FCC TEST REPORT

Report No: STS1501010F01

Issued for

HUARUI TECHNICAL INNOVATION CO.,LIMITED

Room 1708 Nan Fung Tower.,173 Des voeux Road C., Hong Kong.

Product Name:	2.4G & 5G WiFi module
Brand Name:	N/A
Model No.:	HR8811AUU3
Series Model:	N/A
FCC ID:	2ADV3-HR8811AUU3
Test Standard:	FCC Part 15.247

Shenzhen STS Test Services Co., Ltd.
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TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com

TEST RESULT CERTIFICATION

Applicant's name.....:	HUARUI TECHNICAL INNOVATION CO.,LIMITED
Address .....:	Room 1708 Nan Fung Tower.,173 Des voeux Road C.,Hong Kong.
Manufacture's Name .....:	HUARUI TECHNICAL INNOVATION CO.,LIMITED
Address .....:	Room 1708 Nan Fung Tower.,173 Des voeux Road C.,Hong Kong.

Product description

Product name ..... :	2.4G & 5G WiFi module
Model and/or type reference .:	HR8811AUU3
Serial Model ..... :	N/A
Standards.....:	FCC Part15.247
Test procedure..... :	ANSI C63.10-2009

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test.....:	
Date (s) of performance of tests .....:	03 Jan. 2015 ~10 Jan. 2015
Date of Issue.....:	12 Jan. 2015
Test Result .....:	**Pass**

Testing Engineer **:** _____
(Tony Liu)

Technical Manager **:** _____
(Vita Li)

Authorized Signatory **:** _____
(Bovey Yang)

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
FCC Standard Section	Test Item	Judgment	Remark
§15.207	Conducted Emission	PASS	
§15.247 (a)(2)	6dB Bandwidth	PASS	
§15.247 (b) (reference KDB 558074 d05 v02. /9.1.2)	Peak Output Power	PASS	
§15.247 (c)	Radiated Spurious Emission	PASS	
§15.247 (d)	Conducted Spurious Emission	PASS	
§15.247 (e)	Power Spectral Density	PASS	
§15.205&§15.247 (d)	Band Edge Emission	PASS	
§15.203	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

1.1 TEST FACILITY

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F, Building 2, Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China.
FCC Registration No.: 842334; IC Registration No.: 12108A-1

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	2.4G & 5G WiFi module
Trade Name	N/A
Model Name	HR8811AUU3
Serial Model	N/A
Model Difference	N/A
Product Description	The EUT is a 2.4G & 5G WiFi module Operation Frequency: 802.11b/g/n 20: 2412~2462 MHz 802.11n 40: 2422~2452MHz Modulation Type: CCK/OFDM/DBPSK/DAPSK Bit Rate of Transmitter 802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n(20/40MHz):300/150/144.44/130/117/115.56/104/86.67/78/52/6.5Mbps Number Of Channel 802.11b/g/n20: 11CH 802.11n 40: 7CH Antenna Designation: Please see Note 3. Antenna Gain (dBi) 0 dbi
Channel List	Please refer to the Note 2.
Ratings	DC 3.3V
Hardware version number	N/A
Software versioning number	N/A
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2.

Channel List for 802.11b/g/n(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

Channel List for 802.11n(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
03	2422	06	2437	09	2452		
04	2427	07	2442				
05	2432	08	2447				

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	HR8811AUU3	PIFA Antenna	Input Connector	0	WIFI Antenna

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n(20)CH1/ CH6/ CH11
Mode 4	802.11n(40) CH3/ CH6/ CH9
Mode 5	Link Mode

For Conducted Emission	
Final Test Mode	Description
Mode 5	Link Mode

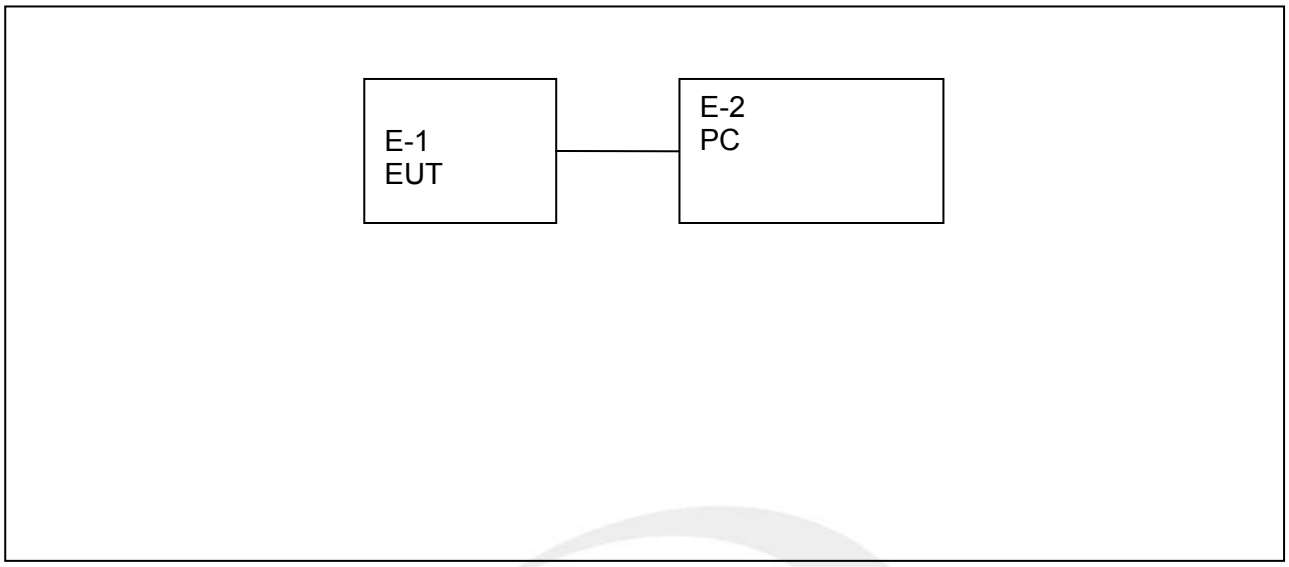
For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n CH1/ CH6/ CH11
Mode 4	802.11n(40) CH3/ CH6/ CH9
Mode 5	Link Mode

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TEST



2.4 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.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	2.4G & 5G WiFi module	N/A	HR8811AUU3	N/A	EUT
E-2	Notebook	Lenovo	B460	WB03928113	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	YES	1.5m	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Spectrum Analyzer	Agilent	E4407B	MY50140340	2014.10.25	2015.10.24
Test Receiver	R&S	ESCI	101427	2014.10.25	2015.10.24
Bilog Antenna	TESEQ	CBL6111D	34678	2014.10.27	2015.10.26
Horn Antenna	R&S	9120D	152265	2014.10.27	2015.10.26
Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05
Amplifier	Agilent	8449B	60538	2014.10.25	2015.10.24
Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07
Power Meter	Anritsu	ML2495A	1204003	2014.10.25	2015.10.24
Power Sensor	Anritsu	MA2411B	100309	2014.10.25	2015.10.24
Low frequency cable	N/A	R01	N/A	2014.10.25	2015.10.24
High frequency cable	N/A	R02	N/A	2014.10.25	2015.10.24

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	102086	2014.10.25	2015.10.24
LISN	R&S	ENV216	101242	2014.10.25	2015.10.24
LISN	EMCO	3810/2NM	000-23625	2014.10.25	2015.10.24
Conduction Cable	HUBER+SUHNER	C01	N/A	2014.10.25	2015.10.24

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

Operating frequency band. In case the emission fall within the restricted band specified on Part 15.247&207(a) limit in the table below has to be followed.

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

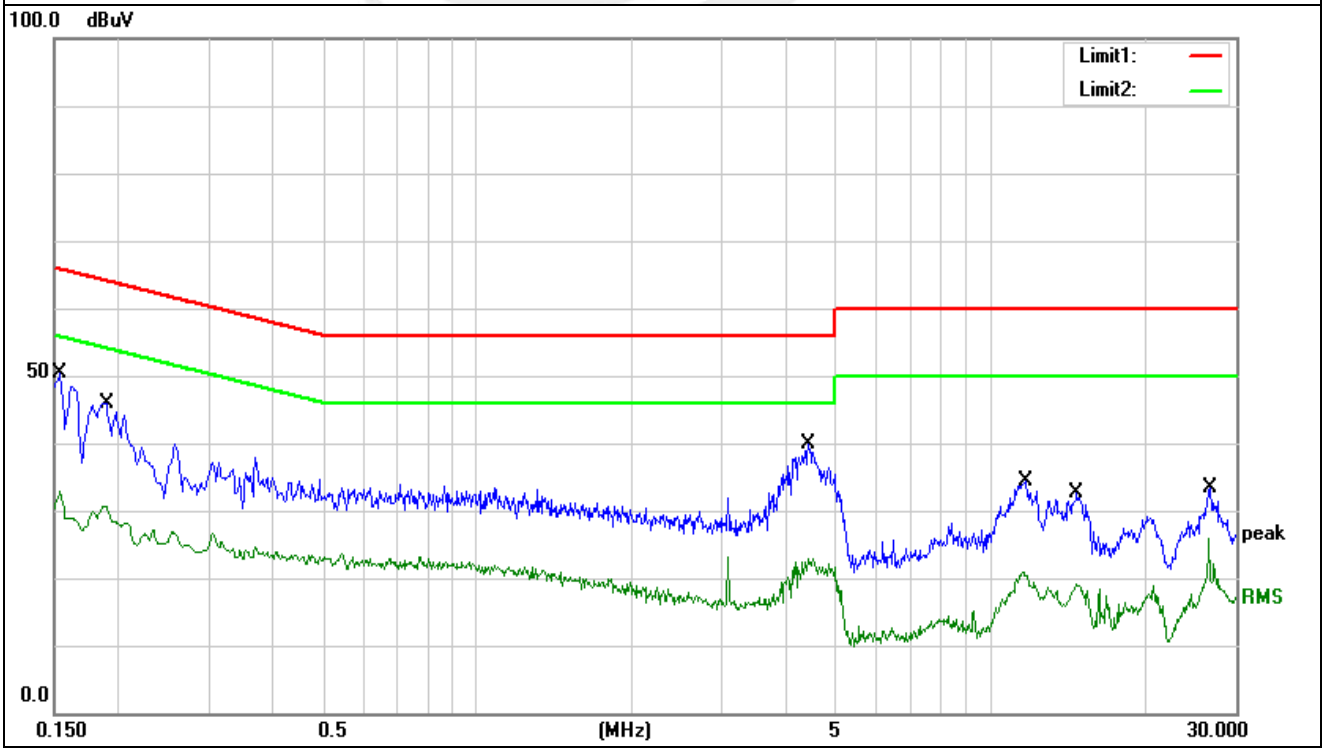
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST RESULTS

EUT：	2.4G & 5G WiFi module	Model Name. ：	HR8811AUU3
Temperature：	23 ℃	Relative Humidity：	50%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	AC 120V/50Hz	Test Mode：	Link Mode

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
0.1540	23.93	11.59	35.52	65.78	-30.26	QP
0.1540	15.17	11.59	26.76	55.78	-29.02	AVG
0.1882	30.51	10.85	41.36	64.12	-22.76	QP
0.1882	18.73	10.85	29.58	54.12	-24.54	AVG
4.4180	19.67	11.12	30.79	56.00	-25.21	QP
4.4180	6.56	11.12	17.68	46.00	-28.32	AVG
11.7153	14.10	11.54	25.64	60.00	-34.36	QP
11.7153	5.28	11.54	16.82	50.00	-33.18	AVG
14.6837	11.18	11.55	22.73	60.00	-37.27	QP
14.6837	3.76	11.55	15.31	50.00	-34.69	AVG
26.8050	12.06	12.48	24.54	60.00	-35.46	QP
26.8050	5.99	12.48	18.47	50.00	-31.53	AVG

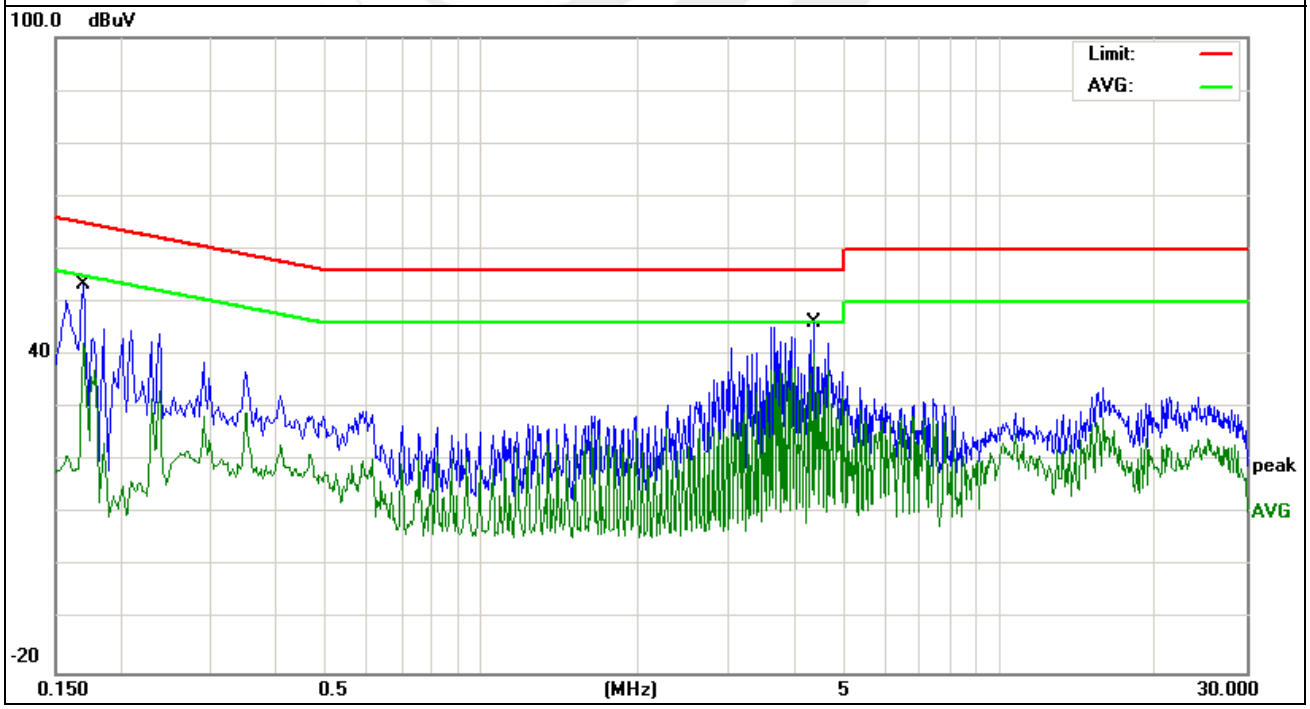
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	2.4G & 5G WiFi module	Model Name. ：	HR8811AUU3
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	N
Test Voltage：	AC 120V/50Hz	Test Mode：	Link Mode

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1800	35.10	10.85	45.95	64.49	-18.54	QP
0.1800	21.18	10.85	32.03	54.49	-22.46	AVG
0.2587	29.73	10.84	40.57	61.47	-20.90	QP
0.2587	16.21	10.84	27.05	51.47	-24.42	AVG
0.2986	25.41	10.84	36.25	60.28	-24.03	QP
0.2986	15.61	10.84	26.45	50.28	-23.83	AVG
11.4161	18.43	11.58	30.01	60.00	-29.99	QP
11.4161	9.89	11.58	21.47	50.00	-28.53	AVG
19.7777	12.60	11.97	24.57	60.00	-35.43	QP
19.7777	6.34	11.97	18.31	50.00	-31.69	AVG
26.5434	13.70	12.70	26.40	60.00	-33.60	QP
26.5434	7.92	12.70	20.62	50.00	-29.38	AVG

Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

6 dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15.247&205&209(a), then the limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz / 10Hz

Receiver Parameter	**Setting**
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

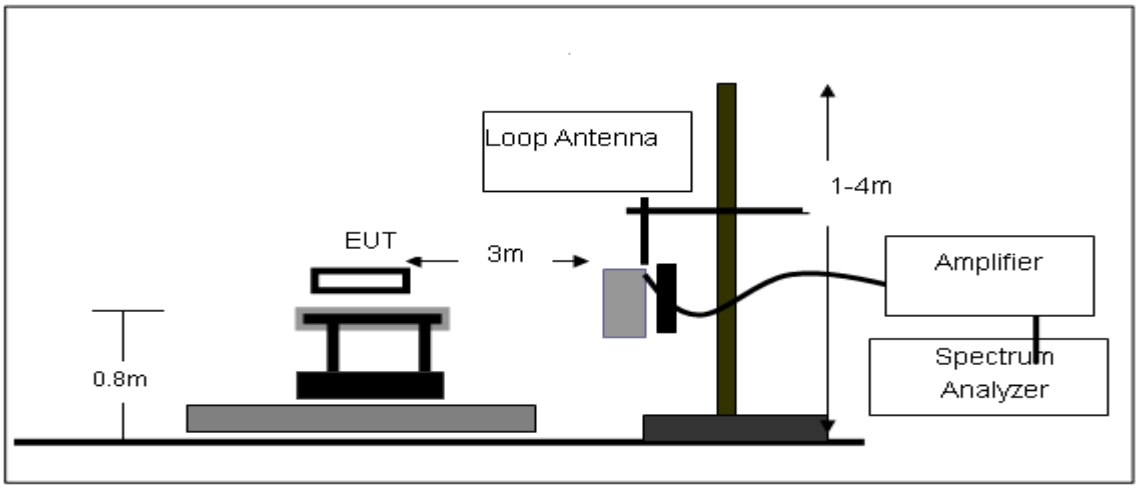
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

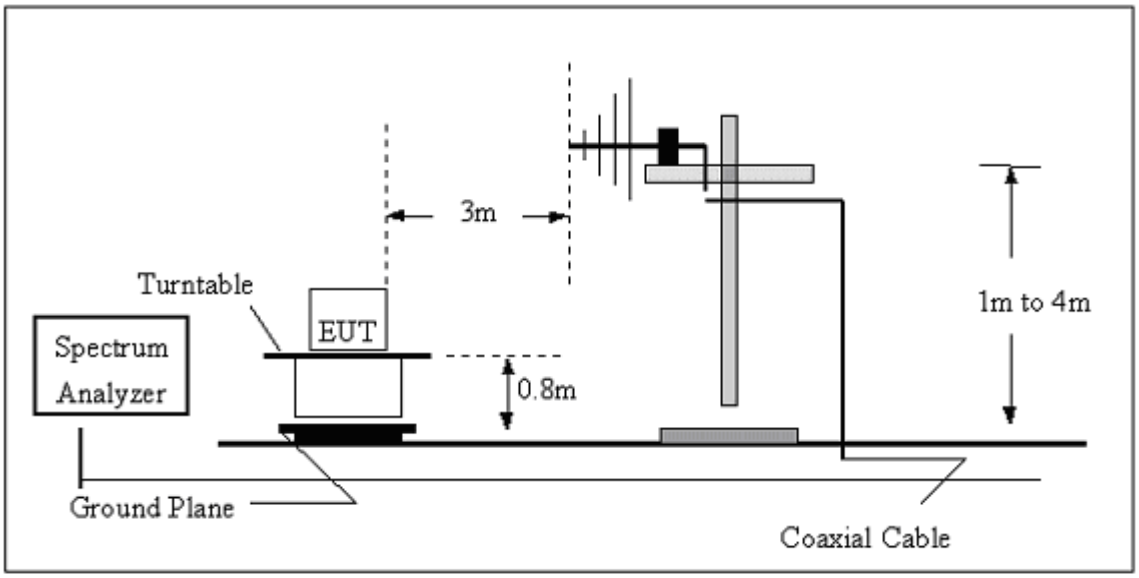
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 TEST SETUP

