FCC Test Report

Report No.:	RFBEMI-WTW-P21050741
FCC ID:	NOIKBN418
Test Model:	N418
Received Date:	May 19, 2021
Test Date:	July 15 to 21, 2021
Issued Date:	Sep. 28, 2021
Applicant:	NETRONIX, INC.
Address:	No 945, Boai St, Jubei City. Hsinchu, 30265 Taiwan
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
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

Table of Contents

Release Control Record 4

1 Certificate of Conformity 5

2 Summary of Test Results 6

2.1 Measurement Uncertainty 6
2.2 Modification Record 6

3 General Information 7

3.1 General Description of EUT 7
3.2 Description of Test Modes 9
3.2.1 Test Mode Applicability and Tested Channel Detail 10
3.3 Duty Cycle of Test Signal 12
3.4 Description of Support Units 13
3.4.1 Configuration of System under Test 13
3.5 General Description of Applied Standards and References 14

4 Test Types and Results 15

4.1 Radiated Emission and Bandedge Measurement 15
4.1.1 Limits of Radiated Emission and Bandedge Measurement 15
4.1.2 Test Instruments 16
4.1.3 Test Procedures 18
4.1.4 Deviation from Test Standard 19
4.1.5 Test Setup 19
4.1.6 EUT Operating Conditions 20
4.1.7 Test Results 21
4.2 Conducted Emission Measurement 35
4.2.1 Limits of Conducted Emission Measurement 35
4.2.2 Test Instruments 35
4.2.3 Test Procedures 36
4.2.4 Deviation from Test Standard 36
4.2.5 Test Setup 36
4.2.6 EUT Operating Conditions 36
4.2.7 Test Results 37
4.3 6dB Bandwidth Measurement 39
4.3.1 Limits of 6dB Bandwidth Measurement 39
4.3.2 Test Setup 39
4.3.3 Test Instruments 39
4.3.4 Test Procedure 39
4.3.5 Deviation from Test Standard 39
4.3.6 EUT Operating Conditions 39
4.3.7 Test Result 40
4.4 Conducted Output Power Measurement 42
4.4.1 Limits of Conducted Output Power Measurement 42
4.4.2 Test Setup 42
4.4.3 Test Instruments 42
4.4.4 Test Procedures 42
4.4.5 Deviation from Test Standard 42
4.4.6 EUT Operating Conditions 42
4.4.7 Test Results 43
4.5 Power Spectral Density Measurement 45
4.5.1 Limits of Power Spectral Density Measurement 45
4.5.2 Test Setup 45
4.5.3 Test Instruments 45
4.5.4 Test Procedure 45
4.5.5 Deviation from Test Standard 45
4.5.6 EUT Operating Condition 45

4.5.7 Test Results 46
4.6 Conducted Out of Band Emission Measurement 48
4.6.1 Limits of Conducted Out of Band Emission Measurement 48
4.6.2 Test Setup 48
4.6.3 Test Instruments 48
4.6.4 Test Procedure 48
4.6.5 Deviation from Test Standard 48
4.6.6 EUT Operating Condition 48
4.6.7 Test Results 48

5 Pictures of Test Arrangements 53

Annex A - Band-Edge Measurement 54

Appendix – Information of the Testing Laboratories 58

Release Control Record

Issue No.	Description	Date Issued
RFBEMI-WTW-P21050741	Original release.	Sep. 28, 2021

1 Certificate of Conformity

Product: Electronic Display Device

Brand: Rakuten kobo

Test Model: N418

Sample Status: Engineering sample

Applicant: NETRONIX, INC.

Test Date: July 15 to 21, 2021

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 : _____ , **Date:** Sep. 28, 2021
Claire Kuan / Specialist

Approved by : _____ , **Date:** Sep. 28, 2021
Clark Lin / Technical 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 -18.02 dB at 0.55625 MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.4dB at 2483.50 MHz
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.

Note:

1. For 2.4 GHz band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A.
2. 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	1.9 dB
Conducted emissions	-	2.5 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.1 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.1 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Electronic Display Device
Brand	Rakuten kobo
Test Model	N418
Status of EUT	Engineering sample
Power Supply Rating	3.7 Vdc from battery or 5 Vdc from USB interface
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 150 Mbps
Operating Frequency	2.412 ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	211.349 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Cable Supplied	USB Cable x1 (Shielded, 1.0m)

Note:

1. Simultaneously transmission condition.

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

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

Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
2	2.4~2.4835GHz	CERAMIC ANTENNA	none

3. The EUT could be supplied with MicroSD card and following different models could be chosen:

No.	Model	Remark
1	SDSDQAB-032G-1	1st source MicroSD
2	MKUS032G-CGZ1	2nd source MicroSD

4. The EUT could be supplied with USB cable and following different models could be chosen:

Brand	Model	Material	Color	Signal Line
Yih Fone	SH-0422	PVC	Black	Shielded : Y , 1.0M , Core: N/A
	SH-0418	TPE		
	SH-0424	PVC	White	
	SH-0420	TPE		
Note: From the above models, model: SH-0422 was selected as representative model for the test and its data was recorded in this report.				

5. The EUT was pre-tested under the following modes:

For AC Power Conducted Emission	
Test Mode	Description
Mode A	**MicroSD Sandisk, Adapter Charge mode**
Mode B	MicroSD MK founder, Adapter Charge mode
Mode C	MicroSD Sandisk, Laptop Charge mode
Note: From the above modes, the worst case were found in **Mode A**. Therefore only the test data of the mode was recorded in this report.	
For Radiated Emission test	
Test Mode	Description
Mode D	**EUT Y-Z plane, MicroSD Sandisk, Adapter Charge mode**
Mode E	EUT Y-Z plane, MicroSD MK founder, Adapter Charge mode
Mode F	EUT Y-Z plane, MicroSD Sandisk, Battery mode
Mode G	**EUT X-Z plane, MicroSD Sandisk, Adapter Charge mode**
Mode H	EUT X-Y plane, MicroSD Sandisk, Adapter Charge mode
Note: From the above modes, the below 1GHz worst case were found in **Mode D**. and the above 1GHz worst case were found in **Mode G.** Therefore only the test data of the mode was recorded in this report.	

6. The EUT incorporates a SISO function:

MODULATION MODE	TX & RX CONFIGURATION	
802.11b	1TX	1RX
802.11g	1TX	1RX
802.11n (HT20)	1TX	1RX
802.11n (HT40)	1TX	1RX

7. 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.
8. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

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

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)
802.11g	1 to 11	6	OFDM	BPSK	6

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)
802.11g	1 to 11	6	OFDM	BPSK	6

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

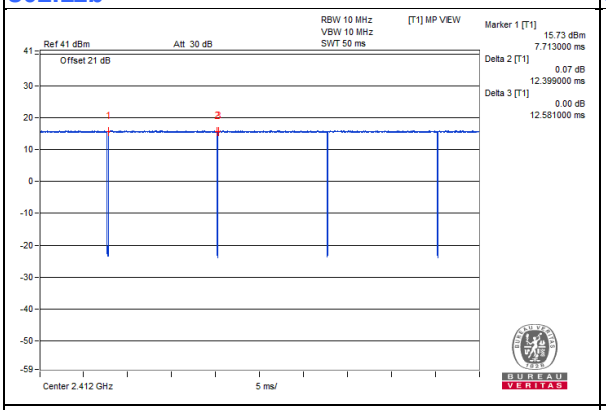
Test Condition:

Applicable to	Environmental Conditions	Input Power (System)	Tested By
RE≥1G	25deg. C, 67%RH, 23deg. C, 69%RH,	120Vac, 60Hz	Sampson Chen Edison Lee
RE<1G	23deg. C, 68%RH,	120Vac, 60Hz	Sampson Chen
PLC	25deg. C, 71%RH	120Vac, 60Hz	Sampson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

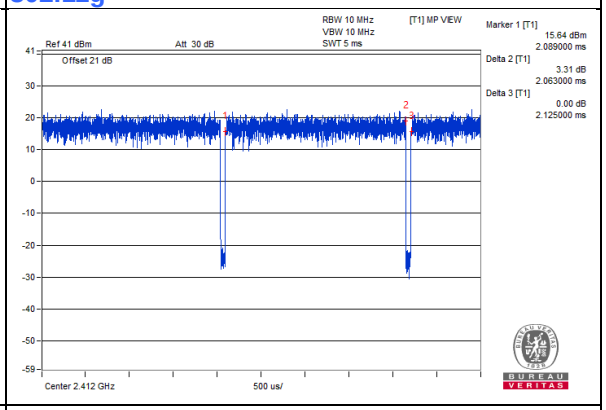
3.3 Duty Cycle of Test Signal

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 = 12.399/12.581 = 0.986
802.11g: Duty cycle = 2.063/2.125 = 0.971, Duty factor = 10 * log(1/0.971) = 0.06 dB
802.11n (HT20): Duty cycle = 1.919/1.957 = 0.981
802.11n (HT40): Duty cycle = 0.943/1.043 = 0.904, Duty factor = 10 * log(1/0.904) = 0.44 dB

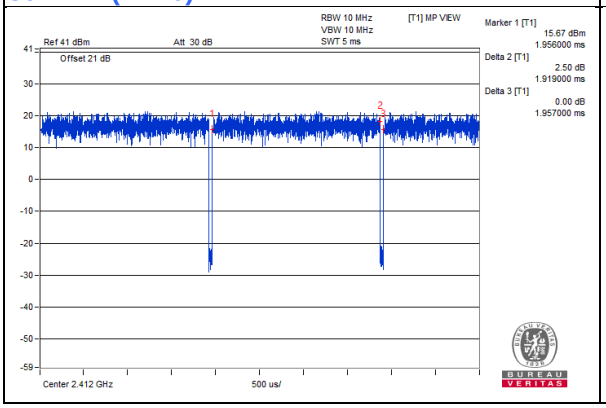
802.11b



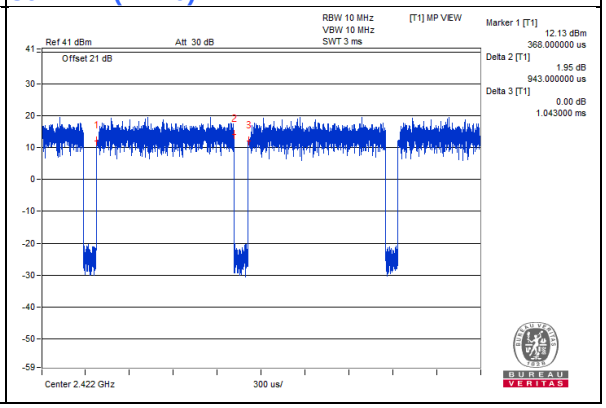
802.11g



802.11n (HT20)



802.11n (HT40)



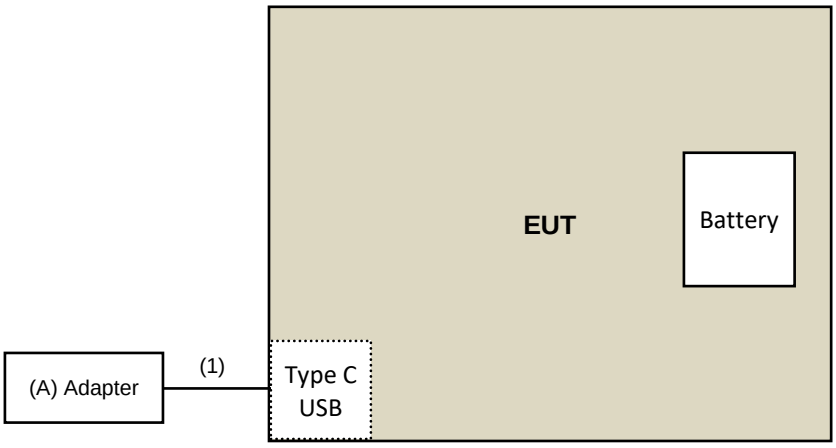
3.4 Description of Support Units

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.	Adapter	ASUS	NA	NA	NA	Provided by Lab

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB to Type C USB Cable	1	1	Yes	0	Supplied by client

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and References

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

Test Standard:

FCC Part 15, Subpart C (15.247)
ANSI C63.10-2013

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

References Test Guidance:

KDB 558074 D01 15.247 Meas Guidance v05r02

All test items have been performed as a reference to the above KDB test guidance.

