FCC Test Report

Report No.:	RF190711E04
FCC ID:	2APLE18300399
Test Model:	VMB4540
PCBA Rev:	V005
Received Date:	July 11, 2019
Test Date:	July 31 to Aug. 02, 2019
Issued Date:	Aug. 21, 2019
Applicant:	Arlo Technologies, Inc.
Address:	2200 Faraday Ave. Suite 150, Carlsbad, CA 92008, Unites States
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RF190711E04	Original release.	Aug. 21, 2019

1 Certificate of Conformity

Product:	Arlo Pro 3 SmartHub
Brand:	Arlo
Test Model:	VMB4540
PCBA Rev:	V005
Sample Status:	ENGINEERING SAMPLE
Applicant:	Arlo Technologies, Inc.
Test Date:	July 31 to Aug. 02, 2019
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 : Wendy Wu , **Date:** Aug. 21, 2019

Wendy Wu / Specialist

Approved by : , **Date:** Aug. 21, 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 -13.94dB at 16.46484MHz.
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 2390.00MHz.
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	Antenna connector is i-pex (MHF) not a standard connector.

Note:

Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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	1.8 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.9 dB
	1GHz ~6GHz	5.1 dB
Radiated Emissions above 1 GHz	6GHz ~ 18GHz	4.9 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Arlo Pro 3 SmartHub
Brand	Arlo
Test Model	VMB4540
PCBA Rev	V005
S/N	A081957BA0091
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from adapter
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 300Mbps
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	924.882mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	RJ45 Cable x 1 (Unshielded, 1.8m)

Note:

1. There are WLAN, Z-Wave, Zigbee and Sub-GHz technology used for the EUT. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3	Radio 4
WLAN 2.4GHz	Z-Wave	Zigbee	Sub-GHz

2. Simultaneously transmission condition.

Condition	Technology			
1	WLAN 2.4GHz	Z-Wave	Zigbee	Sub-GHz
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.				

3. The antennas provided to the EUT, please refer to the following table:

WLAN					
Ant No.	Antenna Net Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type	Cable Length (mm)
1	2.8	2.4~2.4835	Dipole	i-pex (MHF)	65
2	2.5	2.4~2.4835	Dipole	i-pex (MHF)	85

Sub-GHz				
Ant No.	Antenna Gain (dBi)	Frequency rang (MHz)	Antenna type	Connector type
1	1	860~930	PIFA	NA

Z-Wave				
Ant No.	Antenna Gain (dBi)	Frequency rang (MHz)	Antenna type	Connector type
1	1	860~930	PIFA	NA

Zigbee				
Ant No.	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
1	3	2.4~2.4835	Chip	NA

4. The EUT must be supplied a power adapter and following different models could be chosen as following table:

No.	Brand	Model No.	Spec.	Color
1	Arlo	2AAJ018F1	Input: 100-120Vac, 0.6A, 50/60Hz Output: 12V, 1.5A DC output cable (Unshielded, 1.8m)	Black/White
2	Arlo	2AAJ018FC	Input: 100-240Vac, 0.6A, 50/60Hz Output: 12V, 1.5A DC output cable (Unshielded, 1.8m)	Black/White
3	Arlo	AD2076F10	Input: 100-120Vac, 0.56A, 50/60Hz Output: 12V, 1.5A DC output cable (Unshielded, 1.8m)	Black/White
Note: From the above adapters, the worst radiated emission and AC power conducted emission test was found in **Adapter 3**. Therefore only the test data of the modes were recorded in this report.				

5. The EUT incorporates a MIMO function.

Modulation Mode	TX & RX CONFIGURATION	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX

6. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

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

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

7 channels are provided for 802.11n (HT40):

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

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

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	BPSK	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	BPSK	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:

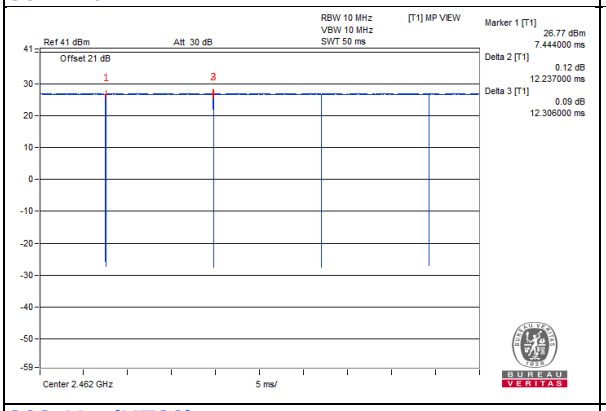
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	20deg. C, 70%RH	120Vac, 60Hz	Ryan Du
RE<1G	24deg. C, 65%RH	120Vac, 60Hz	Ryan Du
PLC	23deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	23deg. C, 67%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

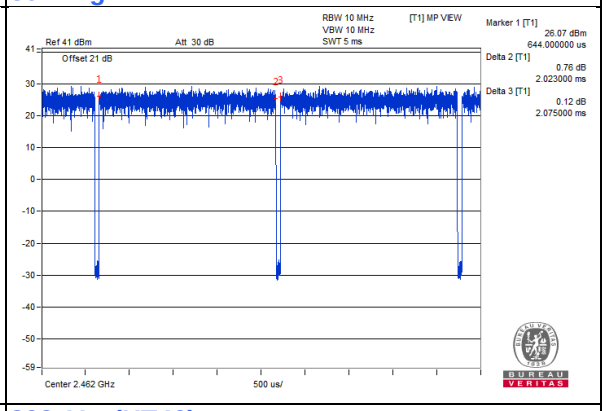
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 12.237 ms/12.306 ms= 0.994
802.11g: Duty cycle = 2.023 ms/2.075 ms= 0.975, Duty factor = 10 * log (1/Duty cycle) = 0.11
802.11n (HT20): Duty cycle = 1.887 ms /1.939 ms = 0.973, Duty factor = 10 * log (1/Duty cycle) = 0.12
802.11n (HT40): Duty cycle = 0.926 ms /0.967 ms = 0.958, Duty factor = 10 * log (1/Duty cycle) = 0.19

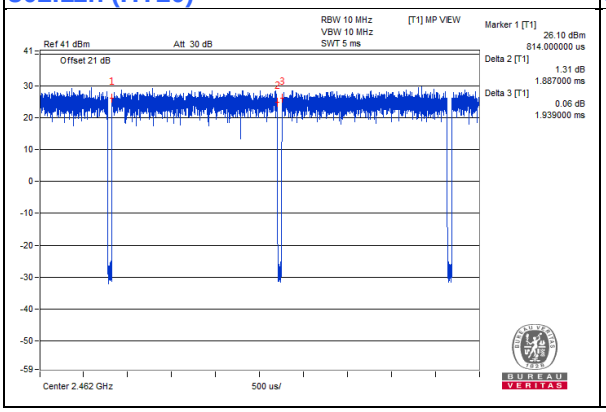
802.11b



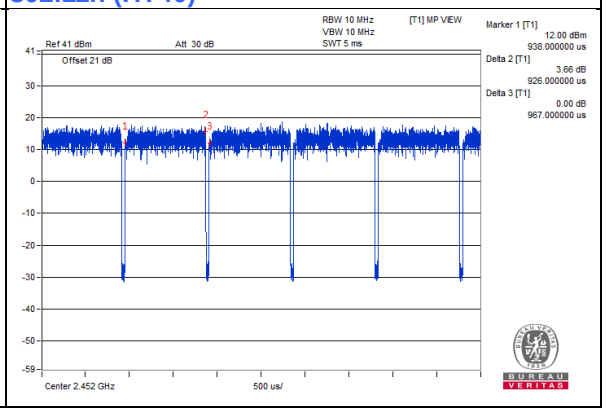
802.11g



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.

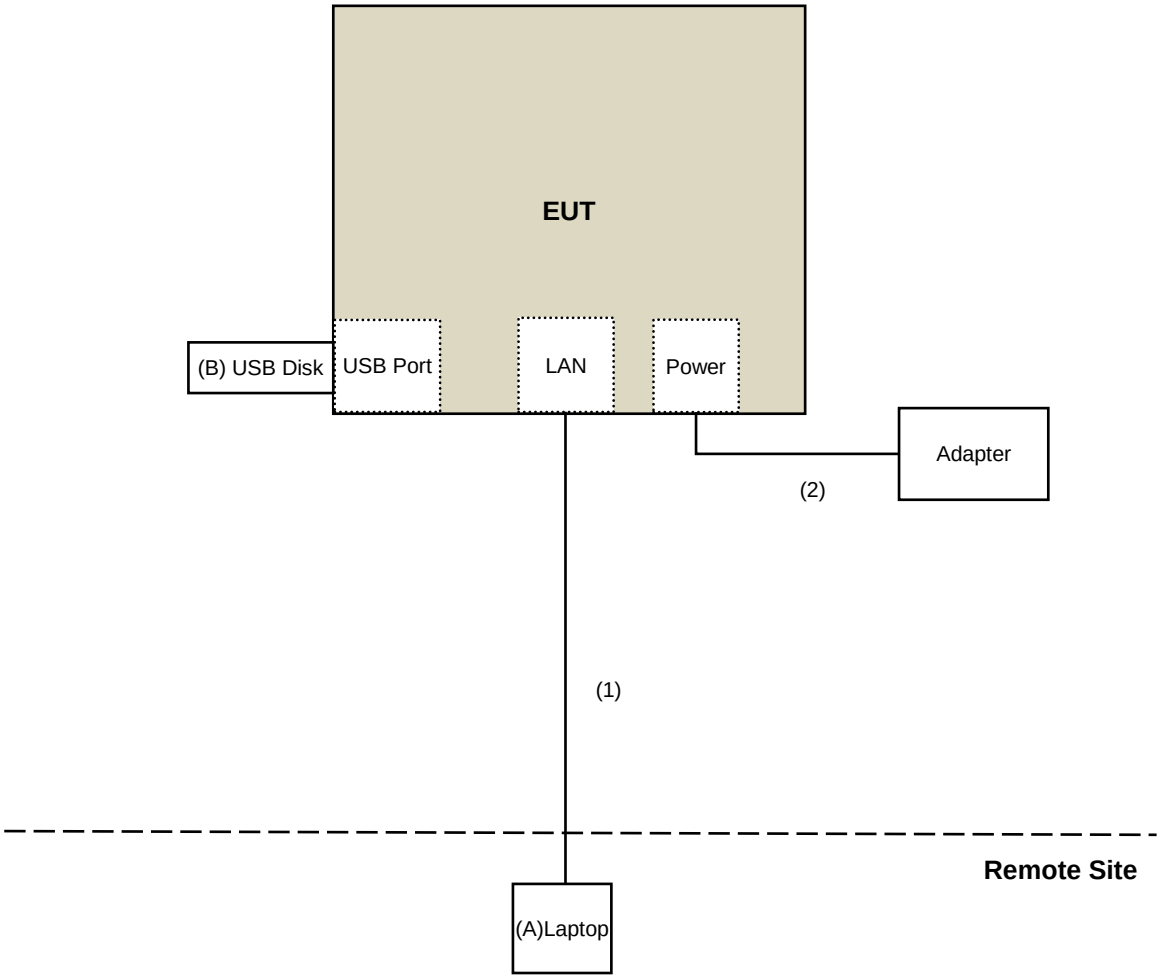
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6420	482T3R1	FCC DoC	Provided by Lab
B.	USB Disk	SanDisk	USB 3.0 Flash Drive	NA	NA	Provided by Lab

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.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	DC Cable	1	1.8	No	0	Supplied by client

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 v05r02
KDB 662911 D01 Multiple Transmitter Output v02r01
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 30dB 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
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Pre-Amplifier EMCI	EMC001340	980142	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Oct. 30, 2018	Oct. 29, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-4-1	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-2	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-3	Mar. 19, 2019	Mar. 18, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 27, 2018	Sep. 26, 2019
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980385	Aug. 16, 2018	Aug. 15, 2019
RF Cable	EMC104-SM-SM-1200	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	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 test was performed in 966 Chamber No. 4.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: July 31 to Aug. 01, 2019

