

## Report on the RF Testing of:

KYOCERA Corporation  
Tablet, Model: KC-T303DT  
FCC ID: JOYEB1080

## In accordance with FCC Part15 Subpart C

Prepared for: KYOCERA Corporation  
Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku  
Yokohama-shi, Kanagawa, Japan  
Phone: +81-45-943-6253 Fax: +81-45-943-6314



Japan

**Add value.  
Inspire trust.**

## COMMERCIAL-IN-CONFIDENCE

Document Number: JPD-TR-21233-0

### SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Hiroaki Suzuki	Deputy Manager of RF Group	Approved Signatory	2021.11.18

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Japan Ltd. document control rules.

### EXECUTIVE SUMMARY – Result: Complied

A sample of this product was tested and the result above was confirmed in accordance with FCC Part15 Subpart C.



### DISCLAIMER AND COPYRIGHT

The results in this report are applicable only to the equipment tested.  
This report shall not be re-produced except in full without the written approval of TÜV SÜD Japan Ltd.

Client provided data, for which TÜV SÜD Japan Ltd. take no responsibility, which can affect validity of results within this report is clearly identified.

### ACCREDITATION

This test report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of the U.S. Government.

TÜV SÜD Japan Ltd.  
Yonezawa Testing Center  
5-4149-7 Hachimanpara,  
Yonezawa-shi, Yamagata,  
992-1128 Japan

Phone: +81 (0) 238 28 2881  
[www.tuvsud.com/ja-jp](http://www.tuvsud.com/ja-jp)

## Contents

<b>1</b>	<b>Summary of Test</b>	<b>3</b>
1.1	Modification history of the test report	3
1.2	Standards	3
1.3	Test methods	3
1.4	Deviation from standards	3
1.5	List of applied test(s) of the EUT	3
1.6	Test information	3
1.7	Test set up	3
1.8	Test period	3
<b>2</b>	<b>Equipment Under Test</b>	<b>4</b>
2.1	EUT information	4
2.2	Modification to the EUT	5
2.3	Variation of family model(s)	5
2.4	Operating channels and frequencies	5
2.5	Description of test mode	6
2.6	Operating flow	6
<b>3</b>	<b>Configuration of Equipment</b>	<b>7</b>
3.1	Equipment used	7
3.2	Cable(s) used	7
3.3	System configuration	7
<b>4</b>	<b>Test Result</b>	<b>8</b>
4.1	DTS Bandwidth / Occupied Bandwidth (99%)	8
4.2	Maximum Conducted Output Power	13
4.3	Band Edge Compliance of RF Conducted Emissions	15
4.4	Spurious emissions - Conducted -	20
4.5	Spurious Emissions - Radiated -	31
4.6	Restricted Band of Operation	55
4.7	Transmitter Power Spectral Density	63
4.8	AC Power Line Conducted Emissions	68
<b>5</b>	<b>Antenna requirement</b>	<b>71</b>
<b>6</b>	<b>Measurement Uncertainty</b>	<b>72</b>
<b>7</b>	<b>Laboratory Information</b>	<b>73</b>
<b>Appendix A. Test Equipment</b>		<b>74</b>
<b>Appendix B. Duty Cycle</b>		<b>75</b>

## 1 Summary of Test

### 1.1 Modification history of the test report

Document Number	Modification History	Issue Date
JPD-TR-21233-0	First Issue	Refer to the cover page

### 1.2 Standards

CFR47 FCC Part 15 Subpart C

### 1.3 Test methods

ANSI C63.10-2013  
KDB 558074 D01 15.247 Meas Guidance v05r02

### 1.4 Deviation from standards

None

### 1.5 List of applied test(s) of the EUT

Test item section	Test item	Condition	Result	Remark
15.247(a)(2)	DTS Bandwidth / Occupied Bandwidth (99%)	Conducted	PASS	-
15.247(b)(3)	Maximum conducted (average) output power	Conducted	PASS	-
15.247(d)	Band Edge Compliance of RF Conducted Emissions	Conducted	PASS	-
15.247(d) 15.205 15.209	Spurious Emissions	Conducted	PASS	-
		Radiated	PASS	-
15.247(d) 15.205 15.209	Restricted Bands of Operation	Radiated	PASS	-
15.247(e)	Transmitter Power Spectral Density	Conducted	PASS	-
15.207	AC Power Line Conducted Emissions	Conducted	PASS	-

### 1.6 Test information

None

### 1.7 Test set up

Table-top

### 1.8 Test period

22-September-2021 - 9-November-2021

## 2 Equipment Under Test

All information in this chapter was provided by the applicant.

### 2.1 EUT information

Applicant	KYOCERA Corporation Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku Yokohama-shi, Kanagawa, Japan Phone: +81-45-943-6253 Fax: +81-45-943-6314
Equipment Under Test (EUT)	Tablet
Model number	KC-T303DT
Serial number	1080FCCRF01, 1080FCCRF02
Trade name	Kyocera
Number of sample(s)	2
EUT condition	Prototype
Power rating	Battery: DC 3.8 V
Size	(W) 260 mm × (D) 169 mm × (H) 10.2 mm
Environment	Indoor and Outdoor use
Terminal limitation	-20°C to 60°C
Hardware Version	DMT
Software Version	0.130.JS
Firmware Version	Not applicable
RF Specification	
Protocol	IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20),
Frequency range	IEEE802.11b /11g /11n (HT20): 2412 MHz-2462 MHz
Number of RF Channels	11 Channels
Modulation type	IEEE802.11b: DSSS (DBPSK, DQPSK, CCK) IEEE802.11g / 11n (HT20): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Data rate	IEEE802.11b: 1, 2, 5.5, 11Mbps IEEE802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps IEEE802.11n (HT20 LGI): 6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps IEEE802.11n (HT20 SGI): 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2Mbps
Channel separation	5 MHz
Conducted power	18.836 mW (IEEE802.11b) 119.399 mW (IEEE802.11g) 162.181 mW (IEEE802.11n: HT20)
Antenna type	Internal antenna
Antenna gain	1.9 dBi

## 2.2 Modification to the EUT

The table below details modifications made to the EUT during the test project.

Modification State	Description of Modification	Modification fitted by	Date of Modification
Model: KC-T303DT, Serial Number: 1080FCCRF01, 1080FCCRF02			
0	As supplied by the applicant	Not Applicable	Not Applicable

## 2.3 Variation of family model(s)

### 2.3.1 List of family model(s)

Not applicable

### 2.3.2 Reason for selection of EUT

Not applicable

## 2.4 Operating channels and frequencies

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

## 2.5 Description of test mode

The EUT had been tested under operating condition.  
There are three channels have been tested as following:

Tested Channel [11b, 11g, 11n(HT20)]	Frequency [MHz]
Low	2412
Middle	2437
High	2462

The pre-test has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

Tested Channel	Modulation Type	Data Rate
Low, Middle, High	IEEE802.11b: DSSS	1Mbps
Low, Middle, High	IEEE802.11g: OFDM	6Mbps
Low, Middle, High	IEEE802.11n (HT20 LGI): OFDM	MCS0 (6.5Mbps)

The field strength of spurious emissions was measured at each position of all three axis X, Y and Z to compare the level, and the maximum noise.

The worst emission was found in X-axis and the worst case recorded.

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports.

## 2.6 Operating flow

### - Tx mode

- i) Test program setup to the Software
- ii) Select a Test mode  
[IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20)]  
Operating frequency: Channel Low: 2412MHz, Channel Middle: 2437MHz, Channel High: 2462MHz
- iii) Start test mode

### - Rx mode

- i) Test program setup to the Software
- ii) Select a Test mode  
[IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20)]  
Operating frequency: Channel Low: 2412MHz, Channel Middle: 2437MHz, Channel High: 2462MHz
- iii) Start test mode

### 3 Configuration of Equipment

Numbers assigned to equipment on the diagram in “3.3 System configuration” correspond to the list in “3.1 Equipment used” and “3.2 Cable(s) used”.

This test configuration is based on the manufacture’s instruction.

Cabling and setup(s) were taken into consideration and test data was taken under worse case condition.

#### 3.1 Equipment used

No.	Equipment	Company	Model No.	Serial No.	FCC ID/DoC	Comment
1	Tablet	KYOCERA	KC-T303DT	1080FCCRF01, 1080FCCRF02	JOYEB1080	EUT
2	AC Adapter	JUSTSYSTEMS.	ADT306	JHA	N/A	*

\*:AC power line Conducted Emission Test.

#### 3.2 Cable(s) used

No.	Equipment	Length[m]	Shield	Connector	Comment
a	DC cable for AC Adapter	1.2	No	Plastic	*

\*:AC power line Conducted Emission Test.

#### 3.3 System configuration



## 4 Test Result

### 4.1 DTS Bandwidth / Occupied Bandwidth (99%)

#### 4.1.1 Measurement procedure

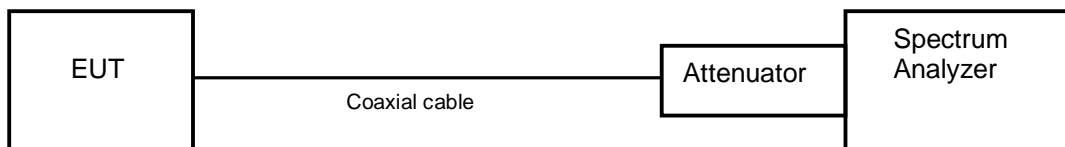
[FCC 15.247(a)(2), KDB 558074 D01 v05r02, Section 8.2]

The bandwidth at 6dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;

- a) RBW = 100kHz.
- b) VBW  $\geq 3 \times$  RBW.
- c) Sweep time = auto-couple.
- d) Detector = peak.
- e) Trace mode = max hold.

- Test configuration



#### 4.1.2 Limit

The minimum permissible 6 dB bandwidth is 500 kHz.



#### 4.1.3 Measurement result

Date : 22-September-2021  
 Temperature : 21.0 [°C]  
 Humidity : 61.2 [%]  
 Test place : Shielded room No.4

Test engineer : Kazunori Saito

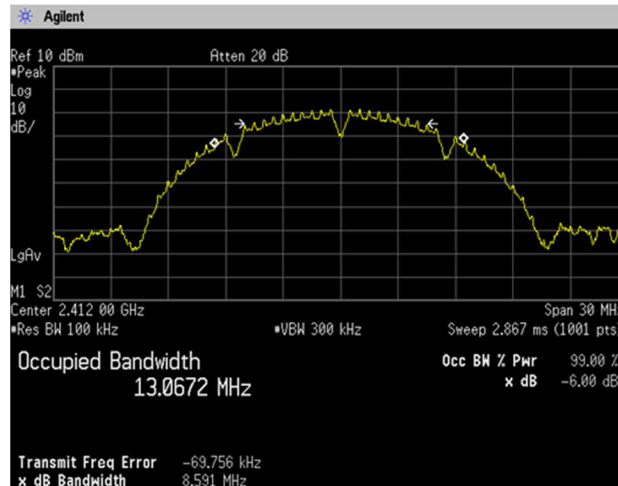
Channel	DTS Bandwidth [MHz]		
	IEEE802.11b	IEEE802.11g	IEEE802.11n (HT20)
Low	8.591	15.976	17.206
Middle	8.081	15.457	15.141
High	7.569	13.846	13.846

Channel	Occupied Bandwidth (99%) [MHz]		
	IEEE802.11b	IEEE802.11g	IEEE802.11n (HT20)
Low	13.067	16.451	17.628
Middle	12.516	16.258	17.409
High	12.113	16.142	17.253

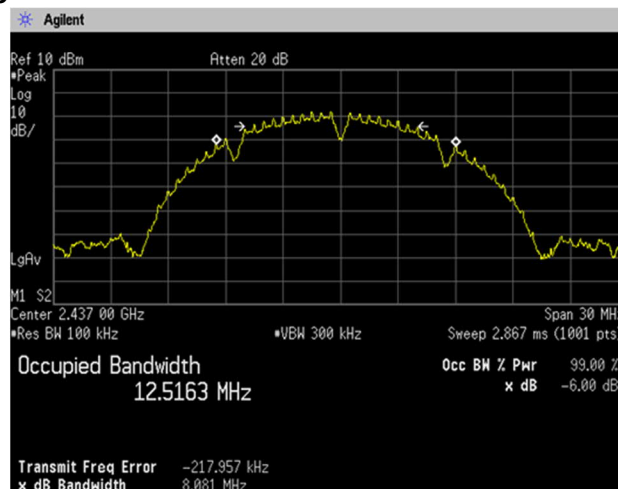
#### 4.1.4 Trace data

[IEEE802.11b]

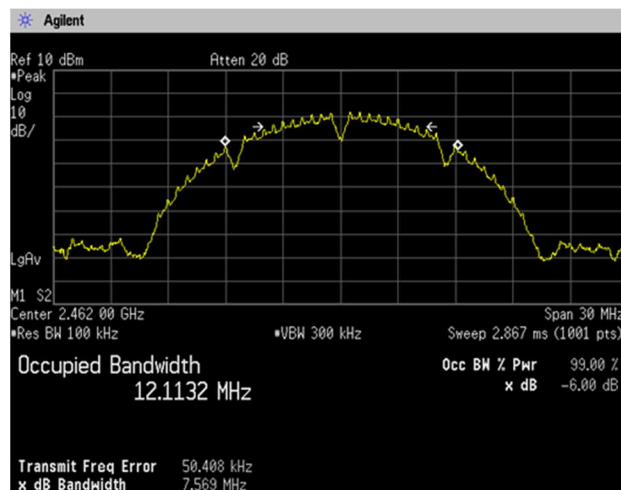
##### Channel Low



##### Channel Middle

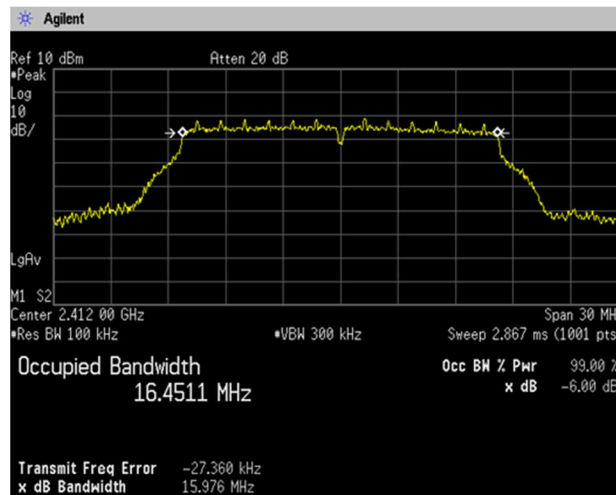


##### Channel High

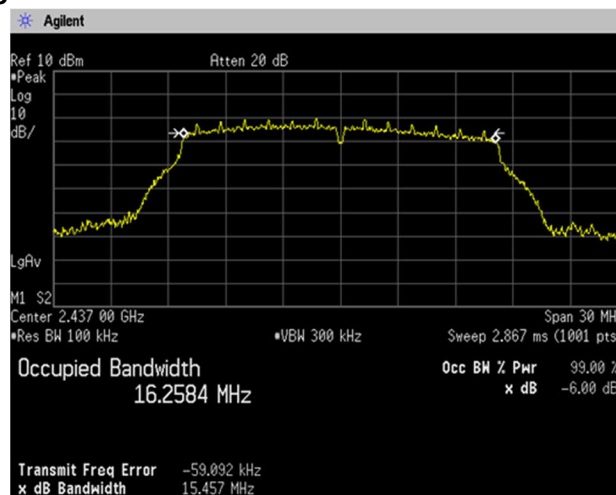


## [IEEE802.11g]

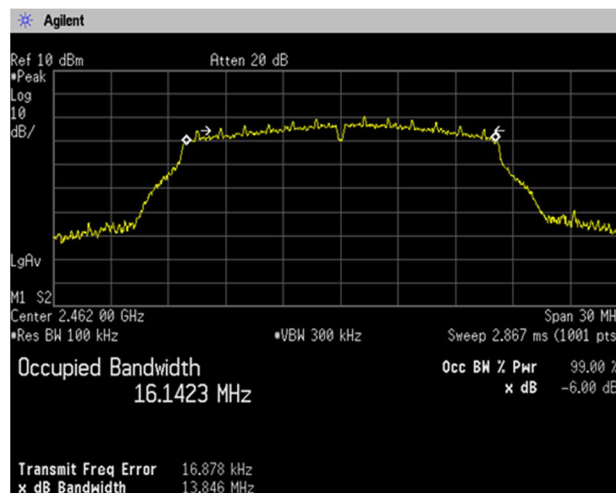
## Channel Low



## Channel Middle

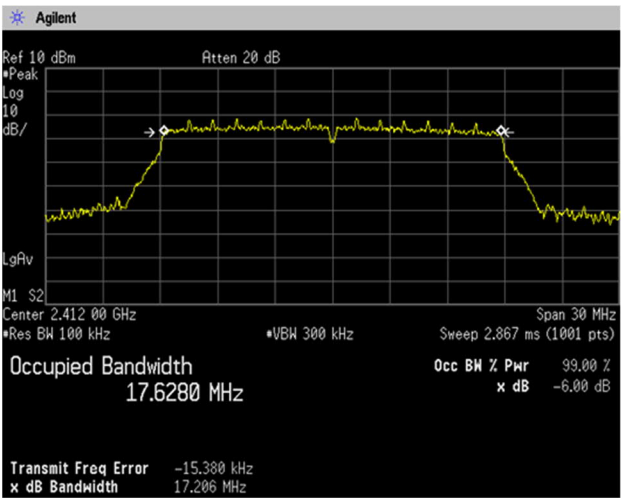


## Channel High

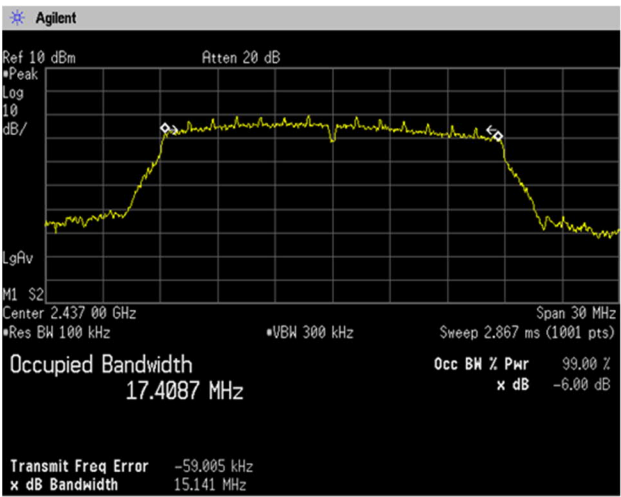


[IEEE802.11n (HT20)]

