



# FCC RADIO TEST REPORT

**FCC ID** : QYLBE201NG  
**Equipment** : Wireless Module  
**Model Name** : BE201NGW  
**Applicant** : Getac Technology Corporation.  
5F., Building A, No. 209, Sec. 1, Nangang Rd.,  
Nangang Dist., Taipei City 115018, Taiwan, R.O.C.  
**Standard** : FCC Part 15 Subpart C §15.247

The product was received on May 22, 2025 and testing was performed from Jun. 06, 2025 to Jun. 10, 2025. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

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Approved by: Louis Wu

***Sportun International Inc. Wensan Laboratory***

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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## History of this test report



## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.247(a)(2)	6dB Bandwidth	Pass	See Note
-	2.1049	99% Occupied Bandwidth	Pass	See Note
3.1	15.247(b)	Power Output Measurement	Pass	-
-	15.247(e)	Power Spectral Density	Pass	See Note
-	15.247(d)	Conducted Band Edges	Pass	See Note
		Conducted Spurious Emission	Pass	See Note
3.2	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	-
3.3	15.207	AC Conducted Emission	Pass	-
3.4	15.203	Antenna Requirement	Pass	-

**Note:**

The module has undergone multiple transmissions assessments, and the antenna gain of the host device is lower than that of the module. Therefore, the host device was spot-checked for conducted output power and radiated spurious emissions per band. The conducted output power shows no difference compared to the module (Model: BE201NGW), and the radiated spurious emissions comply with the limits specified in this test report.

**Conformity Assessment Condition:**

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

**Disclaimer:**

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Yun Huang

Report Producer: Dara Chiu



## 1 General Description

### 1.1 Product Feature of Equipment Under Test

Product Feature		
<b>General Specs</b> Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ax/be, Wi-Fi 5GHz 802.11a/n/ac/ax/be, and Wi-Fi 6GHz 802.11ax/be		
<b>Antenna Type</b> WLAN: <Main>: PIFA Antenna <Aux.>: PIFA Antenna		
Antenna information		
<b>2400 MHz ~ 2483.5 MHz</b>	Peak Gain (dBi)	<Main>: 1.82 <Aux.>: 0.96

The product was installed into Tablet (Brand Name: Getac, Model Name:F120, F120Y (Y= 10 characters, Y can be 0-9, a-z, A-Z, “-”, “\_” or blank for marketing purpose and no impact safety related critical components and constructions.)) during test, and the host information was recorded in the following table.

Sample Information for Host			
	SKU A	SKU B	SKU C
<b>CPU</b>	ULTRA5-226V	ULTRA5-236V	ULTRA7-268V
<b>DDR</b>	INTEGRATED 16GB	INTEGRATED 16GB	INTEGRATED 32GB
<b>SSD</b>	256GB	512GB	1TB
<b>PANEL</b>	Full FHD AUO	Full FHD AUO	Full FHD AUO
<b>DIGITIZER</b>	Not Support	EMRright Digitizer	EMRright Digitizer
<b>OPTION BAY</b>	LAN	Barcode Reader	Barcode Reader
<b>Expansion Bay</b>	N/A	HID RFID	SMART CARD
<b>Right side option</b>	USB2.0	Fingerprinter	RFID (SN-NSVG7-C01)
<b>WLAN/BT</b>	Intel BE201NGW	Intel BE201NGW	Intel BE201NGW
<b>WWAN</b>	N/A	LN920A12-WW	LN920A12-WW
<b>GNSS</b>	SE868K5-D (L1+L5)	LN920A12-WW	LN920A12-WW
<b>Rear 8M Camera</b>	Support	Support	Support
<b>Webcam FHD</b>	Support	Support	Support
<b>USB3.2 Gen2 x 1 Type-A</b>	Support	Support	Support
<b>Type-C (thunder bolt)</b>	Support	Support	Support

**Remark:** The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.



### 1.1.1 Antenna Directional Gain

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)ii)

Directional gain =  $G_{ANT}$  + Array Gain, where Array Gain is as follows:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ .

$G_{ANT}$  is set equal to the gain of the antenna having the highest gain.

For PSD measurements, the directional gain calculation.

Array Gain =  $10 \log(N_{ANT}/N_{SS})$  dB.

$$Directional\ Gain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

$N_{SS}$  = the number of independent spatial streams of data;

$N_{ANT}$  = the total number of antennas

$g_{j,k} = 10^{G_k/20}$  if the  $k$ th antenna is being fed by spatial stream  $j$ , or zero if it is not;  
 $G_k$  is the gain in dBi of the  $k$ th antenna.

As minimum  $N_{SS}=1$  is supported by EUT, the formula can be simplified as:

Directional gain =  $10 \cdot \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$  dB

Where  $G1, G2, \dots, GN$  denote single antenna gain.

The directional gain “DG” is calculated as following table.

			DG	DG	Power	PSD
	Ant 1	Ant 2	for Power	for PSD	Limit	Limit
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
<b>2.4GHz</b>	0.96	1.82	1.82	4.41	0.00	0.00



Calculation example:

If a device has two antenna,  $G_{ANT1} = 0.96\text{dBi}$ ;  $G_{ANT2} = 1.82\text{dBi}$

Directional gain of power measurement =  $\max(0.96, 1.82) + 0 = 1.82\text{ dBi}$

Directional gain of PSD derived from formula which is

$$10 \times \log \{ \{ [ 10^{(0.96\text{dBi}/20)} + 10^{(1.82\text{dBi}/20)} ]^2 \} / 2 \} = 4.41\text{ dBi}$$

Power limit reduction = Composite gain – 6dBi, ( min = 0 )

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, ( min = 0 )

Power and PSD limit reduction = Composite gain – 6dBi, ( min = 0 )

## 1.2 Modification of EUT

No modifications made to the EUT during the testing.

## 1.3 Testing Location

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	<b>Sporton Site No.</b> TH05-HY, CO07-HY, 03CH21-HY

**Note:** The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW3786

## 1.4 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2013

### Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.



