FCC Test Report (WLAN)

Report No.:	RFBCKS-WTW-P21010640
FCC ID:	NKR-WLD92
Test Model:	WLD92
Received Date:	Jan. 21, 2021
Test Date:	Jan. 29 to Feb. 22, 2021
Issued Date:	Apr. 06, 2021
Applicant:	Wistron NeWeb Corporation
Address:	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, 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

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Release Control Record

Issue No.	Description	Date Issued
RFBCKS-WTW-P21010640	Original release.	Apr. 06, 2021

1 Certificate of Conformity

Product:	LTE Indoor Router
Brand:	Wistron NeWeb Corporation
Test Model:	WLD92
Sample Status:	Engineering sample
Applicant:	Wistron NeWeb Corporation
Test Date:	Jan. 29 to Feb. 22, 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 : Joyce Kuo , **Date:** Apr. 06, 2021

Joyce Kuo / Specialist

Approved by : , **Date:** Apr. 06, 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 -22.75dB at 0.36484MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 2483.99MHz.
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 2.4GHz band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
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	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 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 (WLAN)

Product	LTE Indoor Router
Brand	Wistron NeWeb Corporation
Test Model	WLD92
Status of EUT	Engineering sample
Power Supply Rating	12 Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462 GHz **5GHz:** 5.18 ~ 5.24 GHz, 5.745 ~ 5.825 GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** 527.08 mW **5.18 ~ 5.24 GHz:** 135.38 mW **5.745 ~ 5.825 GHz:** 117.093 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Cable Supplied	RJ45 cable x 1 (Unshielded, 1.8 m)

Note:

1. There are WLAN and WWAN technology used for the EUT. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3
WLAN (2.4GHz)	WLAN (5GHz)	WWAN

2. Simultaneously transmission condition.

Condition	Technology		
1	WLAN (2.4GHz)	WLAN (5GHz)	WWAN
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.			

3. The EUT must be supplied with a power adapter as following table:

Brand	Model No.	Spec.
SHENZHEN FRECOM	F12L30-120100SPAU	Input: 100-240 Vac, 0.3 A, 50/60 Hz Output: 12 Vdc, 1.0 A DC output cable (unshielded, 1.5 m)

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

Antenna No.	RF Chain No.	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type
1 (LTE)	Chain0	2.3	1850~1910 MHz	PIFA	None
		1.9	1710~1755 MHz		
		1.8	824~849 MHz		
		0.4	698~716 MHz		
		1.9	1710~1780 MHz		
2 (LTE)	Chain1 (RX only)	-	-	PIFA	None
3 (WLAN)	Chain0	2.1	2.4~2.4835 GHz	PIFA	None
		3.7	5.15~5.85 GHz		
4 (WLAN)	Chain1	2.9	2.4~2.4835 GHz	PIFA	None
		4.7	5.15~5.85 GHz		

5. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
5GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

6. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
7. 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	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

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

Radiated Emission Test (Above 1GHz):

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

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

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	1	DSSS	DBPSK	1

Power Line Conducted Emission Test:

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

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

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

Antenna Port Conducted Measurement:

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

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

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

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

Test Condition:

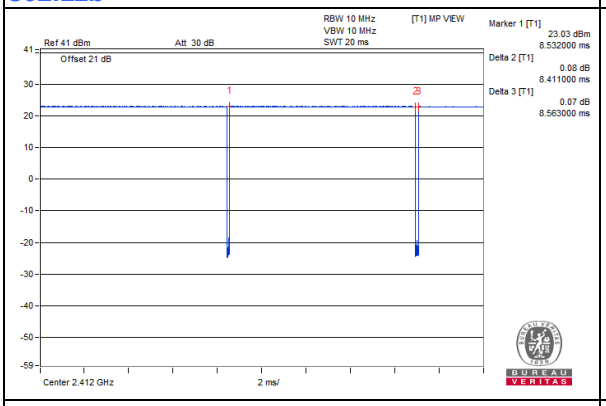
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (System)	TESTED BY
RE≥1G	25deg. C, 75%RH	120Vac, 60Hz	Benson Chao
RE<1G	21deg. C, 64%RH	120Vac, 60Hz	Benson Chao
PLC	25deg. C, 70%RH	120Vac, 60Hz	Sampson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

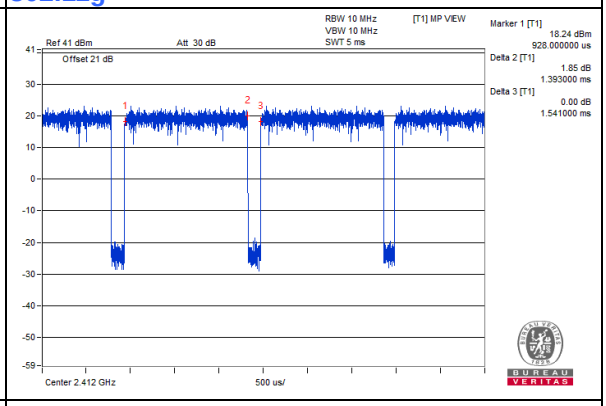
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
Duty cycle of test signal is < 98 %, duty factor shall be considered.

802.11b: Duty cycle = 8.411 ms/8.563 ms= 0.982
802.11g: Duty cycle = 1.393 ms/1.541 ms= 0.904, Duty factor = 10 * log (1/Duty cycle) = 0.44 dB
802.11n (HT20): Duty cycle = 1.307 ms /1.442 ms = 0.906, Duty factor = 10 * log (1/Duty cycle) = 0.43 dB
802.11n (HT40): Duty cycle = 0.647 ms /0.756 ms = 0.856, Duty factor = 10 * log (1/Duty cycle) = 0.68 dB

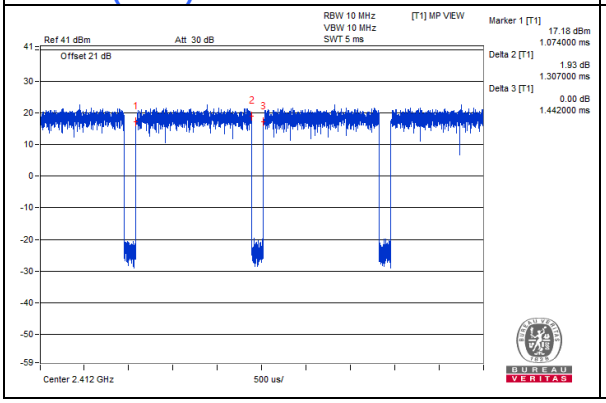
802.11b



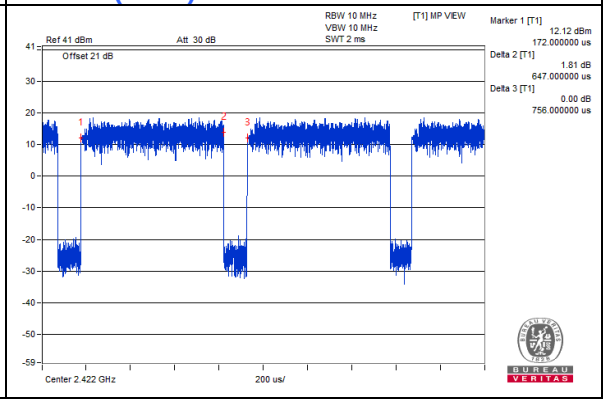
802.11g



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.

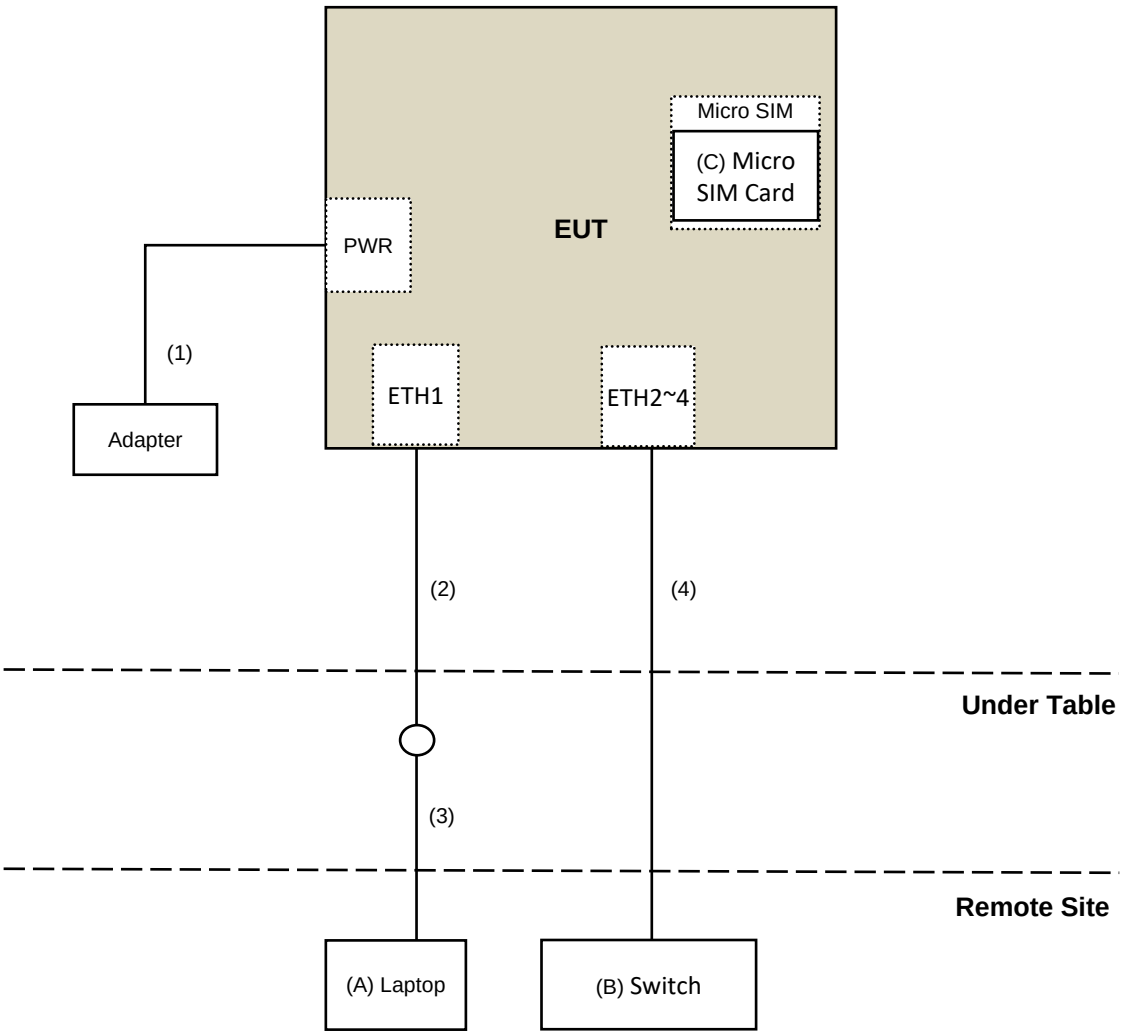
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	Inspiron 7570	DW3CSJ2	NA	Provided by Lab
B.	Switch	D-Link	DGS-1005D	DR8WC92000523	NA	Provided by Lab
C.	SIM Card	R&S	CRT-Z3	NA	NA	Provided by Lab

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.	DC Cable	1	1.5	No	0	Supplied by client
2.	RJ-45 Cable	1	1.8	No	0	Supplied by client
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	RJ-45 Cable	3	10	No	0	Provided by Lab

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
KDB 662911 D01 Multiple Transmitter Output v02r01

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 (Below 1GHz) test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESR7	102026	Apr. 22, 2020	Apr. 21, 2021
Spectrum Analyzer Keysight	N9030B	MY57141948	May 22, 2020	May 21, 2021
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
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. 28, 2020	Apr. 27, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB9168	9168-0842	Nov. 03, 2020	Nov. 02, 2021
RF Cable	8D	966-5-1	Apr. 29, 2020	Apr. 28, 2021
RF Cable	8D	966-5-2	Apr. 29, 2020	Apr. 28, 2021
RF Cable	8D	966-5-3	Apr. 29, 2020	Apr. 28, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	Jan. 11, 2021	Jan. 10, 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: Feb. 02, 2021

For Radiated Emission (Above 1GHz) and Bandedge test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESR7	102026	Apr. 22, 2020	Apr. 21, 2021
Spectrum Analyzer Keysight	N9030B	MY57141948	May 22, 2020	May 21, 2021
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-1819	Nov. 22, 2020	Nov. 21, 2021
Pre-Amplifier EMCI	EMC12630SE	980509	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCI	EMC104-SM-SM-1500	180503	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCI	EMC104-SM-SM-2000	180501	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCI	EMC104-SM-SM-6000	180506	Apr. 29, 2020	Apr. 28, 2021
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. 11, 2020	Mar. 10, 2021
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: Jan. 29 to Feb. 22, 2021

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
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: Feb. 22, 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:

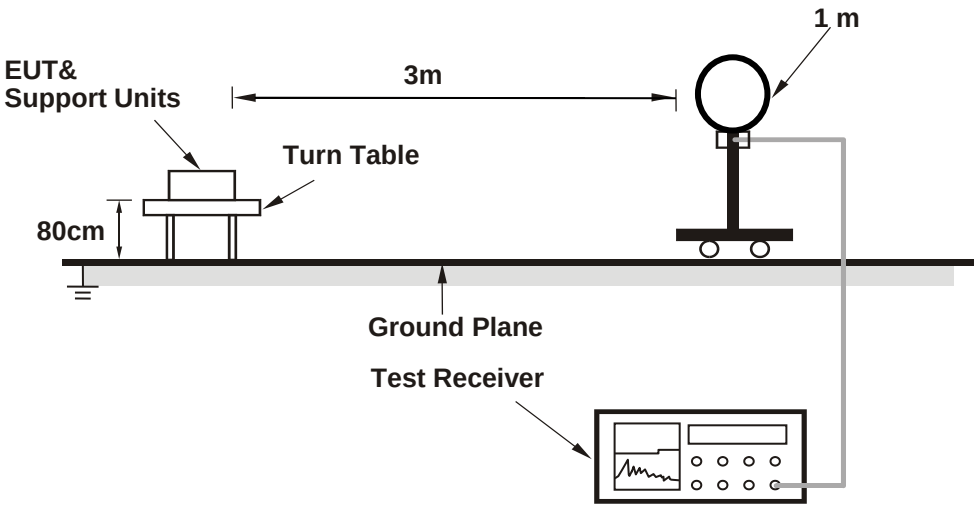
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

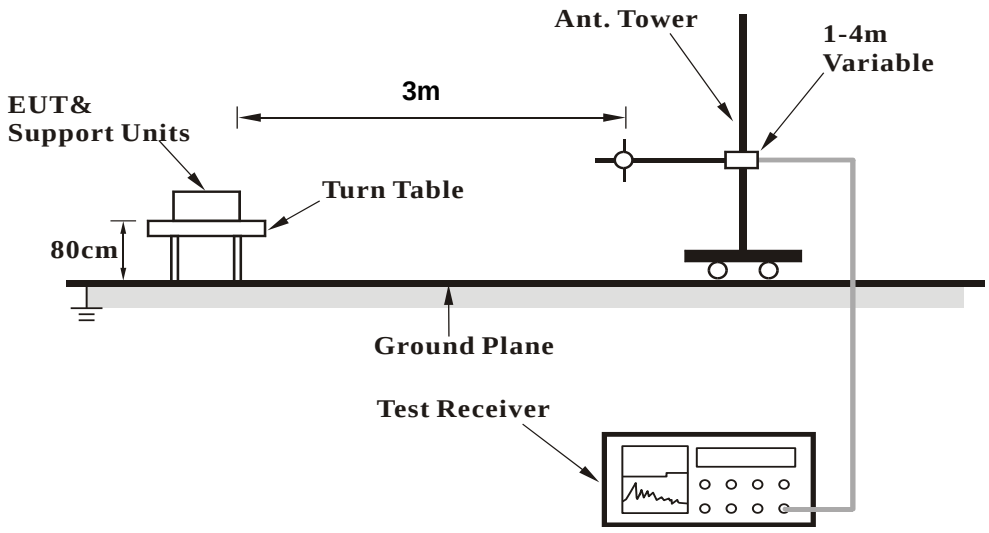
No deviation.