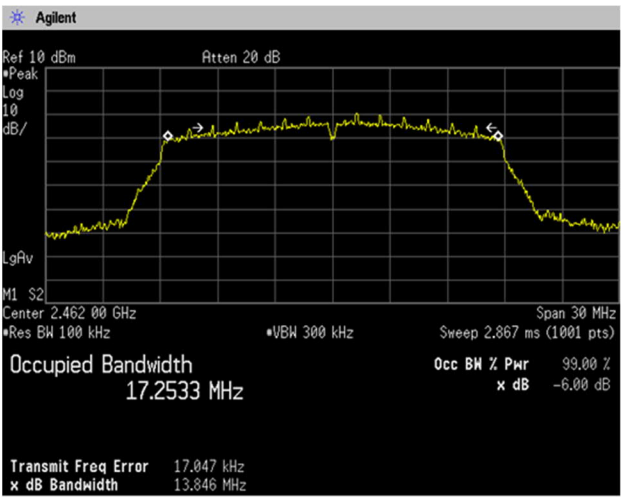
Channel Low



Channel Middle



Channel High



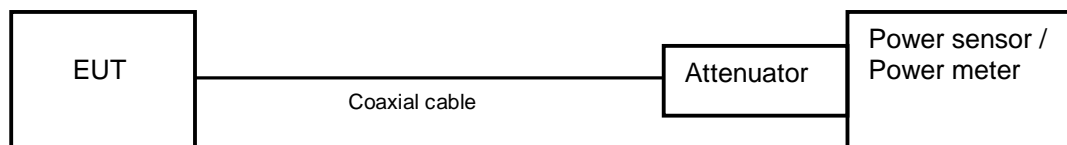
## 4.2 Maximum Conducted Output Power

### 4.2.1 Measurement procedure

[FCC 15.247(b)(3), KDB 558074 D01 v05r02, Section 8.3.1.3]

The peak power is measured with a power sensor connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

- Test configuration



### 4.2.2 Limit

1 W (1000 mW) or less

#### 4.2.3 Measurement result

Date : 22-September-2021  
 Temperature : 21.0 [°C]  
 Humidity : 61.2 [%]  
 Test place : Shielded room No.4

Test engineer : Kazunori Saito

##### [IEEE802.11b]

###### Battery Full

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Peak Output Power (mW)	Limit (mW)	Result
Low	2412	2.11	10.49	12.60	18.197	≤1000	PASS
Middle	2437	2.24	10.49	12.73	18.750	≤1000	PASS
High	2462	2.26	10.49	12.75	18.836	≤1000	PASS

##### [IEEE802.11g]

###### Battery Full

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Peak Output Power (mW)	Limit (mW)	Result
Low	2412	10.28	10.49	20.77	119.399	≤1000	PASS
Middle	2437	9.40	10.49	19.89	97.499	≤1000	PASS
High	2462	9.03	10.49	19.52	89.536	≤1000	PASS

##### [IEEE802.11n (HT20)]

###### Battery Full

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Peak Output Power (mW)	Limit (mW)	Result
Low	2412	11.39	10.49	21.88	154.170	≤1000	PASS
Middle	2437	11.61	10.49	22.10	162.181	≤1000	PASS
High	2462	10.78	10.49	21.27	133.968	≤1000	PASS

Calculation;

$$\text{Reading (dBm)} + \text{Factor (dB)} = \text{Level (dBm)}$$

$$10\log P = \text{Level (dBm)}$$

$$P = 10^{(\text{Maximum Peak Output Power} / 10)} \text{ (mW)}$$

### 4.3 Band Edge Compliance of RF Conducted Emissions

#### 4.3.1 Measurement procedure

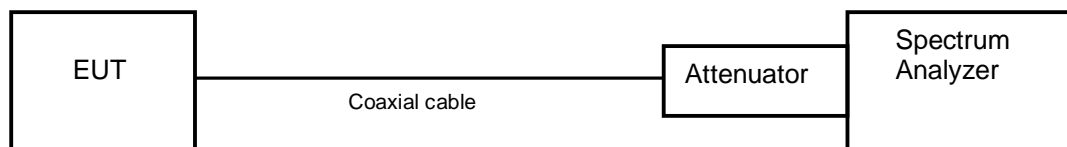
##### [FCC 15.247(d), KDB 558074 D01 v05r02, Section 8.5]

The Band Edge is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;

- a) Span = Arbitrary setting. (Setting suitable for measurement.)
- b) RBW = 100kHz.
- c) VBW  $\geq 3 \times$  RBW
- d) Sweep time = auto-couple.
- e) Detector = peak.
- f) Trace mode = max hold.

- Test configuration



#### 4.3.2 Limit

In any 100 kHz bandwidth outside the frequency band 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.

#### 4.3.3 Measurement result

Date : 22-September-2021  
 Temperature : 21.0 [°C]  
 Humidity : 61.2 [%]  
 Test place : Shielded room No.4

Test engineer : Kazunori Saito

##### [IEEE802.11b]

Channel	Frequency (MHz)	RF Power Level (dBm)	Band-edge Frequency (MHz)	Band-edge Level (dBm)	Difference Level (dBm)	Limit (dBm)	Result
Low	2412.00	-8.46	2399.52	-59.15	50.69	At least 20dB below from peak of RF	PASS
High	2462.00	-8.08	2485.42	-68.76	60.68	At least 20dB below from peak of RF	PASS

##### [IEEE802.11g]

Channel	Frequency (MHz)	RF Power Level (dBm)	Band-edge Frequency (MHz)	Band-edge Level (dBm)	Difference Level (dBm)	Limit (dBm)	Result
Low	2412.00	-11.24	2399.84	-48.00	36.76	At least 20dB below from peak of RF	PASS
High	2462.00	-9.40	2483.90	-62.85	53.45	At least 20dB below from peak of RF	PASS

##### [IEEE802.11n (HT20)]

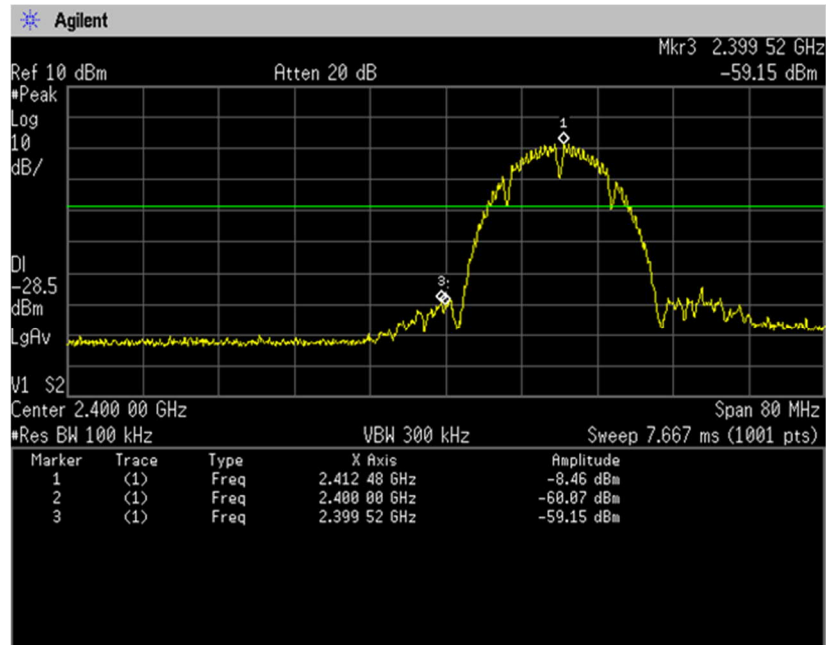
Channel	Frequency (MHz)	RF Power Level (dBm)	Band-edge Frequency (MHz)	Band-edge Level (dBm)	Difference Level (dBm)	Limit (dBm)	Result
Low	2412.00	-11.60	2399.84	-48.72	37.12	At least 20dB below from peak of RF	PASS
High	2462.00	-9.40	2483.98	-63.03	53.63	At least 20dB below from peak of RF	PASS



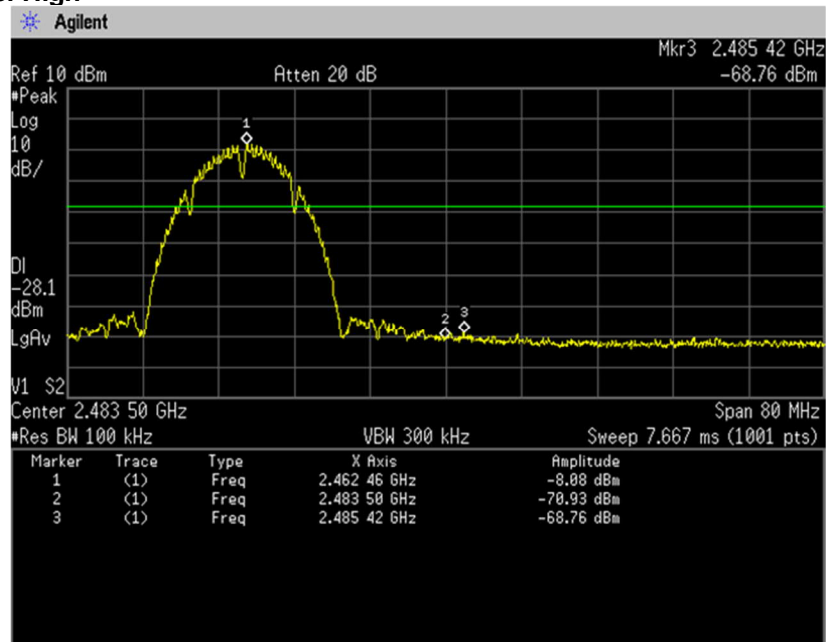
#### 4.3.4 Trace data

[IEEE802.11b]

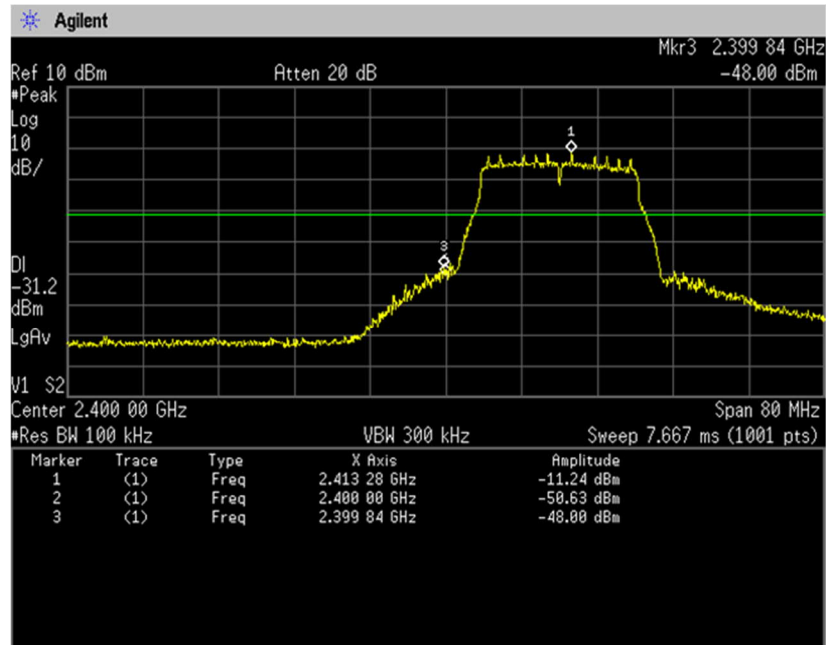
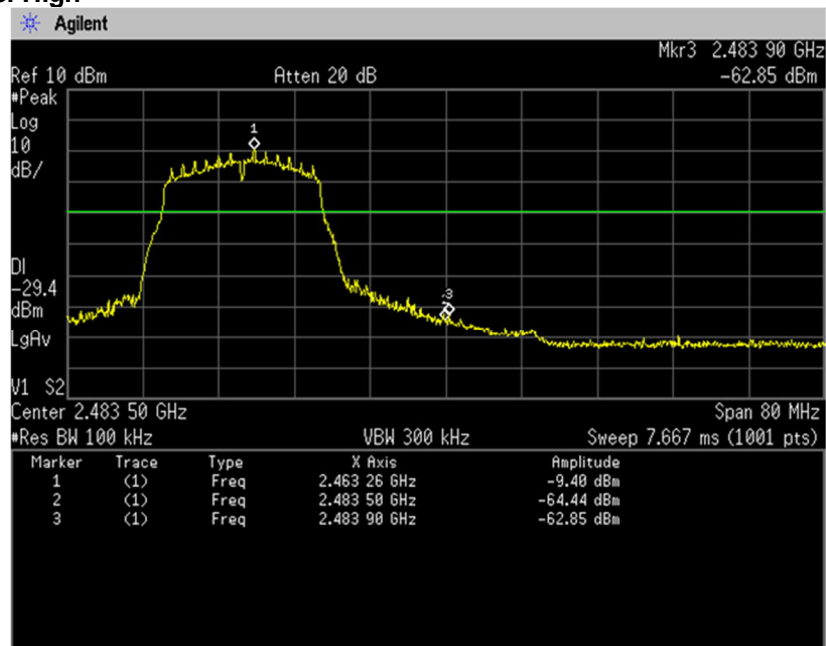
##### Channel Low



##### Channel High

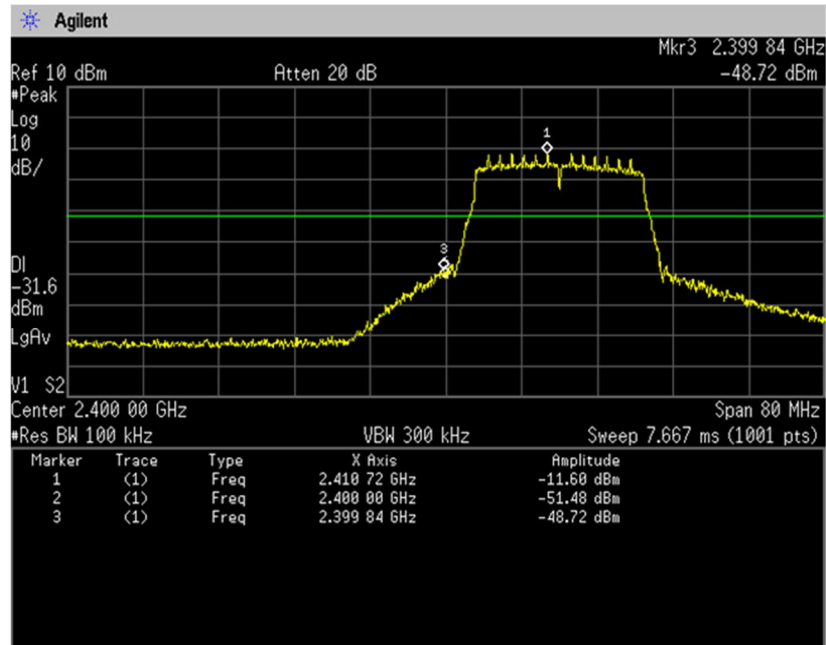


[IEEE802.11g]

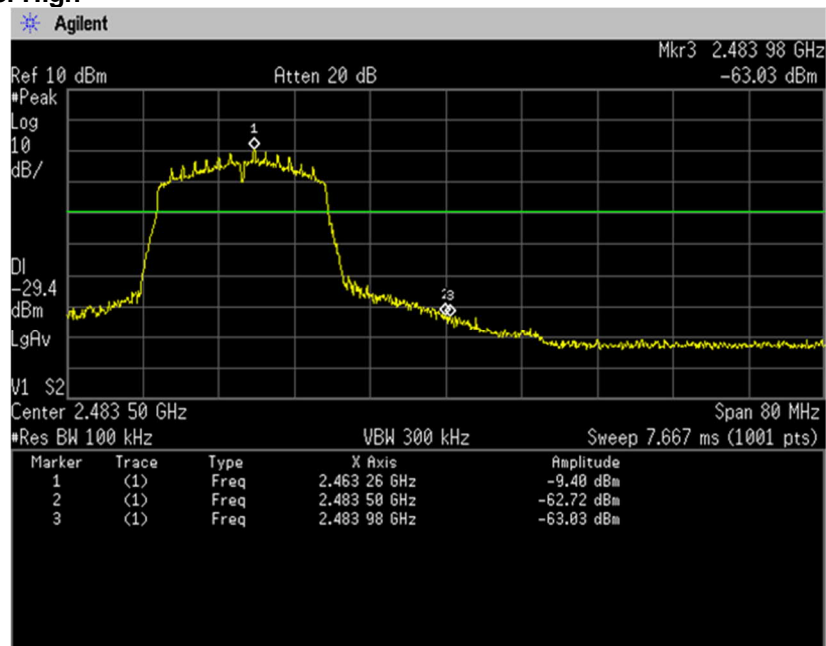
**Channel Low****Channel High**

## [IEEE802.11n (HT20)]

## Channel Low



## Channel High



#### 4.4 Spurious emissions - Conducted -

##### 4.4.1 Measurement procedure

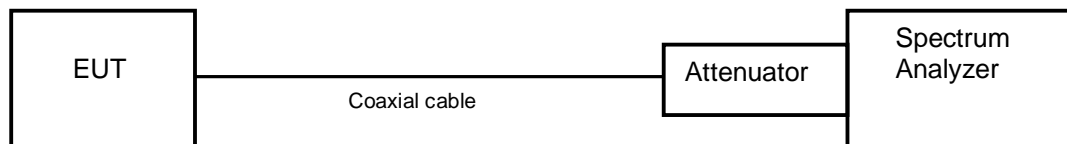
###### [FCC 15.247(d), KDB 558074 D01 v05r02, Section 8.5]

The spurious emissions (Conducted) are measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;

- a) Span = wide enough to fully capture the emission being measured.
- b) RBW = 100 kHz.
- c) VBW  $\geq$  RBW.
- d) Sweep time = auto-couple.
- e) Detector = peak.
- f) Trace mode = max hold.