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020

NOTE:

1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Aug. 02, 2019

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:

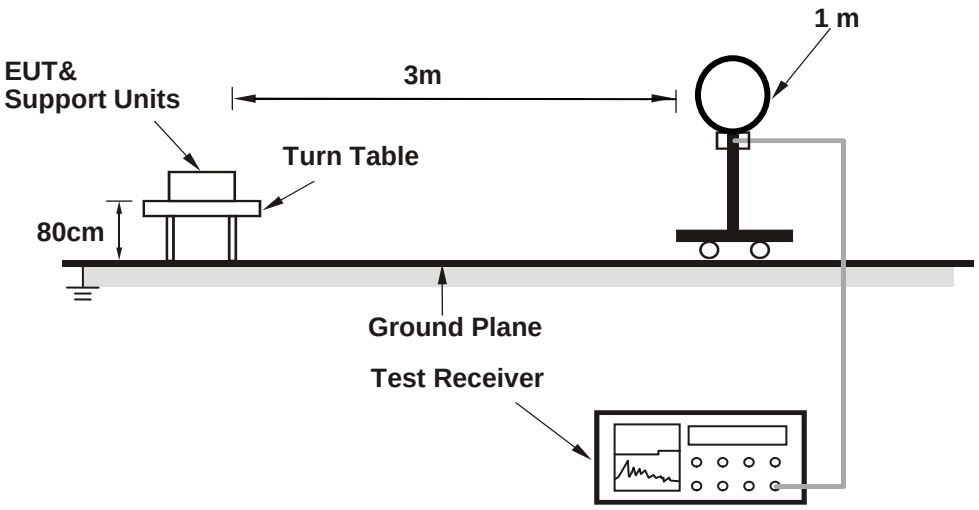
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

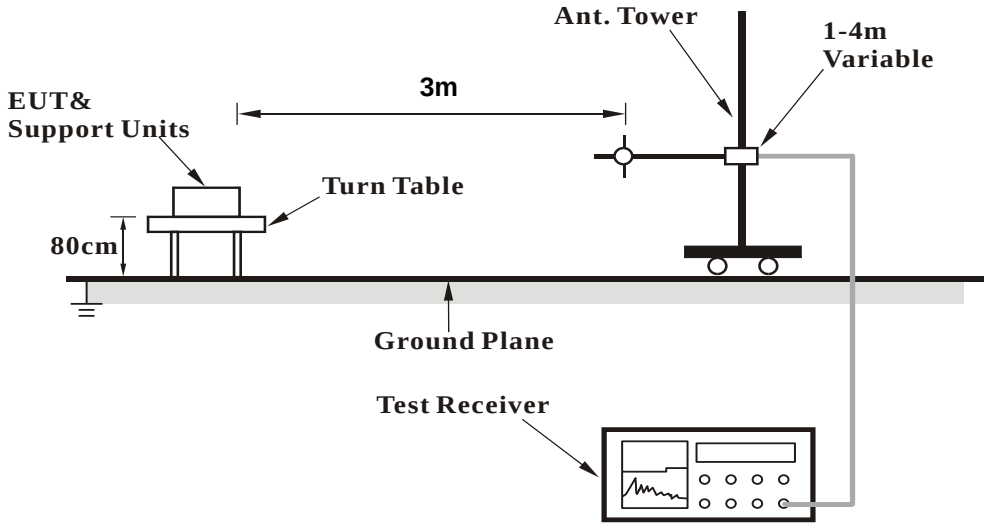
No deviation.

4.1.5 Test Setup

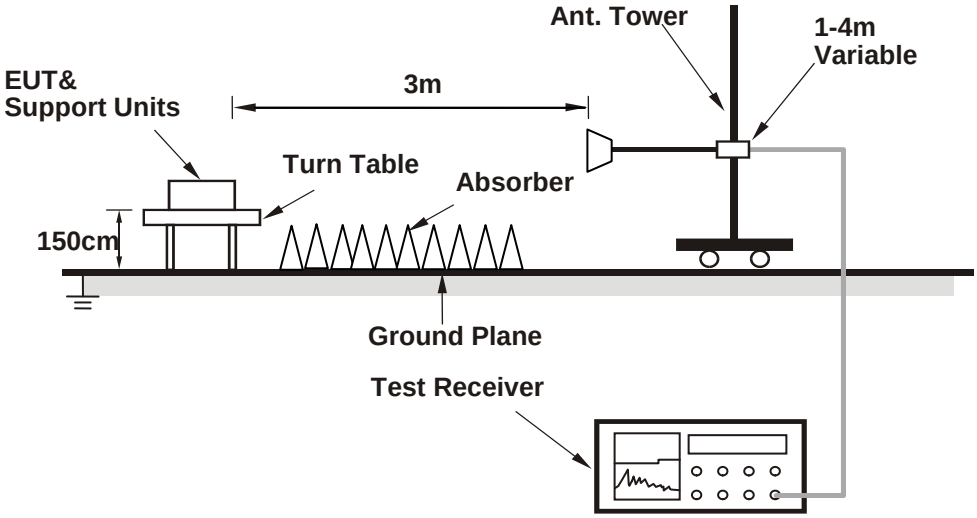
For Radiated emission below 30MHz



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 with the Laptop which is placed on remote site.
b. Controlling software (ART2-GUI[2.3]) has been activated to set the EUT under transmission condition continuously at specific channel frenquency.

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	63.2 PK	74.0	-10.8	1.99 H	179	64.8	-1.6
2	2390.00	53.8 AV	54.0	-0.2	1.99 H	179	55.4	-1.6
3	*2412.00	118.5 PK			1.99 H	179	120.2	-1.7
4	*2412.00	116.3 AV			1.99 H	179	118.0	-1.7
5	4824.00	49.4 PK	74.0	-24.6	1.21 H	132	47.1	2.3
6	4824.00	48.4 AV	54.0	-5.6	1.21 H	132	46.1	2.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.5 PK	74.0	-10.5	1.96 V	164	65.1	-1.6
2	2390.00	51.6 AV	54.0	-2.4	1.96 V	164	53.2	-1.6
3	*2412.00	117.0 PK			1.96 V	164	118.7	-1.7
4	*2412.00	114.7 AV			1.96 V	164	116.4	-1.7
5	4824.00	46.8 PK	74.0	-27.2	1.80 V	31	44.5	2.3
6	4824.00	45.7 AV	54.0	-8.3	1.80 V	31	43.4	2.3

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 other emission levels were very low against the limit.
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	65.4 PK	74.0	-8.6	2.14 H	190	67.0	-1.6
2	2390.00	53.2 AV	54.0	-0.8	2.14 H	190	54.8	-1.6
3	*2437.00	121.9 PK			2.14 H	190	123.7	-1.8
4	*2437.00	119.7 AV			2.14 H	190	121.5	-1.8
5	2483.50	62.1 PK	74.0	-11.9	2.14 H	190	63.8	-1.7
6	2483.50	50.8 AV	54.0	-3.2	2.14 H	190	52.5	-1.7
7	4874.00	50.4 PK	74.0	-23.6	1.27 H	137	48.0	2.4
8	4874.00	49.1 AV	54.0	-4.9	1.27 H	137	46.7	2.4
9	7311.00	44.5 PK	74.0	-29.5	2.32 H	167	35.3	9.2
10	7311.00	32.6 AV	54.0	-21.4	2.32 H	167	23.4	9.2
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	64.1 PK	74.0	-9.9	1.91 V	166	65.7	-1.6
2	2390.00	52.0 AV	54.0	-2.0	1.91 V	166	53.6	-1.6
3	*2437.00	120.9 PK			1.91 V	166	122.7	-1.8
4	*2437.00	118.2 AV			1.91 V	166	120.0	-1.8
5	2483.50	61.0 PK	74.0	-13.0	1.91 V	166	62.7	-1.7
6	2483.50	49.9 AV	54.0	-4.1	1.91 V	166	51.6	-1.7
7	4874.00	47.6 PK	74.0	-26.4	1.99 V	28	45.2	2.4
8	4874.00	46.3 AV	54.0	-7.7	1.99 V	28	43.9	2.4
9	7311.00	46.1 PK	74.0	-27.9	3.41 V	177	36.9	9.2
10	7311.00	37.8 AV	54.0	-16.2	3.41 V	177	28.6	9.2

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 other emission levels were very low against the limit.
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	118.6 PK			1.92 H	180	120.4	-1.8
2	*2462.00	116.4 AV			1.92 H	180	118.2	-1.8
3	2483.50	61.6 PK	74.0	-12.4	1.92 H	180	63.3	-1.7
4	2483.50	53.7 AV	54.0	-0.3	1.92 H	180	55.4	-1.7
5	4924.00	50.0 PK	74.0	-24.0	1.24 H	145	47.5	2.5
6	4924.00	48.9 AV	54.0	-5.1	1.24 H	145	46.4	2.5
7	7386.00	44.8 PK	74.0	-29.2	2.32 H	177	35.4	9.4
8	7386.00	32.8 AV	54.0	-21.2	2.32 H	177	23.4	9.4
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	*2462.00	116.1 PK			1.95 V	163	117.9	-1.8
2	*2462.00	113.8 AV			1.95 V	163	115.6	-1.8
3	2483.50	63.4 PK	74.0	-10.6	1.95 V	163	65.1	-1.7
4	2483.50	51.3 AV	54.0	-2.7	1.95 V	163	53.0	-1.7
5	4924.00	47.5 PK	74.0	-26.5	2.00 V	32	45.0	2.5
6	4924.00	46.4 AV	54.0	-7.6	2.00 V	32	43.9	2.5
7	7386.00	45.8 PK	74.0	-28.2	3.47 V	184	36.4	9.4
8	7386.00	37.5 AV	54.0	-16.5	3.47 V	184	28.1	9.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	65.0 PK	74.0	-9.0	1.52 H	0	66.6	-1.6
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**1.52 H**	**0**	**55.5**	**-1.6**
3	*2412.00	118.1 PK			1.52 H	0	119.8	-1.7
4	*2412.00	108.9 AV			1.52 H	0	110.6	-1.7
5	4824.00	49.9 PK	74.0	-24.1	1.24 H	143	47.6	2.3
6	4824.00	49.1 AV	54.0	-4.9	1.24 H	143	46.8	2.3
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	64.4 PK	74.0	-9.6	2.08 V	175	66.0	-1.6
2	2390.00	52.6 AV	54.0	-1.4	2.08 V	175	54.2	-1.6
3	*2412.00	117.8 PK			2.08 V	175	119.5	-1.7
4	*2412.00	107.9 AV			2.08 V	175	109.6	-1.7
5	4824.00	48.0 PK	74.0	-26.0	1.98 V	39	45.7	2.3
6	4824.00	46.6 AV	54.0	-7.4	1.98 V	39	44.3	2.3

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 other emission levels were very low against the limit.
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	65.9 PK	74.0	-8.1	1.74 H	2	67.5	-1.6
2	2390.00	53.7 AV	54.0	-0.3	1.74 H	2	55.3	-1.6
3	*2437.00	119.7 PK			1.74 H	2	121.5	-1.8
4	*2437.00	110.4 AV			1.74 H	2	112.2	-1.8
5	2483.50	64.4 PK	74.0	-9.6	1.74 H	2	66.1	-1.7
6	2483.50	52.7 AV	54.0	-1.3	1.74 H	2	54.4	-1.7
7	4874.00	50.3 PK	74.0	-23.7	1.29 H	131	47.9	2.4
8	4874.00	49.2 AV	54.0	-4.8	1.29 H	131	46.8	2.4
9	7311.00	44.2 PK	74.0	-29.8	2.32 H	156	35.0	9.2
10	7311.00	32.2 AV	54.0	-21.8	2.32 H	156	23.0	9.2
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	62.6 PK	74.0	-11.4	1.49 V	113	64.2	-1.6
2	2390.00	51.9 AV	54.0	-2.1	1.49 V	113	53.5	-1.6
3	*2437.00	118.0 PK			1.49 V	113	119.8	-1.8
4	*2437.00	108.6 AV			1.49 V	113	110.4	-1.8
5	2483.50	61.5 PK	74.0	-12.5	1.49 V	113	63.2	-1.7
6	2483.50	49.1 AV	54.0	-4.9	1.49 V	113	50.8	-1.7
7	4874.00	47.8 PK	74.0	-26.2	2.02 V	19	45.4	2.4
8	4874.00	46.8 AV	54.0	-7.2	2.02 V	19	44.4	2.4
9	7311.00	46.1 PK	74.0	-27.9	3.39 V	191	36.9	9.2
10	7311.00	37.6 AV	54.0	-16.4	3.39 V	191	28.4	9.2

