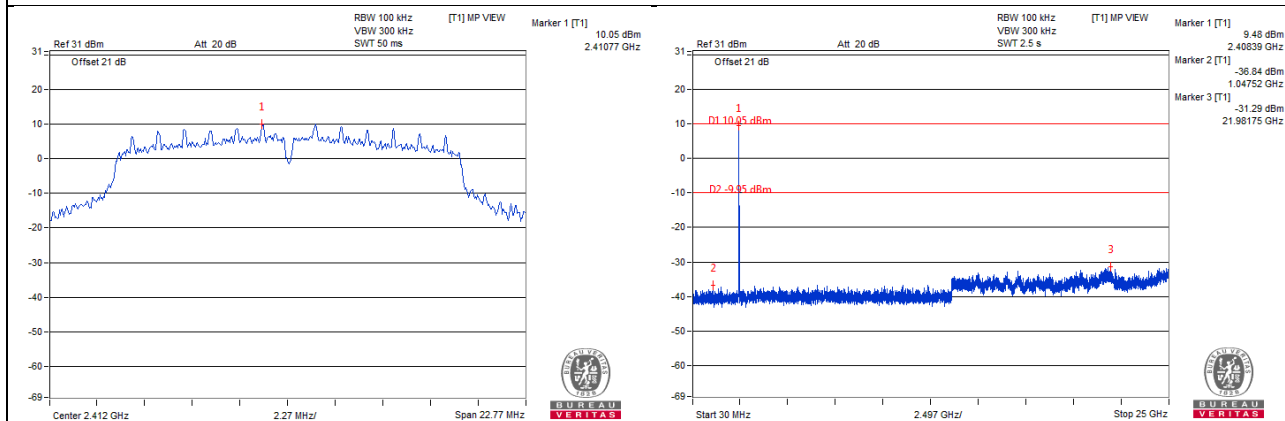
CH 1 Band edge

CH 11 Band edge

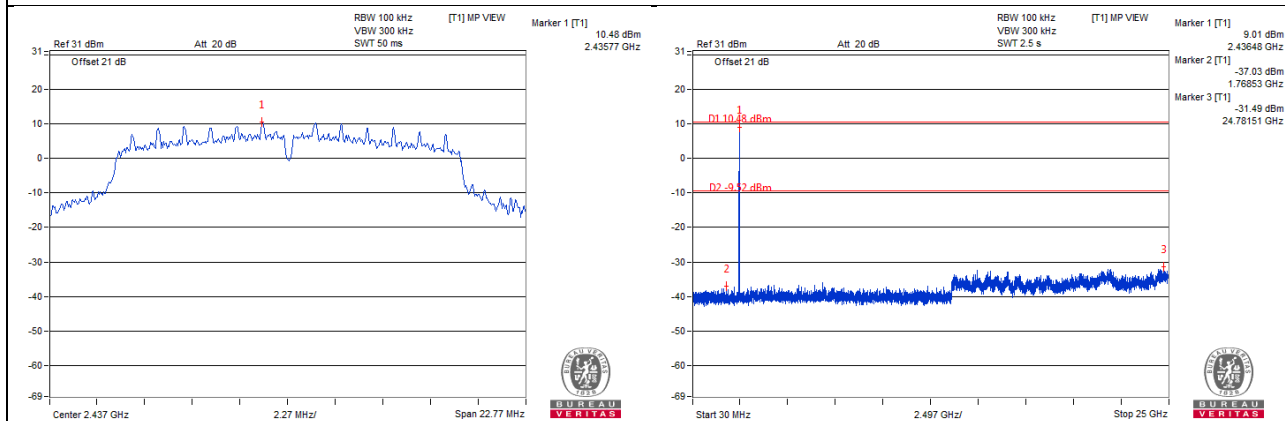


802.11g