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 radiated emission test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESR3	102528	Mar. 02, 2021	Mar. 01, 2022
Spectrum Analyzer Keysight	N9030B	MY57141948	May 21, 2021	May 20, 2022
Pre-Amplifier EMCI	EMC001340	980142	May 24, 2021	May 23, 2022
Loop Antenna Electro-Metrics	EM-6879	264	Mar. 05, 2021	Mar. 04, 2022
RF Cable	5D-FB	LOOPCAB-001	Jan. 07, 2021	Jan. 06, 2022
RF Cable	5D-FB	LOOPCAB-002	Jan. 07, 2021	Jan. 06, 2022
Pre-Amplifier EMCI	EMC330N	980538	Apr. 26, 2021	Apr. 25, 2022
Trilog Broadband Antenna SCHWARZBECK	VULB9168	9168-0842	Nov. 03, 2020	Nov. 02, 2021
RF Cable	8D	966-5-1	Apr. 26, 2021	Apr. 25, 2022
RF Cable	8D	966-5-2	Apr. 26, 2021	Apr. 25, 2022
RF Cable	8D	966-5-3	Apr. 26, 2021	Apr. 25, 2022
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	Jan. 11, 2021	Jan. 10, 2022
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-1819	Nov. 22, 2020	Nov. 21, 2021
Pre-Amplifier EMCI	EMC12630SE	980509	Apr. 26, 2021	Apr. 25, 2022
RF Cable EMCI	EMC104-SM-SM-1500	180503	Apr. 26, 2021	Apr. 25, 2022
RF Cable EMCI	EMC104-SM-SM-2000	180501	Apr. 26, 2021	Apr. 25, 2022
RF Cable EMCI	EMC104-SM-SM-6000	180506	Apr. 26, 2021	Apr. 25, 2022
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 11, 2021	Jan. 10, 2022
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 22, 2020	Nov. 21, 2021
RF Cable	EMC102-KM-KM-1200	160924	Jan. 11, 2021	Jan. 10, 2022
RF Cable	EMC-KM-KM-4000	200214	Mar. 10, 2021	Mar. 09, 2022
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. 5.
3. Tested Date: July 15 to 21, 2021

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	101516	Mar. 08, 2021	Mar. 07, 2022
Power meter Anritsu	ML2495A	1529002	June 21, 2021	June 20, 2022
Power sensor Anritsu	MA2411B	1339443	May 31, 2021	May 30, 2022
10dB Attenuator Woken	MDCS18N-10	MDCS18N-10-01	Apr. 13, 2021	Apr. 12, 2022
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

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: July 21, 2021

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:

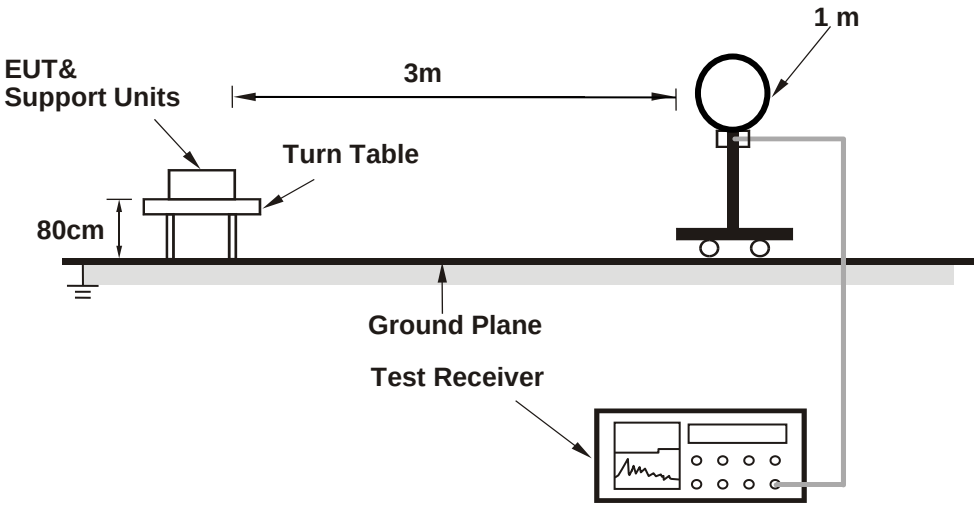
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

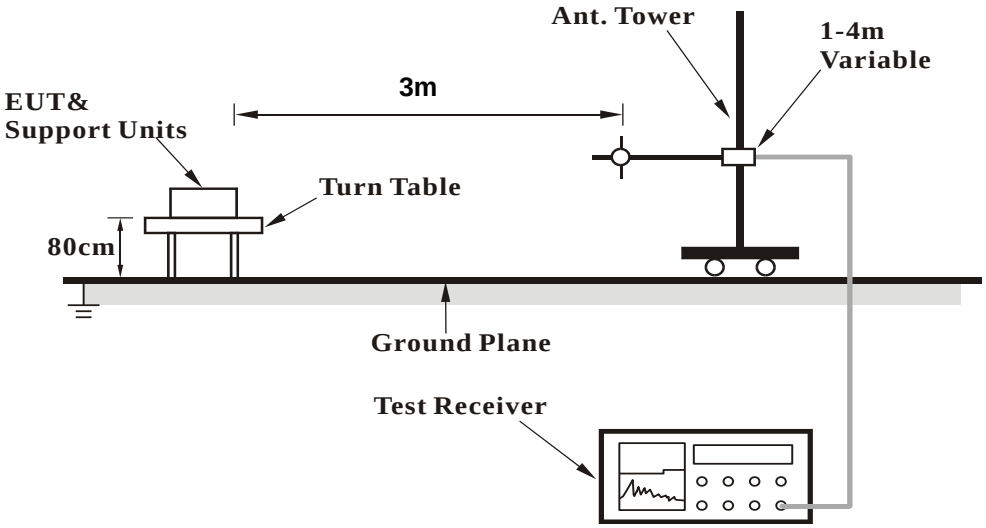
No deviation.

4.1.5 Test Setup

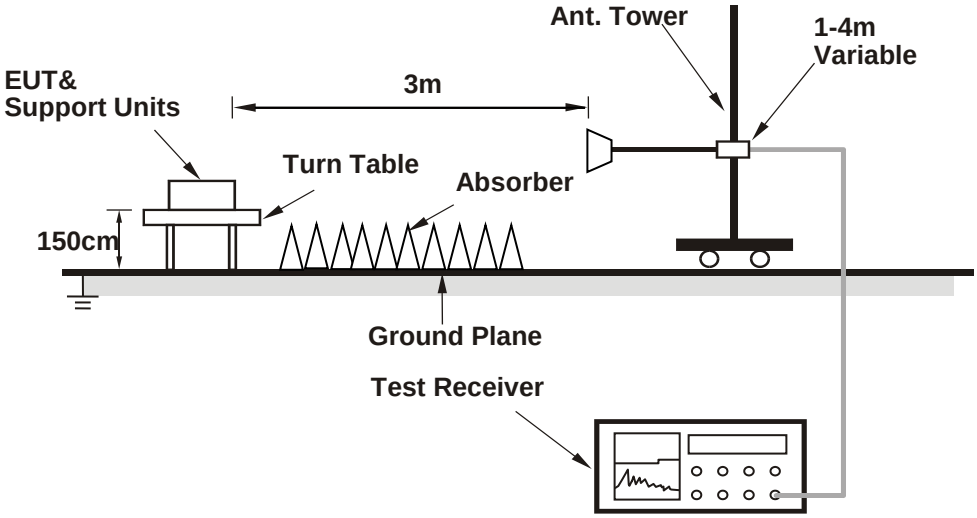
For Radiated emission below 30MHz



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. Placed the EUT on the testing table.
b. Controlling software (HyperTerminal paste 2.4G command.txt command) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

RF Mode	TX 802.11b	**Channel**	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	**Detector Function**	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	2390.00	59.1 PK	74.0	-14.9	1.41 H	175	61.8	-2.7
2	2390.00	46.3 AV	54.0	-7.7	1.41 H	175	49.0	-2.7
3	*2412.00	97.7 PK			1.41 H	175	100.4	-2.7
4	*2412.00	95.1 AV			1.41 H	175	97.8	-2.7
5	4824.00	49.6 PK	74.0	-24.4	1.91 H	20	47.8	1.8
6	4824.00	42.1 AV	54.0	-11.9	1.91 H	20	40.3	1.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (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	57.4 PK	74.0	-16.6	3.00 V	150	60.1	-2.7
2	2390.00	46.0 AV	54.0	-8.0	3.00 V	150	48.7	-2.7
3	*2412.00	102.8 PK			3.00 V	150	105.5	-2.7
4	*2412.00	100.6 AV			3.00 V	150	103.3	-2.7
5	4824.00	48.8 PK	74.0	-25.2	1.45 V	313	47.0	1.8
6	4824.00	39.8 AV	54.0	-14.2	1.45 V	313	38.0	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11b	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	56.7 PK	74.0	-17.3	1.88 H	212	59.4	-2.7
2	2390.00	45.6 AV	54.0	-8.4	1.88 H	212	48.3	-2.7
3	*2437.00	101.1 PK			1.88 H	212	103.8	-2.7
4	*2437.00	98.8 AV			1.88 H	212	101.5	-2.7
5	2483.50	56.9 PK	74.0	-17.1	1.88 H	212	59.7	-2.8
6	2483.50	45.7 AV	54.0	-8.3	1.88 H	212	48.5	-2.8
7	4874.00	46.9 PK	74.0	-27.1	1.96 H	37	45.2	1.7
8	4874.00	37.7 AV	54.0	-16.3	1.96 H	37	36.0	1.7
9	7311.00	42.0 PK	74.0	-32.0	1.49 H	324	34.8	7.2
10	7311.00	29.8 AV	54.0	-24.2	1.49 H	324	22.6	7.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	56.3 PK	74.0	-17.7	3.28 V	171	59.0	-2.7
2	2390.00	45.3 AV	54.0	-8.7	3.28 V	171	48.0	-2.7
3	*2437.00	103.3 PK			3.28 V	171	106.0	-2.7
4	*2437.00	100.4 AV			3.28 V	171	103.1	-2.7
5	2483.50	56.7 PK	74.0	-17.3	3.28 V	171	59.5	-2.8
6	2483.50	45.6 AV	54.0	-8.4	3.28 V	171	48.4	-2.8
7	4874.00	47.5 PK	74.0	-26.5	1.50 V	309	45.8	1.7
8	4874.00	38.2 AV	54.0	-15.8	1.50 V	309	36.5	1.7
9	7311.00	44.3 PK	74.0	-29.7	1.74 V	68	37.1	7.2
10	7311.00	33.9 AV	54.0	-20.1	1.74 V	68	26.7	7.2

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.

RF Mode	TX 802.11b	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	101.2 PK			1.94 H	226	104.0	-2.8
2	*2462.00	98.5 AV			1.94 H	226	101.3	-2.8
3	2483.50	58.7 PK	74.0	-15.3	1.94 H	226	61.5	-2.8
4	2483.50	48.1 AV	54.0	-5.9	1.94 H	226	50.9	-2.8
5	4924.00	47.6 PK	74.0	-26.4	1.93 H	33	45.8	1.8
6	4924.00	38.2 AV	54.0	-15.8	1.93 H	33	36.4	1.8
7	7386.00	42.0 PK	74.0	-32.0	1.51 H	311	34.6	7.4
8	7386.00	29.6 AV	54.0	-24.4	1.51 H	311	22.2	7.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	102.0 PK			2.94 V	147	104.8	-2.8
2	*2462.00	99.9 AV			2.94 V	147	102.7	-2.8
3	2483.50	59.3 PK	74.0	-14.7	2.94 V	147	62.1	-2.8
4	2483.50	48.3 AV	54.0	-5.7	2.94 V	147	51.1	-2.8
5	4924.00	47.7 PK	74.0	-26.3	1.49 V	312	45.9	1.8
6	4924.00	38.7 AV	54.0	-15.3	1.49 V	312	36.9	1.8
7	7386.00	44.5 PK	74.0	-29.5	1.72 V	63	37.1	7.4
8	7386.00	33.8 AV	54.0	-20.2	1.72 V	63	26.4	7.4

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.

RF Mode	TX 802.11g	Channel	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.2 PK	74.0	-14.8	3.02 H	144	61.9	-2.7
2	2390.00	46.4 AV	54.0	-7.6	3.02 H	144	49.1	-2.7
3	*2412.00	103.9 PK			3.02 H	144	106.6	-2.7
4	*2412.00	93.3 AV			3.02 H	144	96.0	-2.7
5	4824.00	48.1 PK	74.0	-25.9	1.51 H	320	46.3	1.8
6	4824.00	37.2 AV	54.0	-16.8	1.51 H	320	35.4	1.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	58.9 PK	74.0	-15.1	1.95 V	213	61.6	-2.7
2	2390.00	46.4 AV	54.0	-7.6	1.95 V	213	49.1	-2.7
3	*2412.00	103.2 PK			1.95 V	213	105.9	-2.7
4	*2412.00	91.3 AV			1.95 V	213	94.0	-2.7
5	4824.00	47.9 PK	74.0	-26.1	1.79 V	29	46.1	1.8
6	4824.00	36.9 AV	54.0	-17.1	1.79 V	29	35.1	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	56.3 PK	74.0	-17.7	1.93 H	211	59.0	-2.7
2	2390.00	45.5 AV	54.0	-8.5	1.93 H	211	48.2	-2.7
3	*2437.00	100.6 PK			1.93 H	211	103.3	-2.7
4	*2437.00	91.1 AV			1.93 H	211	93.8	-2.7
5	2483.50	56.9 PK	74.0	-17.1	1.93 H	211	59.7	-2.8
6	2483.50	46.0 AV	54.0	-8.0	1.93 H	211	48.8	-2.8
7	4874.00	47.0 PK	74.0	-27.0	1.72 H	42	45.3	1.7
8	4874.00	34.8 AV	54.0	-19.2	1.72 H	42	33.1	1.7
9	7311.00	41.7 PK	74.0	-32.3	1.53 H	316	34.5	7.2
10	7311.00	29.6 AV	54.0	-24.4	1.53 H	316	22.4	7.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	56.0 PK	74.0	-18.0	3.08 V	147	58.7	-2.7
2	2390.00	45.1 AV	54.0	-8.9	3.08 V	147	47.8	-2.7
3	*2437.00	103.6 PK			3.08 V	147	106.3	-2.7
4	*2437.00	94.5 AV			3.08 V	147	97.2	-2.7
5	2483.50	57.2 PK	74.0	-16.8	3.08 V	147	60.0	-2.8
6	2483.50	45.8 AV	54.0	-8.2	3.08 V	147	48.6	-2.8
7	4874.00	47.4 PK	74.0	-26.6	1.47 V	311	45.7	1.7
8	4874.00	35.1 AV	54.0	-18.9	1.47 V	311	33.4	1.7
9	7311.00	40.7 PK	74.0	-33.3	1.73 V	73	33.5	7.2
10	7311.00	28.4 AV	54.0	-25.6	1.73 V	73	21.2	7.2

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.

