



Zacta

TEST REPORT

Report number : JPD-TR-17133-0

Issue date : June 12, 2017

The device, as described herewith, was tested pursuant to applicable test procedure and complies with the requirements of;

FCC Part15 Subpart E

The test results are traceable to the international or national standards.

Applicant	: KYOCERA Corporation
Equipment under test (EUT)	: Mobile Phone
Model number	: EA34
FCC ID	: JOYEA34

Date of test : April 24, 2017
May 9, 11, 12, 16, 17, 18, 19, 23, 24, 27, 30, 31, 2017
Test place : TÜV SÜD Zacta Ltd. Yonezawa Testing Center
5-4149-7, Hachimanpara, Yonezawa-shi,
Yamagata, 992-1128 Japan
Phone: +81-238-28-2881 Fax: +81-238-28-2888
Test results : Complied

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 Zacta Ltd.

This test report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, ILAC-MRA, or any agency of the federal government.

Tested by : Chiaki Kanno Tadahiro Seino
Chiaki Kanno Tadahiro Seino

Tested by : Taiki Watanabe
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Approved by : Hiroaki Suzuki
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Lab Manager of RF Lab



Table of contents

	Page
1. Summary of Test	4
1.1 Purpose of test	4
1.2 Standards	4
1.3 List of applied test to the EUT	4
1.4 Modification to the EUT by laboratory	4
2. Equipment Under Test	5
2.1 General Description of equipment	5
2.2 EUT information	5
2.3 Variation of the family model(s)	6
2.4 Operating channels and frequencies	6
2.5 Operating mode	8
2.6 Operating mode	8
3. Configuration of equipment	9
3.1 Equipment(s) used	9
3.2 Cable(s) used	9
3.3 System configuration	9
4. 26dB Bandwidth and 99% Occupied Bandwidth	10
4.1 Measurement procedure	10
4.2 Limit	10
4.3 Measurement result	10
4.4 Trace data	12
5. Maximum Conducted Output Power	23
5.1 Measurement procedure	23
5.2 Limit	23
5.3 Measurement result	25
5.4 Trace data	27
6. Peak Power Spectral Density	38
6.1 Measurement procedure	38
6.2 Limit	38
6.3 Measurement result	39
6.4 Trace data	41
7. Radiated Emissions (Restricted Bands of Operation)	52
7.1 Measurement procedure	52
7.2 Calculation method	53
7.3 Limit	54
7.4 Test data	55
8. Frequency Stability	141
8.1 Measurement procedure	141
8.2 Limit	141
8.3 Measurement result	142
9. AC Power Line Conducted Emissions	144
9.1 Measurement procedure	144



Zacta

9.2 Calculation method.....	144
9.3 Limit.....	144
9.4 Test data.....	145
10. Duty Cycle.....	148
10.1 Measurement procedure.....	148
10.2 Limit.....	148
10.3 Measurement result.....	148
10.4 Trace data	151
11. Antenna requirement.....	156
12. Uncertainty of measurement.....	157
13. Laboratory Information	158
Appendix A. Test equipment	159

1. Summary of Test

1.1 Purpose of test

It is the original test in order to verify conformance to FCC Part 15 Subpart E.

1.2 Standards

CFR47 FCC Part 15 Subpart E

1.2.1 Test Methods

ANSI C63.10-2013, KDB789033 D02 General U-NII Test Procedures New Rules v01r04

1.2.2 Deviation from standards

None

1.3 List of applied test to the EUT

Test items Section	Test items	Condition	Result
15.407(a)	26dB Bandwidth	Conducted	PASS
15.407(a)	Maximum Conducted Output Power	Conducted	PASS
15.407(a)	Peak Power Spectral Density	Conducted	PASS
15.407(b) 15.205 15.209	Radiated emissions (Restricted Bands of Operation)	Radiated	PASS
15.407(g)	Frequency Stability	Conducted	PASS
15.207	AC Power Line Conducted Emissions	Conducted	PASS

1.3.1 Test set up

Table-Top

1.4 Modification to the EUT by laboratory

None

2. Equipment Under Test

2.1 General Description of equipment

EUT is the Mobile Phone.

2.2 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	: Mobile Phone
Trade name	: Kyocera
Model number	: EA34
Serial number	: N/A
EUT condition	: Pre-Production
Power ratings	: Battery: DC 3.8V
Size	: (W) 73.0 × (D) 8.9 × (H) 146.0 mm
Environment	: Indoor and Outdoor use
Terminal limitation	: -20°C to 60°C
RF Specification Protocol	: IEEE802.11a, IEEE802.11n(HT20), IEEE802.11n(HT40) IEEE802.11ac(HT20), IEEE802.11ac(HT40), IEEE802.11ac(HT80)
Frequency range	: IEEE802.11a/n/ac(HT20): 5180MHz-5320MHz, 5500MHz-5700MHz IEEE802.11n/ac(HT40): 5190MHz-5310MHz, 5510MHz-5670MHz IEEE802.11ac(HT80): 5210MHz, 5290MHz, 5530MHz, 5610MHz
Number of RF Channels	: IEEE802.11a/n/ac(HT20): 19 Channels IEEE802.11n/ac(HT40): 9 Channels IEEE802.11ac(HT80): 4 Channels
Modulation type	: IEEE802.11a/n/ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Data rate	: IEEE802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 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 IEEE802.11ac (HT20 LGI): 6.5, 13, 19.5, 26, 39, 52, 58.5, 65, 78, 86.5Mbps IEEE802.11ac (HT20 SGI): 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2, 86.6, 96.1Mbps IEEE802.11n (HT40 LGI): 13.5, 27, 40.5, 54, 81, 108, 121.5, 135Mbps IEEE802.11n (HT40 SGI): 15, 30, 45, 60, 90, 120, 135, 150Mbps IEEE802.11ac (HT40 LGI): 13.5, 27, 40.5, 54, 81, 108, 121.5, 135, 162, 180Mbps IEEE802.11ac (HT40 SGI): 15, 30, 45, 60, 90, 120, 135, 150, 180, 200Mbps IEEE802.11ac (HT80 LGI): 29.3, 58.5, 87.8, 117, 175.5, 234, 263.3, 292.6, 351, 390Mbps IEEE802.11ac (HT80 SGI): 32.5, 65, 97.5, 130, 195, 260, 292.5, 325, 390, 433.3Mbps

Channel separation : IEEE802.11a/n/ac (HT20): 20MHz
IEEE802.11n/ac (HT40): 40MHz
IEEE802.11ac (HT80): 80MHz

Output power : 30.799mW (IEEE802.11a)
31.944mW (IEEE802.11n: HT20)
21.271mW (IEEE802.11n: HT40)
18.878mW (IEEE802.11ac: HT80)

Antenna type : Internal antenna

Antenna gain : 5.15-5.25GHz band: 1.1dBi
5.25-5.35GHz band: 1.1dBi
5.47-5.725GHz band: 0.5dBi

2.3 Variation of the family model(s)

Not applicable

2.4 Operating channels and frequencies

[IEEE802.11a/n/ac (HT20)]

Channel	Frequency [MHz]
36	5180
40	5200
44	5220
48	5240
52	5260
56	5280
60	5300
64	5320
100	5500
104	5520
108	5540
112	5560
116	5580
120	5600
124	5620
128	5640
132	5660
136	5680
140	5700



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[IEEE802.11n/ac (HT40)]

Channel	Frequency [MHz]
38	5190
46	5230
54	5270
62	5310
102	5510
110	5550
118	5590
126	5630
134	5670

[IEEE802.11ac (HT80)]

Channel	Frequency [MHz]
42	5210
58	5290
106	5530
122	5610

2.5 Operating mode

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

Band	IEEE802.11a/n/ac (HT20)		IEEE802.11n/ac (HT40)		IEEE802.11ac (HT80)	
	Channel	Frequency [MHz]	Channel	Frequency [MHz]	Channel	Frequency [MHz]
5.2GHz Band	36	5180	38	5190	42	5210
	40	5200	-	-	-	-
	48	5240	46	5230	-	-
5.3GHz Band	52	5260	54	5270	58	5290
	56	5280	-	-	-	-
	64	5320	62	5310	-	-
5.6GHz Band	100	5500	102	5510	106	5530
	116	5580	110	5550	122	5610
	140	5700	134	5670	-	-

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

Band	Modulation Type	Data Rate
5.2GHz Band	IEEE802.11a: OFDM	6Mbps
	IEEE802.11n (HT20): OFDM	MCS0 (6.5Mbps)
	IEEE802.11n (HT40): OFDM	MCS0 (13.5Mbps)
	IEEE802.11ac (HT80): OFDM	MCS0 (29.3Mbps)
5.3GHz Band	IEEE802.11a: OFDM	6Mbps
	IEEE802.11n (HT20): OFDM	MCS0 (6.5Mbps)
	IEEE802.11n (HT40): OFDM	MCS0 (13.5Mbps)
	IEEE802.11ac (HT80): OFDM	MCS0 (29.3Mbps)
5.6GHz Band	IEEE802.11a: OFDM	6Mbps
	IEEE802.11n (HT20): OFDM	MCS0 (6.5Mbps)
	IEEE802.11n (HT40): OFDM	MCS0 (13.5Mbps)
	IEEE802.11ac (HT80): OFDM	MCS0 (29.3Mbps)

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.

2.6 Operating mode

[Tx mode]

- i) Test program setup to the DM tool
- ii) Select a Test mode
Operating frequency: 5.2GHz Band, 5.3GHz Band, 5.6GHz Band
- iii) Start test mode

[Rx mode]

- i) Test program setup to the DM tool
- ii) Select a Test mode
Operating frequency: 5.2GHz Band, 5.3GHz Band, 5.6GHz Band
- iii) Start test mode

3. Configuration of equipment

3.1 Equipment(s) used

No.	Equipment	Company	Model No.	Serial No.	FCC ID / DoC	Comment
1	Mobile Phone	KYOCERA	EA34	N/A	JOYEA34	EUT
2	AC Adapter	au	N/A	N/A	N/A	*

*: AC power line Conducted Emission Test.

3.2 Cable(s) used

No.	Cable	Length[m]	Shield	Connector	Comment
a	Micro USB cable(for AC Adapter)	1.0	Yes	Metal	*

*: AC power line Conducted Emission Test.

3.3 System configuration



Note1: Numbers assigned to equipment or cables on this diagram correspond to the list in "3.1 Equipment(s) used" and "3.2 Cable(s) used".

4. 26dB Bandwidth and 99% Occupied Bandwidth

4.1 Measurement procedure

[FCC 15.407(a), KDB 789033 D02, Section C, D]

The 26dB bandwidth and 99% occupied bandwidth 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;

- RBW=200kHz/430kHz/820kHz, VBW=620kHz/1.3MHz/2.4MHz, Span=40MHz/80MHz/160MHz
- Sweep=auto, Detector=Peak, Trace mode=Max hold

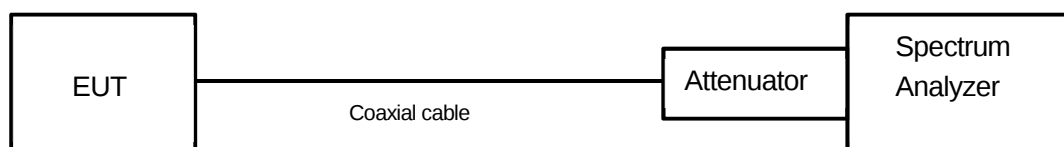
The EUT was set to operate with following conditions.

- 5.2GHz Band, 5.3GHz Band, 5.6GHz Band

The test mode of EUT is as follows.

- Tx mode

- Test configuration



4.2 Limit

None

4.3 Measurement result

Date : May 30, 2017

Temperature : 23.6 [°C]

Humidity : 49.0 [%]

Test place : Shielded room No.4

Test engineer :

Tadahiro Seino

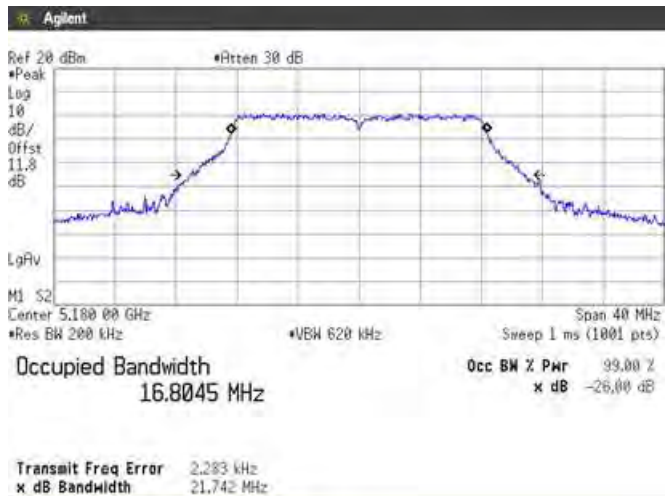
Mode	Band	Channel	Frequency (MHz)	26dB bandwidth (MHz)	99% Occupied bandwidth (MHz)
802.11a	5.2GHz Band	36	5180	21.742	16.8045
		40	5200	21.899	16.8148
		48	5240	21.743	16.7768
	5.3GHz Band	52	5260	22.259	16.8382
		56	5280	21.937	16.8209
		64	5320	22.219	16.8496
	5.6GHz Band	100	5500	22.041	16.8392
		116	5580	22.133	16.8072
		140	5700	22.028	16.8078

Mode	Band	Channel	Frequency (MHz)	26dB bandwidth (MHz)	99% Occupied bandwidth (MHz)
802.11n (20MHz)	5.2GHz Band	36	5180	22.560	17.8811
		40	5200	22.440	17.8781
		48	5240	22.667	17.8610
	5.3GHz Band	52	5260	22.094	17.8741
		56	5280	22.567	17.8998
		64	5320	22.333	17.8857
	5.6GHz Band	100	5500	22.414	17.8825
		116	5580	22.277	17.8920
		140	5700	22.256	17.8630

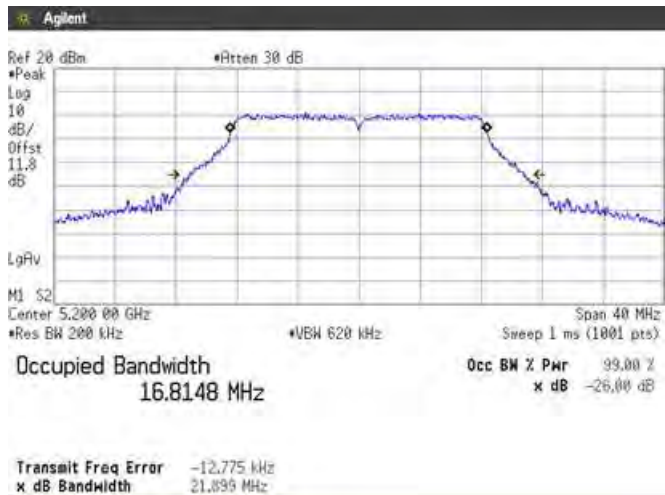
Mode	Band	Channel	Frequency (MHz)	26dB bandwidth (MHz)	99% Occupied bandwidth (MHz)
802.11n (40MHz)	5.2GHz Band	38	5190	43.600	36.1747
		46	5230	43.753	36.1841
	5.3GHz Band	54	5270	43.685	36.2130
		62	5310	44.186	36.1707
	5.6GHz Band	102	5510	43.708	36.1645
		110	5550	42.284	36.1610
		134	5670	44.084	36.2441

Mode	Band	Channel	Frequency (MHz)	26dB bandwidth (MHz)	99% Occupied bandwidth (MHz)
802.11ac (80MHz)	5.2GHz Band	42	5210	83.697	74.6391
	5.3GHz Band	58	5290	83.737	74.5898
	5.6GHz Band	106	5530	83.802	74.6661
		122	5610	83.813	74.6399

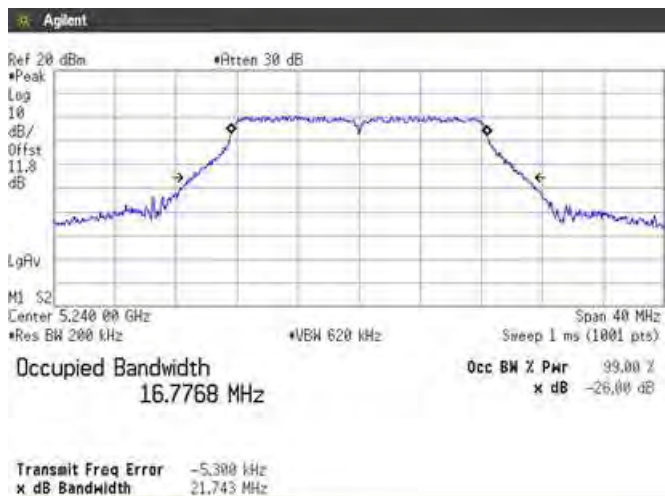
4.4 Trace data
[IEEE802.11a]
(5.2GHz Band)
Channel: 36