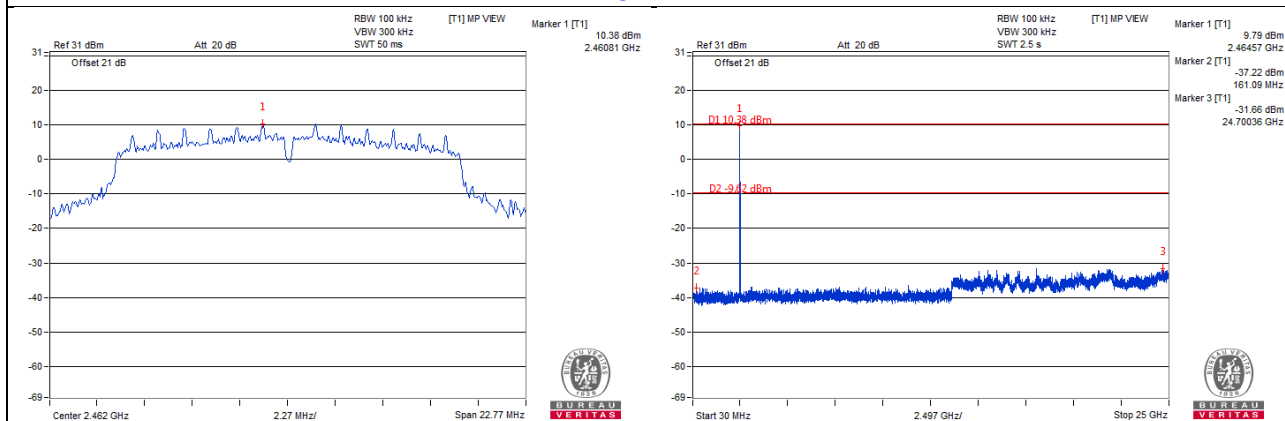
CH 1



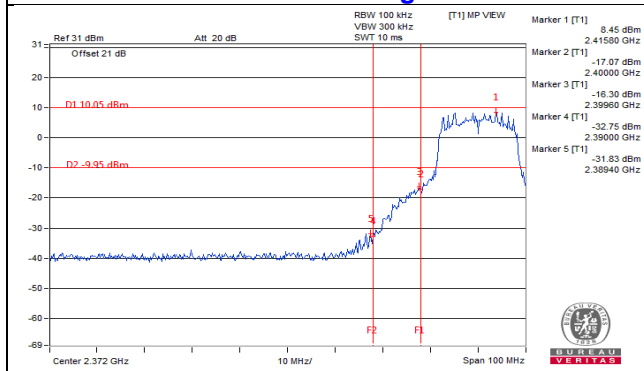
CH 6



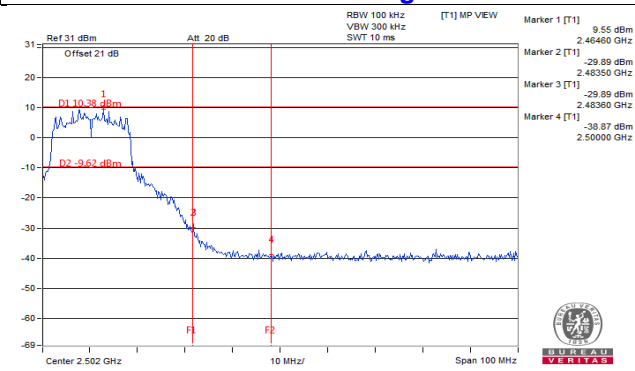
CH 11