RF Mode	TX 802.11g	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	101.2 PK			2.03 H	209	104.0	-2.8
2	*2462.00	91.7 AV			2.03 H	209	94.5	-2.8
3	2483.50	59.4 PK	74.0	-14.6	2.03 H	209	62.2	-2.8
4	2483.50	48.5 AV	54.0	-5.5	2.03 H	209	51.3	-2.8
5	4924.00	47.0 PK	74.0	-27.0	1.93 H	40	45.2	1.8
6	4924.00	34.3 AV	54.0	-19.7	1.93 H	40	32.5	1.8
7	7386.00	41.9 PK	74.0	-32.1	1.47 H	303	34.5	7.4
8	7386.00	29.5 AV	54.0	-24.5	1.47 H	303	22.1	7.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	106.3 PK			2.92 V	138	109.1	-2.8
2	*2462.00	96.3 AV			2.92 V	138	99.1	-2.8
3	2483.50	60.1 PK	74.0	-13.9	2.92 V	138	62.9	-2.8
4	2483.50	49.2 AV	54.0	-4.8	2.92 V	138	52.0	-2.8
5	4924.00	47.1 PK	74.0	-26.9	1.51 V	299	45.3	1.8
6	4924.00	34.9 AV	54.0	-19.1	1.51 V	299	33.1	1.8
7	7386.00	41.0 PK	74.0	-33.0	1.60 V	67	33.6	7.4
8	7386.00	28.4 AV	54.0	-25.6	1.60 V	67	21.0	7.4

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.

RF Mode	TX 802.11n (HT20)	Channel	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.2 PK	74.0	-14.8	1.80 H	211	61.9	-2.7
2	2390.00	46.0 AV	54.0	-8.0	1.80 H	211	48.7	-2.7
3	*2412.00	100.4 PK			1.80 H	211	103.1	-2.7
4	*2412.00	90.7 AV			1.80 H	211	93.4	-2.7
5	4824.00	47.5 PK	74.0	-26.5	1.99 H	32	45.7	1.8
6	4824.00	35.0 AV	54.0	-19.0	1.99 H	32	33.2	1.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.5 PK	74.0	-14.5	3.00 V	142	62.2	-2.7
2	2390.00	48.3 AV	54.0	-5.7	3.00 V	142	51.0	-2.7
3	*2412.00	104.8 PK			3.00 V	142	107.5	-2.7
4	*2412.00	94.7 AV			3.00 V	142	97.4	-2.7
5	4824.00	47.9 PK	74.0	-26.1	1.43 V	312	46.1	1.8
6	4824.00	35.3 AV	54.0	-18.7	1.43 V	312	33.5	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11n (HT20)	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	56.4 PK	74.0	-17.6	1.83 H	200	59.1	-2.7
2	2390.00	45.2 AV	54.0	-8.8	1.83 H	200	47.9	-2.7
3	*2437.00	100.8 PK			1.83 H	200	103.5	-2.7
4	*2437.00	90.6 AV			1.83 H	200	93.3	-2.7
5	2483.50	57.0 PK	74.0	-17.0	1.83 H	200	59.8	-2.8
6	2483.50	45.6 AV	54.0	-8.4	1.83 H	200	48.4	-2.8
7	4874.00	46.9 PK	74.0	-27.1	2.01 H	43	45.2	1.7
8	4874.00	34.0 AV	54.0	-20.0	2.01 H	43	32.3	1.7
9	7311.00	41.4 PK	74.0	-32.6	1.48 H	304	34.2	7.2
10	7311.00	29.1 AV	54.0	-24.9	1.48 H	304	21.9	7.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	55.9 PK	74.0	-18.1	3.28 V	145	58.6	-2.7
2	2390.00	45.0 AV	54.0	-9.0	3.28 V	145	47.7	-2.7
3	*2437.00	104.1 PK			3.28 V	145	106.8	-2.7
4	*2437.00	93.9 AV			3.28 V	145	96.6	-2.7
5	2483.50	57.1 PK	74.0	-16.9	3.28 V	145	59.9	-2.8
6	2483.50	46.0 AV	54.0	-8.0	3.28 V	145	48.8	-2.8
7	4874.00	47.2 PK	74.0	-26.8	1.46 V	312	45.5	1.7
8	4874.00	34.1 AV	54.0	-19.9	1.46 V	312	32.4	1.7
9	7311.00	41.1 PK	74.0	-32.9	1.71 V	60	33.9	7.2
10	7311.00	28.4 AV	54.0	-25.6	1.71 V	60	21.2	7.2

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.

RF Mode	TX 802.11n (HT20)	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	100.2 PK			1.85 H	207	103.0	-2.8
2	*2462.00	90.4 AV			1.85 H	207	93.2	-2.8
3	2483.50	59.6 PK	74.0	-14.4	1.85 H	207	62.4	-2.8
4	2483.50	48.4 AV	54.0	-5.6	1.85 H	207	51.2	-2.8
5	4924.00	47.2 PK	74.0	-26.8	1.80 H	36	45.4	1.8
6	4924.00	33.8 AV	54.0	-20.2	1.80 H	36	32.0	1.8
7	7386.00	42.1 PK	74.0	-31.9	1.50 H	316	34.7	7.4
8	7386.00	29.9 AV	54.0	-24.1	1.50 H	316	22.5	7.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	103.3 PK			3.26 V	166	106.1	-2.8
2	*2462.00	93.6 AV			3.26 V	166	96.4	-2.8
3	2483.50	60.5 PK	74.0	-13.5	3.26 V	166	63.3	-2.8
4	2483.50	48.9 AV	54.0	-5.1	3.26 V	166	51.7	-2.8
5	4924.00	47.4 PK	74.0	-26.6	1.44 V	301	45.6	1.8
6	4924.00	34.0 AV	54.0	-20.0	1.44 V	301	32.2	1.8
7	7386.00	41.0 PK	74.0	-33.0	1.65 V	65	33.6	7.4
8	7386.00	28.4 AV	54.0	-25.6	1.65 V	65	21.0	7.4

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.

RF Mode	TX 802.11n (HT40)	Channel	CH 3：2422 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.2 PK	74.0	-13.8	1.78 H	192	62.9	-2.7
2	2390.00	47.6 AV	54.0	-6.4	1.78 H	192	50.3	-2.7
3	*2422.00	99.2 PK			1.78 H	192	101.9	-2.7
4	*2422.00	87.8 AV			1.78 H	192	90.5	-2.7
5	4844.00	46.9 PK	74.0	-27.1	1.82 H	35	45.1	1.8
6	4844.00	34.1 AV	54.0	-19.9	1.82 H	35	32.3	1.8
7	7266.00	41.5 PK	74.0	-32.5	1.36 H	290	34.2	7.3
8	7266.00	29.0 AV	54.0	-25.0	1.36 H	290	21.7	7.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.8 PK	74.0	-13.2	3.28 V	166	63.5	-2.7
2	2390.00	48.3 AV	54.0	-5.7	3.28 V	166	51.0	-2.7
3	*2422.00	99.7 PK			3.28 V	166	102.4	-2.7
4	*2422.00	88.9 AV			3.28 V	166	91.6	-2.7
5	4844.00	47.2 PK	74.0	-26.8	1.47 V	302	45.4	1.8
6	4844.00	34.2 AV	54.0	-19.8	1.47 V	302	32.4	1.8
7	7266.00	41.0 PK	74.0	-33.0	1.56 V	79	33.7	7.3
8	7266.00	28.0 AV	54.0	-26.0	1.56 V	79	20.7	7.3

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.

RF Mode	TX 802.11n (HT40)	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	55.9 PK	74.0	-18.1	1.58 H	200	58.6	-2.7
2	2390.00	45.2 AV	54.0	-8.8	1.58 H	200	47.9	-2.7
3	*2437.00	99.5 PK			1.58 H	200	102.2	-2.7
4	*2437.00	87.6 AV			1.58 H	200	90.3	-2.7
5	2483.50	56.7 PK	74.0	-17.3	1.58 H	200	59.5	-2.8
6	2483.50	45.5 AV	54.0	-8.5	1.58 H	200	48.3	-2.8
7	4874.00	46.6 PK	74.0	-27.4	1.93 H	44	44.9	1.7
8	4874.00	33.6 AV	54.0	-20.4	1.93 H	44	31.9	1.7
9	7311.00	42.3 PK	74.0	-31.7	1.50 H	300	35.1	7.2
10	7311.00	29.8 AV	54.0	-24.2	1.50 H	300	22.6	7.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	56.3 PK	74.0	-17.7	3.30 V	171	59.0	-2.7
2	2390.00	45.1 AV	54.0	-8.9	3.30 V	171	47.8	-2.7
3	*2437.00	101.4 PK			3.30 V	171	104.1	-2.7
4	*2437.00	89.7 AV			3.30 V	171	92.4	-2.7
5	2483.50	57.1 PK	74.0	-16.9	3.30 V	171	59.9	-2.8
6	2483.50	45.9 AV	54.0	-8.1	3.30 V	171	48.7	-2.8
7	4874.00	46.8 PK	74.0	-27.2	1.33 V	316	45.1	1.7
8	4874.00	33.8 AV	54.0	-20.2	1.33 V	316	32.1	1.7
9	7311.00	40.3 PK	74.0	-33.7	1.63 V	61	33.1	7.2
10	7311.00	27.9 AV	54.0	-26.1	1.63 V	61	20.7	7.2

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.

RF Mode	TX 802.11n (HT40)	Channel	CH 9：2452 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	100.0 PK			1.62 H	207	102.7	-2.7
2	*2452.00	89.8 AV			1.62 H	207	92.5	-2.7
3	2483.50	67.3 PK	74.0	-6.7	1.62 H	207	70.1	-2.8
4	2483.50	50.4 AV	54.0	-3.6	1.62 H	207	53.2	-2.8
5	4904.00	46.7 PK	74.0	-27.3	1.92 H	30	45.0	1.7
6	4904.00	33.6 AV	54.0	-20.4	1.92 H	30	31.9	1.7
7	7356.00	42.5 PK	74.0	-31.5	1.40 H	273	35.2	7.3
8	7356.00	29.9 AV	54.0	-24.1	1.40 H	273	22.6	7.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	103.6 PK			3.29 V	166	106.3	-2.7
2	*2452.00	91.9 AV			3.29 V	166	94.6	-2.7
3	2483.50	69.1 PK	74.0	-4.9	3.29 V	166	71.9	-2.8
4	**2483.50**	**52.6 AV**	**54.0**	**-1.4**	**3.29 V**	**166**	**55.4**	**-2.8**
5	4904.00	46.8 PK	74.0	-27.2	1.50 V	298	45.1	1.7
6	4904.00	33.9 AV	54.0	-20.1	1.50 V	298	32.2	1.7
7	7356.00	41.5 PK	74.0	-32.5	1.56 V	81	34.2	7.3
8	7356.00	28.2 AV	54.0	-25.8	1.56 V	81	20.9	7.3

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.

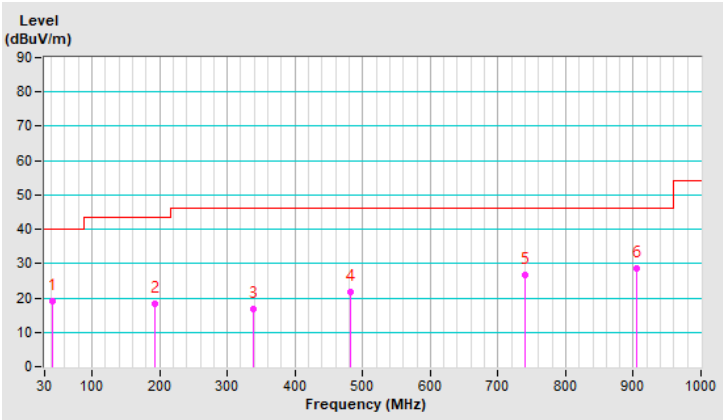
Below 1GHz Data:

RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	41.07	19.1 QP	40.0	-20.9	1.50 H	249	32.2	-13.1
2	193.75	18.3 QP	43.5	-25.2	2.00 H	26	34.2	-15.9
3	337.60	16.7 QP	46.0	-29.3	3.00 H	198	28.0	-11.3
4	482.94	21.7 QP	46.0	-24.3	3.00 H	49	29.5	-7.8
5	740.08	26.8 QP	46.0	-19.2	3.00 H	147	29.8	-3.0
6	904.20	28.6 QP	46.0	-17.4	3.00 H	323	29.8	-1.2

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.

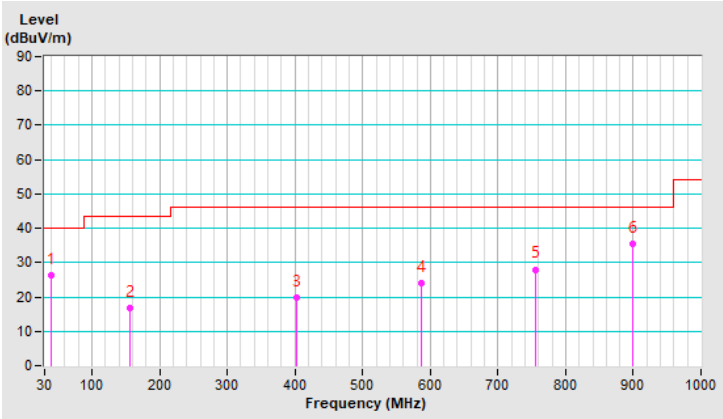


RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	40.62	26.2 QP	40.0	-13.8	2.00 V	38	39.4	-13.2
2	155.72	16.8 QP	43.5	-26.7	1.00 V	321	29.5	-12.7
3	401.89	19.7 QP	46.0	-26.3	3.00 V	258	29.5	-9.8
4	586.39	23.9 QP	46.0	-22.1	2.00 V	306	29.6	-5.7
5	755.43	28.0 QP	46.0	-18.0	2.00 V	320	30.6	-2.6
6	900.05	35.5 QP	46.0	-10.5	2.00 V	254	36.7	-1.2

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.