## 2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and only the worst case emissions were reported in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

### 2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	8	2447
	2	2417	9	2452
	3	2422	10	2457
	4	2427	11	2462
	5	2432	12	2467
	6	2437	13	2472
	7	2442		

### 2.2 Test Mode

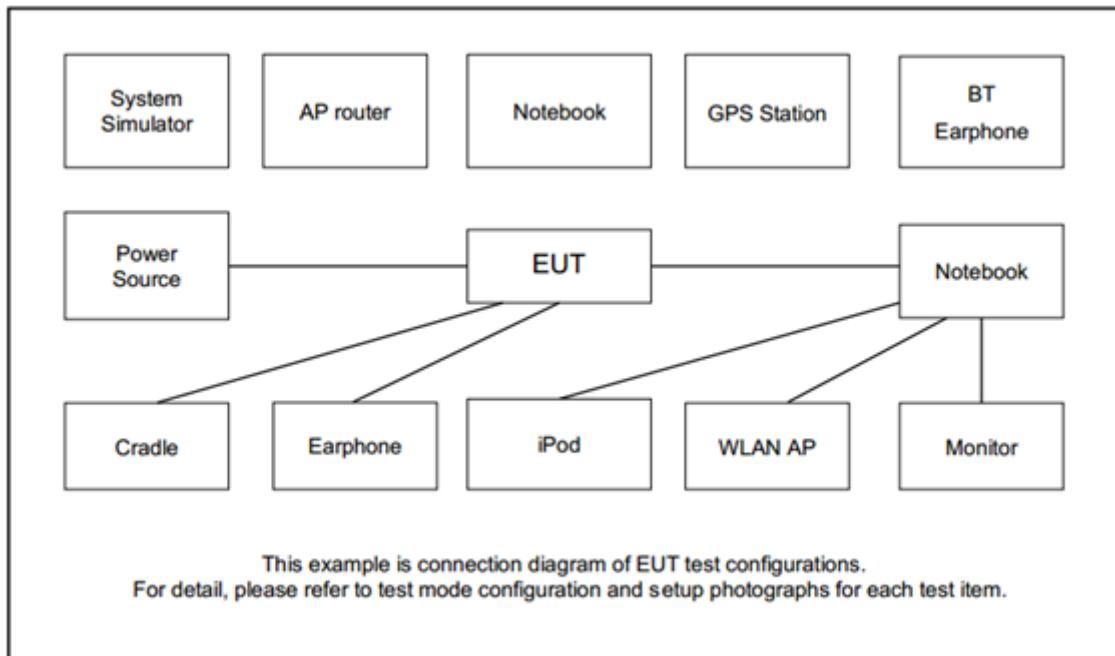
The final test modes include the worst data rates for each modulation shown in the table below.

#### MIMO Antenna

Modulation	Data Rate
802.11n HT40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 :WLAN (2.4GHz) Tx (802.11n HT40 Ch03) + Adapter 1 + Battery 1 for SKU A
<b>Remark:</b> 1. For Radiated Test Cases, the tests were performed with Adapter 1, Battery 1, and SKU B. 2. The detailed Radiated test modes are shown in Appendix C.	

## 2.3 Connection Diagram of Test System



## 2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	ASUS	RT-AC52	MSQ-RTAC4A00	N/A	Unshielded, 1.8m
2.	USB HD	ADATA	HV620S-1T	FCC DoC	Shielded, 0.5m	N/A
3.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0m	N/A

## 2.5 EUT Operation Test Setup

The RF test items, utility “DRTU.07983.23.120.0” was installed in Host which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

## 3 Test Result

### 3.1 Output Power Measurement

#### 3.1.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5 MHz, the limit for output power is 30 dBm. If transmitting antenna with directional gain greater than 6 dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

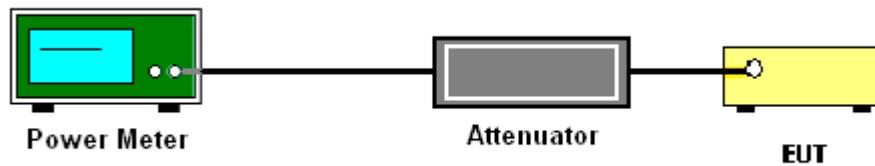
#### 3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

#### 3.1.3 Test Procedures

1. For Peak Power, the testing follows ANSI C63.10 Section 11.9.1.3 PKPM1
2. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
3. The RF output of EUT is connected to the power meter by RF cable and attenuator. The path loss is compensated to the results for each measurement.
4. Set the maximum power setting and enable the EUT to transmit continuously.
5. Measure the conducted output power and record the results in the test report.
6. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

#### 3.1.4 Test Setup



#### 3.1.5 Test Result of Peak Output Power

Please refer to Appendix A.

#### 3.1.6 Test Result of Average Output Power (Reporting Only)

Please refer to Appendix A.



## 3.2 Radiated Band Edges and Spurious Emission Measurement

### 3.2.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device is measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (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

### 3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

### 3.2.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
4. The EUT is set 3 meters away from the receiving antenna, which is mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-”.

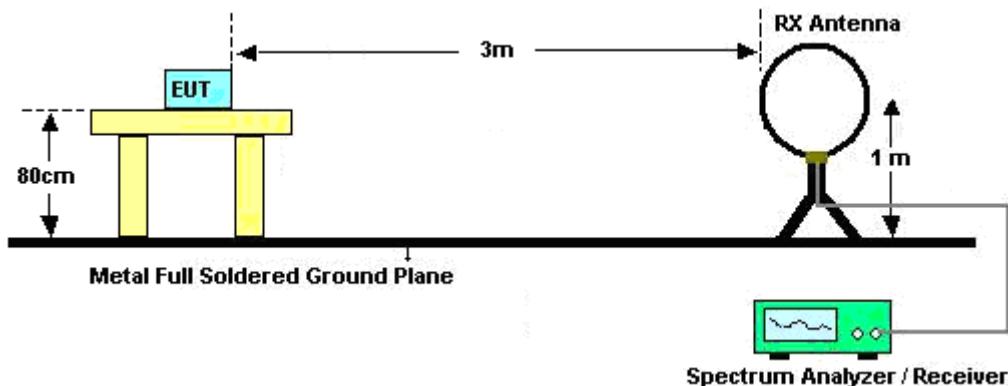
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “\_”.
8. Use the following spectrum analyzer settings:
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Set RBW = 100 kHz for  $f < 1$  GHz; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Set RBW = 1 MHz, VBW = 3 MHz for  $f \geq 1$  GHz for peak measurement.

For average measurement:

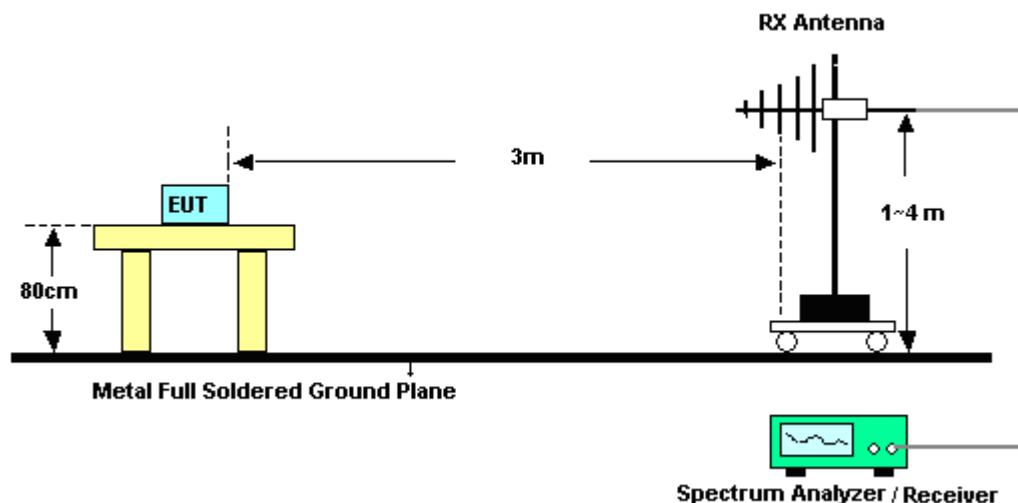
  - VBW = 10 Hz, when duty cycle is no less than 98 percent.
  - VBW  $\geq 1/T$ , when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