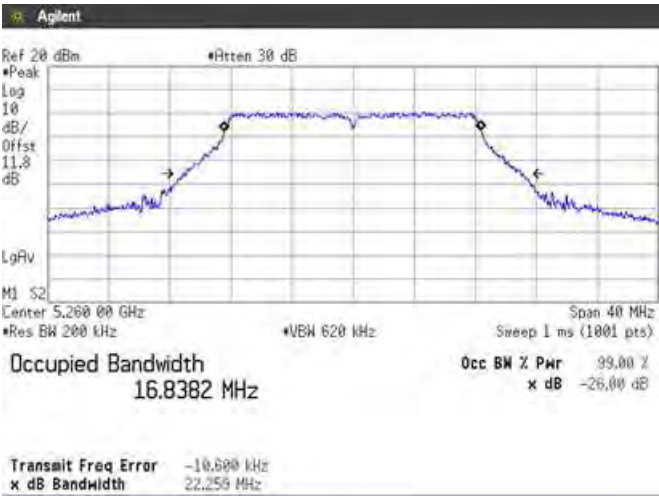
Channel: 40



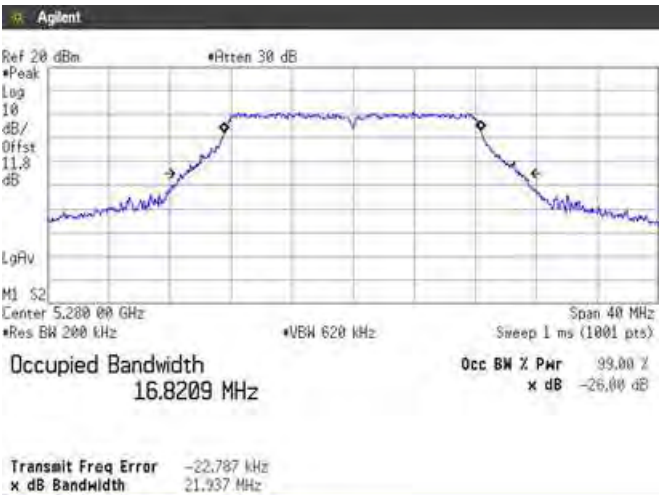
Channel: 48



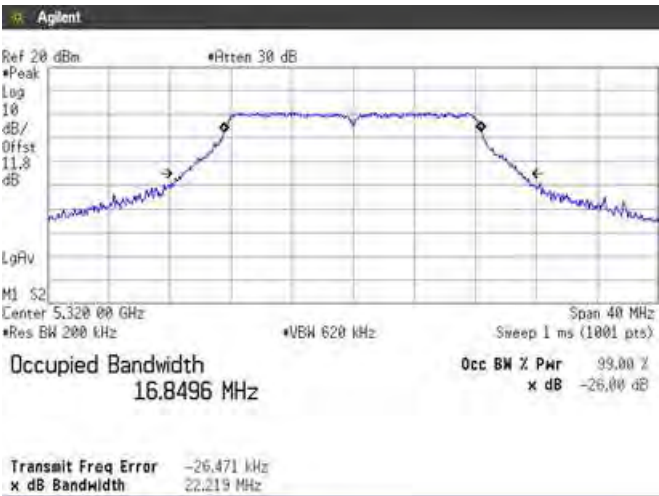
(5.3GHz Band)
Channel: 52



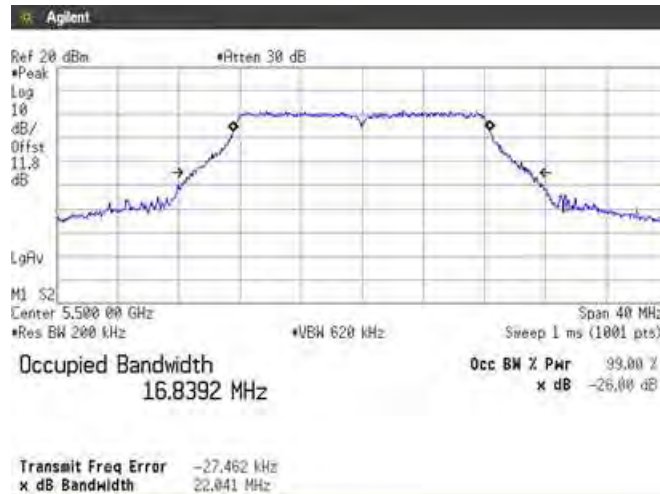
Channel: 56



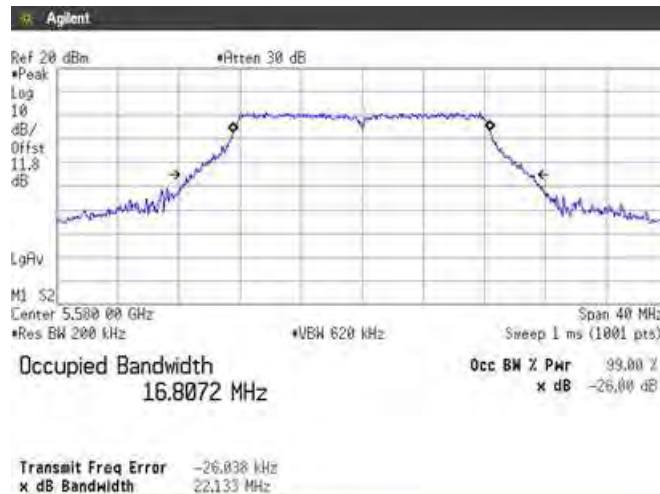
Channel: 64



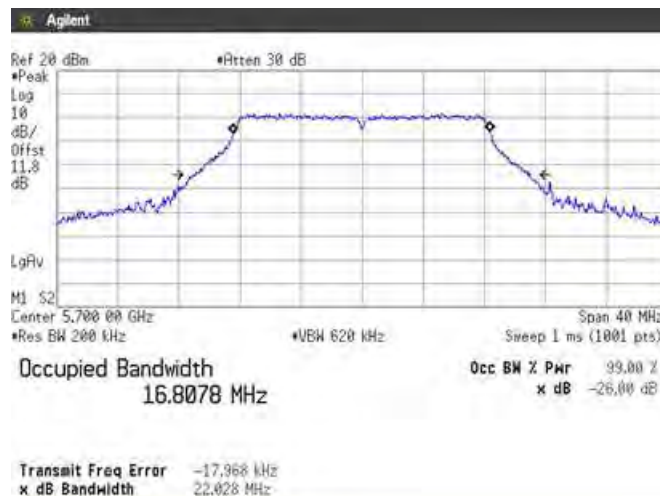
(5.6GHz Band)
Channel: 100



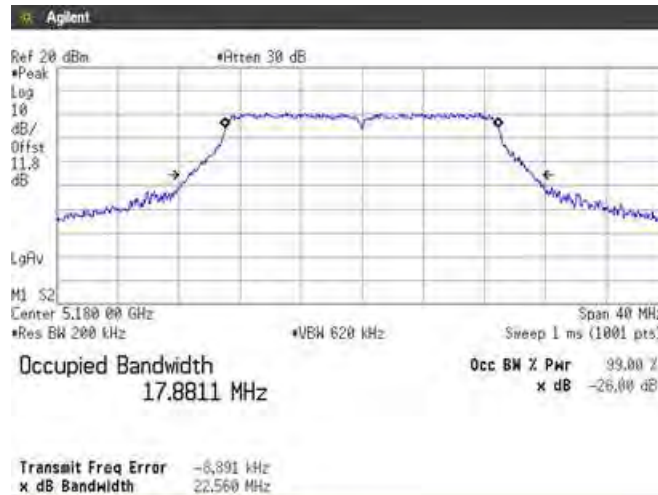
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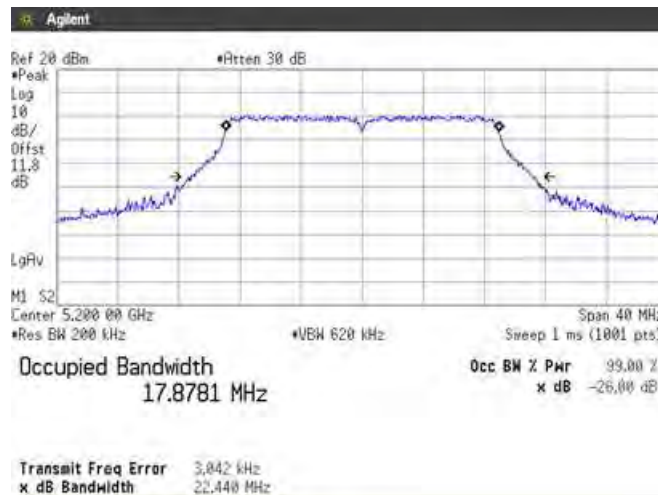
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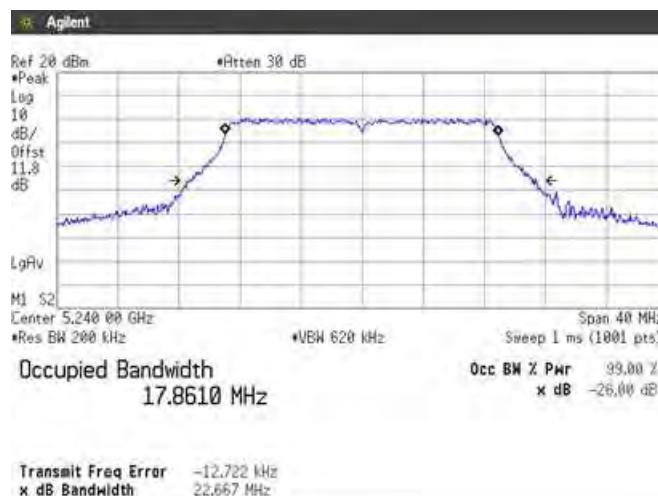
[IEEE802.11n (HT20)]
(5.2GHz Band)
Channel: 36



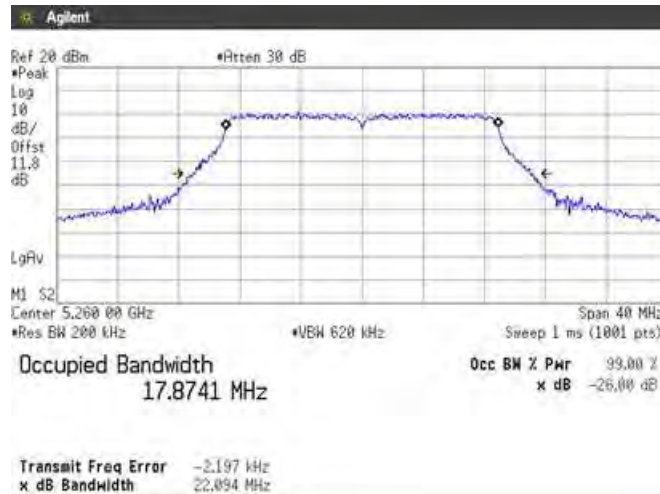
Channel: 40



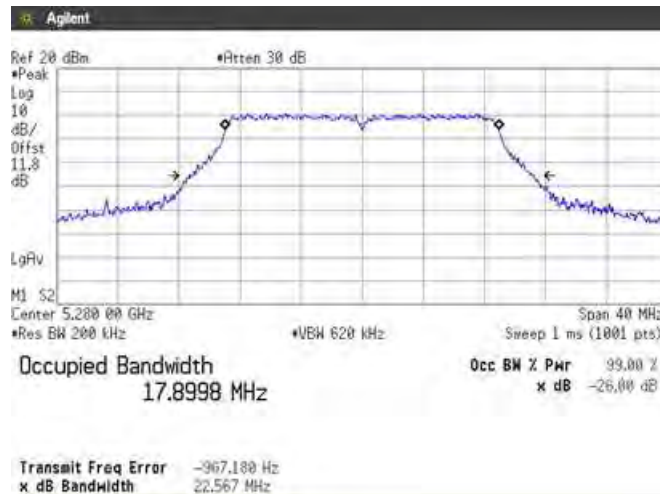
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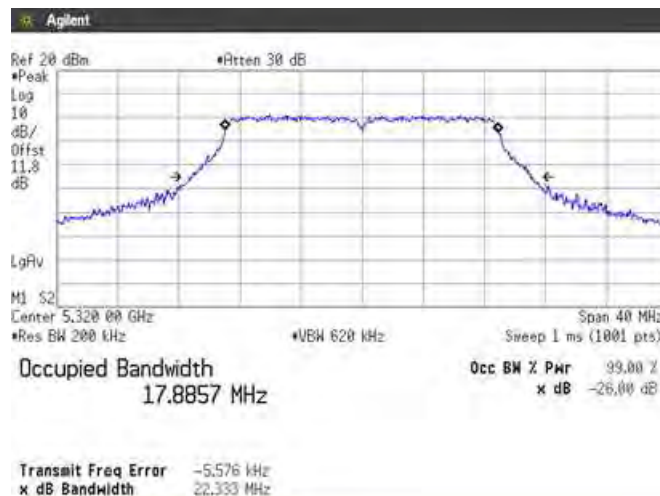
(5.3GHz Band)
Channel: 52



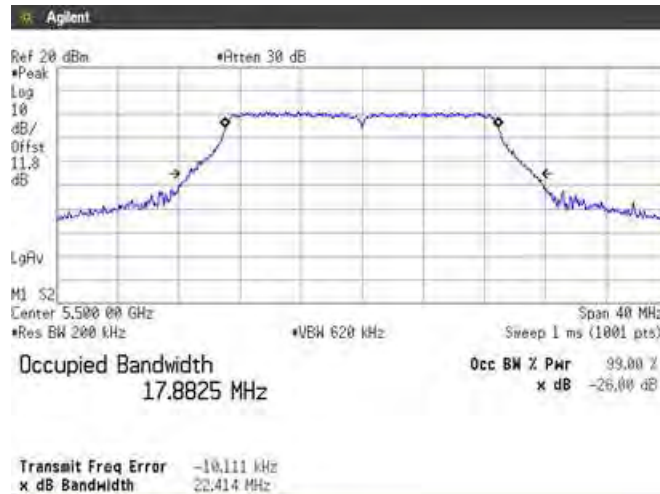
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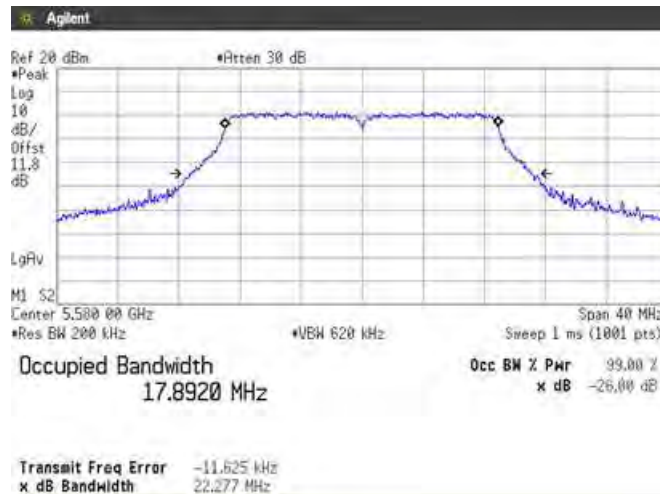
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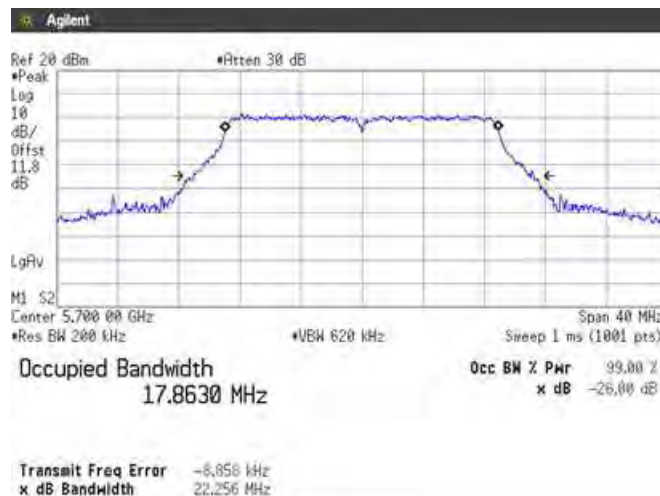
(5.6GHz Band)
Channel: 100



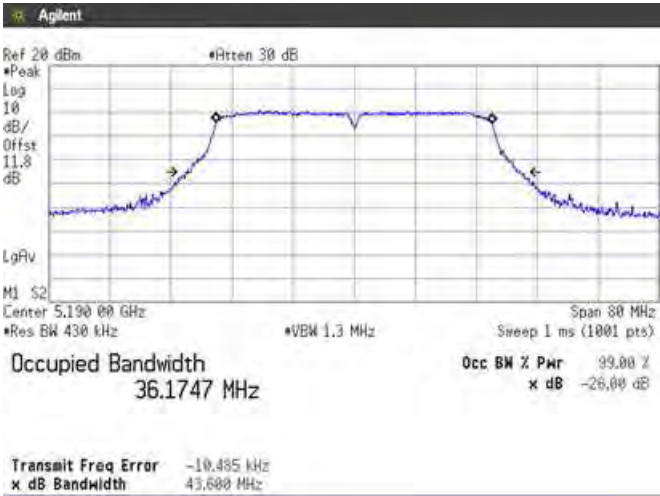
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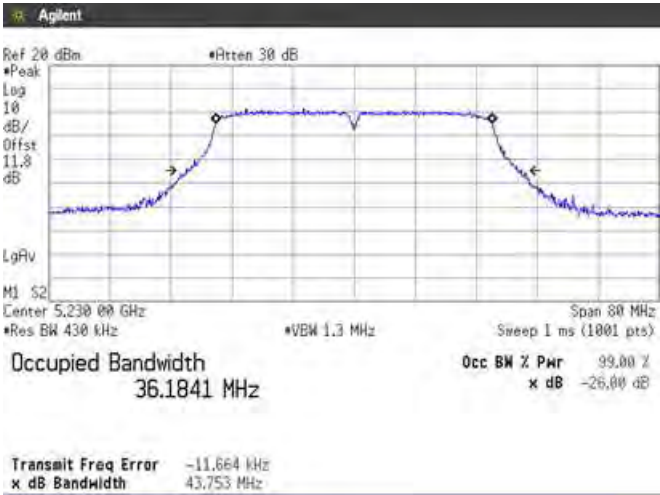
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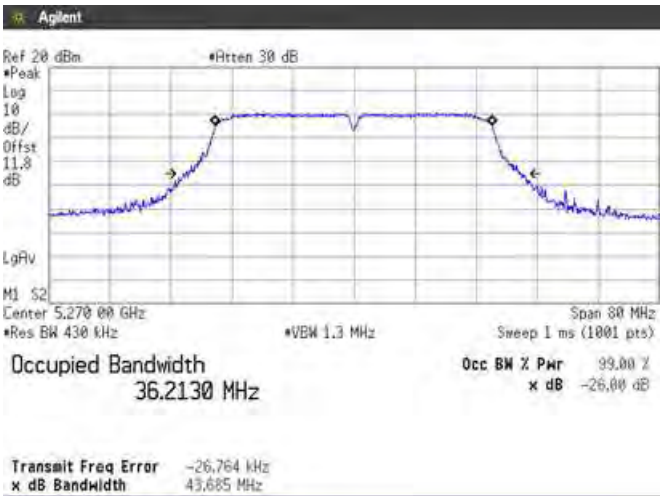
[IEEE802.11n (HT40)]
(5.2GHz Band)
Channel: 38