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. 20, 2020	Oct. 19, 2021
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 27, 2020	Oct. 26, 2021
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 26, 2021	Mar. 25, 2022
50 ohms Terminator	50	3	Oct. 26, 2020	Oct. 25, 2021
RF Cable	5D-FB	COCCAB-001	Sep. 26, 2020	Sep. 25, 2021
Fixed attenuator EMCI	STI02-2200-10	005	Aug. 29, 2020	Aug. 28, 2021
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 15, 2021

4.2.3 Test Procedures

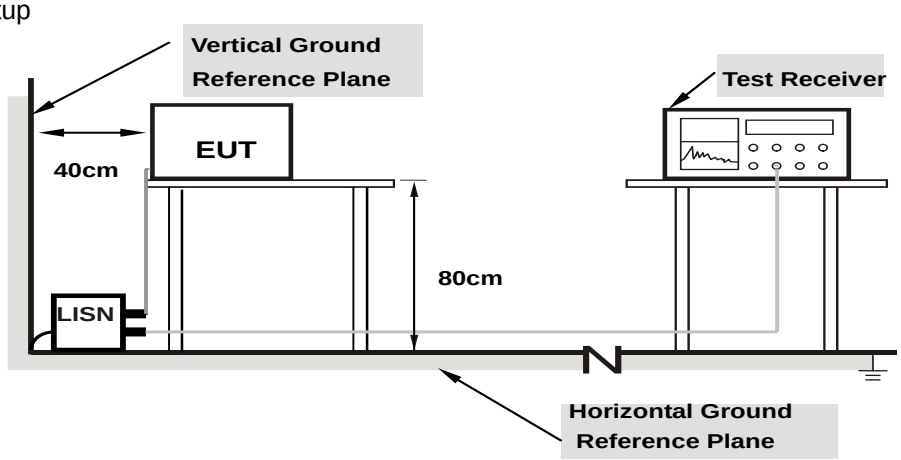
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

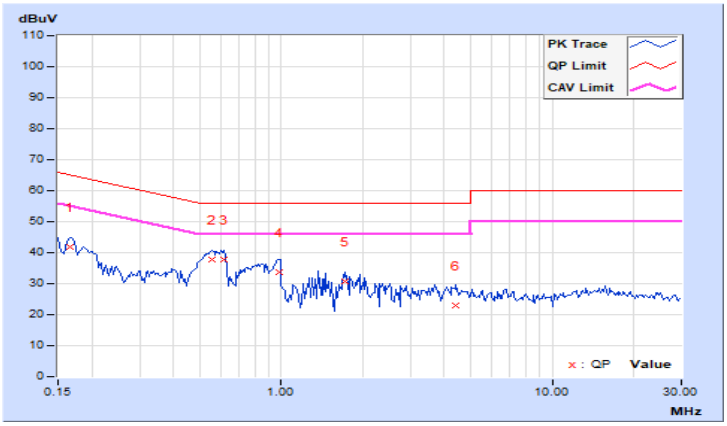
4.2.7 Test Results

RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	9.98	31.97	22.89	41.95	32.87	65.18	55.18	-23.23	-22.31
2	**0.55625**	**10.04**	**27.83**	**17.94**	**37.87**	**27.98**	**56.00**	**46.00**	**-18.13**	**-18.02**
3	0.61094	10.04	27.77	17.57	37.81	27.61	56.00	46.00	-18.19	-18.39
4	0.97813	10.07	23.73	13.77	33.80	23.84	56.00	46.00	-22.20	-22.16
5	1.71094	10.11	20.47	10.27	30.58	20.38	56.00	46.00	-25.42	-25.62
6	4.42578	10.29	12.73	3.51	23.02	13.80	56.00	46.00	-32.98	-32.20

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

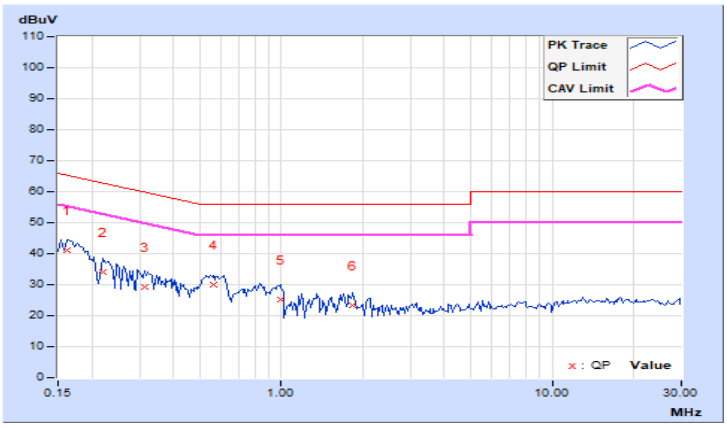


RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16192	9.96	31.04	14.46	41.00	24.42	65.36	55.36	-24.36	-30.94
2	0.22021	10.00	24.24	10.05	34.24	20.05	62.81	52.81	-28.57	-32.76
3	0.31437	10.01	19.21	5.78	29.22	15.79	59.85	49.85	-30.63	-34.06
4	0.56001	10.03	19.85	8.97	29.88	19.00	56.00	46.00	-26.12	-27.00
5	0.99355	10.06	15.20	4.13	25.26	14.19	56.00	46.00	-30.74	-31.81
6	1.83564	10.12	13.28	4.18	23.40	14.30	56.00	46.00	-32.60	-31.70

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

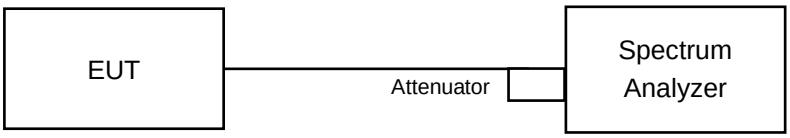


4.3 6dB Bandwidth Measurement

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 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 specific channel frequencies individually.

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	10.09	0.5	Pass
6	2437	10.09	0.5	Pass
11	2462	10.08	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	16.39	0.5	Pass
6	2437	16.38	0.5	Pass
11	2462	16.38	0.5	Pass

802.11n (HT20)

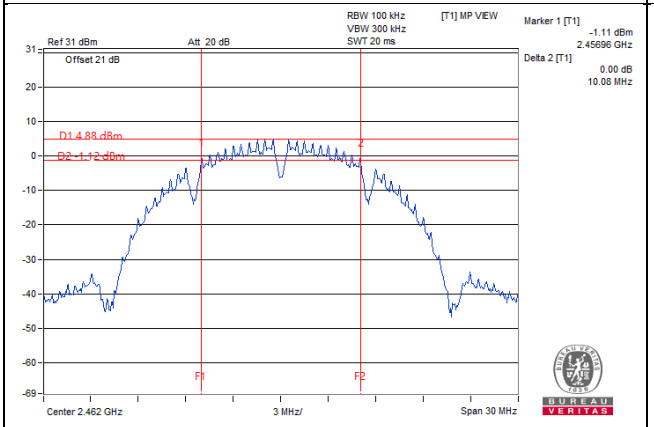
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	17.57	0.5	Pass
6	2437	17.56	0.5	Pass
11	2462	17.4	0.5	Pass

802.11n (HT40)

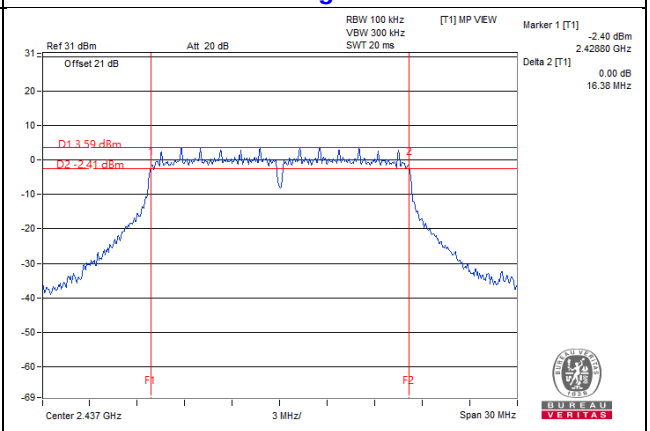
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	35.46	0.5	Pass
6	2437	35.35	0.5	Pass
9	2452	35.43	0.5	Pass

Spectrum Plot of Worst Value

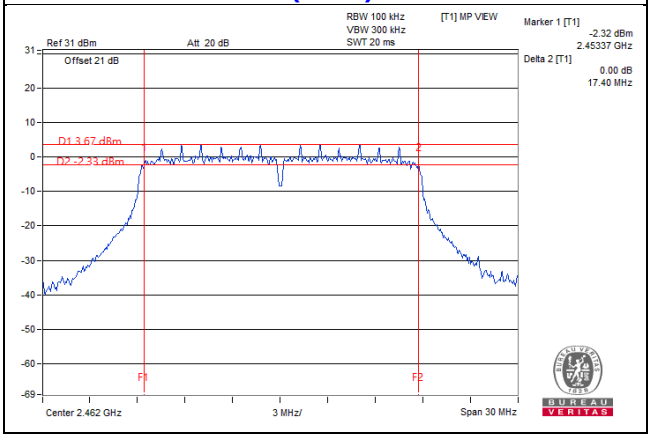
802.11b / CH11



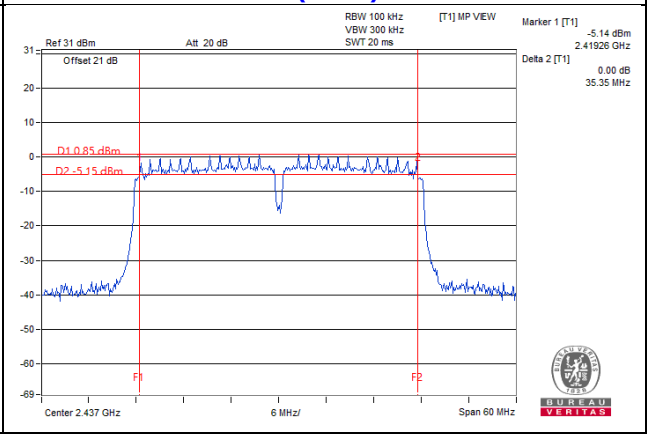
802.11g / CH6



802.11n (HT20) / CH11



802.11n (HT40) / CH6

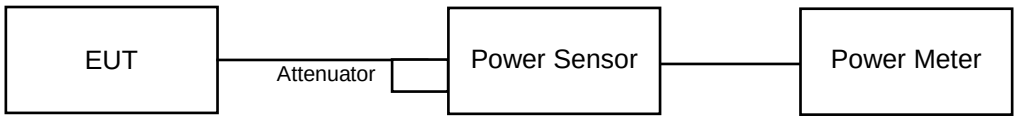


4.4 Conducted Output Power Measurement

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	46.989	16.72	30	Pass
6	2437	47.753	16.79	30	Pass
11	2462	46.345	16.66	30	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	188.365	22.75	30	Pass
6	2437	191.867	22.83	30	Pass
11	2462	186.638	22.71	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	191.426	22.82	30	Pass
6	2437	188.799	22.76	30	Pass
11	2462	187.499	22.73	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
3	2422	205.116	23.12	30	Pass
6	2437	211.349	23.25	30	Pass
9	2452	198.609	22.98	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	29.376	14.68
6	2437	29.512	14.70
11	2462	29.04	14.63

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	29.242	14.66
6	2437	29.648	14.72
11	2462	28.84	14.60

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	29.309	14.67
6	2437	29.512	14.70
11	2462	28.907	14.61

802.11n (HT40)

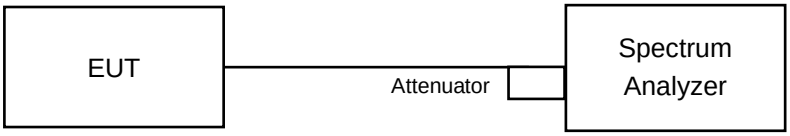
Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
3	2422	29.04	14.63
6	2437	29.309	14.67
9	2452	28.642	14.57

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 kHz ≤ RBW ≤ 100 kHz.
d. Set the VBW ≥ 3 × RBW.
e. Detector = peak.
f. Sweep time = auto couple.
g. Trace mode = max hold.
h. Allow trace to fully stabilize.
i. Use the peak marker function to determine the maximum amplitude level within the RBW.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

802.11b

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-8.14	8	Pass
6	2437	-8.74	8	Pass
11	2462	-8.82	8	Pass

802.11g

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-10.05	8	Pass
6	2437	-10.37	8	Pass
11	2462	-10.20	8	Pass

802.11n (HT20)

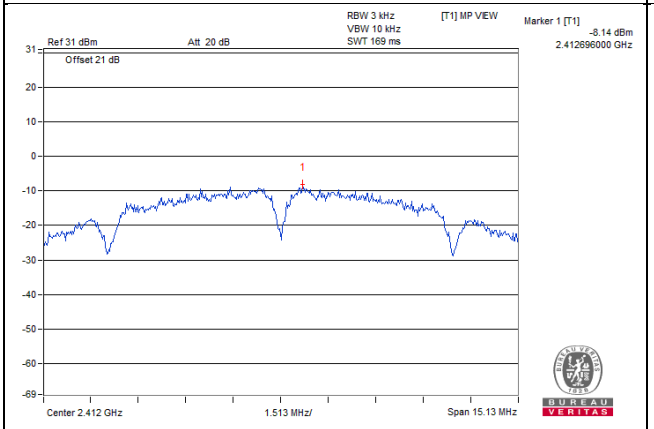
Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-10.55	8	Pass
6	2437	-10.96	8	Pass
11	2462	-10.03	8	Pass