### 3.2.4 Test Setup

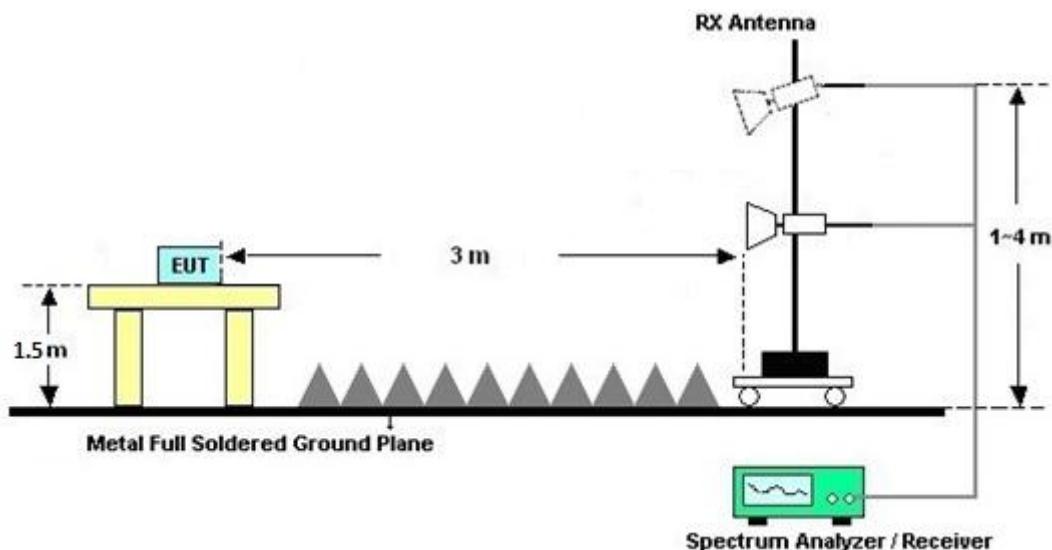
#### For radiated emissions below 30MHz



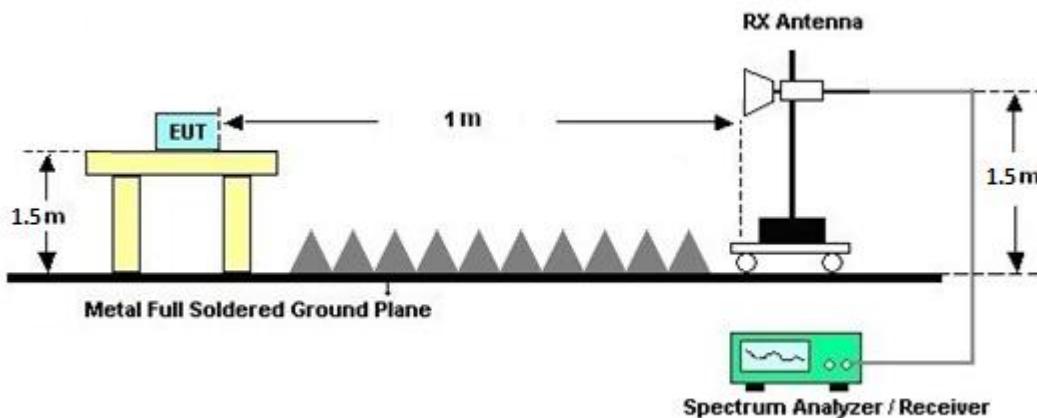
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



### 3.2.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result comes out very similar.

### 3.2.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

### 3.2.7 Duty Cycle

Please refer to Appendix D.

### 3.2.8 Test Result of Radiated Spurious Emission (30MHz ~ 10<sup>th</sup> Harmonic)

Please refer to Appendix C.



### 3.3 AC Conducted Emission Measurement

#### 3.3.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

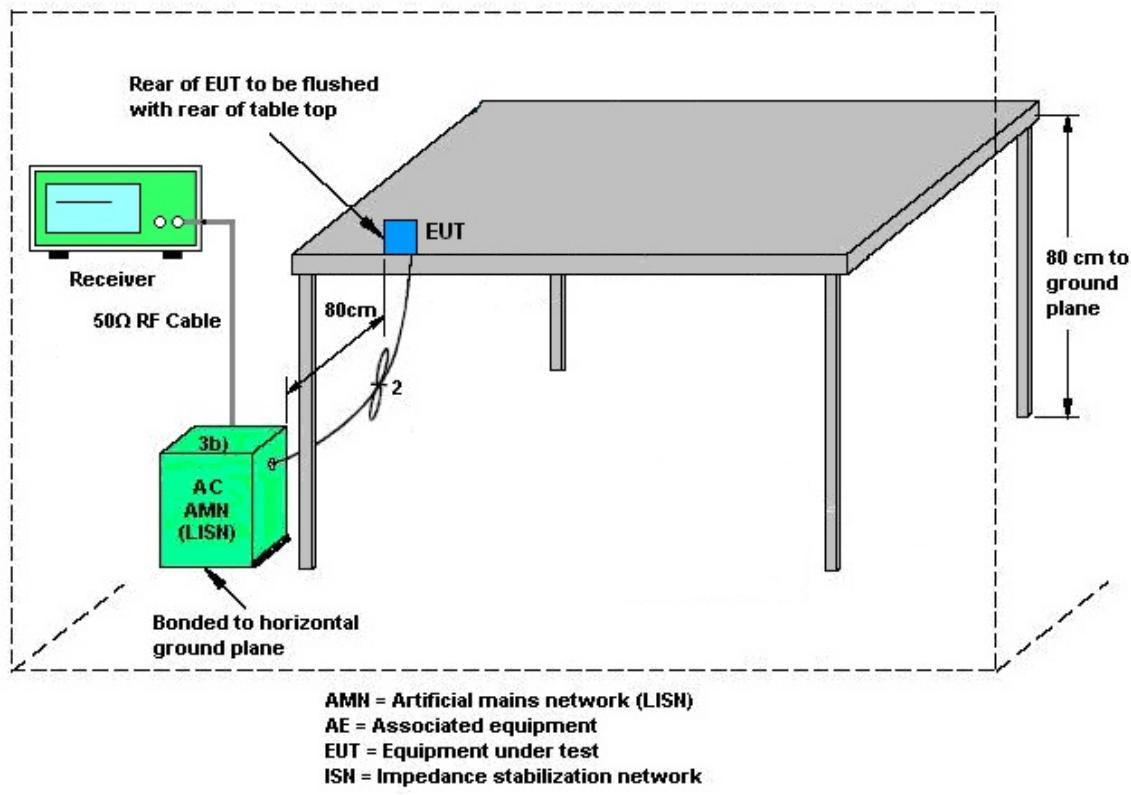
#### 3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

#### 3.3.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

### 3.3.4 Test Setup



### 3.3.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



## 3.4 Antenna Requirements

### 3.4.1 Standard Applicable

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

### 3.4.2 Antenna Anti-Replacement Construction

Unique (non-standard) antenna connector.