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 other emission levels were very low against the limit.
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	118.5 PK			1.50 H	4	120.3	-1.8
2	*2462.00	109.2 AV			1.50 H	4	111.0	-1.8
3	2483.50	67.4 PK	74.0	-6.6	1.50 H	4	69.1	-1.7
4	2483.50	53.8 AV	54.0	-0.2	1.50 H	4	55.5	-1.7
5	4924.00	49.9 PK	74.0	-24.1	1.26 H	132	47.4	2.5
6	4924.00	48.9 AV	54.0	-5.1	1.26 H	132	46.4	2.5
7	7386.00	44.3 PK	74.0	-29.7	2.37 H	143	34.9	9.4
8	7386.00	32.1 AV	54.0	-21.9	2.37 H	143	22.7	9.4
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	*2462.00	115.2 PK			1.99 V	171	117.0	-1.8
2	*2462.00	105.9 AV			1.99 V	171	107.7	-1.8
3	2483.50	63.7 PK	74.0	-10.3	1.99 V	171	65.4	-1.7
4	2483.50	51.2 AV	54.0	-2.8	1.99 V	171	52.9	-1.7
5	4924.00	48.1 PK	74.0	-25.9	2.06 V	21	45.6	2.5
6	4924.00	47.1 AV	54.0	-6.9	2.06 V	21	44.6	2.5
7	7386.00	46.6 PK	74.0	-27.4	3.33 V	181	37.2	9.4
8	7386.00	38.0 AV	54.0	-16.0	3.33 V	181	28.6	9.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	65.3 PK	74.0	-8.7	1.84 H	337	66.9	-1.6
2	2390.00	53.8 AV	54.0	-0.2	1.84 H	337	55.4	-1.6
3	*2412.00	117.0 PK			1.84 H	337	118.7	-1.7
4	*2412.00	107.5 AV			1.84 H	337	109.2	-1.7
5	4824.00	49.7 PK	74.0	-24.3	1.27 H	142	47.4	2.3
6	4824.00	49.0 AV	54.0	-5.0	1.27 H	142	46.7	2.3
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	64.3 PK	74.0	-9.7	2.02 V	180	65.9	-1.6
2	2390.00	52.5 AV	54.0	-1.5	2.02 V	180	54.1	-1.6
3	*2412.00	115.9 PK			2.02 V	180	117.6	-1.7
4	*2412.00	106.1 AV			2.02 V	180	107.8	-1.7
5	4824.00	47.8 PK	74.0	-26.2	1.78 V	44	45.5	2.3
6	4824.00	46.6 AV	54.0	-7.4	1.78 V	44	44.3	2.3

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 other emission levels were very low against the limit.
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	2390.00	63.7 PK	74.0	-10.3	1.42 H	1	65.3	-1.6
2	2390.00	53.2 AV	54.0	-0.8	1.42 H	1	54.8	-1.6
3	*2437.00	120.1 PK			1.42 H	1	121.9	-1.8
4	*2437.00	110.6 AV			1.42 H	1	112.4	-1.8
5	2483.50	65.1 PK	74.0	-8.9	1.42 H	1	66.8	-1.7
6	2483.50	51.9 AV	54.0	-2.1	1.42 H	1	53.6	-1.7
7	4874.00	50.1 PK	74.0	-23.9	1.24 H	132	47.7	2.4
8	4874.00	48.8 AV	54.0	-5.2	1.24 H	132	46.4	2.4
9	7311.00	44.7 PK	74.0	-29.3	2.27 H	160	35.5	9.2
10	7311.00	32.6 AV	54.0	-21.4	2.27 H	160	23.4	9.2
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	62.8 PK	74.0	-11.2	1.53 V	107	64.4	-1.6
2	2390.00	52.0 AV	54.0	-2.0	1.53 V	107	53.6	-1.6
3	*2437.00	118.3 PK			1.53 V	107	120.1	-1.8
4	*2437.00	109.0 AV			1.53 V	107	110.8	-1.8
5	2483.50	61.4 PK	74.0	-12.6	1.53 V	107	63.1	-1.7
6	2483.50	49.3 AV	54.0	-4.7	1.53 V	107	51.0	-1.7
7	4874.00	47.6 PK	74.0	-26.4	2.04 V	10	45.2	2.4
8	4874.00	46.7 AV	54.0	-7.3	2.04 V	10	44.3	2.4
9	7311.00	46.4 PK	74.0	-27.6	3.44 V	191	37.2	9.2
10	7311.00	37.8 AV	54.0	-16.2	3.44 V	191	28.6	9.2

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 other emission levels were very low against the limit.
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	118.8 PK			1.51 H	1	120.6	-1.8
2	*2462.00	109.0 AV			1.51 H	1	110.8	-1.8
3	2483.50	66.9 PK	74.0	-7.1	1.51 H	1	68.6	-1.7
4	2483.50	52.8 AV	54.0	-1.2	1.51 H	1	54.5	-1.7
5	4924.00	50.4 PK	74.0	-23.6	1.27 H	143	47.9	2.5
6	4924.00	49.1 AV	54.0	-4.9	1.27 H	143	46.6	2.5
7	7386.00	44.7 PK	74.0	-29.3	2.37 H	142	35.3	9.4
8	7386.00	32.4 AV	54.0	-21.6	2.37 H	142	23.0	9.4
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	*2462.00	114.9 PK			2.03 V	158	116.7	-1.8
2	*2462.00	105.6 AV			2.03 V	158	107.4	-1.8
3	2483.50	63.7 PK	74.0	-10.3	2.03 V	158	65.4	-1.7
4	2483.50	50.8 AV	54.0	-3.2	2.03 V	158	52.5	-1.7
5	4924.00	48.3 PK	74.0	-25.7	2.06 V	7	45.8	2.5
6	4924.00	47.1 AV	54.0	-6.9	2.06 V	7	44.6	2.5
7	7386.00	46.3 PK	74.0	-27.7	3.38 V	170	36.9	9.4
8	7386.00	38.0 AV	54.0	-16.0	3.38 V	170	28.6	9.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	65.3 PK	74.0	-8.7	2.33 H	192	66.9	-1.6
2	2390.00	53.6 AV	54.0	-0.4	2.33 H	192	55.2	-1.6
3	*2422.00	110.0 PK			2.33 H	192	111.7	-1.7
4	*2422.00	99.4 AV			2.33 H	192	101.1	-1.7
5	4844.00	42.5 PK	74.0	-31.5	1.25 H	150	40.3	2.2
6	4844.00	41.2 AV	54.0	-12.8	1.25 H	150	39.0	2.2
7	7266.00	44.9 PK	74.0	-29.1	2.36 H	137	35.9	9.0
8	7266.00	32.6 AV	54.0	-21.4	2.36 H	137	23.6	9.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.0 PK	74.0	-12.0	2.21 V	146	63.6	-1.6
2	2390.00	50.2 AV	54.0	-3.8	2.21 V	146	51.8	-1.6
3	*2422.00	108.8 PK			2.21 V	146	110.5	-1.7
4	*2422.00	98.1 AV			2.21 V	146	99.8	-1.7
5	4844.00	42.1 PK	74.0	-31.9	2.01 V	10	39.9	2.2
6	4844.00	40.8 AV	54.0	-13.2	2.01 V	10	38.6	2.2
7	7266.00	44.8 PK	74.0	-29.2	3.42 V	188	35.8	9.0
8	7266.00	32.5 AV	54.0	-21.5	3.42 V	188	23.5	9.0

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 other emission levels were very low against the limit.
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	65.5 PK	74.0	-8.5	2.25 H	193	67.1	-1.6
2	2390.00	53.7 AV	54.0	-0.3	2.25 H	193	55.3	-1.6
3	*2437.00	118.2 PK			2.25 H	193	120.0	-1.8
4	*2437.00	107.0 AV			2.25 H	193	108.8	-1.8
5	2483.50	63.0 PK	74.0	-11.0	2.25 H	193	64.7	-1.7
6	2483.50	50.6 AV	54.0	-3.4	2.25 H	193	52.3	-1.7
7	4874.00	50.1 PK	74.0	-23.9	1.27 H	138	47.7	2.4
8	4874.00	48.9 AV	54.0	-5.1	1.27 H	138	46.5	2.4
9	7311.00	44.3 PK	74.0	-29.7	2.34 H	139	35.1	9.2
10	7311.00	31.9 AV	54.0	-22.1	2.34 H	139	22.7	9.2
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	62.1 PK	74.0	-11.9	2.00 V	137	63.7	-1.6
2	2390.00	50.2 AV	54.0	-3.8	2.00 V	137	51.8	-1.6
3	*2437.00	117.3 PK			2.00 V	137	119.1	-1.8
4	*2437.00	106.1 AV			2.00 V	137	107.9	-1.8
5	2483.50	60.5 PK	74.0	-13.5	2.00 V	137	62.2	-1.7
6	2483.50	47.9 AV	54.0	-6.1	2.00 V	137	49.6	-1.7
7	4874.00	48.0 PK	74.0	-26.0	2.06 V	5	45.6	2.4
8	4874.00	46.6 AV	54.0	-7.4	2.06 V	5	44.2	2.4
9	7311.00	46.5 PK	74.0	-27.5	3.33 V	185	37.3	9.2
10	7311.00	38.1 AV	54.0	-15.9	3.33 V	185	28.9	9.2

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 other emission levels were very low against the limit.
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	2276.00	59.2 PK	74.0	-14.8	2.31 H	190	60.7	-1.5
2	2276.00	50.2 AV	54.0	-3.8	2.31 H	190	51.7	-1.5
3	*2452.00	111.6 PK			2.31 H	190	113.4	-1.8
4	*2452.00	101.3 AV			2.31 H	190	103.1	-1.8
5	2483.50	65.9 PK	74.0	-8.1	2.31 H	190	67.6	-1.7
6	2483.50	53.6 AV	54.0	-0.4	2.31 H	190	55.3	-1.7
7	4904.00	44.1 PK	74.0	-29.9	1.32 H	158	41.6	2.5
8	4904.00	42.8 AV	54.0	-11.2	1.32 H	158	40.3	2.5
9	7356.00	44.6 PK	74.0	-29.4	2.39 H	141	35.4	9.2
10	7356.00	32.2 AV	54.0	-21.8	2.39 H	141	23.0	9.2
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	2276.00	60.3 PK	74.0	-13.7	2.00 V	166	61.8	-1.5
2	2276.00	47.6 AV	54.0	-6.4	2.00 V	166	49.1	-1.5
3	*2452.00	110.9 PK			2.00 V	166	112.7	-1.8
4	*2452.00	100.5 AV			2.00 V	166	102.3	-1.8
5	2483.50	62.5 PK	74.0	-11.5	2.00 V	166	64.2	-1.7
6	2483.50	50.5 AV	54.0	-3.5	2.00 V	166	52.2	-1.7
7	4904.00	42.1 PK	74.0	-31.9	2.05 V	18	39.6	2.5
8	4904.00	41.2 AV	54.0	-12.8	2.05 V	18	38.7	2.5
9	7356.00	44.2 PK	74.0	-29.8	3.40 V	191	35.0	9.2
10	7356.00	32.2 AV	54.0	-21.8	3.40 V	191	23.0	9.2

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 other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

Below 1GHz Data:

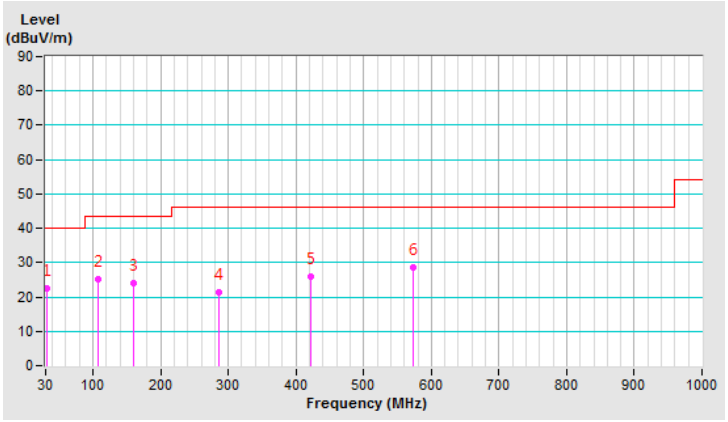
802.11b

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	32.13	22.6 QP	40.0	-17.4	2.50 H	69	32.2	-9.6
2	108.01	25.2 QP	43.5	-18.3	2.00 H	21	36.0	-10.8
3	159.81	23.9 QP	43.5	-19.6	2.00 H	329	32.0	-8.1
4	285.50	21.4 QP	46.0	-24.6	1.50 H	286	28.8	-7.4
5	422.15	25.9 QP	46.0	-20.1	2.00 H	293	29.3	-3.4
6	573.56	28.5 QP	46.0	-17.5	1.00 H	344	28.7	-0.2

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 other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. 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.