802.11n (HT40)

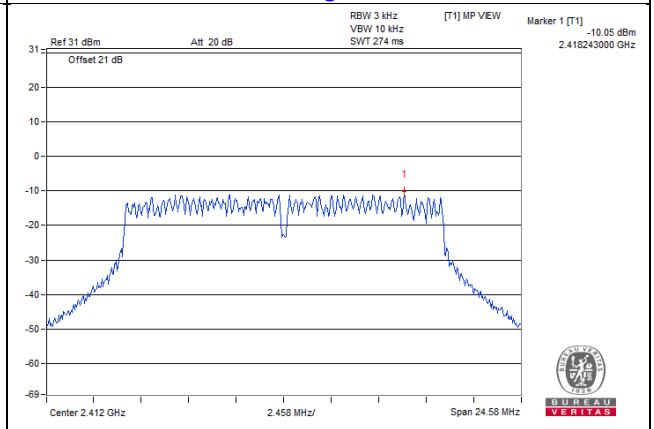
Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
3	2422	-14.39	8	Pass
6	2437	-12.95	8	Pass
9	2452	-13.64	8	Pass

Spectrum Plot of Worst Value

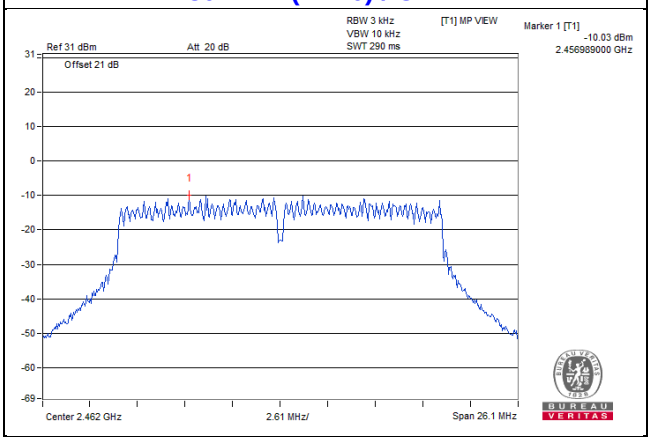
802.11b / CH1



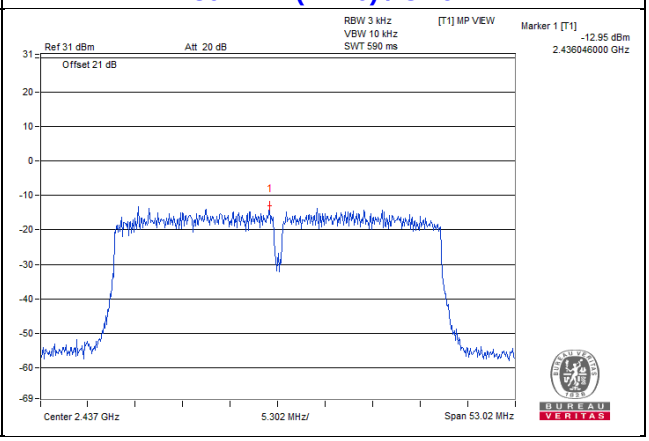
802.11g / CH1



802.11n (HT20) / CH11



802.11n (HT40) / CH6

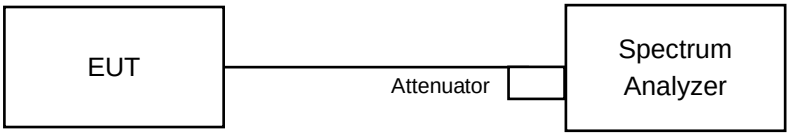


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

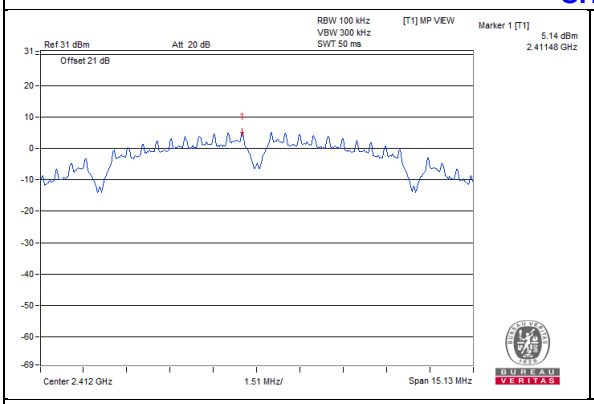
Same as Item 4.3.6

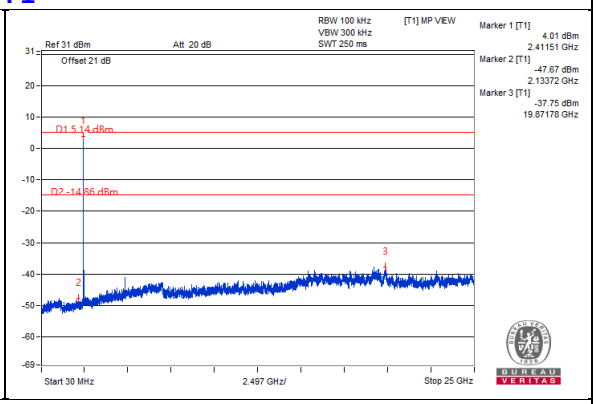
4.6.7 Test Results

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

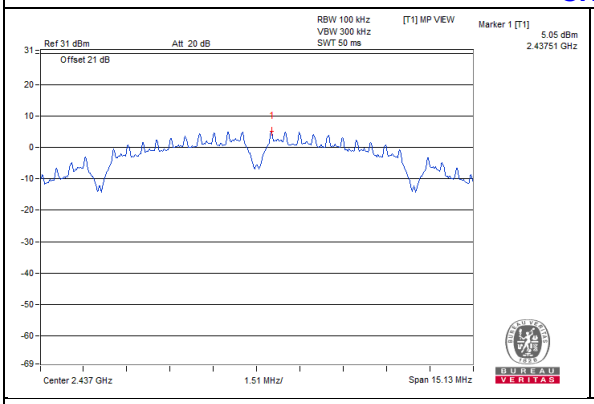
802.11b

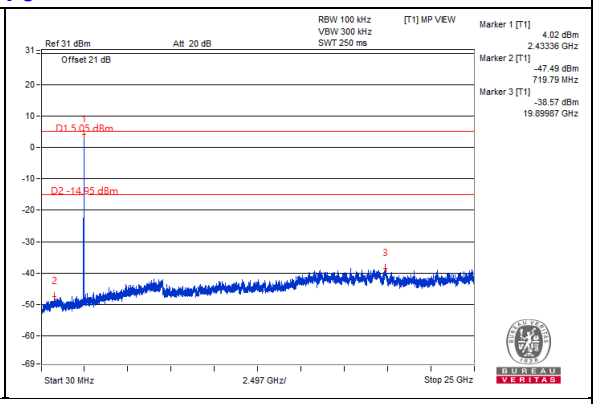
CH 1



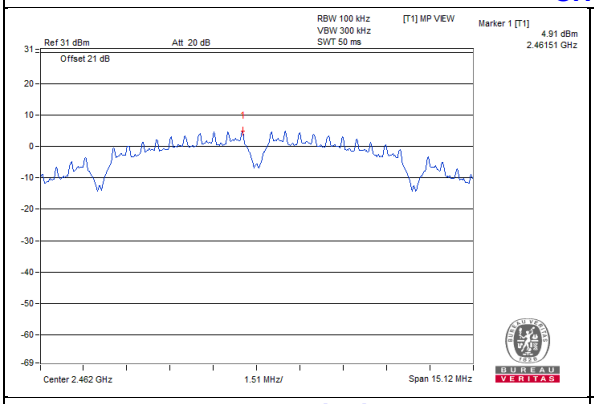


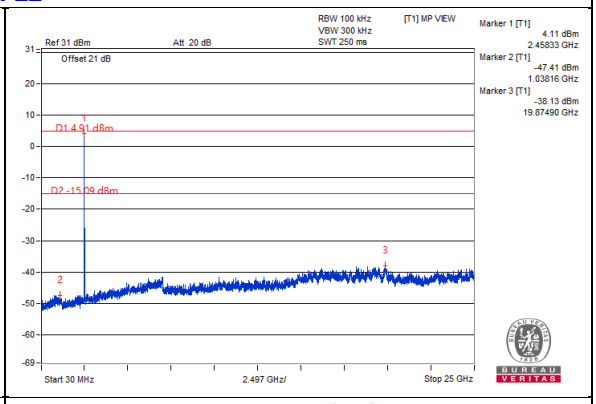
CH 6



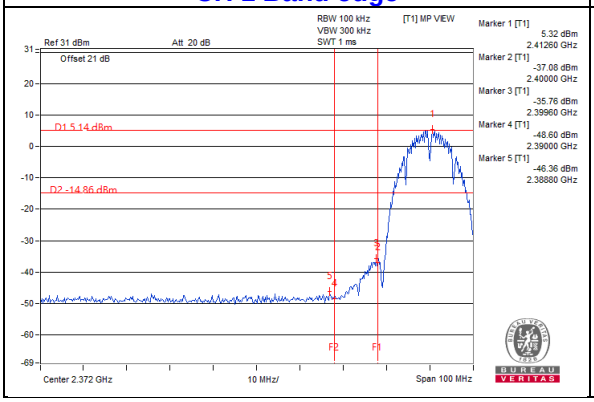


CH 11

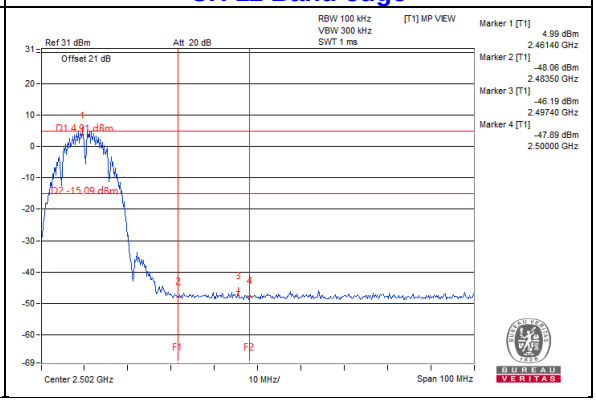




CH 1 Band edge