## 4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LOOP Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Aug. 29, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Aug. 28, 2025	Radiation (03CH21-HY)
Bilog Antenna	TESEQ & WOKEN	CBL 6111D & 00802N1D-06	63303 & 001	30MHz~1GHz	Dec. 17, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Dec. 16, 2025	Radiation (03CH21-HY)
Double Ridged Guide Horn Antenna	RFSPIN	DRH18-E	LE2C03A1 8EN	1GHz~18GHz	Jul. 11, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Jul. 10, 2025	Radiation (03CH21-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1223	18GHz~40GHz	Jun. 24, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Jun. 23, 2025	Radiation (03CH21-HY)
Amplifier	SONOMA	310N	421580	30MHz~1GHz	Jul. 14, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Jul. 13, 2025	Radiation (03CH21-HY)
Amplifier	EMEC	EM01G18GA	060876	1GHz~18GHz	Sep. 27, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Sep. 26, 2025	Radiation (03CH21-HY)
Preamplifier	EMEC	EM18G40G	060873	18GHz~40GHz	Sep. 02, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Sep. 01, 2025	Radiation (03CH21-HY)
Spectrum Analyzer	Keysight	N9010B	MY621703 58	10Hz~44GHz	Sep. 06, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Sep. 05, 2025	Radiation (03CH21-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 05, 2025	Jun. 09, 2025 ~ Jun. 10, 2025	Mar. 04, 2026	Radiation (03CH21-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804397/2,8 04612/2,80 3954/2	30MHz~40GHz	Aug. 12, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Aug. 11, 2025	Radiation (03CH21-HY)
Hygrometer	TECPEL	DTM-303A	TP211568	N/A	Oct. 21, 2024	Jun. 09, 2025 ~ Jun. 10, 2025	Oct. 20, 2025	Radiation (03CH21-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Jun. 09, 2025 ~ Jun. 10, 2025	N/A	Radiation (03CH21-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Jun. 09, 2025 ~ Jun. 10, 2025	N/A	Radiation (03CH21-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Jun. 09, 2025 ~ Jun. 10, 2025	N/A	Radiation (03CH21-HY)
Software	Audix	E3 6.2009-8-24	RK-00105 3	N/A	N/A	Jun. 09, 2025 ~ Jun. 10, 2025	N/A	Radiation (03CH21-HY)
AC Power Source	ACPOWER	AFC-11003G	F3170400 33	N/A	N/A	Jun. 09, 2025	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jun. 09, 2025	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	9561-F N00373	9kHz-200MHz	Oct. 23, 2024	Jun. 09, 2025	Oct. 22, 2025	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 03, 2025	Jun. 09, 2025	Mar. 02, 2026	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Mar. 24, 2025	Jun. 09, 2025	Mar. 23, 2026	Conduction (CO07-HY)
Four-Line V-Network	TESEQ	NNB 52	36122	N/A	Mar. 26, 2025	Jun. 09, 2025	Mar. 25, 2026	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 23, 2024	Jun. 09, 2025	Sep. 22, 2025	Conduction (CO07-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 01, 2024	Jun. 06, 2025	Oct. 30, 2025	Conducted (TH05-HY)
Power Meter	Anritsu	ML2495A	1036004	N/A	Jul. 04, 2024	Jun. 06, 2025	Jul. 03, 2025	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Jul. 04, 2024	Jun. 06, 2025	Jul. 03, 2025	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV3044	101467	10HZ~44GHZ	Jan. 14, 2025	Jun. 06, 2025	Jan. 13, 2026	Conducted (TH05-HY)
Switch Control Mainframe	E-Instument	ETF-1405-0	EC1900157 (BOX6)	N/A	Feb. 10, 2025	Jun. 06, 2025	Feb. 09, 2026	Conducted (TH05-HY)
Software	Sporton	BTWIFI_Final_version_240513	N/A	Conducted Other Test Item	N/A	Jun. 06, 2025	N/A	Conducted (TH05-HY)



## 5 Measurement Uncertainty

### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.7 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.6 dB
--	--------

### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0 dB
--	--------

### Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.7 dB
--	--------

### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.3 dB
--	--------

## Appendix A. Test Result of Conducted Test Items

Test Engineer:	Shiming Liu	Temperature:	21~25	°C
Test Date:	2025/6/6	Relative Humidity:	51~54	%

**Remark:** For Conducted Test Items, Ant. 1 means Aux. Ant. and Ant. 2 means Main Ant..

**TEST RESULTS DATA**  
**Peak Output Power**

2.4GHz Band MIMO																
Mod.	Data Rate	N <sub>TX</sub>	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
HT40	MCS0	2	3	2422	22.41	24.20	26.41	30.00		1.82		28.23		36.00	Pass	

Note: Measured power (dBm) has offset with cable loss.

**TEST RESULTS DATA**  
**Average Output Power**  
**(Reporting Only)**

2.4GHz Band MIMO																		
Mod.	Data Rate	N <sub>TX</sub>	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power with duty factor (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2			
HT40	MCS0	2	3	2422	0.03	0.03	16.83	17.69	20.29	30.00	1.82	22.11	36.00	Pass				

Note: Measured power (dBm) has offset with cable loss.