- Test configuration



##### 4.4.2 Limit

In any 100 kHz bandwidth outside the frequency band 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.

#### 4.4.3 Measurement result

Date : 22-September-2021  
Temperature : 21.0 [°C]  
Humidity : 61.2 [%]  
Test place : Shielded room No.4

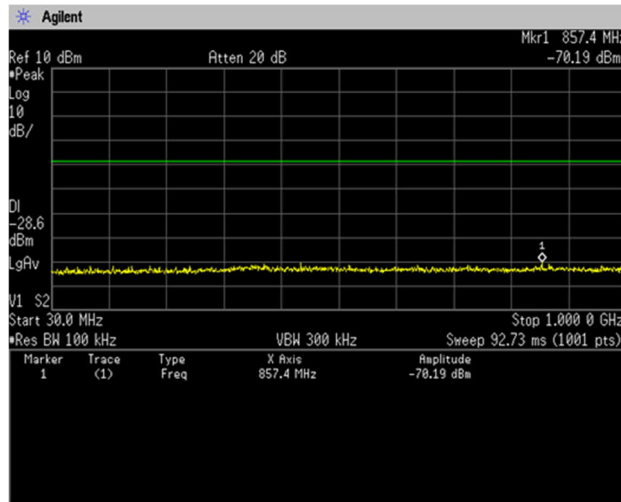
Test engineer : Kazunori Saito

##### [IEEE802.11b、IEEE802.11g、IEEE802.11n (HT20)]

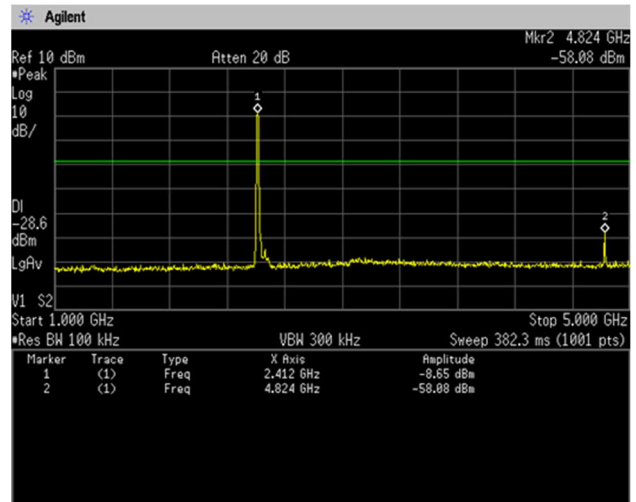
Channel	Frequency [MHz]	Limit [dB]	Results Chart	Result
Low	2412	At least 20dB below from peak of RF	See the trace Data	PASS
Middle	2437	At least 20dB below from peak of RF	See the trace Data	PASS
High	2462	At least 20dB below from peak of RF	See the trace Data	PASS

#### 4.4.4 Trace data

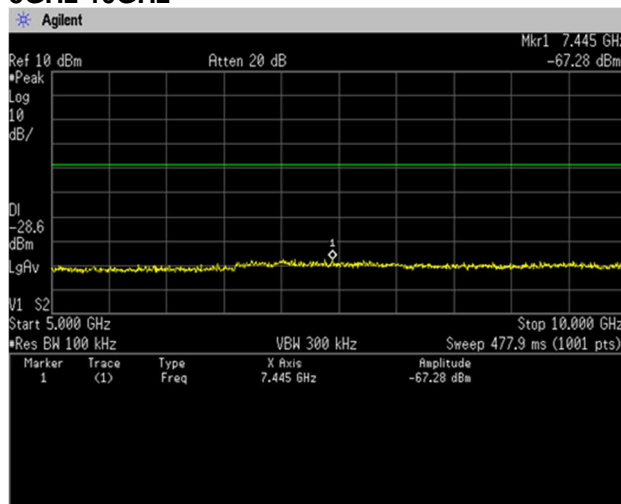
[IEEE802.11b]  
Channel Low  
30MHz-1GHz