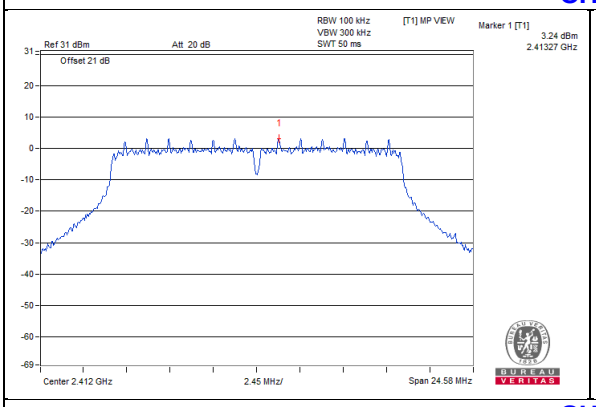


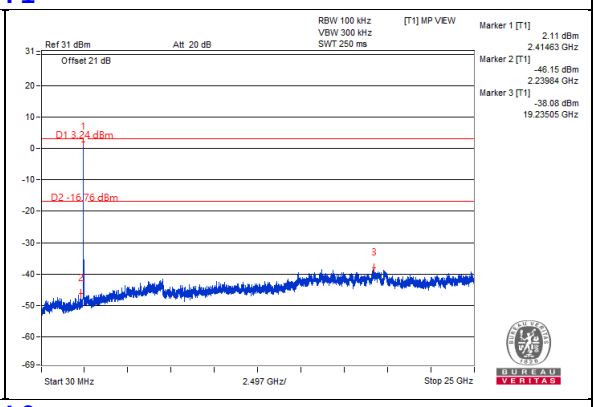
CH 11 Band edge



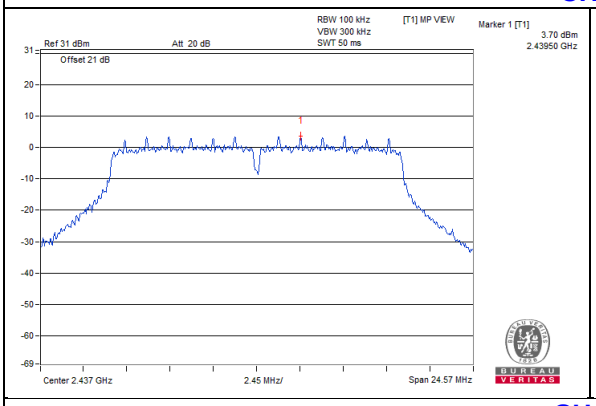
802.11g

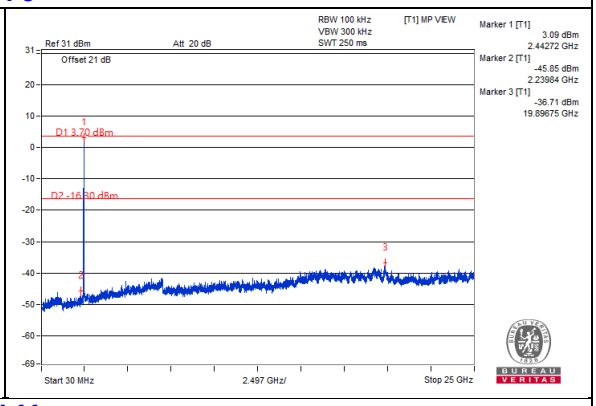
CH 1



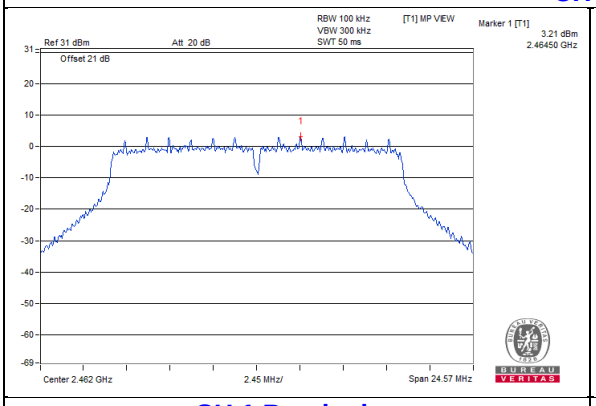


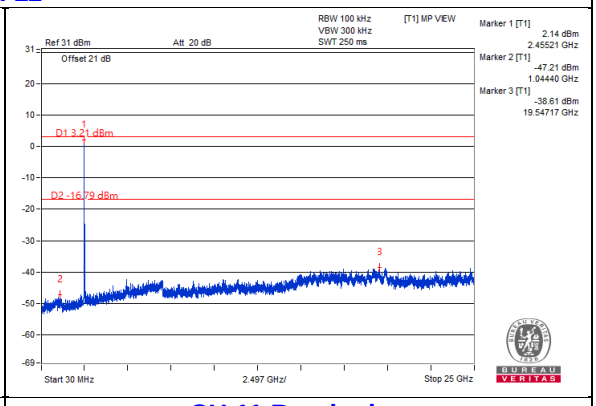
CH 6



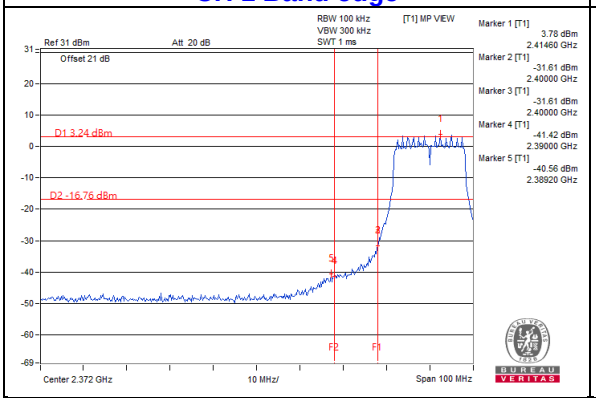


CH 11

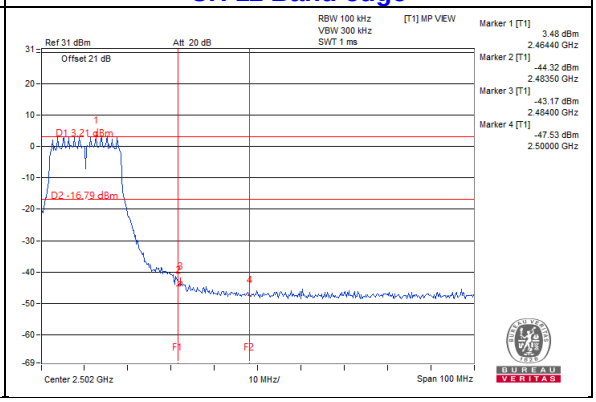




CH 1 Band edge

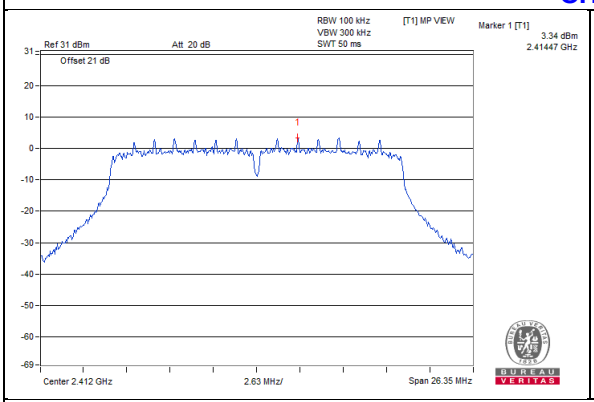


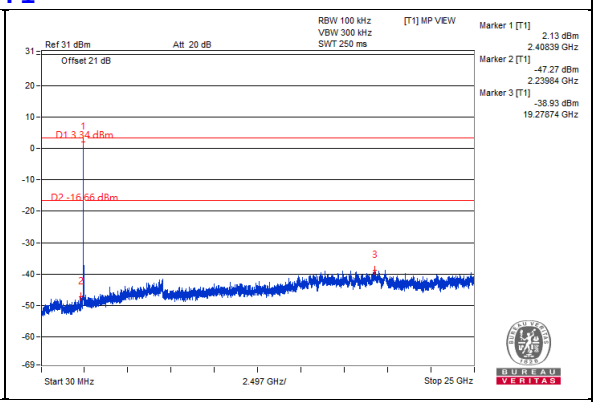
CH 11 Band edge



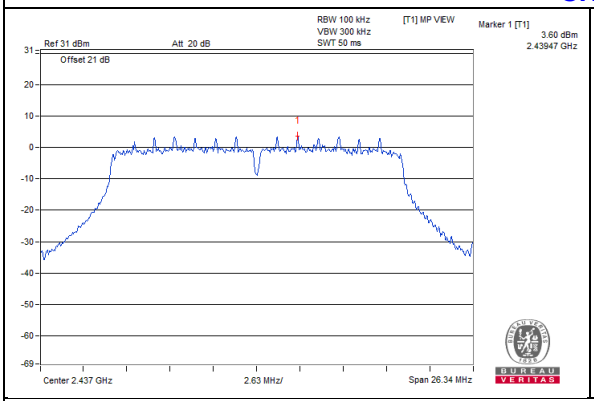
802.11n (HT20)

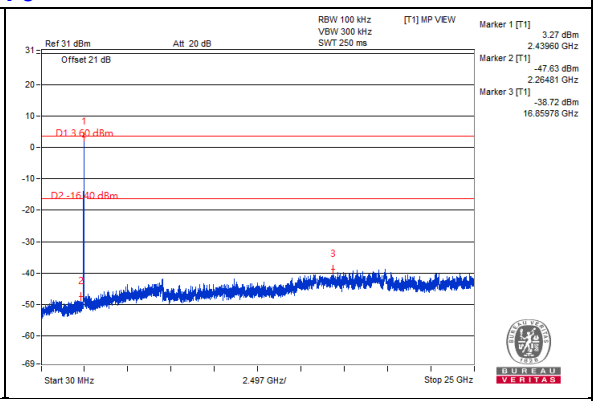
CH 1



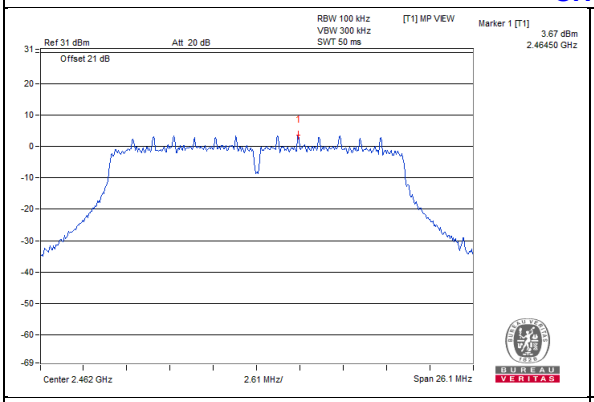


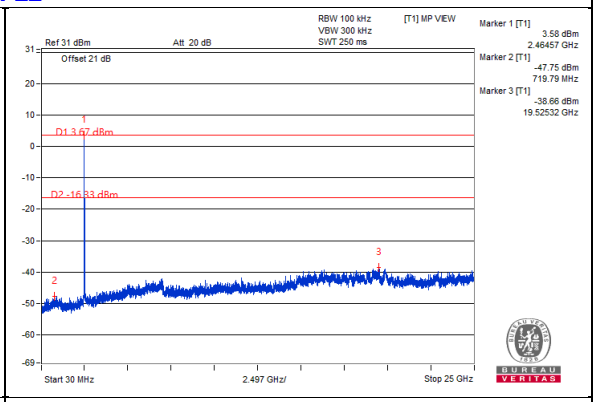
CH 6



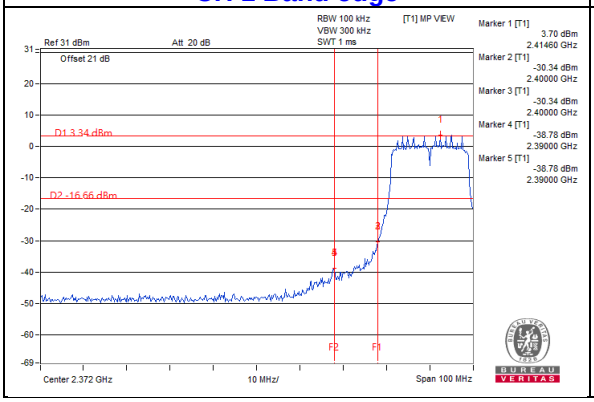


CH 11

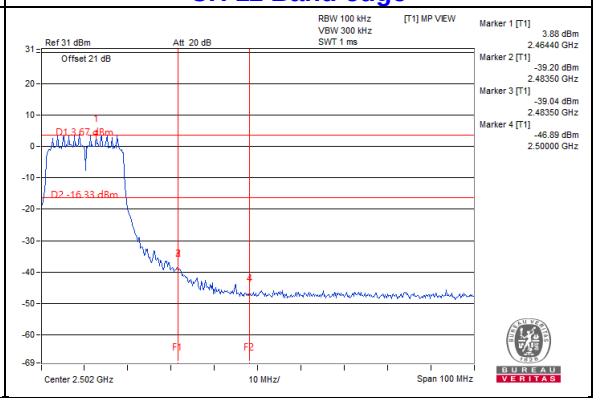




CH 1 Band edge

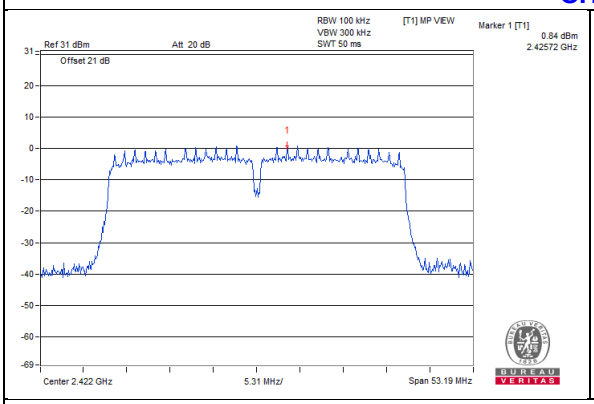


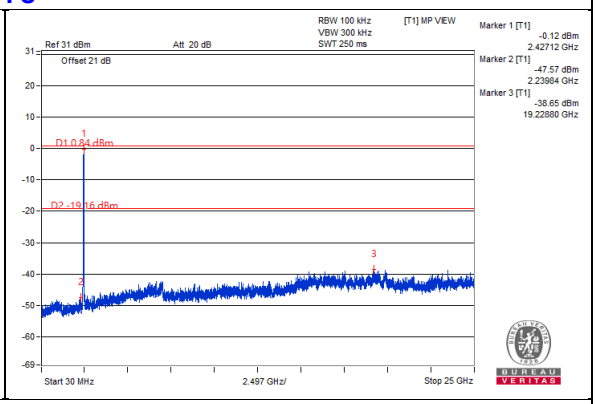
CH 11 Band edge



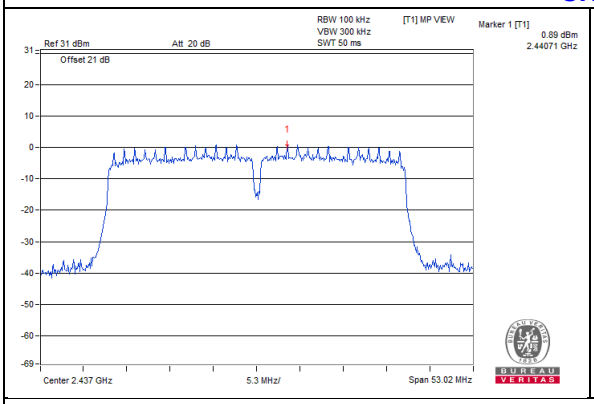
802.11n (HT40)