4.1.5 Test Setup

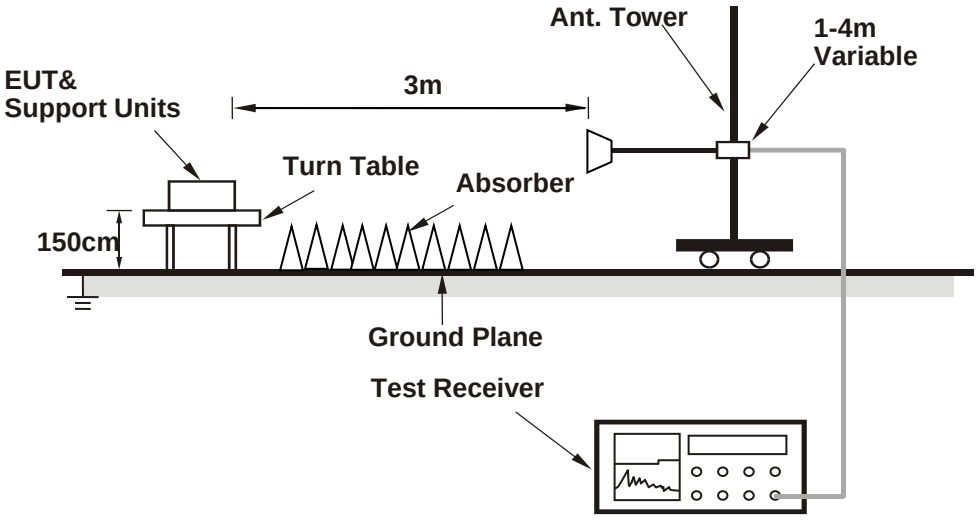
For Radiated emission below 30MHz



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 (MP_TEST V3.3(RTL819x)) has been activated to set the EUT under transmission condition continuously.

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	2388.77	59.9 PK	74.0	-14.1	1.57 H	139	62.9	-3.0
2	2388.77	51.6 AV	54.0	-2.4	1.57 H	139	54.6	-3.0
3	*2412.00	112.4 PK			1.57 H	139	115.3	-2.9
4	*2412.00	109.1 AV			1.57 H	139	112.0	-2.9
5	4824.00	53.5 PK	74.0	-20.5	1.62 H	97	52.1	1.4
6	4824.00	51.1 AV	54.0	-2.9	1.62 H	97	49.7	1.4
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	2389.15	59.6 PK	74.0	-14.4	1.38 V	272	62.6	-3.0
2	2389.15	52.6 AV	54.0	-1.4	1.38 V	272	55.6	-3.0
3	*2412.00	112.8 PK			1.38 V	272	115.7	-2.9
4	*2412.00	109.0 AV			1.38 V	272	111.9	-2.9
5	4824.00	53.2 PK	74.0	-20.8	1.09 V	260	51.8	1.4
6	4824.00	49.8 AV	54.0	-4.2	1.09 V	260	48.4	1.4

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 802.11b	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	55.7 PK	74.0	-18.3	1.36 H	143	58.7	-3.0
2	2390.00	43.5 AV	54.0	-10.5	1.36 H	143	46.5	-3.0
3	*2437.00	113.9 PK			1.36 H	143	116.8	-2.9
4	*2437.00	112.5 AV			1.36 H	143	115.4	-2.9
5	2483.50	58.0 PK	74.0	-16.0	1.36 H	143	61.0	-3.0
6	2483.50	47.3 AV	54.0	-6.7	1.36 H	143	50.3	-3.0
7	4874.00	53.8 PK	74.0	-20.2	1.65 H	81	52.5	1.3
8	4874.00	51.1 AV	54.0	-2.9	1.65 H	81	49.8	1.3
9	7311.00	46.1 PK	74.0	-27.9	1.35 H	190	39.2	6.9
10	7311.00	32.5 AV	54.0	-21.5	1.35 H	190	25.6	6.9
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	57.6 PK	74.0	-16.4	1.16 V	261	60.6	-3.0
2	2390.00	45.2 AV	54.0	-8.8	1.16 V	261	48.2	-3.0
3	*2437.00	115.3 PK			1.16 V	261	118.2	-2.9
4	*2437.00	110.7 AV			1.16 V	261	113.6	-2.9
5	2483.50	59.3 PK	74.0	-14.7	1.16 V	261	62.3	-3.0
6	2483.50	48.5 AV	54.0	-5.5	1.16 V	261	51.5	-3.0
7	4874.00	52.7 PK	74.0	-21.3	1.12 V	256	51.4	1.3
8	4874.00	49.6 AV	54.0	-4.4	1.12 V	256	48.3	1.3
9	7311.00	45.3 PK	74.0	-28.7	1.65 V	249	38.4	6.9
10	7311.00	32.1 AV	54.0	-21.9	1.65 V	249	25.2	6.9

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	112.3 PK			1.44 H	141	115.3	-3.0
2	*2462.00	108.6 AV			1.44 H	141	111.6	-3.0
3	2487.25	60.2 PK	74.0	-13.8	1.44 H	141	63.2	-3.0
4	2487.25	51.9 AV	54.0	-2.1	1.44 H	141	54.9	-3.0
5	4924.00	48.5 PK	74.0	-25.5	2.27 H	120	47.0	1.5
6	4924.00	46.1 AV	54.0	-7.9	2.27 H	120	44.6	1.5
7	7386.00	46.7 PK	74.0	-27.3	1.29 H	200	39.5	7.2
8	7386.00	32.8 AV	54.0	-21.2	1.29 H	200	25.6	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	*2462.00	113.3 PK			1.19 V	264	116.3	-3.0
2	*2462.00	109.5 AV			1.19 V	264	112.5	-3.0
3	2484.81	61.9 PK	74.0	-12.1	1.19 V	264	64.9	-3.0
4	2484.81	52.9 AV	54.0	-1.1	1.19 V	264	55.9	-3.0
5	4924.00	46.6 PK	74.0	-27.4	1.48 V	124	45.1	1.5
6	4924.00	42.0 AV	54.0	-12.0	1.48 V	124	40.5	1.5
7	7386.00	45.2 PK	74.0	-28.8	1.62 V	234	38.0	7.2
8	7386.00	32.0 AV	54.0	-22.0	1.62 V	234	24.8	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 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	2389.96	68.1 PK	74.0	-5.9	1.52 H	52	71.1	-3.0
2	2389.96	50.8 AV	54.0	-3.2	1.52 H	52	53.8	-3.0
3	*2412.00	109.9 PK			1.52 H	52	112.8	-2.9
4	*2412.00	100.3 AV			1.52 H	52	103.2	-2.9
5	4824.00	52.2 PK	74.0	-21.8	1.68 H	95	50.8	1.4
6	4824.00	48.5 AV	54.0	-5.5	1.68 H	95	47.1	1.4
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	2389.91	69.7 PK	74.0	-4.3	1.15 V	264	72.7	-3.0
2	2389.91	52.9 AV	54.0	-1.1	1.15 V	264	55.9	-3.0
3	*2412.00	113.2 PK			1.15 V	264	116.1	-2.9
4	*2412.00	103.4 AV			1.15 V	264	106.3	-2.9
5	4824.00	51.4 PK	74.0	-22.6	1.13 V	275	50.0	1.4
6	4824.00	47.6 AV	54.0	-6.4	1.13 V	275	46.2	1.4

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 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	55.7 PK	74.0	-18.3	1.37 H	138	58.7	-3.0
2	2390.00	43.8 AV	54.0	-10.2	1.37 H	138	46.8	-3.0
3	*2437.00	112.0 PK			1.37 H	138	114.9	-2.9
4	*2437.00	101.8 AV			1.37 H	138	104.7	-2.9
5	2483.50	60.9 PK	74.0	-13.1	1.37 H	138	63.9	-3.0
6	2483.50	44.8 AV	54.0	-9.2	1.37 H	138	47.8	-3.0
7	4874.00	48.5 PK	74.0	-25.5	2.31 H	122	47.2	1.3
8	4874.00	45.8 AV	54.0	-8.2	2.31 H	122	44.5	1.3
9	7311.00	46.5 PK	74.0	-27.5	1.26 H	193	39.6	6.9
10	7311.00	32.7 AV	54.0	-21.3	1.26 H	193	25.8	6.9
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	57.7 PK	74.0	-16.3	1.03 V	249	60.7	-3.0
2	2390.00	45.1 AV	54.0	-8.9	1.03 V	249	48.1	-3.0
3	*2437.00	114.4 PK			1.03 V	249	117.3	-2.9
4	*2437.00	104.3 AV			1.03 V	249	107.2	-2.9
5	2483.50	62.7 PK	74.0	-11.3	1.03 V	249	65.7	-3.0
6	2483.50	46.7 AV	54.0	-7.3	1.03 V	249	49.7	-3.0
7	4874.00	46.9 PK	74.0	-27.1	1.52 V	115	45.6	1.3
8	4874.00	42.2 AV	54.0	-11.8	1.52 V	115	40.9	1.3
9	7311.00	45.2 PK	74.0	-28.8	1.60 V	247	38.3	6.9
10	7311.00	31.8 AV	54.0	-22.2	1.60 V	247	24.9	6.9

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	2383.92	69.8 PK	74.0	-4.2	1.44 H	136	72.7	-2.9
2	2383.92	52.1 AV	54.0	-1.9	1.44 H	136	55.0	-2.9
3	*2462.00	109.0 PK			1.44 H	136	112.0	-3.0
4	*2462.00	98.1 AV			1.44 H	136	101.1	-3.0
5	4924.00	48.2 PK	74.0	-25.8	2.29 H	118	46.7	1.5
6	4924.00	45.7 AV	54.0	-8.3	2.29 H	118	44.2	1.5
7	7386.00	47.0 PK	74.0	-27.0	1.22 H	207	39.8	7.2
8	7386.00	32.9 AV	54.0	-21.1	1.22 H	207	25.7	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	*2462.00	111.5 PK			1.19 V	263	114.5	-3.0
2	*2462.00	102.0 AV			1.19 V	263	105.0	-3.0
3	2484.00	70.3 PK	74.0	-3.7	1.19 V	263	73.3	-3.0
4	2484.00	52.9 AV	54.0	-1.1	1.19 V	263	55.9	-3.0
5	4924.00	46.6 PK	74.0	-27.4	1.51 V	101	45.1	1.5
6	4924.00	42.2 AV	54.0	-11.8	1.51 V	101	40.7	1.5
7	7386.00	45.1 PK	74.0	-28.9	1.54 V	254	37.9	7.2
8	7386.00	31.9 AV	54.0	-22.1	1.54 V	254	24.7	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 (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	2389.97	72.4 PK	74.0	-1.6	1.36 H	139	75.4	-3.0
2	2389.97	52.2 AV	54.0	-1.8	1.36 H	139	55.2	-3.0
3	*2412.00	109.3 PK			1.36 H	139	112.2	-2.9
4	*2412.00	99.5 AV			1.36 H	139	102.4	-2.9
5	4824.00	47.5 PK	74.0	-26.5	2.32 H	128	46.1	1.4
6	4824.00	45.2 AV	54.0	-8.8	2.32 H	128	43.8	1.4
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	2389.88	71.5 PK	74.0	-2.5	1.14 V	266	74.5	-3.0
2	2389.88	52.8 AV	54.0	-1.2	1.14 V	266	55.8	-3.0
3	*2412.00	112.7 PK			1.14 V	266	115.6	-2.9
4	*2412.00	102.4 AV			1.14 V	266	105.3	-2.9
5	4824.00	46.2 PK	74.0	-27.8	1.46 V	93	44.8	1.4
6	4824.00	41.7 AV	54.0	-12.3	1.46 V	93	40.3	1.4

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 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	1.77 H	312	59.4	-3.0
2	2390.00	43.4 AV	54.0	-10.6	1.77 H	312	46.4	-3.0
3	*2437.00	113.2 PK			1.77 H	312	116.1	-2.9
4	*2437.00	101.7 AV			1.77 H	312	104.6	-2.9
5	2483.50	61.6 PK	74.0	-12.4	1.77 H	312	64.6	-3.0
6	2483.50	45.2 AV	54.0	-8.8	1.77 H	312	48.2	-3.0
7	4874.00	48.3 PK	74.0	-25.7	2.28 H	131	47.0	1.3
8	4874.00	46.1 AV	54.0	-7.9	2.28 H	131	44.8	1.3
9	7311.00	47.1 PK	74.0	-26.9	1.20 H	207	40.2	6.9
10	7311.00	33.1 AV	54.0	-20.9	1.20 H	207	26.2	6.9
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	1.24 V	265	60.4	-3.0
2	2390.00	45.5 AV	54.0	-8.5	1.24 V	265	48.5	-3.0
3	*2437.00	115.1 PK			1.24 V	265	118.0	-2.9
4	*2437.00	105.0 AV			1.24 V	265	107.9	-2.9
5	2483.50	62.0 PK	74.0	-12.0	1.24 V	265	65.0	-3.0
6	2483.50	47.8 AV	54.0	-6.2	1.24 V	265	50.8	-3.0
7	4874.00	46.3 PK	74.0	-27.7	1.55 V	102	45.0	1.3
8	4874.00	41.8 AV	54.0	-12.2	1.55 V	102	40.5	1.3
9	7311.00	45.2 PK	74.0	-28.8	1.53 V	259	38.3	6.9
10	7311.00	31.8 AV	54.0	-22.2	1.53 V	259	24.9	6.9

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	107.0 PK			1.33 H	138	110.0	-3.0
2	*2462.00	97.7 AV			1.33 H	138	100.7	-3.0
3	2483.99	71.9 PK	74.0	-2.1	1.33 H	138	74.9	-3.0
4	**2483.99**	**53.0 AV**	**54.0**	**-1.0**	**1.33 H**	**138**	**56.0**	**-3.0**
5	4924.00	48.2 PK	74.0	-25.8	2.25 H	138	46.7	1.5
6	4924.00	46.1 AV	54.0	-7.9	2.25 H	138	44.6	1.5
7	7386.00	46.7 PK	74.0	-27.3	1.26 H	191	39.5	7.2
8	7386.00	32.7 AV	54.0	-21.3	1.26 H	191	25.5	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	*2462.00	111.4 PK			1.16 V	265	114.4	-3.0
2	*2462.00	101.5 AV			1.16 V	265	104.5	-3.0
3	2483.65	67.2 PK	74.0	-6.8	1.16 V	265	70.2	-3.0
4	2483.65	52.9 AV	54.0	-1.1	1.16 V	265	55.9	-3.0
5	4924.00	46.0 PK	74.0	-28.0	1.60 V	109	44.5	1.5
6	4924.00	41.7 AV	54.0	-12.3	1.60 V	109	40.2	1.5
7	7386.00	44.9 PK	74.0	-29.1	1.49 V	269	37.7	7.2
8	7386.00	31.8 AV	54.0	-22.2	1.49 V	269	24.6	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 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	2389.95	66.5 PK	74.0	-7.5	1.35 H	137	69.5	-3.0
2	2389.95	51.6 AV	54.0	-2.4	1.35 H	137	54.6	-3.0
3	*2422.00	106.0 PK			1.35 H	137	108.9	-2.9
4	*2422.00	96.4 AV			1.35 H	137	99.3	-2.9
5	4844.00	48.2 PK	74.0	-25.8	2.28 H	127	46.8	1.4
6	4844.00	45.9 AV	54.0	-8.1	2.28 H	127	44.5	1.4
7	7266.00	46.7 PK	74.0	-27.3	1.31 H	202	39.7	7.0
8	7266.00	32.6 AV	54.0	-21.4	1.31 H	202	25.6	7.0
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	2389.87	67.2 PK	74.0	-6.8	1.19 V	262	70.2	-3.0
2	2389.87	52.9 AV	54.0	-1.1	1.19 V	262	55.9	-3.0
3	*2422.00	108.6 PK			1.19 V	262	111.5	-2.9
4	*2422.00	99.3 AV			1.19 V	262	102.2	-2.9
5	4844.00	46.4 PK	74.0	-27.6	1.59 V	101	45.0	1.4
6	4844.00	42.1 AV	54.0	-11.9	1.59 V	101	40.7	1.4
7	7266.00	44.6 PK	74.0	-29.4	1.54 V	276	37.6	7.0
8	7266.00	31.4 AV	54.0	-22.6	1.54 V	276	24.4	7.0

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.