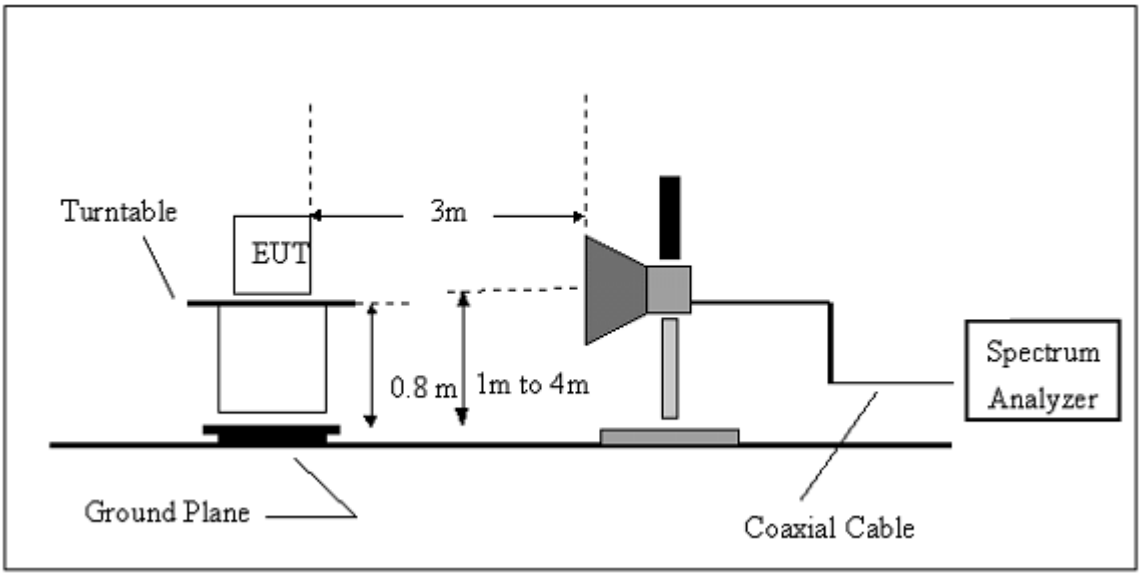
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 TEST RESULT

9KHz-30MHz

EUT：	2.4G & 5G WiFi module	Model Name. ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	Link mode	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

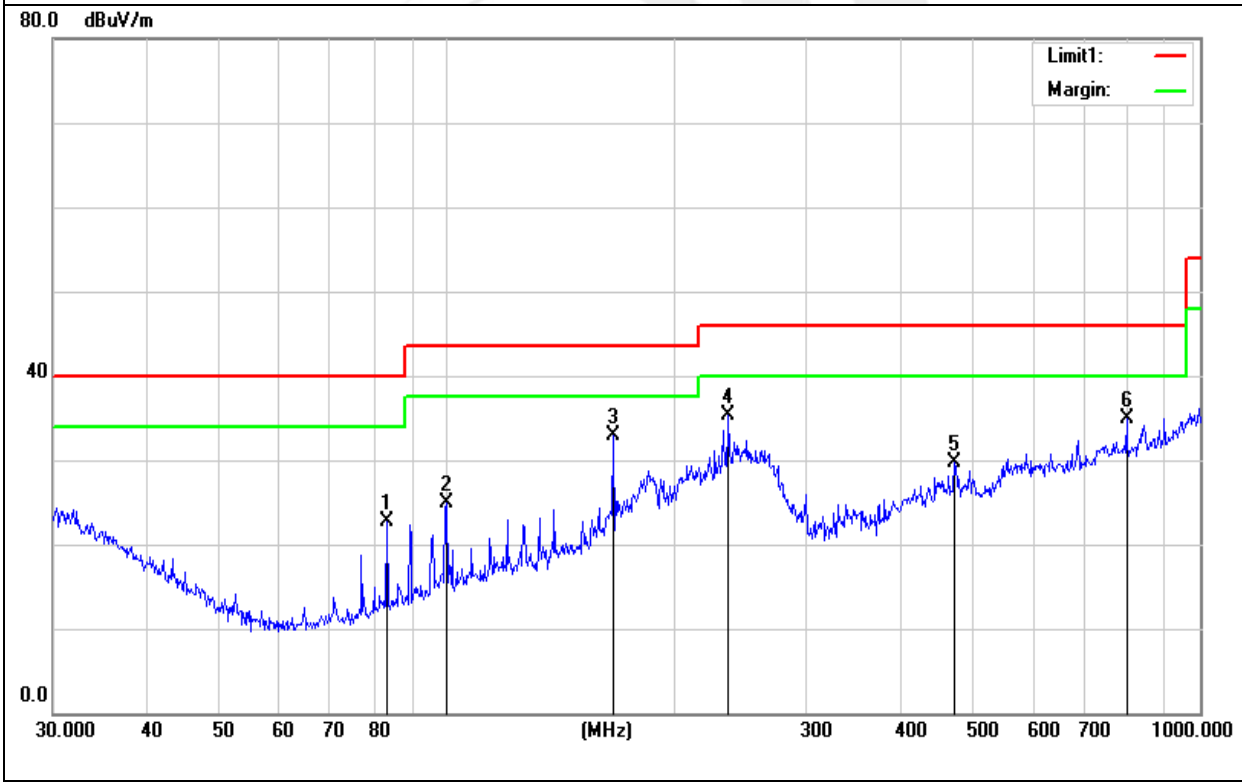
Limit line = specific limits(dBuv) + distance extrapolation factor.

30MHz - 1000MHz

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	Link mode	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
83.2298	14.00	8.62	22.62	40.00	-17.38	QP
99.8777	14.00	10.90	24.90	43.50	-18.60	QP
166.0680	21.64	11.24	32.88	43.50	-10.62	QP
236.6447	23.50	11.74	35.24	46.00	-10.76	QP
472.1760	9.42	20.24	29.66	46.00	-16.34	QP
798.9797	8.84	26.10	34.94	46.00	-11.06	QP

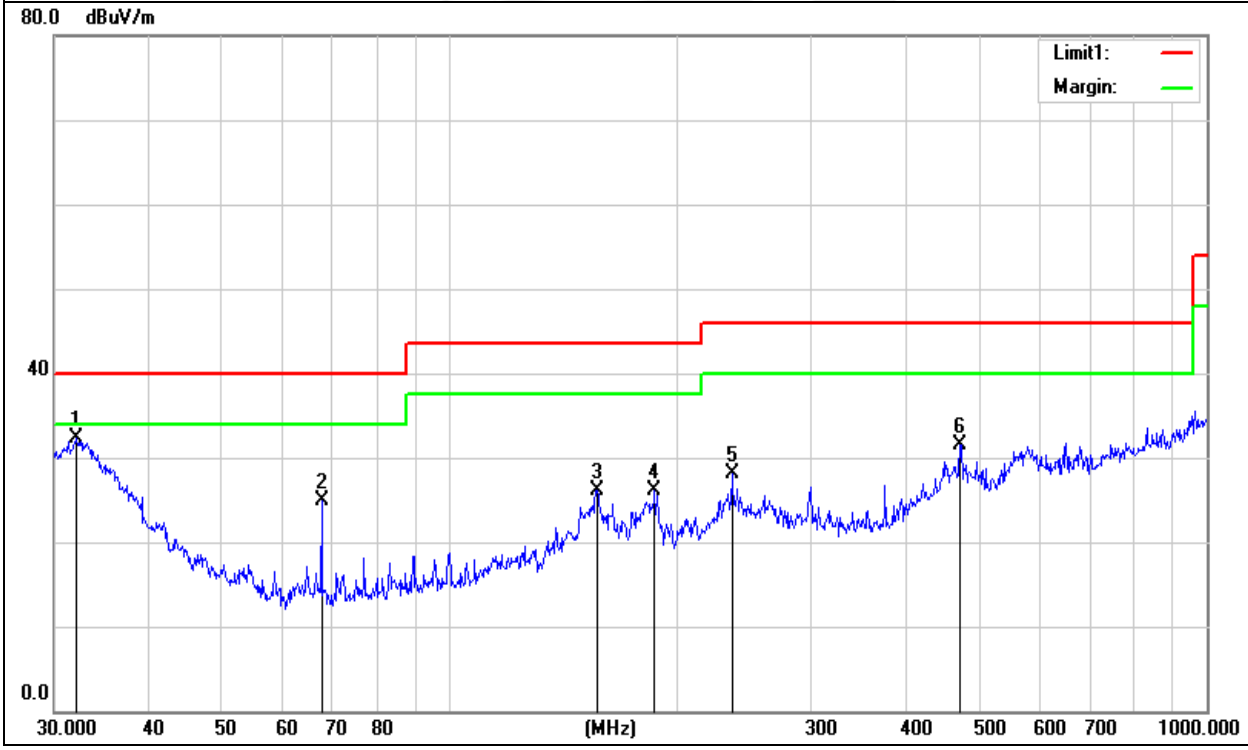
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	Link Mode	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
32.0667	14.41	17.89	32.30	40.00	-7.70	QP
67.6751	18.82	6.09	24.91	40.00	-15.09	QP
156.4578	13.98	12.10	26.08	43.50	-17.42	QP
186.4410	16.21	9.93	26.14	43.50	-17.36	QP
235.8164	16.41	11.63	28.04	46.00	-17.96	QP
472.1760	11.34	20.24	31.58	46.00	-14.42	QP

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Above 1000MHz

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1 (802.11b Mode)/2412	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.062	46.65	10.44	57.09	74	-16.91	peak
4824.105	36.34	10.44	46.78	54	-7.22	AVG
7236.050	42.67	12.39	55.06	74	-18.94	peak
7236.080	28.89	12.39	41.28	54	-12.72	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1 (802.11b Mode)/2412	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.059	46.12	10.44	56.56	74	-17.44	peak
4824.134	36.14	10.44	46.58	54	-7.42	AVG
7236.056	42.14	12.39	54.53	74	-19.47	peak
7236.098	28.13	12.39	40.52	54	-13.48	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH6 (802.11b Mode)/2437	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.057	49.45	10.39	59.84	74	-14.16	peak
4874.099	33.12	10.39	43.51	54	-10.49	AVG
7311.058	48.79	12.68	61.47	74	-12.53	peak
7311.099	30.56	12.68	43.24	54	-10.76	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH6 (802.11b Mode)/2437	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.115	49.65	10.39	60.04	74	-13.96	peak
4874.122	33.14	10.39	43.53	54	-10.47	AVG
7311.104	48.78	12.68	61.46	74	-12.54	peak
7311.115	30.39	12.68	43.07	54	-10.93	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11 (802.11b Mode)/2462	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.106	49.56	10.39	59.95	74	-14.05	peak
4924.111	33.34	10.39	43.73	54	-10.27	AVG
7386.141	48.69	12.68	61.37	74	-12.63	peak
7386.087	30.19	12.68	42.87	54	-11.13	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11 (802.11b Mode)/2462	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.095	49.65	10.39	60.04	74	-13.96	peak
4924.095	33.12	10.39	43.51	54	-10.49	AVG
7386.066	48.89	12.68	61.57	74	-12.43	peak
7386.088	30.34	12.68	43.02	54	-10.98	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1 (802.11g Mode)/2412	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.046	46.54	10.44	56.98	74	-17.02	peak
4824.114	36.59	10.44	47.03	54	-6.97	AVG
7236.039	42.31	12.39	54.7	74	-19.3	peak
7236.058	28.39	12.39	40.78	54	-13.22	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1 (802.11g Mode)/2412	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.097	46.14	10.44	56.58	74	-17.42	peak
4824.056	36.25	10.44	46.69	54	-7.31	AVG
7236.039	42.58	12.39	54.97	74	-19.03	peak
7236.074	28.76	12.39	41.15	54	-12.85	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH6 (802.11g Mode)/2437	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.136	45.47	10.4	55.87	74	-18.13	peak
4874.055	26.24	10.4	36.64	54	-17.36	AVG
7311.150	44.79	12.75	57.54	74	-16.46	peak
7311.123	25.25	12.75	38	54	-16	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH6 (802.11g Mode)/2437	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.063	48.26	10.4	58.66	74	-15.34	peak
4874.088	35.58	10.4	45.98	54	-8.02	AVG
7311.089	48.46	12.75	61.21	74	-12.79	peak
7311.129	33.23	12.75	45.98	54	-8.02	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11 (802.11g Mode)/2462	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.063	49.16	10.39	59.55	74	-14.45	peak
4924.109	33.78	10.39	44.17	54	-9.83	AVG
7386.050	48.56	12.68	61.24	74	-12.76	peak
7386.068	30.13	12.68	42.81	54	-11.19	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11g Mode)/2462	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.057	46.16	10.39	56.55	74	-17.45	peak
4924.077	34.32	10.39	44.71	54	-9.29	AVG
7386.083	46.21	12.68	58.89	74	-15.11	peak
7386.079	33.73	12.68	46.41	54	-7.59	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1(802.11n Mode)/20MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.078	46.52	10.44	56.96	74	-17.04	peak
4824.050	36.61	10.44	47.05	54	-6.95	AVG
7236.090	42.34	12.39	54.73	74	-19.27	peak
7236.098	28.53	12.39	40.92	54	-13.08	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1(802.11n Mode)/20MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.048	46.15	10.44	56.59	74	-17.41	peak
4824.101	37.32	10.44	47.76	54	-6.24	AVG
7236.123	51.61	12.39	64	74	-10	peak
7236.127	31.37	12.39	43.76	54	-10.24	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH6(802.11n Mode)/20MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.147	51.12	10.4	61.52	74	-12.48	peak
4874.135	32.58	10.4	42.98	54	-11.02	AVG
7311.059	48.83	12.75	61.58	74	-12.42	peak
7311.097	27.35	12.75	40.1	54	-13.9	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH6(802.11n Mode)/20MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.083	48.24	10.4	58.64	74	-15.36	peak
4874.086	32.52	10.4	42.92	54	-11.08	AVG
7311.080	47.27	12.75	60.02	74	-13.98	peak
7311.130	26.53	12.75	39.28	54	-14.72	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11n Mode)/20MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.138	50.16	10.39	60.55	74	-13.45	peak
4924.115	35.27	10.39	45.66	54	-8.34	AVG
7386.097	43.66	12.68	56.34	74	-17.66	peak
7386.122	31.43	12.68	44.11	54	-9.89	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11n Mode)/20MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.075	51.64	10.39	62.03	74	-11.97	peak
4924.132	35.25	10.39	45.64	54	-8.36	AVG
7386.160	42.27	12.68	54.95	74	-19.05	peak
7386.137	28.71	12.68	41.39	54	-12.61	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH3(802.11n Mode)/40MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4844.063	47.51	10.5	58.01	74	-15.99	peak
4844.147	31.35	10.5	41.85	54	-12.15	AVG
7266.229	48.47	12.5	60.97	74	-13.03	peak
7266.239	31.23	12.5	43.73	54	-10.27	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH3(802.11n Mode)/40MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4844.252	47.24	10.5	57.74	74	-16.26	peak
4844.239	30.62	10.5	41.12	54	-12.88	AVG
7266.249	48.61	12.5	61.11	74	-12.89	peak
7266.177	29.38	12.5	41.88	54	-12.12	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH6(802.11n Mode)/40MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.196	48.54	10.4	58.94	74	-15.06	peak
4874.145	33.27	10.4	43.67	54	-10.33	AVG
7311.144	47.52	12.75	60.27	74	-13.73	peak
7311.079	32.63	12.75	45.38	54	-8.62	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH6(802.11n Mode)/40MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.469	47.47	10.4	57.87	74	-16.13	peak
4874.495	34.29	10.4	44.69	54	-9.31	AVG
7311.630	46.31	12.75	59.06	74	-14.94	peak
7311.542	35.83	12.75	48.58	54	-5.42	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH9(802.11n Mode)/40MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4904.302	49.29	10.29	59.58	74	-14.42	peak
4904.274	35.38	10.29	45.67	54	-8.33	AVG
7356.188	48.29	12.79	61.08	74	-12.92	peak
7356.237	31.74	12.79	44.53	54	-9.47	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH9(802.11n Mode)/40MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4904.101	50.27	10.29	60.56	74	-13.44	peak
4904.154	34.15	10.29	44.44	54	-9.56	AVG
7356.365	48.63	12.79	61.42	74	-12.58	peak
7356.352	32.87	12.79	45.66	54	-8.34	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

3.2.6 TEST RESULTS (BAND EDGE)

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1(802.11b Mode)	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	80.17	-13	67.17	74	-6.83	peak
2399.900	61.32	-13	48.32	54	-5.54	AVG
2400.000	82.29	-12.99	69.3	74	-4.41	peak
2400.000	61.21	-12.99	48.22	54	-5.74	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1(802.11b Mode)	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	81.77	-13	68.77	74	-5.23	peak
2399.900	61.15	-13	48.15	54	-5.85	AVG
2400.000	78.41	-12.99	65.42	74	-8.58	peak
2400.000	59.45	-12.99	46.46	54	-7.54	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11b Mode)	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	78.57	-12.78	65.79	74	-8.21	peak
2483.500	60.12	-12.78	47.34	54	-6.66	AVG
2483.600	79.33	-12.77	66.56	74	-7.44	peak
2483.600	60.27	-12.78	47.49	54	-6.51	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11b Mode)	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	77.24	-12.78	64.46	74	-9.54	peak
2483.500	60.57	-12.78	47.79	54	-6.21	AVG
2483.600	78.21	-12.77	65.44	74	-8.56	peak
2483.600	59.63	-12.77	46.86	54	-7.14	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1(802.11g Mode)	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	76.15	-13	63.15	74	-10.85	peak
2399.900	59.37	-13	46.37	54	-7.63	AVG
2400.000	78.52	-12.99	65.53	74	-8.47	peak
2400.000	58.39	-12.99	45.4	54	-8.6	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1(802.11gMode)	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	77.55	-13	64.55	74	-9.45	peak
2399.900	60.41	-13	47.41	54	-6.59	AVG
2400.000	78.22	-12.99	65.23	74	-8.77	peak
2400.000	62.12	-12.99	49.13	54	-4.87	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11g Mode)	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	77.25	-12.78	64.47	74	-9.53	peak
2483.500	63.51	-12.78	50.73	54	-3.27	AVG
2483.600	76.23	-12.77	63.46	74	-10.54	peak
2483.600	61.77	-12.77	49	54	-5	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11g Mode)	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	76.14	-12.78	63.36	74	-10.64	peak
2483.500	60.33	-12.78	47.55	54	-6.45	AVG
2483.600	75.75	-12.77	62.98	74	-11.02	peak
2483.600	61.21	-12.77	48.44	54	-5.56	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1(802.11n Mode)/20MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	76.24	-13	63.24	74	-10.76	peak
2399.900	58.31	-13	45.31	54	-8.69	AVG
2400.000	78.17	-12.99	65.18	74	-8.82	peak
2400.000	58.32	-12.99	45.33	54	-8.67	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH1(802.11n Mode)/20M	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	77.12	-13	64.12	74	-9.88	peak
2399.900	58.57	-13	45.57	54	-8.43	AVG
2400.000	76.33	-12.99	63.34	74	-10.66	peak
2400.000	59.25	-12.99	46.26	54	-7.74	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11n Mode)/20MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	77.82	-12.78	65.04	74	-8.96	peak
2483.500	56.72	-12.78	43.94	54	-10.06	AVG
2483.600	75.39	-12.77	62.62	74	-11.38	peak
2483.600	57.34	-12.77	44.57	54	-9.43	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH11(802.11n Mode)/20MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	73.27	-12.78	60.45	74	-13.55	peak
2483.500	59.35	-12.78	46.84	54	-7.16	AVG
2483.600	73.63	-12.78	60.45	74	-13.55	peak
2483.600	59.51	-12.78	46.84	54	-7.16	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH3(802.11n Mode)/40M	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	77.42	-13	64.42	74	-9.58	peak
2399.900	58.56	-13	45.56	54	-8.44	AVG
2400.000	77.61	-12.99	64.62	74	-9.38	peak
2400.000	59.57	-12.99	46.58	54	-7.42	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH3(802.11n Mode)/40MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	80.54	-13	67.54	74	-6.46	peak
2399.900	55.52	-13	42.52	54	-11.48	AVG
2400.000	78.37	-12.99	65.38	74	-8.62	peak
2400.000	55.33	-12.99	42.34	54	-11.66	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH9(802.11n Mode)/40MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	76.11	-12.78	63.33	74	-10.67	peak
2483.500	59.25	-12.78	46.47	54	-7.53	AVG
2483.600	77.51	-12.77	64.74	74	-9.26	peak
2483.600	61.17	-12.77	48.4	54	-5.6	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	CH9(802.11n Mode)/40MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	77.31	-12.78	64.53	74	-9.47	peak
2483.500	60.53	-12.78	47.75	54	-6.25	AVG
2483.600	78.28	-12.78	65.5	74	-8.5	peak
2483.600	59.52	-12.78	46.74	54	-7.26	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

4. CONDUCTED SPURIOUS EMISSIONS

4.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c).