CH 1 Band edge

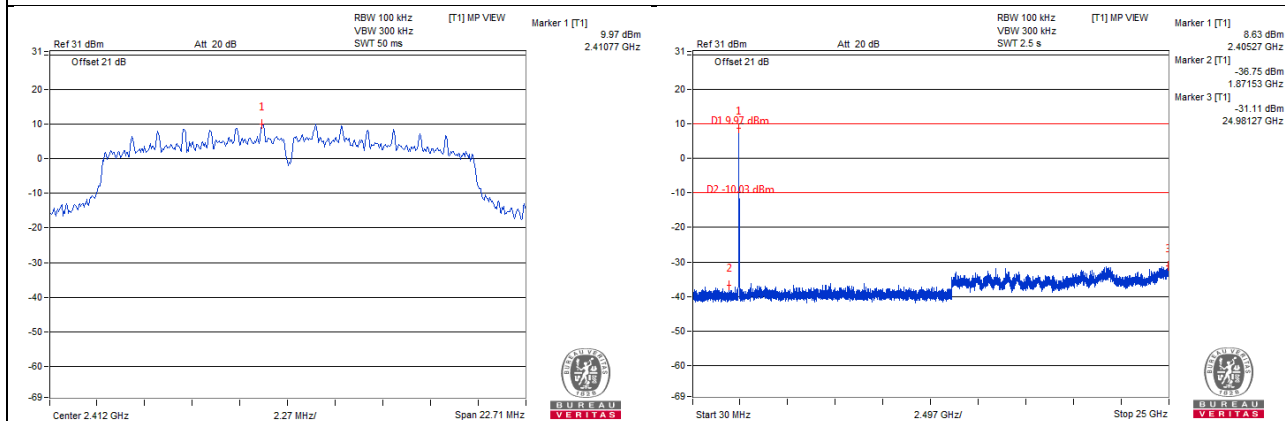


CH 11 Band edge

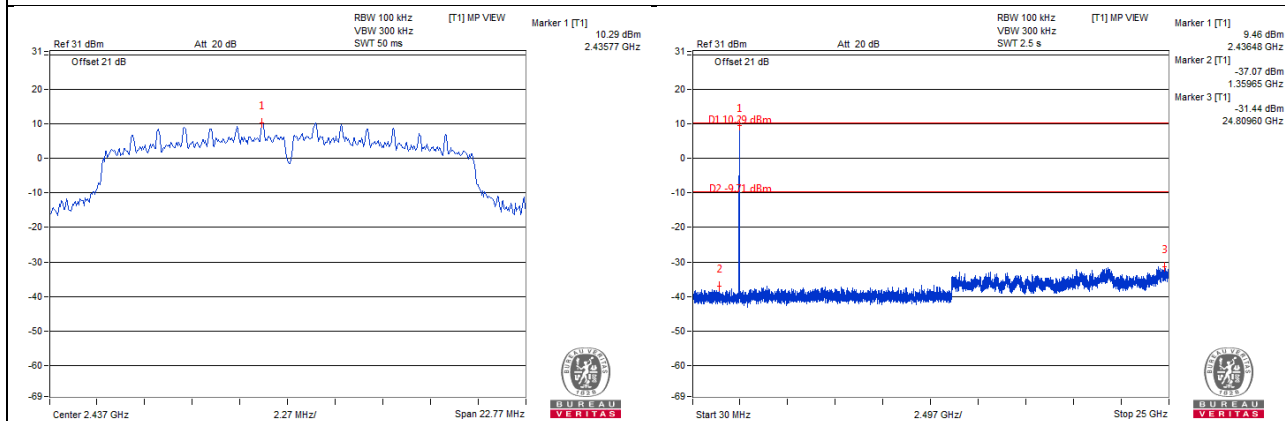


802.11n (HT20)