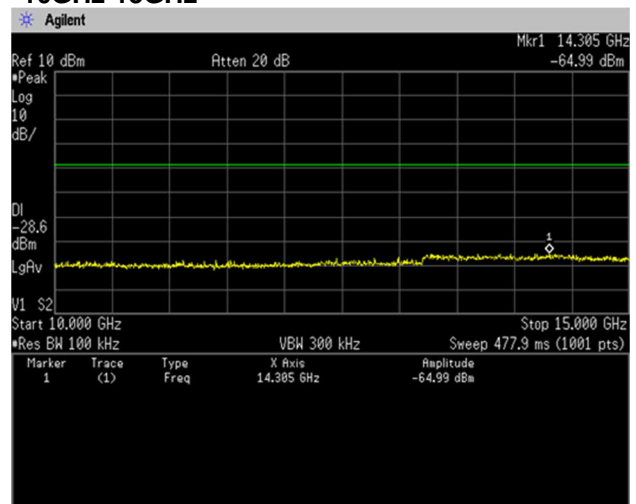
#### 1GHz-5GHz



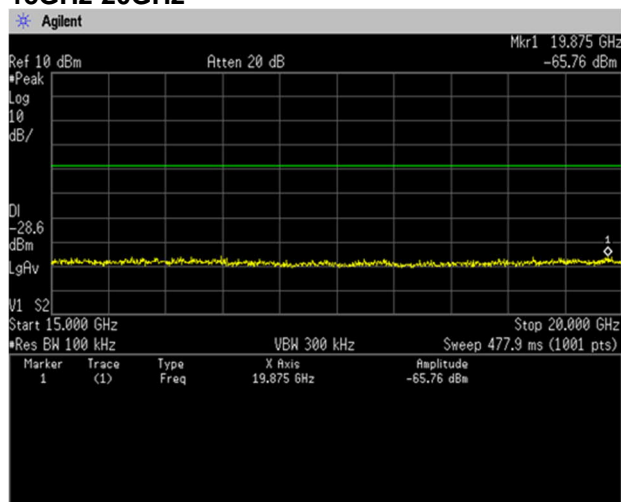
#### 5GHz-10GHz



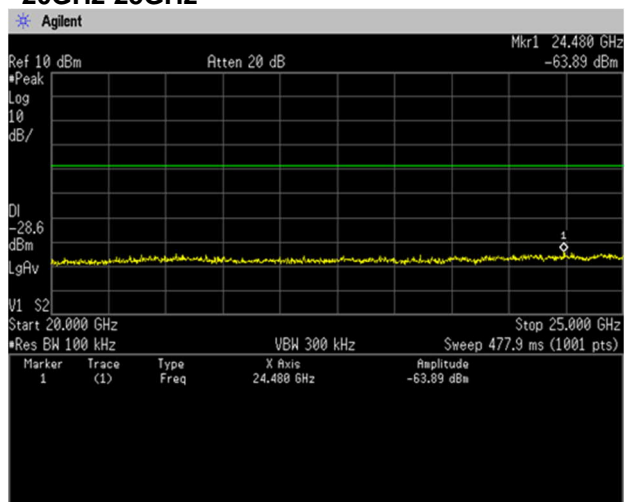
#### 10GHz-15GHz



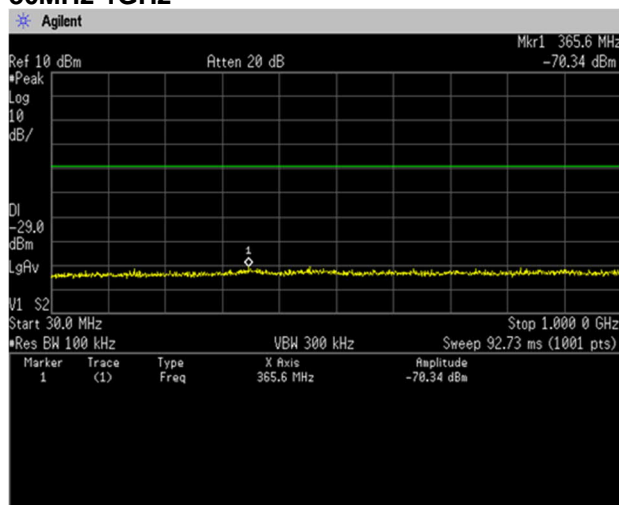
#### 15GHz-20GHz



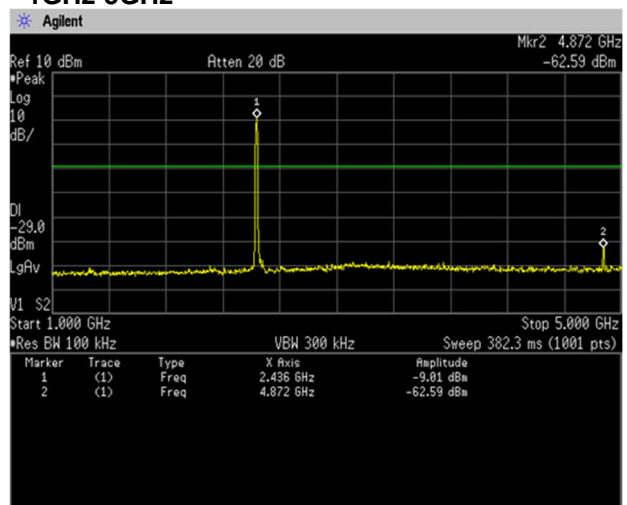
#### 20GHz-25GHz



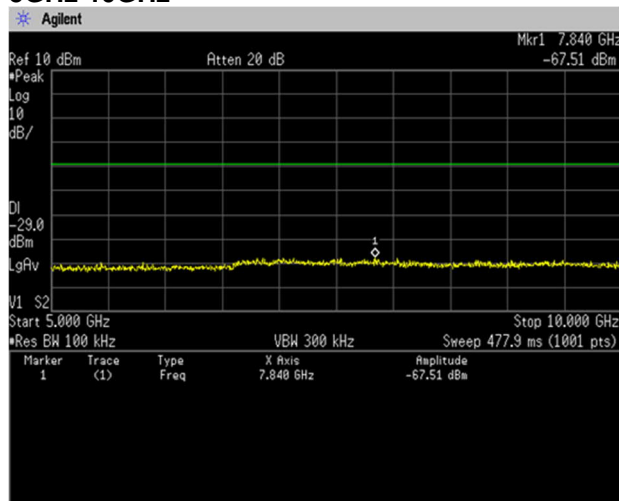
### Channel Middle 30MHz-1GHz



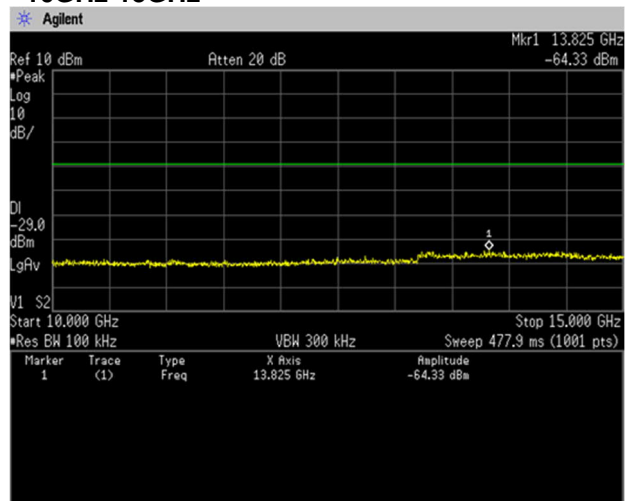
### 1GHz-5GHz



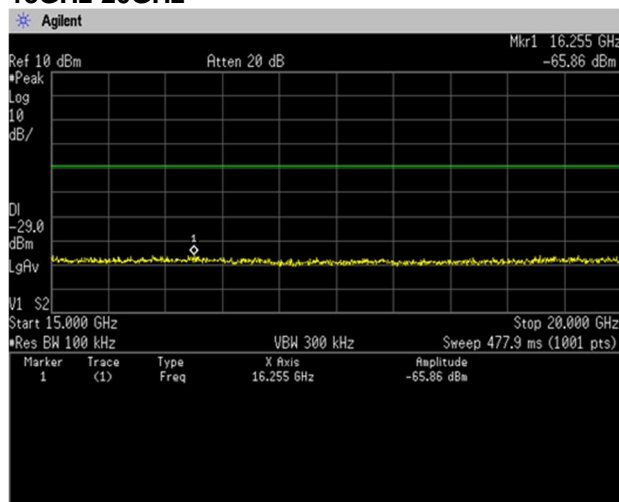
### 5GHz-10GHz



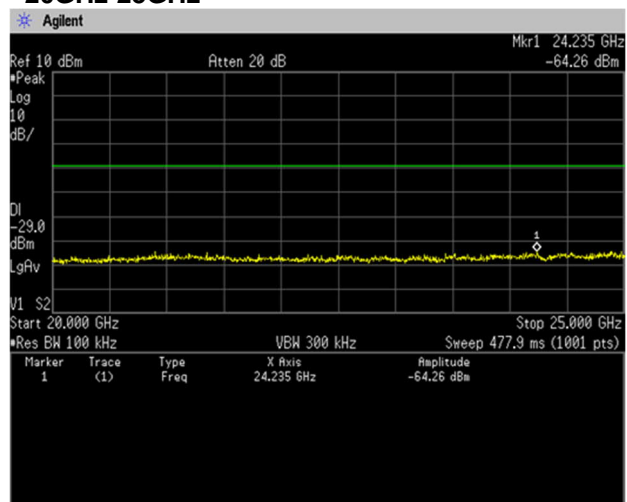
### 10GHz-15GHz



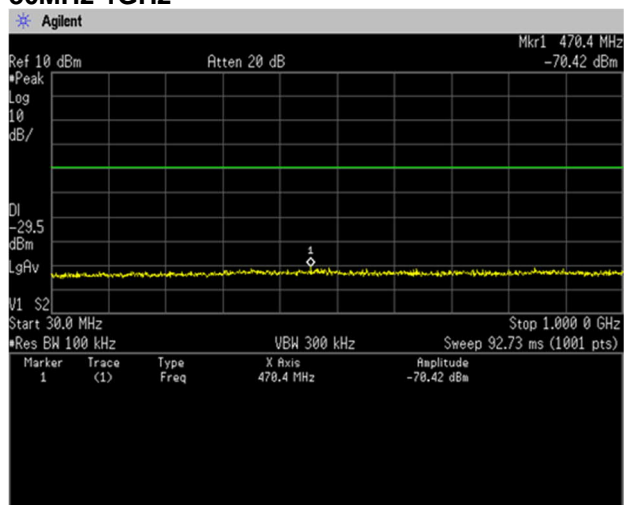
### 15GHz-20GHz



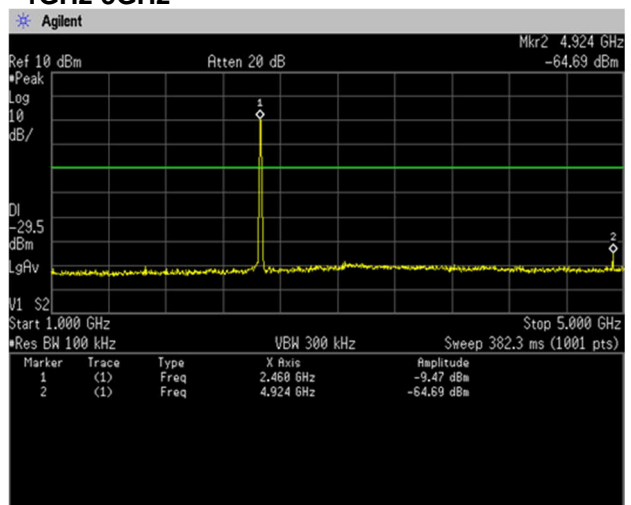
### 20GHz-25GHz



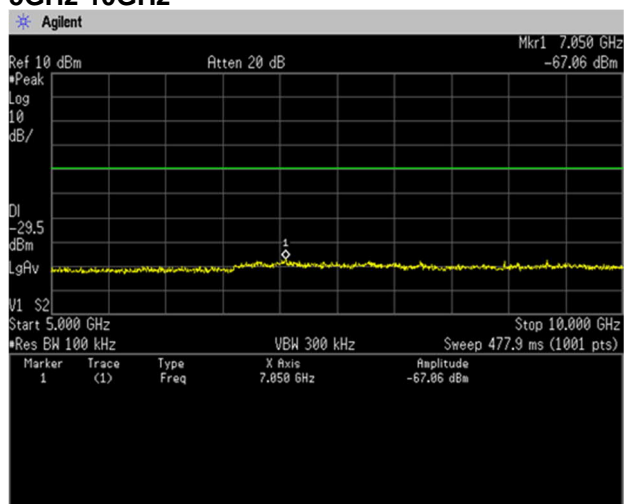
### Channel High 30MHz-1GHz



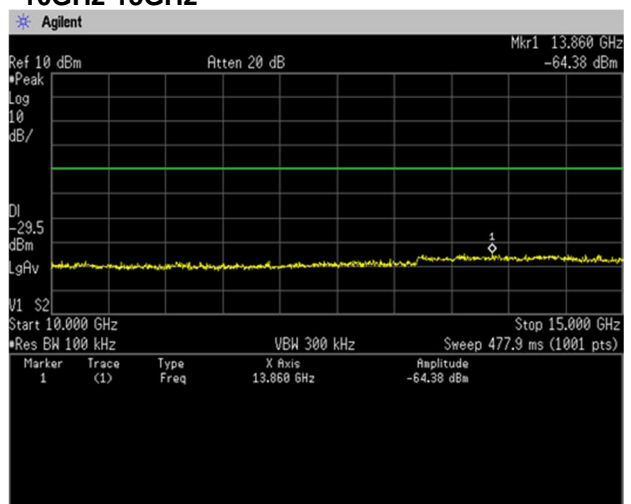
### 1GHz-5GHz



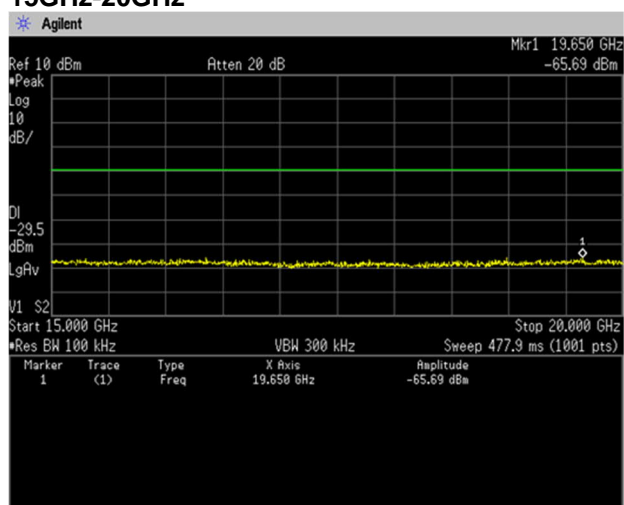
### 5GHz-10GHz



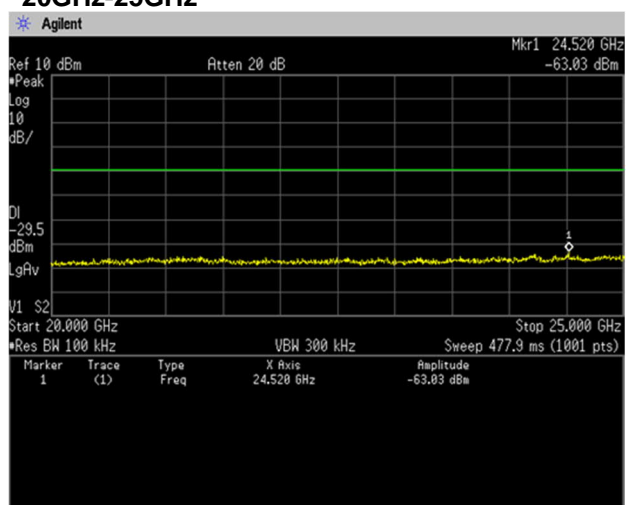
### 10GHz-15GHz



### 15GHz-20GHz

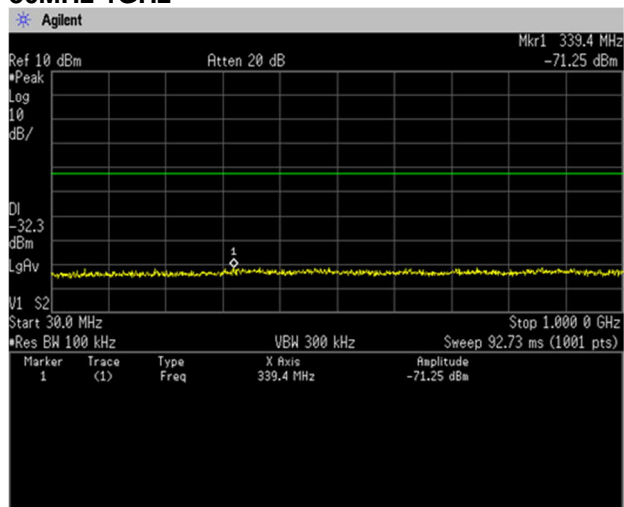


### 20GHz-25GHz

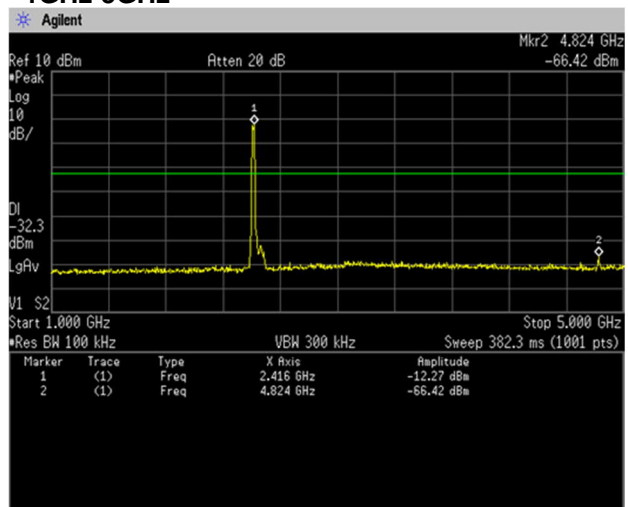




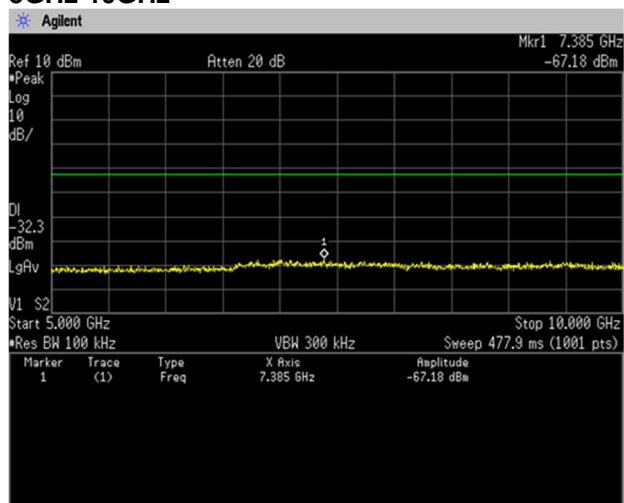