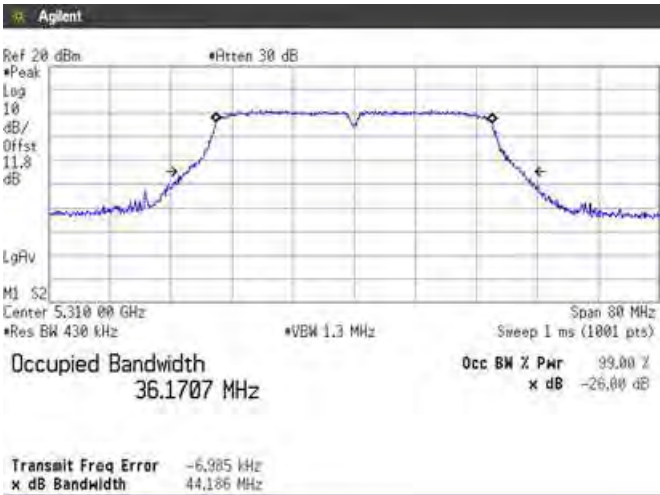
Channel: 46



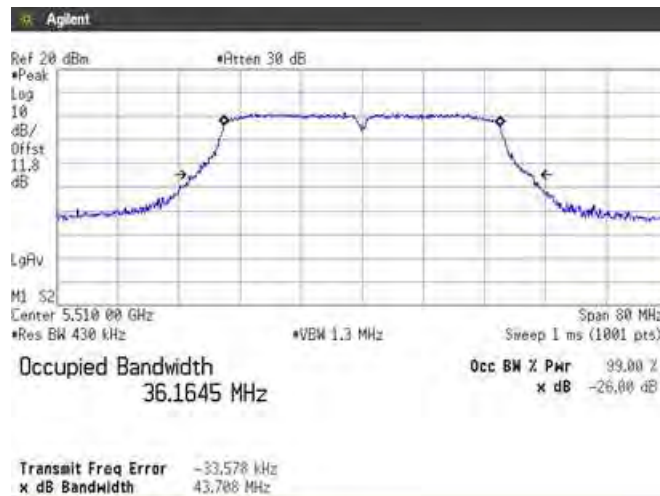
(5.3GHz Band)
Channel: 54



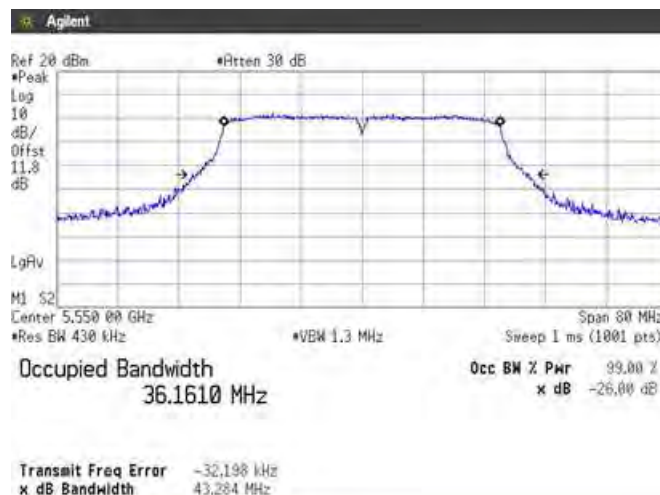
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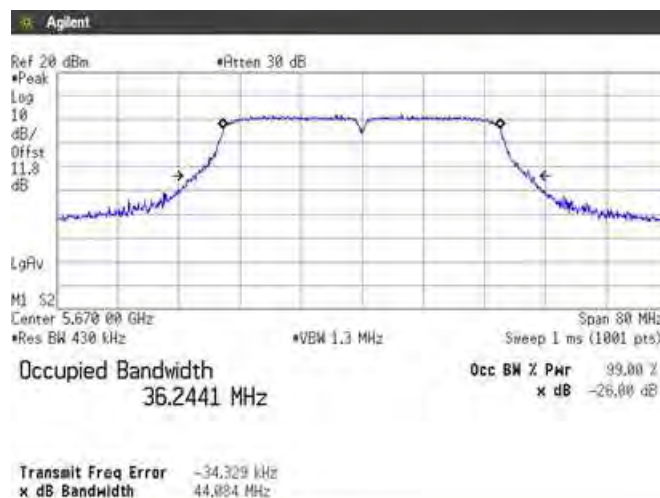
(5.6GHz Band)
Channel: 102



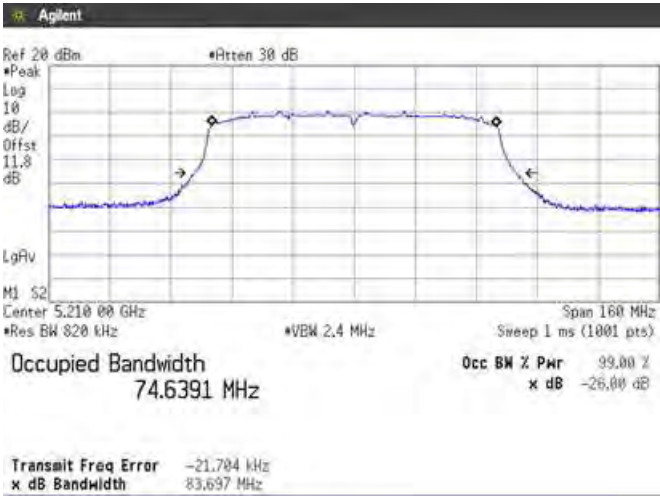
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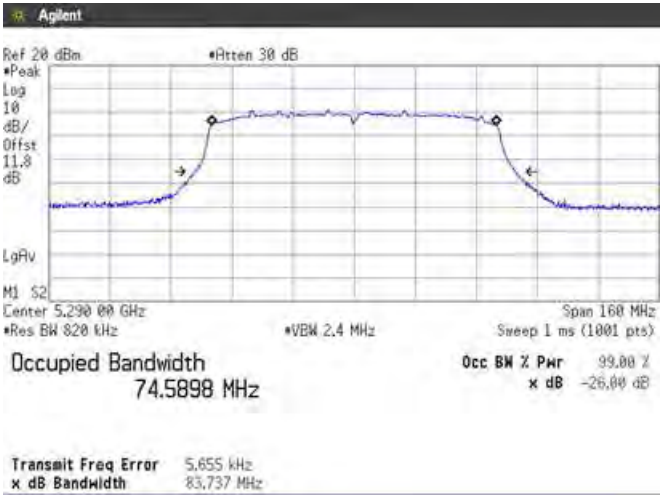
Channel: 134



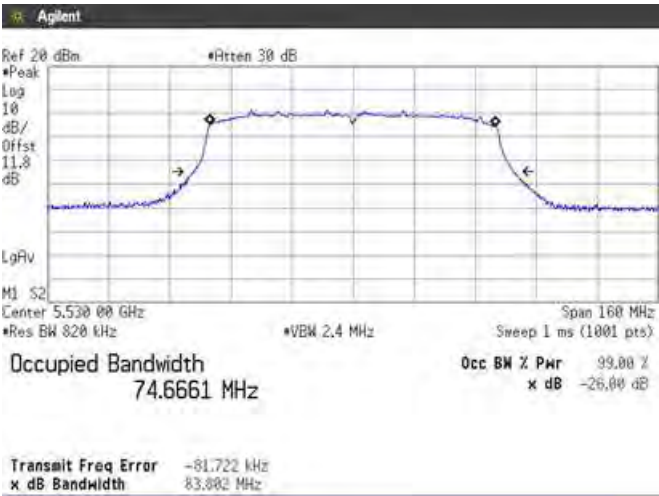
[IEEE802.11ac (HT80)]
(5.2GHz Band)
Channel: 42



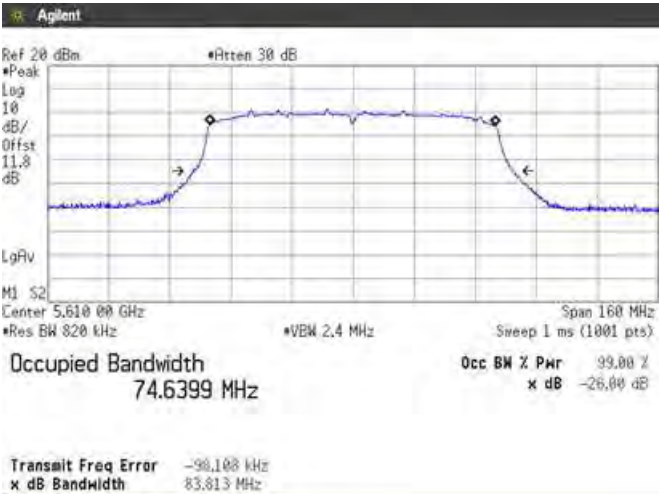
(5.3GHz Band)
Channel: 58



(5.6GHz Band)
Channel: 106



Channel: 122



5. Maximum Conducted Output Power

5.1 Measurement procedure

[FCC 15.407(a), KDB 789033 D02, Section E.2.b)Method SA-1, d)Method SA-2]

The peak power 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;

- RBW=1MHz, VBW=3MHz, Span=35MHz/70MHz/140MHz, Sweep=auto, Detector=RMS, Trace mode=Averaging

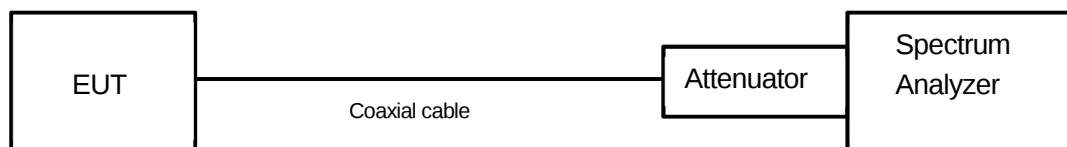
The EUT was set to operate with following conditions.

- 5.2GHz Band, 5.3GHz Band, 5.6GHz Band

The test mode of EUT is as follows.

- Tx mode

- Test configuration



5.2 Limit

- (1) For mobile and portable client devices in the 5.15-5.25GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250mW provided the maximum antenna gain does not exceed 6dBi.
- (2) For the 5.25-5.35GHz and 5.47-5.725GHz bands, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250mW or $11\text{dBm} + 10\log B$, where B is the 26dB emission bandwidth in megahertz.
- (3) For the 5.725-5.85GHz bands, the maximum conducted output power over the frequency band of operation shall not exceed 1W.

<Output Power Limit Calculation>

Band	Mode	Power Limit (mW)	Calculated Limit (dBm)	Antenna Gain (dBi)	Determined Limit (dBm)
5.2GHz Band	802.11a	250	23.97	1.1	23.97
	802.11n HT20				
	802.11n HT40				
	802.11ac HT80				

Band	Mode	Power Limit (mW)	Calculated Limit (dBm)	Antenna Gain (dBi)	Determined Limit (dBm)
		Least 26dBc BW (MHz)			
5.3GHz Band	802.11a	250	23.97	1.1	23.97
		21.494	24.32		
	802.11n HT20	250	23.97		23.97
		22.217	24.47		
	802.11n HT40	250	23.97		23.97
		42.725	27.31		
	802.11ac HT80	250	23.97		23.97
		83.558	30.22		

Band	Mode	Power Limit (mW)	Calculated Limit (dBm)	Antenna Gain (dBi)	Determined Limit (dBm)
		Least 26dBc BW (MHz)			
5.6GHz Band	802.11a	250	23.97	0.5	23.97
		21.63	24.35		
	802.11n HT20	250	23.97		23.97
		21.852	24.39		
	802.11n HT40	250	23.97		23.97
		43.014	27.34		
	802.11ac HT80	250	23.97		23.97
		83.168	30.20		

5.3 Measurement result

Date : May 30, 2017
 Temperature : 23.6 [°C]
 Humidity : 49.0 [%]
 Test place : Shielded room No.4

Test engineer : Tadahiro Seino

Mode	Channel	Frequency (MHz)	Reading (dBm)	Duty Cycle			DCF (dB)	Test Result (dBm)	Test Result (mW)
				On Time(ms)	On+Off Time(ms)	X			
802.11a	36	5180	10.69	1.364	1.372	0.994	0.025	10.715	11.791
	40	5200	10.79					10.815	12.065
	48	5240	10.57					10.595	11.469
	52	5260	10.67	1.364	1.372	0.994	0.025	10.695	11.737
	56	5280	10.68					10.705	11.764
	64	5320	10.94					10.965	12.489
	100	5500	11.15	1.364	1.372	0.994	0.025	11.175	13.108
	116	5580	11.41					11.435	13.917
	140	5700	11.50					11.525	14.208

Note: X = On time / (On + Off time), DCF=10log (1/x)

Mode	Channel	Frequency (MHz)	Reading (dBm)	Duty Cycle			DCF (dB)	Test Result (dBm)	Test Result (mW)
				On Time(ms)	On+Off Time(ms)	X			
802.11n (20MHz)	36	5180	10.90	1.274	1.284	0.992	0.034	10.934	12.399
	40	5200	10.82					10.854	12.173
	48	5240	10.75					10.784	11.978
	52	5260	10.70	1.276	1.284	0.994	0.027	10.727	11.823
	56	5280	10.97					10.997	12.581
	64	5320	11.03					11.057	12.756
	100	5500	11.23	1.274	1.284	0.992	0.034	11.264	13.378
	116	5580	11.34					11.374	13.721
	140	5700	11.56					11.594	14.434

Note: X = On time / (On + Off time), DCF=10log (1/x)

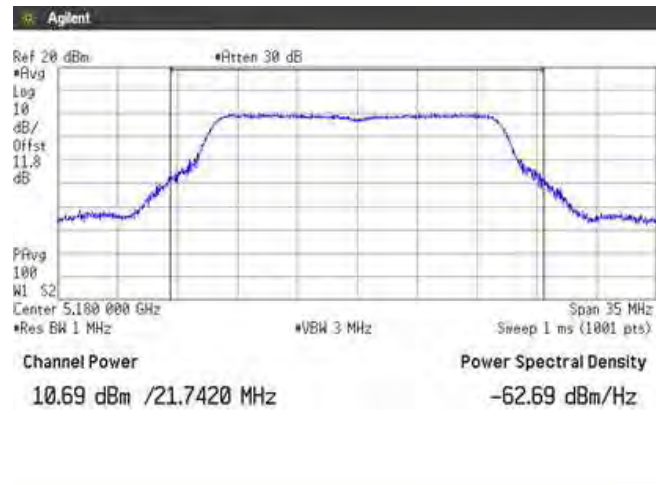
Mode	Channel	Frequency (MHz)	Reading (dBm)	Duty Cycle			DCF (dB)	Test Result (dBm)	Test Result (mW)
				On Time(ms)	On+Off Time(ms)	X			
802.11n (40MHz)	38	5190	10.69	0.635	0.646	0.983	0.075	10.765	11.925
	46	5230	10.67					10.745	11.870
	54	5270	10.71	0.634	0.645	0.983	0.075	10.785	11.980
	62	5310	11.12					11.195	13.167
	102	5510	11.25	0.634	0.646	0.981	0.081	11.331	13.588
	110	5550	11.40					11.481	14.065
	134	5670	11.43					11.511	14.163

Note: X = On time / (On + Off time), DCF=10log (1/x)

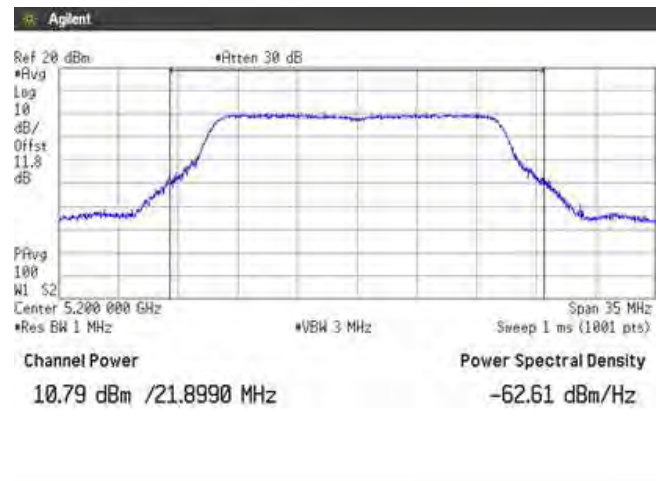
Mode	Channel	Frequency (MHz)	Reading (dBm)	Duty Cycle			DCF (dB)	Test Result (dBm)	Test Result (mW)
				On Time(ms)	On+Off Time(ms)	X			
802.11ac (80MHz)	42	5210	10.04	0.248	0.258	0.959	0.180	10.220	10.521
	58	5290	10.19	0.248	0.258	0.961	0.172	10.362	10.868
	106	5530	10.35	0.247	0.258	0.957	0.189	10.539	11.322
	122	5610	10.33	0.248	0.258	0.961	0.172	10.502	11.225

Note: X = On time / (On + Off time), DCF=10log (1/x)

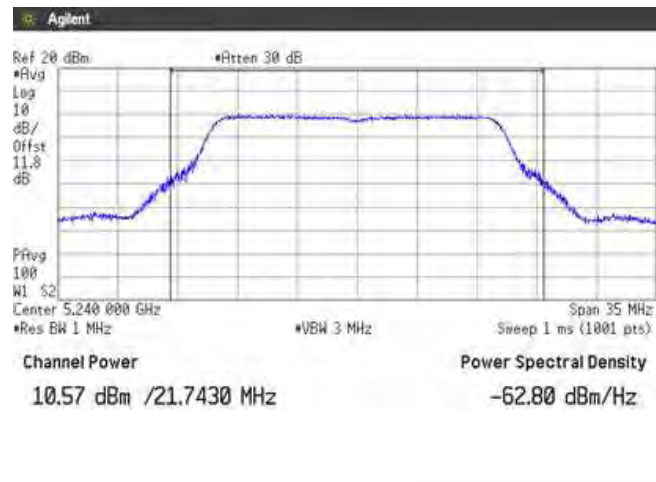
5.4 Trace data
[IEEE802.11a]
(5.2GHz Band)
Channel: 36