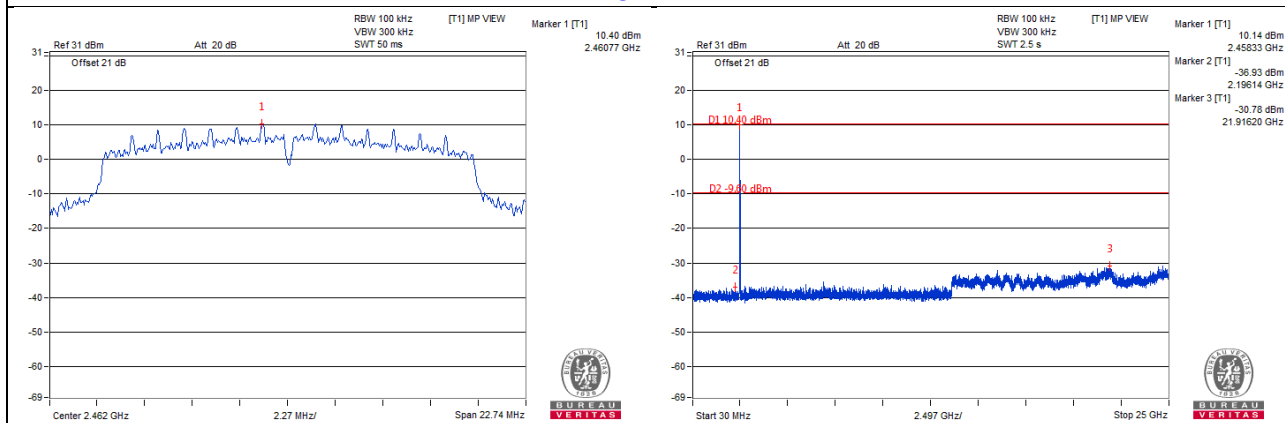
CH 1



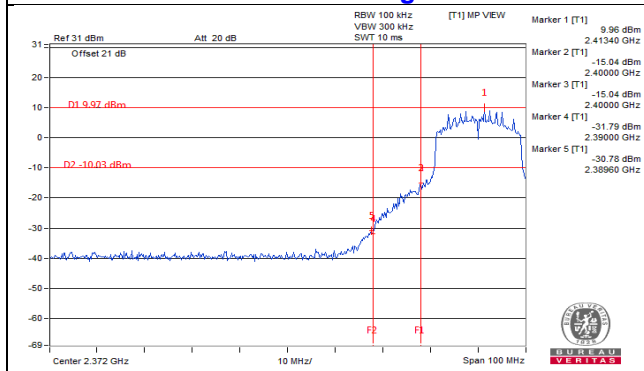
CH 6



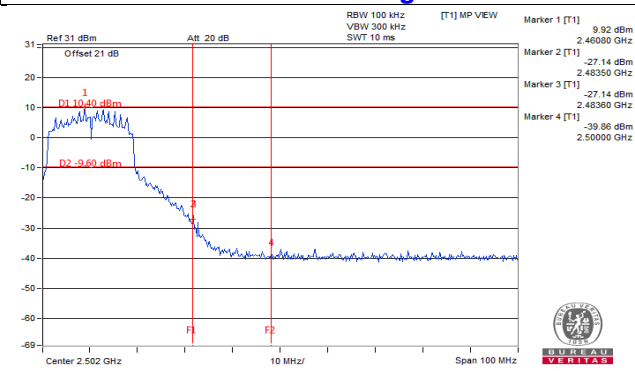
CH 11



CH 1 Band edge

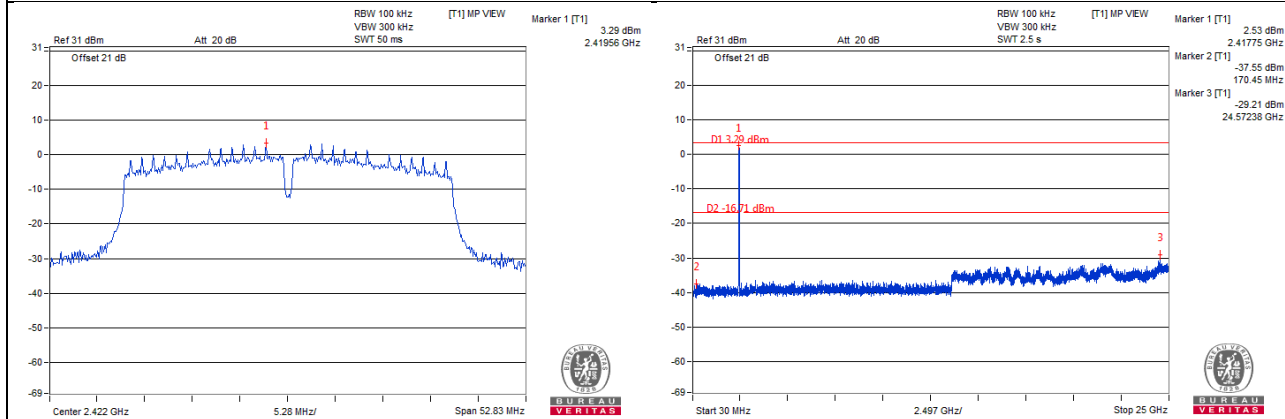


CH 11 Band edge

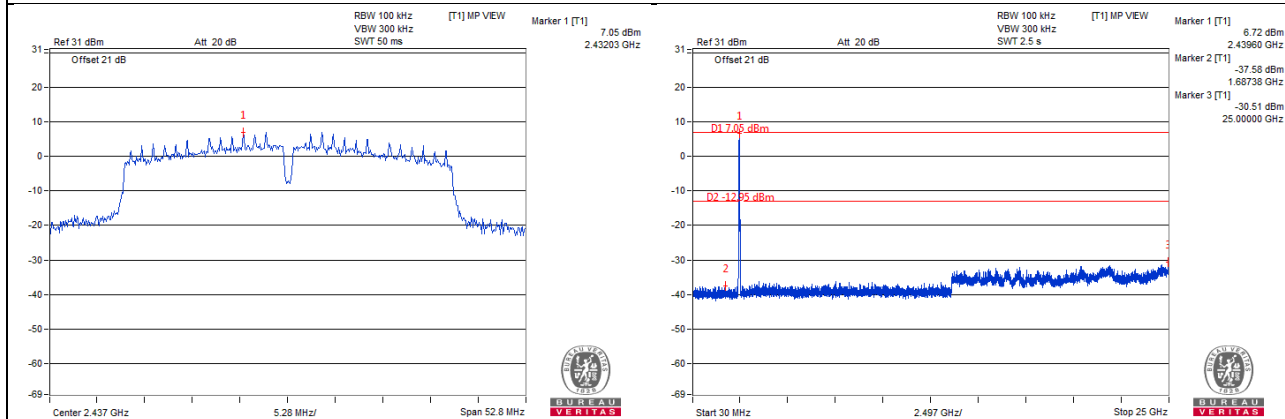


802.11n (HT40)

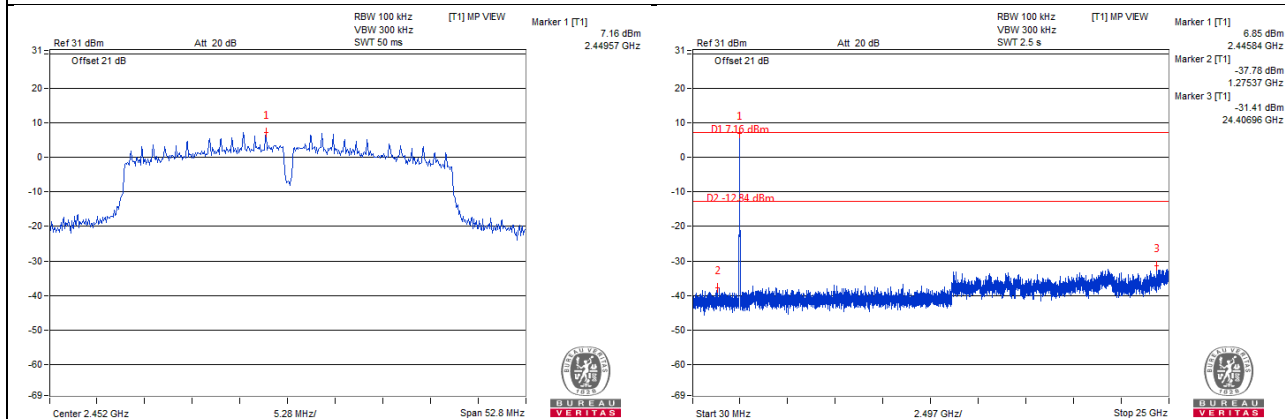
CH 3



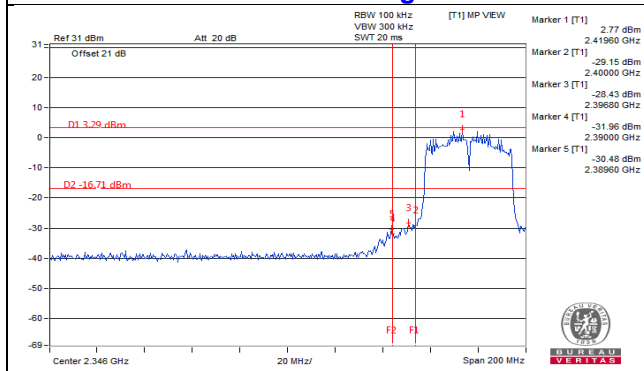
CH 6



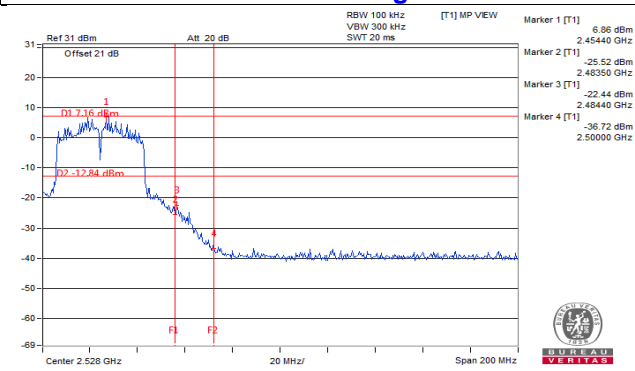
CH 9



CH 3 Band edge



CH 9 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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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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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