# [IEEE802.11g] Channel Low 30MHz-1GHz



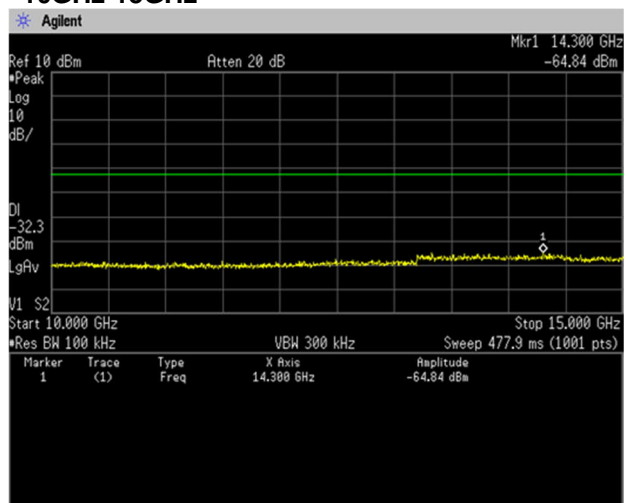
## 1GHz-5GHz



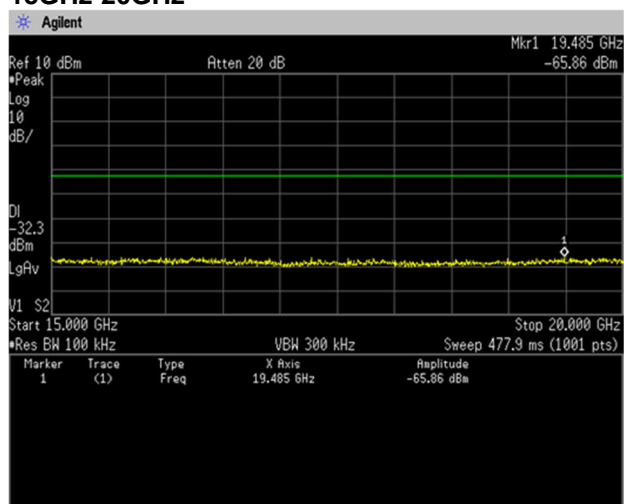
## 5GHz-10GHz



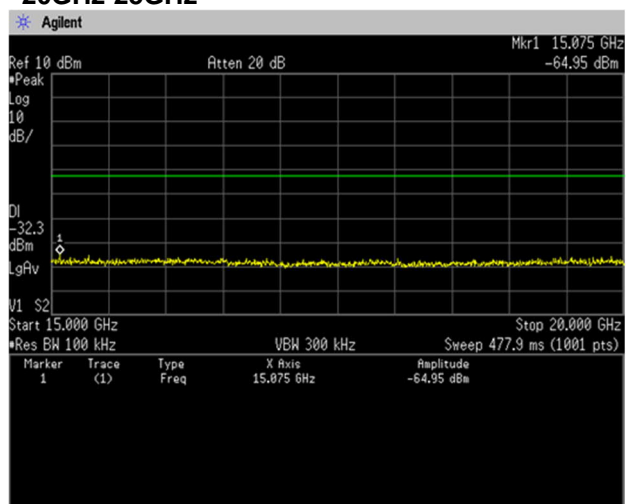
## 10GHz-15GHz



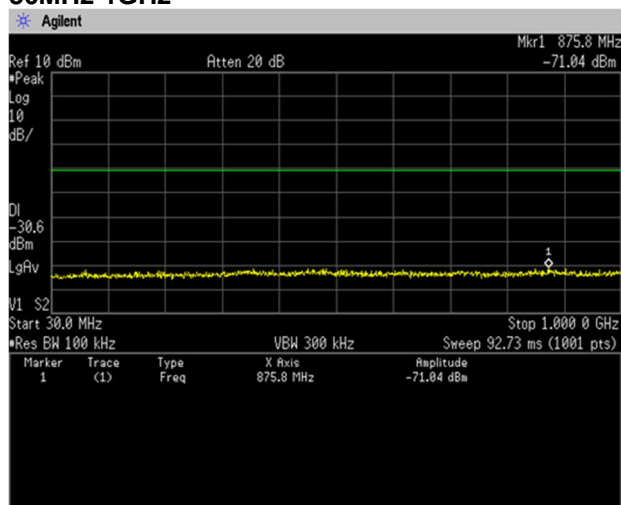
## 15GHz-20GHz



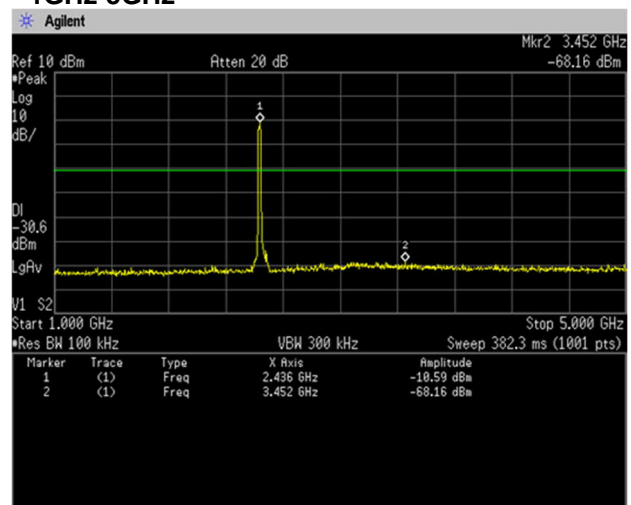
## 20GHz-25GHz



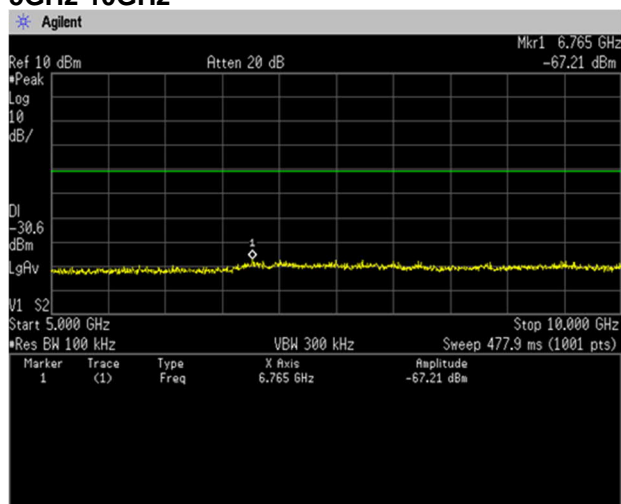
### Channel Middle 30MHz-1GHz



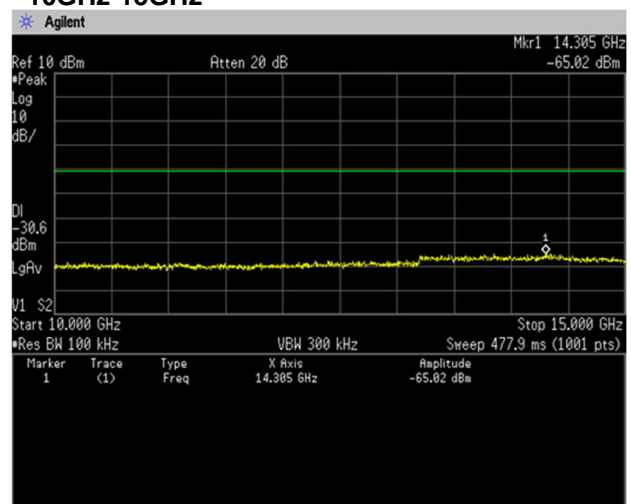
### 1GHz-5GHz



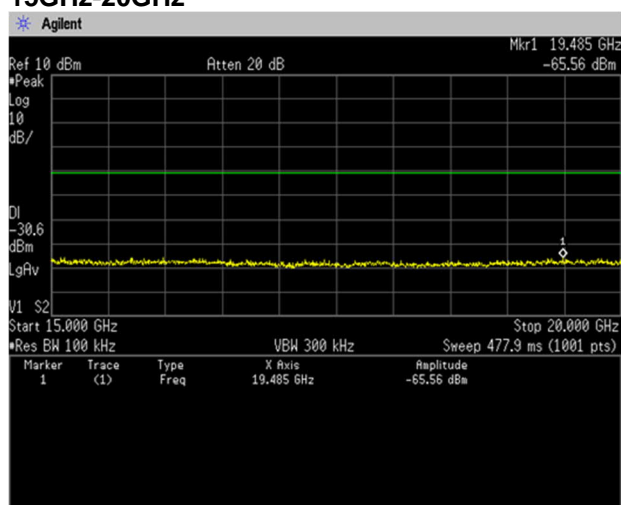
### 5GHz-10GHz



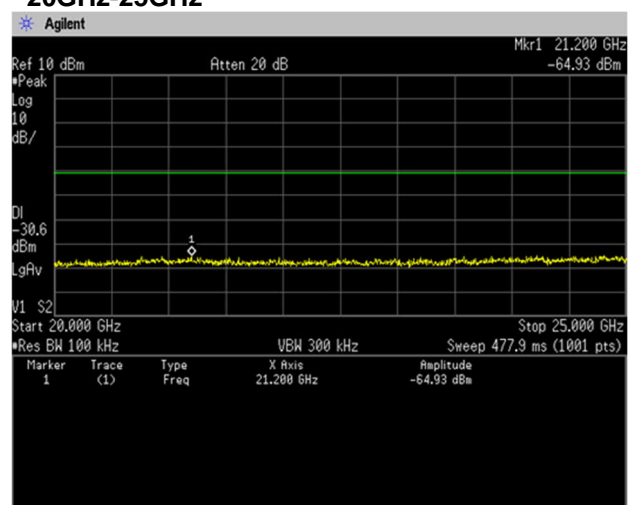
### 10GHz-15GHz



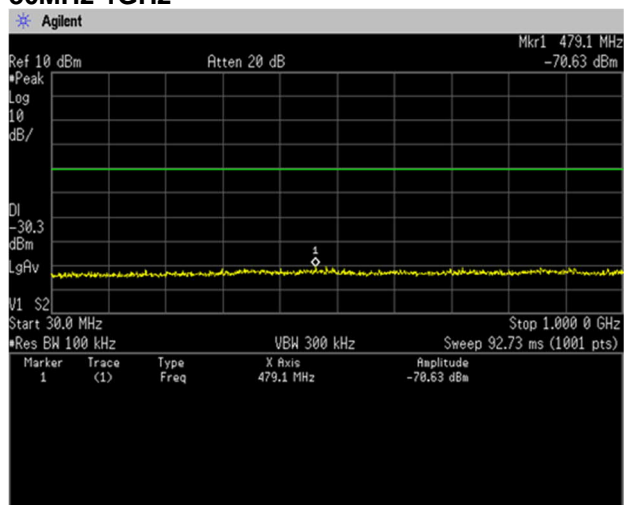
### 15GHz-20GHz



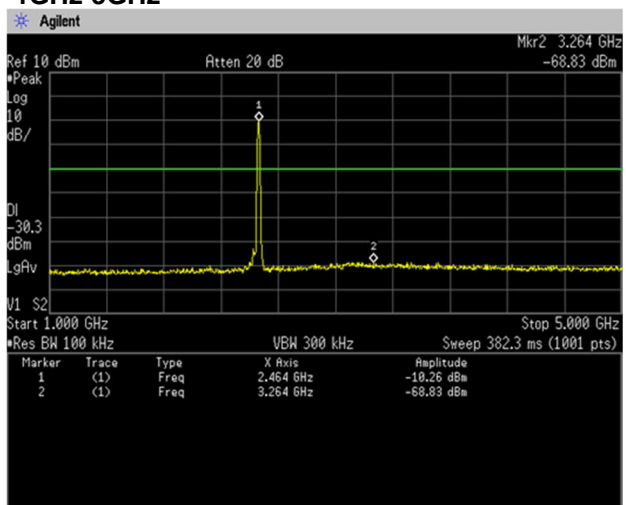
### 20GHz-25GHz



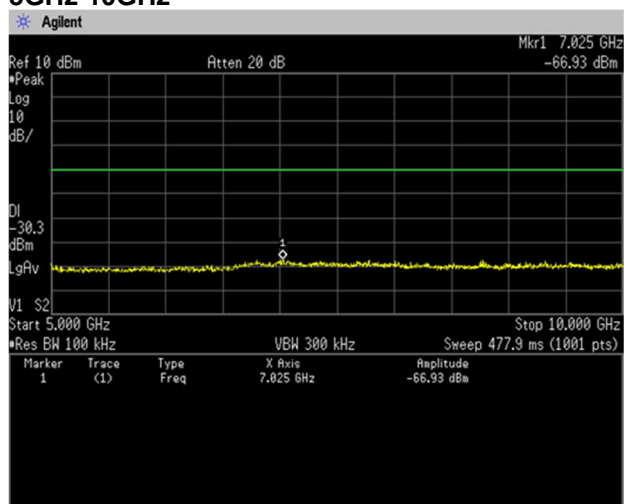
### Channel High 30MHz-1GHz



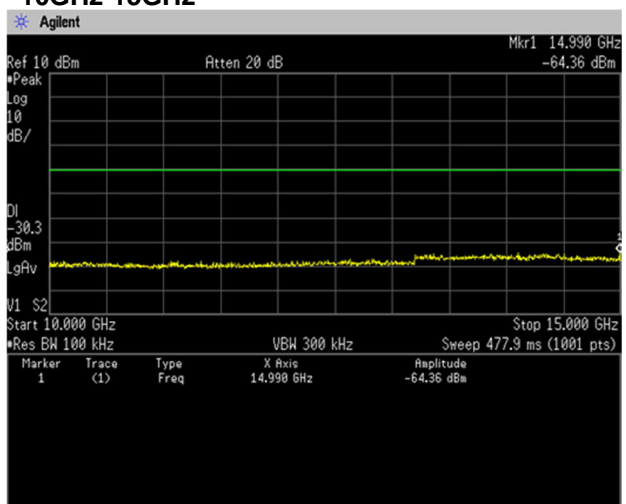
### 1GHz-5GHz



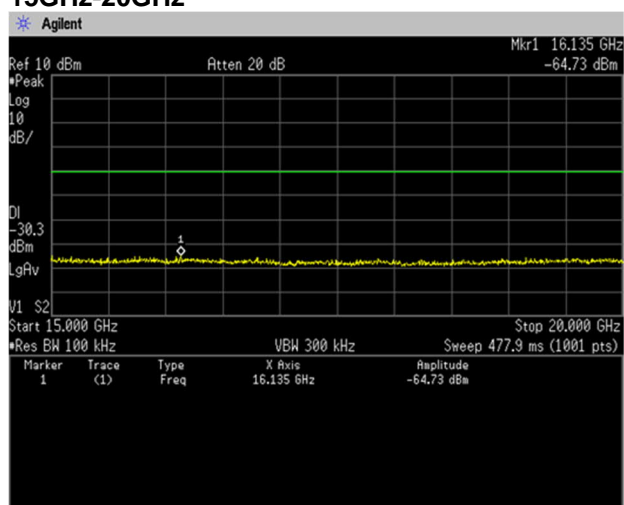
### 5GHz-10GHz



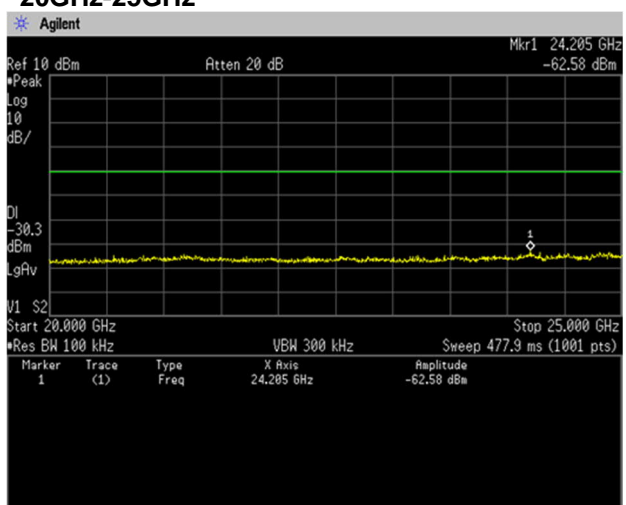
### 10GHz-15GHz



### 15GHz-20GHz



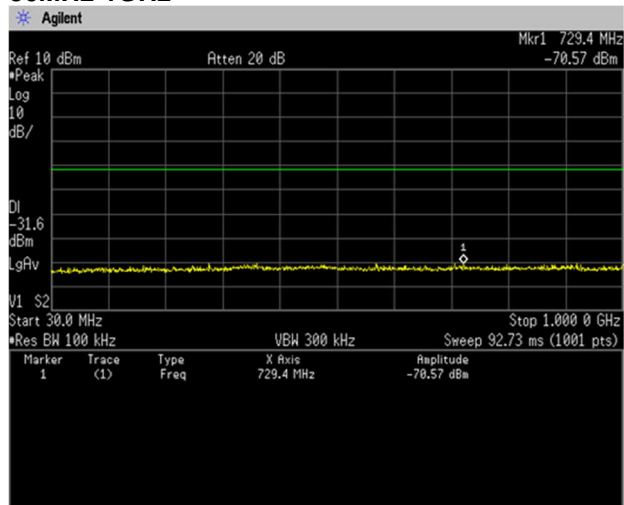
### 20GHz-25GHz



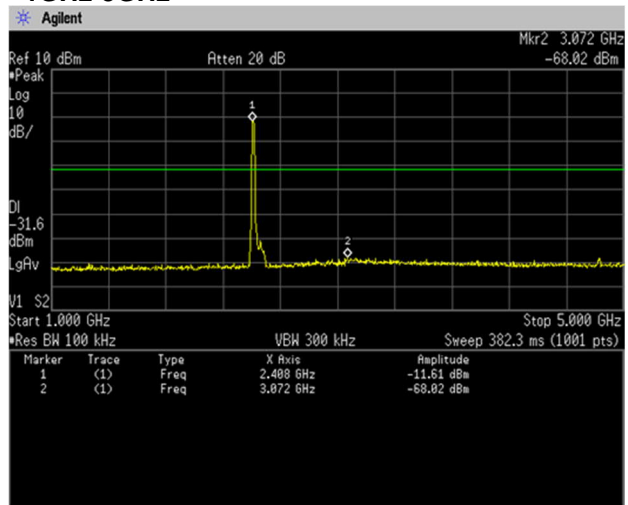
## [IEEE802.11n (HT20)]