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	61.8 PK	74.0	-12.2	1.28 H	138	64.8	-3.0
2	2390.00	47.6 AV	54.0	-6.4	1.28 H	138	50.6	-3.0
3	*2437.00	107.1 PK			1.28 H	138	110.0	-2.9
4	*2437.00	96.0 AV			1.28 H	138	98.9	-2.9
5	2483.50	66.8 PK	74.0	-7.2	1.28 H	138	69.8	-3.0
6	2483.50	52.5 AV	54.0	-1.5	1.28 H	138	55.5	-3.0
7	4874.00	48.7 PK	74.0	-25.3	2.26 H	129	47.4	1.3
8	4874.00	46.4 AV	54.0	-7.6	2.26 H	129	45.1	1.3
9	7311.00	46.4 PK	74.0	-27.6	1.35 H	199	39.5	6.9
10	7311.00	32.6 AV	54.0	-21.4	1.35 H	199	25.7	6.9
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	63.7 PK	74.0	-10.3	1.15 V	268	66.7	-3.0
2	2390.00	49.5 AV	54.0	-4.5	1.15 V	268	52.5	-3.0
3	*2437.00	109.2 PK			1.15 V	268	112.1	-2.9
4	*2437.00	98.8 AV			1.15 V	268	101.7	-2.9
5	2483.50	67.2 PK	74.0	-6.8	1.15 V	268	70.2	-3.0
6	2483.50	52.8 AV	54.0	-1.2	1.15 V	268	55.8	-3.0
7	4874.00	45.9 PK	74.0	-28.1	1.57 V	102	44.6	1.3
8	4874.00	41.9 AV	54.0	-12.1	1.57 V	102	40.6	1.3
9	7311.00	44.6 PK	74.0	-29.4	1.57 V	262	37.7	6.9
10	7311.00	31.2 AV	54.0	-22.8	1.57 V	262	24.3	6.9

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	104.5 PK			1.25 H	135	107.4	-2.9
2	*2452.00	95.2 AV			1.25 H	135	98.1	-2.9
3	2484.02	69.3 PK	74.0	-4.7	1.25 H	135	72.3	-3.0
4	2484.02	52.5 AV	54.0	-1.5	1.25 H	135	55.5	-3.0
5	4904.00	48.9 PK	74.0	-25.1	2.26 H	117	47.5	1.4
6	4904.00	46.3 AV	54.0	-7.7	2.26 H	117	44.9	1.4
7	7356.00	46.5 PK	74.0	-27.5	1.37 H	200	39.4	7.1
8	7356.00	32.9 AV	54.0	-21.1	1.37 H	200	25.8	7.1
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	108.0 PK			1.15 V	266	110.9	-2.9
2	*2452.00	98.1 AV			1.15 V	266	101.0	-2.9
3	2483.60	67.7 PK	74.0	-6.3	1.15 V	266	70.7	-3.0
4	2483.60	52.9 AV	54.0	-1.1	1.15 V	266	55.9	-3.0
5	4904.00	45.5 PK	74.0	-28.5	1.61 V	111	44.1	1.4
6	4904.00	41.6 AV	54.0	-12.4	1.61 V	111	40.2	1.4
7	7356.00	44.3 PK	74.0	-29.7	1.60 V	260	37.2	7.1
8	7356.00	31.0 AV	54.0	-23.0	1.60 V	260	23.9	7.1

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.

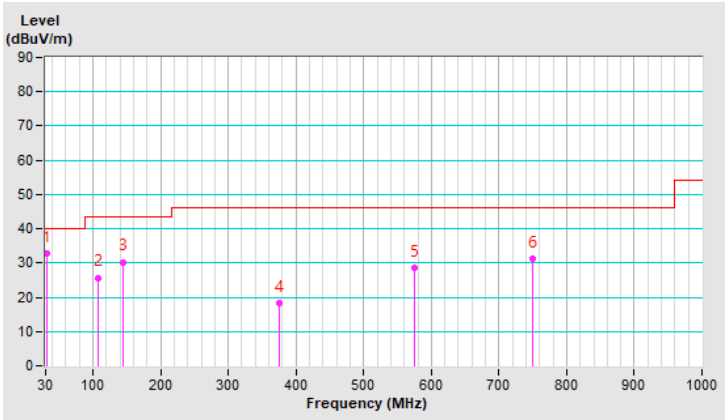
Below 1GHz Data:

RF Mode	TX 802.11b	Channel	CH 1：2412 MHz
Frequency Range	9kHz ~ 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	32.04	32.7 QP	40.0	-7.3	1.00 H	360	46.5	-13.8
2	107.07	25.7 QP	43.5	-17.8	1.50 H	317	41.8	-16.1
3	144.27	30.3 QP	43.5	-13.2	2.00 H	315	43.0	-12.7
4	374.56	18.3 QP	46.0	-27.7	1.00 H	229	28.6	-10.3
5	575.02	28.5 QP	46.0	-17.5	1.50 H	192	34.5	-6.0
6	750.02	31.2 QP	46.0	-14.8	1.50 H	0	34.0	-2.8

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 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.

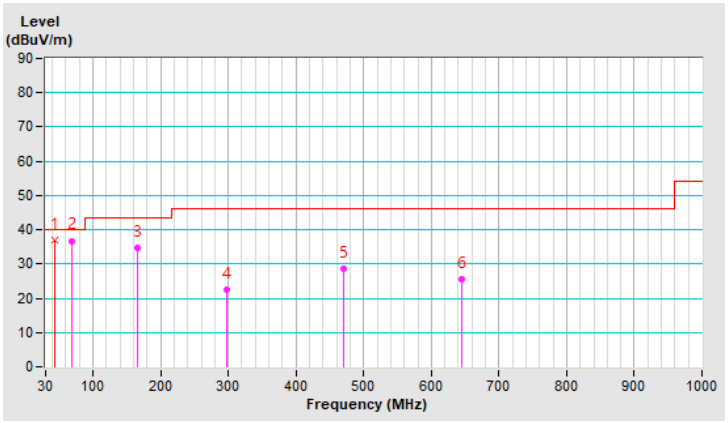


RF Mode	TX 802.11b	Channel	CH 1：2412 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	44.41	37.0 QP	40.0	-3.0	1.50 V	258	49.8	-12.8
2	69.63	36.8 QP	40.0	-3.2	1.50 V	352	51.7	-14.9
3	165.56	34.5 QP	43.5	-9.0	1.50 V	360	47.5	-13.0
4	298.12	22.5 QP	46.0	-23.5	1.00 V	0	34.7	-12.2
5	469.77	28.7 QP	46.0	-17.3	1.00 V	0	36.6	-7.9
6	644.77	25.5 QP	46.0	-20.5	1.00 V	66	29.9	-4.4

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 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. 19, 2020	Mar. 18, 2021
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: Feb. 05, 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.

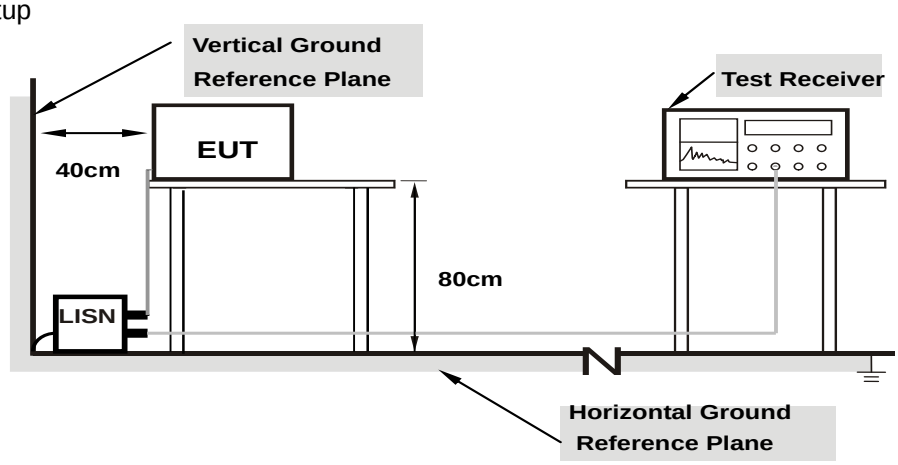
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

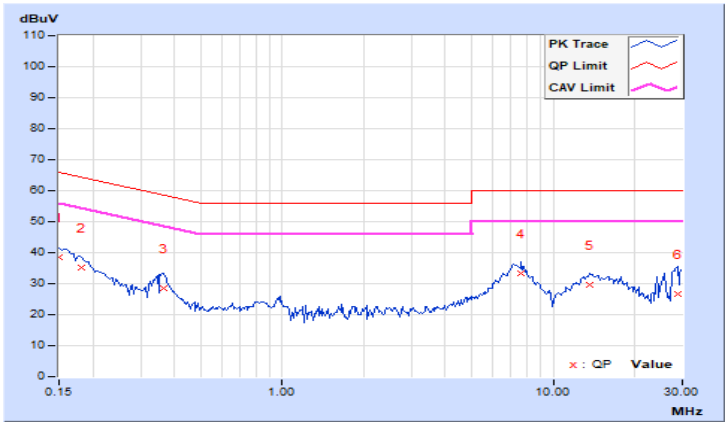
4.2.7 Test Results

RF Mode	TX 802.11b	Channel	CH 1：2412 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	0.15000	9.96	28.54	15.35	38.50	25.31	66.00	56.00	-27.50	-30.69
2	0.18125	9.98	25.05	11.97	35.03	21.95	64.43	54.43	-29.40	-32.48
3	**0.36484**	**10.01**	**18.55**	**15.86**	**28.56**	**25.87**	**58.62**	**48.62**	**-30.06**	**-22.75**
4	7.57422	10.54	22.76	14.94	33.30	25.48	60.00	50.00	-26.70	-24.52
5	13.61328	10.99	18.62	11.70	29.61	22.69	60.00	50.00	-30.39	-27.31
6	28.70703	11.70	15.06	7.79	26.76	19.49	60.00	50.00	-33.24	-30.51

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

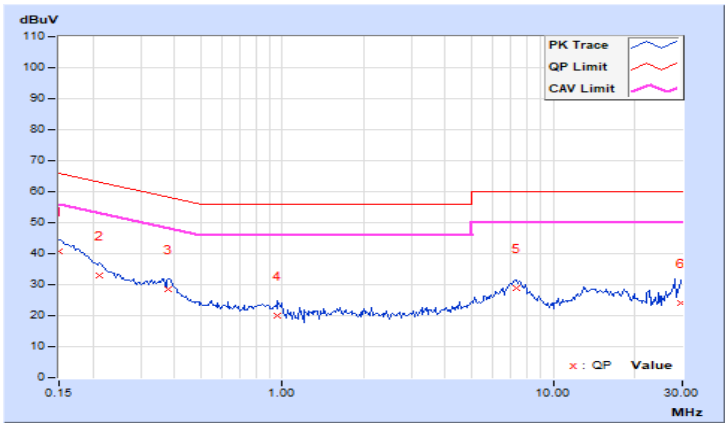


RF Mode	TX 802.11b	Channel	CH 1：2412 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

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	0.15000	9.94	30.65	16.61	40.59	26.55	66.00	56.00	-25.41	-29.45
2	0.21250	9.98	22.82	9.07	32.80	19.05	63.11	53.11	-30.31	-34.06
3	0.38047	10.01	18.39	11.46	28.40	21.47	58.27	48.27	-29.87	-26.80
4	0.95859	10.07	10.02	-0.69	20.09	9.38	56.00	46.00	-35.91	-36.62
5	7.31641	10.45	18.61	9.71	29.06	20.16	60.00	50.00	-30.94	-29.84
6	29.64453	11.33	12.61	2.91	23.94	14.24	60.00	50.00	-36.06	-35.76

Remarks:

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

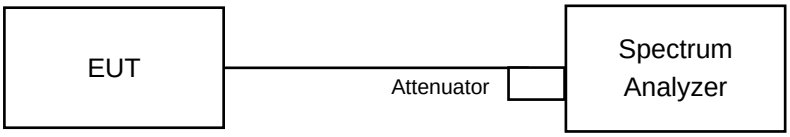


4.3 6dB Bandwidth Measurement

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 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	10.13	9.63	0.5	Pass
6	2437	10.11	10.11	0.5	Pass
11	2462	9.63	9.65	0.5	Pass

802.11g

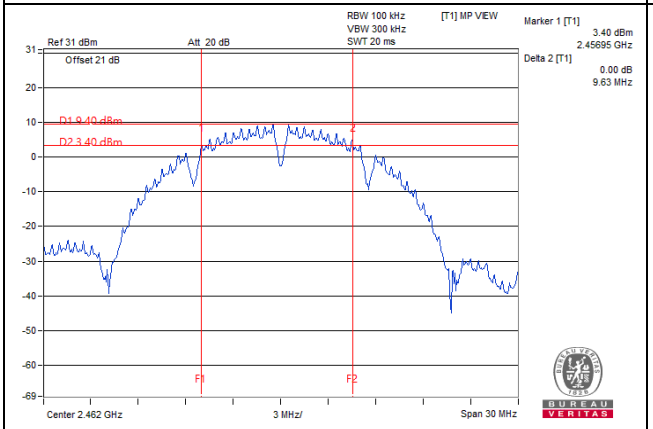
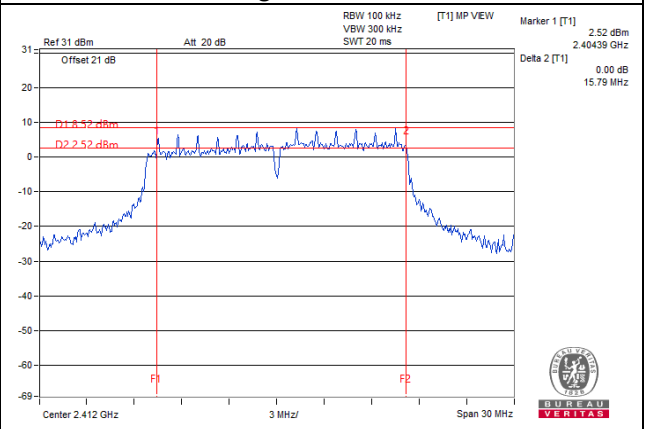
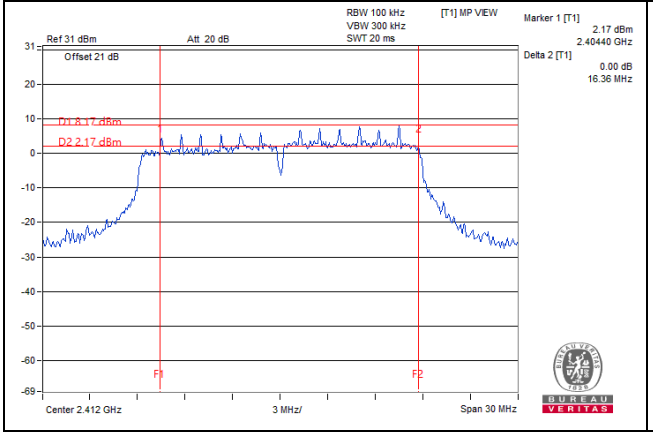
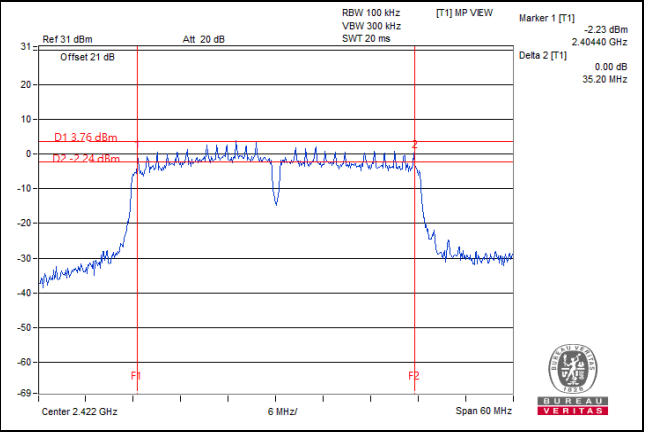
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.37	15.79	0.5	Pass
6	2437	16.37	16.36	0.5	Pass
11	2462	16.39	16.11	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.54	16.36	0.5	Pass
6	2437	17.32	16.97	0.5	Pass
11	2462	17.64	16.6	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.6	35.2	0.5	Pass
6	2437	35.35	35.62	0.5	Pass
9	2452	35.41	35.27	0.5	Pass

Spectrum Plot of Worst Value	
802.11b_ Chain 0 / CH11	**802.11g_ Chain 1 / CH1**
	
802.11n (HT20) _ Chain 1 / CH1	**802.11n (HT40) _ Chain 1 / CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

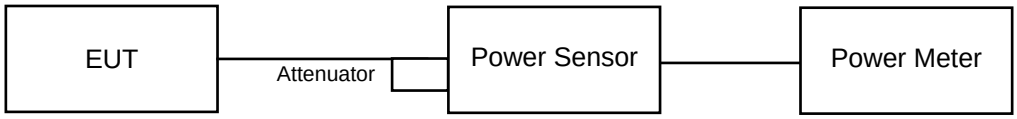
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

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

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.15	24.61	495.606	26.95	30	Pass
6	2437	22.84	23.58	420.343	26.24	30	Pass
11	2462	21.49	22.12	303.858	24.83	30	Pass

802.11g

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.51	24.81	527.08	27.22	30	Pass
6	2437	23.23	24.50	492.216	26.92	30	Pass
11	2462	22.35	23.53	397.215	25.99	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	22.87	24.11	451.274	26.54	30	Pass
6	2437	23.12	24.93	516.288	27.13	30	Pass
11	2462	21.61	22.60	326.847	25.14	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	22.10	24.00	413.37	26.16	30	Pass
6	2437	22.12	23.85	405.591	26.08	30	Pass
9	2452	21.53	24.12	400.459	26.03	30	Pass