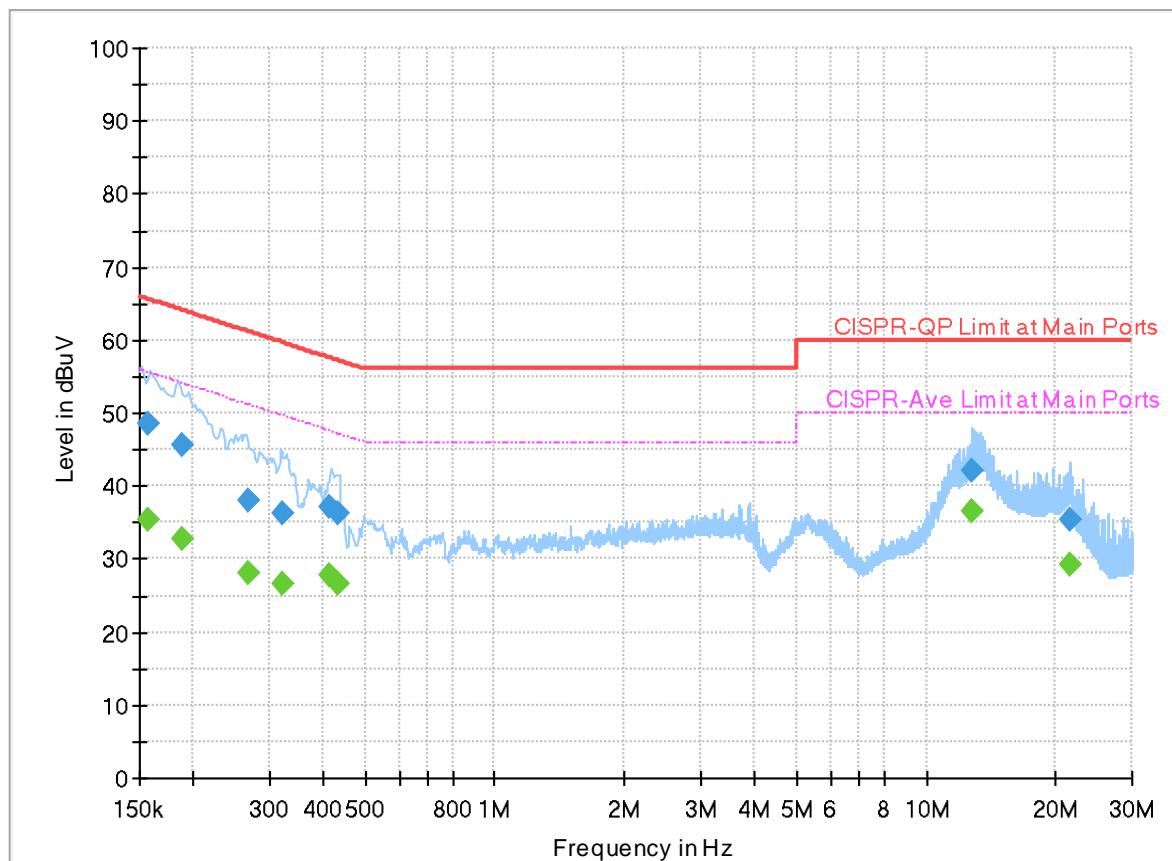
## Appendix B. AC Conducted Emission Test Results

<b>Test Engineer :</b>	Louis Chung	<b>Temperature :</b>	22.8~25.6°C
		<b>Relative Humidity :</b>	46.2~52.3%

## EUT Information

Report NO : 552229  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Line

Full Spectrum



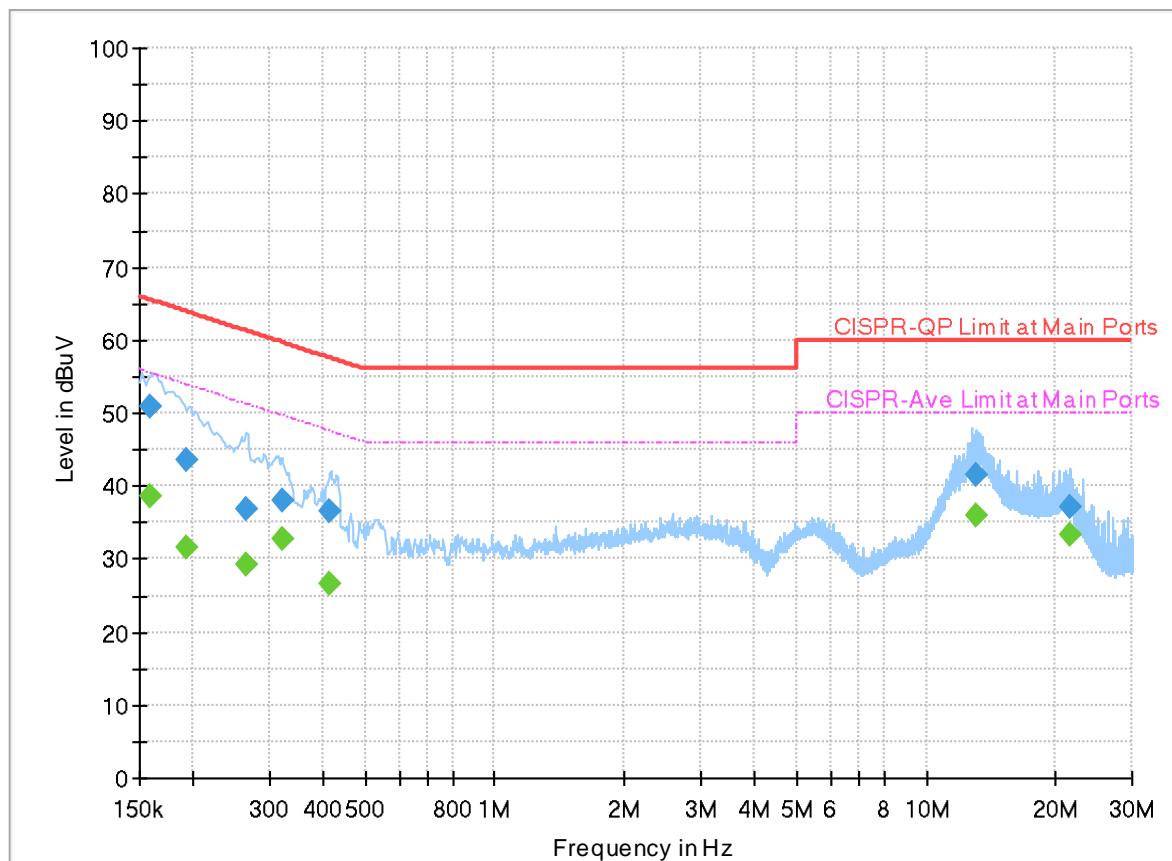
## Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	PE	Corr. (dB)
0.156750	---	35.47	55.63	20.16	L1	FLO	20.0
0.156750	48.50	---	65.63	17.13	L1	FLO	20.0
0.188250	---	32.66	54.11	21.45	L1	FLO	20.0
0.188250	45.63	---	64.11	18.48	L1	FLO	20.0
0.266910	---	28.09	51.21	23.12	L1	FLO	20.0
0.266910	38.00	---	61.21	23.21	L1	FLO	20.0
0.321630	---	26.49	49.67	23.18	L1	FLO	20.0
0.321630	36.36	---	59.67	23.31	L1	FLO	20.0
0.413250	---	27.89	47.58	19.69	L1	FLO	20.0
0.413250	37.15	---	57.58	20.43	L1	FLO	20.0
0.431700	---	26.66	47.22	20.56	L1	FLO	20.0
0.431700	36.28	---	57.22	20.94	L1	FLO	20.0
12.745770	---	36.41	50.00	13.59	L1	FLO	20.5
12.745770	42.10	---	60.00	17.90	L1	FLO	20.5
21.509250	---	29.18	50.00	20.82	L1	FLO	20.9
21.509250	35.39	---	60.00	24.61	L1	FLO	20.9