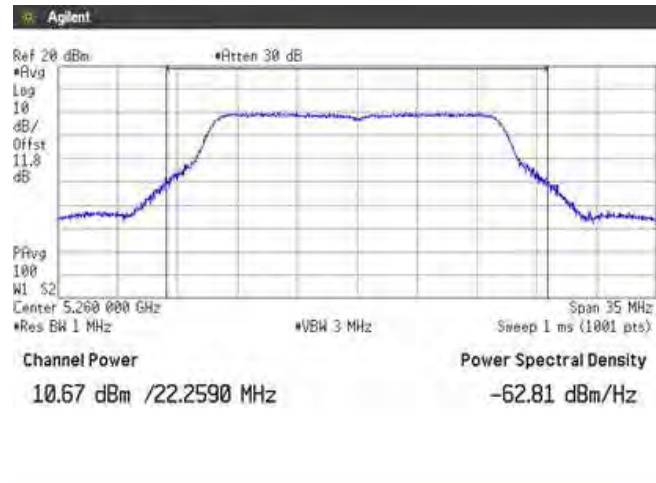
Channel: 40



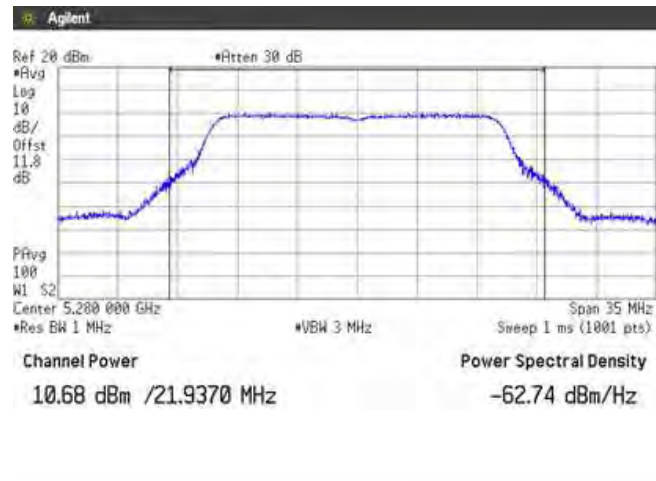
Channel: 48



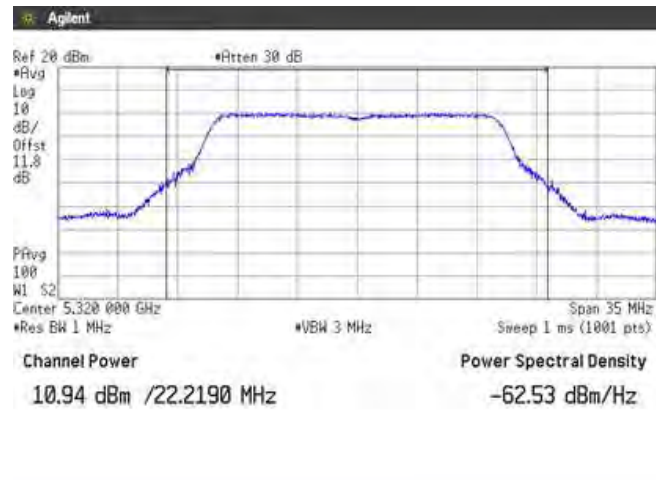
(5.3GHz Band)
Channel: 52



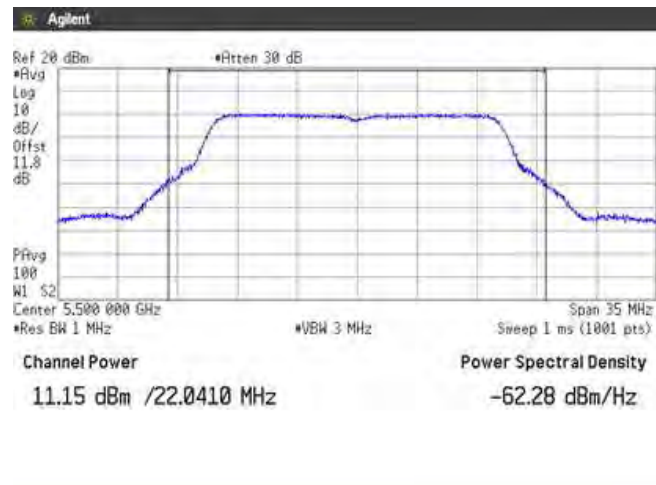
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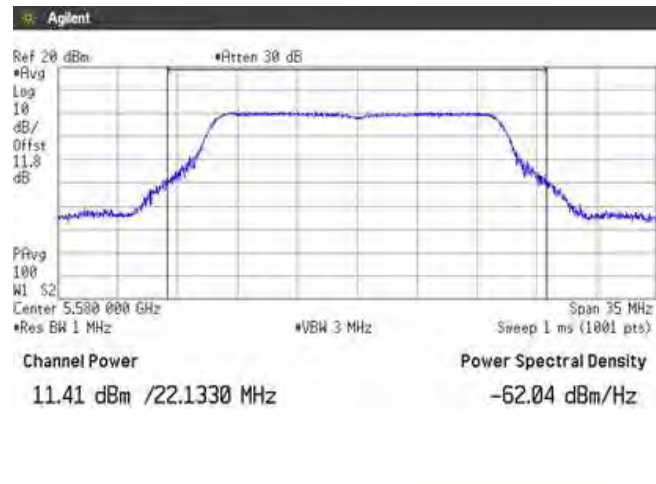
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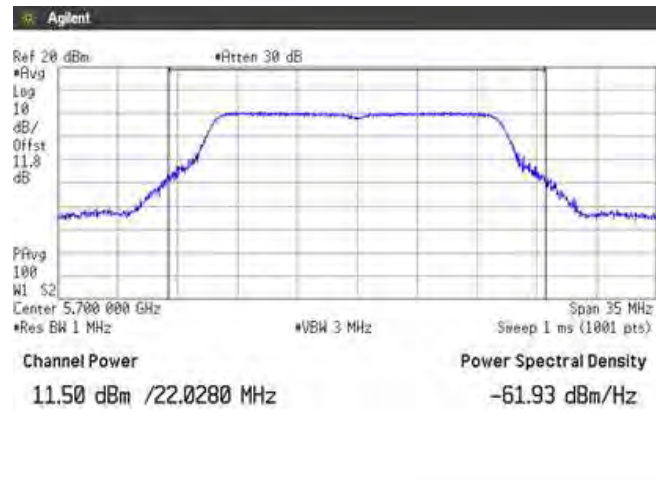
(5.6GHz Band)
Channel: 100



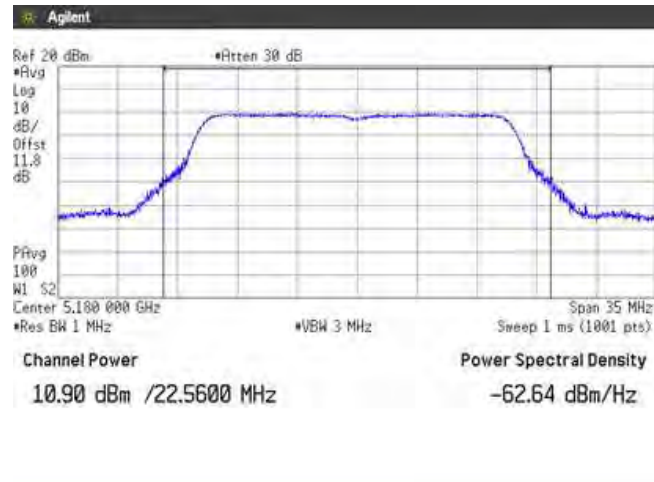
Channel: 116



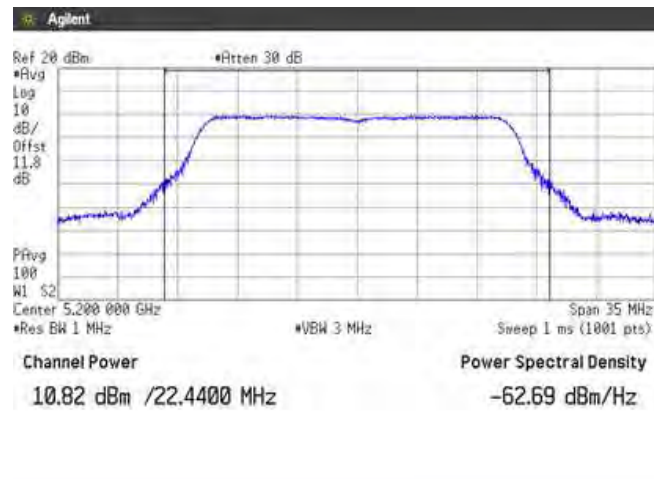
Channel: 140



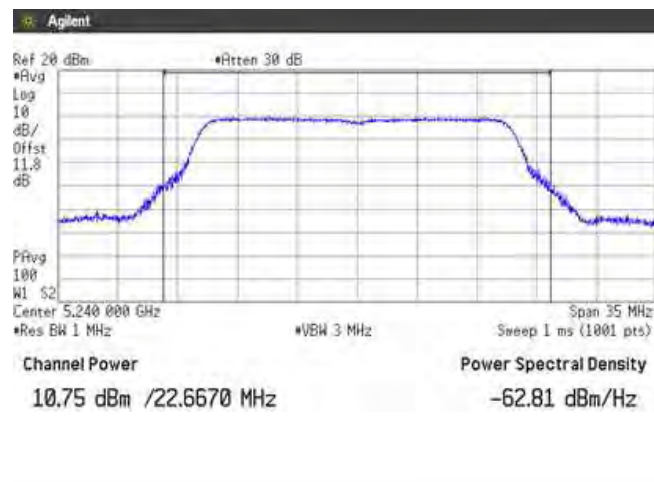
[IEEE802.11n (HT20)]
(5.2GHz Band)
Channel: 36



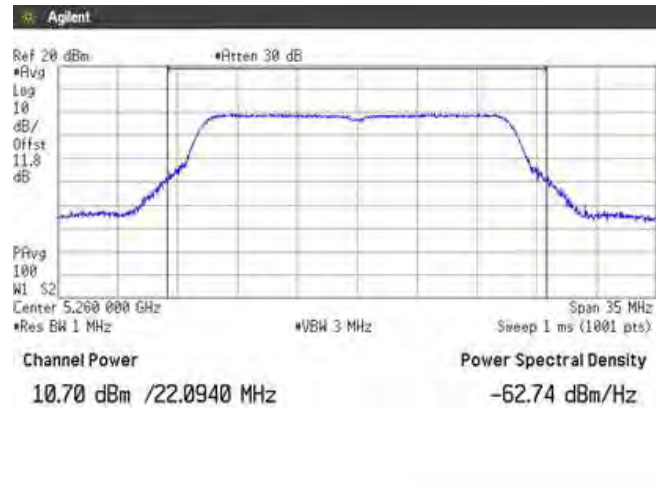
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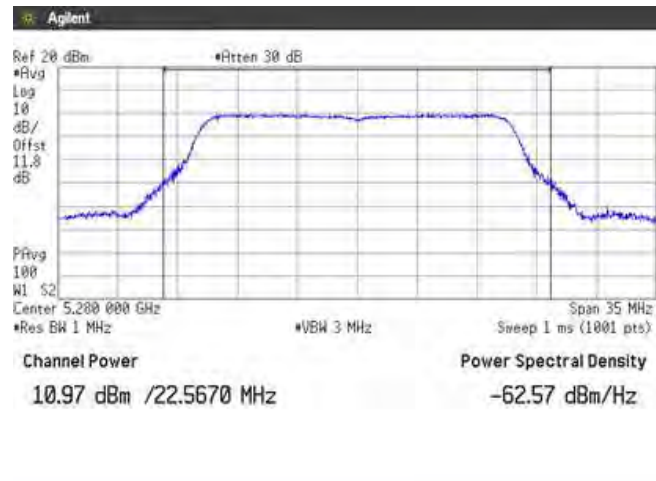
Channel: 48



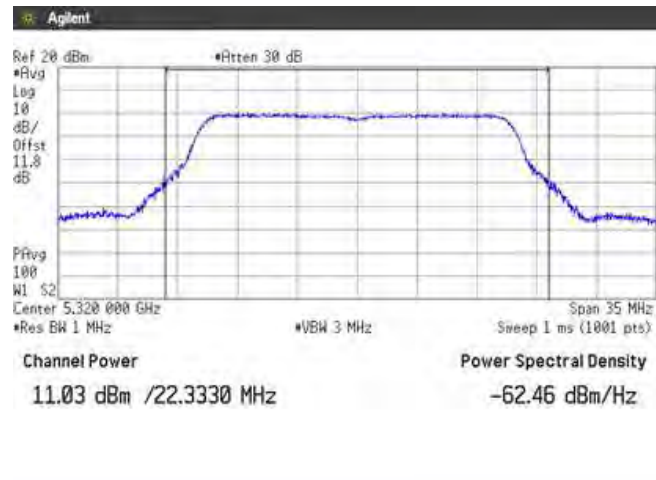
(5.3GHz Band)
Channel: 52



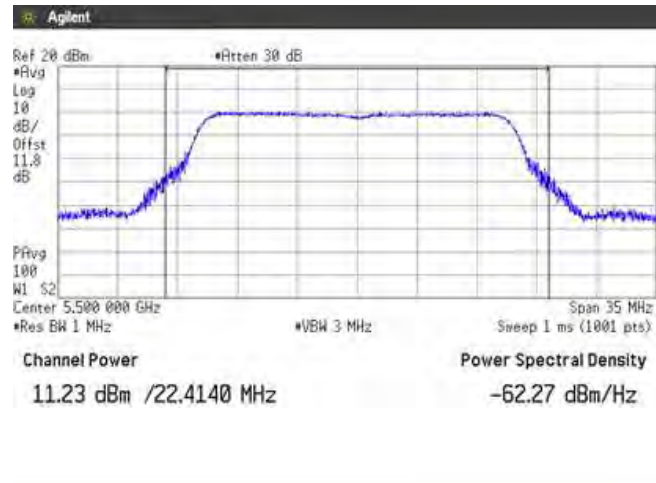
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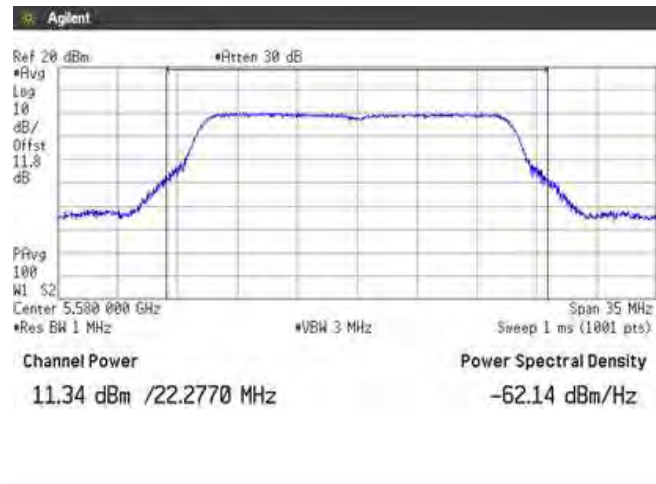
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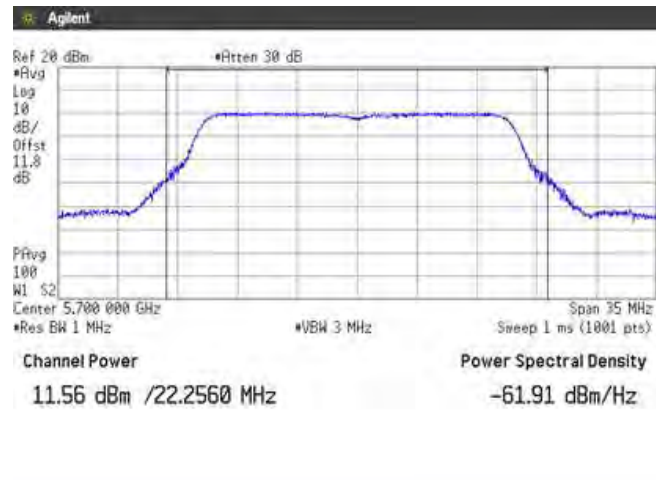
(5.6GHz Band)
Channel: 100



Channel: 116



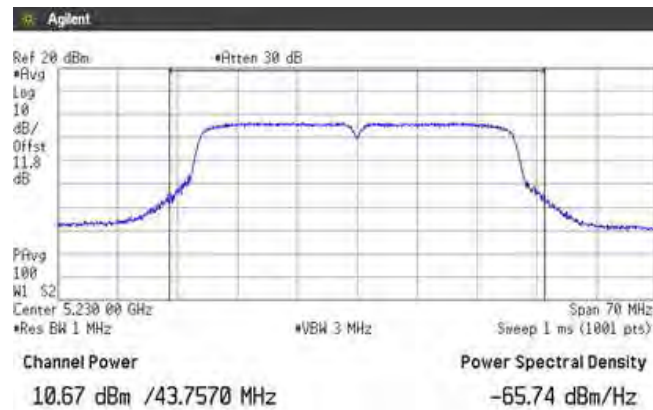
Channel: 140



[IEEE802.11n (HT40)]
(5.2GHz Band)
Channel: 38

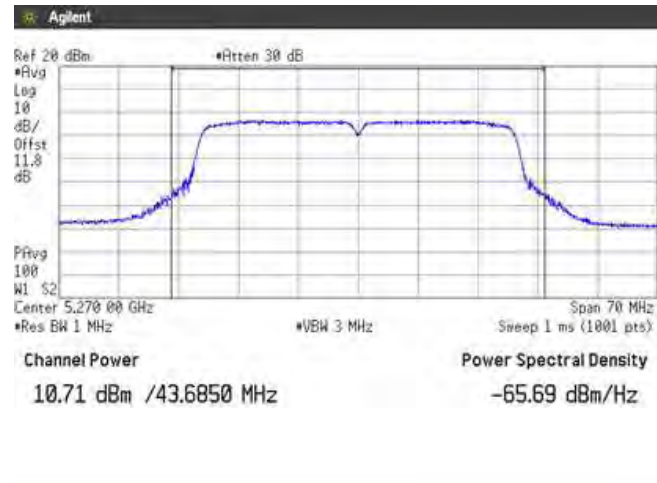


Channel: 46

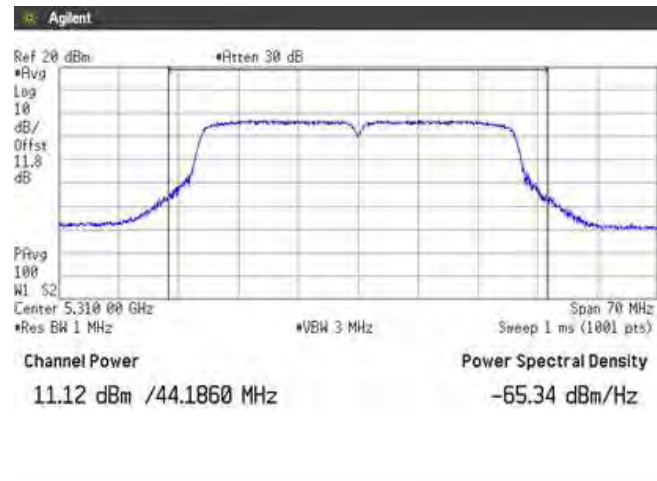


(5.3GHz Band)