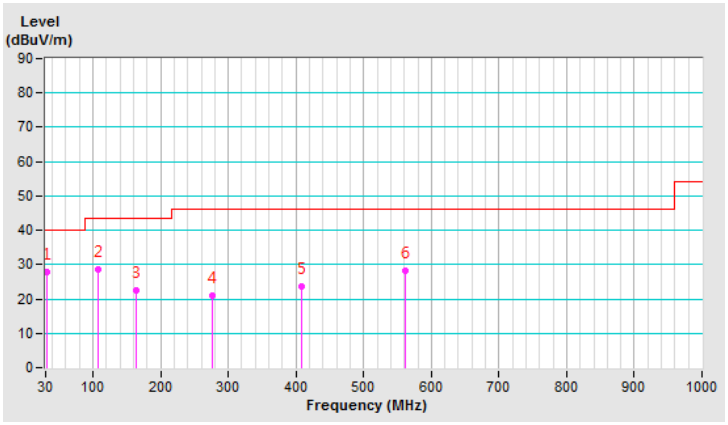


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	**30.99**	**27.9 QP**	**40.0**	**-12.1**	**1.00 V**	**160**	**37.6**	**-9.7**
2	107.26	28.6 QP	43.5	-14.9	1.50 V	217	39.5	-10.9
3	163.37	22.4 QP	43.5	-21.1	1.50 V	269	30.5	-8.1
4	276.70	21.0 QP	46.0	-25.0	1.00 V	67	28.7	-7.7
5	407.55	23.5 QP	46.0	-22.5	1.00 V	90	27.6	-4.1
6	560.86	28.2 QP	46.0	-17.8	1.50 V	173	28.9	-0.7

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 other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. 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	Oct. 24, 2018	Oct. 23, 2019
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 22, 2018	Oct. 21, 2019
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 17, 2019	Mar. 16, 2020
50 ohms Terminator	N/A	3	Oct. 22, 2018	Oct. 21, 2019
RF Cable	5D-FB	COCCAB-001	Sep. 28, 2018	Sep. 27, 2019
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 14, 2019	Mar. 13, 2020
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: July 31, 2019

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.

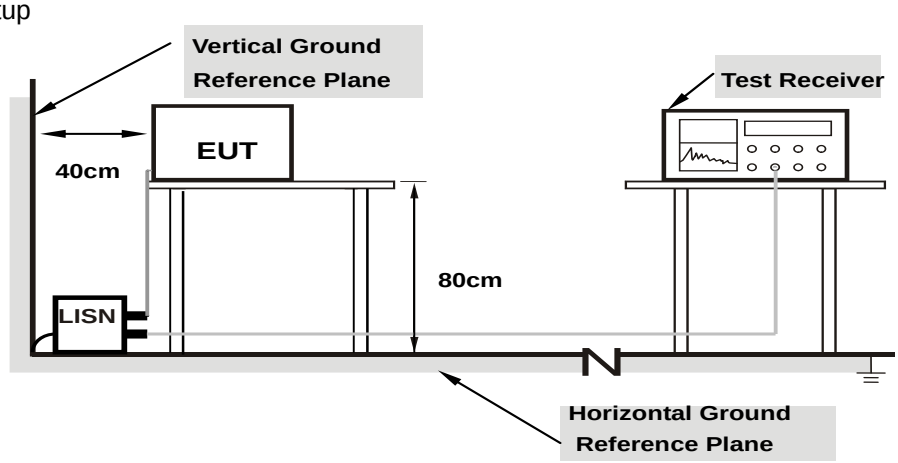
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

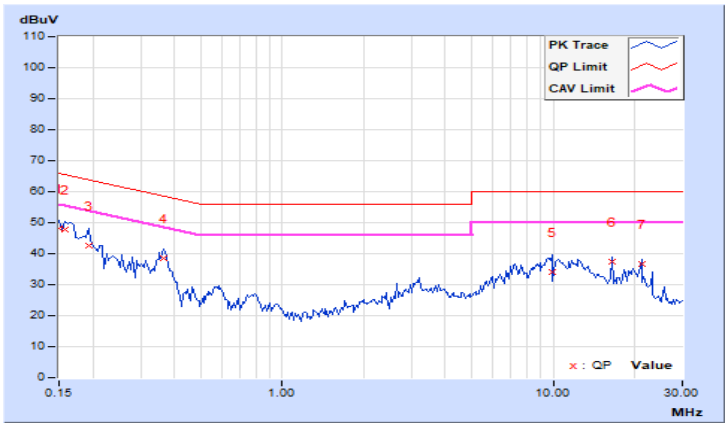
4.2.7 Test Results

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	0.15000	9.96	38.28	19.14	48.24	29.10	66.00	56.00	-17.76	-26.90
2	0.15781	9.97	37.78	19.82	47.75	29.79	65.58	55.58	-17.83	-25.79
3	0.19297	9.97	32.80	16.45	42.77	26.42	63.91	53.91	-21.14	-27.49
4	0.36484	9.98	28.58	23.44	38.56	33.42	58.62	48.62	-20.06	-15.20
5	9.94531	10.64	23.60	16.97	34.24	27.61	60.00	50.00	-25.76	-22.39
6	**16.46484**	**11.10**	**26.33**	**24.96**	**37.43**	**36.06**	**60.00**	**50.00**	**-22.57**	**-13.94**
7	21.17188	11.39	25.41	23.33	36.80	34.72	60.00	50.00	-23.20	-15.28

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.

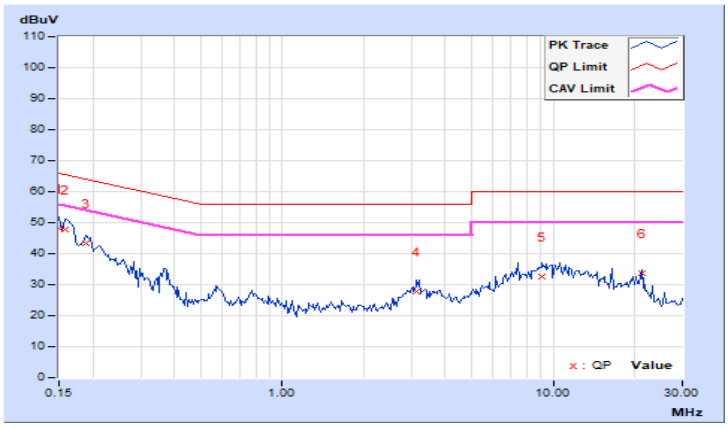


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.15000	9.94	38.36	18.38	48.30	28.32	66.00	56.00	-17.70	-27.68
2	0.15781	9.95	37.82	19.29	47.77	29.24	65.58	55.58	-17.81	-26.34
3	0.18906	9.95	33.21	18.37	43.16	28.32	64.08	54.08	-20.92	-25.76
4	3.13281	10.15	17.55	11.29	27.70	21.44	56.00	46.00	-28.30	-24.56
5	9.14453	10.50	21.97	15.17	32.47	25.67	60.00	50.00	-27.53	-24.33
6	21.17188	11.11	22.71	20.55	33.82	31.66	60.00	50.00	-26.18	-18.34

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.

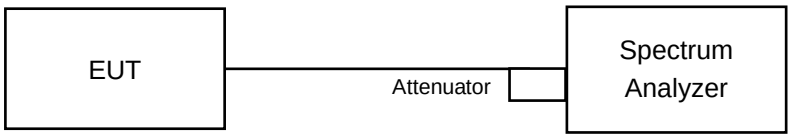


4.3 6dB Bandwidth Measurement

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
		Chain 0	Chain 1		
1	2412	9.58	9.63	0.5	PASS
6	2437	9.60	10.09	0.5	PASS
11	2462	9.60	9.60	0.5	PASS

802.11g

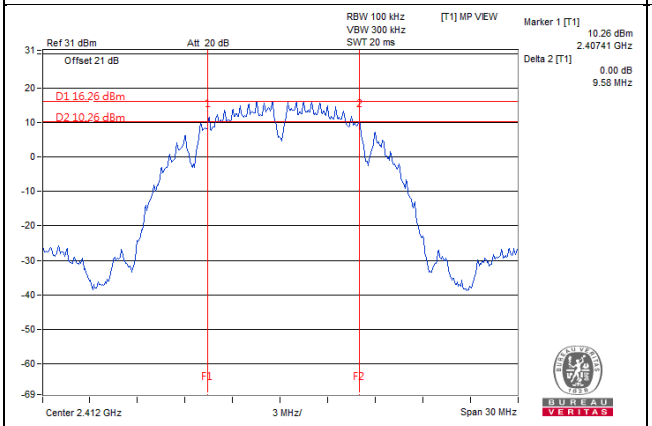
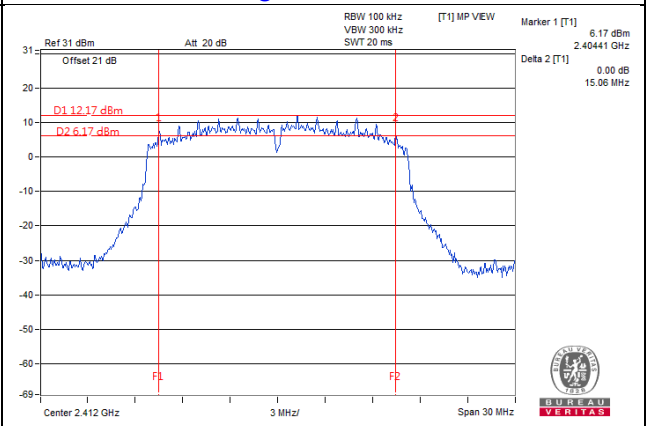
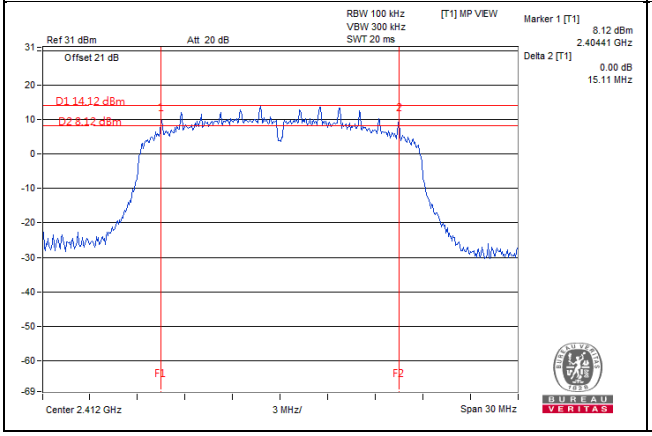
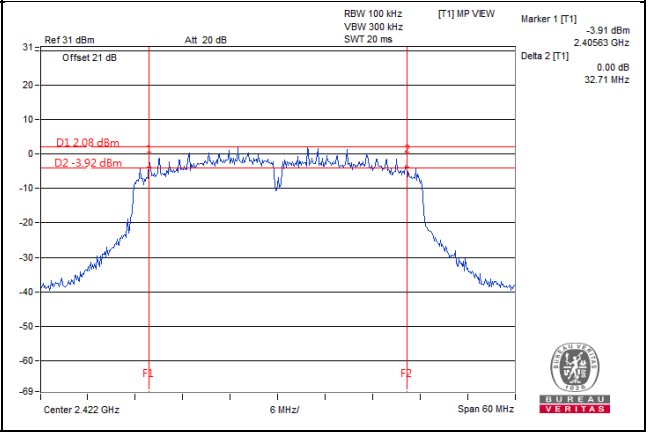
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.11	15.06	0.5	PASS
6	2437	15.16	15.18	0.5	PASS
11	2462	15.12	15.16	0.5	PASS