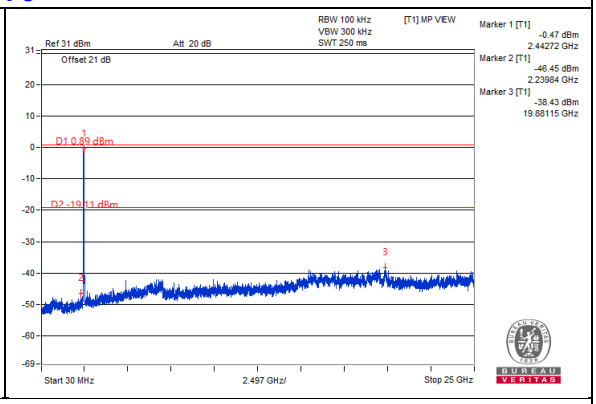
CH 3



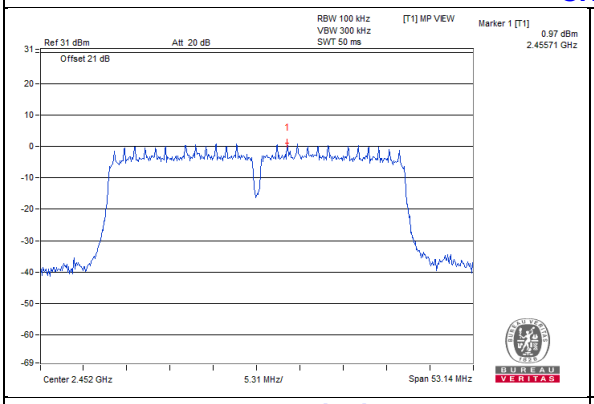


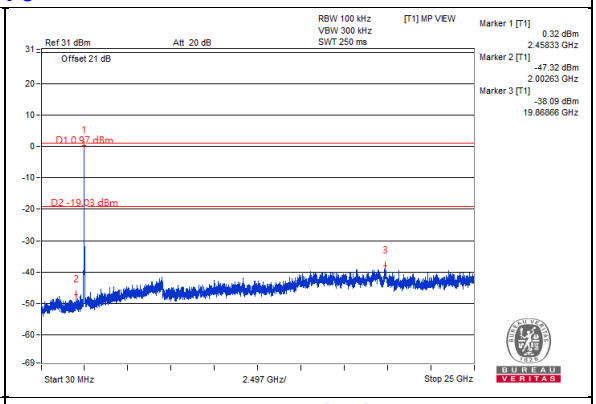
CH 6



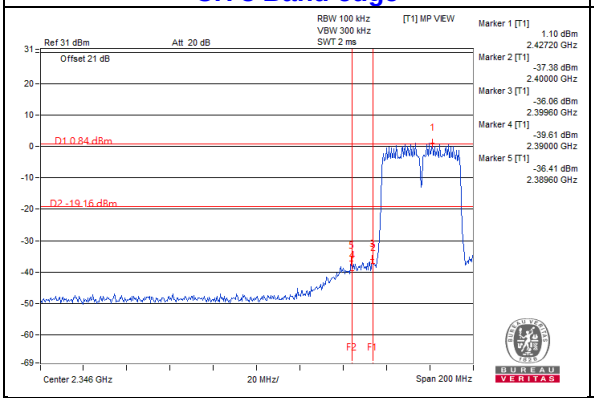


CH 9

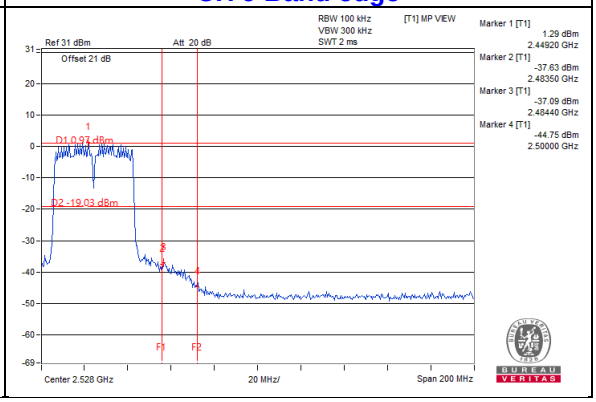




CH 3 Band edge



CH 9 Band edge



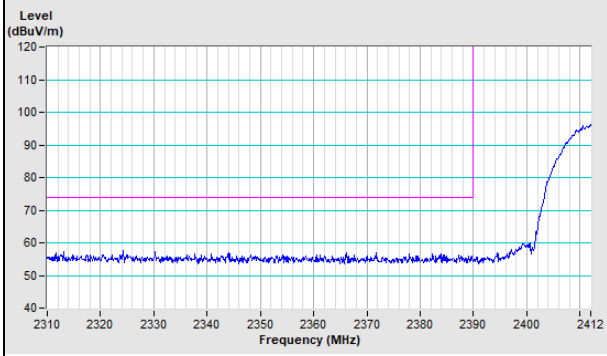
5 Pictures of Test Arrangements

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

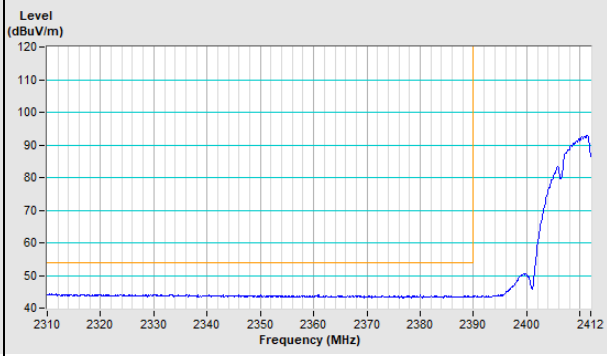
Annex A - Band-Edge Measurement

802.11b Channel 1

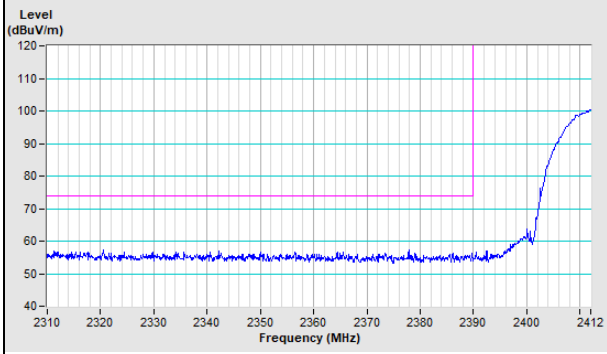
Horizontal (Peak)



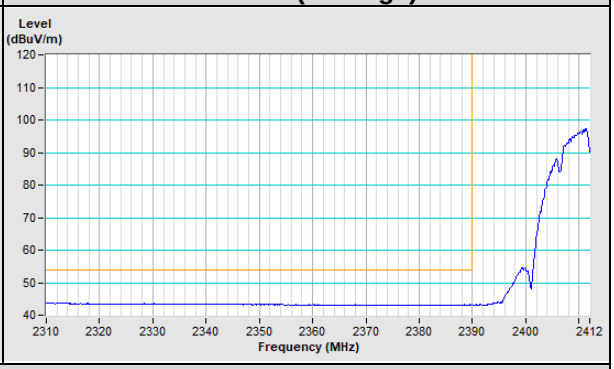
Horizontal (Average)



Vertical (Peak)

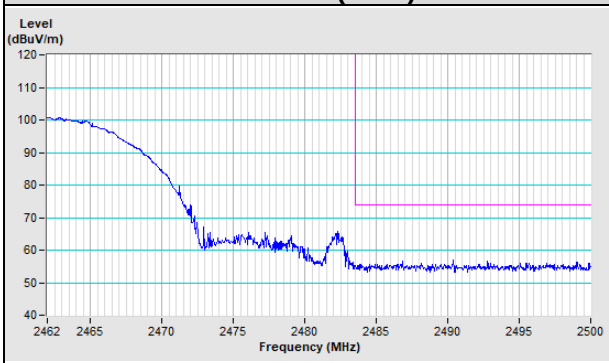


Vertical (Average)

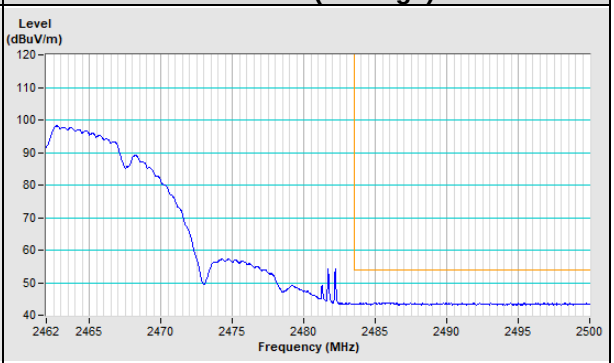


802.11b Channel 11

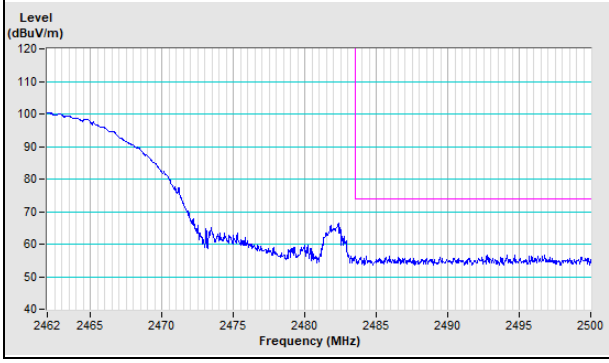
Horizontal (Peak)



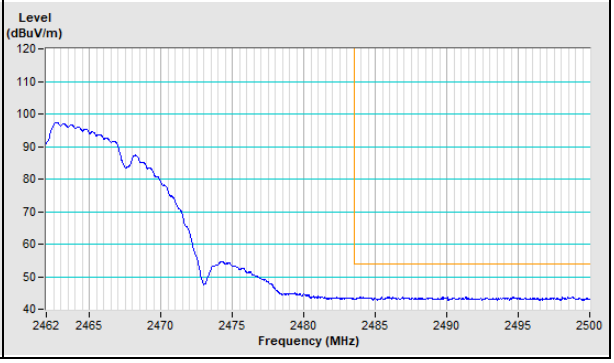
Horizontal (Average)



Vertical (Peak)

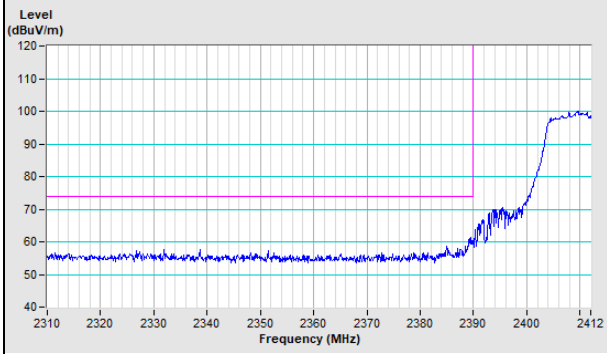


Vertical (Average)

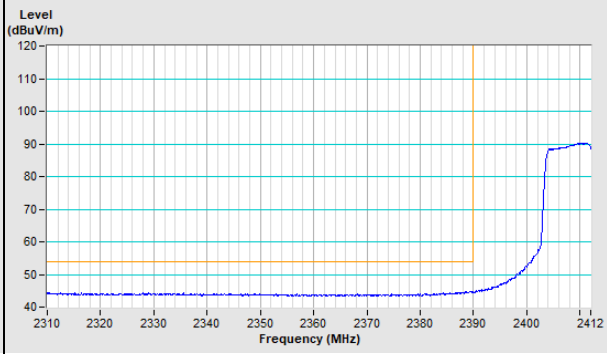


802.11g Channel 1

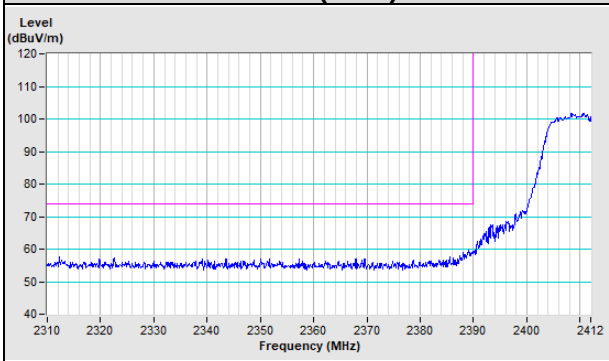
Horizontal (Peak)



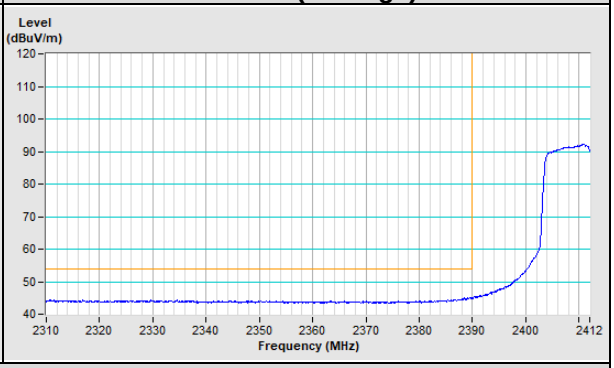
Horizontal (Average)



Vertical (Peak)

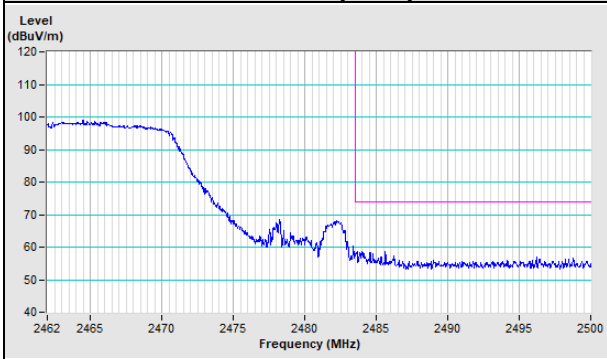


Vertical (Average)

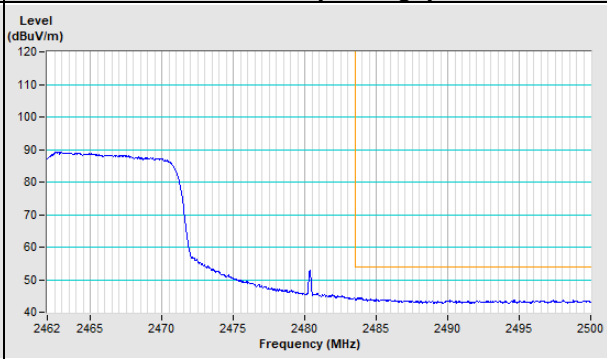


802.11g Channel 11

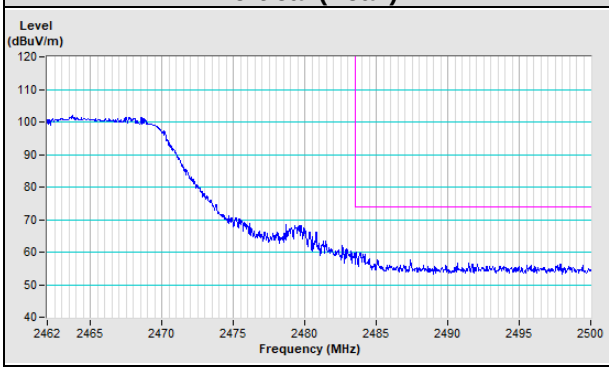
Horizontal (Peak)