FOR AVERAGE POWER

802.11b

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	22.02	23.41	378.501	25.78
6	2437	21.84	22.54	332.23	25.21
11	2462	19.92	20.65	214.32	23.31

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	18.86	20.28	183.573	22.64
6	2437	19.83	20.65	212.306	23.27
11	2462	17.26	18.73	127.856	21.07

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	17.82	18.94	138.877	21.43
6	2437	19.82	20.83	217	23.36
11	2462	15.57	17.46	91.776	19.63

802.11n (HT40)

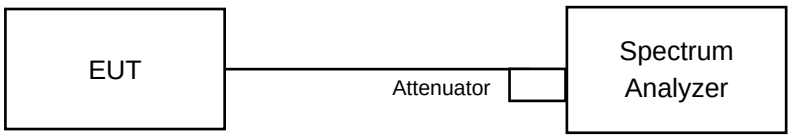
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	16.50	17.82	105.202	20.22
6	2437	16.93	18.56	121.097	20.83
9	2452	15.19	16.96	82.696	19.17

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

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (mW/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
1	2412	-3.78	-3.22	0.8952	-0.48	8.00	PASS
6	2437	-3.72	-4.12	0.8119	-0.90	8.00	PASS
11	2462	-5.74	-6.48	0.4916	-3.08	8.00	PASS

Note: Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (mW/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
1	2412	-9.85	-9.11	0.2263	-6.45	8.00	PASS
6	2437	-8.30	-8.26	0.2972	-5.27	8.00	PASS
11	2462	-12.01	-10.88	0.14461	-8.40	8.00	PASS

Note: Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

802.11n (HT20)

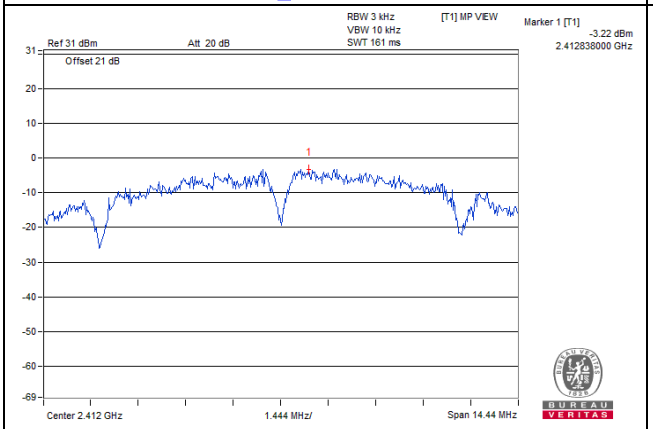
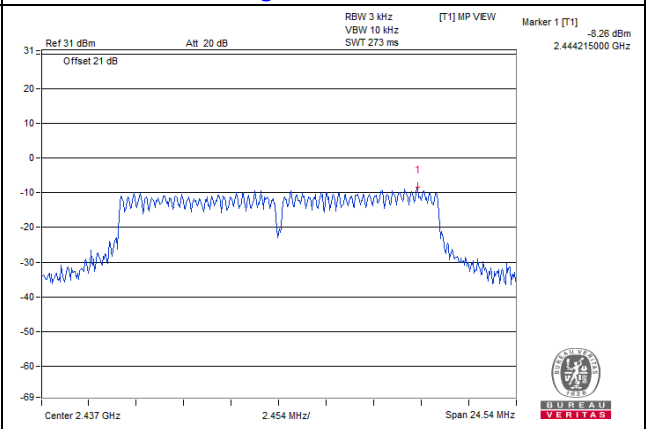
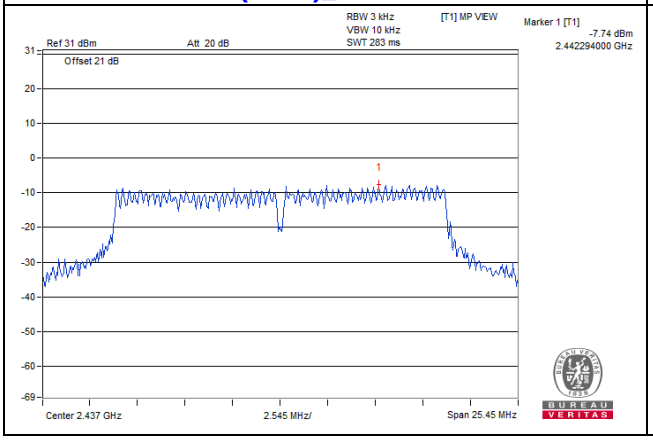
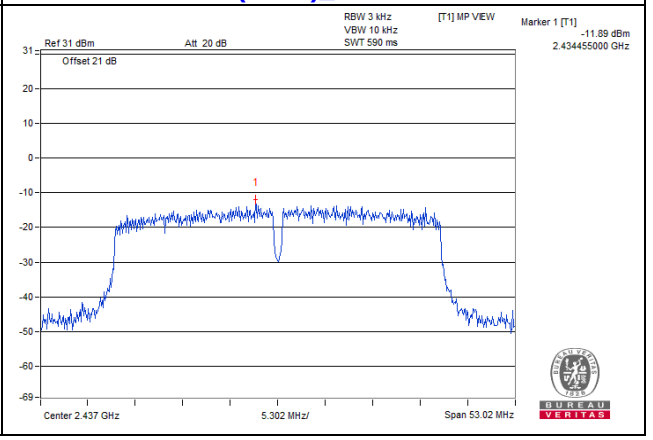
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (mW/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
1	2412	-10.44	-8.34	0.23692	-6.25	8.00	PASS
6	2437	-7.88	-7.74	0.3312	-4.80	8.00	PASS
11	2462	-12.31	-11.06	0.13709	-8.63	8.00	PASS

Note: Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (mW/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
3	2422	-12.98	-12.54	0.10607	-9.74	8.00	PASS
6	2437	-11.89	-12.67	0.11879	-9.25	8.00	PASS
9	2452	-14.40	-13.28	0.0833	-10.79	8.00	PASS

Note: Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

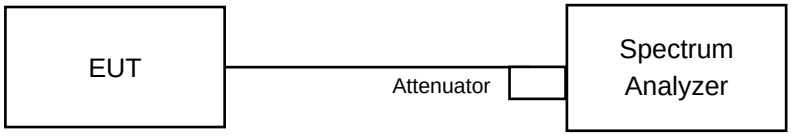
Spectrum Plot of Worst Value	
802.11b_ Chain 1 / CH1	**802.11g_ Chain 1 / CH6**
	
802.11n (HT20)_ Chain 1 / CH6	**802.11n (HT40)_ Chain 0 / CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 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

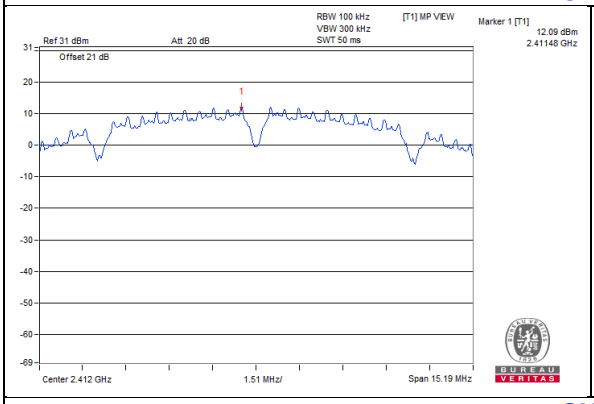
4.6.7 Test Results

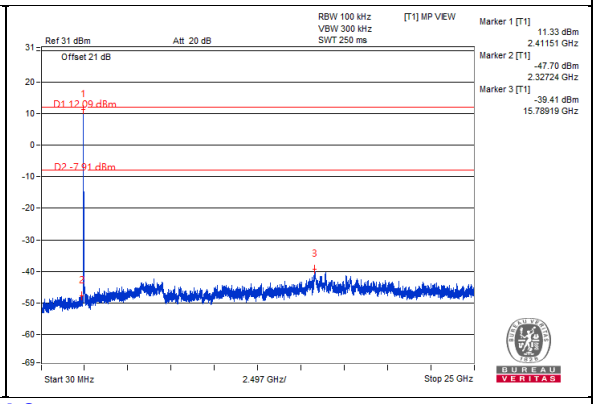
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b