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

.

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 to 2430 MHz Upper Band Edge: 2450 to 2500 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP

The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

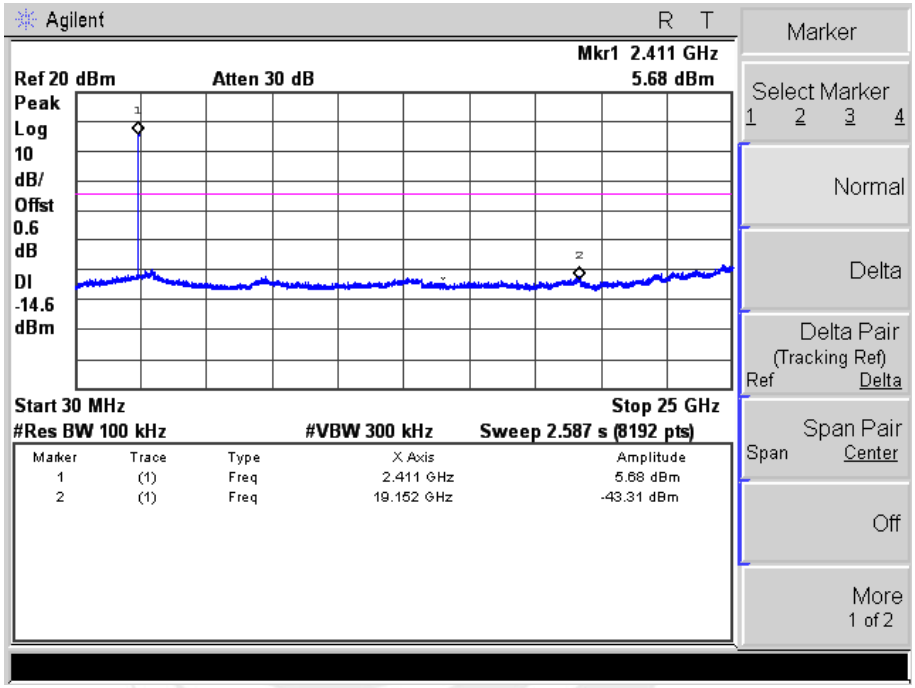
4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

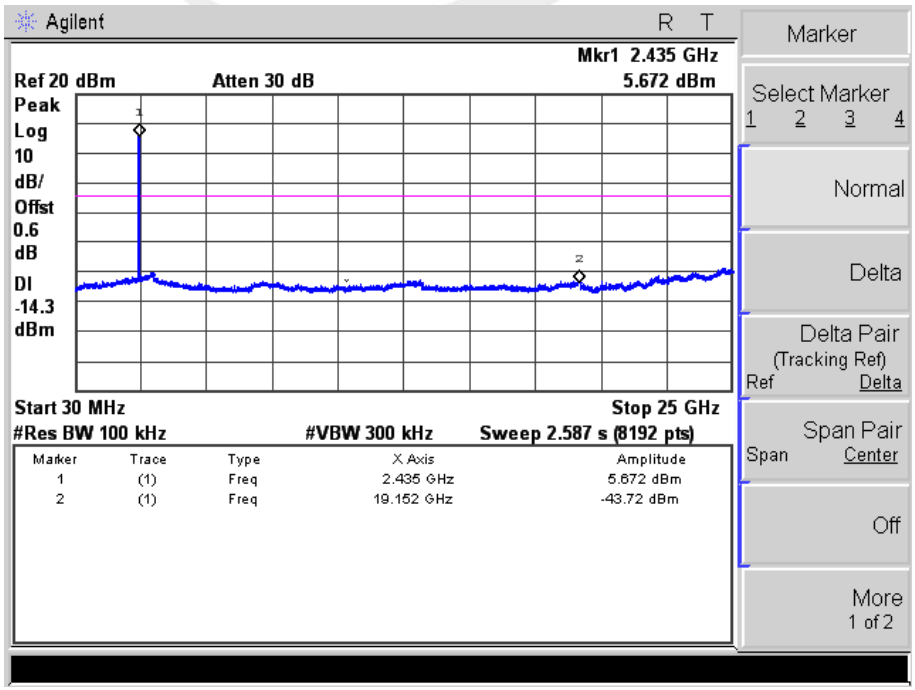
4.6 TEST RESULTS

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX b Mode /CH01, CH06, CH11		

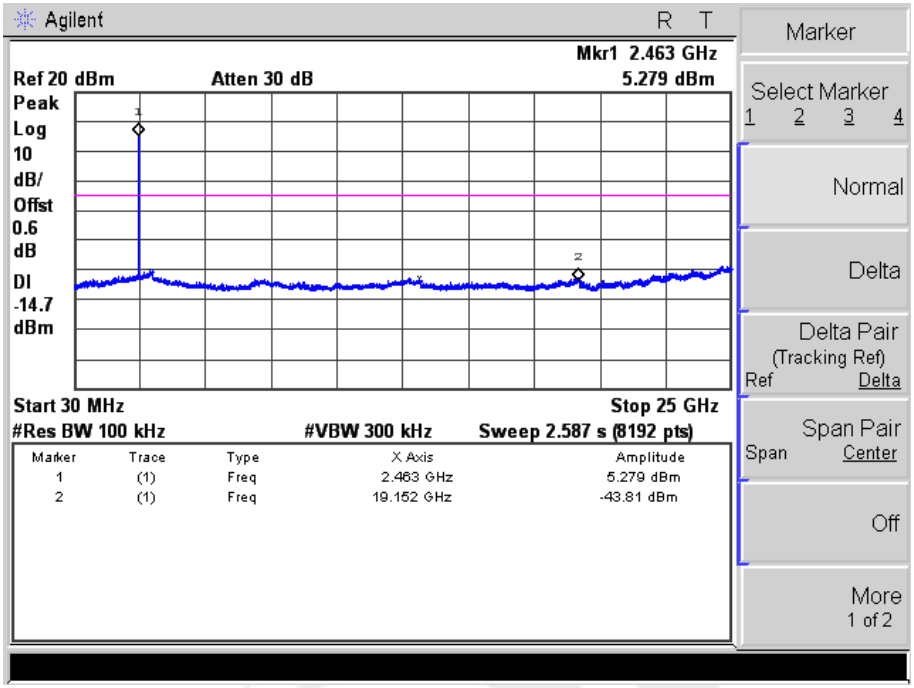
CH 01



CH 06

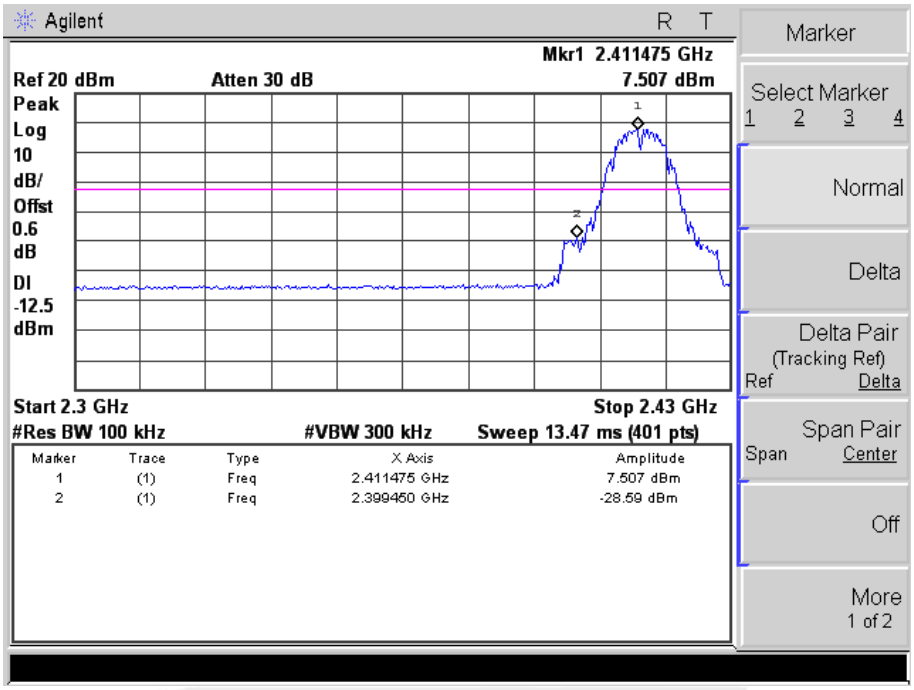


CH 11

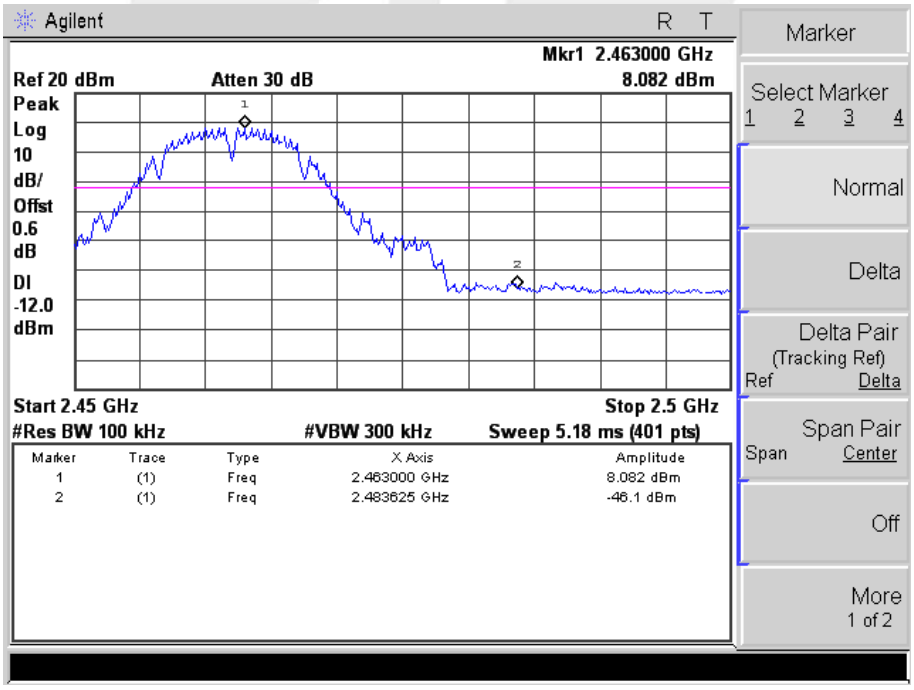

Agilent
R T
Mkr1 2.463 GHz
Ref 20 dBm
Atten 30 dB
5.279 dBm
Peak
Log
10
dB/
Offst
0.6
dB
Dl
-14.7
dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25 GHz
Sweep 2.587 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.463 GHz 5.279 dBm
2 (1) Freq 19.152 GHz -43.81 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