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.11	15.16	0.5	Pass
6	2437	15.16	15.16	0.5	Pass
11	2462	15.16	15.13	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	32.71	33.92	0.5	Pass
6	2437	32.72	35.09	0.5	Pass
9	2452	35.10	35.13	0.5	Pass

Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH1	**802.11g / Chain 1 : CH1**
	
802.11n (HT20) / Chain 0 : CH1	**802.11n (HT40) / Chain 0 : CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

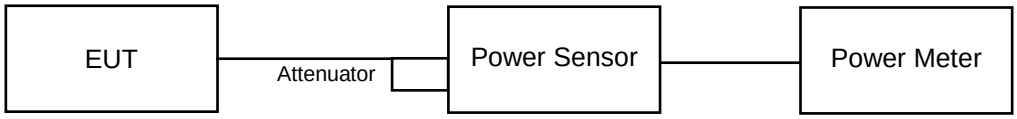
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

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

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 AVERAGE POWER

802.11b

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	25.34	23.72	577.484	27.62
6	2437	26.72	26.58	924.882	29.66
11	2462	24.13	24.06	513.504	27.11

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	23.23	21.98	368.139	25.66
6	2437	24.67	24.27	560.39	27.48
11	2462	23.06	22.93	398.638	26.01

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	23.23	21.56	353.597	25.49
6	2437	24.89	24.66	600.734	27.79
11	2462	22.67	22.49	362.346	25.59

802.11n (HT40)

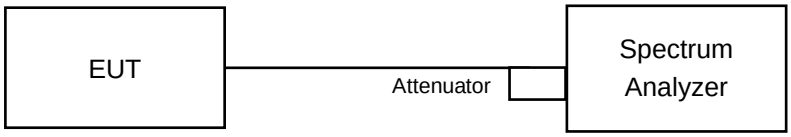
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	14.85	13.25	51.684	17.13
6	2437	21.48	21.15	270.922	24.33
9	2452	15.77	15.78	75.601	18.79

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

For 802.11b

a) Set instrument center frequency to DTS channel center frequency.
b) Set span to at least 1.5 times the OBW.
c) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz. .
d) Set VBW ≥3 x RBW.
e) Detector = power averaging (RMS) or sample detector (when RMS not available).
f) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g) Sweep time = auto couple.
h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
i) Use the peak marker function to determine the maximum amplitude level.

For 802.11g, 802.11n (HT20), 802.11n (HT40)

a) Measure the duty cycle (x).
b) Set instrument center frequency to DTS channel center frequency.
c) Set span to at least 1.5 times the OBW.
d) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
e) Set VBW ≥3 x RBW.
f) Detector = power averaging (RMS) or sample detector (when RMS not available).
g) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
h) Sweep time = auto couple.
i) Do not use sweep triggering. Allow sweep to “free run”.
j) Employ trace averaging (RMS) mode over a minimum of 100 traces.
k) Use the peak marker function to determine the maximum amplitude level.
l) Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time.

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

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-5.57	3.01	-2.56	8	Pass
	6	2437	-4.15	3.01	-1.14	8	Pass
	11	2462	-6.48	3.01	-3.47	8	Pass
1	1	2412	-6.22	3.01	-3.21	8	Pass
	6	2437	-4.79	3.01	-1.78	8	Pass
	11	2462	-7.30	3.01	-4.29	8	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.66dBi < 6dBi , so the power density limit shall not be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-8.27	3.01	0.11	-5.15	8	Pass
	6	2437	-8.20	3.01	0.11	-5.08	8	Pass
	11	2462	-8.54	3.01	0.11	-5.42	8	Pass
1	1	2412	-10.04	3.01	0.11	-6.92	8	Pass
	6	2437	-8.05	3.01	0.11	-4.93	8	Pass
	11	2462	-8.22	3.01	0.11	-5.10	8	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.66dBi < 6dBi , so the power density limit shall not be reduced.
2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

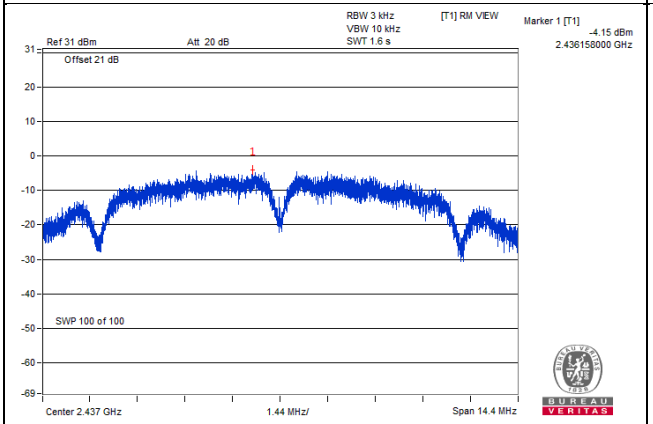
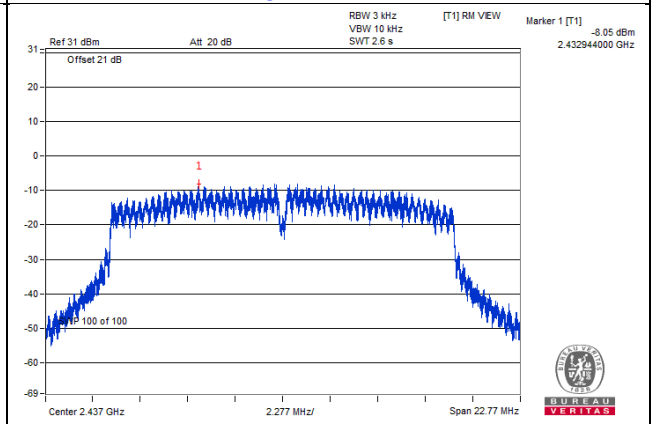
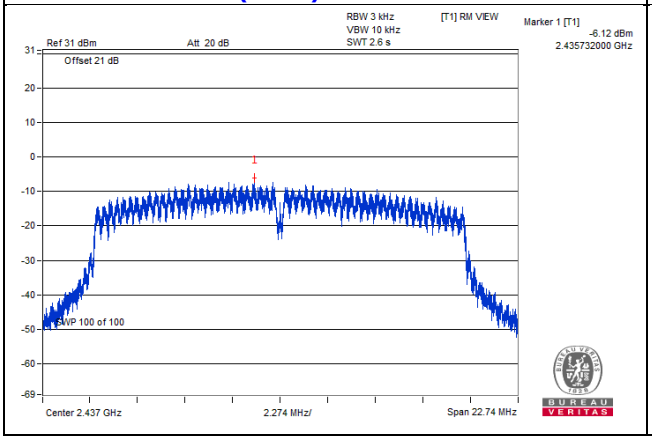
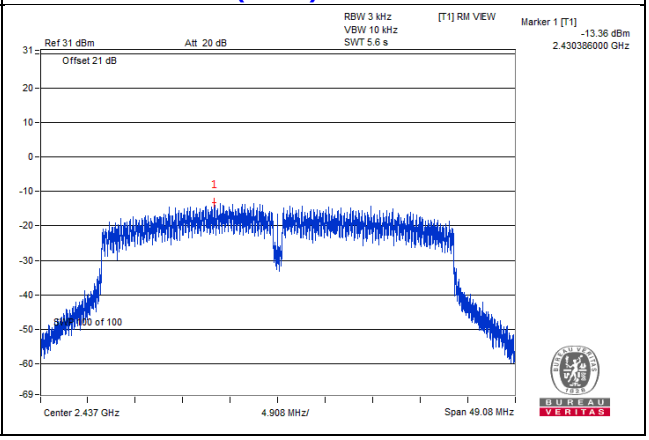
TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-8.77	3.01	0.12	-5.64	8	Pass
	6	2437	-6.12	3.01	0.12	-2.99	8	Pass
	11	2462	-9.80	3.01	0.12	-6.67	8	Pass
1	1	2412	-10.75	3.01	0.12	-7.62	8	Pass
	6	2437	-7.62	3.01	0.12	-4.49	8	Pass
	11	2462	-8.69	3.01	0.12	-5.56	8	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] =5.66dBi < 6dBi , so the power density limit shall not be reduced.
2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-17.77	3.01	0.19	-14.57	8	Pass
	6	2437	-13.36	3.01	0.19	-10.16	8	Pass
	9	2452	-17.67	3.01	0.19	-14.47	8	Pass
1	3	2422	-21.08	3.01	0.19	-17.88	8	Pass
	6	2437	-14.14	3.01	0.19	-10.94	8	Pass
	9	2452	-19.18	3.01	0.19	-15.98	8	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.66dBi < 6dBi , so the power density limit shall not be reduced.
2. Refer to section 3.3 for duty cycle spectrum plot.

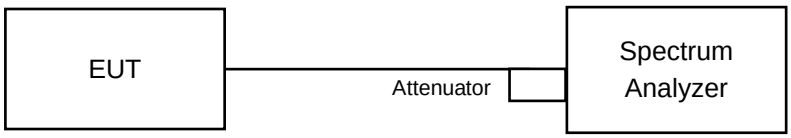
Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH6	**802.11g / Chain 1 : CH6**
	
802.11n (HT20) / Chain 0 : CH6	**802.11n (HT40) / Chain 0 : CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below -30dB 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

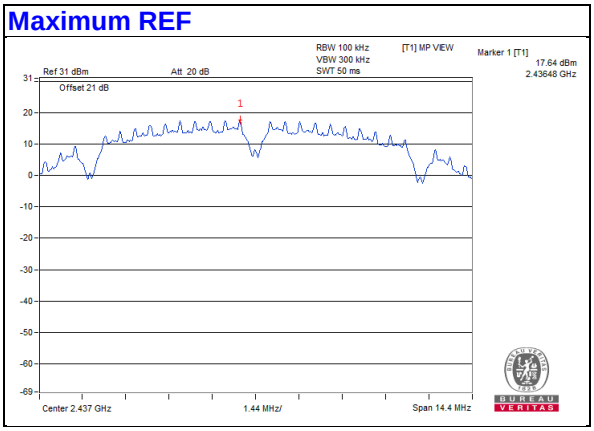
Same as Item 4.3.6

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 -30dB offset below D1. It shows compliance with the requirement.