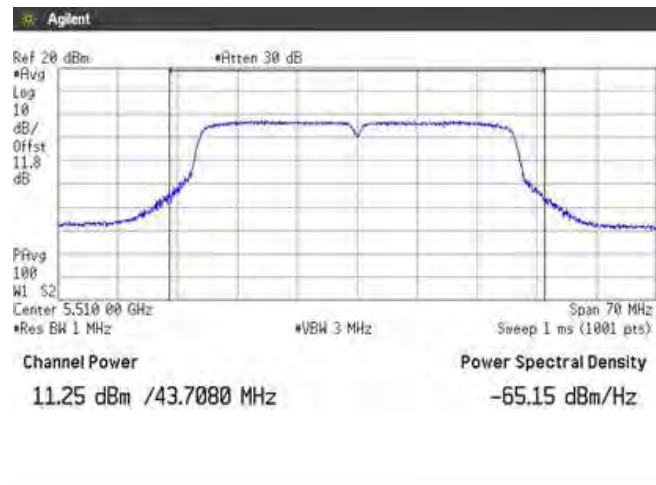
Channel: 54



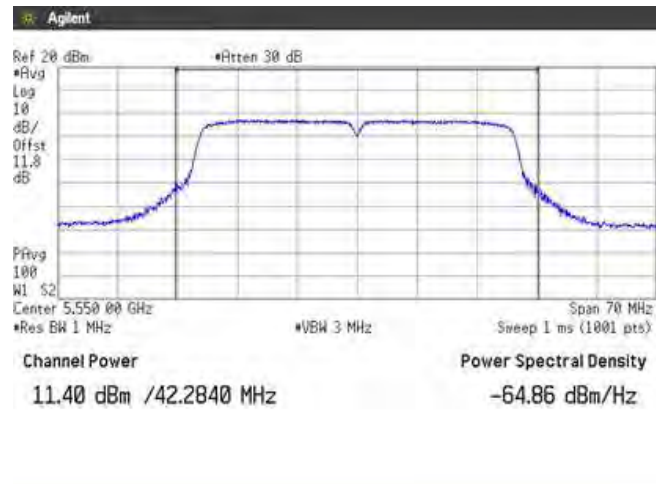
Channel: 62



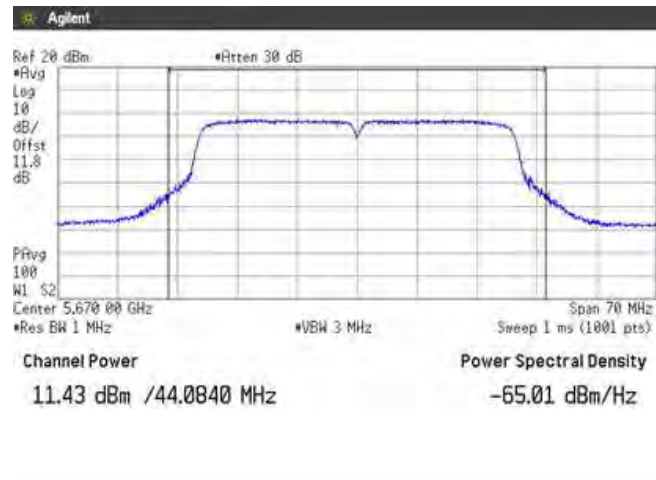
(5.6GHz Band)
Channel: 102



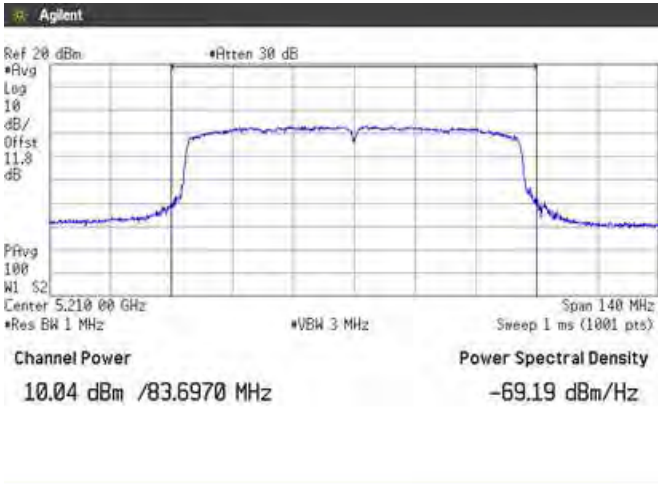
Channel: 110



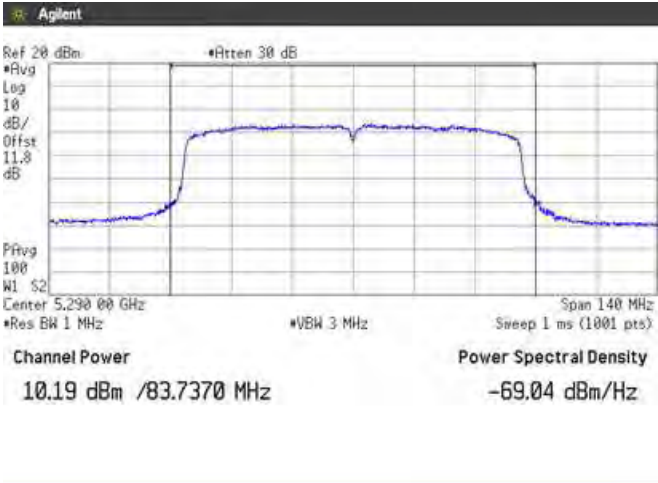
Channel: 134



[IEEE802.11ac (HT80)]
(5.2GHz Band)
Channel: 42

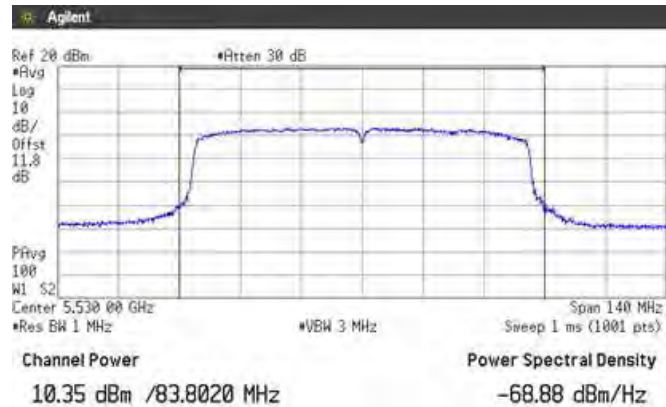


(5.3GHz Band)
Channel: 58

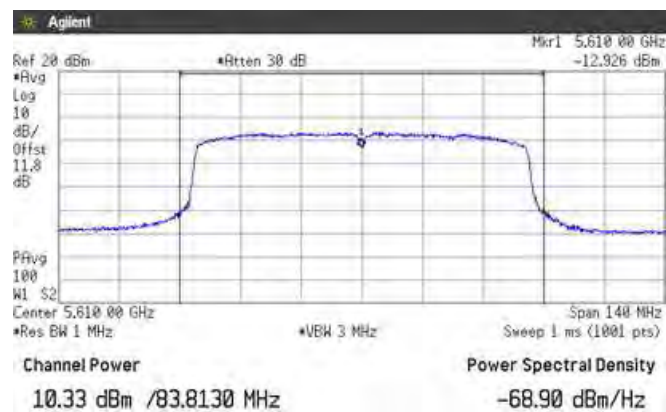


(5.6GHz Band)

Channel: 106



Channel: 122



6. Peak Power Spectral Density

6.1 Measurement procedure

[FCC 15.407(a), KDB 789033 D02, Section F]

The peak power 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;

- RBW=1MHz, VBW=3MHz, Span=25MHz/50MHz/100MHz, Sweep=Auto, Detector=RMS, Trace mode=Averaging

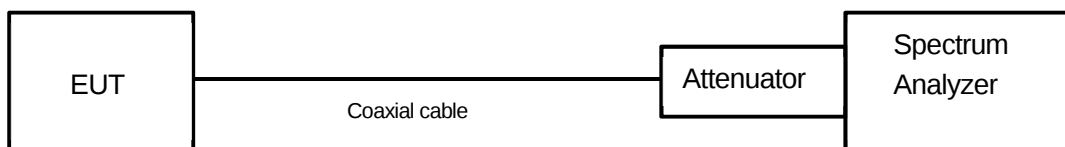
The EUT was set to operate with following conditions.

- 5.2GHz Band, 5.3GHz Band, 5.6GHz Band

The test mode of EUT is as follows.

- Tx mode

- Test configuration



6.2 Limit

- (1) For mobile and portable client devices in the 5.15-5.25GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6dBi.
- (2) For the 5.25-5.35GHz and 5.47-5.725GHz bands, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6dBi.
- (3) For the 5.725-5.85GHz bands, the maximum power spectral density shall not exceed 30dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirection applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

<Peak Power Spectral Density Limit Calculation>

Band	Antenna Gain (dBi)	Limit
5.2GHz Band	1.1	11dBm/MHz
5.3GHz Band	1.1	11dBm/MHz
5.6GHz Band	0.5	11dBm/MHz

6.3 Measurement result

Date : May 30, 2017
 Temperature : 23.6 [°C]
 Humidity : 49.0 [%]
 Test place : Shielded room No.4

Test engineer : Chiaki Kanno

Mode	Channel	Frequency (MHz)	Reading (dBm)	Duty Cycle			DCF (dB)	Test Result (dBm)
				On Time(ms)	On+Off Time(ms)	X		
802.11a	36	5180	0.109	1.362	1.372	0.993	0.032	0.141
	40	5200	0.022					0.054
	48	5240	-0.130					-0.098
	52	5260	0.186	1.364	1.372	0.994	0.025	0.211
	56	5280	0.363					0.388
	64	5320	0.300					0.325
	100	5500	0.474	1.364	1.372	0.994	0.025	0.499
	116	5580	0.663					0.688
	140	5700	0.719					0.744

Note: X = On time / (On + Off time), DCF=10log (1/x)

Mode	Channel	Frequency (MHz)	Reading (dBm)	Duty Cycle			DCF (dB)	Test Result (dBm)
				On Time(ms)	On+Off Time(ms)	X		
802.11n (20MHz)	36	5180	0.002	1.276	1.284	0.994	0.027	0.029
	40	5200	-0.754					-0.727
	48	5240	-0.126					-0.099
	52	5260	-0.545	1.276	1.284	0.994	0.027	-0.518
	56	5280	-0.128					-0.101
	64	5320	0.074					0.101
	100	5500	0.135	1.276	1.284	0.994	0.027	0.162
	116	5580	0.312					0.339
	140	5700	0.730					0.757

Note: X = On time / (On + Off time), DCF=10log (1/x)

Mode	Channel	Frequency (MHz)	Reading (dBm)	Duty Cycle			DCF (dB)	Test Result (dBm)
				On Time(ms)	On+Off Time(ms)	X		
802.11n (40MHz)	38	5190	-3.070	0.636	0.646	0.985	0.068	-3.002
	46	5230	-3.152					-3.084
	54	5270	-3.497	0.636	0.646	0.985	0.068	-3.429
	62	5310	-3.202					-3.134
	102	5510	-2.100	0.636	0.646	0.985	0.068	-2.032
	110	5550	-2.344					-2.276
	134	5670	-2.306					-2.238

Note: X = On time / (On + Off time), DCF=10log (1/x)

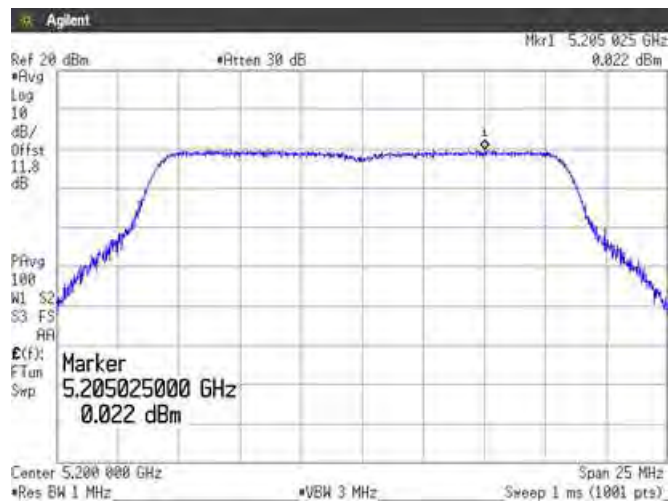
Mode	Channel	Frequency (MHz)	Reading (dBm)	Duty Cycle			DCF (dB)	Test Result (dBm)
				On Time(ms)	On+Off Time(ms)	X		
802.11ac (80MHz)	42	5210	-6.290	0.248	0.258	0.960	0.179	-6.111
	58	5290	-6.327	0.248	0.258	0.960	0.179	-6.148
	106	5530	-6.405	0.248	0.258	0.960	0.179	-6.226
	122	5610	-6.424	0.248	0.257	0.962	0.170	-6.254

Note: X = On time / (On + Off time), DCF=10log (1/x)

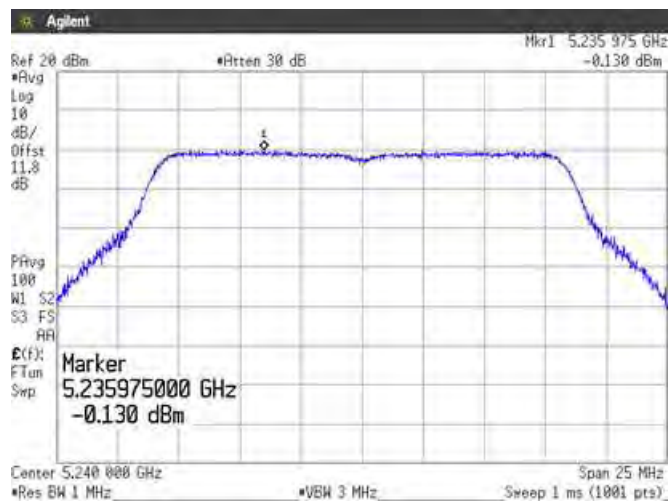
6.4 Trace data
[IEEE802.11a]
(5.2GHz Band)
Channel: 36



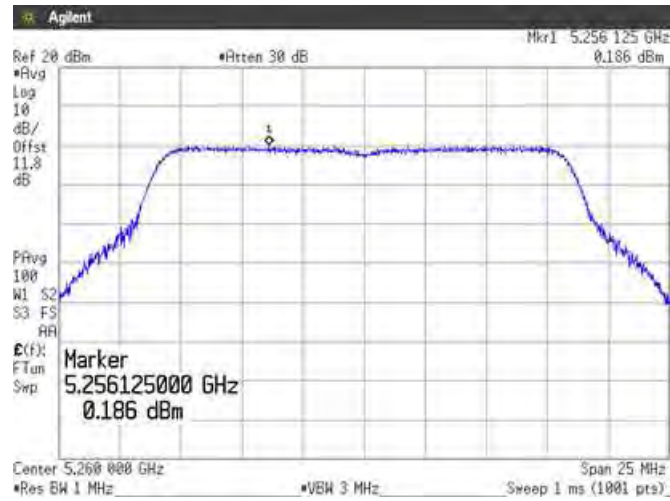
Channel: 40



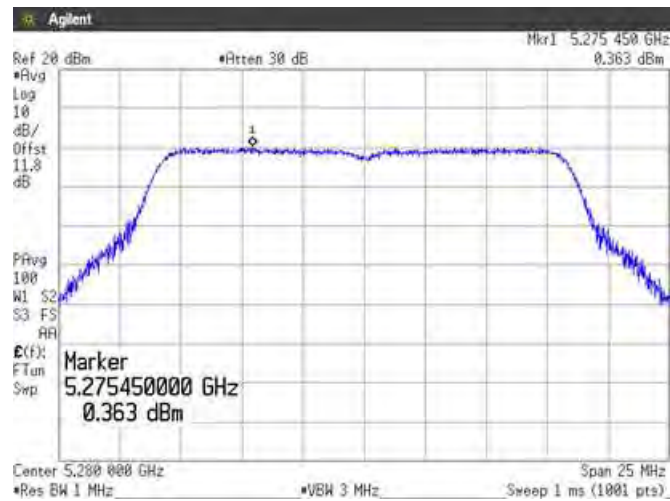
Channel: 48



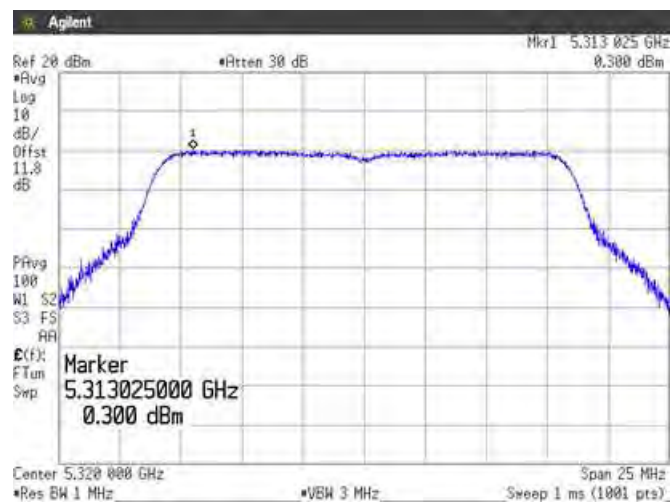
(5.3GHz Band)
Channel: 52



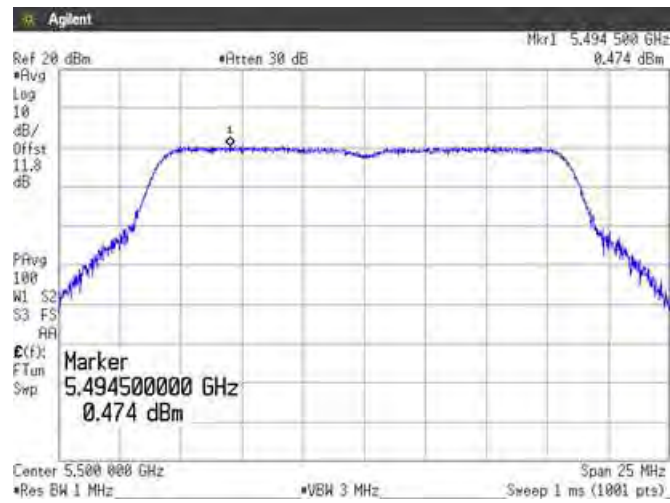
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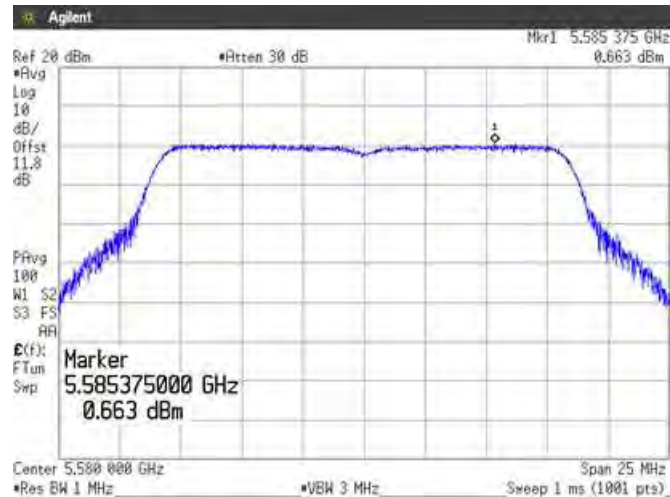
Channel: 64