Band edge

CH 01

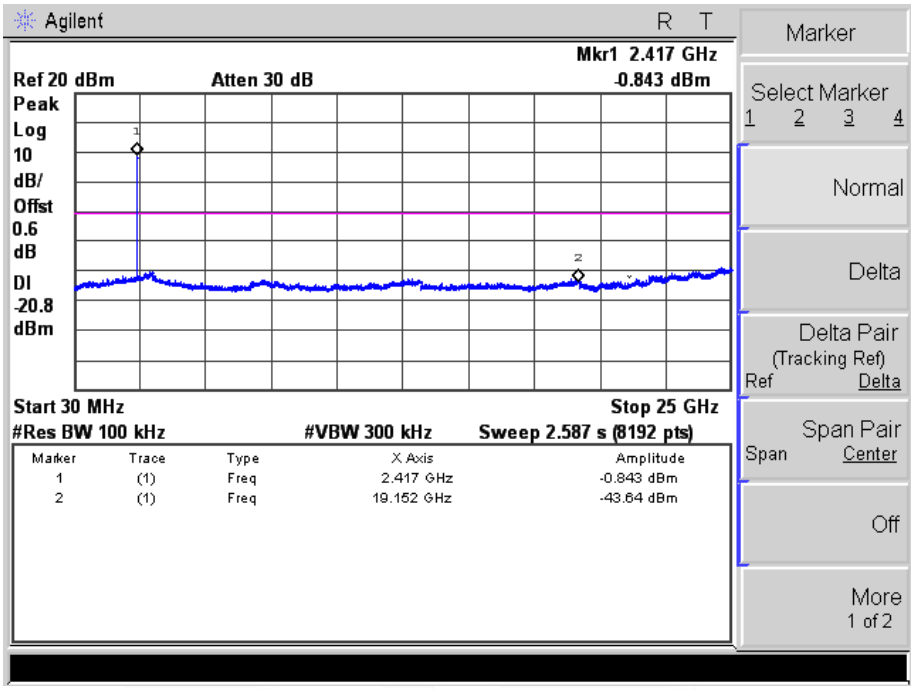


CH 11

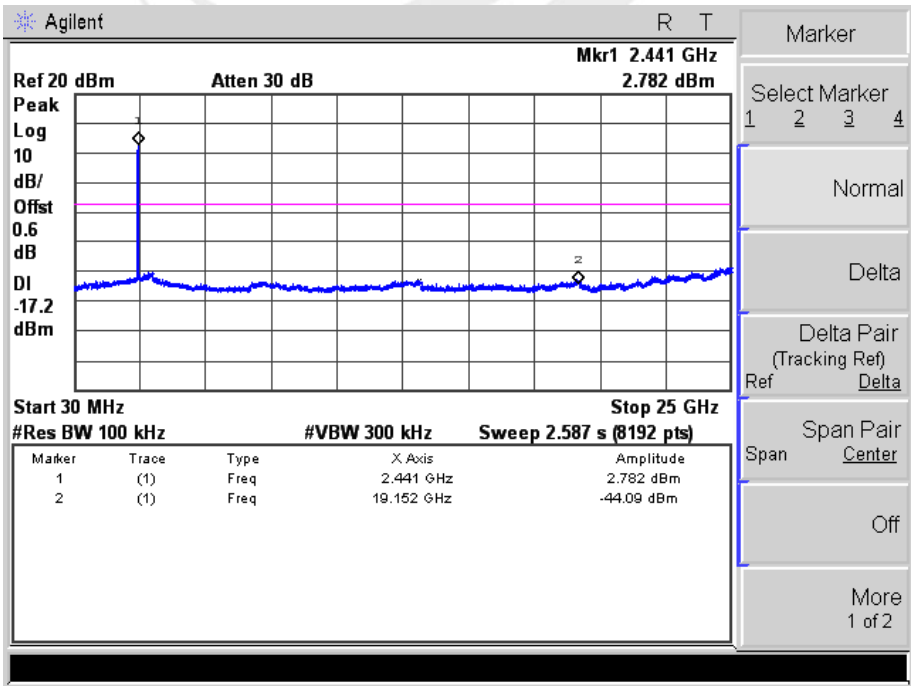


EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX g Mode /CH01, CH06, CH11		

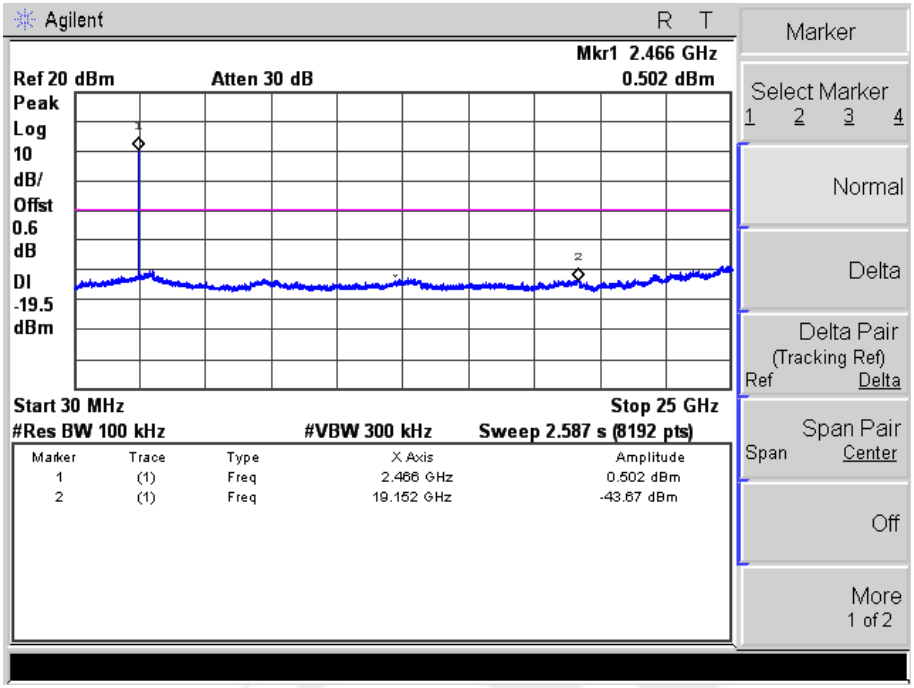
CH 01



CH 06

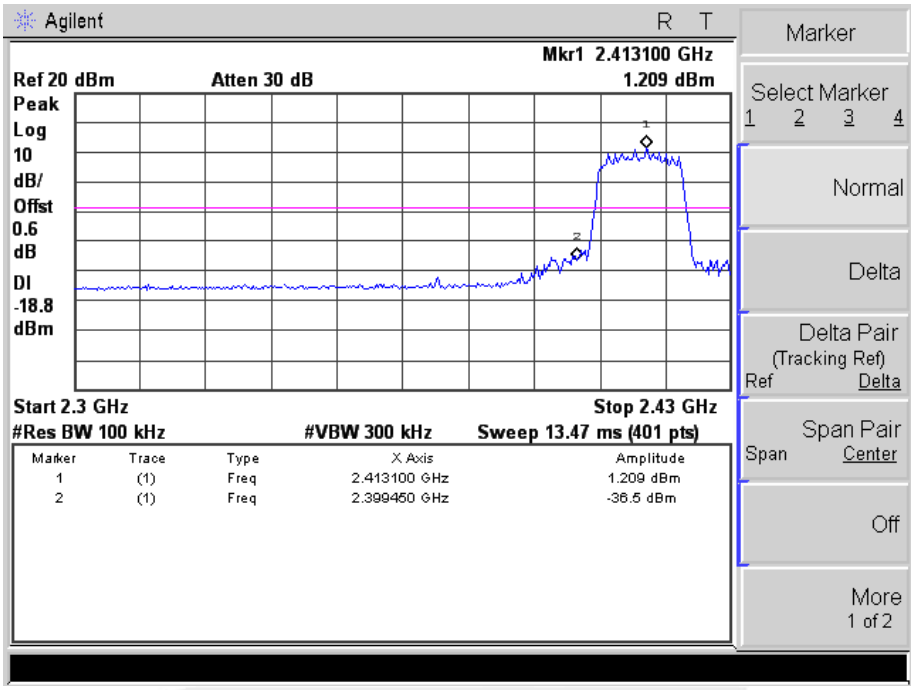


CH 11

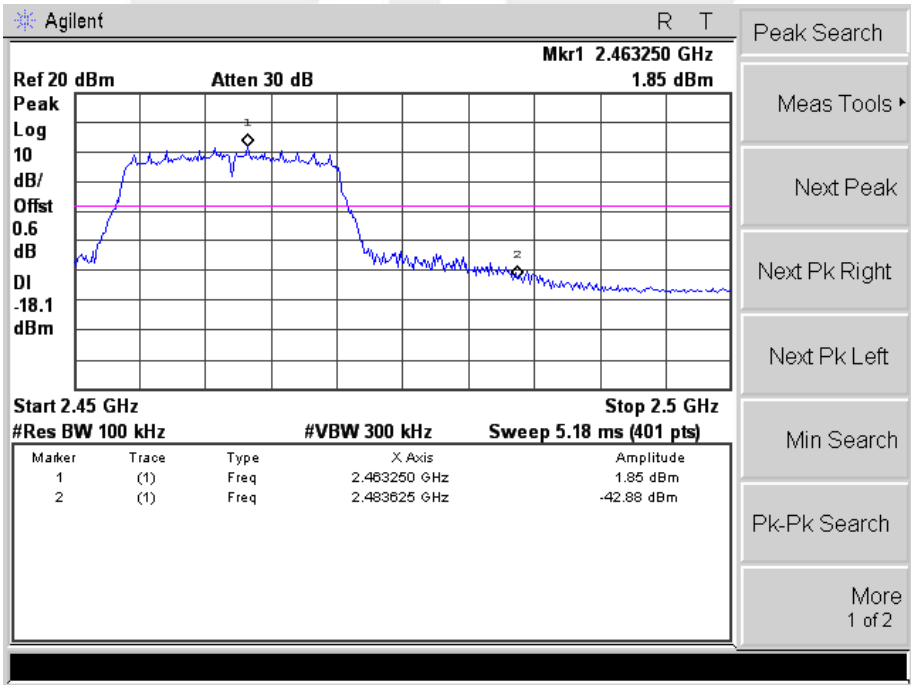

Agilent
R T
Mkr1 2.466 GHz
Ref 20 dBm
Atten 30 dB
0.502 dBm
Peak
Log
10
dB/
Offst
0.6
dB
Dl
-19.5
dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25 GHz
Sweep 2.587 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.466 GHz 0.502 dBm
2 (1) Freq 19.152 GHz -43.67 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

Band edge

CH 01

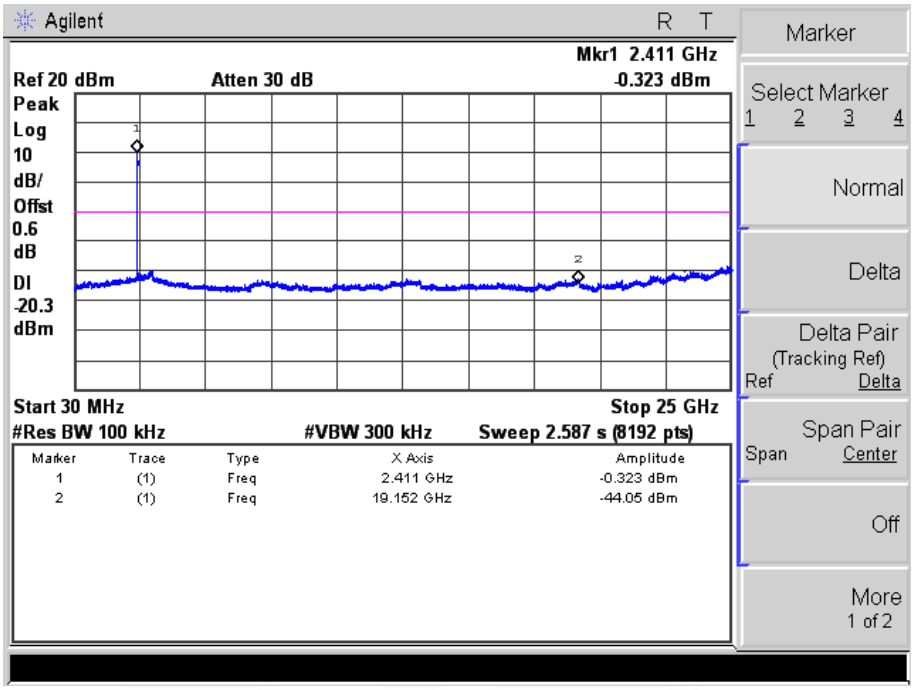


CH11

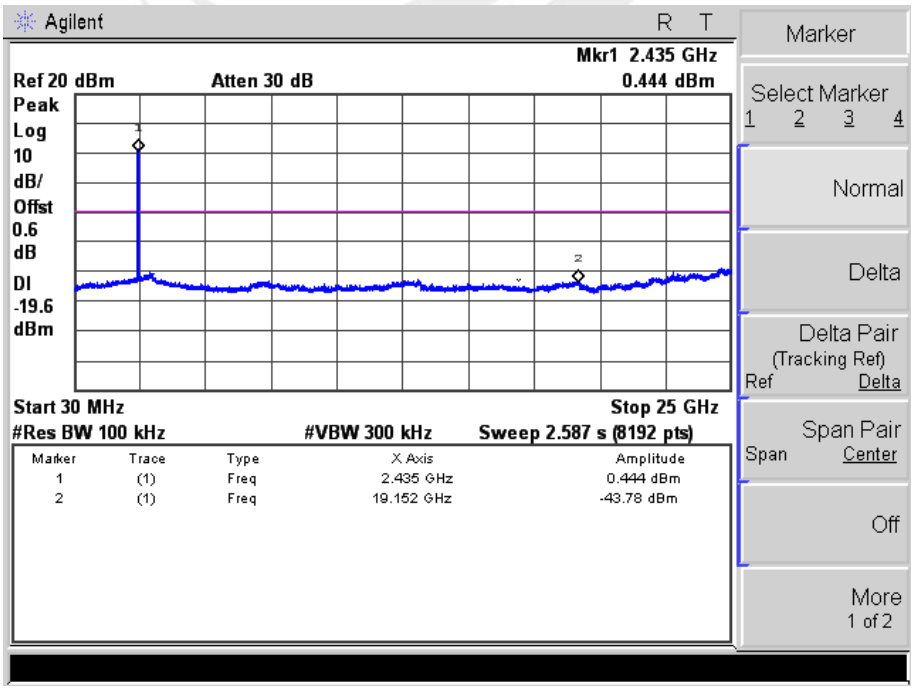


EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX n Mode(20M) /CH01, CH06, CH11		

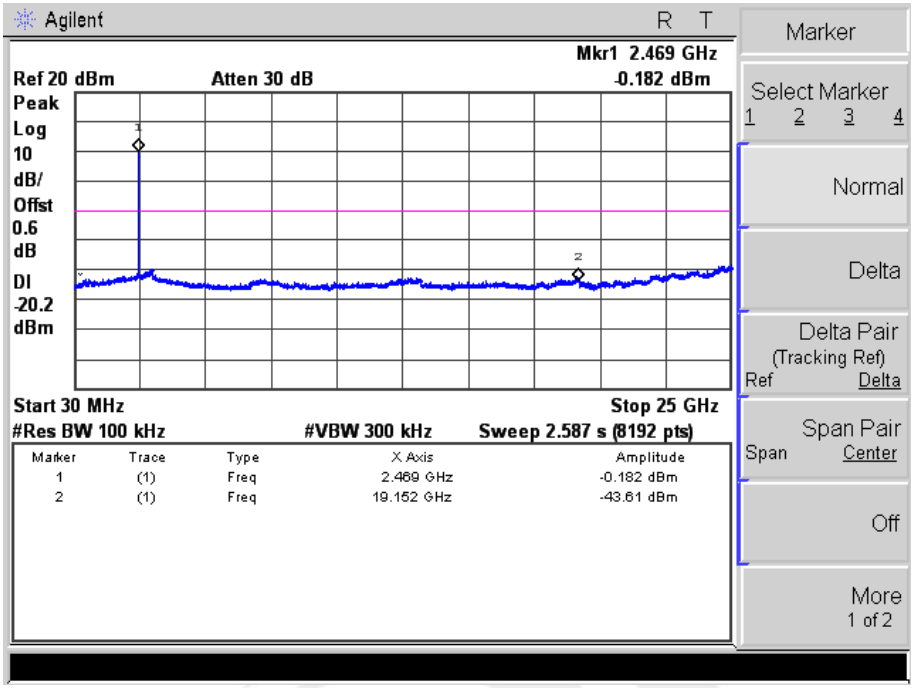
CH 01



CH 06

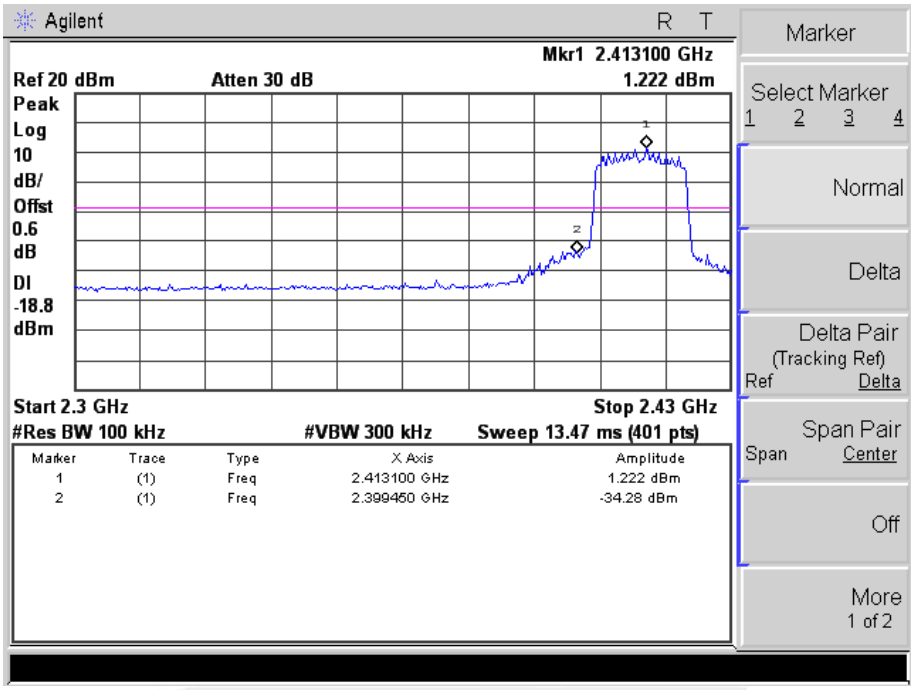


CH 11

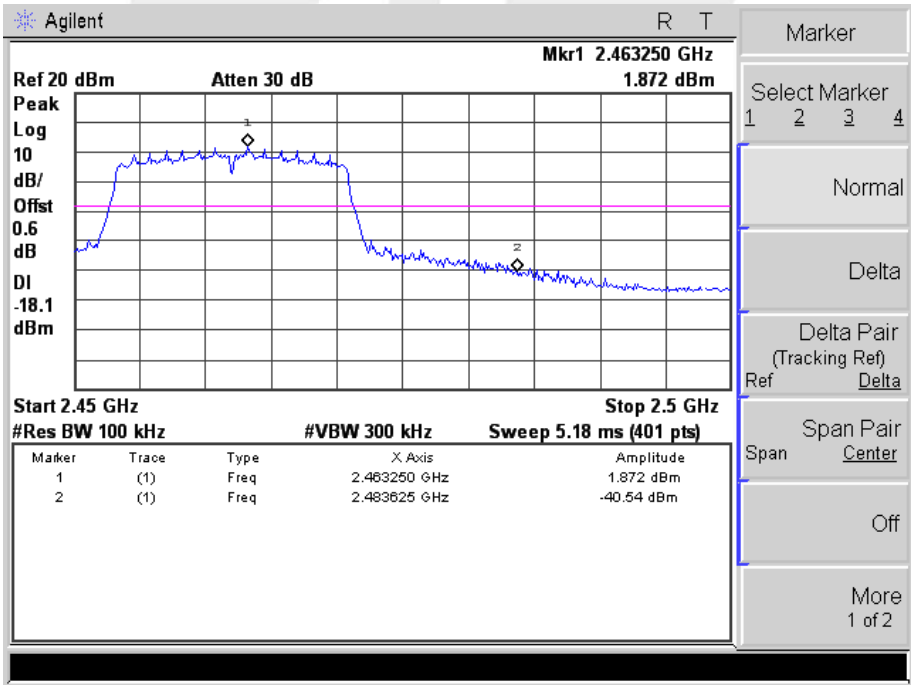

Agilent
R T
Mkr1 2.469 GHz
Ref 20 dBm
Atten 30 dB
-0.182 dBm
Peak
Log
10
dB/
Offst
0.6
dB
Dl
-20.2
dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25 GHz
Sweep 2.587 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.469 GHz -0.182 dBm
2 (1) Freq 19.152 GHz -43.61 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

Band edge

CH 01

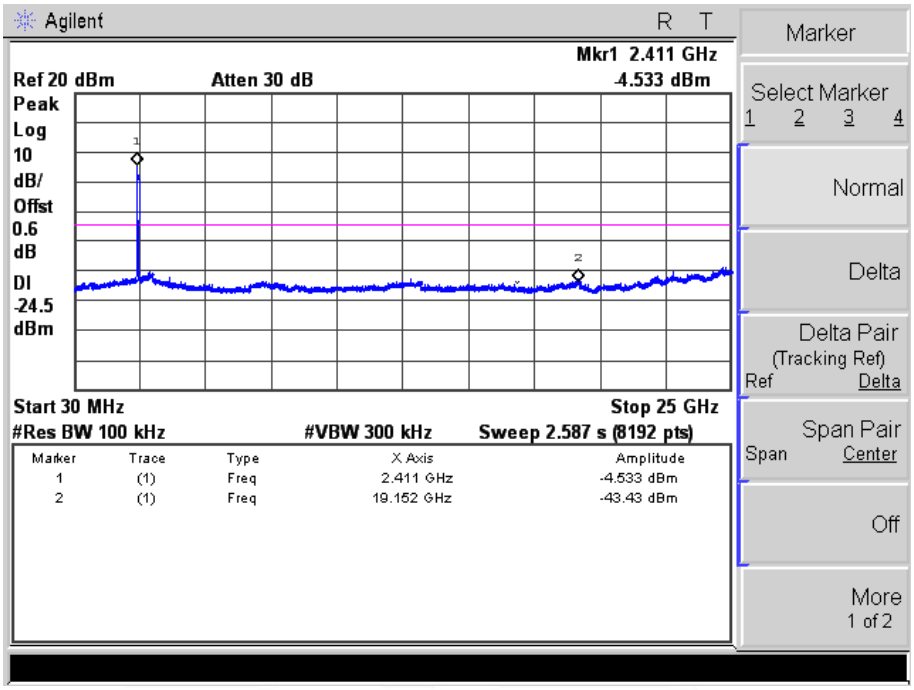


CH 11

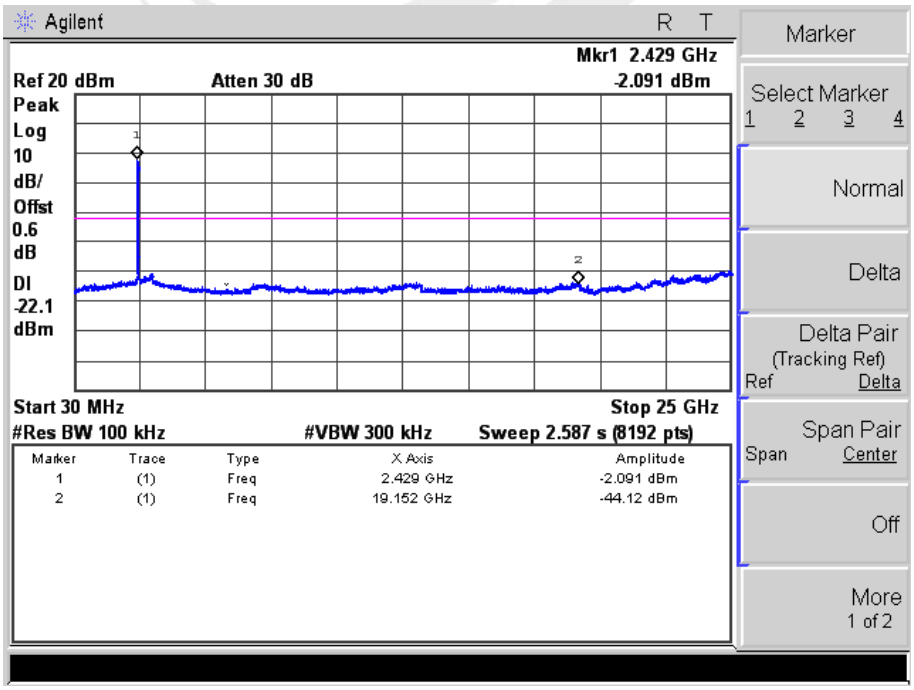


EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX n Mode(40M) /CH03, CH06, CH09		