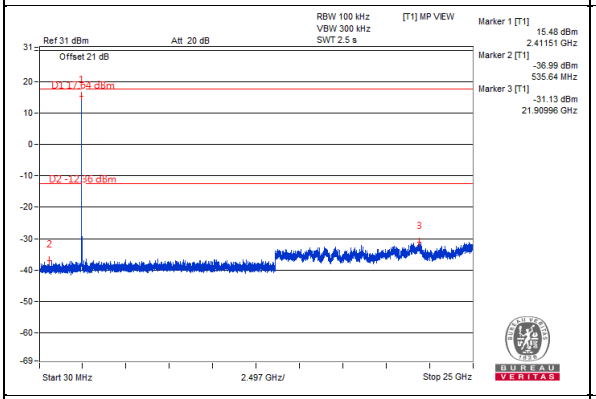
802.11b

Maximum REF

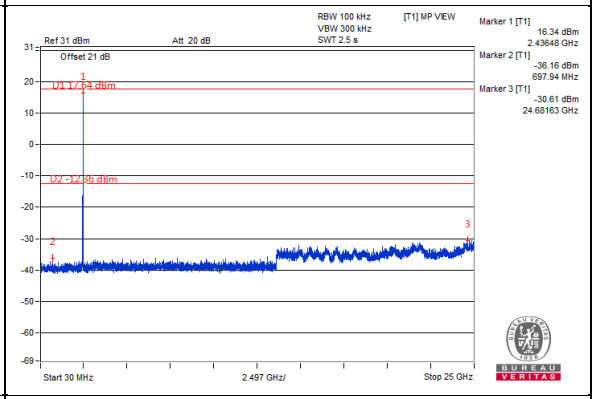


Chain 0

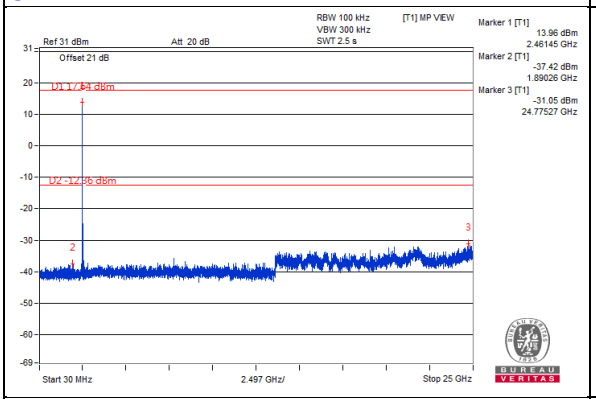
CH 1



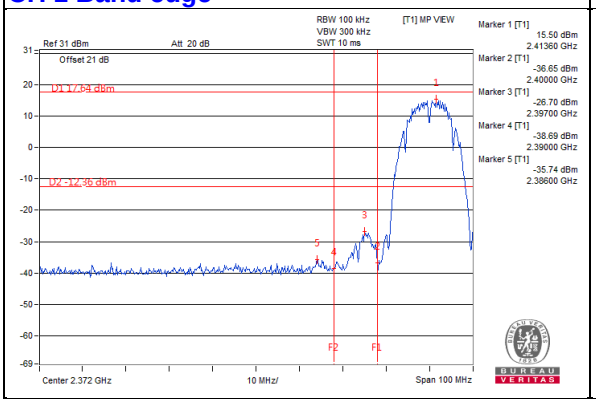
CH 6



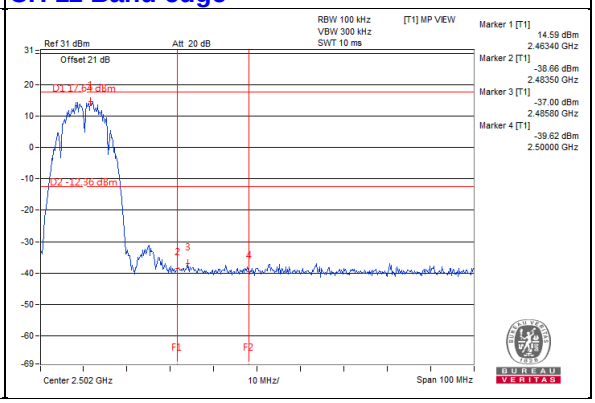
CH 11



CH 1 Band edge

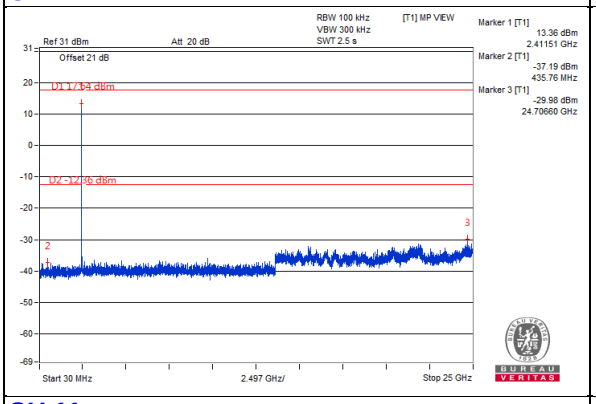


CH 11 Band edge

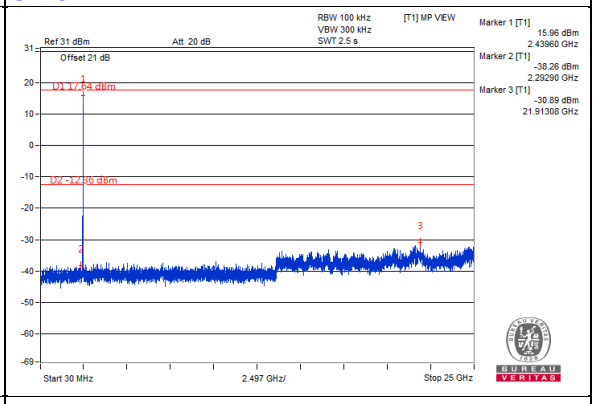


Chain 1

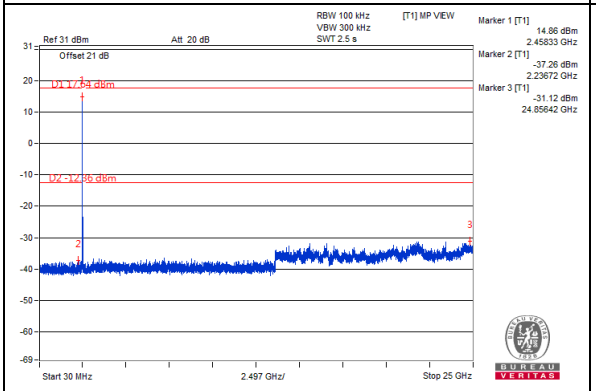
CH 1



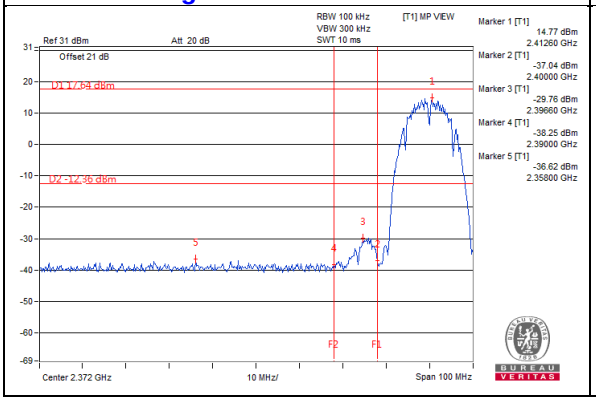
CH 6



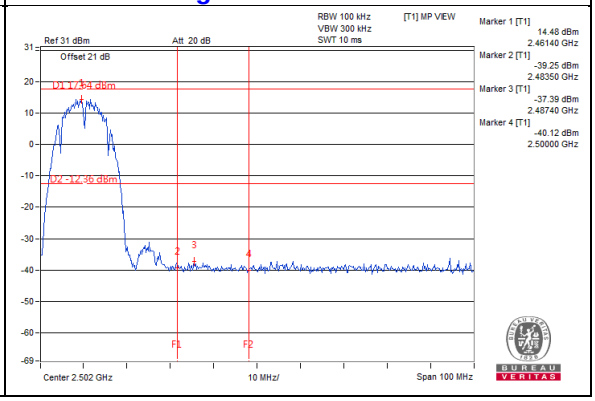
CH 11



CH 1 Band edge

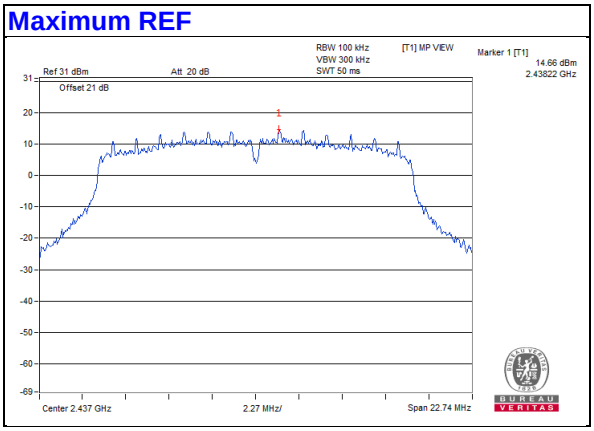


CH 11 Band edge



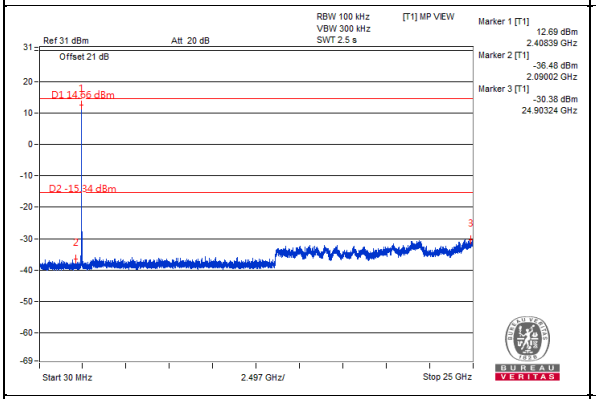