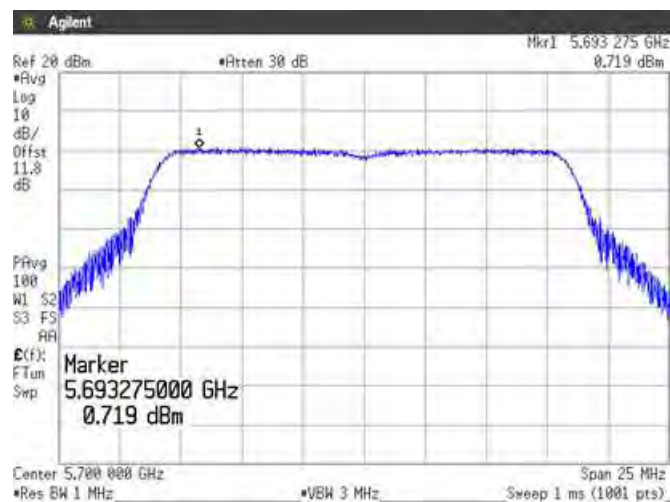
(5.6GHz Band)
Channel: 100



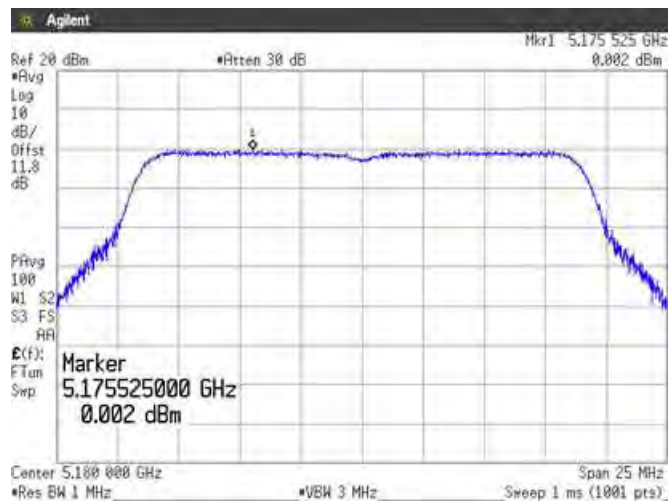
Channel: 116



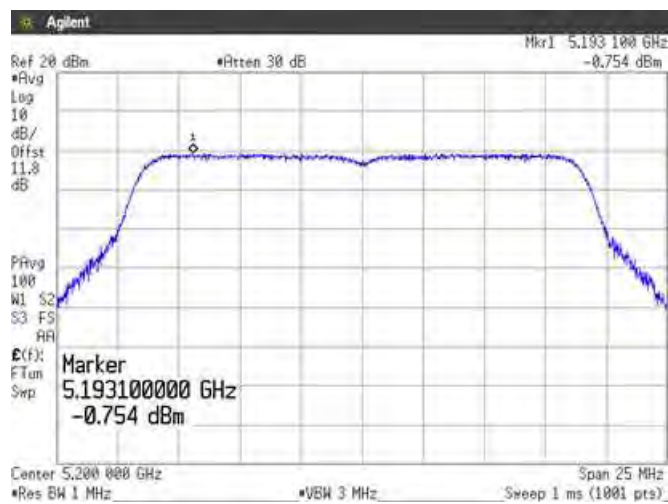
Channel: 140



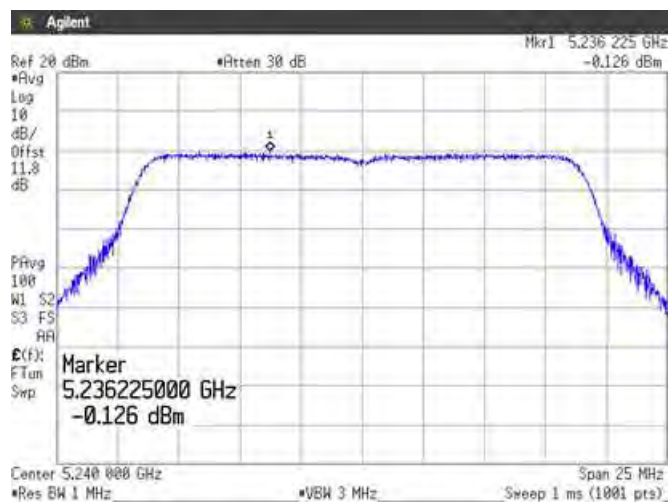
[IEEE802.11n (HT20)]
(5.2GHz Band)
Channel: 36



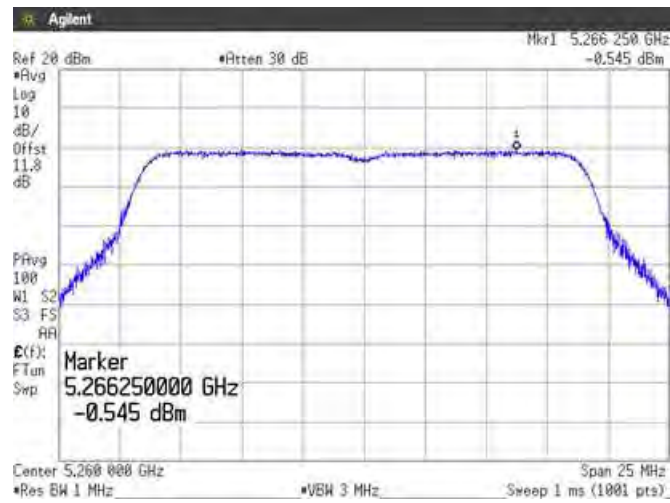
Channel: 40



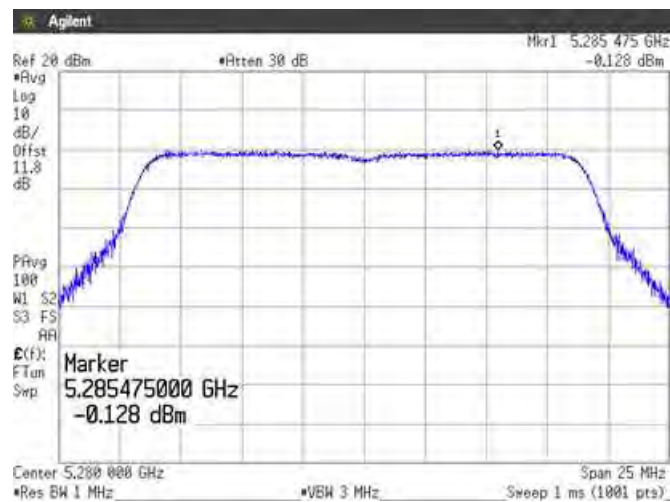
Channel: 48



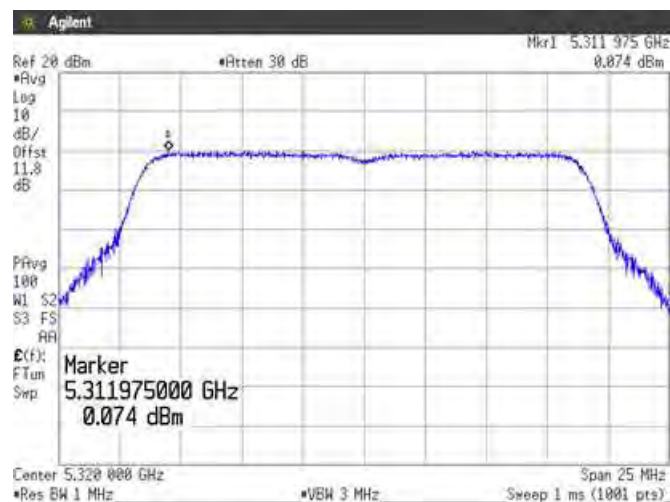
(5.3GHz Band)
Channel: 52



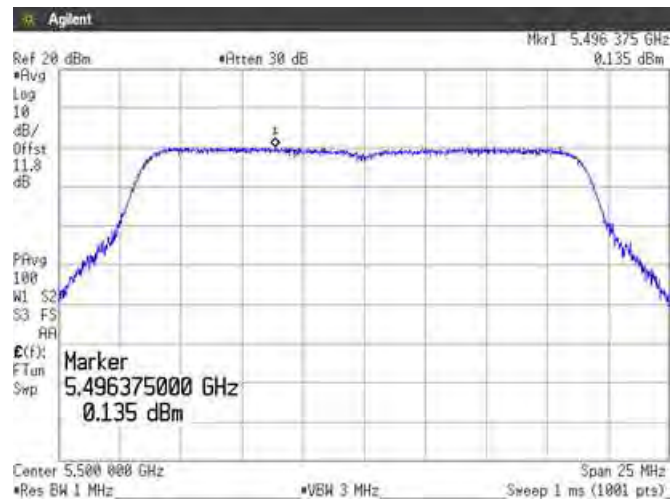
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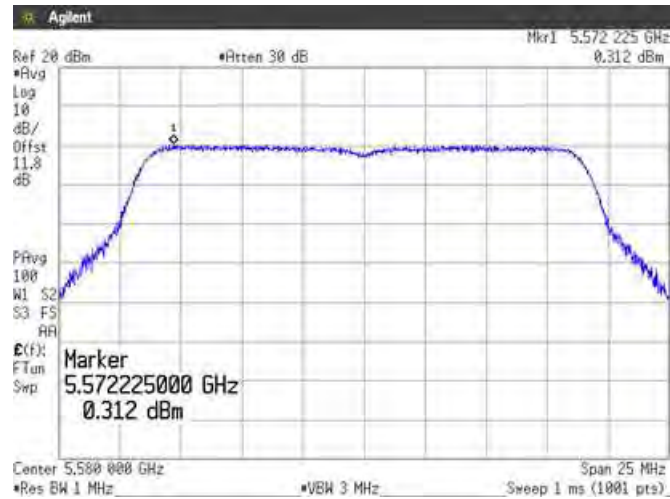
Channel: 64



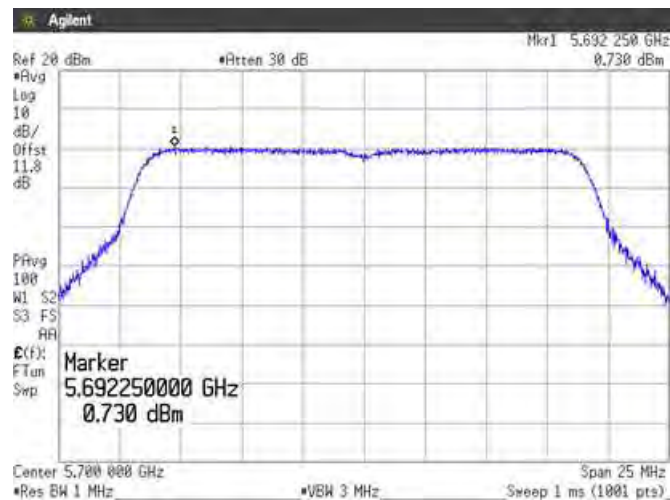
(5.6GHz Band)
Channel: 100



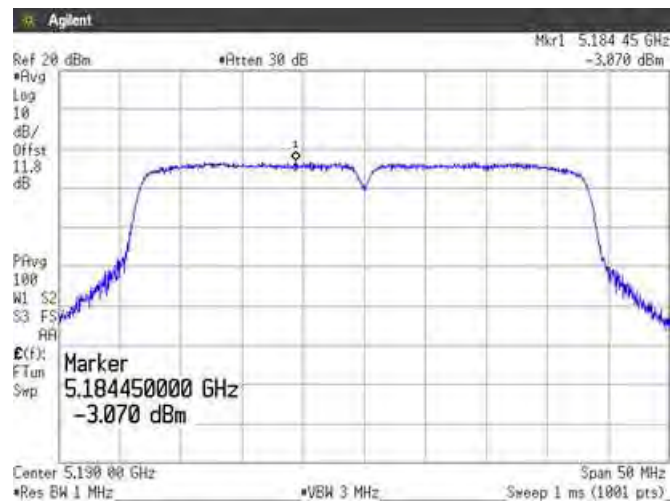
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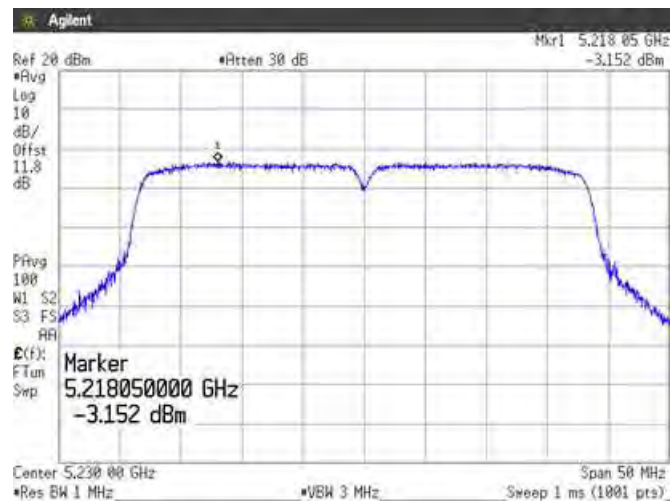
Channel: 140



[IEEE802.11n (HT40)]
(5.2GHz Band)
Channel: 38

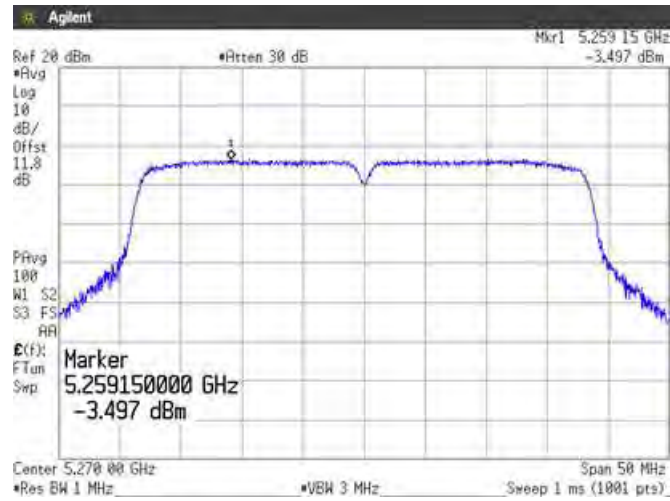


Channel: 46

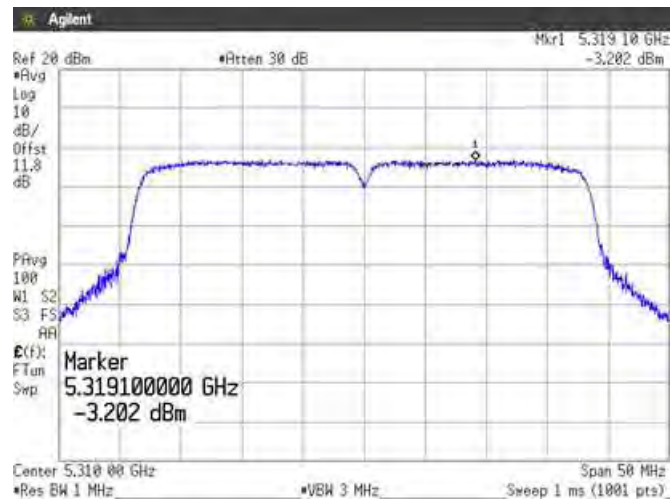


(5.3GHz Band)