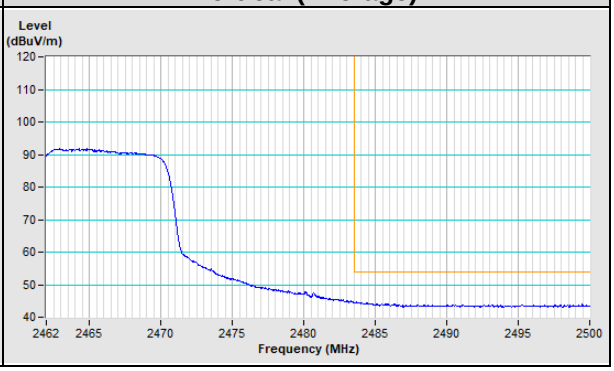
Horizontal (Average)



Vertical (Peak)

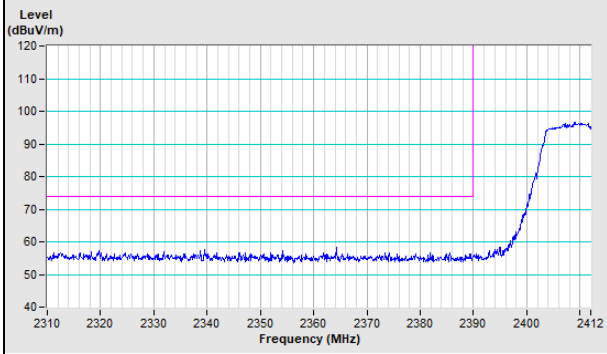


Vertical (Average)

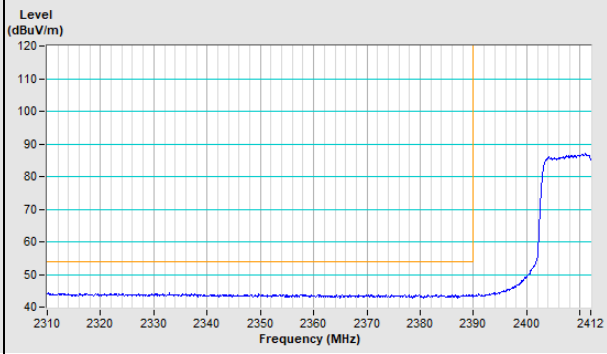


802.11n (HT20) Channel 1

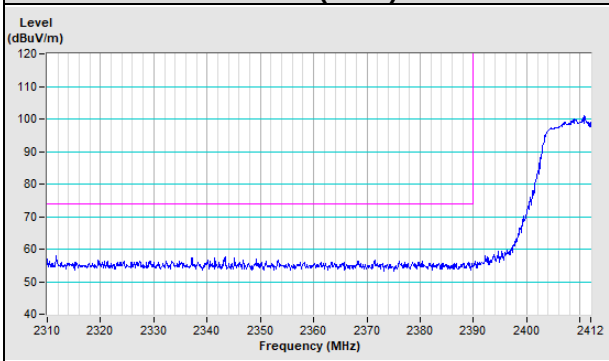
Horizontal (Peak)



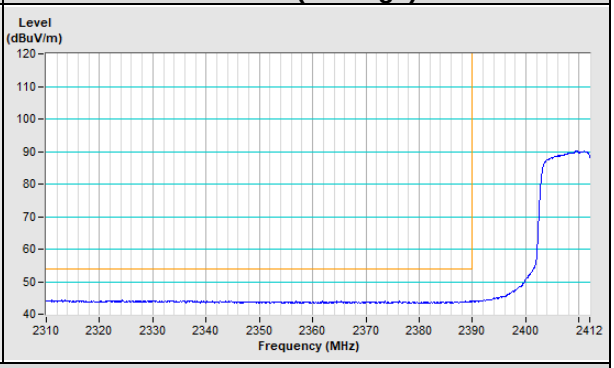
Horizontal (Average)



Vertical (Peak)

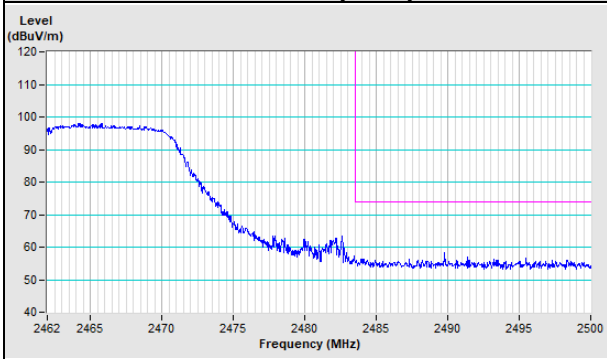


Vertical (Average)

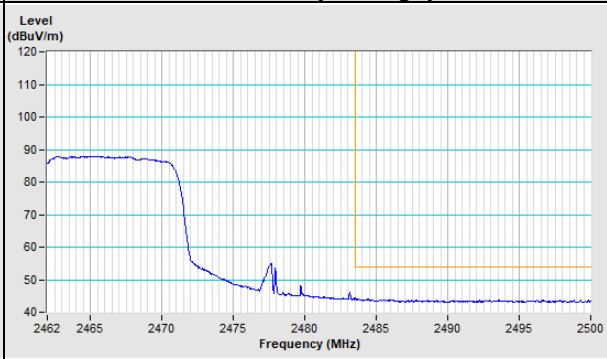


802.11n (HT20) Channel 11

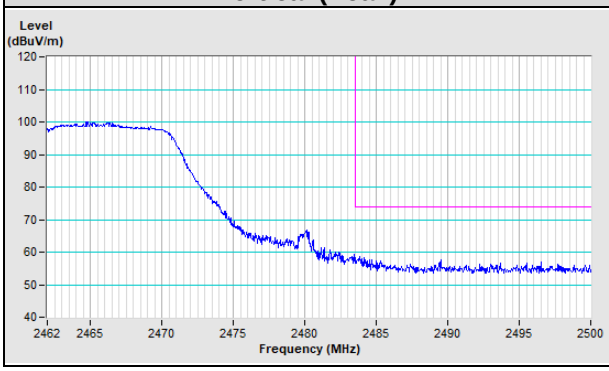
Horizontal (Peak)



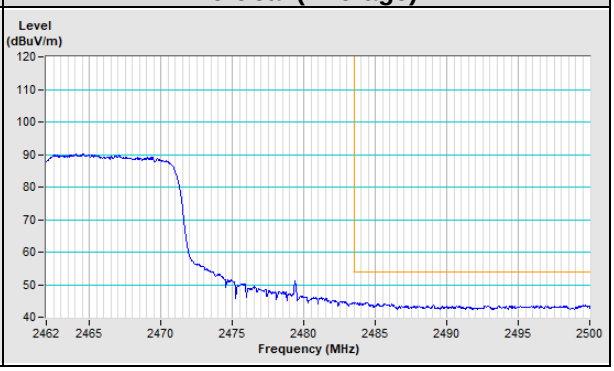
Horizontal (Average)



Vertical (Peak)

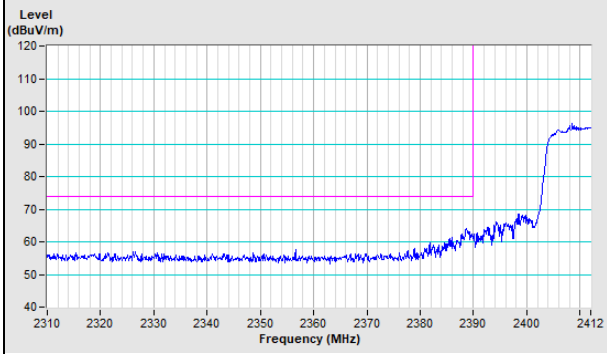


Vertical (Average)

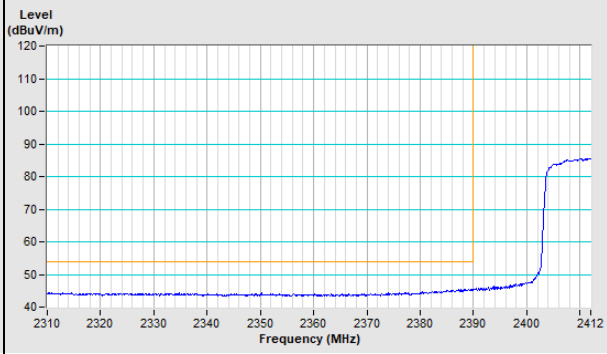


802.11n (HT40) Channel 3

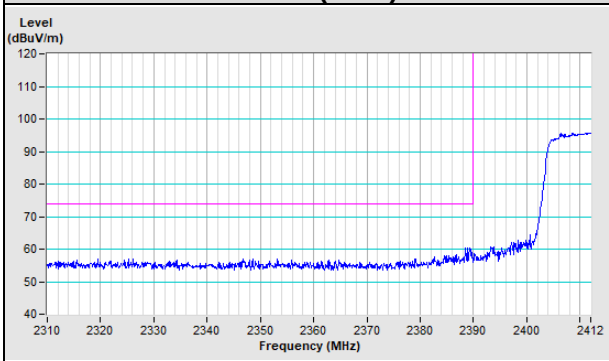
Horizontal (Peak)



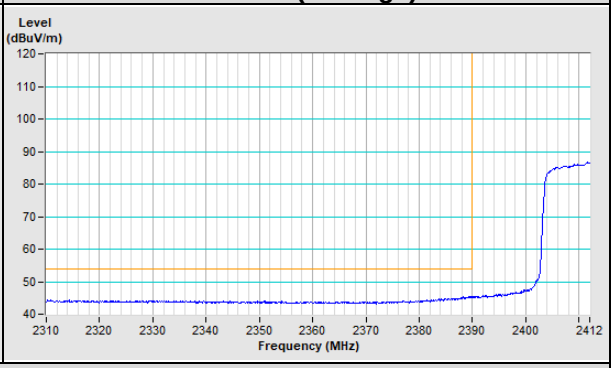
Horizontal (Average)



Vertical (Peak)

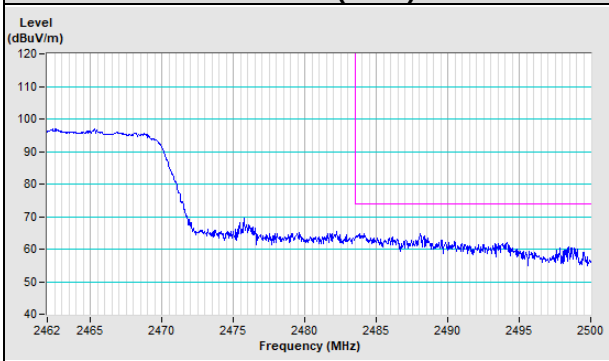


Vertical (Average)

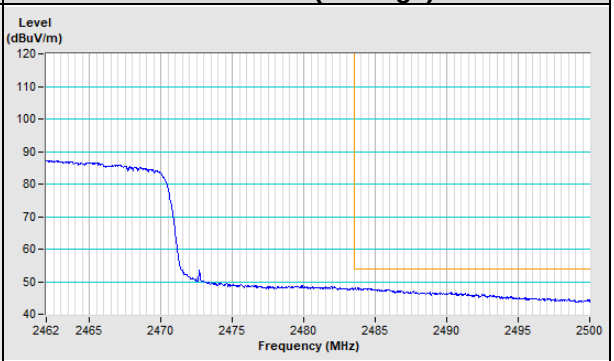


802.11n (HT40) Channel 9

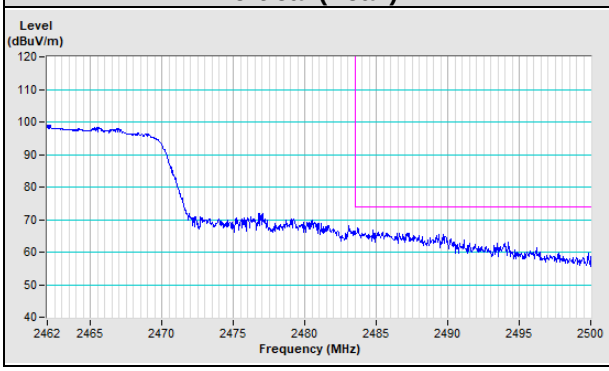
Horizontal (Peak)



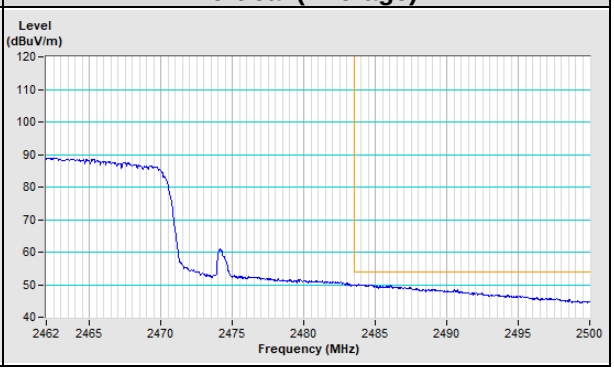
Horizontal (Average)



Vertical (Peak)



Vertical (Average)



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 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:

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

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

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

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

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

--- END ---