## Channel Low

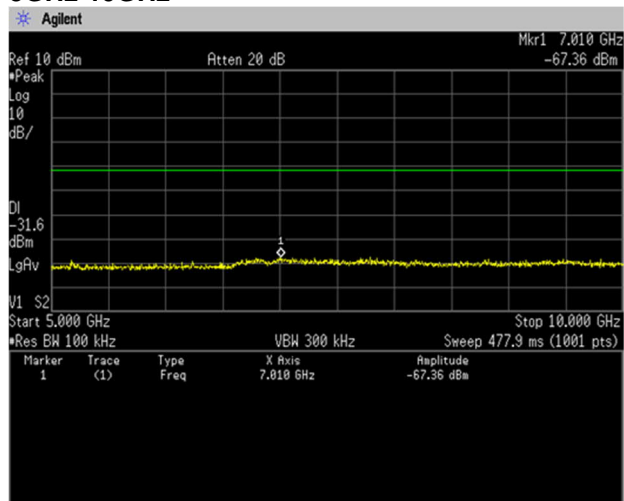
## 30MHz-1GHz



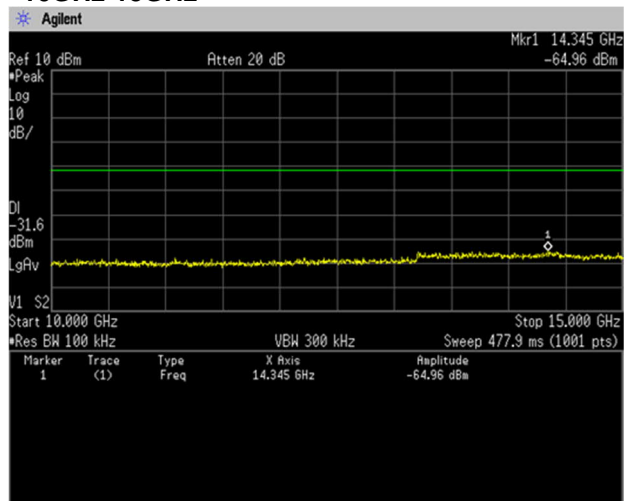
## 1GHz-5GHz



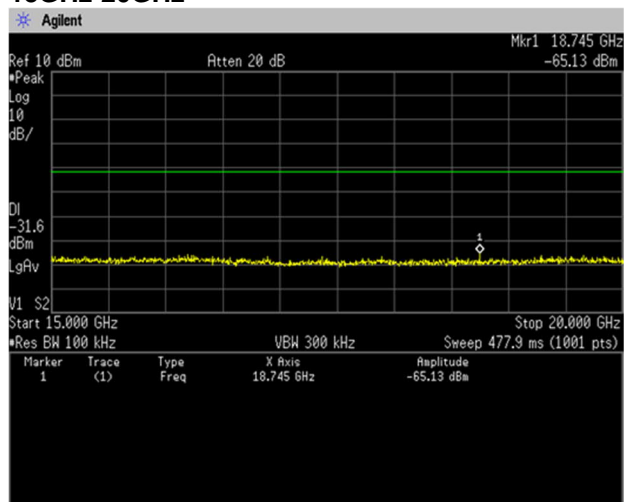
## 5GHz-10GHz



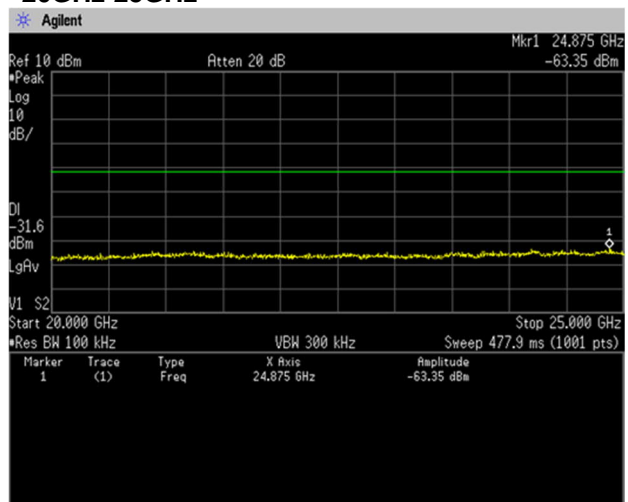
## 10GHz-15GHz



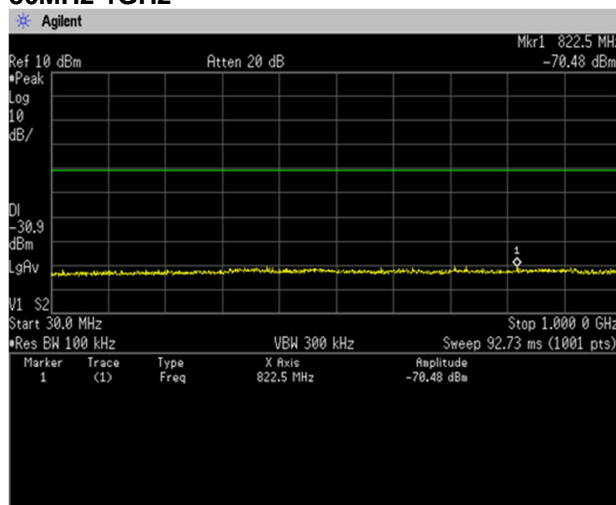
## 15GHz-20GHz



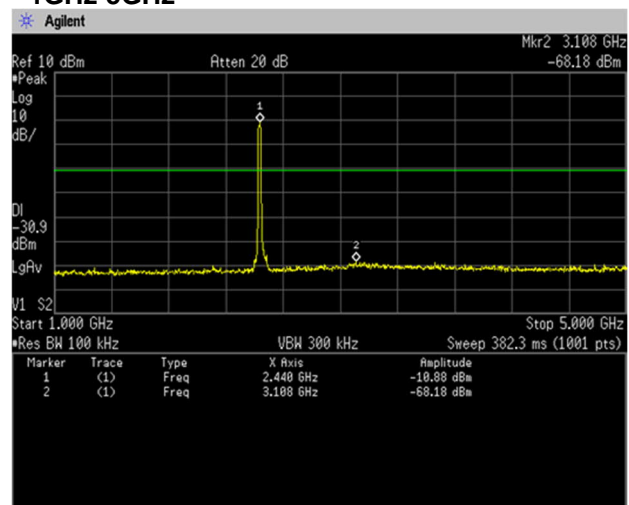
## 20GHz-25GHz



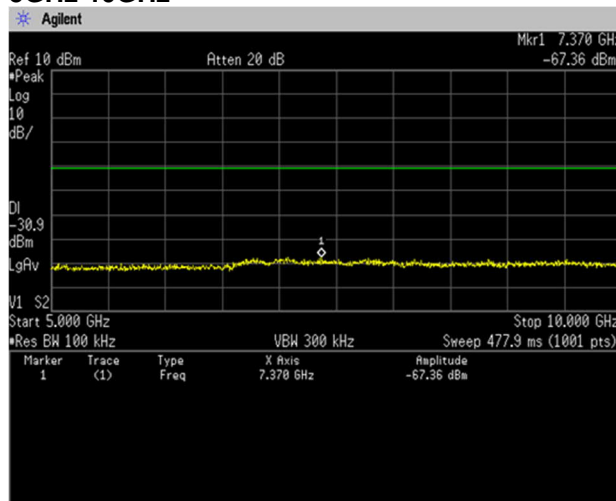
### Channel Middle 30MHz-1GHz



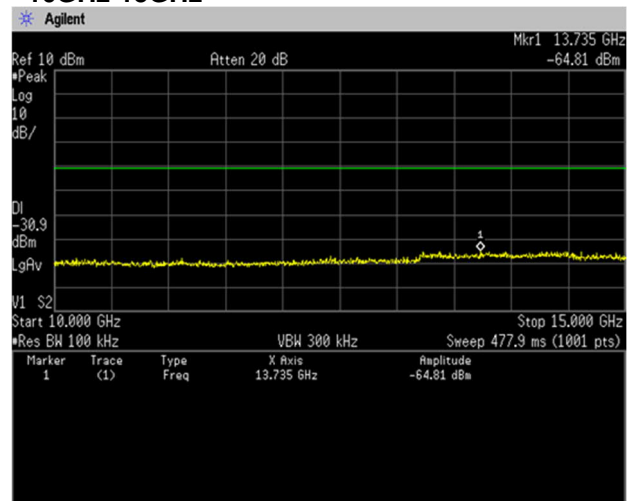
### 1GHz-5GHz



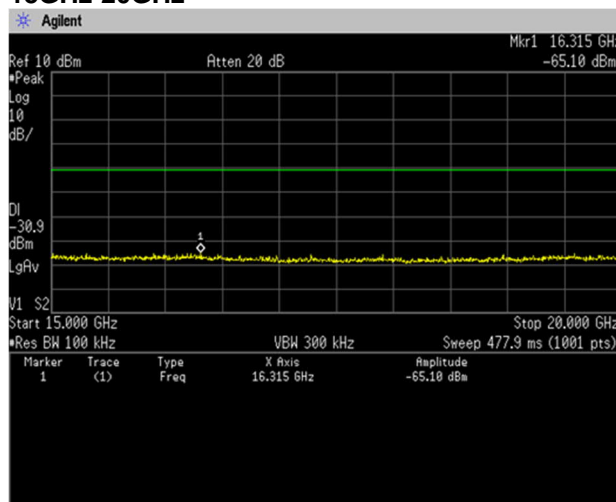
### 5GHz-10GHz



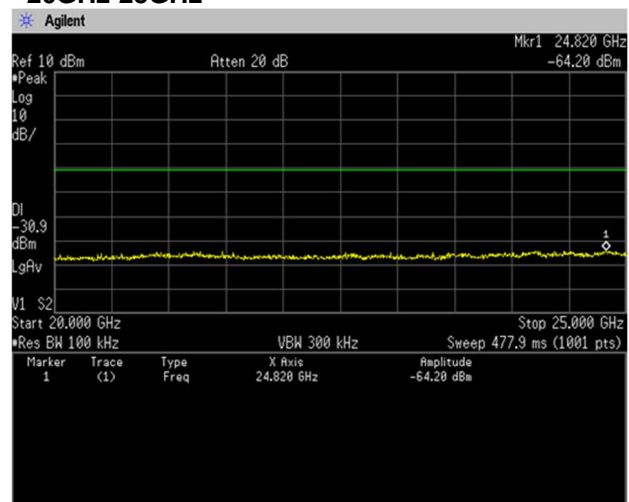
### 10GHz-15GHz



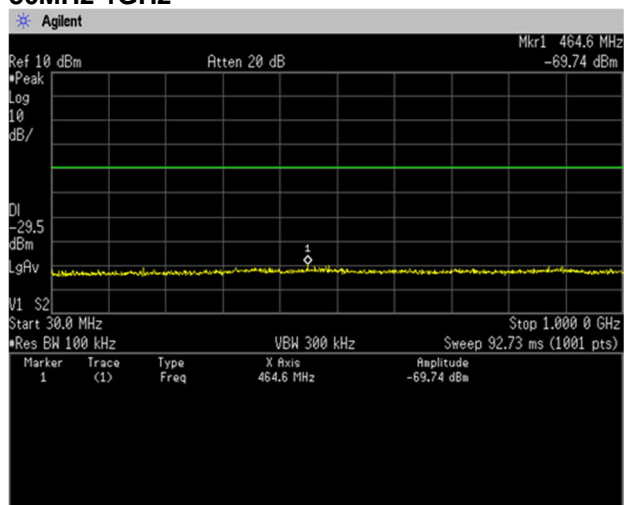
### 15GHz-20GHz



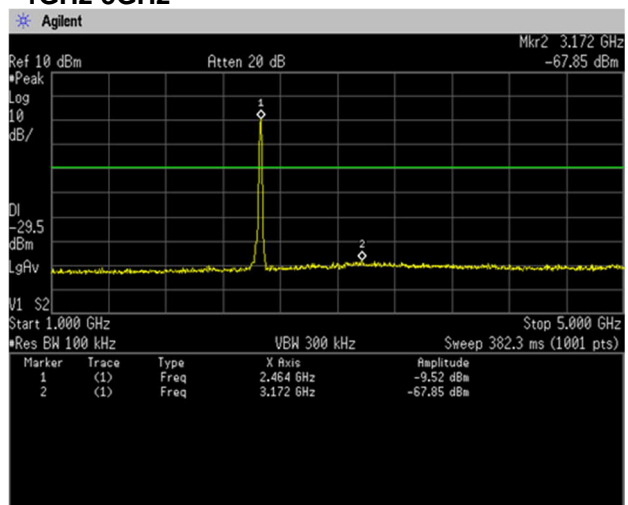
### 20GHz-25GHz



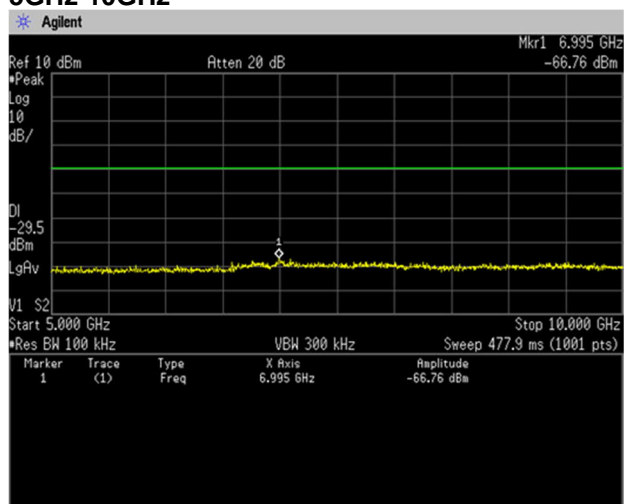
### Channel High 30MHz-1GHz



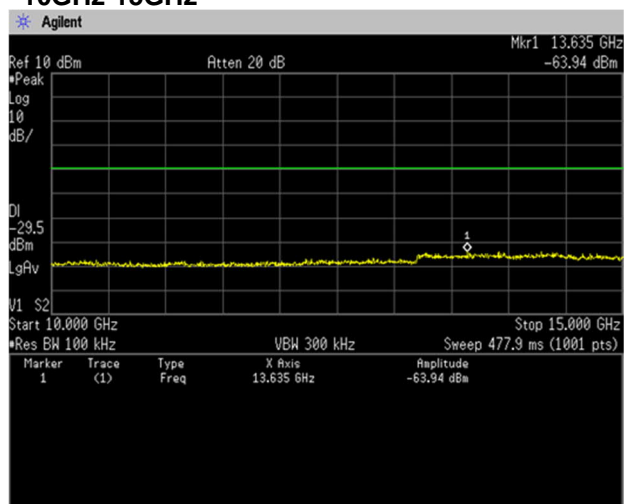
### 1GHz-5GHz



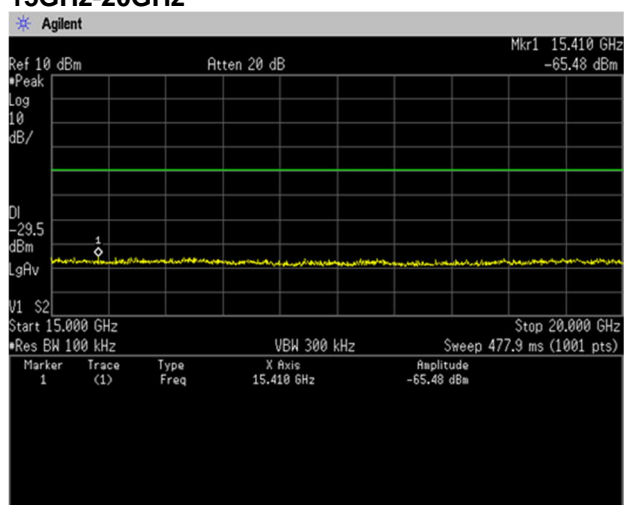
### 5GHz-10GHz



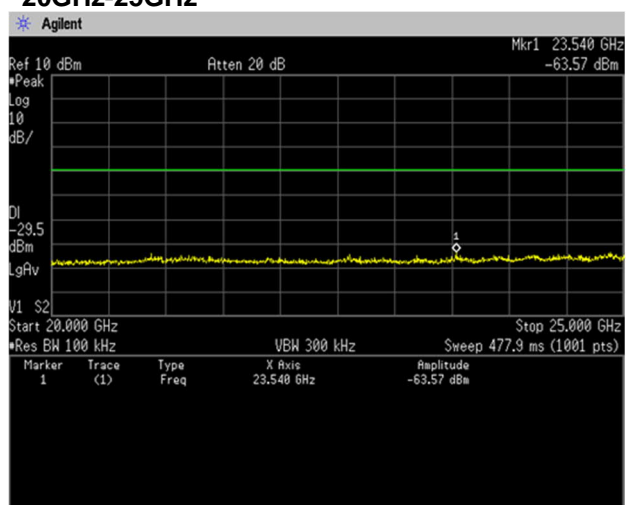
### 10GHz-15GHz



### 15GHz-20GHz



### 20GHz-25GHz





## 4.5 Spurious Emissions - Radiated -

### 4.5.1 Measurement procedure

#### [FCC 15.247(d), 15.205, 15.209, KDB 558074 D01 v05r02, Section 8.6]

Test was applied by following conditions.

Test method	: ANSI C63.10
Frequency range	: 9 kHz to 25 GHz
Test place	: 3m Semi-anechoic chamber
EUT was placed on	: Styrofoam table / (W) 1.0 × (D) 1.0 × (H) 0.8 m (below 1 GHz) Styrofoam table / (W) 0.6 × (D) 0.6 × (H) 1.5 m (above 1 GHz)
Antenna distance	: 3 m
Test receiver setting	Below 1 GHz
- Detector	: Average (9 kHz-90 kHz, 110 kHz-490 kHz), Quasi-peak
- Bandwidth	: 200 Hz, 120 kHz
Spectrum analyzer setting	Above 1 GHz
- Peak	: RBW=1 MHz, VBW=3 MHz, Span=0 Hz, Sweep=auto
- Average	: 11b: RBW=1 MHz, VBW=3 kHz, Span=0 Hz, Sweep=auto 11g, 11n: RBW=1 MHz, VBW=3 kHz (11b, 11g), 1kHz (11n), Span=0 Hz, Sweep=auto Display mode=Linear

#### Average Measurement Setting [VBW]

mode	Duty Cycle (%)	Ton [μs]	Toff [μs]	1/Ton (kHz)	Determined VBW Setting
11b	96.17	990.5	39.5	1.010	3kHz
11g	96.80	1392	46	0.718	1kHz
11n(HT20)	96.54	1284	46	0.779	1kHz

Although these tests were performed other than open area test site, adequate comparison measurements

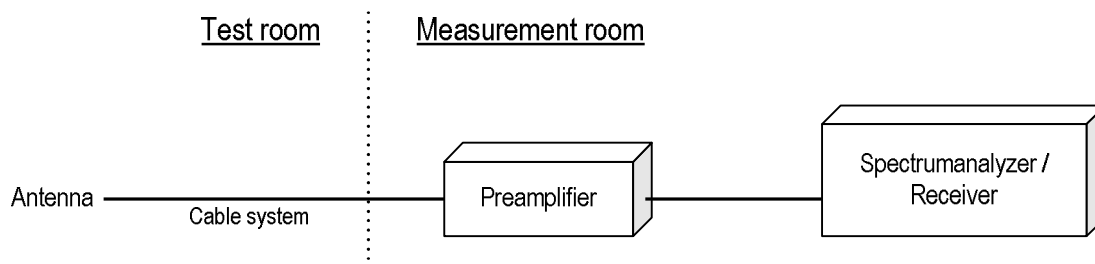
were confirmed against 30 m open area test site.

Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

Radiated emission measurements are performed at 3m distance with the broadband antenna (Loop antenna, Biconical antenna, Log periodic antenna and Double ridged guide antenna). The antenna is positioned both the horizontal and vertical planes of polarization and height is varied 1m to 4m and stopped at height producing the maximum emission. As for the Loop antenna, it is positioned with its plane vertical, and the center of the Loop antenna is 1m above the ground plane.

The EUT is Placed on a turntable, which is 0.8m/1.5m above ground plane. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. The test results represent the worst cases emission for each emission with manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation. Sufficient time for the EUT, support equipment, and test equipment are allowed in order for them to warm up to their normal operating condition.

- Test configuration



#### 4.5.2 Calculation method

[9 kHz to 150 kHz]

Emission level = Reading + (Ant factor + Cable system loss)

Margin = Limit – Emission level

[150 kHz to 25 GHz]

Emission level = Reading + (Ant factor + Cable system loss - Amp. Gain)

Margin = Limit – Emission level

Example:

Limit @ 4824.0 MHz: 74.0 dBuV/m (Peak Limit)

S.A Reading = 49.5 dBuV Cable system loss = 8.4 dB

Result = 49.5 + 8.4 = 45.1 dBuV/m

Margin = 74.0 - 45.1 = 16.1 dB

#### 4.5.3 Limit

Frequency [MHz]	Field strength		Distance [m]
	[uV/m]	[dBuV/m]	
0.009-0.490	2400 / F [kHz]	20logE [uV/m]	300
0.490-1.705	24000 / F [kHz]	20logE [uV/m]	30
1.705-30	30	29.5	30
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level [dBuV/m] = 20log Emission [uV/m]
3. As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition modulation.





Japan

#### 4.5.4 Test data

Date : 1-November-2021  
Temperature : 22.0 [°C]  
Humidity : 37.0 [%]  
Test place : 3m Semi-anechoic chamber

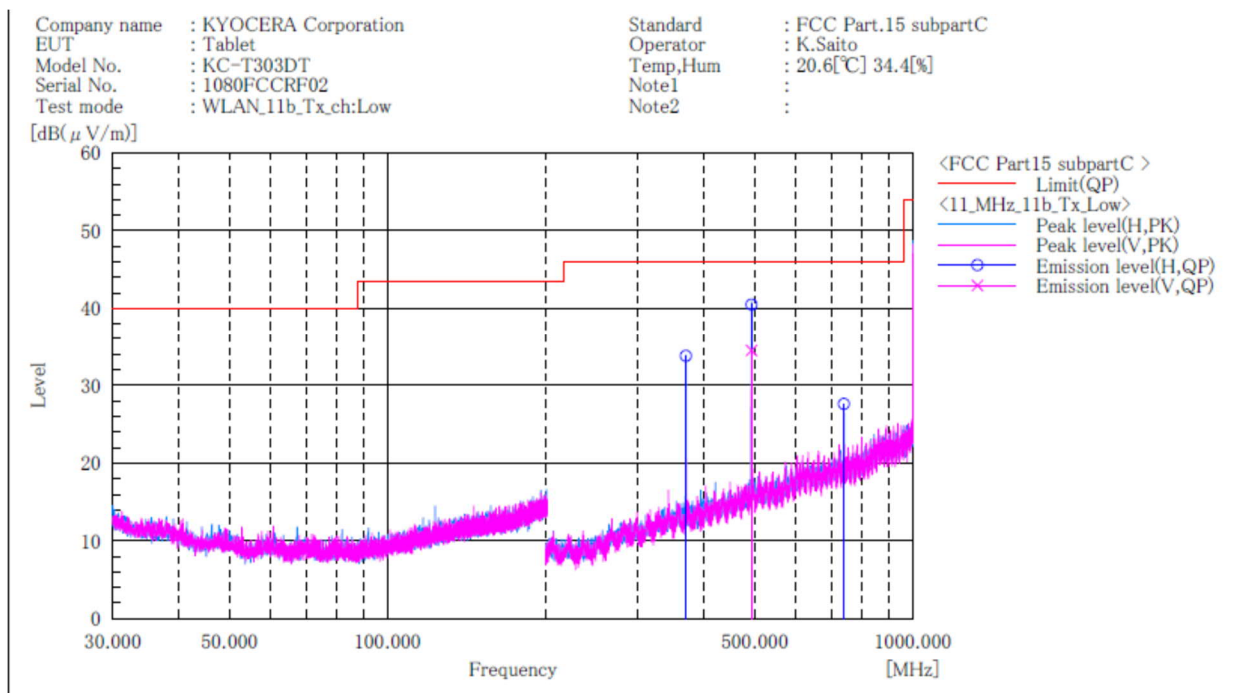
Test engineer : Tadahiro Seino

Date : 6-November-2021  
Temperature : 20.6 [°C]  
Humidity : 34.4 [%]  
Test place : 3m Semi-anechoic chamber

Test engineer : Kazunori Saito

## 4.5.4.1 Transmission mode

[11b]