802.11g

Maximum REF

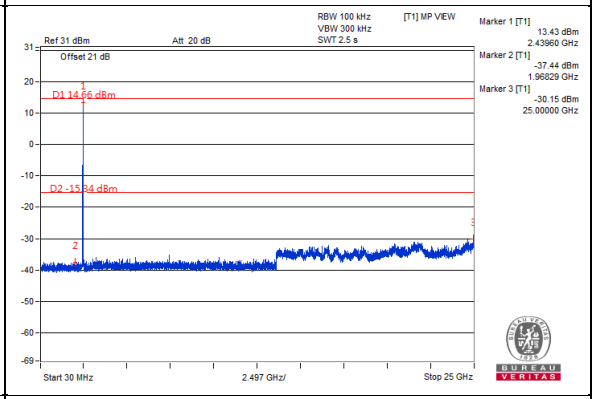


Chain 0

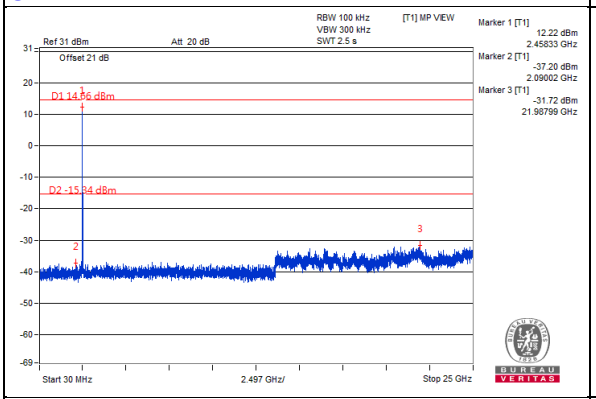
CH 1



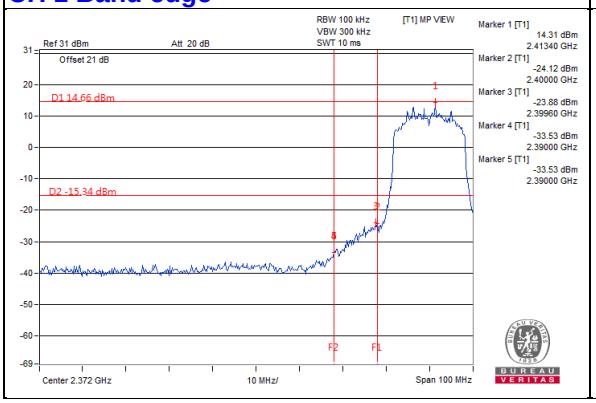
CH 6



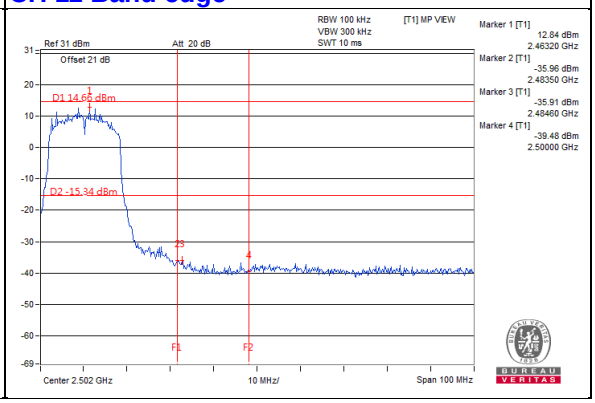
CH 11



CH 1 Band edge

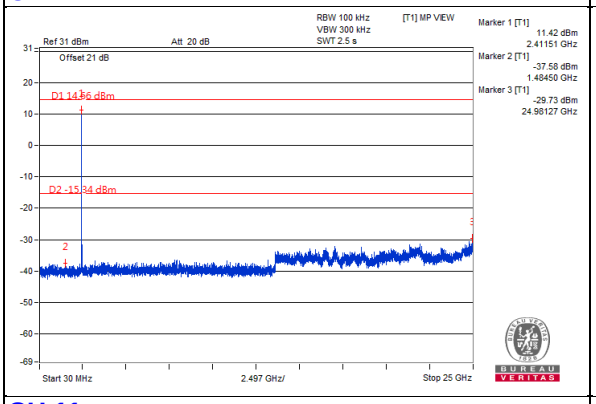


CH 11 Band edge

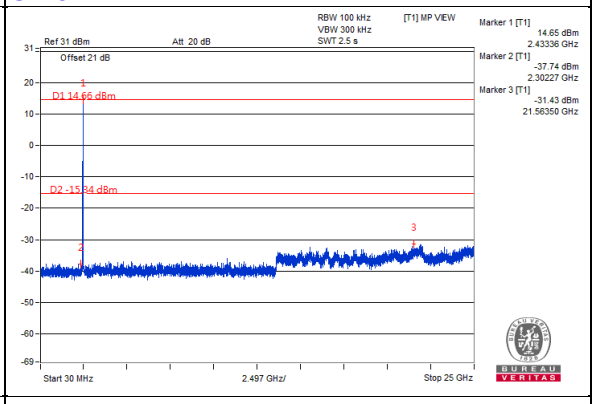


Chain 1

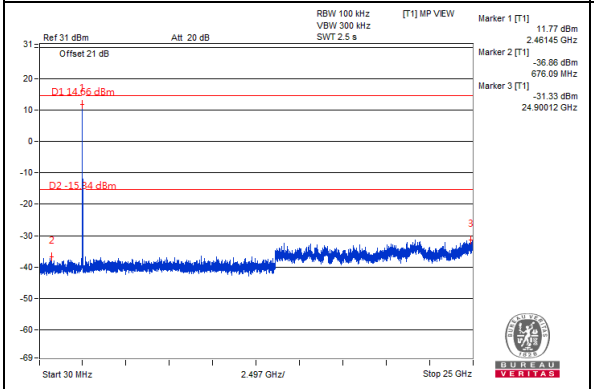
CH 1



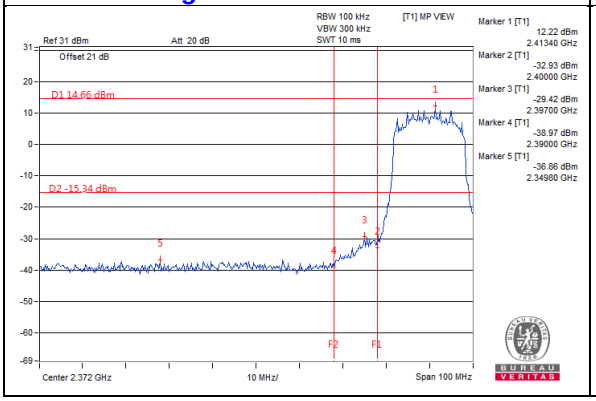
CH 6



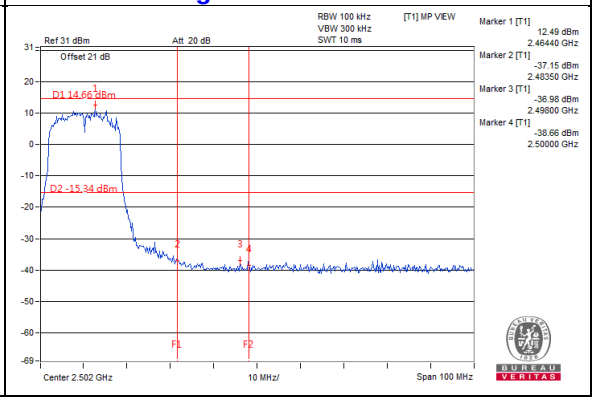
CH 11



CH 1 Band edge

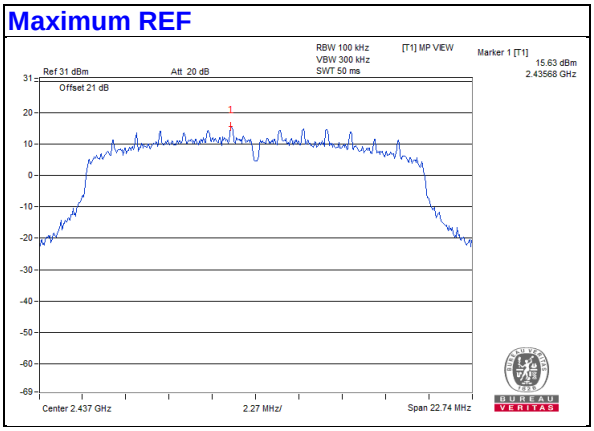


CH 11 Band edge



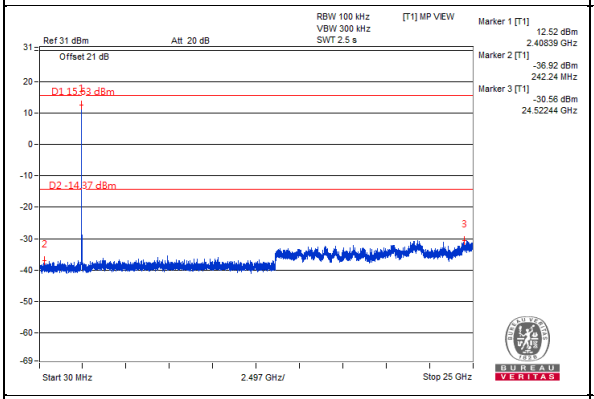
802.11n (HT20)