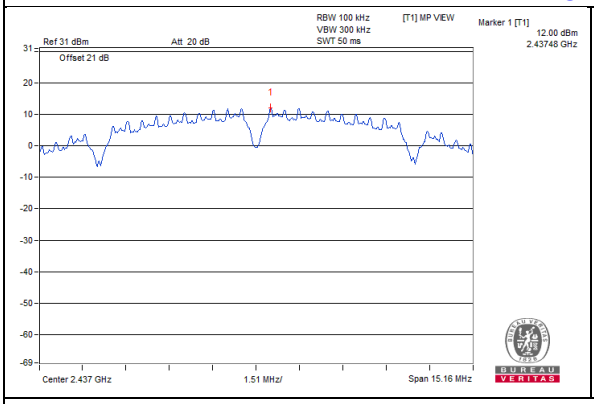
Chain 0

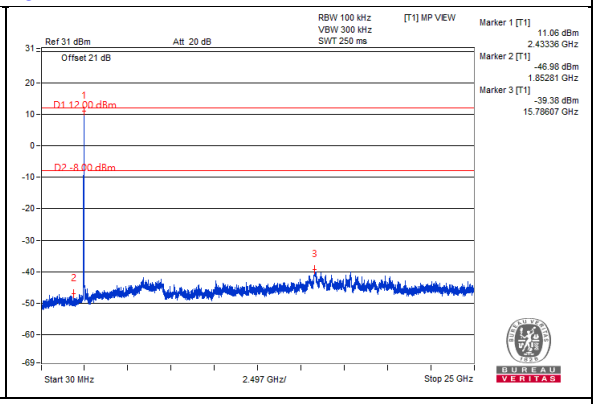
CH 1



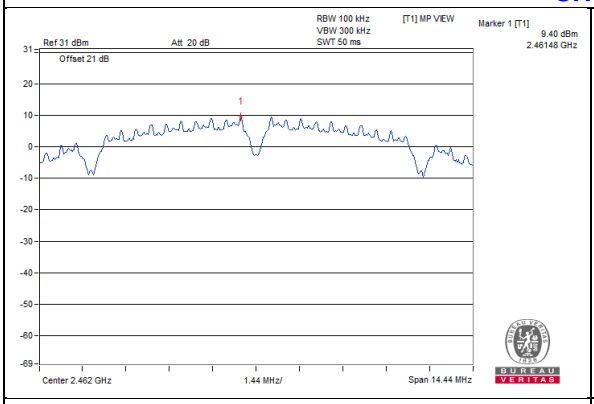


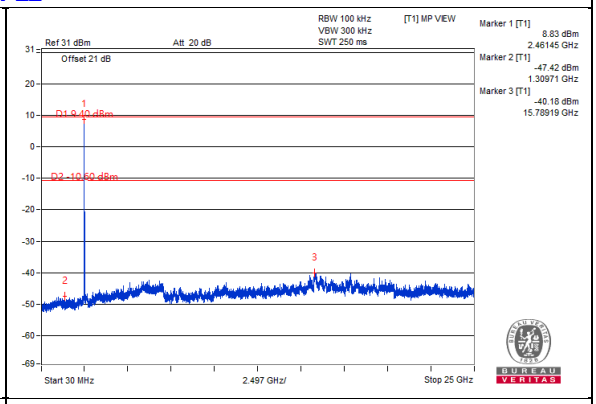
CH 6



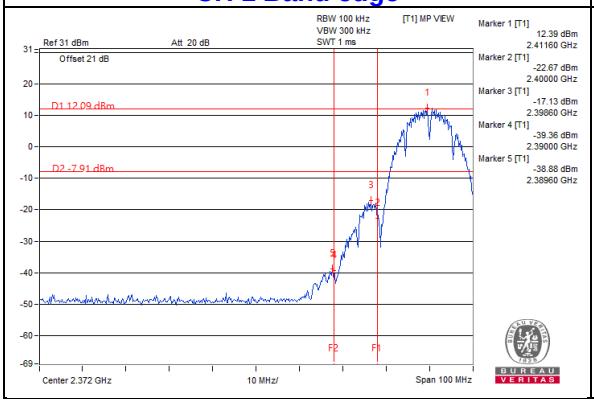


CH 11

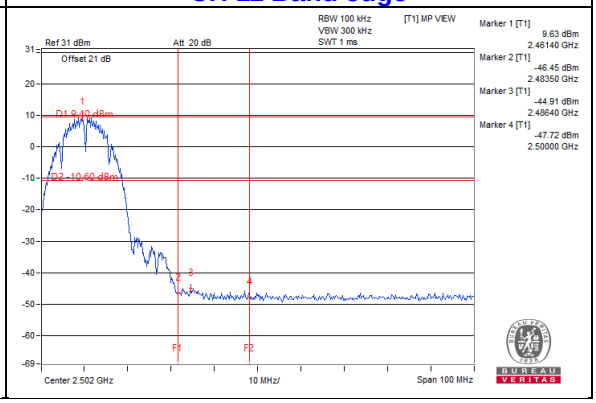




CH 1 Band edge

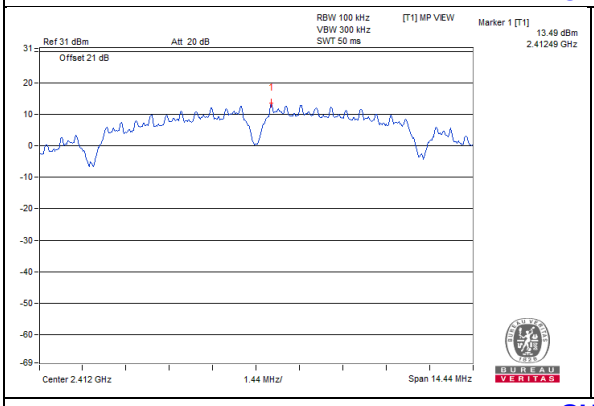


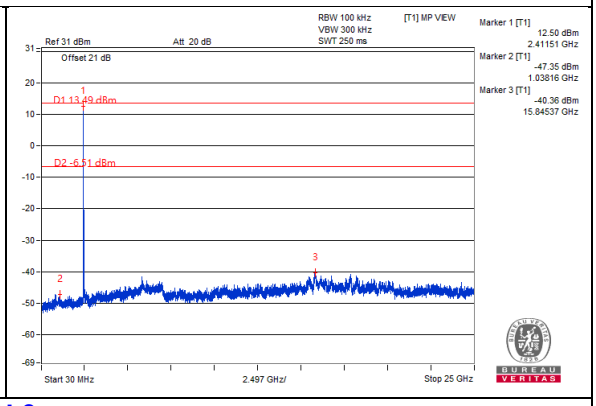
CH 11 Band edge



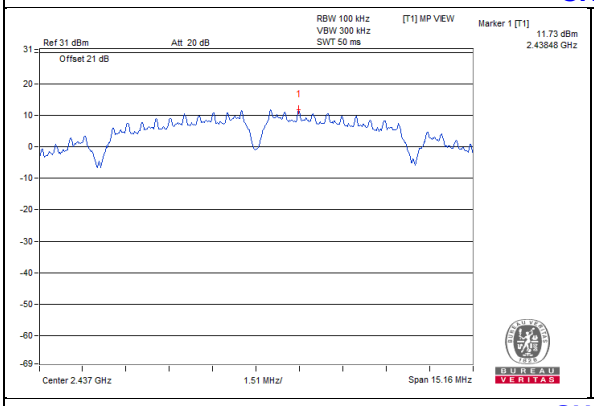
Chain 1

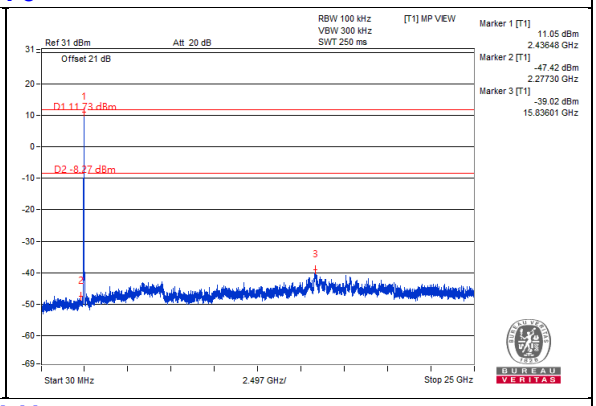
CH 1



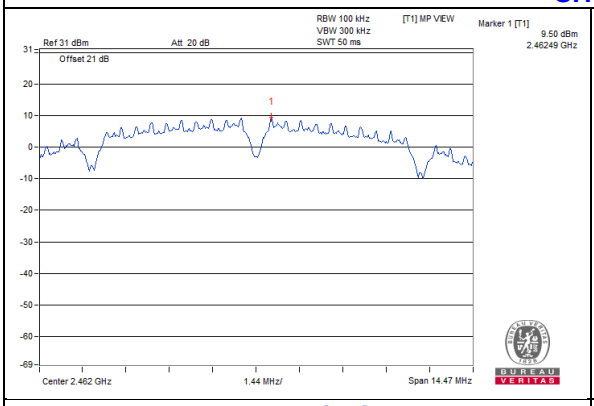


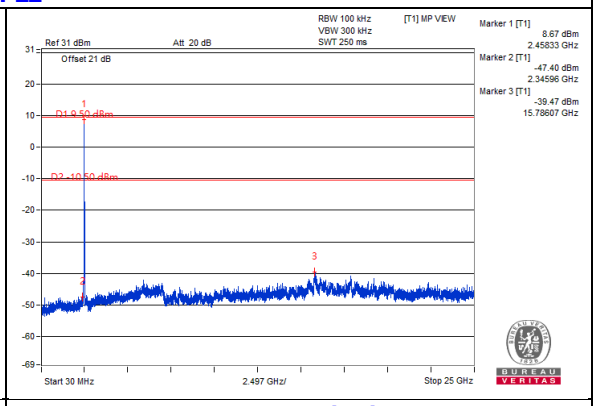
CH 6



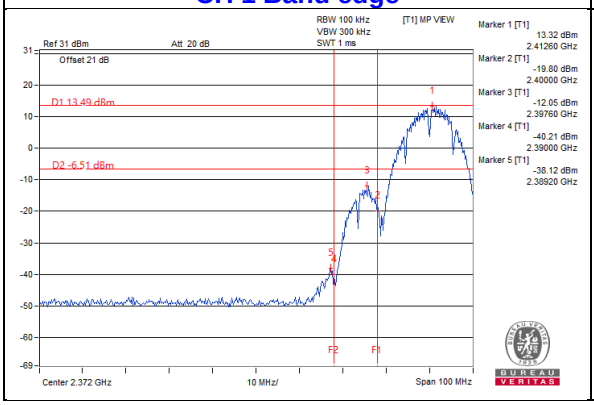


CH 11

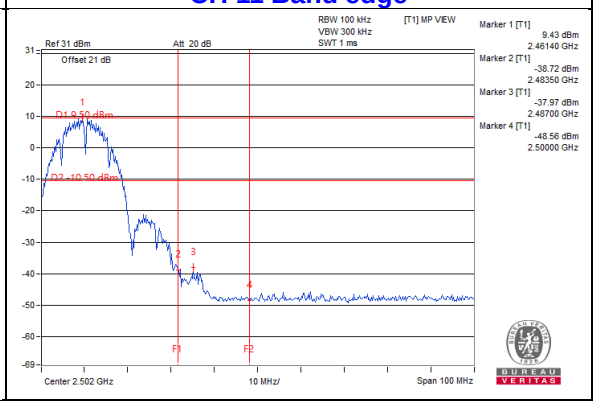




CH 1 Band edge



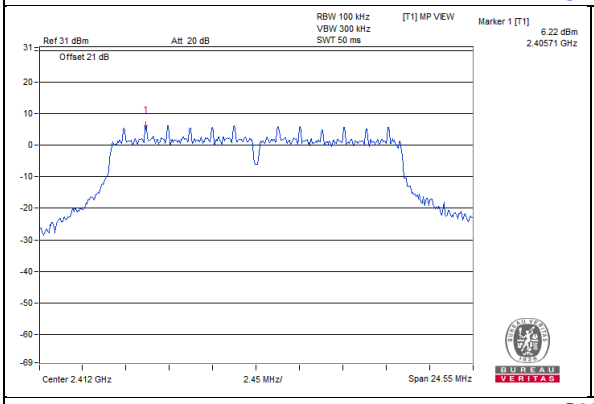
CH 11 Band edge

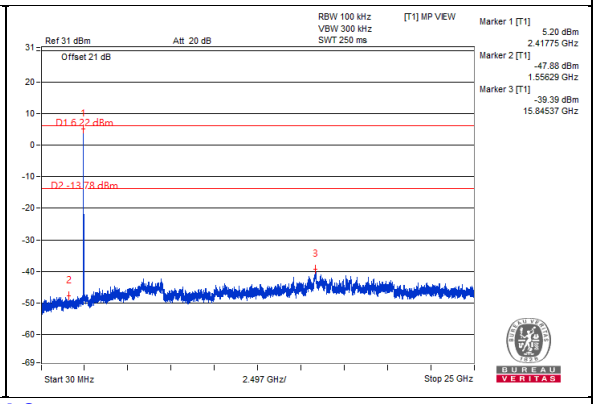


802.11g

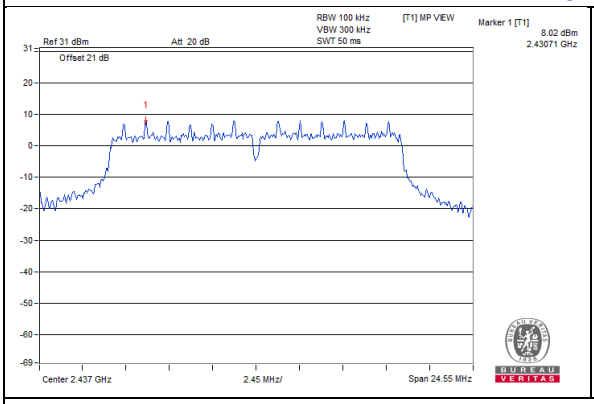
Chain 0

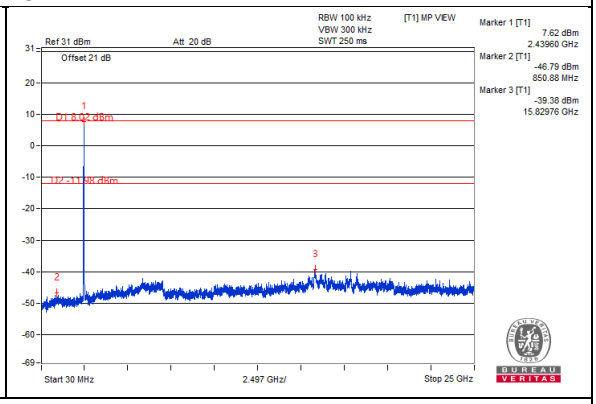
CH 1



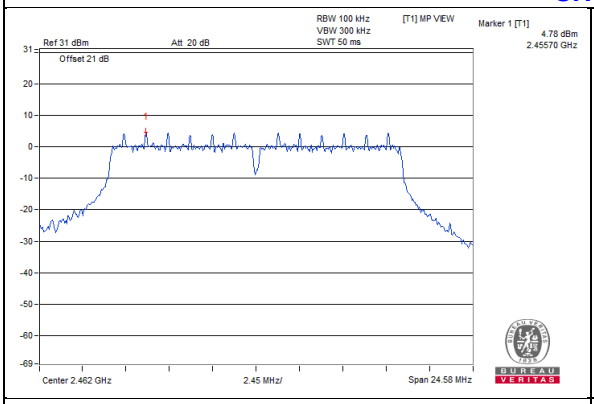


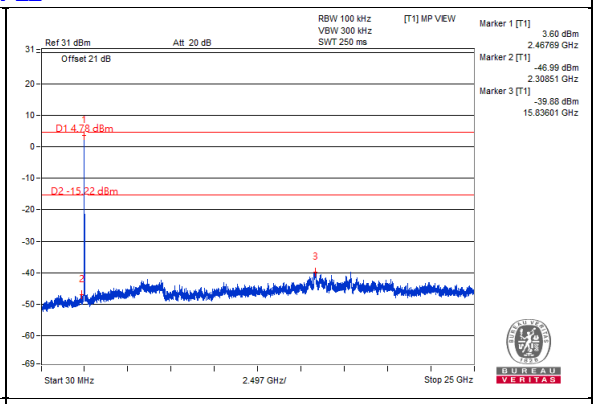
CH 6



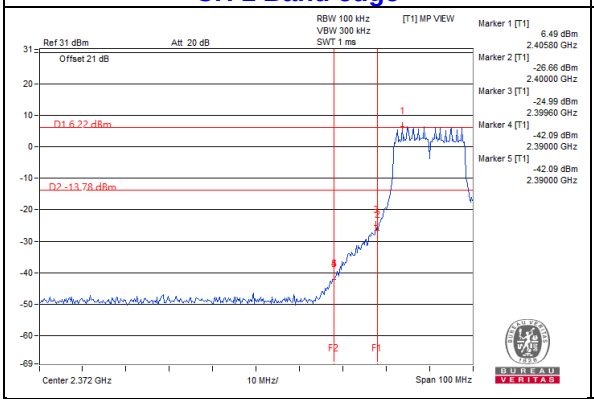


CH 11

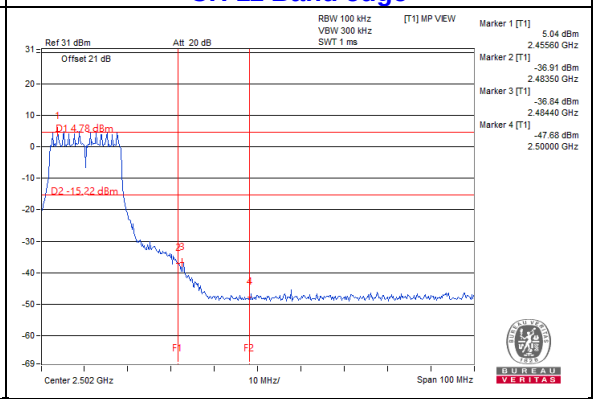




CH 1 Band edge

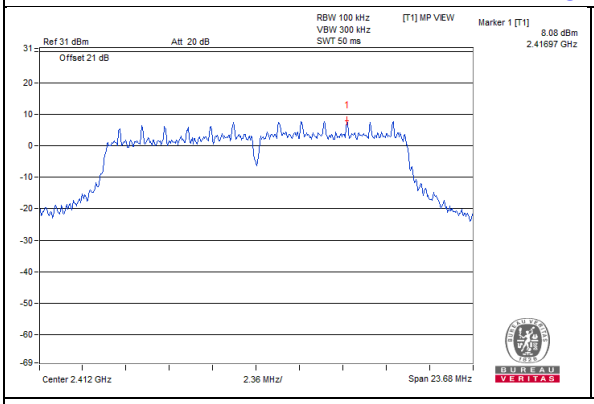


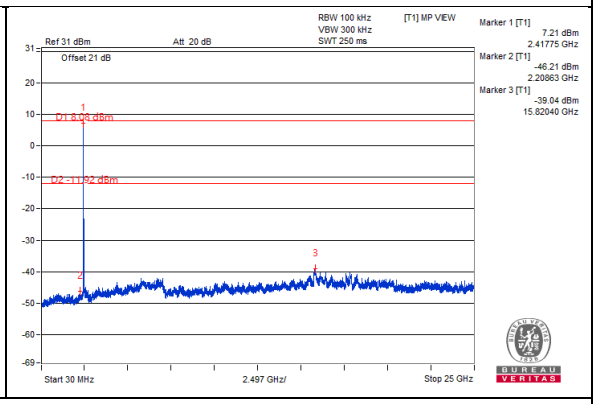
CH 11 Band edge



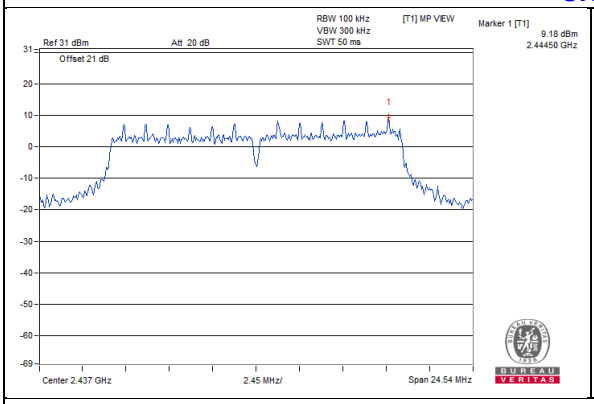
Chain 1

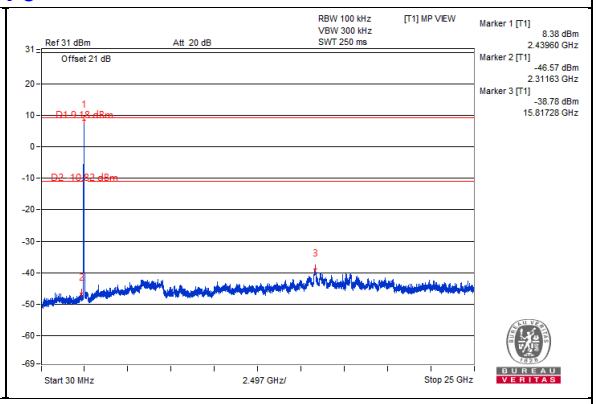
CH 1



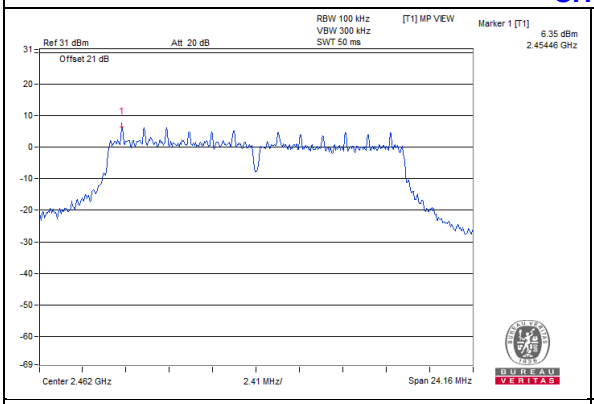


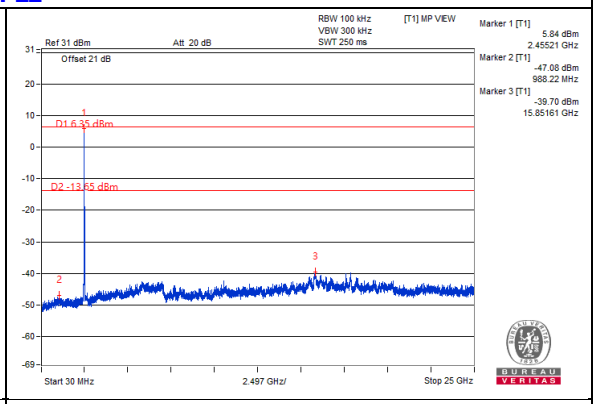
CH 6



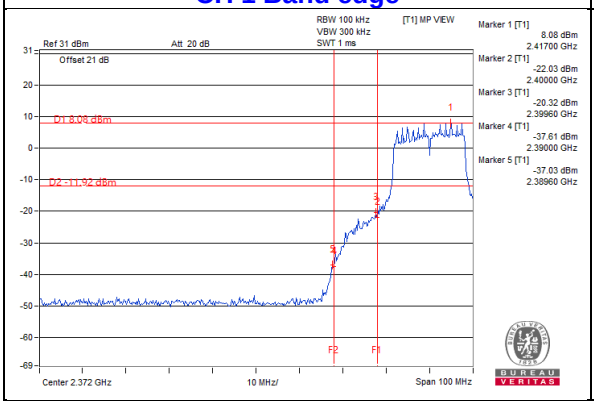


CH 11

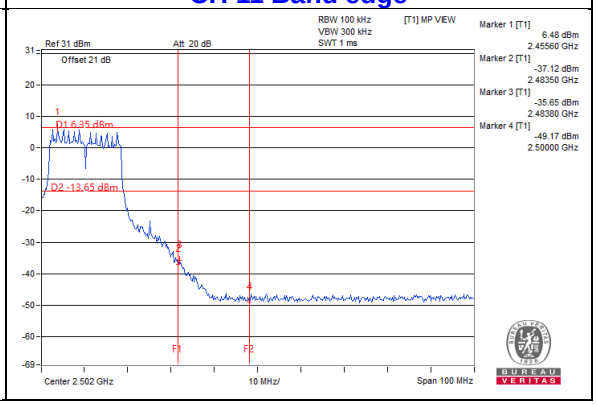




CH 1 Band edge



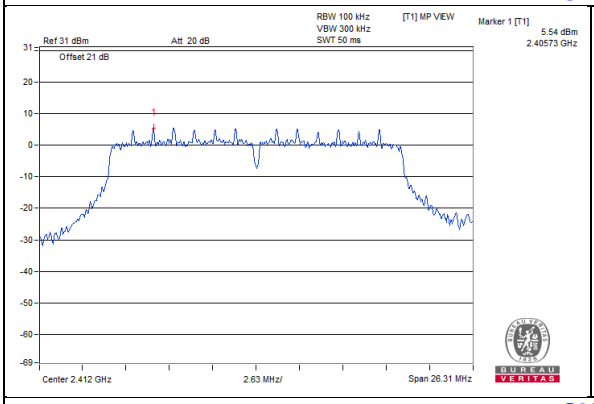
CH 11 Band edge

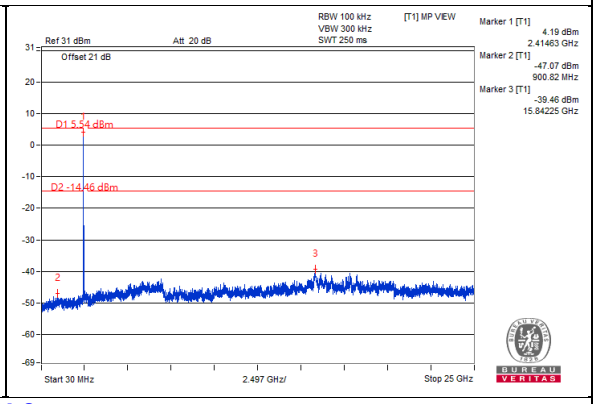


802.11n (HT20)