## EUT Information

Report NO : 552229  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Neutral

Full Spectrum



## Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	PE	Corr. (dB)
0.157920	---	38.65	55.57	16.92	N	FLO	20.0
0.157920	50.74	---	65.57	14.83	N	FLO	20.0
0.192750	---	31.54	53.92	22.38	N	FLO	20.0
0.192750	43.60	---	63.92	20.32	N	FLO	20.0
0.266100	---	29.15	51.24	22.09	N	FLO	20.0
0.266100	36.87	---	61.24	24.37	N	FLO	20.0
0.320460	---	32.75	49.70	16.95	N	FLO	20.0
0.320460	38.14	---	59.70	21.56	N	FLO	20.0
0.413250	---	26.64	47.58	20.94	N	FLO	20.0
0.413250	36.53	---	57.58	21.05	N	FLO	20.0
13.045830	---	35.90	50.00	14.10	N	FLO	20.5
13.045830	41.51	---	60.00	18.49	N	FLO	20.5
21.662070	---	33.46	50.00	16.54	N	FLO	20.9
21.662070	37.10	---	60.00	22.90	N	FLO	20.9



## Appendix C. Radiated Spurious Emission Test Data

<b>Test Engineer:</b>	Fred Zeng, Ray Lung, and Sky Chang	<b>Temperature(°C):</b>	18 ~ 23
		<b>Relative Humidity(%):</b>	50 ~ 65

**Remark:** For Radiated Spurious Emission Test Data, Ant. 1 means Aux. Ant. and Ant. 2 means Main Ant..

### Note symbol

-L	Low channel location
-R	High channel location

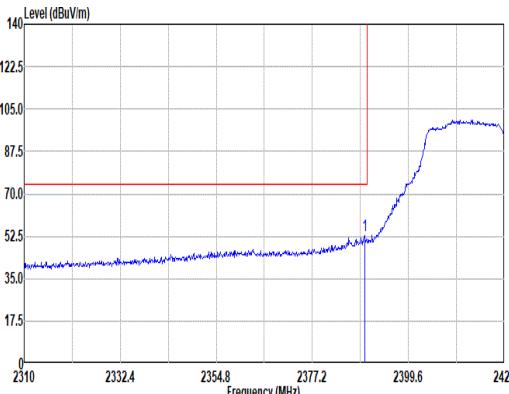
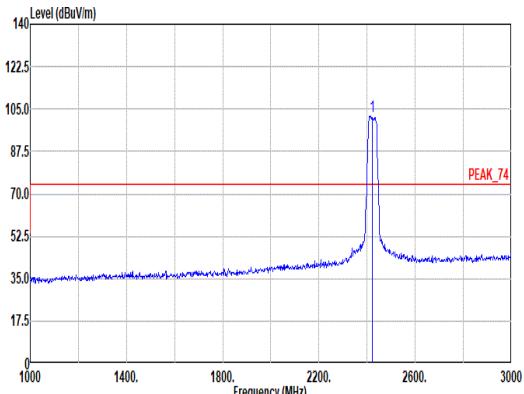
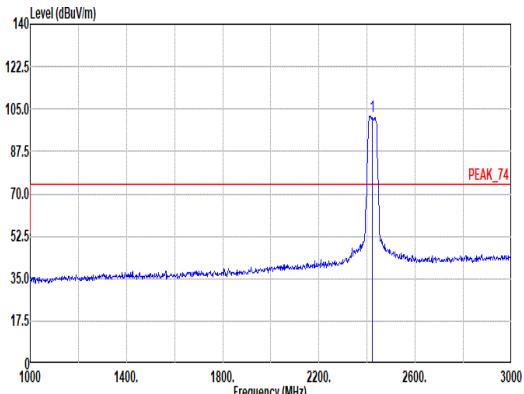
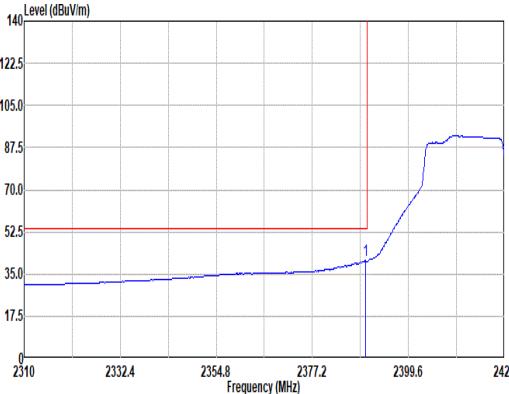
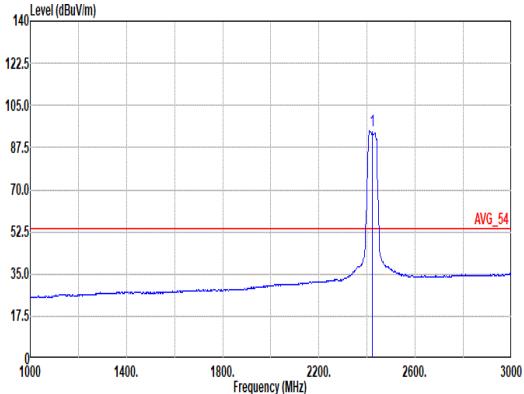
## C1. Radiated Spurious Emission Test Modes

Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Remark
Mode 1	2400-2483.5	1+2	802.11n HT40	03	2422	MCS0	-	-
Mode 2	2400-2483.5	1+2	802.11n HT40	03	2422	MCS0	-	SHF
Mode 3	2400-2483.5	1+2	802.11n HT40	03	2422	MCS0	-	LF

## C2. Summary of each worse mode

Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
1	802.11n HT40	03	2389.63	40.54	54.00	-13.46	H	Avg.	Pass	-	Band Edge
	802.11n HT40	03	7266.00	38.11	54.00	-15.89	H	Avg.	Pass	-	Harmonic
2	802.11n HT40	03	22988.91	29.70	54.00	-24.30	H	Avg.	Pass	-	SHF
3	802.11n HT40	03	248.25	35.80	46.00	-10.20	H	Peak	Pass	-	LF