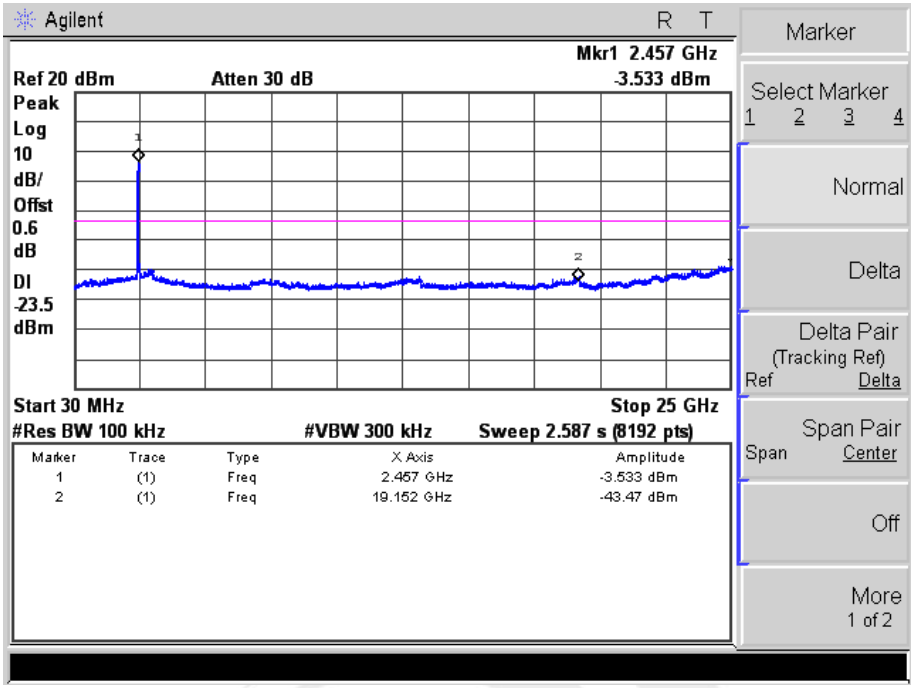
CH 03



CH06

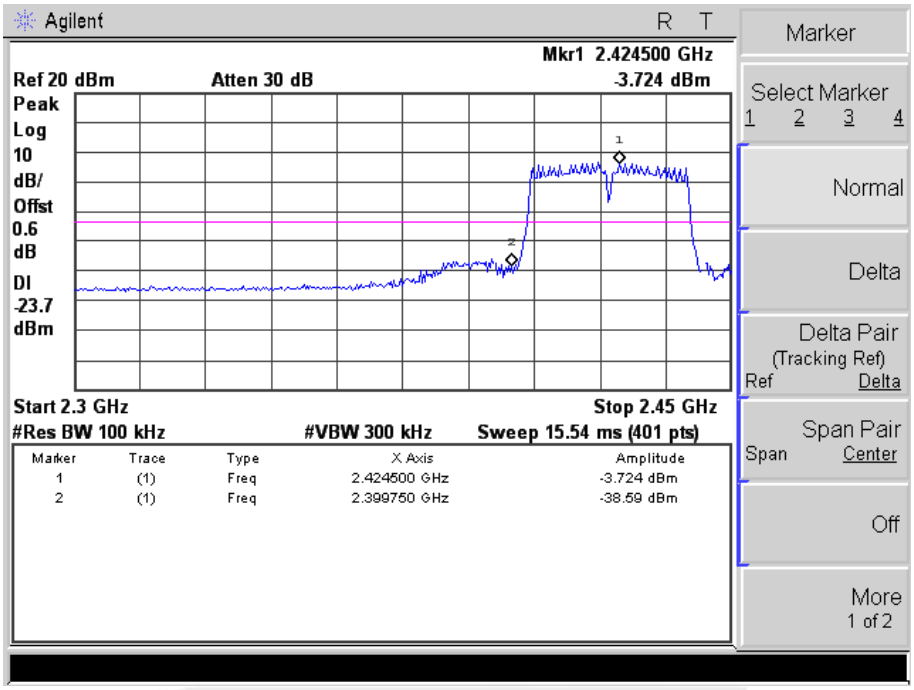


CH09

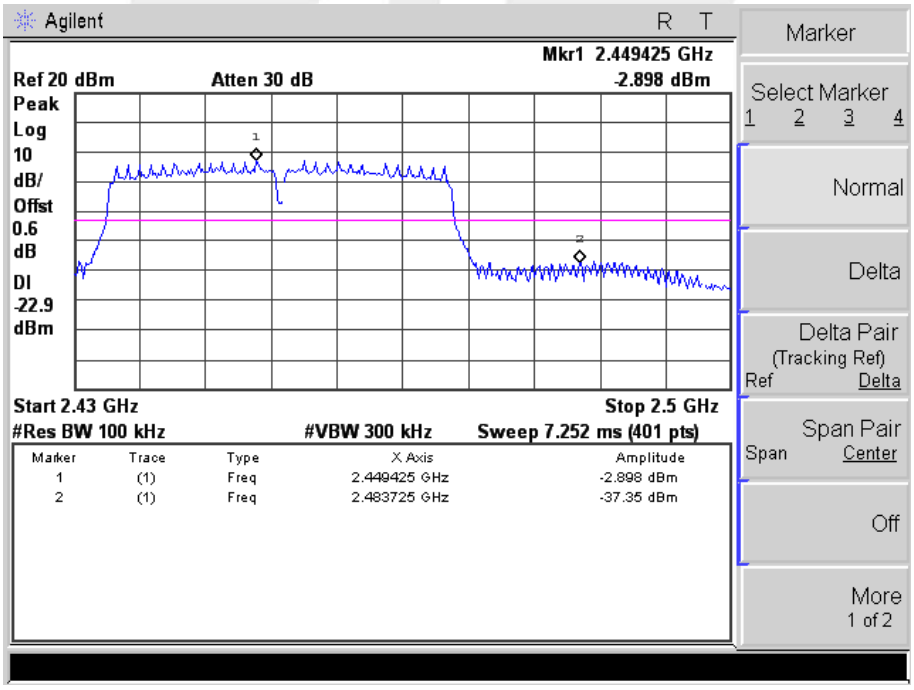

Agilent
R T
Mkr1 2.457 GHz
Ref 20 dBm
Atten 30 dB
-3.533 dBm
Peak
Log
10
dB/
Offst
0.6
dB
Dl
-23.5
dBm
Start 30 MHz
Stop 25 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 2.587 s (8192 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.457 GHz -3.533 dBm
2 (1) Freq 19.152 GHz -43.47 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

Band edge

CH03



CH 09



5. POWER SPECTRAL DENSITY TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

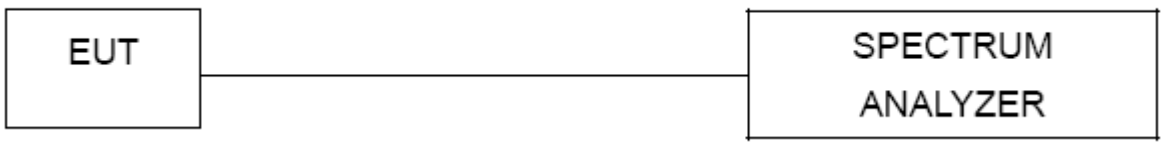
5.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 3 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

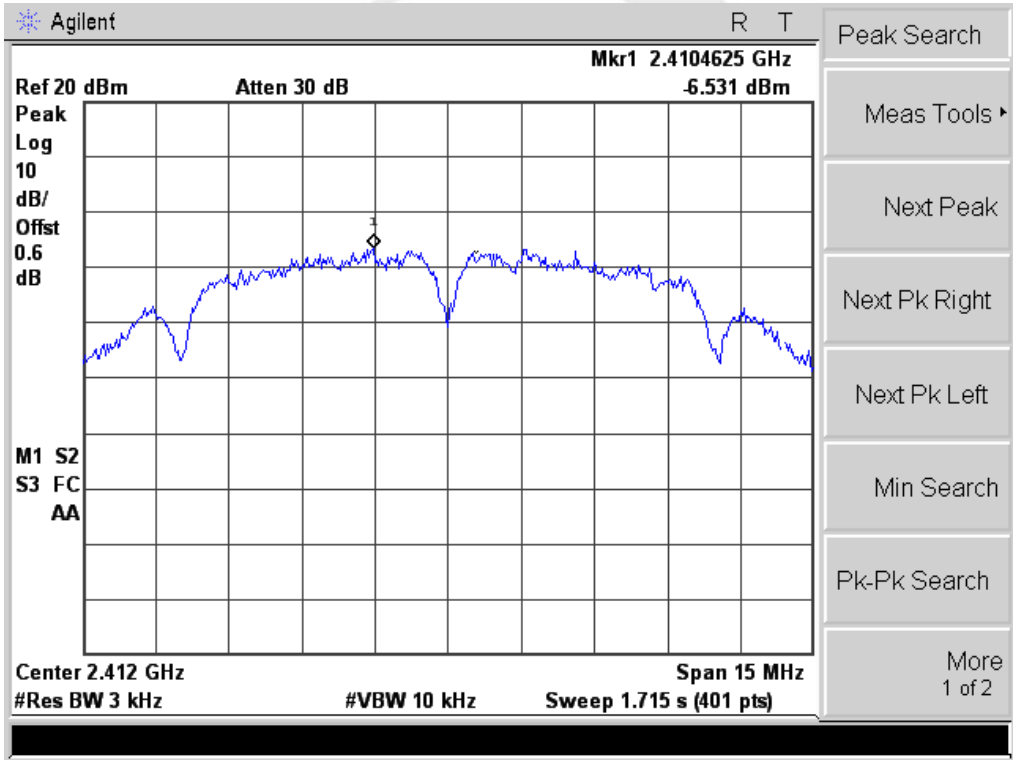
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULTS

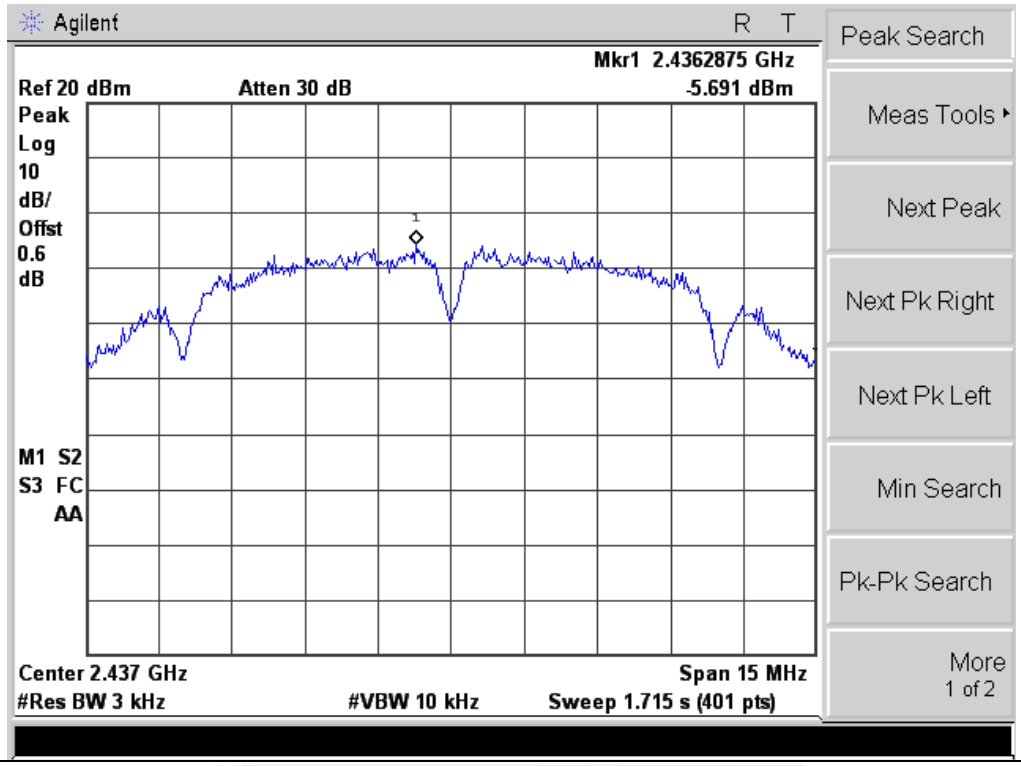
EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX b Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-6.531	8	**PASS**
2437 MHz	-5.691	8	**PASS**
2462 MHz	-5.747	8	**PASS**

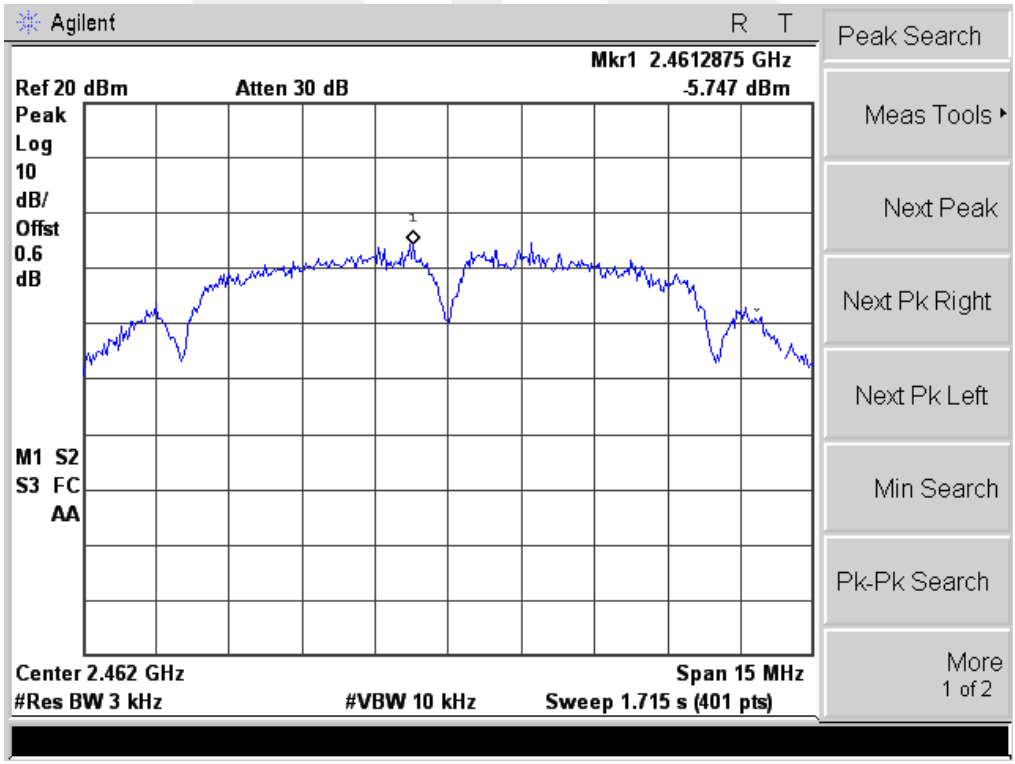
TX CH01



TX CH06



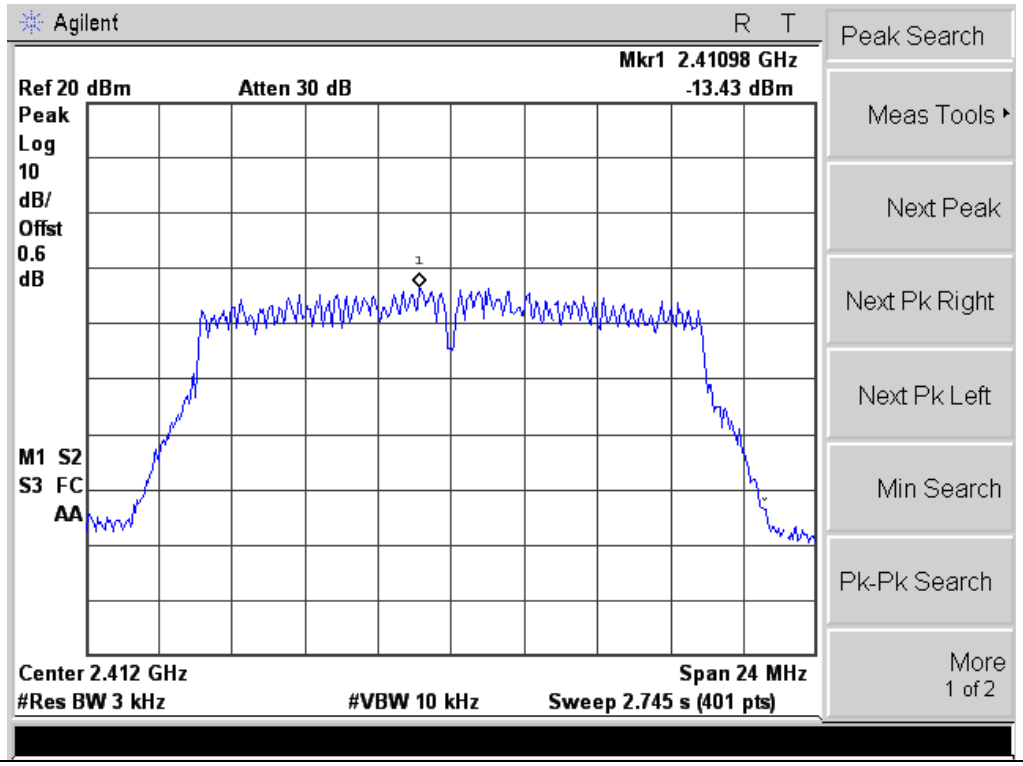
TX CH11



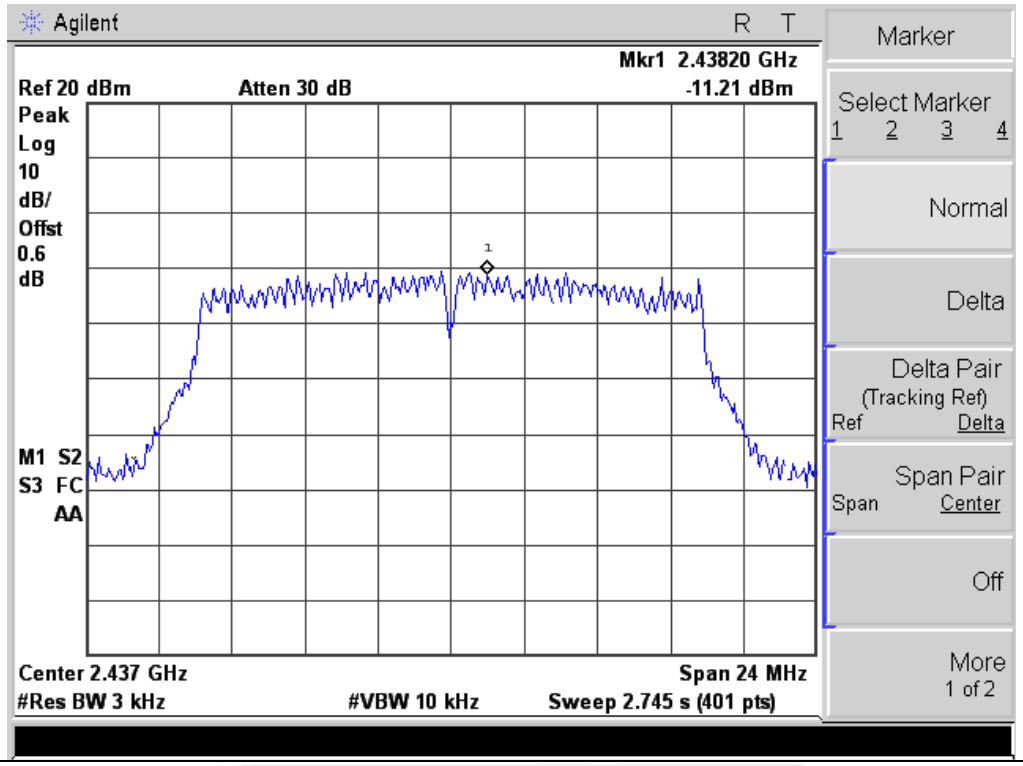
EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX g Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-13.43	8	**PASS**
2437 MHz	-11.21	8	**PASS**
2462 MHz	-12.13	8	**PASS**