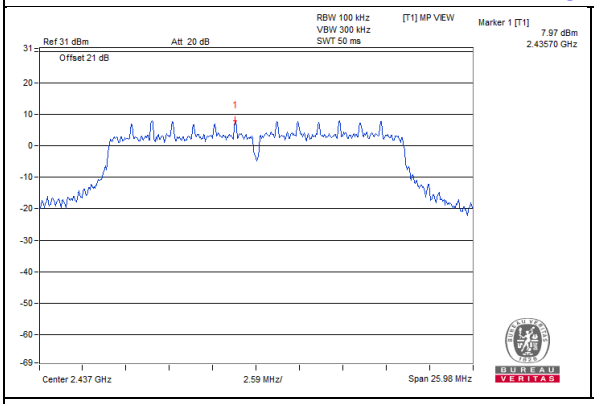
Chain 0

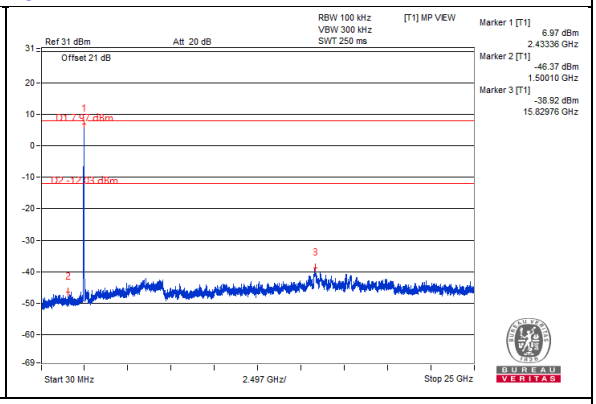
CH 1



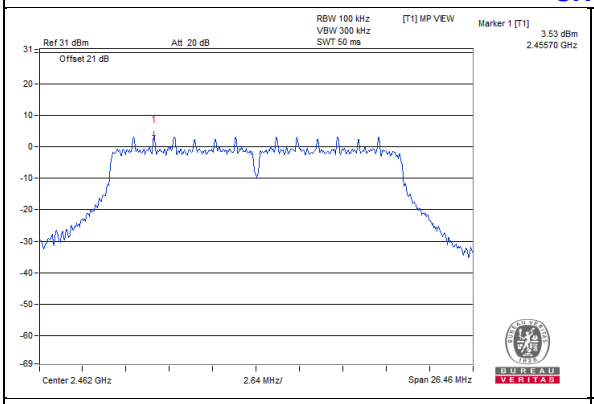


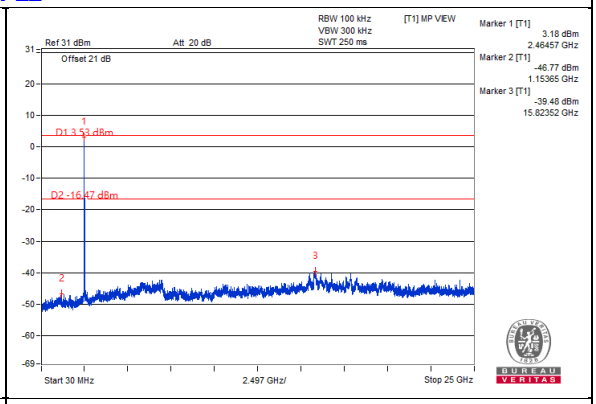
CH 6



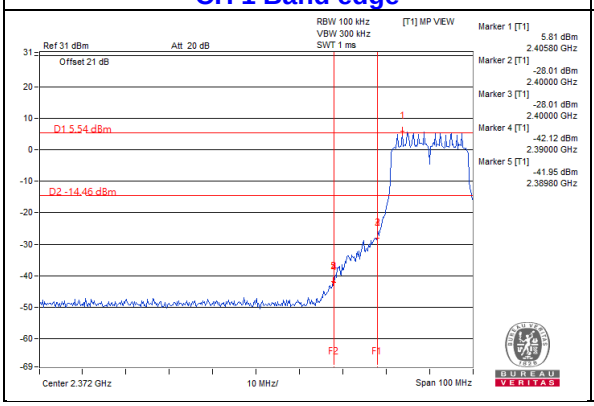


CH 11

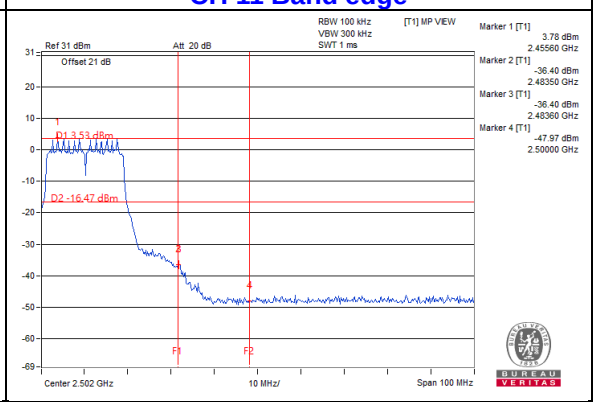




CH 1 Band edge

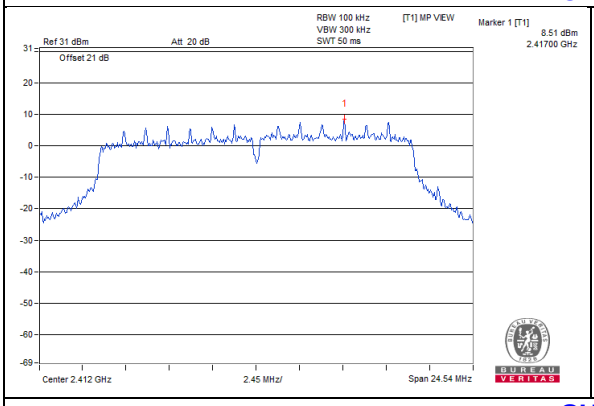


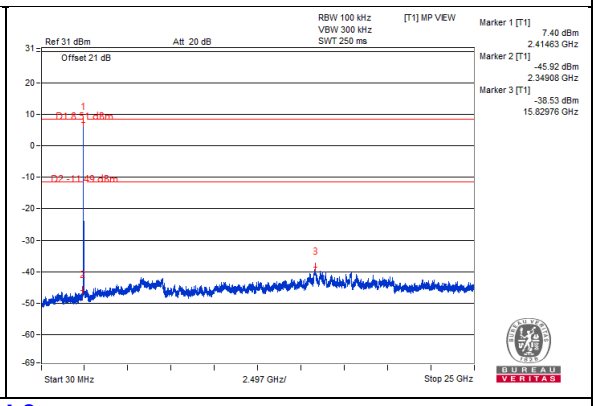
CH 11 Band edge



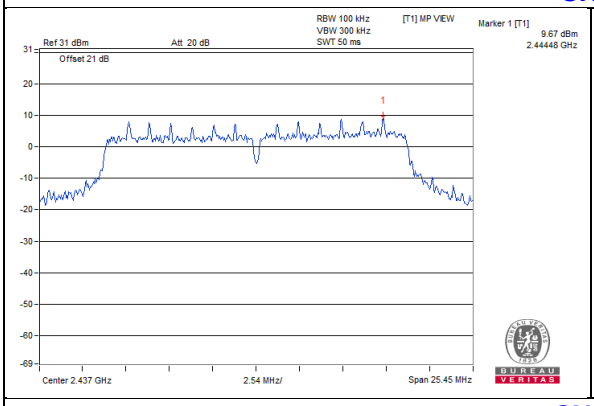
Chain 1

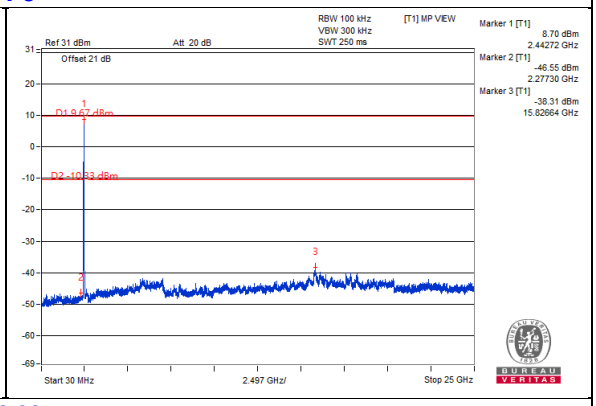
CH 1



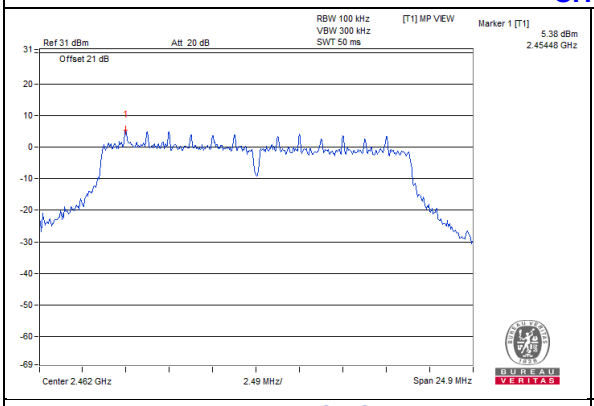


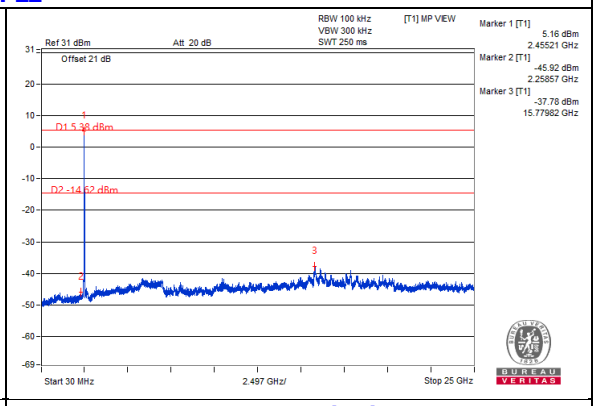
CH 6



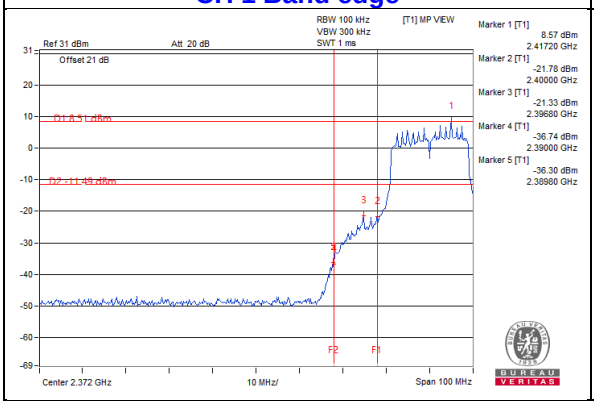


CH 11

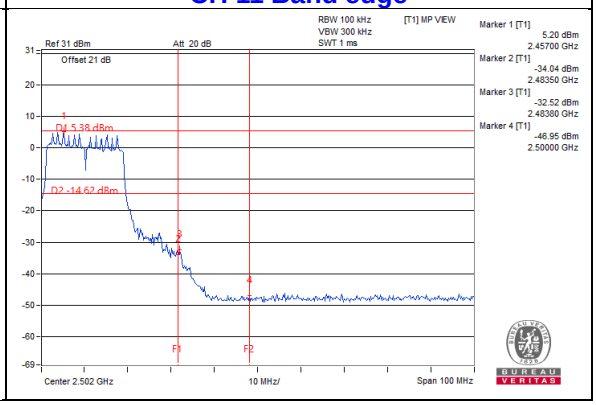




CH 1 Band edge



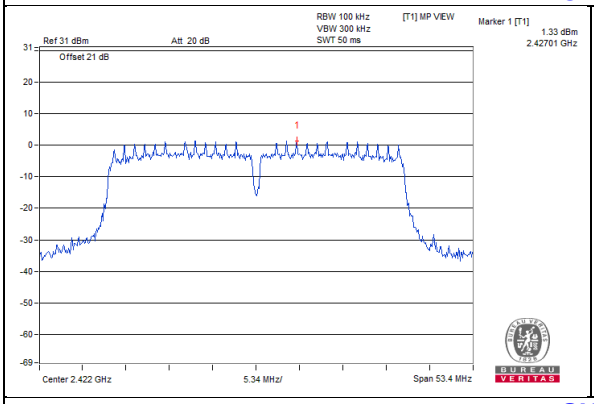
CH 11 Band edge

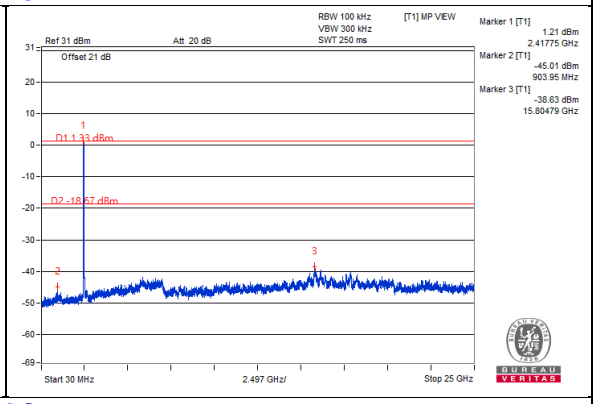


802.11n (HT40)