Maximum REF

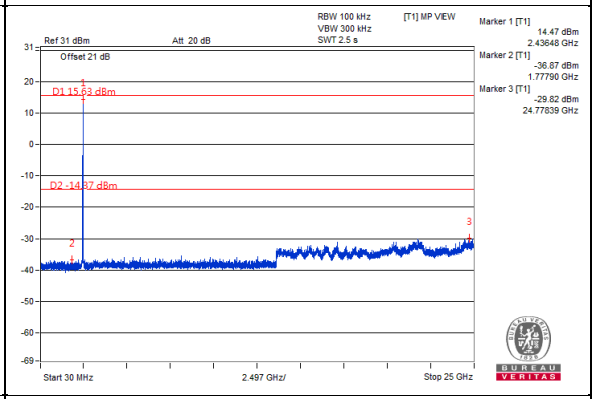


Chain 0

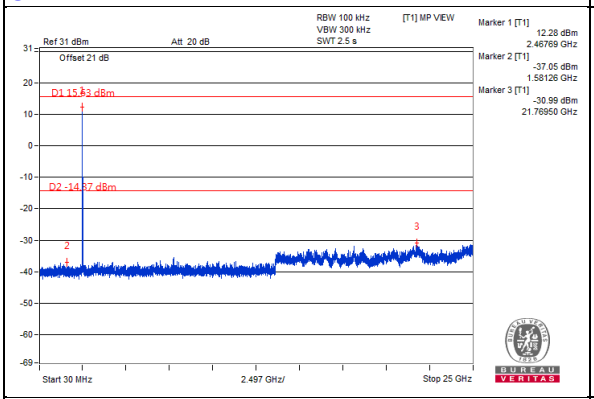
CH 1



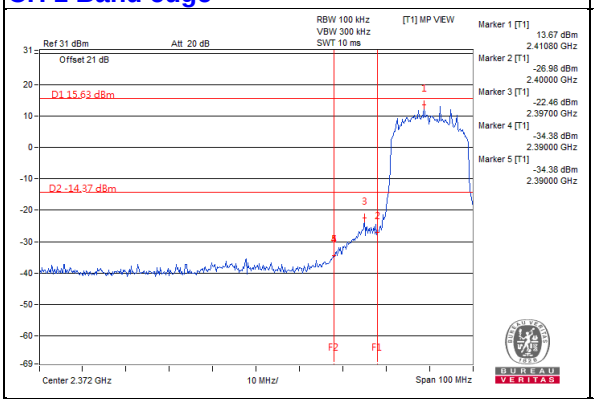
CH 6



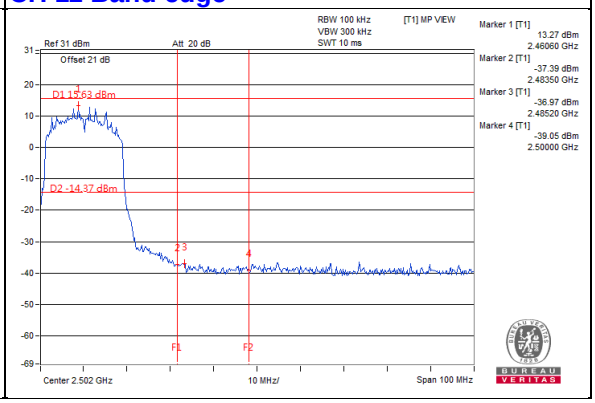
CH 11



CH 1 Band edge

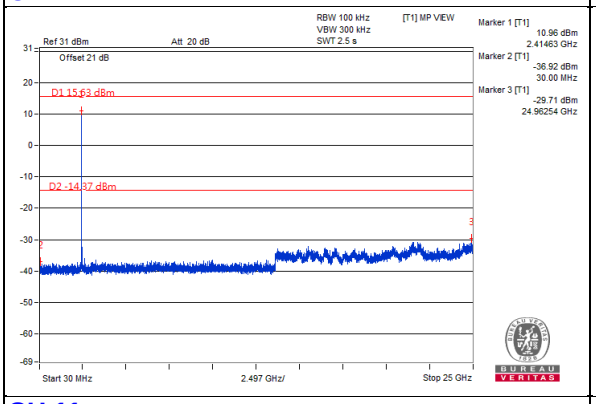


CH 11 Band edge

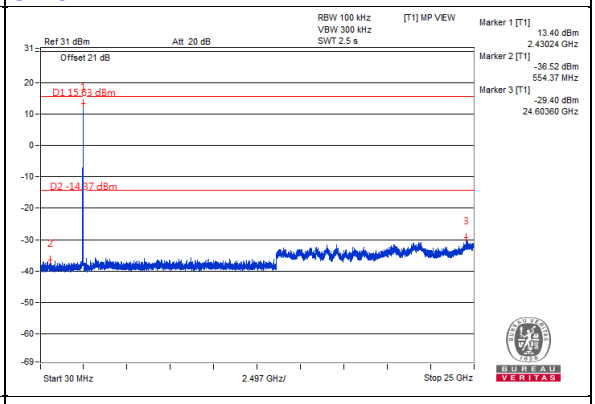


Chain 1

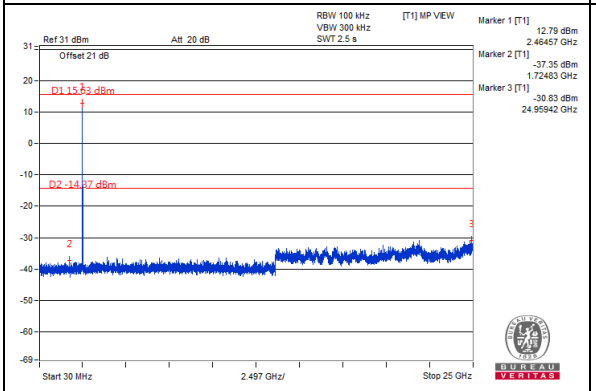
CH 1



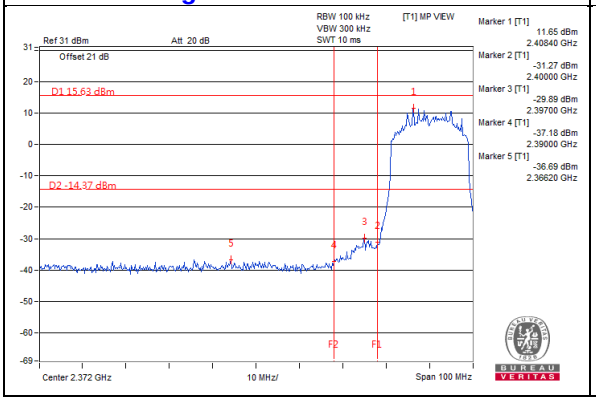
CH 6



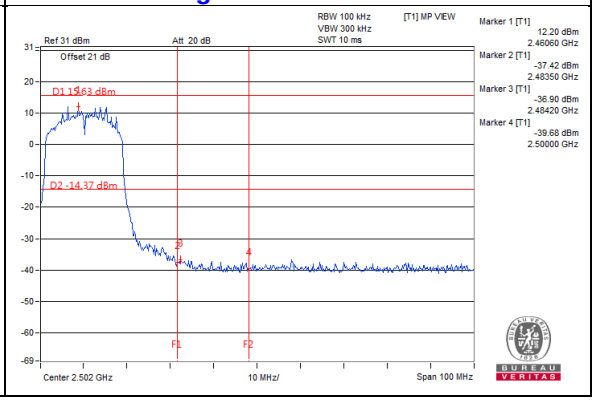
CH 11



CH 1 Band edge

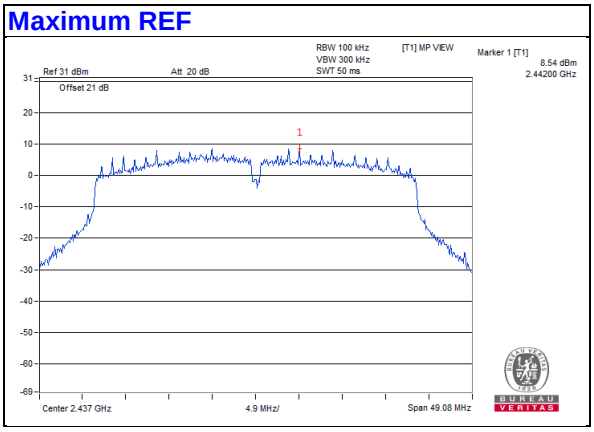


CH 11 Band edge



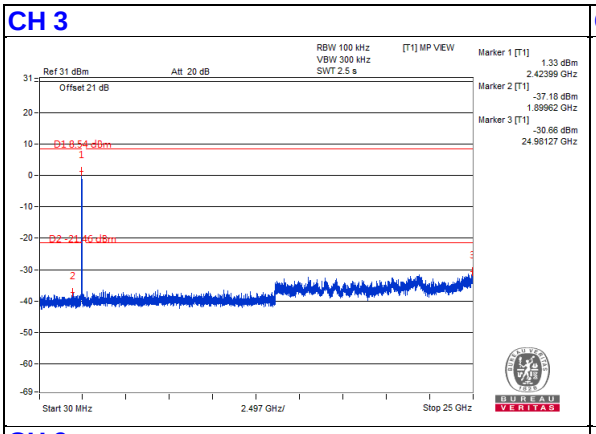
802.11n (HT40)

Maximum REF

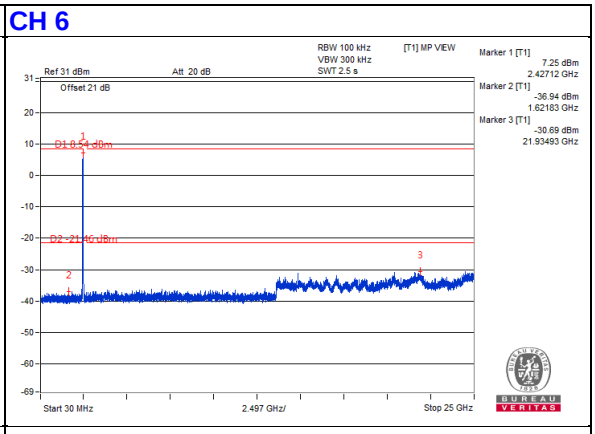


Chain 0

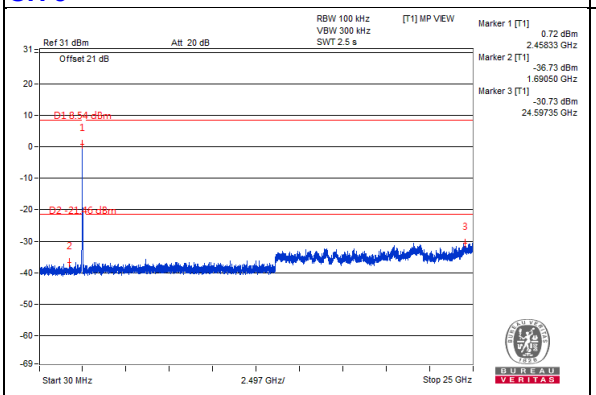
CH 3



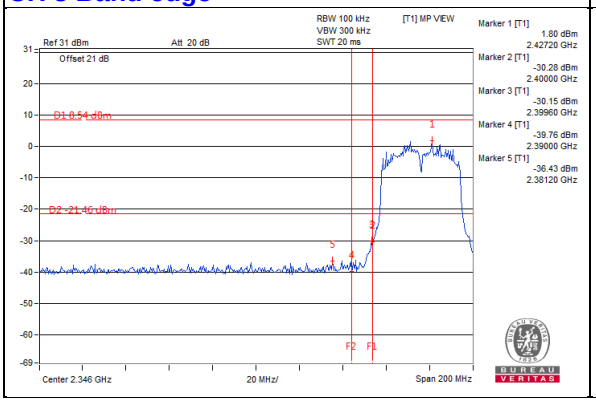
CH 6



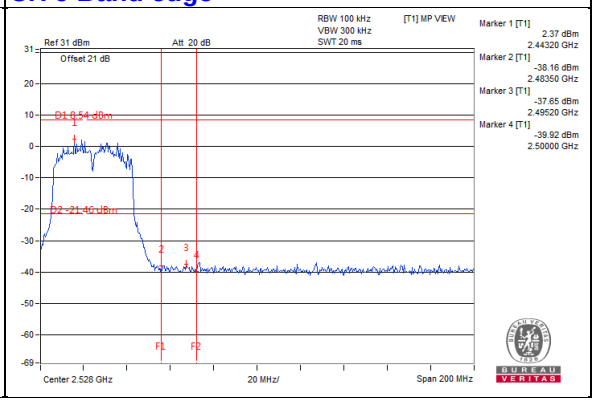
CH 9



CH 3 Band edge

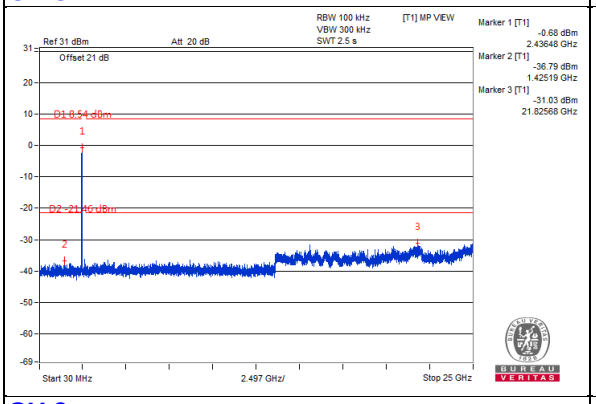


CH 9 Band edge

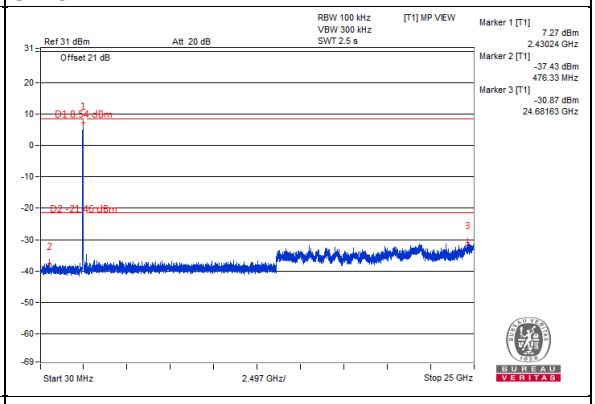


Chain 1

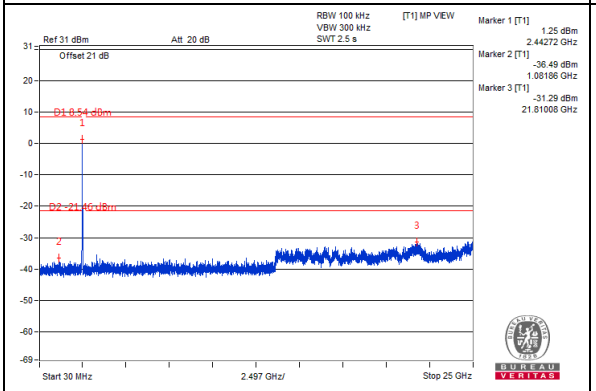
CH 3



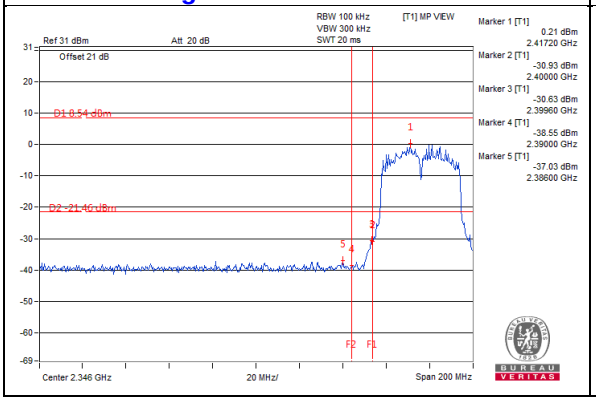
CH 6



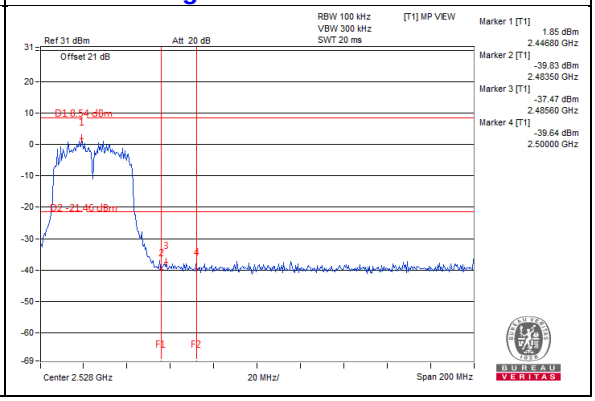
CH 9



CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information of 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.

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

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