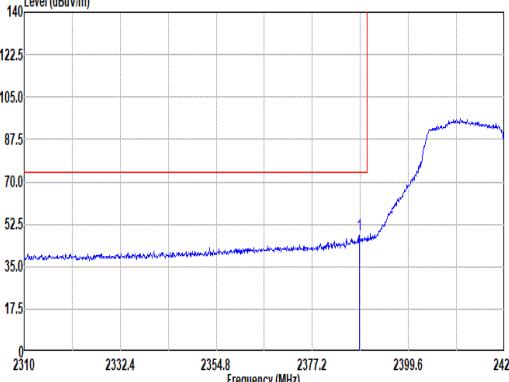
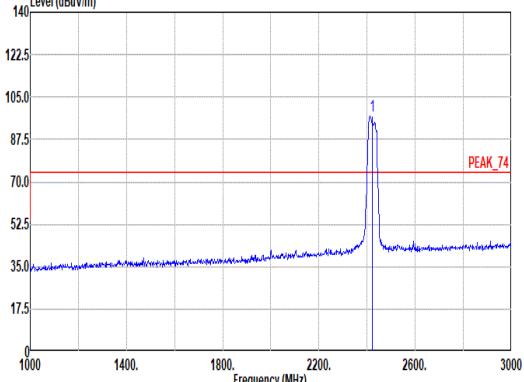
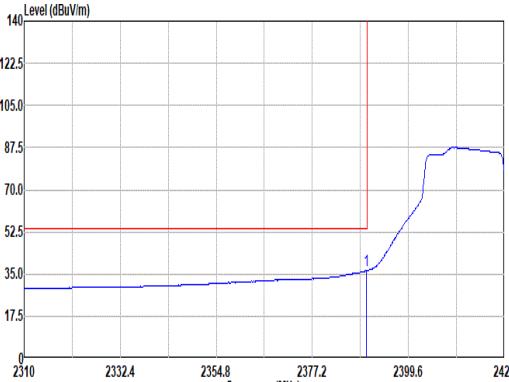
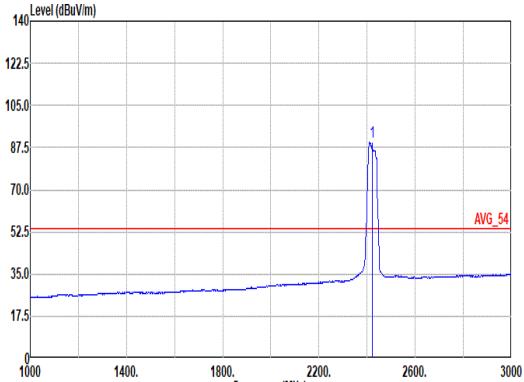