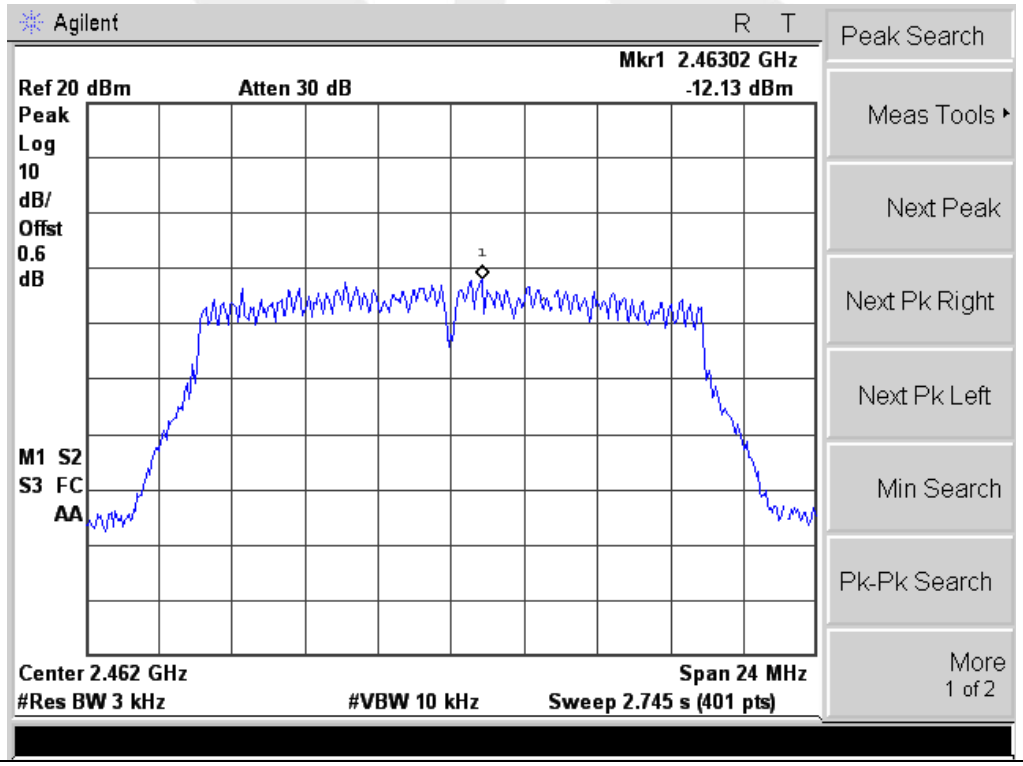
TX CH01



TX CH06



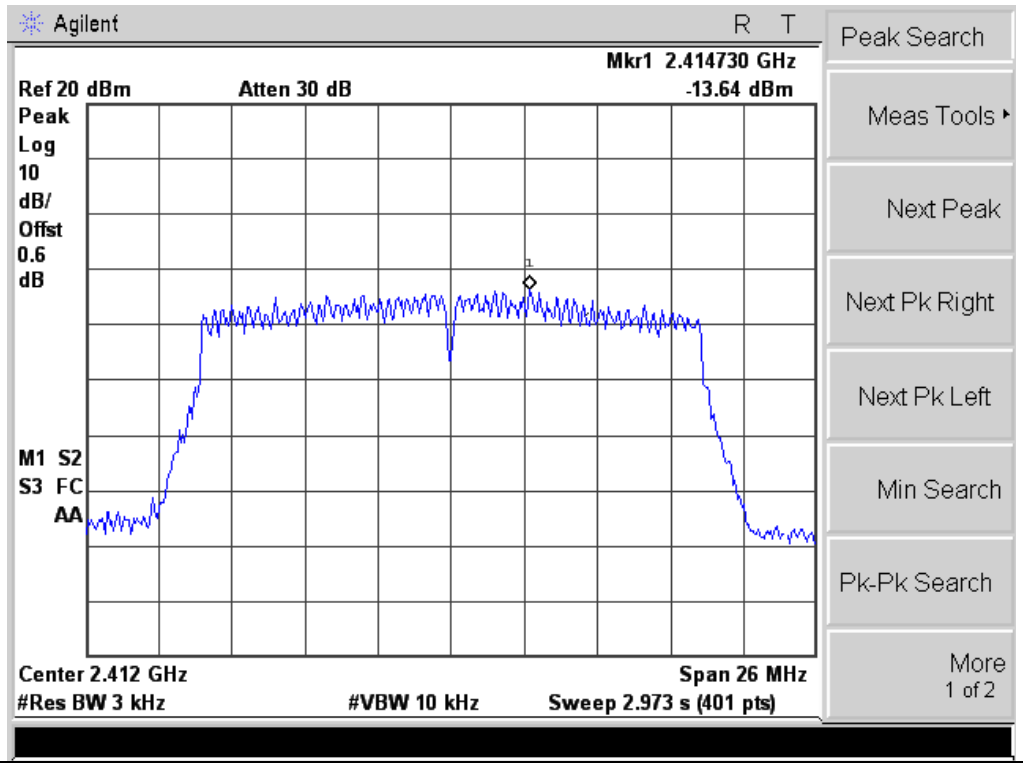
TX CH11



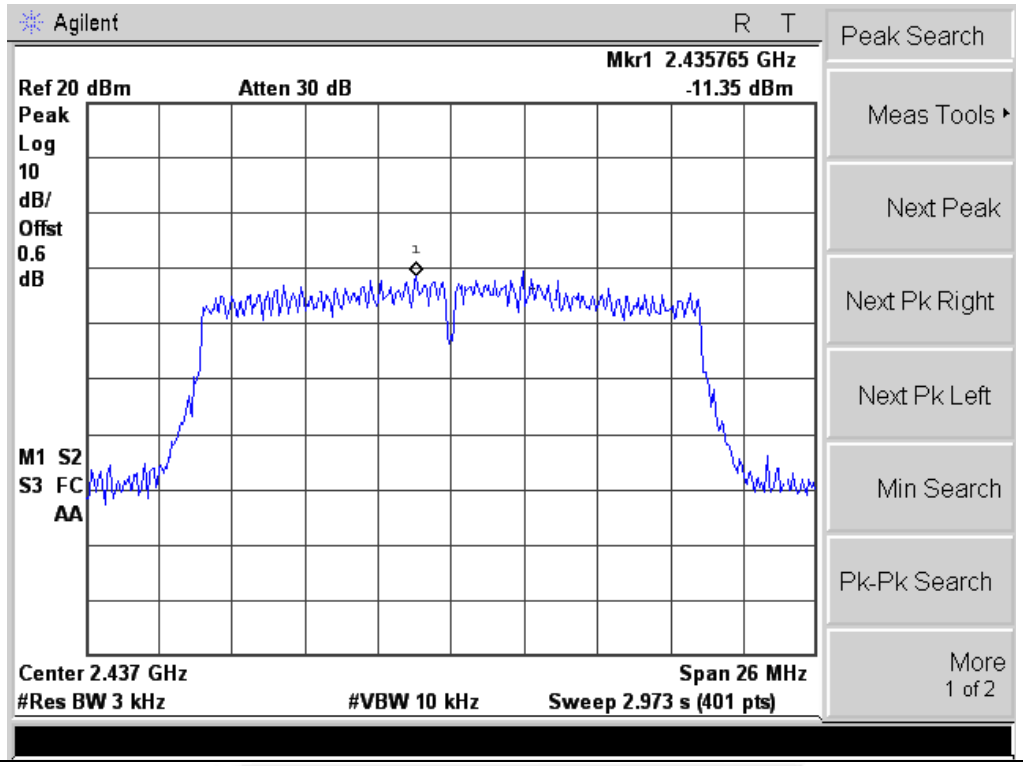
EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX n Mode(20M) /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-13.64	8	**PASS**
2437 MHz	-11.35	8	**PASS**
2462 MHz	-12.85	8	**PASS**

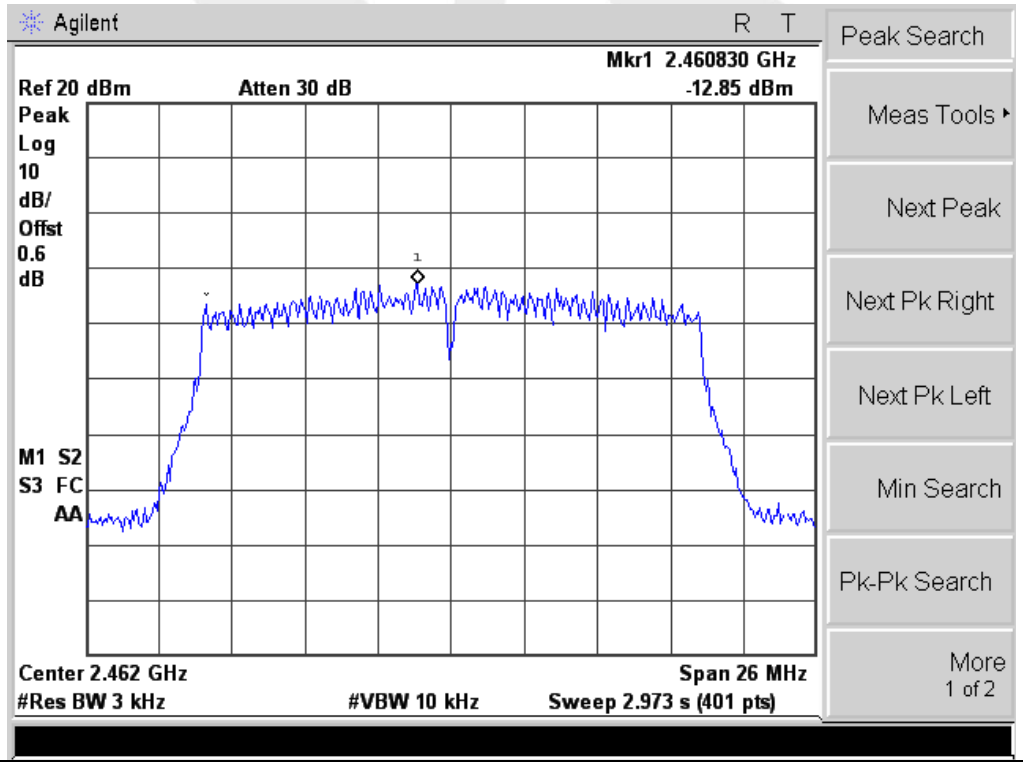
TX CH01



TX CH06



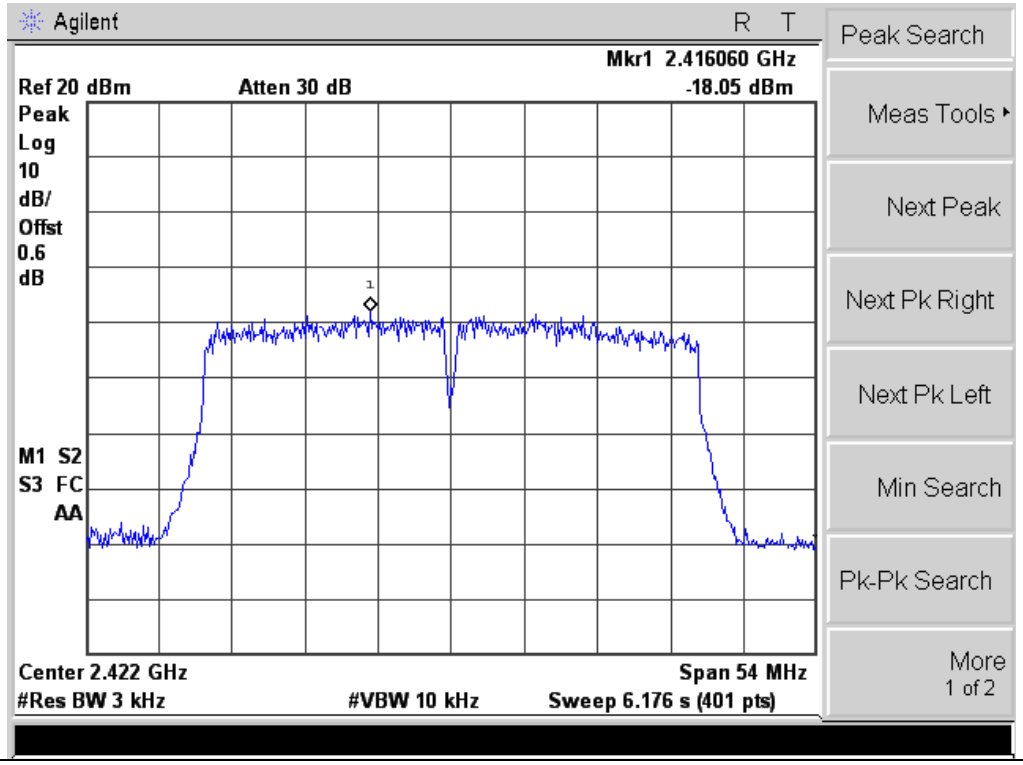
TX CH11



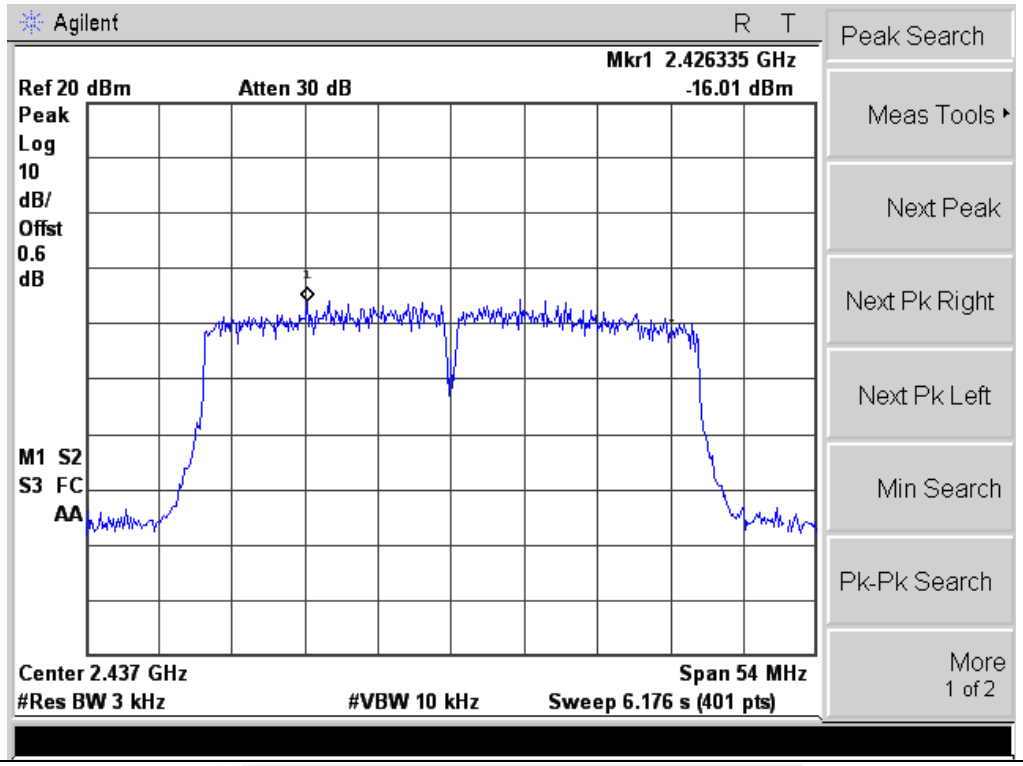
EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX n Mode(40M) /CH03, CH06, CH09		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2422 MHz	-18.05	8	PASS
2437 MHz	-16.01	8	PASS
2452 MHz	-16.72	8	PASS

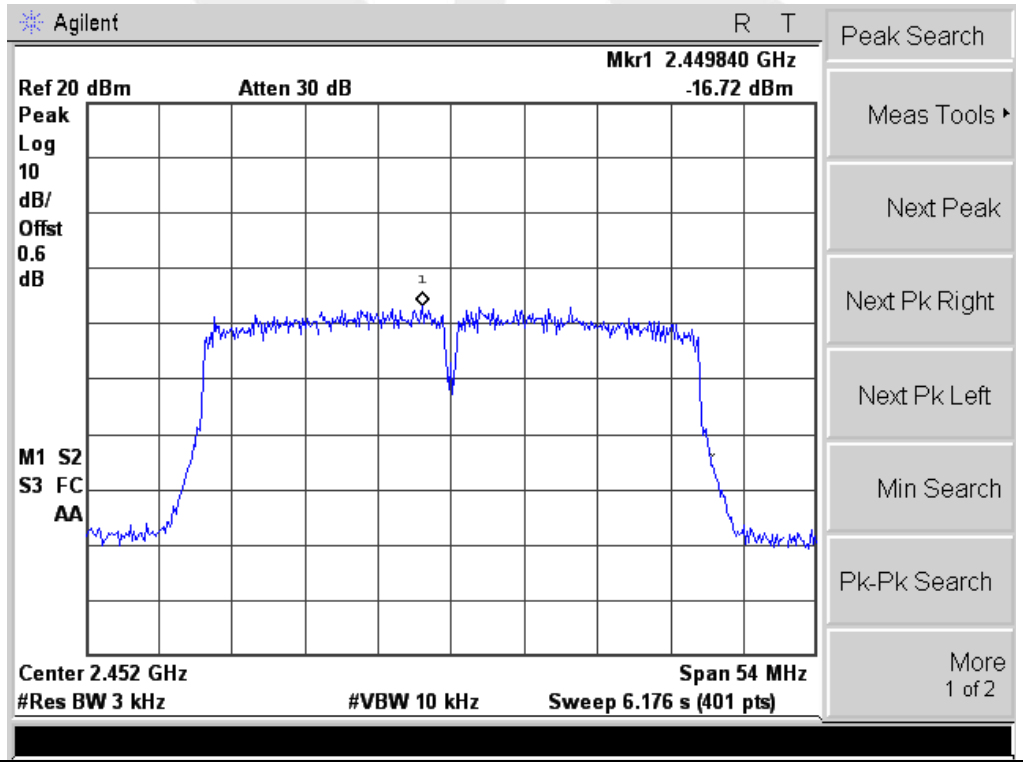
TX CH03



TX CH06



TX CH09



6. BANDWIDTH TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz(6dB bandwidth)	2400-2483.5	PASS

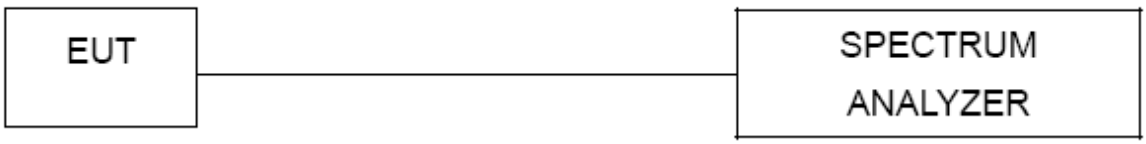
6.2 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 ´ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7.Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 d B relative to the maximum level measured in the fundamental emission.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

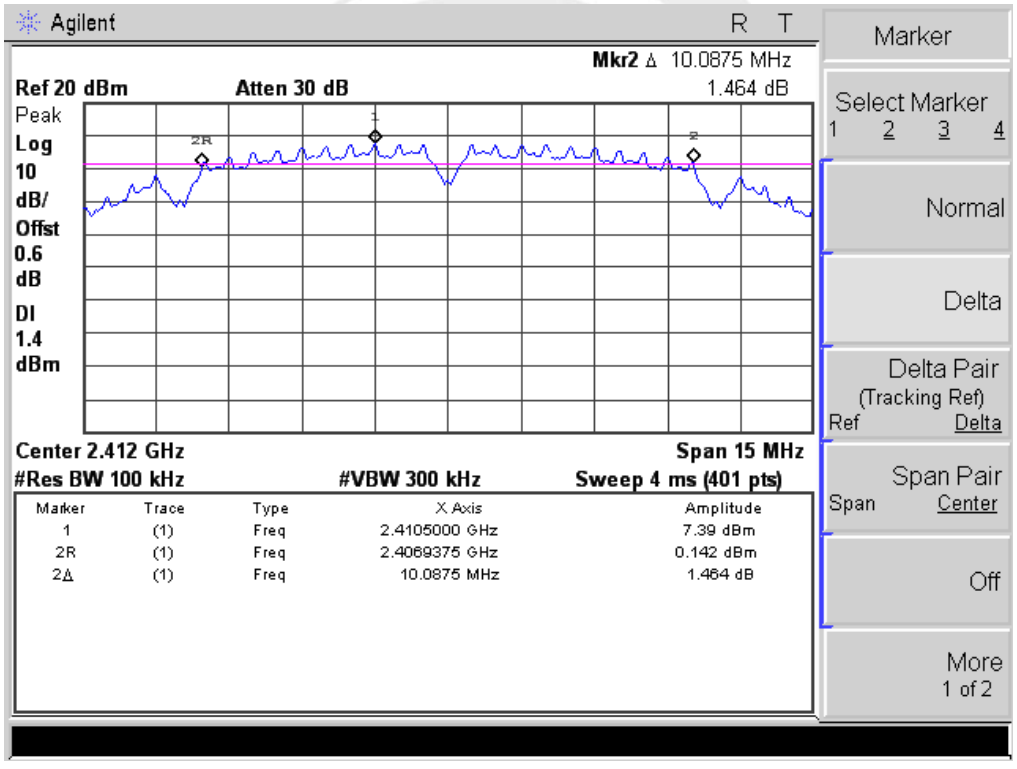
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