Channel Low  
BELOW 1GHz

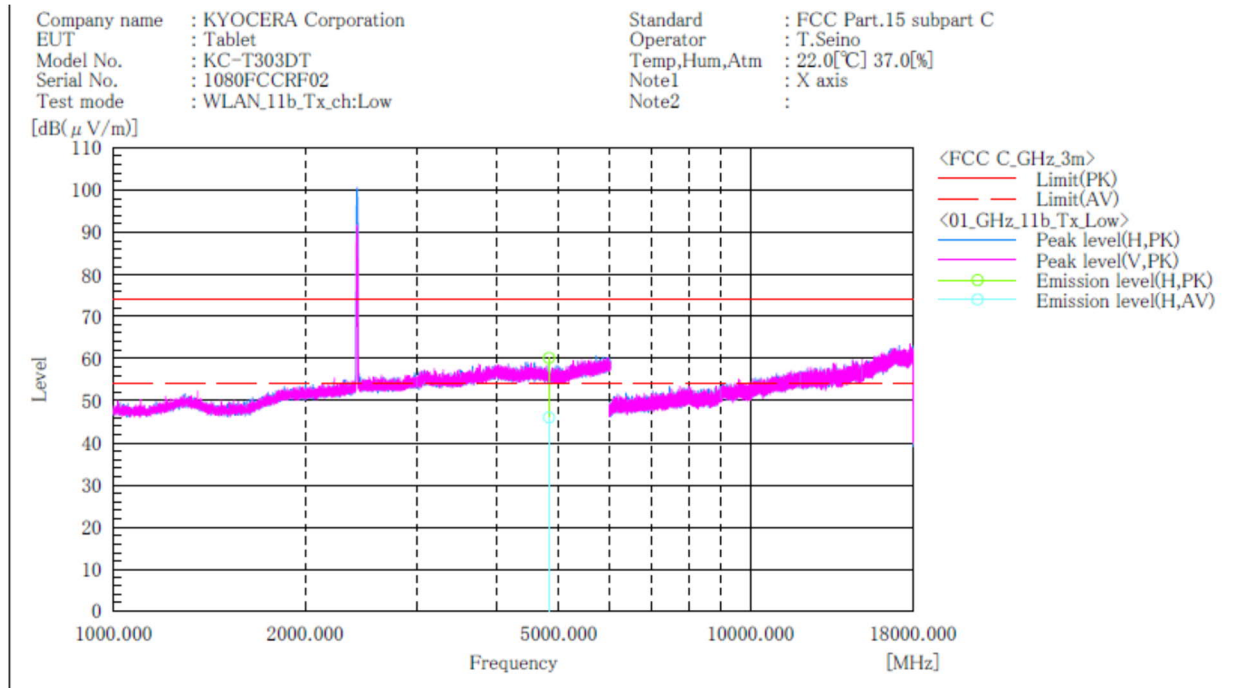
## Final Result

No.	Frequency (P)	Reading	c.f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	[dB(μV)]	[dB(1/m)]	QP [dB(μV/m)]	QP [dB(μV/m)]	QP [dB]	[cm]	[°]	
1	369.751	H 45.8	-12.0	33.8	46.0	12.2	100.0	72.0	
2	493.001	H 49.6	-9.1	40.5	46.0	5.5	228.0	250.0	
3	493.001	V 43.6	-9.1	34.5	46.0	11.5	225.0	321.0	
4	739.497	H 33.4	-5.8	27.6	46.0	18.4	100.0	279.0	

## Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**[11b]**  
**Channel Low**  
**ABOVE 1GHz**



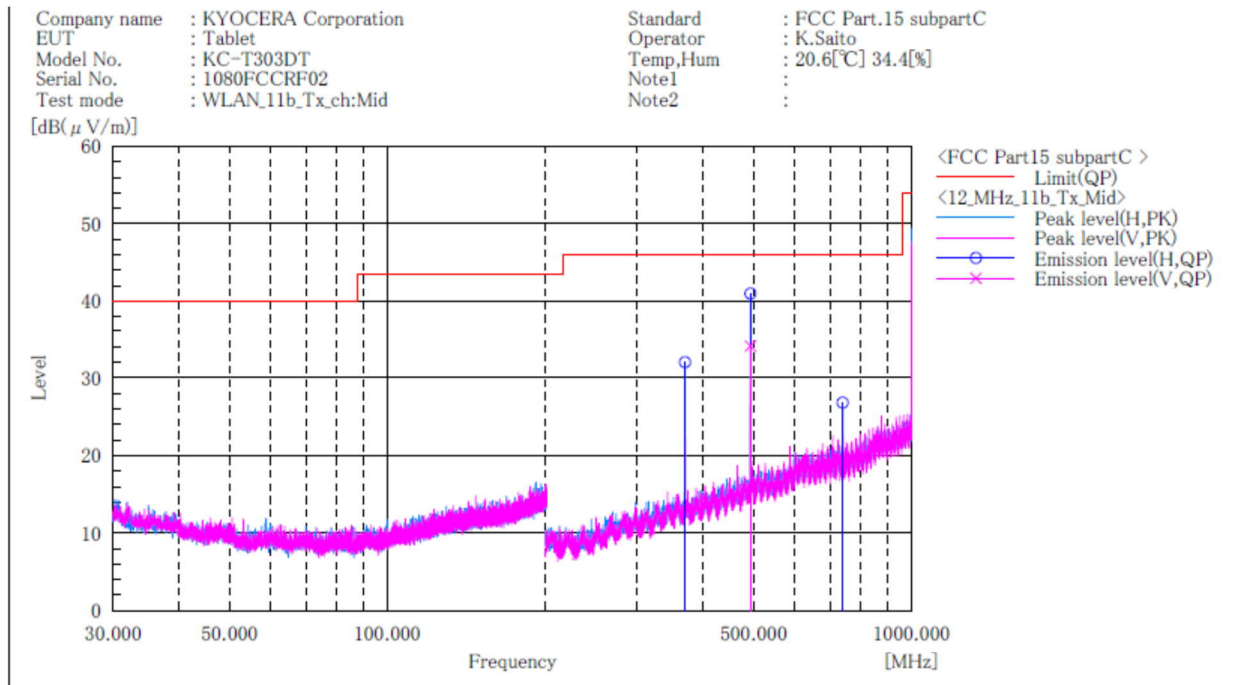
## Final Result

No.	Frequency (P)	Reading PK	Reading AV	c.f	Result PK	Result AV	Limit PK	Limit AV	Margin PK	Margin AV	Height	Angle	Remark	
	[MHz]	[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]		
1	4824.000	H	49.5	35.4	10.6	60.1	46.0	74.0	54.0	13.9	8.0	190.0	121.0	

## Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**[11b]**  
**Channel Middle**  
**BELOW 1GHz**



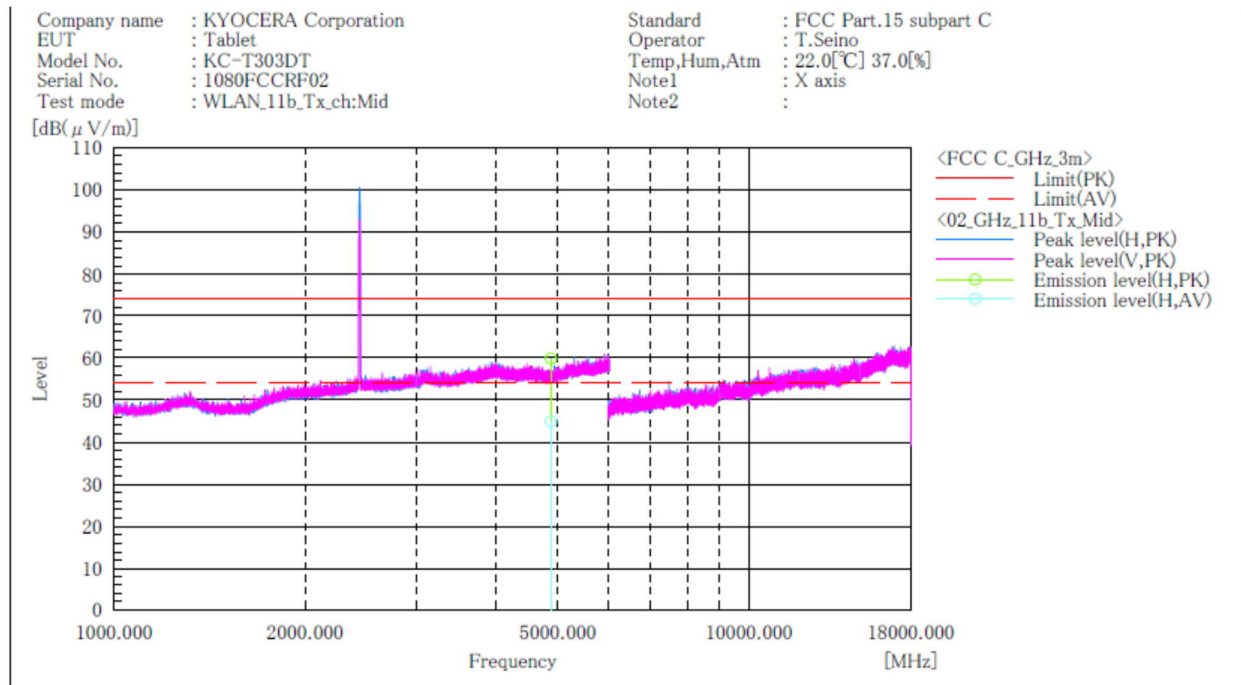
**Final Result**

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c. f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	Remark
1	369.748	H	44.0	-12.0	32.0	46.0	14.0	100.0	52.0	
2	493.001	H	50.1	-9.1	41.0	46.0	5.0	192.0	276.0	
3	493.001	V	43.2	-9.1	34.1	46.0	11.9	232.0	357.0	
4	739.508	H	32.6	-5.8	26.8	46.0	19.2	100.0	302.0	

**Note:**

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**[11b]**  
**Channel Middle**  
**ABOVE 1GHz**



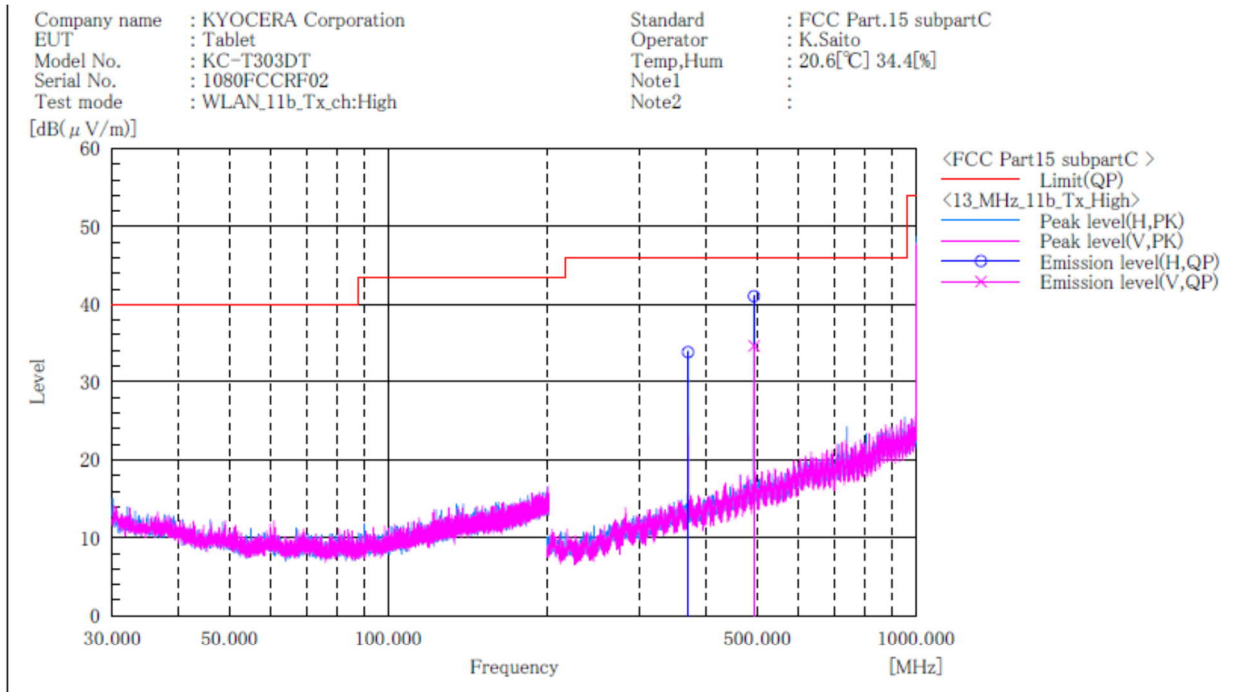
## Final Result

No.	Frequency (P)	Reading PK	Reading AV	c.f	Result PK	Result AV	Limit PK	Limit AV	Margin PK	Margin AV	Height	Angle	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]	
1	4874.000	H	49.1	34.2	10.7	59.8	44.9	74.0	54.0	14.2	9.1	159.0	153.0

## Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**[11b]**  
**Channel High**  
**BELOW 1GHz**



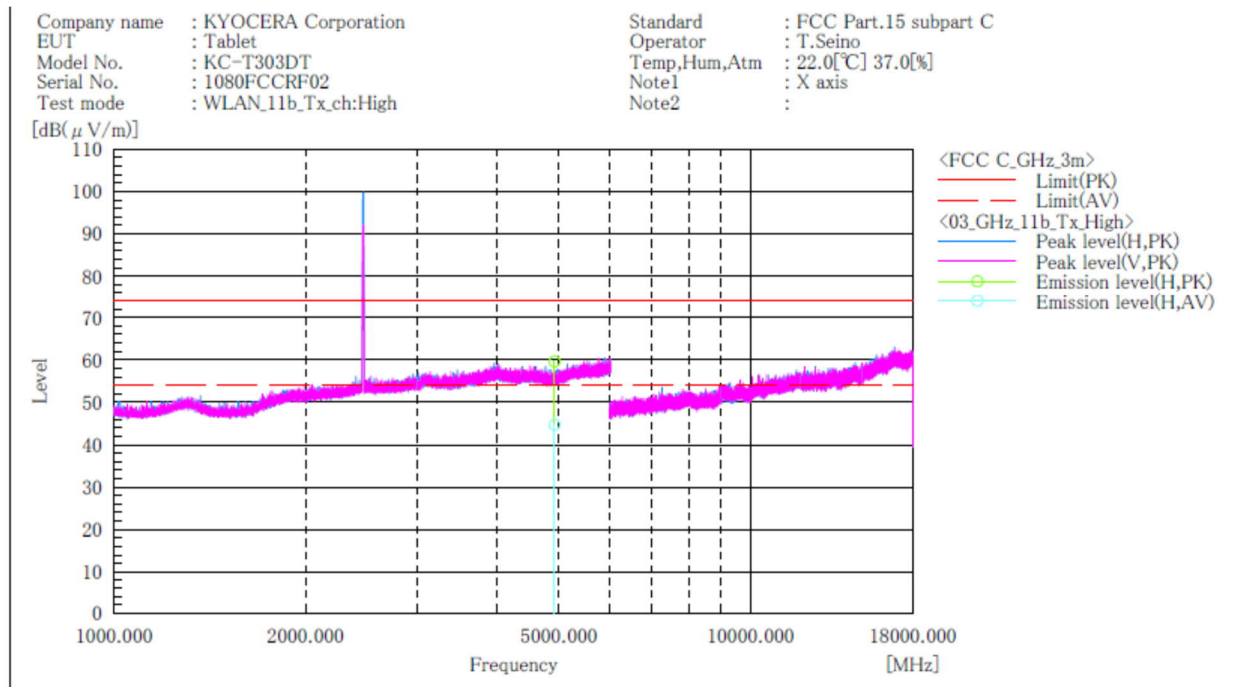
**Final Result**

No.	Frequency (P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	QP [dB(μV)]	[dB(1/m)]	QP [dB(μV/m)]	QP [dB(μV/m)]	QP [dB]	[cm]	[°]	
1	369.750	H 45.8	-12.0	33.8	46.0	12.2	100.0	244.0	
2	493.001	H 50.2	-9.1	41.1	46.0	4.9	194.0	256.0	
3	493.001	V 43.7	-9.1	34.6	46.0	11.4	205.0	2.0	

**Note:**

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**[11b]**  
**Channel High**  
**ABOVE 1GHz**



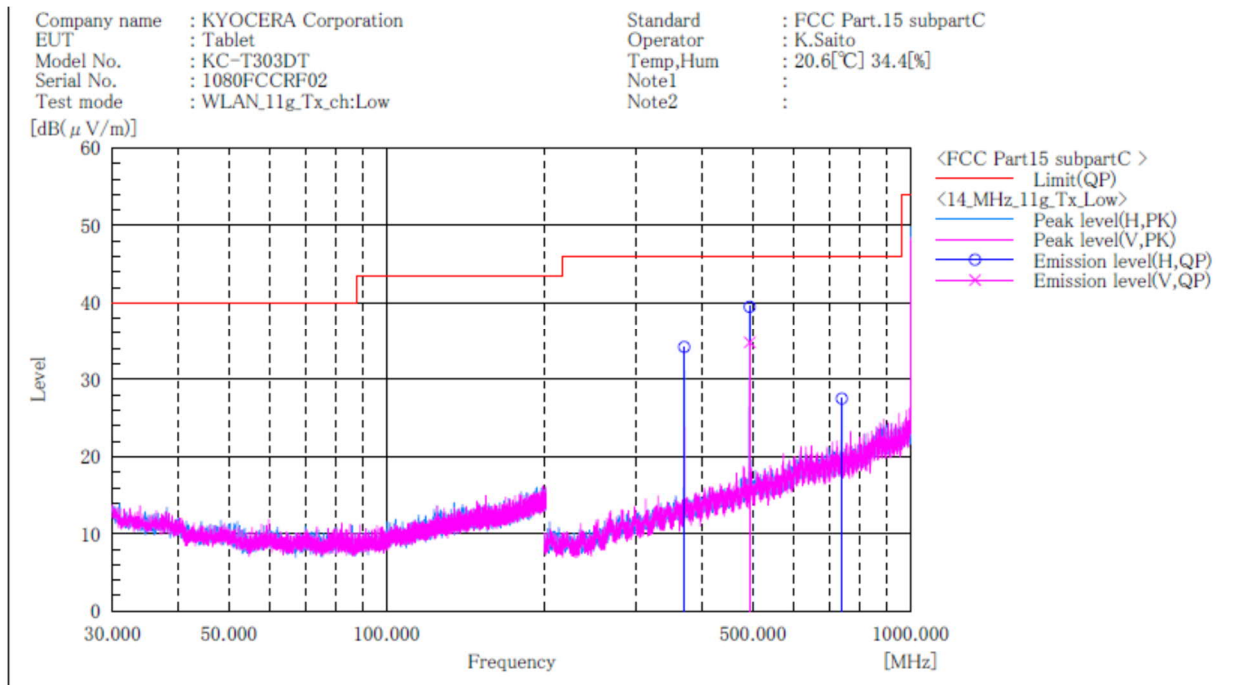
## Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading AV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin PK [dB]	Margin AV [dB]	Height [cm]	Angle [°]	Remark
1	4924.000	H	48.9	34.0	10.7	59.6	44.7	74.0	54.0	14.4	9.3	134.0	152.0	

## Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**[11g]  
Channel Low  
BELOW 1GHz**



**Final Result**

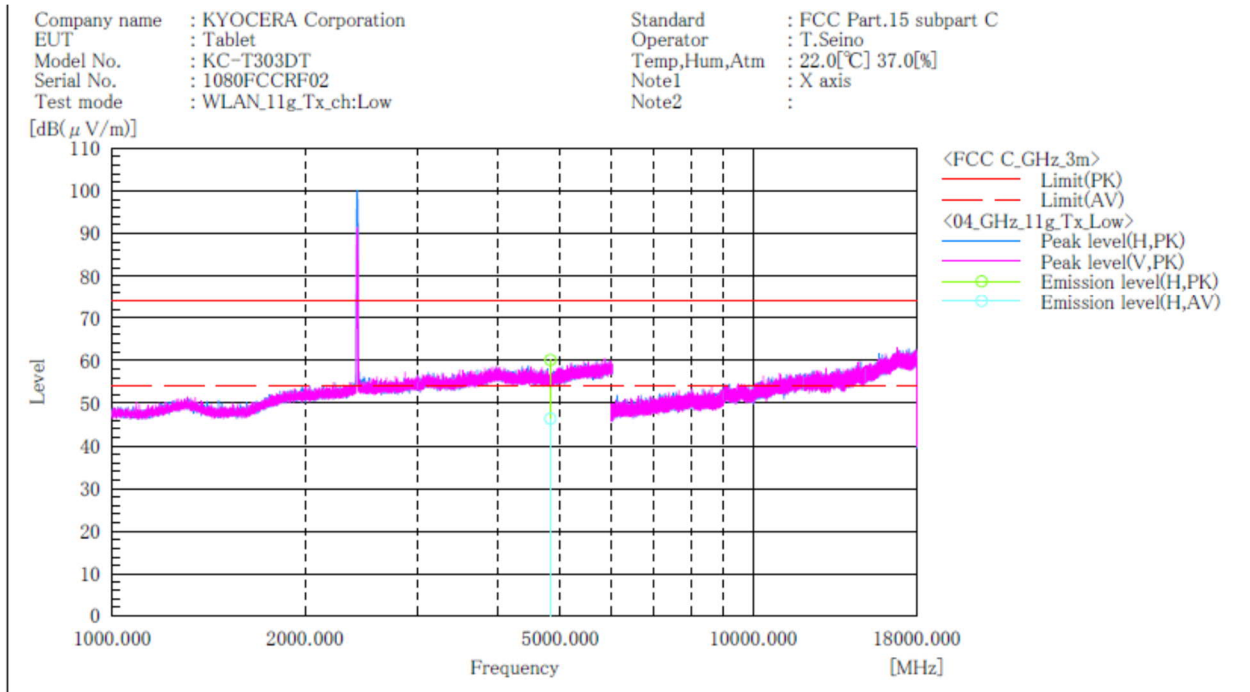
No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c. f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	Remark
1	369.748	H	46.2	-12.0	34.2	46.0	11.8	100.0	92.0	
2	739.500	H	33.3	-5.8	27.5	46.0	18.5	100.0	274.0	
3	493.001	H	48.6	-9.1	39.5	46.0	6.5	200.0	48.0	
4	493.001	V	43.9	-9.1	34.8	46.0	11.2	228.0	335.0	

**Note:**

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



**[11g]**  
**Channel Low**  
**ABOVE 1GHz**



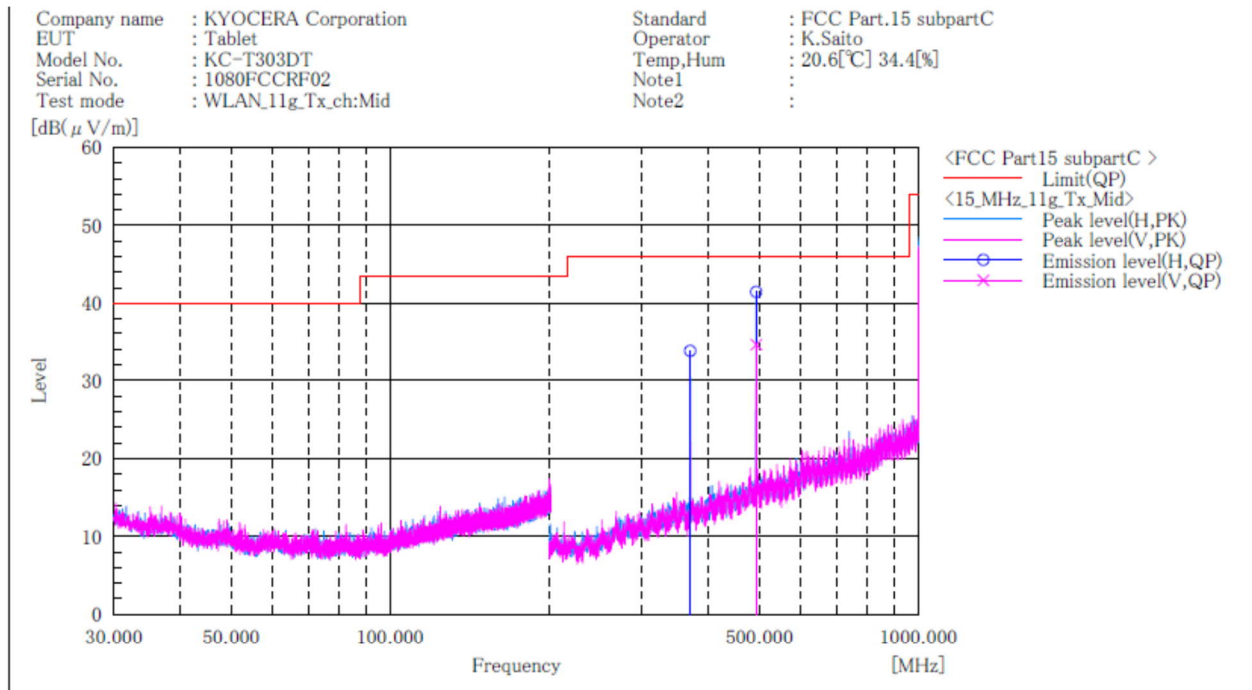
## Final Result

No.	Frequency (P)	Reading PK	Reading AV	c.f	Result PK	Result AV	Limit PK	Limit AV	Margin PK	Margin AV	Height	Angle	Remark	
	[MHz]	[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]		
1	4824.000	H	49.5	35.8	10.6	60.1	46.4	74.0	54.0	13.9	7.6	139.0	150.0	

## Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
- No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**[11g]**  
**Channel Middle**  
**BELOW 1GHz**



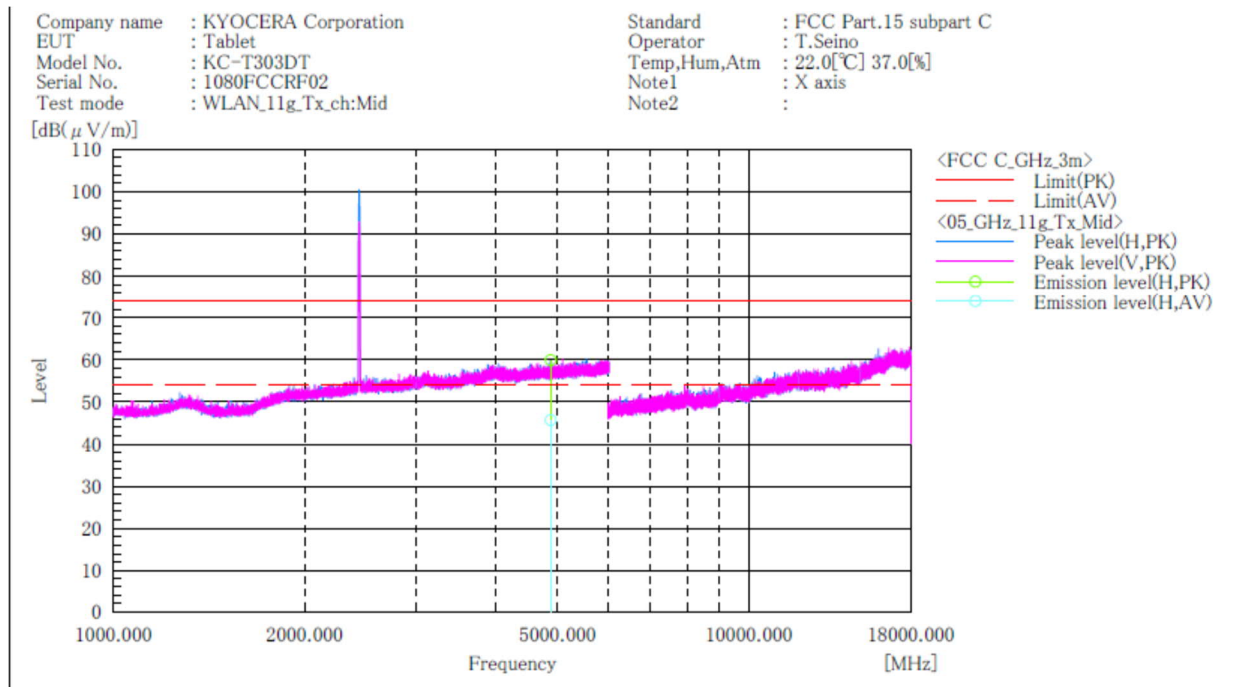
**Final Result**

No.	Frequency (P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	QP [dB(μV)]	[dB(1/m)]	QP [dB(μV/m)]	QP [dB(μV/m)]	QP [dB]	[cm]	[°]	
1	369.746	H 45.8	-12.0	33.8	46.0	12.2	100.0	257.0	
2	493.001	H 50.6	-9.1	41.5	46.0	4.5	203.0	260.0	
3	493.001	V 43.7	-9.1	34.6	46.0	11.4	239.0	323.0	

**Note:**

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**[11g]**  
**Channel Middle**  
**ABOVE 1GHz**



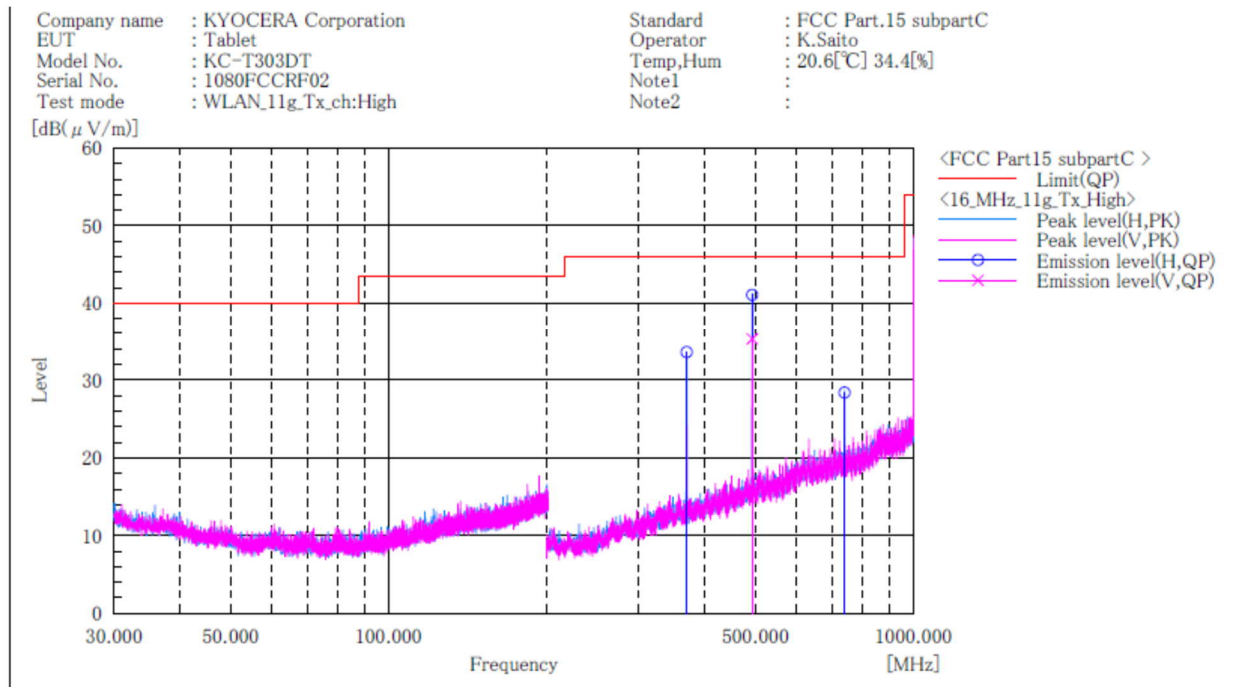
## Final Result

No.	Frequency (P)	Reading PK	Reading AV	c.f	Result PK	Result AV	Limit PK	Limit AV	Margin PK	Margin AV	Height	Angle	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]	
1	4874.000	H	49.2	35.0	10.7	59.9	45.7	74.0	54.0	14.1	8.3	157.0	151.0

## Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
- No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**[11g]  
Channel High  
BELOW 1GHz**



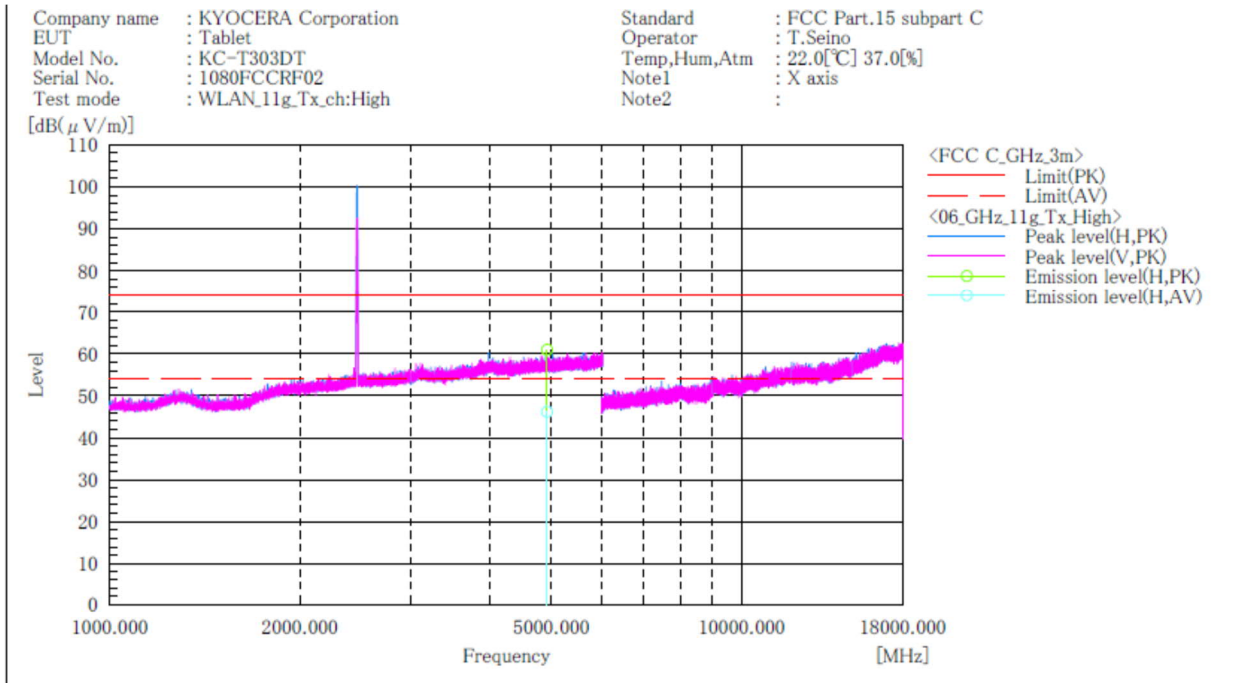
**Final Result**

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	Remark
1	369.750	H	45.6	-12.0	33.6	46.0	12.4	104.0	244.0	
2	493.001	H	50.2	-9.1	41.1	46.0	4.9	189.0	255.0	
3	493.001	V	44.4	-9.1	35.3	46.0	10.7	218.0	325.0	
4	739.504	H	34.2	-5.8	28.4	46.0	17.6	138.0	273.0	

**Note:**

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

[11g]  
Channel High  
ABOVE 1GHz



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading AV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin PK [dB]	Margin AV [dB]	Height [cm]	Angle [°]	Remark
1	4924.000	H	50.3	35.5	10.7	61.0	46.2	74.0	54.0	13.0	7.8	158.0	150.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.