Mode	1																																																													
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Pol.	<b>Horizontal</b> 																																																													
Peak	 <p>Site : 03CH21-HY Condition: PEAK_BE_74 3m DRH18-E LE2C03A18EN_240711 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> <table border="1"> <thead> <tr> <th></th><th>Limit</th><th>Read</th><th>Ant</th><th>Cable</th><th>Preamp</th><th>Aux</th><th>APos</th><th>TPos</th><th>Remark</th></tr> <tr> <th>Freq</th><th>Level</th><th>Line Margin</th><th>Level Factor</th><th>Loss Factor</th><th>Factor</th><th></th><th></th><th></th><th></th></tr> </thead> <tbody> <tr> <td>1</td><td>2389.41</td><td>52.59</td><td>74.00</td><td>-21.41</td><td>58.07</td><td>26.70</td><td>8.75</td><td>32.93</td><td>0.00 100 80 Peak</td></tr> </tbody> </table>		Limit	Read	Ant	Cable	Preamp	Aux	APos	TPos	Remark	Freq	Level	Line Margin	Level Factor	Loss Factor	Factor					1	2389.41	52.59	74.00	-21.41	58.07	26.70	8.75	32.93	0.00 100 80 Peak	<b>Fundamental</b>  <p>Site : 03CH21-HY Condition: PEAK_74 3m DRH18-E LE2C03A18EN_240711 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> <table border="1"> <thead> <tr> <th></th><th>Limit</th><th>Read</th><th>Ant</th><th>Cable</th><th>Preamp</th><th>Aux</th><th>APos</th><th>TPos</th><th>Remark</th></tr> <tr> <th>Freq</th><th>Level</th><th>Line Margin</th><th>Level Factor</th><th>Loss Factor</th><th>Factor</th><th></th><th></th><th></th><th></th></tr> </thead> <tbody> <tr> <td>1</td><td>2422.00</td><td>102.03</td><td>-----</td><td>-----</td><td>99.36</td><td>26.82</td><td>8.80</td><td>32.95</td><td>0.00 100 80 Peak</td></tr> </tbody> </table>		Limit	Read	Ant	Cable	Preamp	Aux	APos	TPos	Remark	Freq	Level	Line Margin	Level Factor	Loss Factor	Factor					1	2422.00	102.03	-----	-----	99.36	26.82	8.80	32.95	0.00 100 80 Peak
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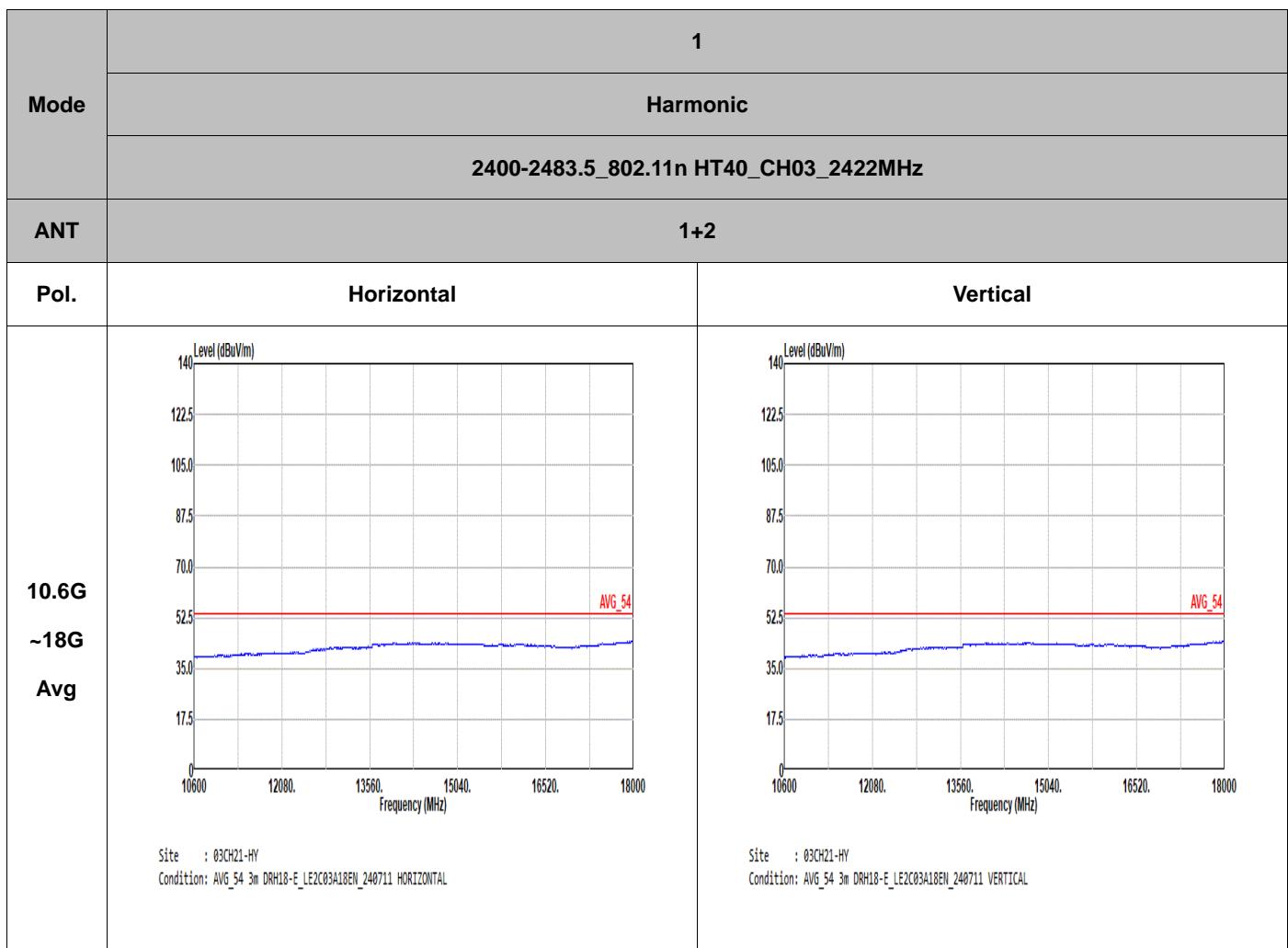
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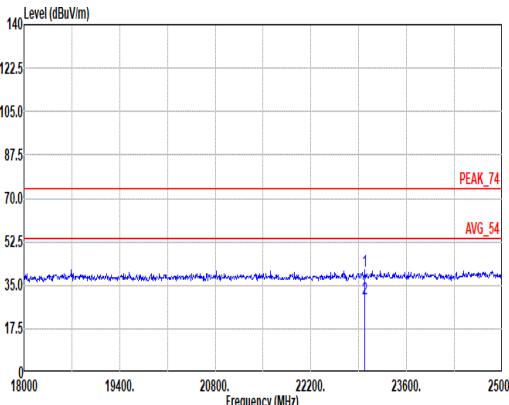
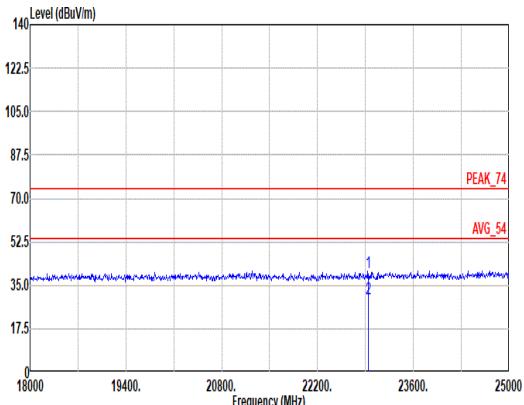
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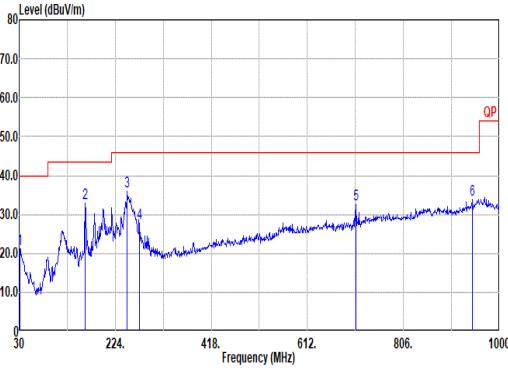
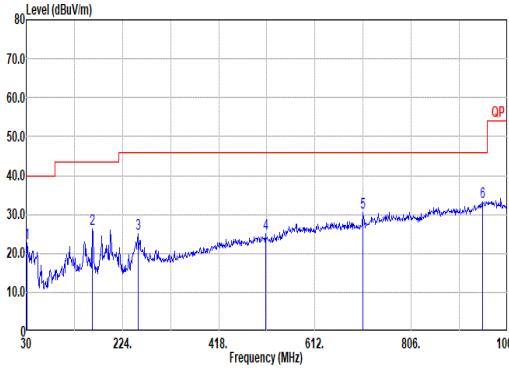
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QP/ Peak	<b>Vertical</b>  Site : 03CH21-HY Condition: QP 3m LF_63303&001_241217 VERTICAL <table border="1"> <thead> <tr> <th>Freq</th> <th>Limit</th> <th>Read</th> <th>Ant</th> <th>Cable</th> <th>Preamp</th> <th>Aux</th> <th>APos</th> <th>TPos</th> <th>Remark</th> </tr> <tr> <th>Freq</th> <th>Level</th> <th>Line Margin</th> <th>Level</th> <th>Factor</th> <th>Loss</th> <th>Factor</th> <th>Factor</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>31.94</td> <td>22.52</td> <td>40.00</td> <td>-17.48</td> <td>30.27</td> <td>24.02</td> <td>0.88</td> <td>32.65</td> <td>0.00</td> </tr> <tr> <td>2</td> <td>163.86</td> <td>26.27</td> <td>43.50</td> <td>-17.23</td> <td>40.59</td> <td>16.11</td> <td>2.20</td> <td>32.63</td> <td>0.00</td> </tr> <tr> <td>3</td> <td>255.04</td> <td>24.95</td> <td>46.00</td> <td>-21.05</td> <td>35.49</td> <td>19.31</td> <td>2.78</td> <td>32.63</td> <td>0.00</td> </tr> <tr> <td>4</td> <td>512.09</td> <td>25.07</td> <td>46.00</td> <td>-20.93</td> <td>29.81</td> <td>24.14</td> <td>3.96</td> <td>32.84</td> <td>0.00</td> </tr> <tr> <td>5</td> <td>708.03</td> <td>30.53</td> <td>46.00</td> <td>-15.47</td> <td>31.98</td> <td>26.76</td> <td>4.68</td> <td>32.89</td> <td>0.00</td> </tr> <tr> <td>6</td> <td>949.56</td> <td>33.38</td> <td>46.00</td> <td>-12.70</td> <td>28.10</td> <td>31.17</td> <td>5.45</td> <td>31.42</td> <td>0.00</td> </tr> </tbody> </table>		Freq	Limit	Read	Ant	Cable	Preamp	Aux	APos	TPos	Remark	Freq	Level	Line Margin	Level	Factor	Loss	Factor	Factor			1	31.94	22.52	40.00	-17.48	30.27	24.02	0.88	32.65	0.00	2	163.86	26.27	43.50	-17.23	40.59	16.11	2.20	32.63	0.00	3	255.04	24.95	46.00	-21.05	35.49	19.31	2.78	32.63	0.00	4	512.09	25.07	46.00	-20.93	29.81	24.14	3.96	32.84	0.00	5	708.03	30.53	46.00	-15.47	31.98	26.76	4.68	32.89	0.00	6	949.56	33.38	46.00	-12.70	28.10	31.17	5.45	31.42	0.00
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## Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting
1+2	2.4GHz 802.11n HT40	99.35	-	-	10Hz

### MIMO <Ant. 1+2>