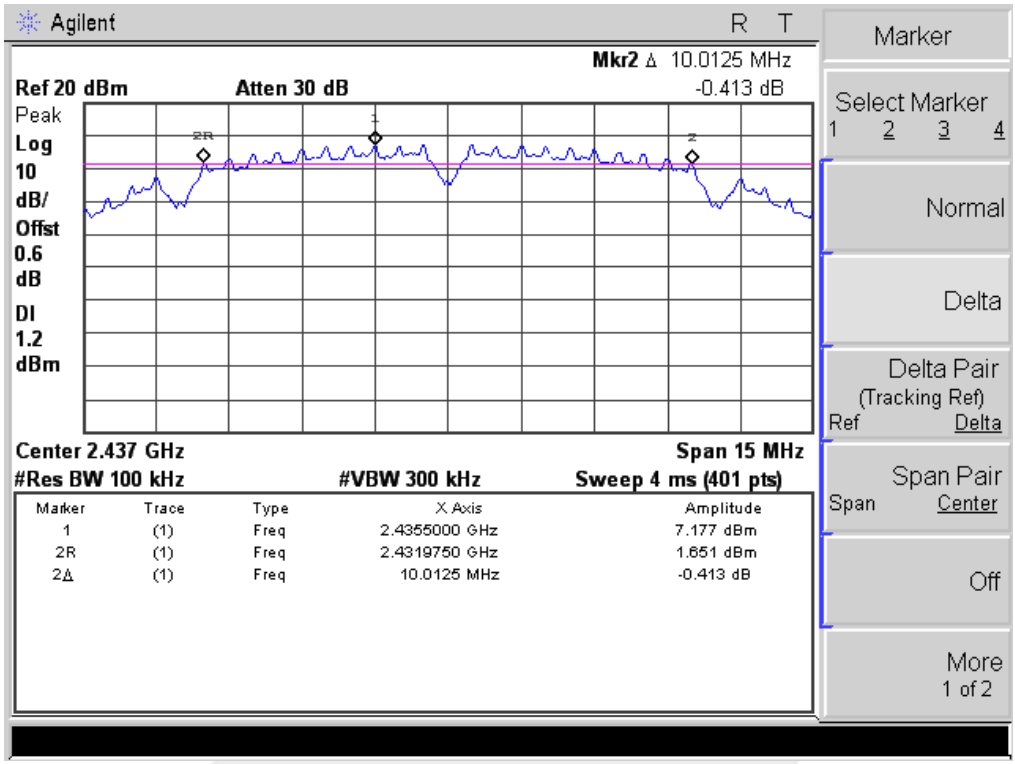
EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX b Mode /CH01, CH06, CH11		

Frequency	6dB Bandwidth(MHz)	Limit (KHz)	Result
2412 MHz	10.0875	>=500KHz	**PASS**
2437 MHz	10.0125	>=500KHz	**PASS**
2462 MHz	10.0125	>=500KHz	**PASS**

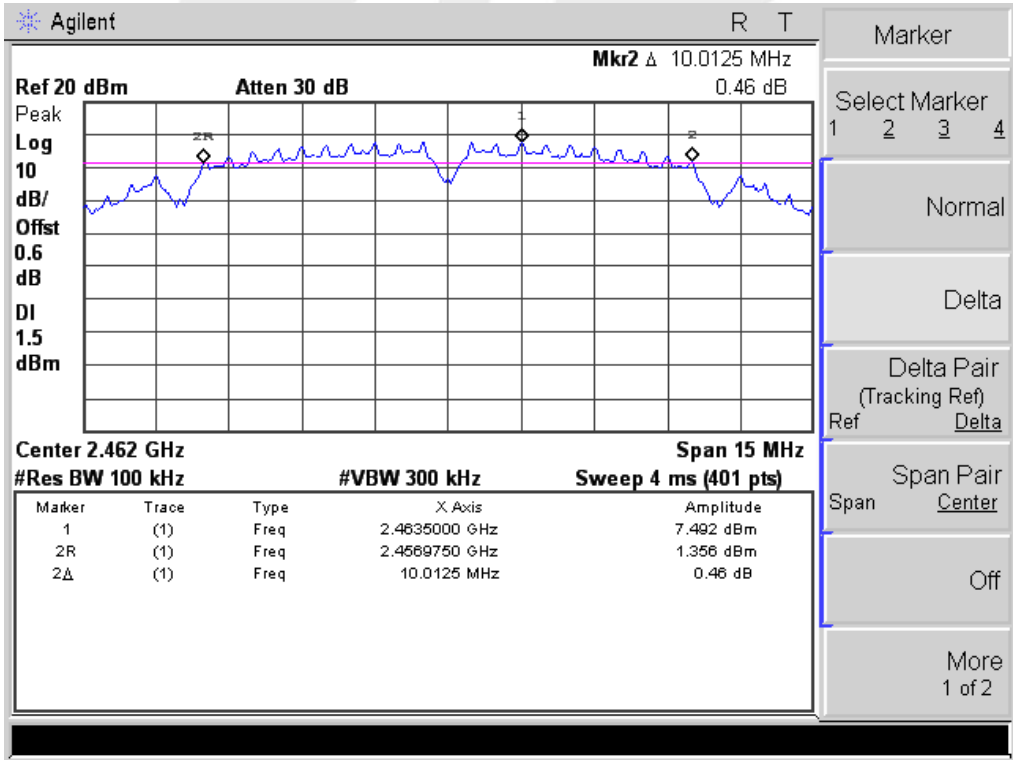
6dB Bandwidth/TX CH 01



6dB Bandwidth/TX CH 06



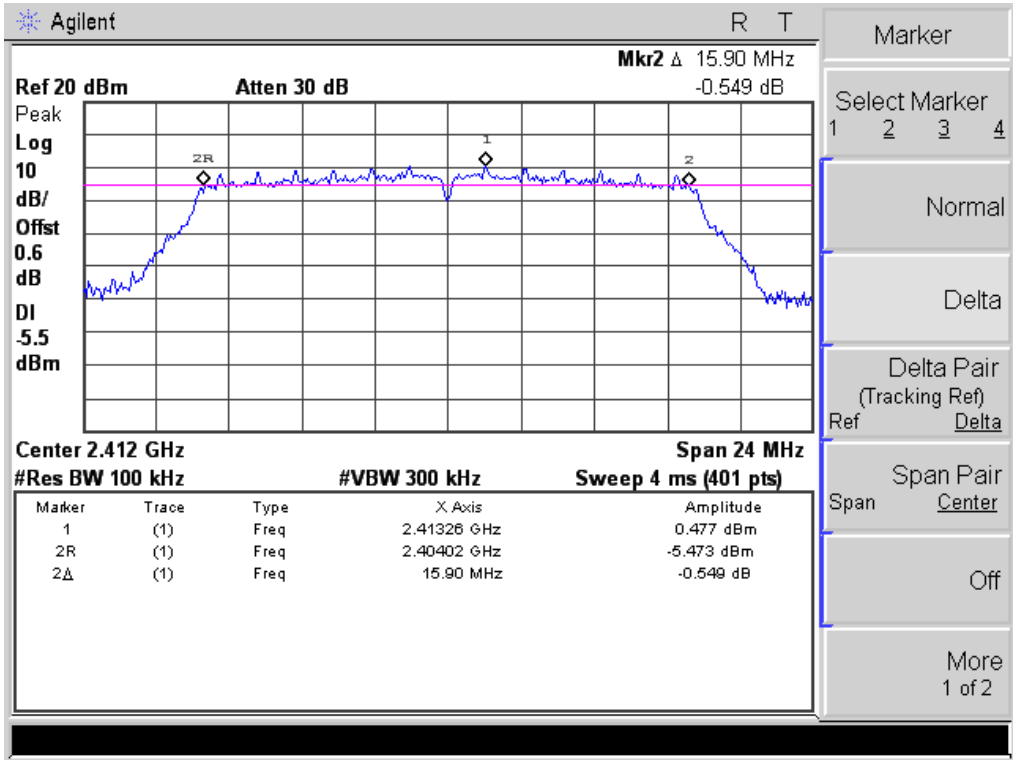
6dB Bandwidth/TX CH 11



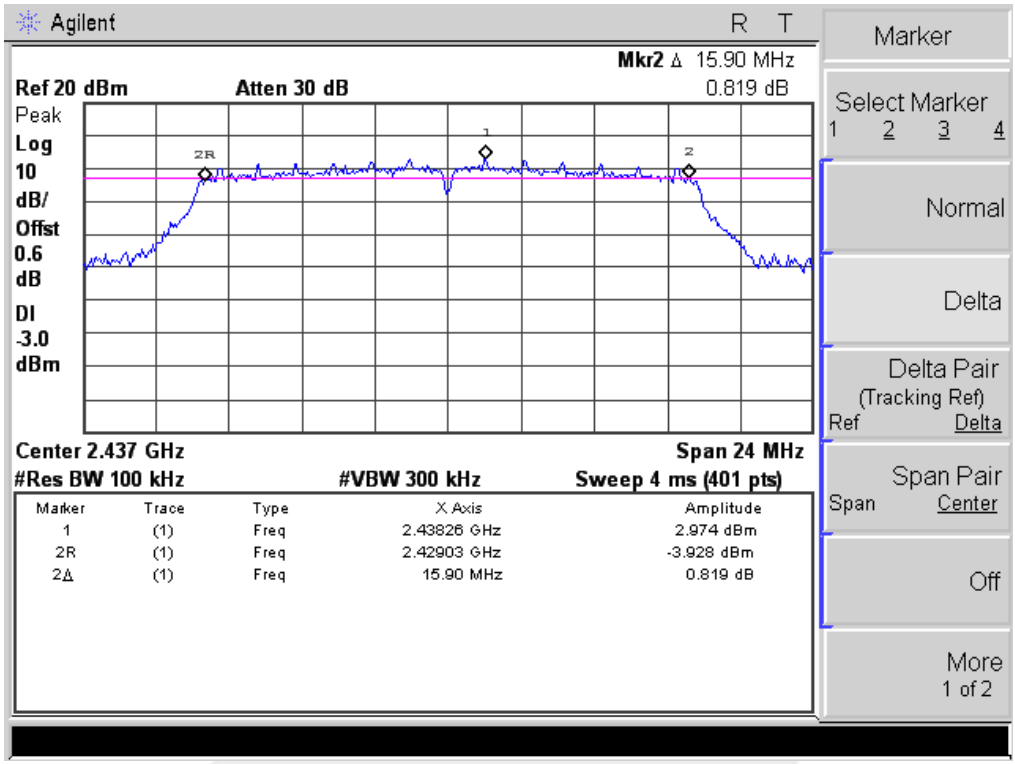
EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX g Mode /CH01, CH06, CH11		

Frequency	6dB Bandwidth(MHz)	Limit (KHz)	Result
2412 MHz	15.9000	>=500KHz	**PASS**
2437 MHz	15.9000	>=500KHz	**PASS**
2462 MHz	15.9600	>=500KHz	**PASS**

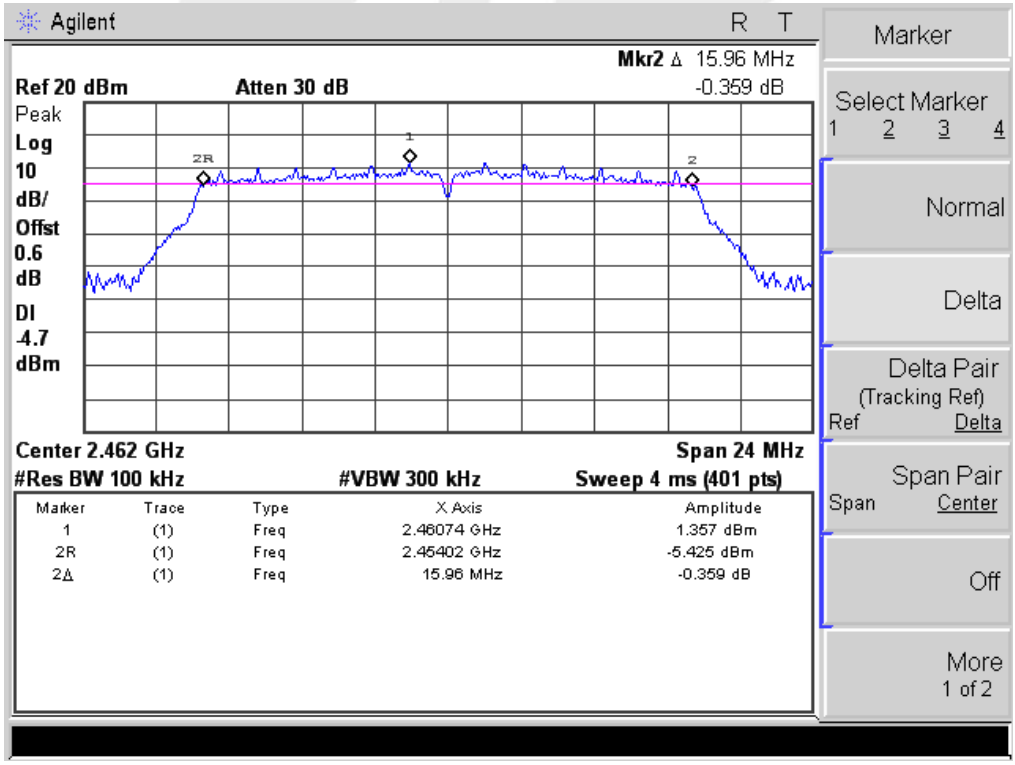
6dB Bandwidth/TX CH 01



6dB Bandwidth/TX CH 06



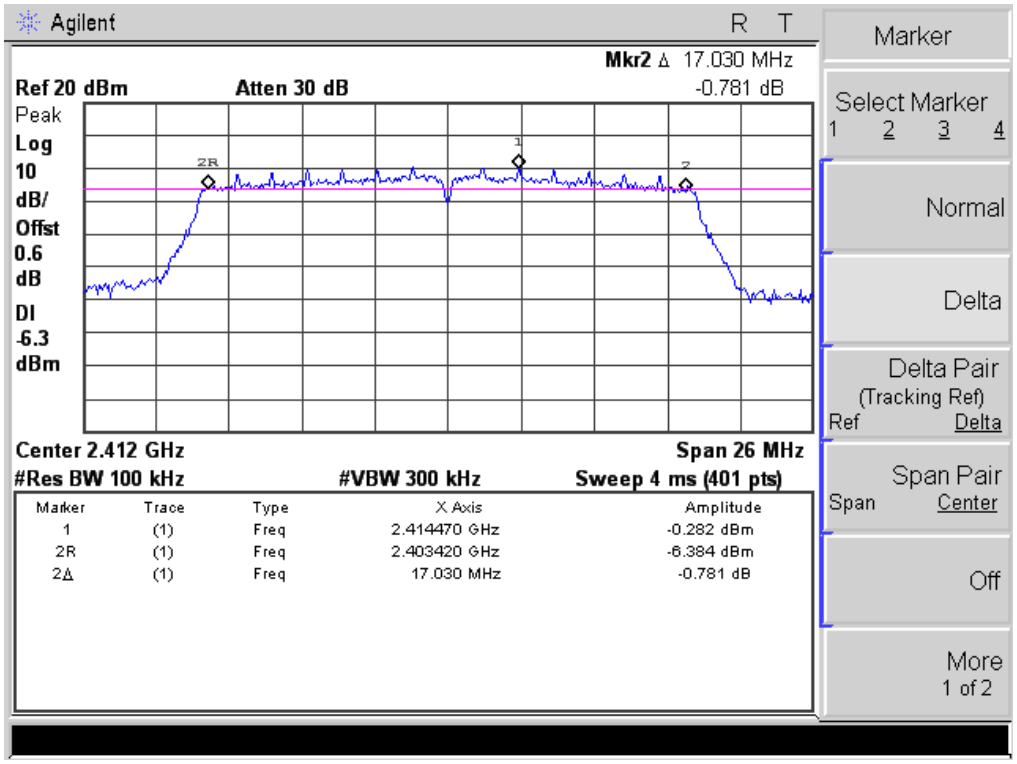
6dB Bandwidth/TX CH 11



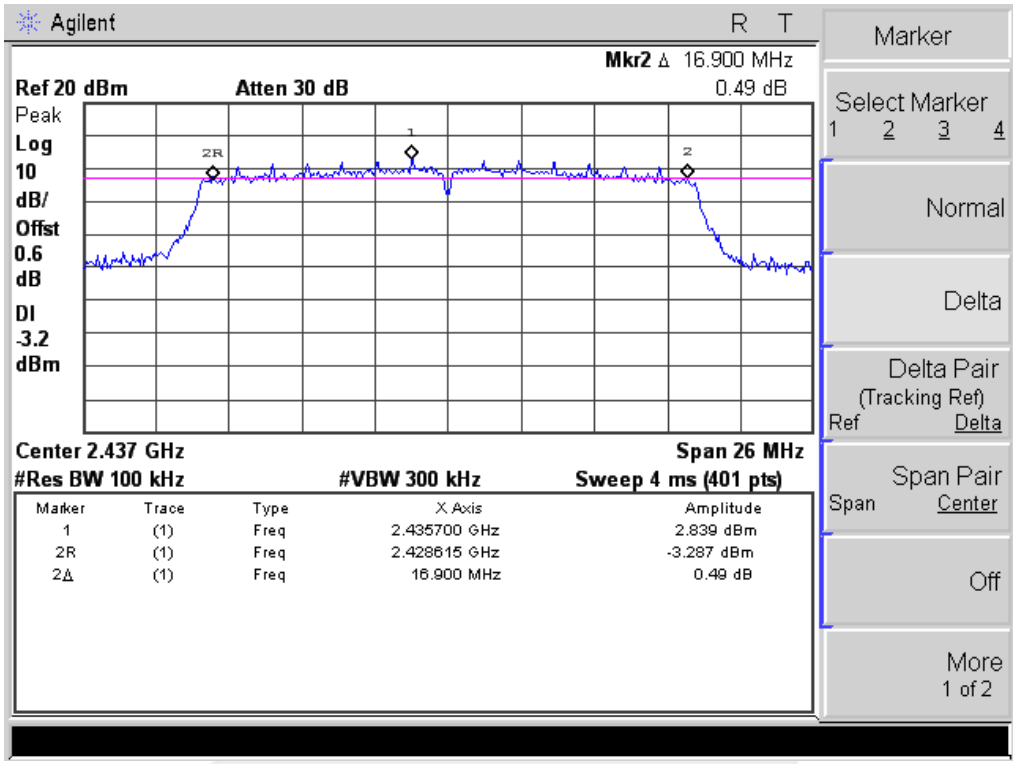
EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX n Mode(20M) /CH01, CH06, CH11		

Frequency	6dB Bandwidth(MHz)	Limit (KHz)	Result
2412 MHz	17.0300	>=500KHz	**PASS**
2437 MHz	16.9000	>=500KHz	**PASS**
2462 MHz	16.9650	>=500KHz	**PASS**