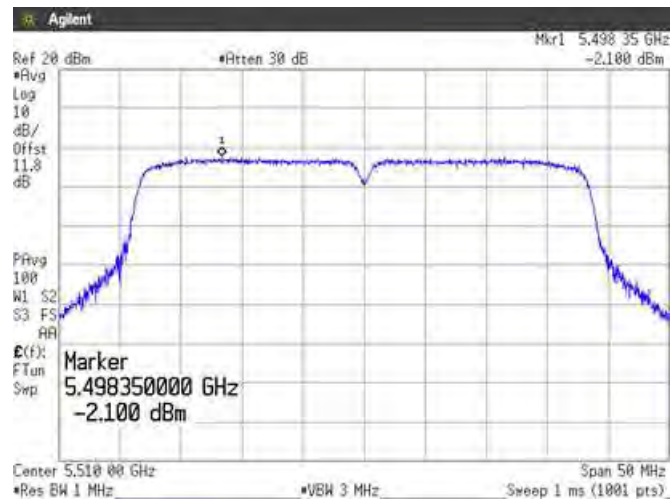
Channel: 54



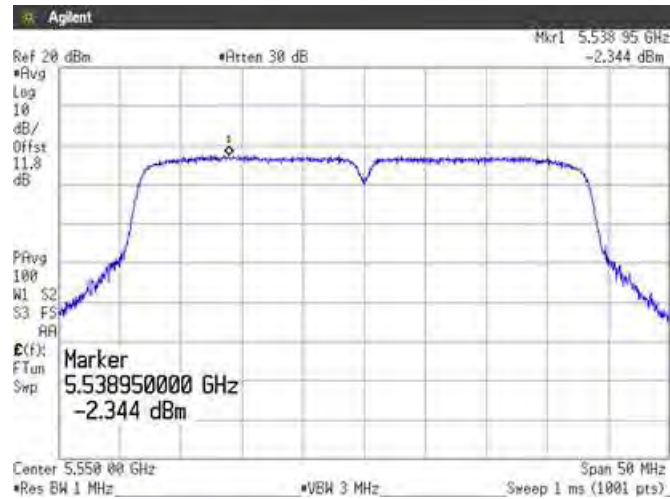
Channel: 62



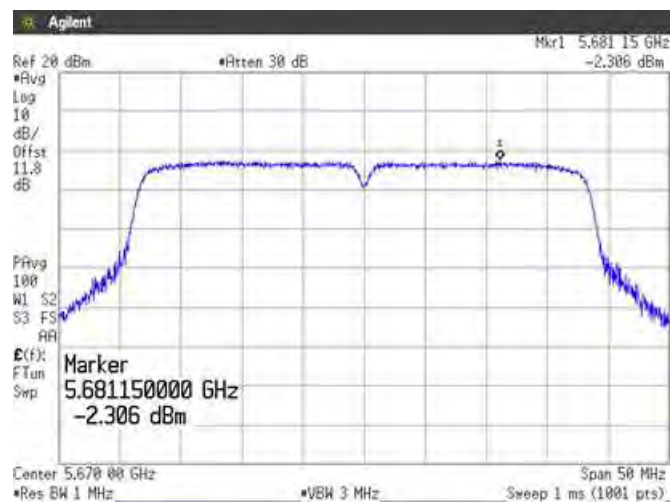
(5.6GHz Band)
Channel: 102



Channel: 110

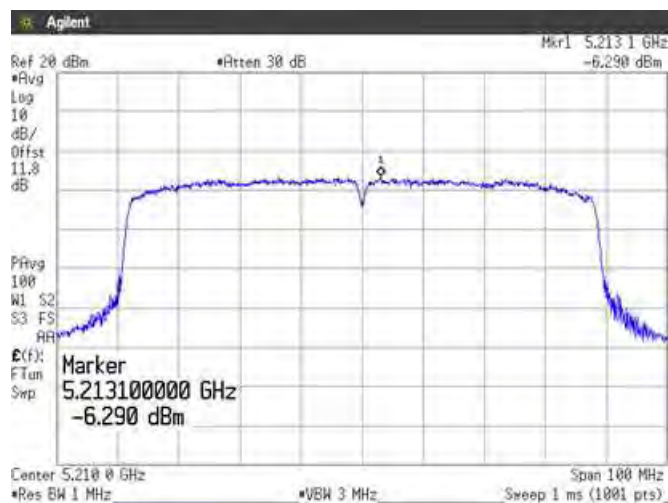


Channel: 134

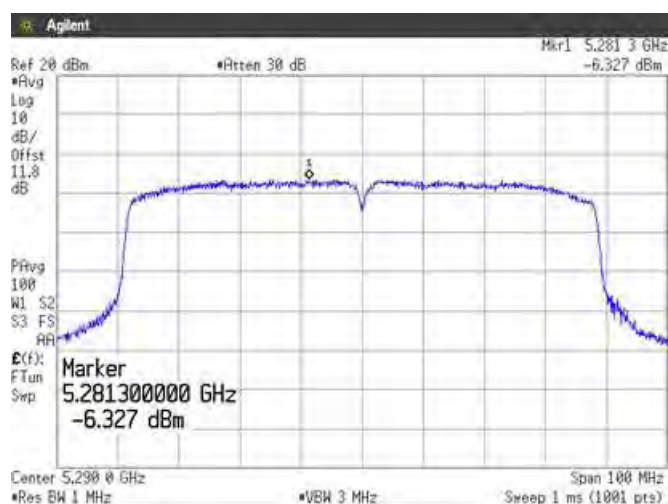


Zacta

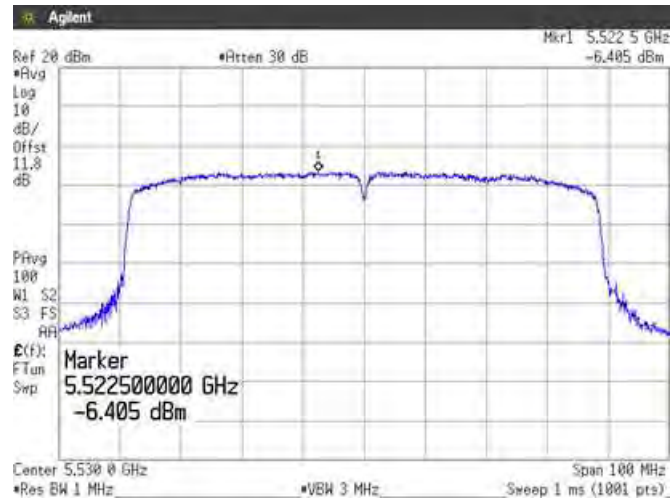
[IEEE802.11ac (HT80)]
(5.2GHz Band)
Channel: 42



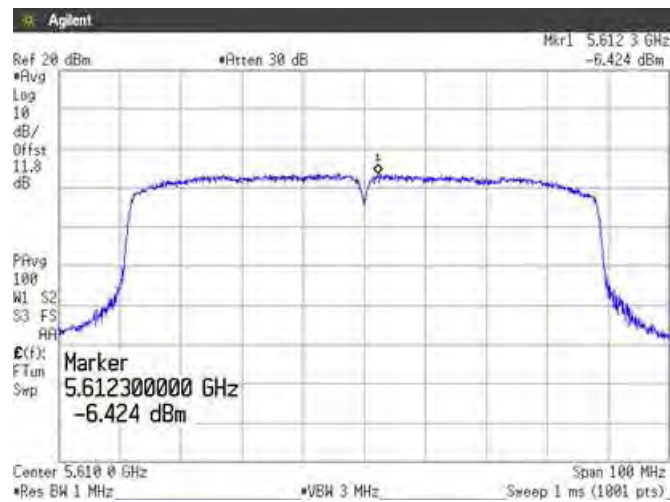
(5.3GHz Band)
Channel: 58



(5.6GHz Band)
Channel: 106



Channel: 122



7. Radiated Emissions (Restricted Bands of Operation)

7.1 Measurement procedure

[FCC 15.407(b), 15.205, 15.209, KDB 789033 D02, Section G.4, 5, 6.c)Method AD]

Test was applied by following conditions.

Test method	: ANSI C63.10
Frequency range	: 30MHz to 40GHz
Test place	: 3m Semi-anechoic chamber No.1
EUT was placed on	: Styrofoam table / (W)1.0m × (D)1.0m × (H)0.8m (below 1GHz) Styrofoam table / (W)1.5m × (D)1.0m × (H)1.5m (above 1GHz)
Antenna distance	: 3m
Test receiver setting	Below 1GHz
- Detector	: Quasi-peak
- Bandwidth	: 120kHz
Spectrum analyzer setting	Above 1GHz
- Peak	: RBW=1MHz, VBW=3MHz, Span=0Hz, Sweep=auto, Detector=Peak Trace mode=Max hold
- Average	: RBW=1MHz, VBW=3MHz, Span=0Hz, Sweep=auto, Detector=RMS Trace mode=Averaging(300 counts)

Radiated emission measurements are performed at 3m distance with the broadband antenna (Loop antenna, Biconical antenna, Log periodic antenna, Double ridged guide antenna and Broad-band horn 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 (below 1GHz) and 1.5m (above 1GHz) 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 case 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.

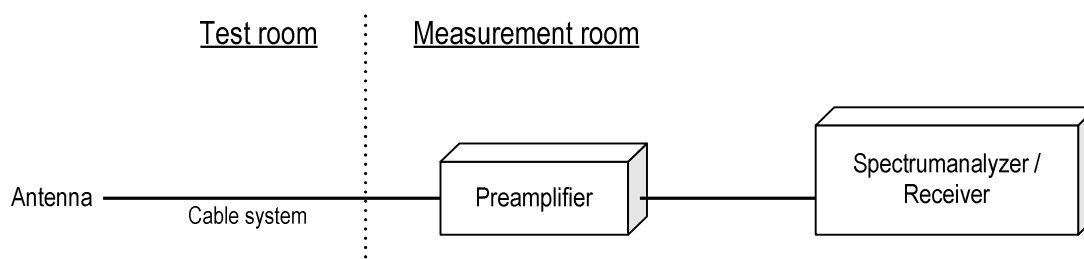
The EUT was set to operate with following conditions.

- 5.2GHz Band, 5.3GHz Band, 5.6GHz Band

The test mode of EUT is as follows.

- Tx mode, Rx mode

- Test configuration



Duty cycle result

Mode	Band	On Time(ms)	On+Off Time(ms)	Duty Cycle (%)	DCF (dB)
802.11a	W52	1.362	1.372	99.271	-
	W53	1.364	1.372	99.417	-
	W56	1.364	1.372	99.417	-
802.11n (20MHz)	W52	1.276	1.284	99.377	-
	W53	1.276	1.284	99.377	-
	W56	1.276	1.284	99.377	-
802.11n (40MHz)	W52	0.636	0.646	98.452	-
	W53	0.636	0.646	98.452	-
	W56	0.636	0.646	98.452	-
802.11ac (80MHz)	W52	0.248	0.258	95.967	0.179
	W53	0.248	0.258	95.967	0.179
	W56	0.248	0.257	96.154	0.170

7.2 Calculation method

[150kHz to 25GHz]

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

Margin = Limit – Emission level

Example:

Detector: Peak

Limit @ 5147.0MHz : 74.0dBuV/m (Peak Limit)

S.A Reading = 40.9dBuV Cable system loss = 16.4dB

Result = 40.9 + 16.4 = 57.3dBuV/m

Margin = 74.0 – 57.3 = 16.7dB

7.3 Limit

- (1) For transmitters operating in the 5.15-5.25GHz band: all emissions outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35GHz band: all emissions outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725GHz band: all emissions outside of the 5.47 5-5.725GHz band shall not exceed an EIRP of -27dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85GHz band: all emissions within the frequency range from the band edge to 10MHz above or below the band edge shall not exceed an EIRP of -17dBm/MHz; for frequencies 10MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27dBm/MHz.

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 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition modulation.

7.4 Test data

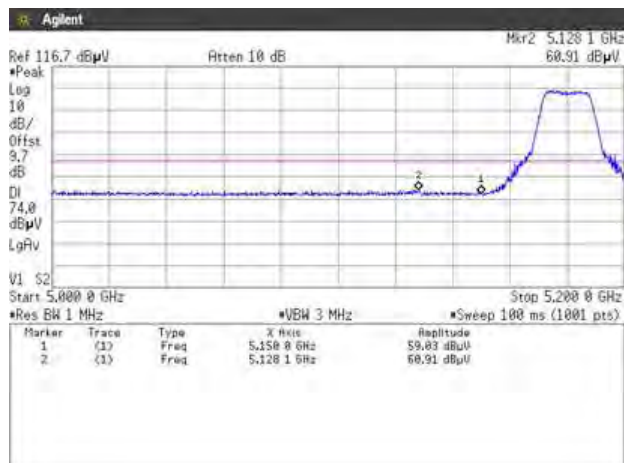
Date : April 24, 2017
 Temperature : 23.8 [°C]
 Humidity : 24.2 [%]
 Test place : 3m Semi-anechoic chamber

Test engineer : Taiki Watanabe

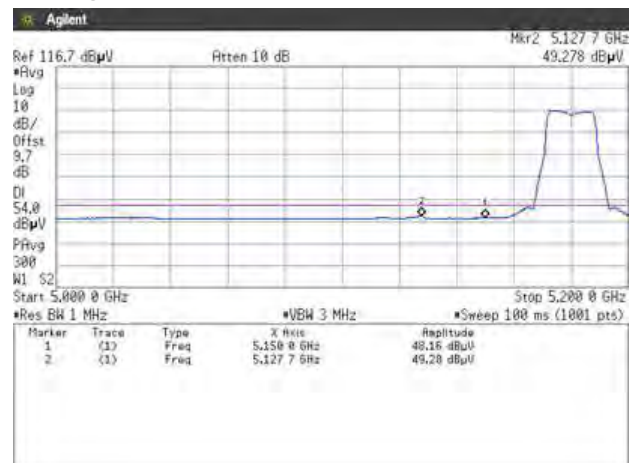
7.4.1 Restricted Bandedge

[IEEE802.11a]

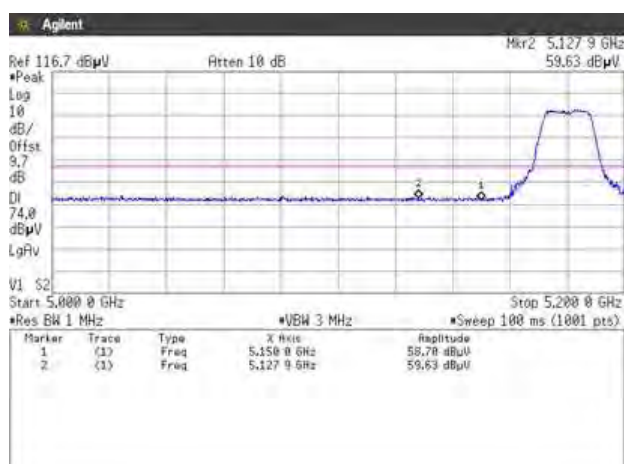
5.2GHz Band, Channel Low Horizontal Peak



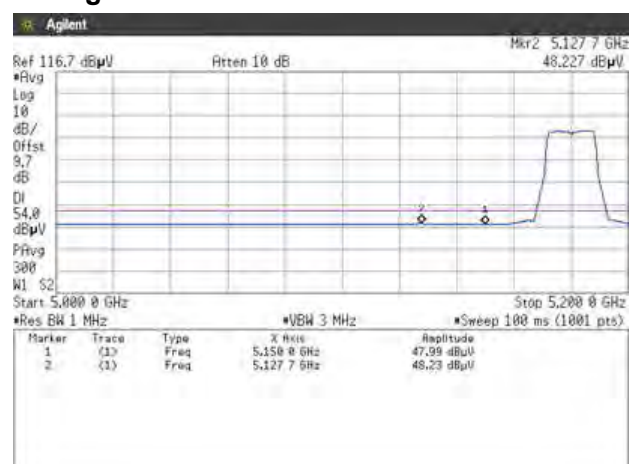
Average



Vertical Peak

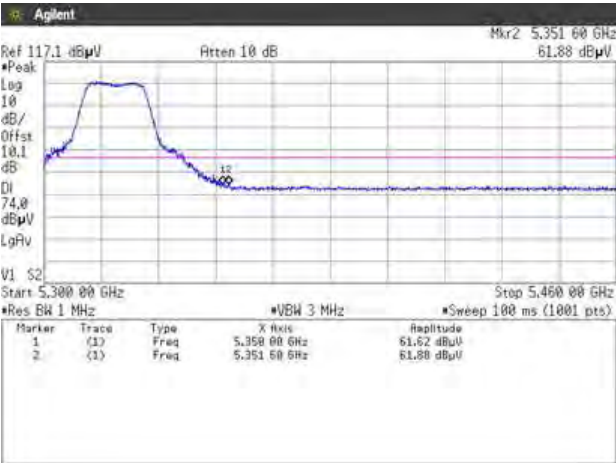


Average

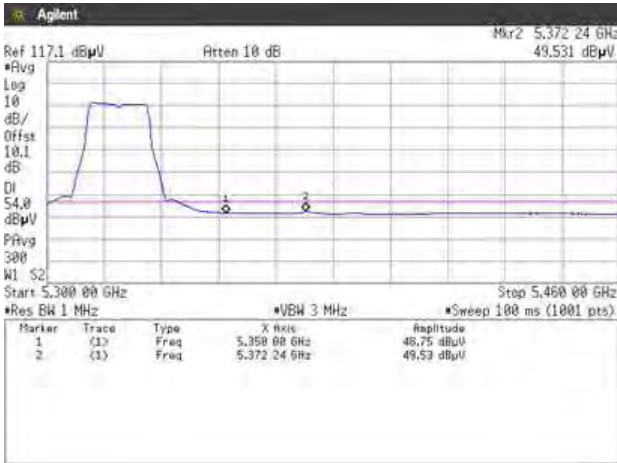


[IEEE802.11a]

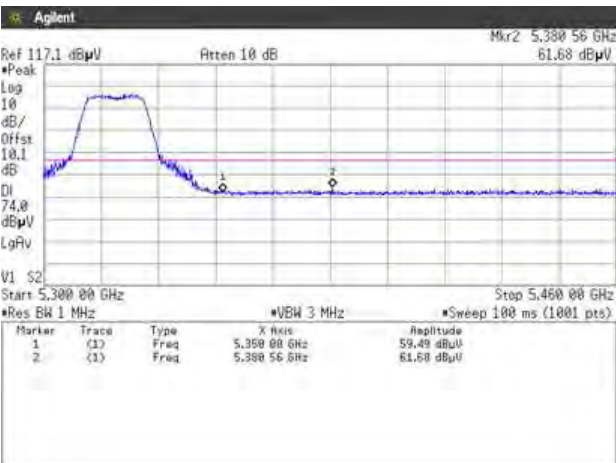
5.3GHz Band, Channel High
Horizontal
Peak



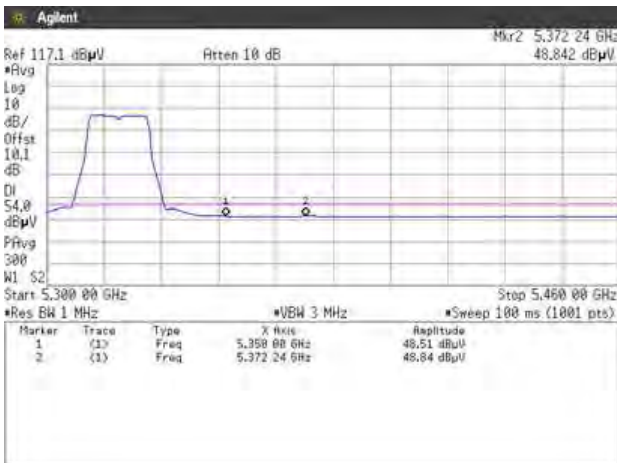
Average



Vertical
Peak



Average

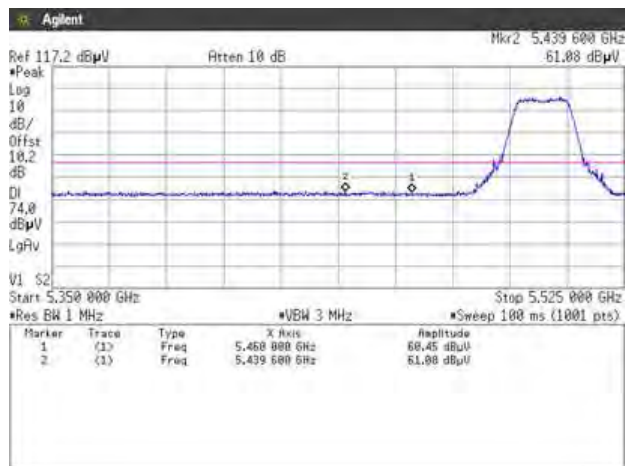


[IEEE802.11a]