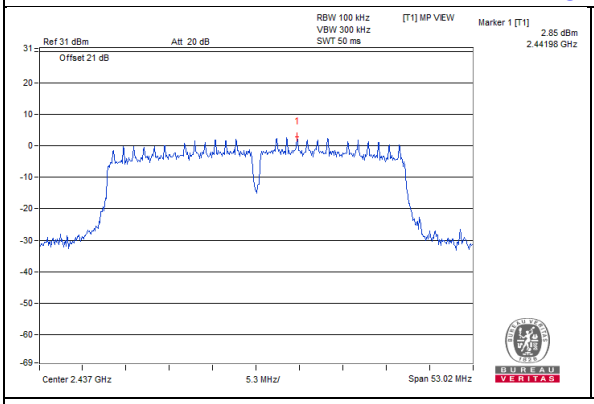
Chain 0

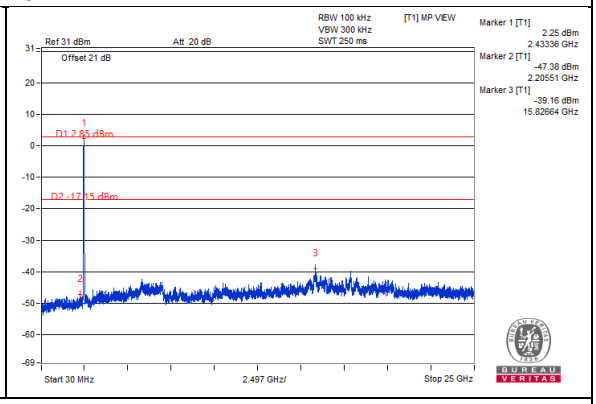
CH 3



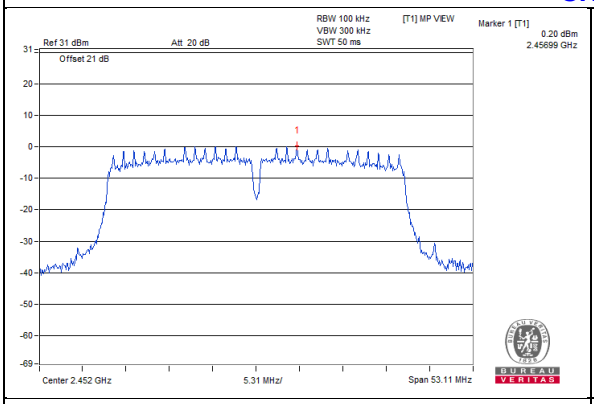


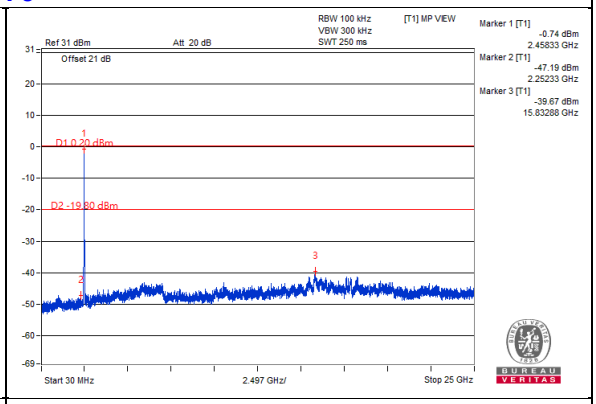
CH 6



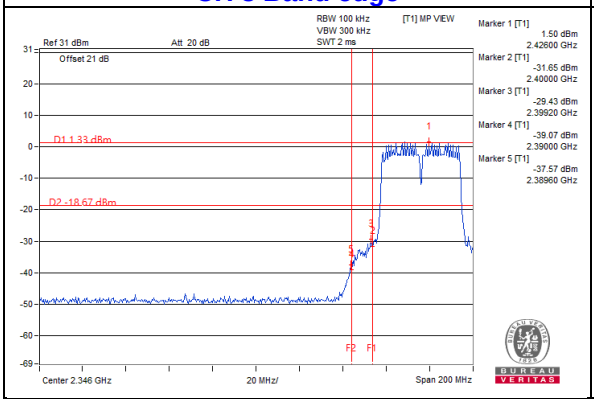


CH 9

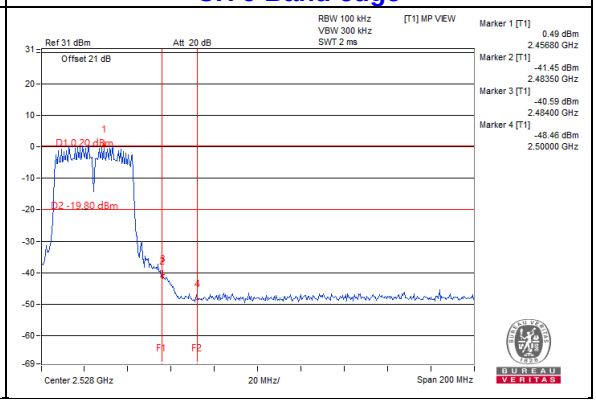




CH 3 Band edge

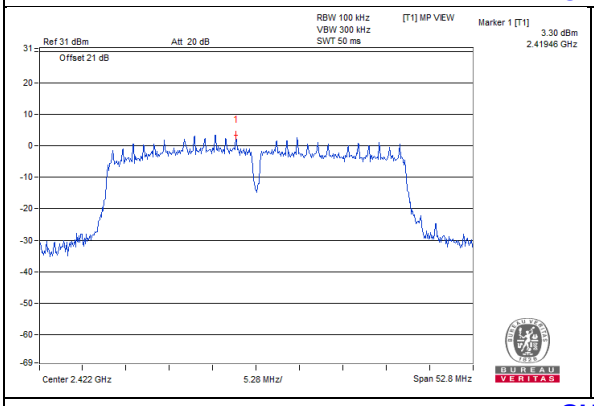


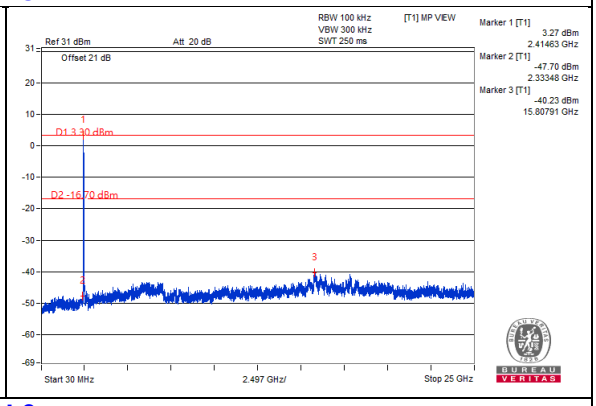
CH 9 Band edge



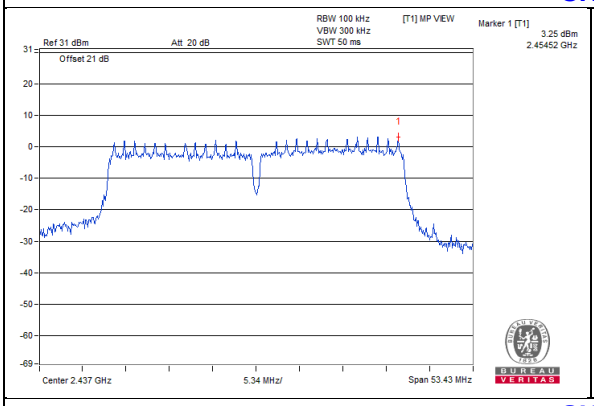
Chain 1

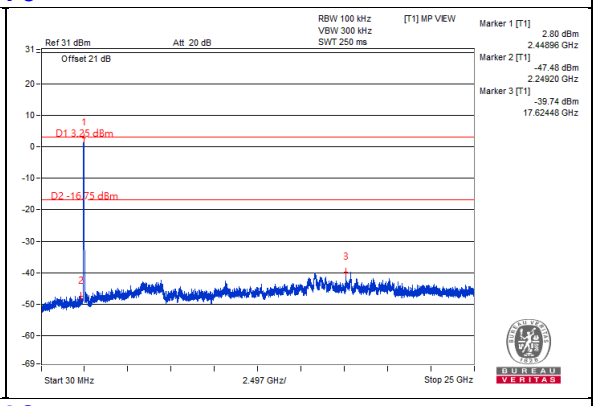
CH 3



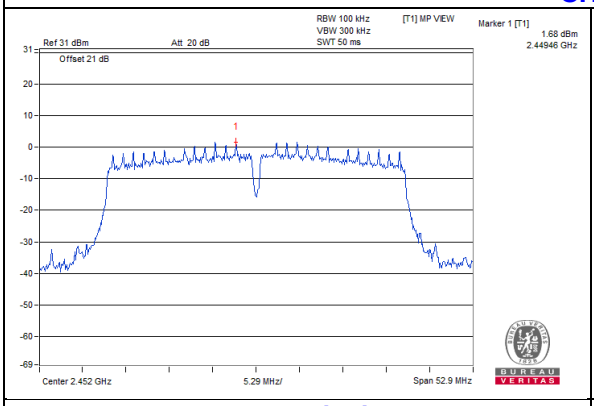


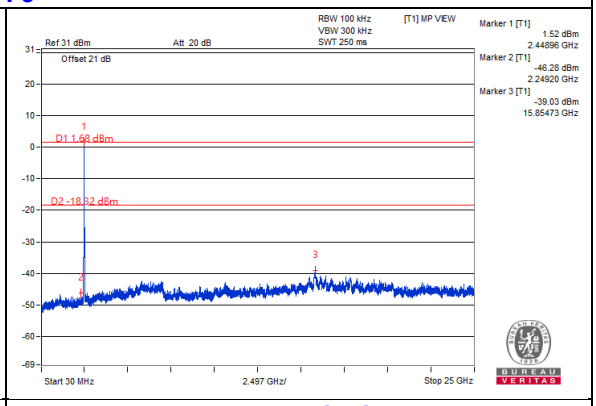
CH 6



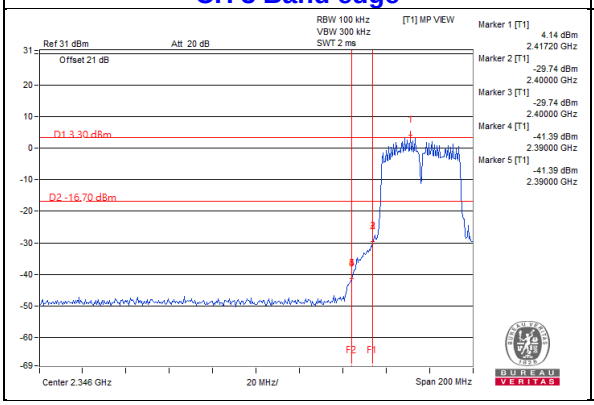


CH 9

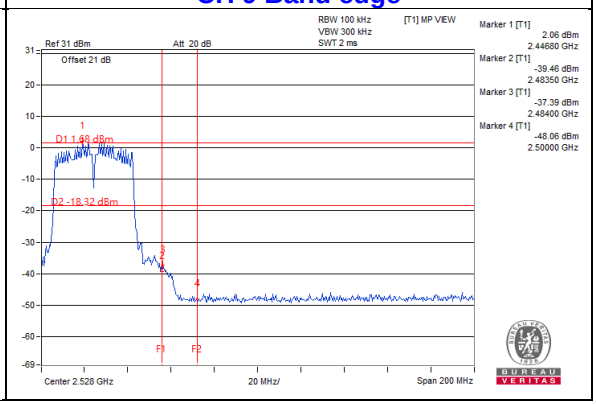




CH 3 Band edge



CH 9 Band edge



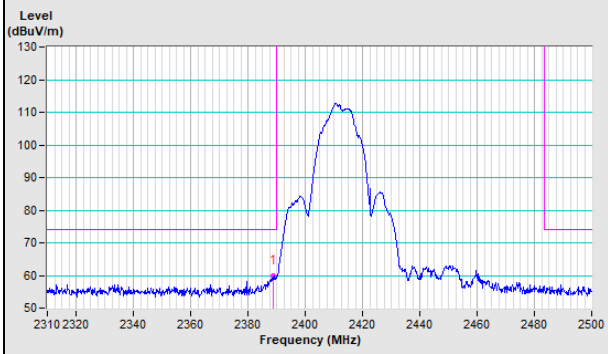
5 Pictures of Test Arrangements

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

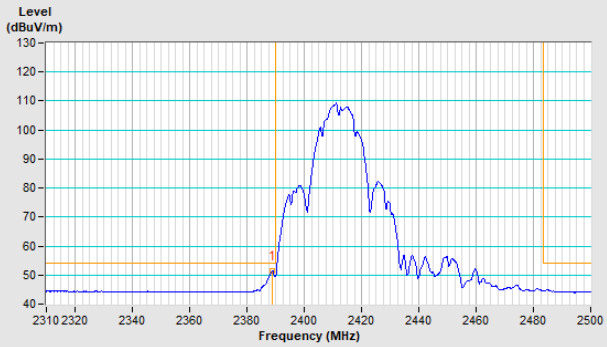
Annex A - Band-Edge Measurement

802.11b Channel 1

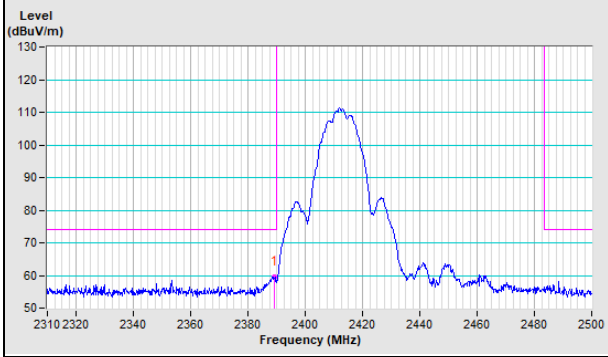
Horizontal (Peak)



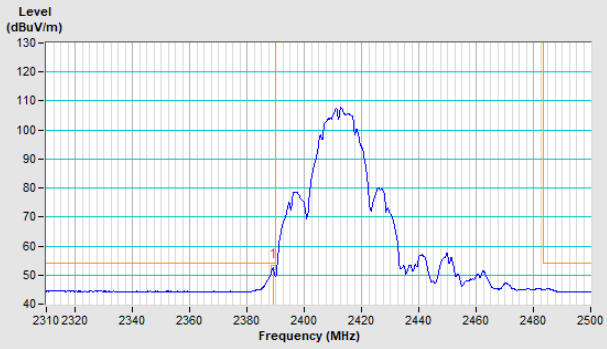
Horizontal (Average)



Vertical (Peak)

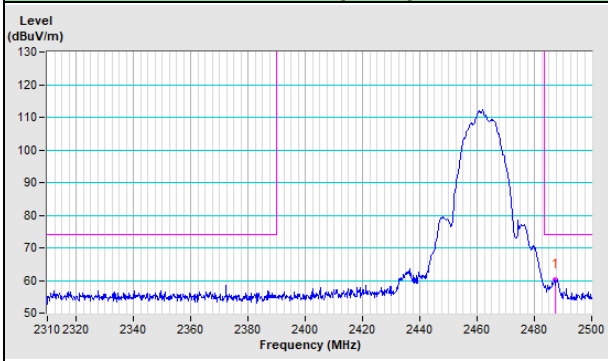


Vertical (Average)

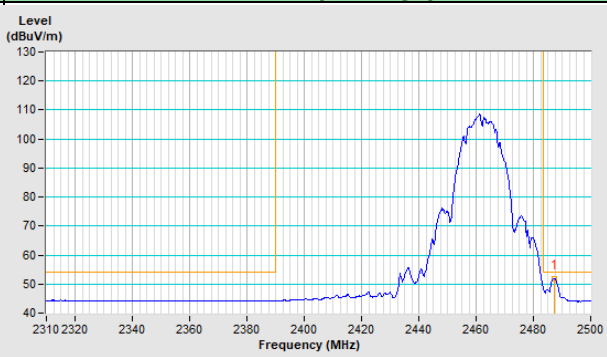


802.11b Channel 11

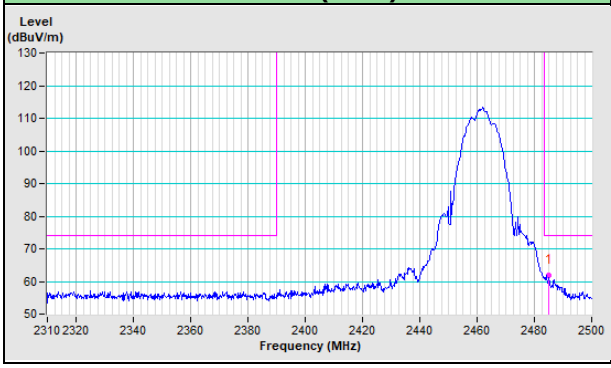
Horizontal (Peak)



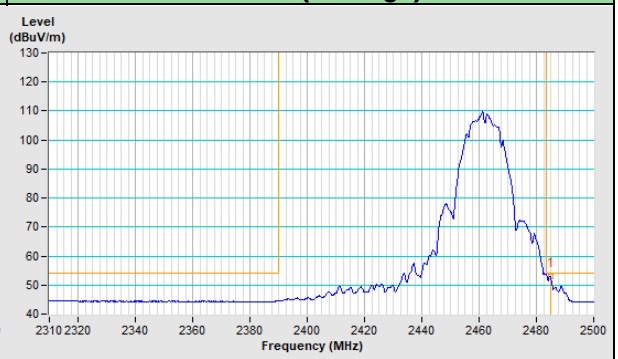
Horizontal (Average)



Vertical (Peak)

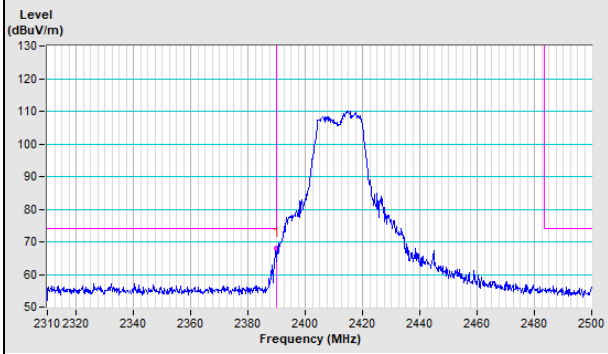


Vertical (Average)