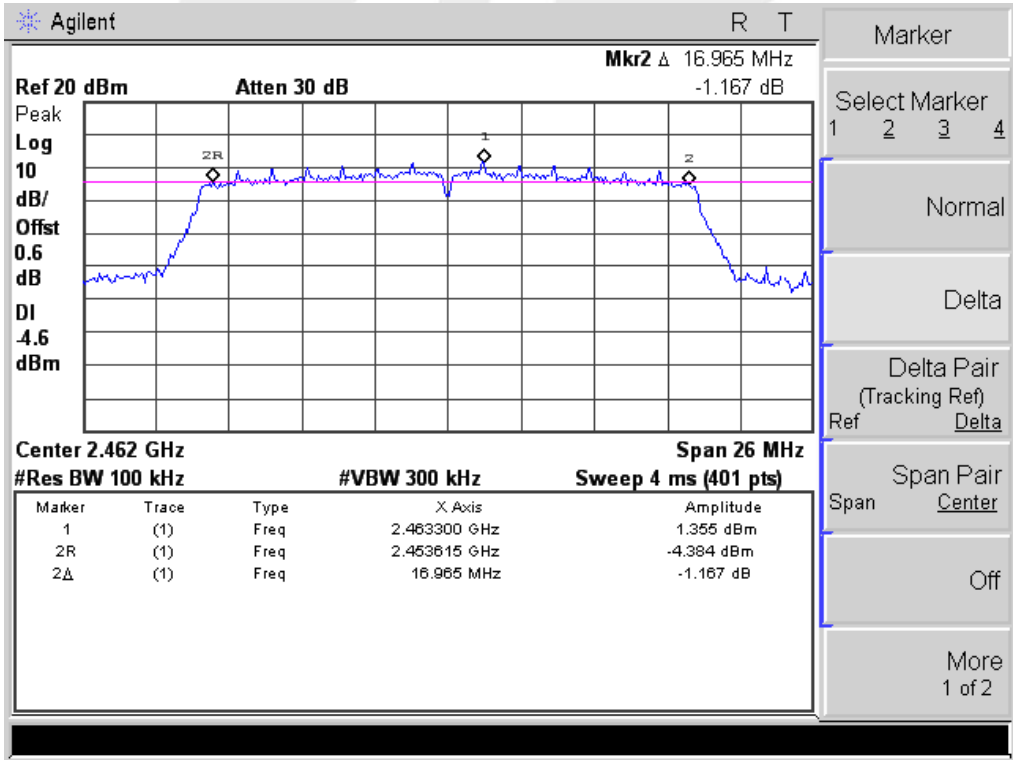
6dB Bandwidth/TX CH 01



6dB Bandwidth/TX CH 06



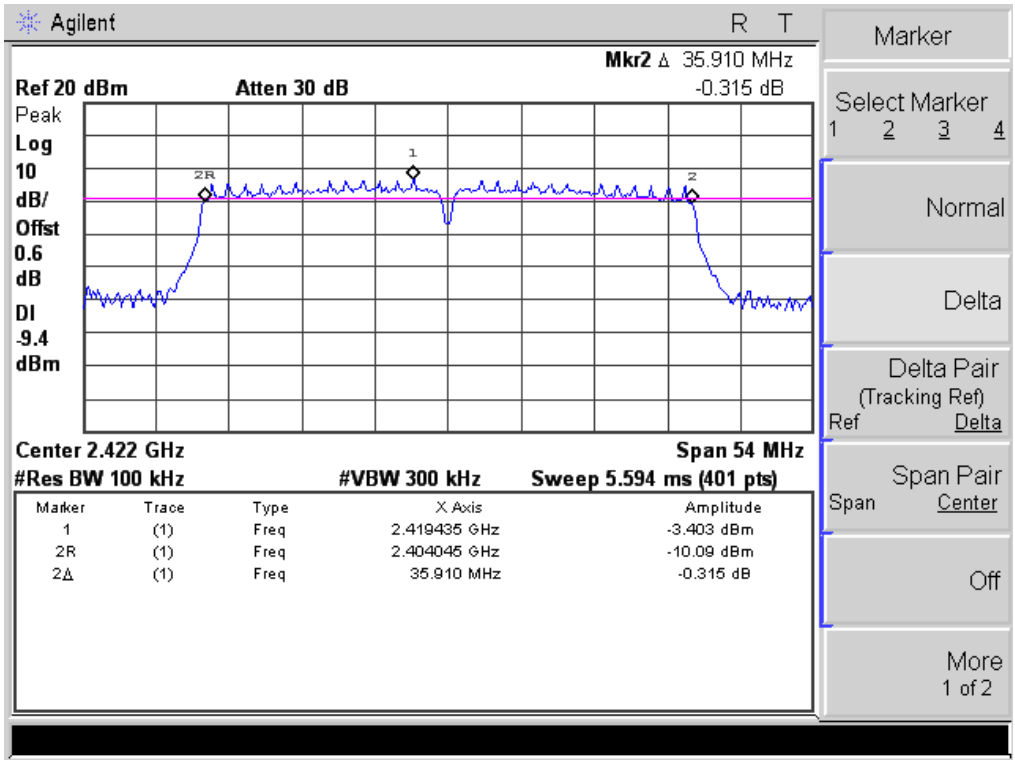
6dB Bandwidth/TX CH 11



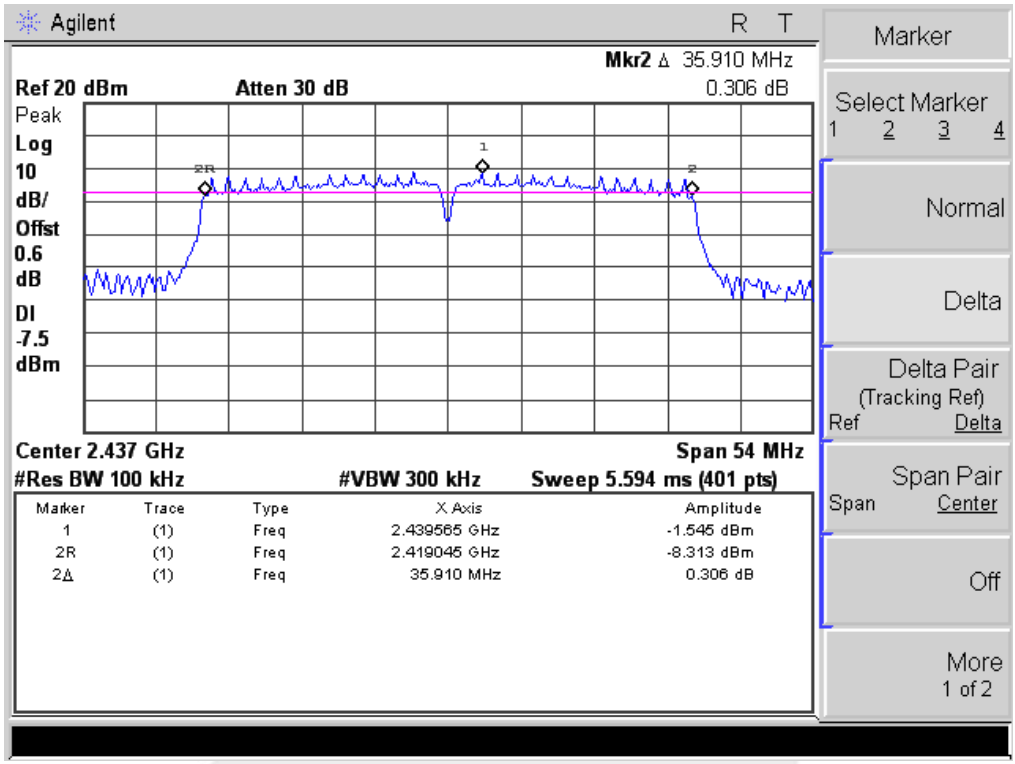
EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX n Mode(40M) /CH03, CH06, CH09		

Frequency	6dB Bandwidth(MHz)	Limit (KHz)	Result
2412 MHz	35.9100	>=500KHz	**PASS**
2437 MHz	35.9100	>=500KHz	**PASS**
2462 MHz	35.9100	>=500KHz	**PASS**

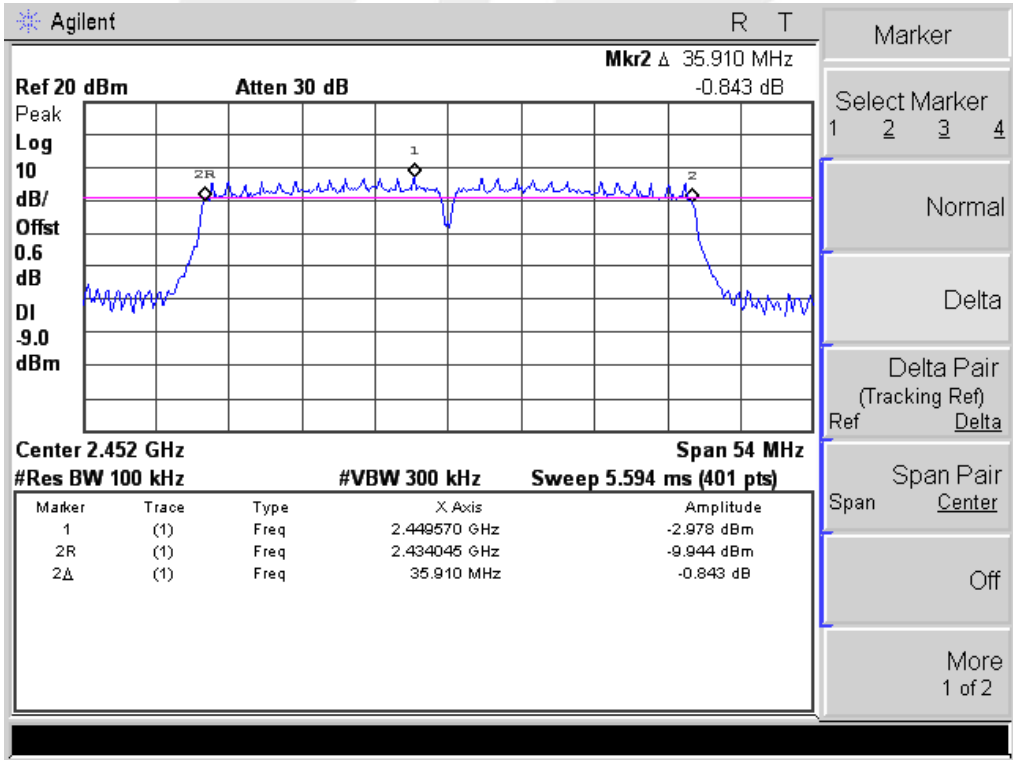
6dB Bandwidth/TX CH 03



6dB Bandwidth/TX CH 06



6dB Bandwidth/TX CH 09



7. PEAK OUTPUT POWER TEST

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

7.2 TEST PROCEDURE

a. The EUT was directly connected to the Power Sensor&Power meter

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULTS

EUT：	2.4G & 5G WiFi module	Model Name ：	HR8811AUU3
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.3V
Test Mode ：	TX b/g/n(20M,40M) Mode /CH01, CH06, CH11		

TX 802.11b Mode			
Test Channe	Frequency (MHz)	Peak Conducted Output Power (dBm)	LIMIT dBm
CH01	2412	11.56	30
CH06	2437	11.91	30
CH11	2462	11.52	30

TX 802.11g Mode			
Test Channe	Frequency (MHz)	Peak Conducted Output Power (dBm)	LIMIT dBm
CH01	2412	10.26	30
CH06	2437	10.47	30
CH11	2462	10.58	30

TX 802.11n20 Mode			
Test Channe	Frequency (MHz)	Peak Conducted Output Power (dBm)	LIMIT dBm
CH01	2412	9.35	30
CH06	2437	9.12	30
CH11	2462	9.41	30

TX 802.11n40 Mode			
Test Channe	Frequency (MHz)	Peak Conducted Output Power (dBm)	LIMIT dBm
CH03	2422	8.23	30
CH06	2437	8.34	30
CH09	2452	8.97	30

8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

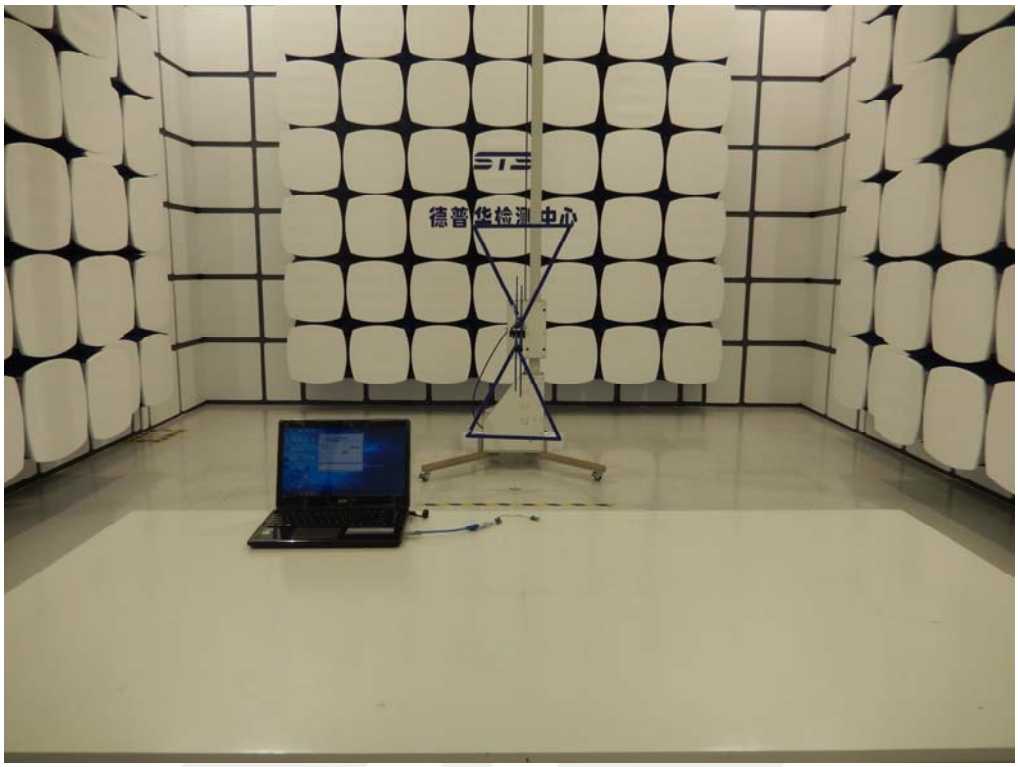
15.203requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

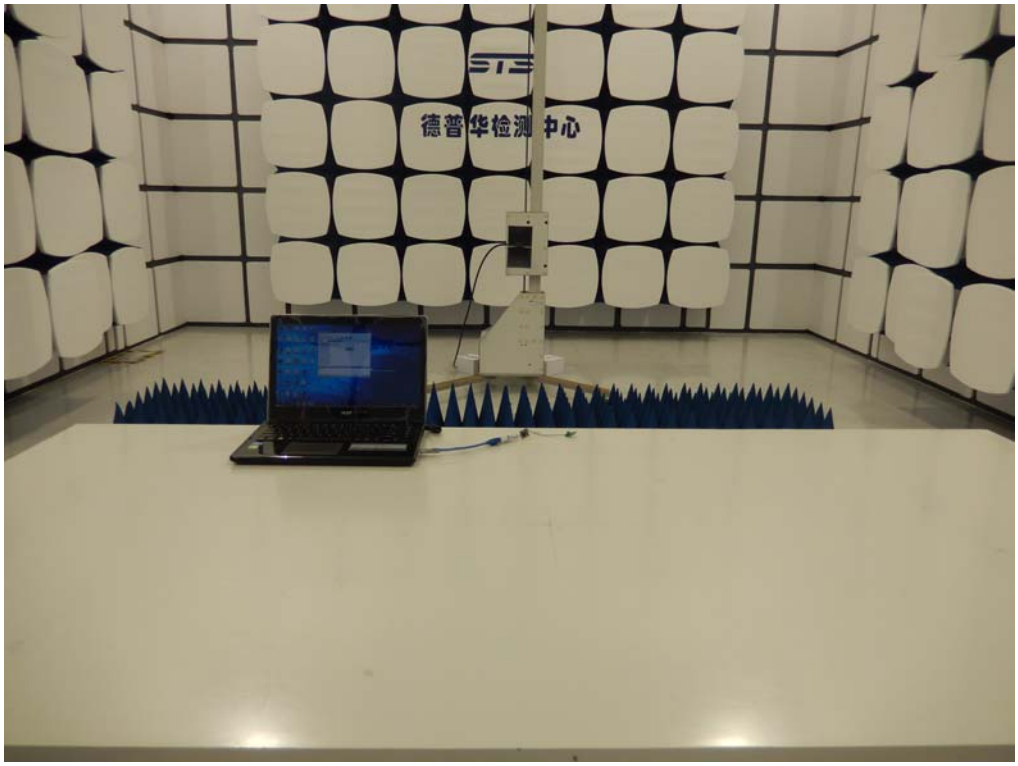
8.2 EUT ANTENNA

The EUT Is Unique Connector Antenna. It Comply With The Standard Requirement.

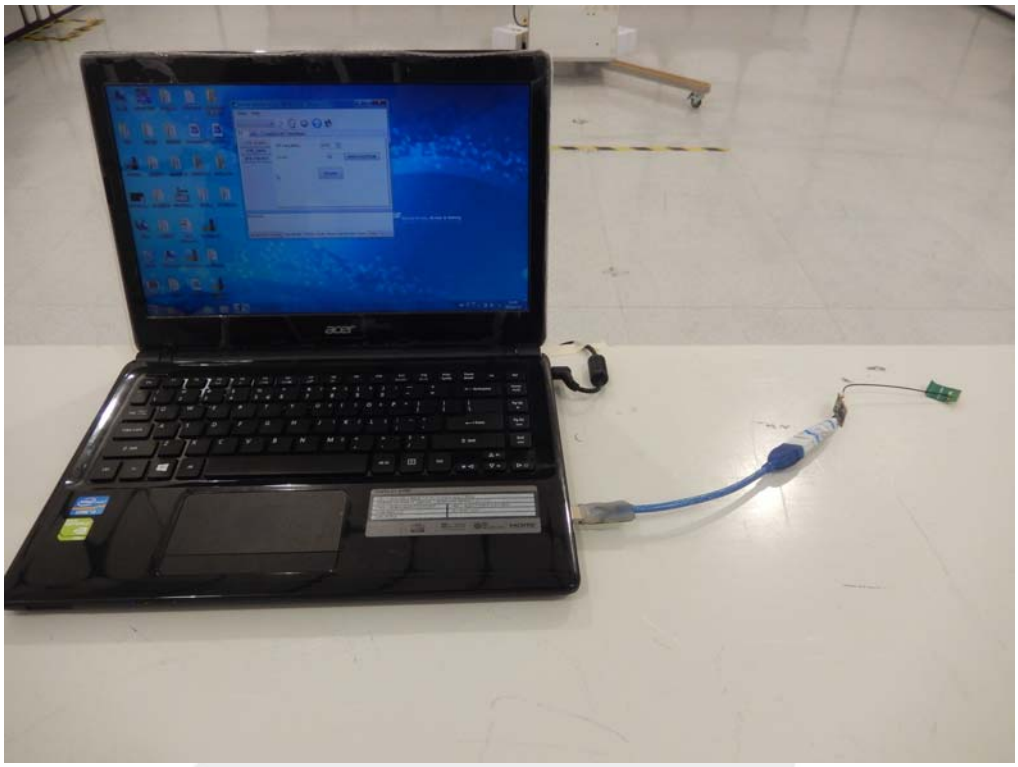
APPENDIX - PHOTOS OF TEST SETUP

Radiated Measurement Photos





Radiation from close range



Conducted Measurement Photos

Conducted from close range