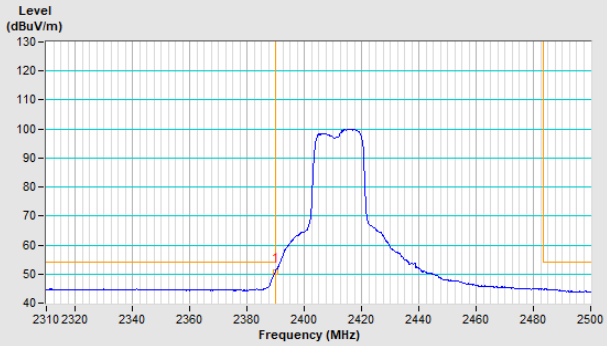


802.11g Channel 1

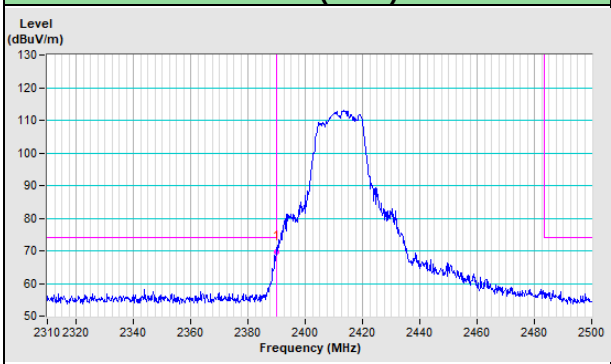
Horizontal (Peak)



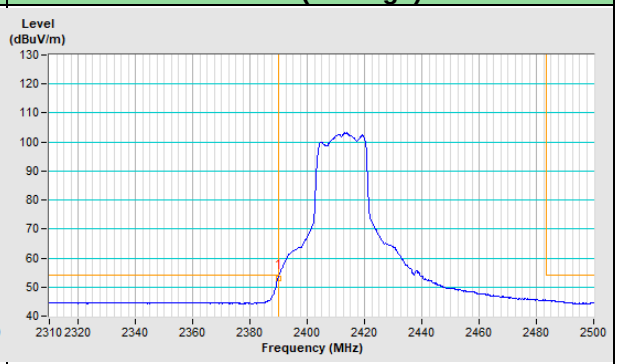
Horizontal (Average)



Vertical (Peak)

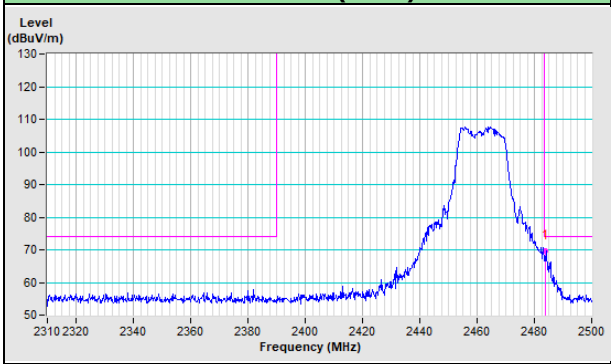


Vertical (Average)

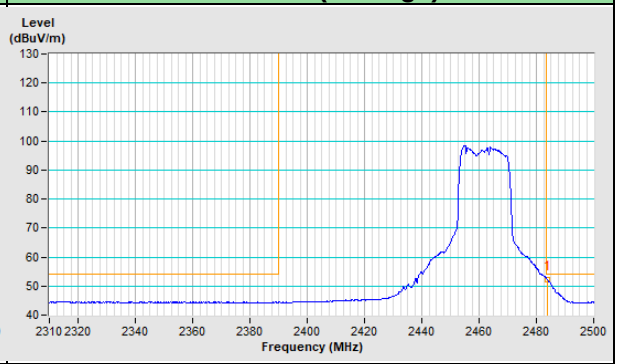


802.11g Channel 11

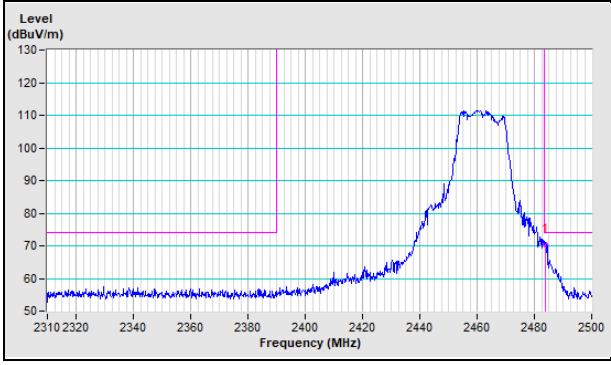
Horizontal (Peak)



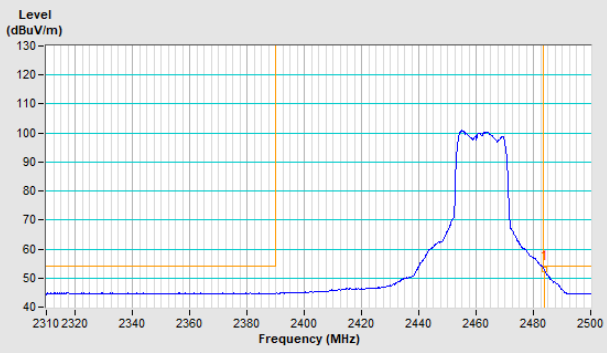
Horizontal (Average)



Vertical (Peak)

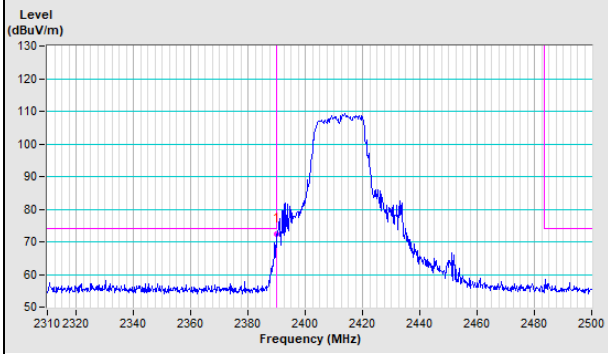


Vertical (Average)

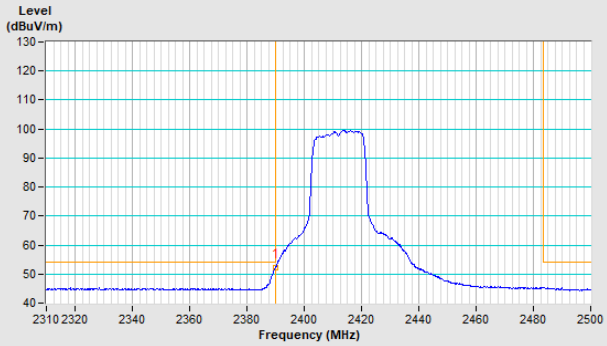


802.11n (HT20) Channel 1

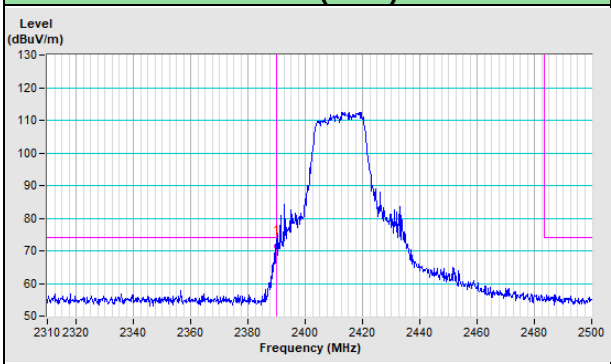
Horizontal (Peak)



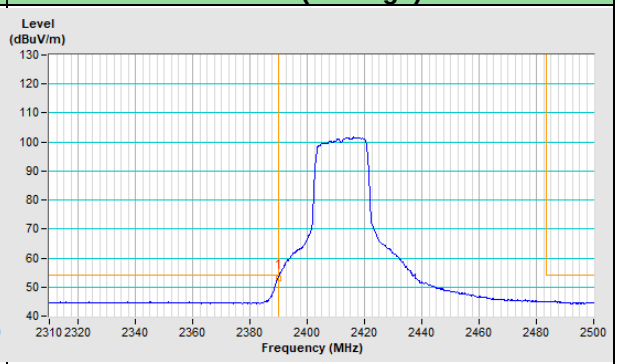
Horizontal (Average)



Vertical (Peak)

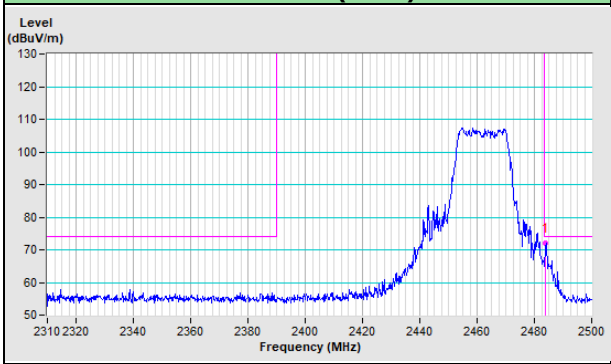


Vertical (Average)

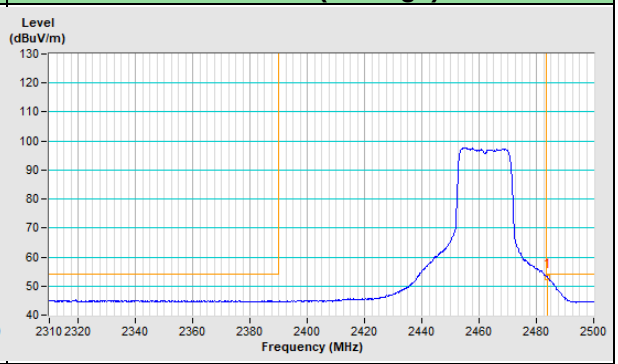


802.11n (HT20) Channel 11

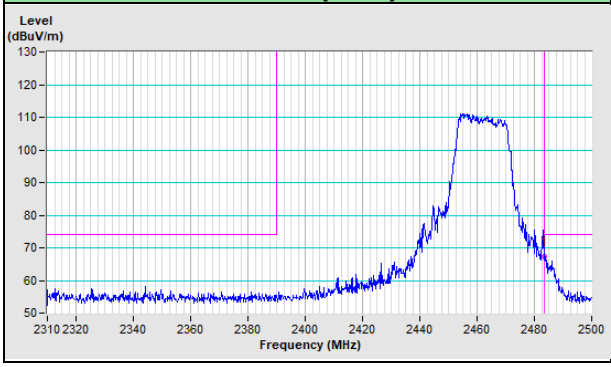
Horizontal (Peak)



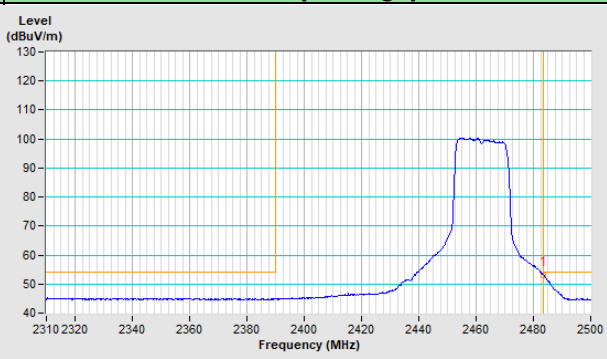
Horizontal (Average)



Vertical (Peak)

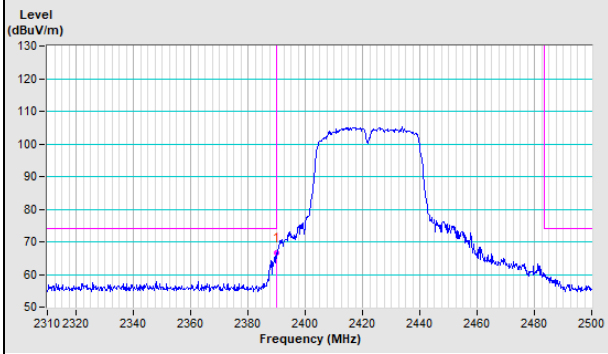


Vertical (Average)

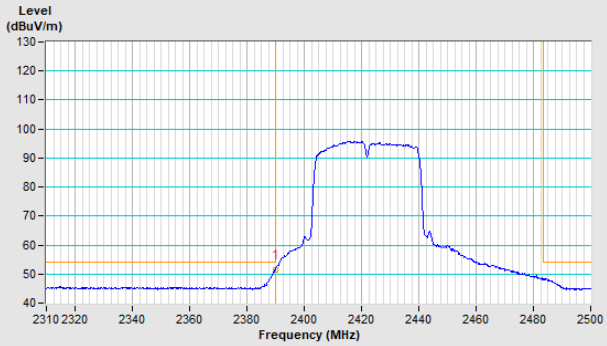


802.11n (HT40) Channel 3

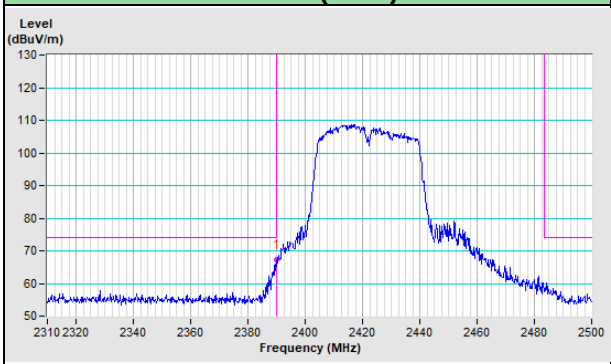
Horizontal (Peak)



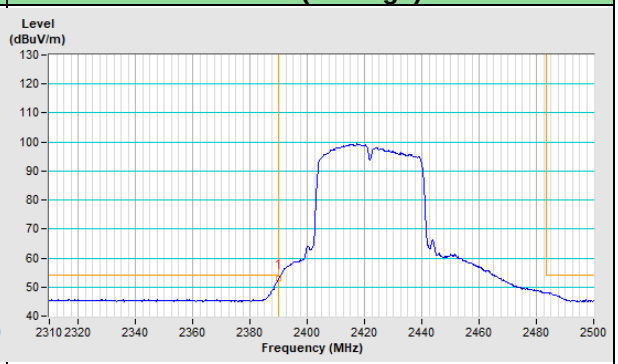
Horizontal (Average)



Vertical (Peak)

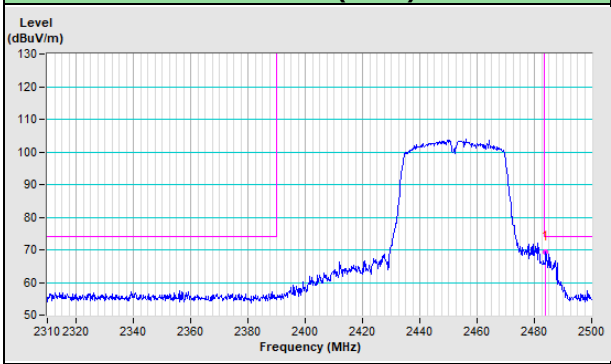


Vertical (Average)

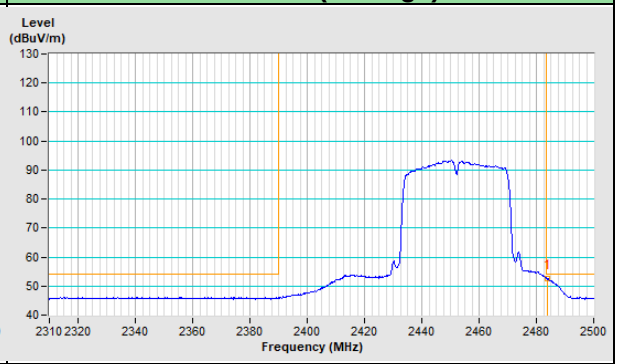


802.11n (HT40) Channel 9

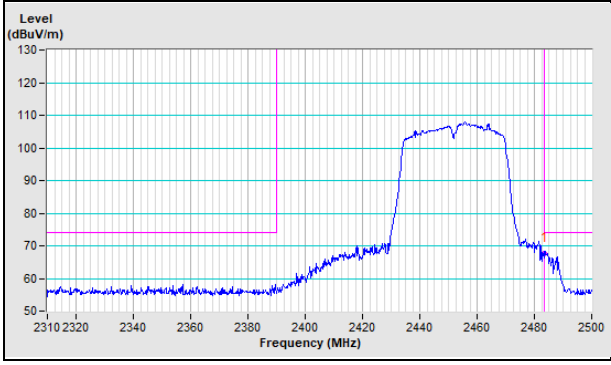
Horizontal (Peak)



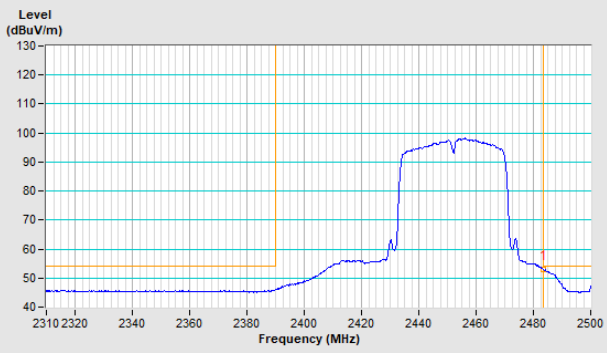
Horizontal (Average)



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.

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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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