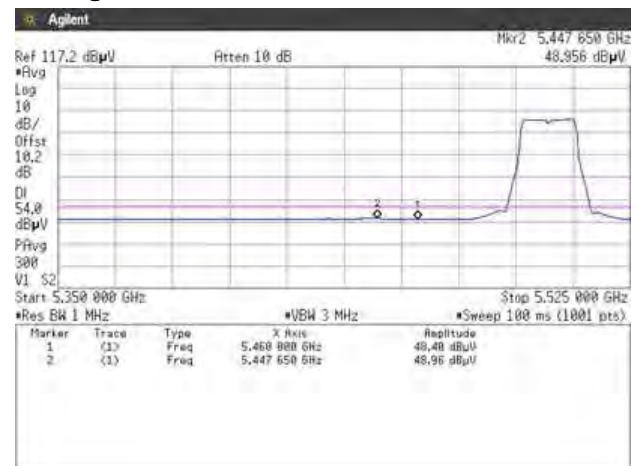
5.6GHz Band, Channel Low

Horizontal

Peak

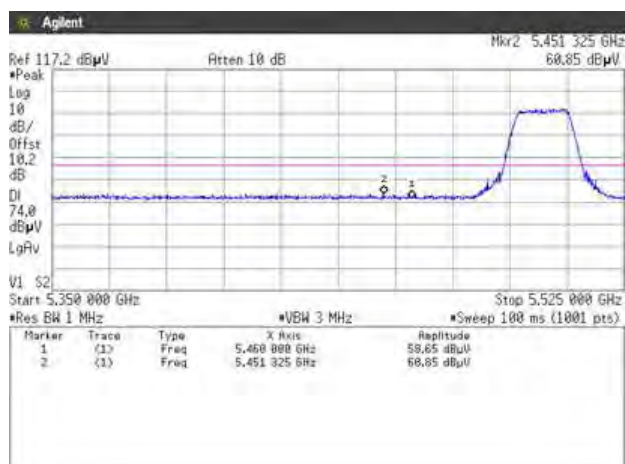


Average

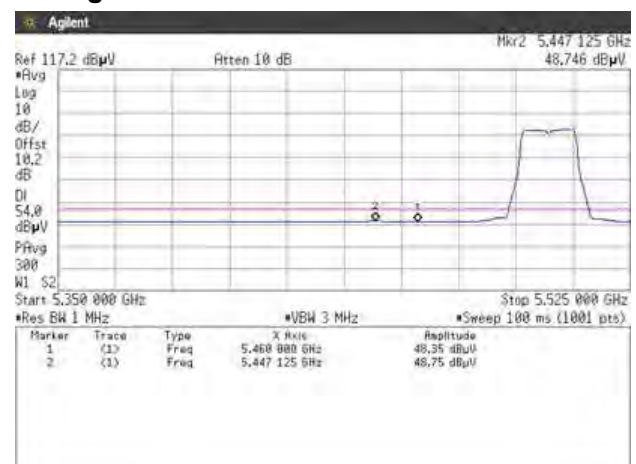


Vertical

Peak

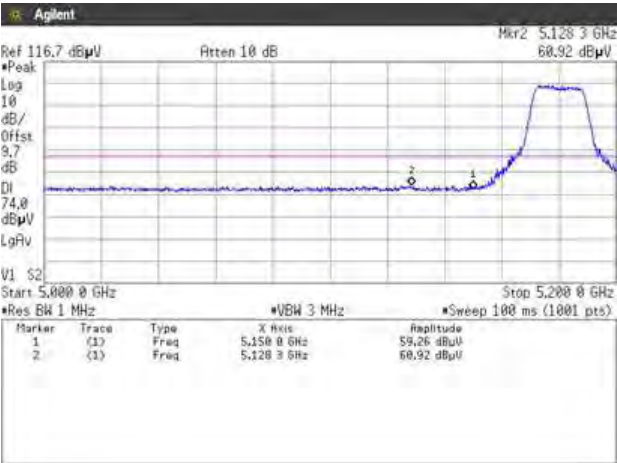


Average

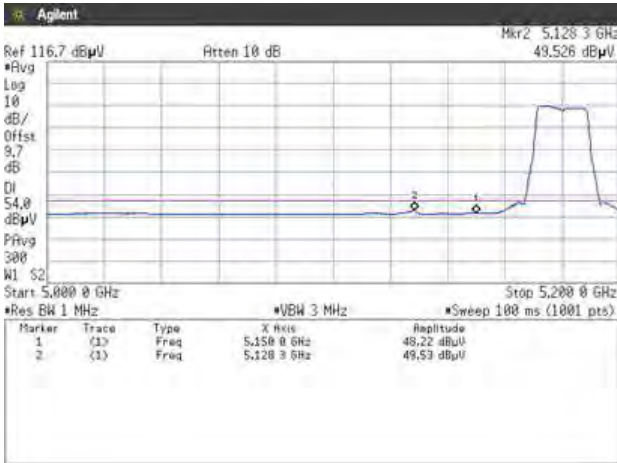


[IEEE802.11n (HT20)]

5.2GHz Band, Channel Low
Horizontal
Peak



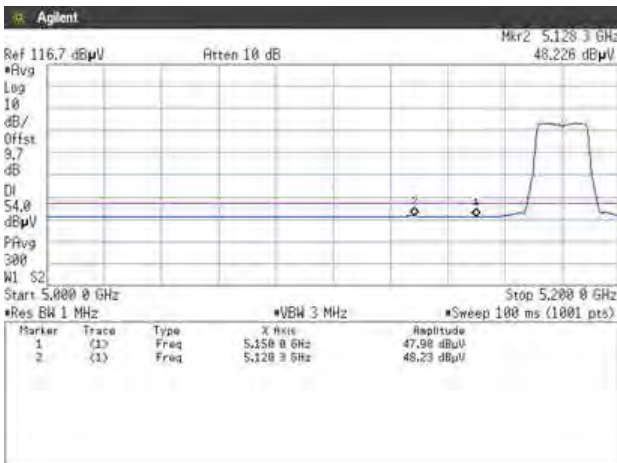
Average



Vertical
Peak

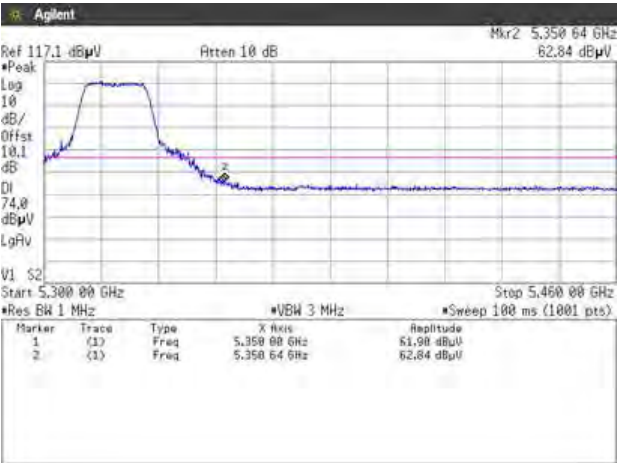


Average

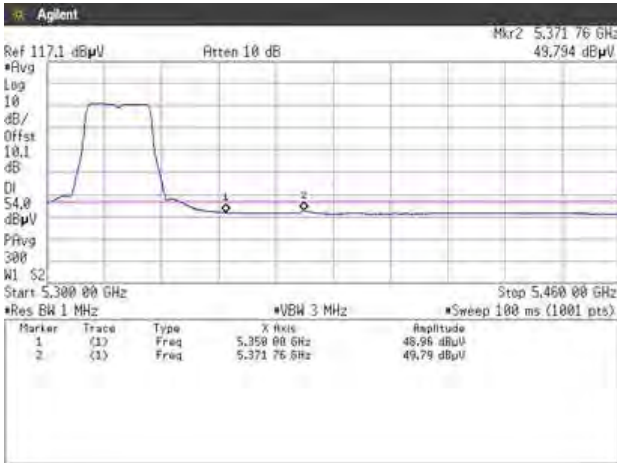


[IEEE802.11n (HT20)]

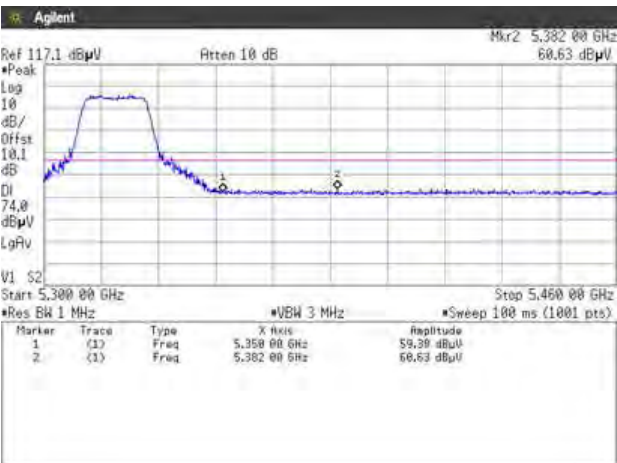
5.3GHz Band, Channel High
Horizontal
Peak



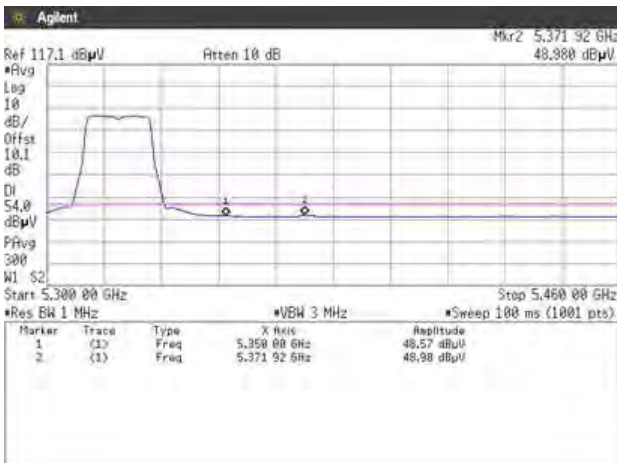
Average



Vertical
Peak

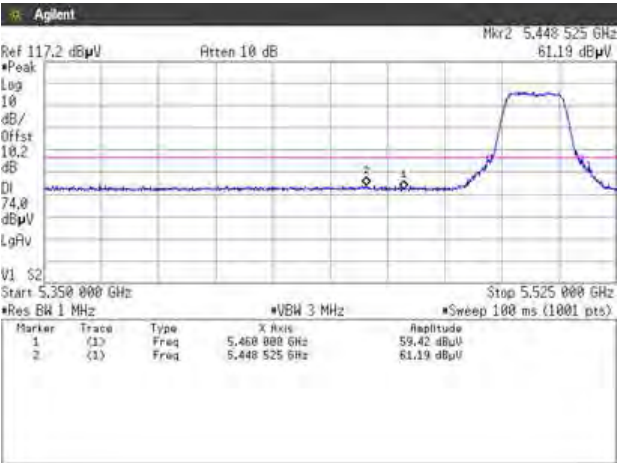


Average

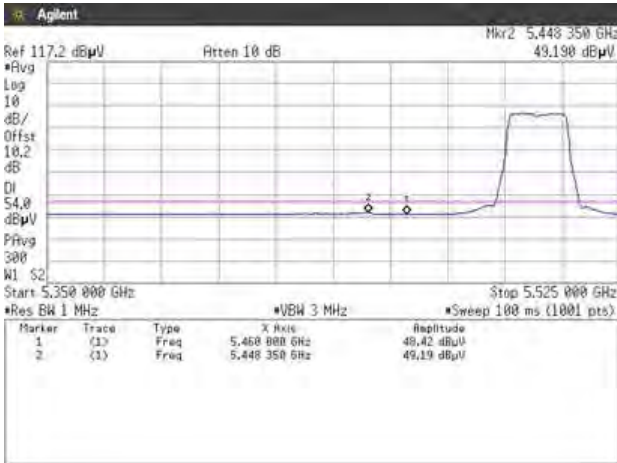


[IEEE802.11n (HT20)]

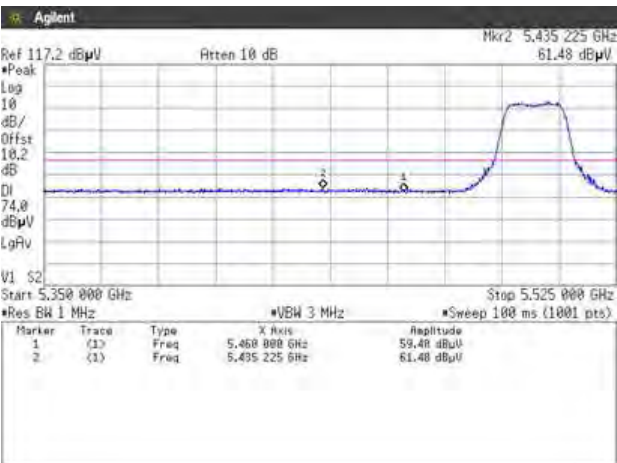
5.6GHz Band, Channel Low
Horizontal
Peak



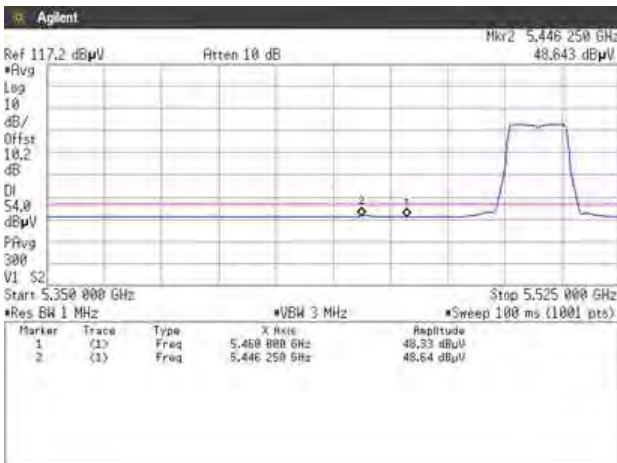
Average



Vertical
Peak

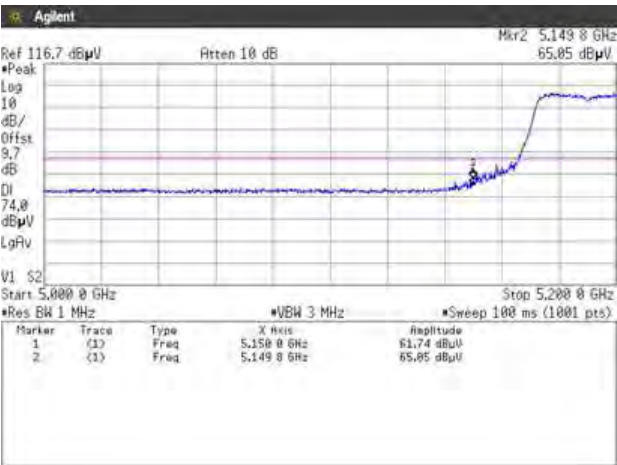


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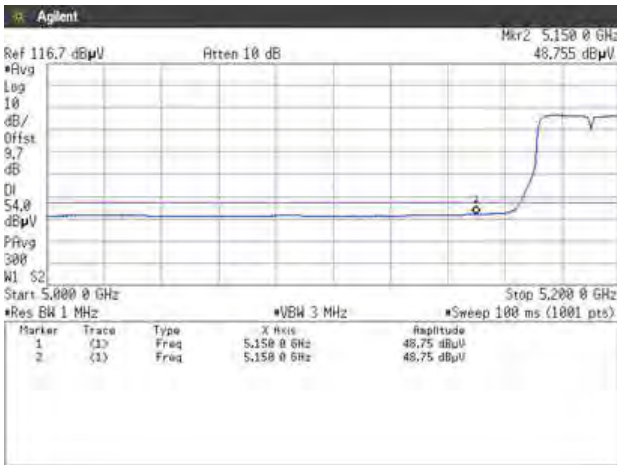


[IEEE802.11n (HT40)]

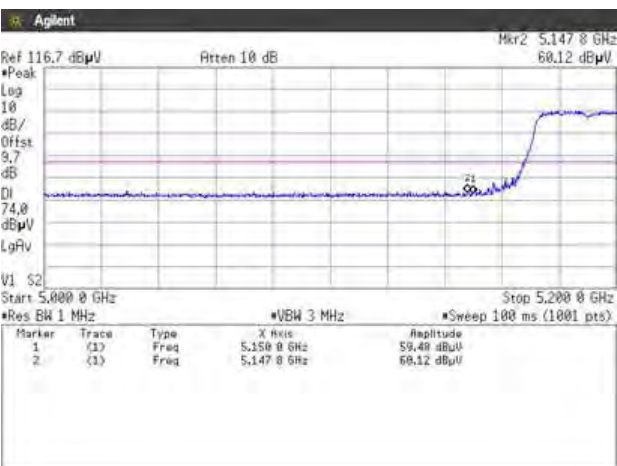
5.2GHz Band, Channel Low
Horizontal
Peak



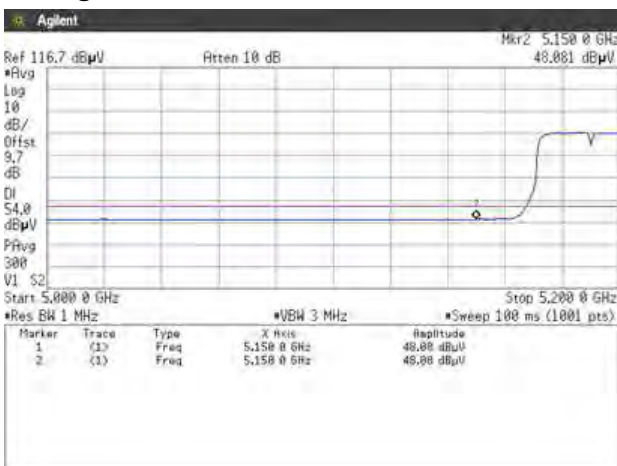
Average



Vertical
Peak

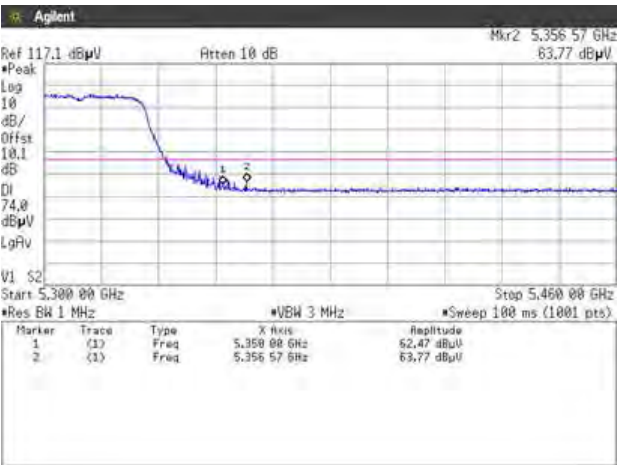


Average

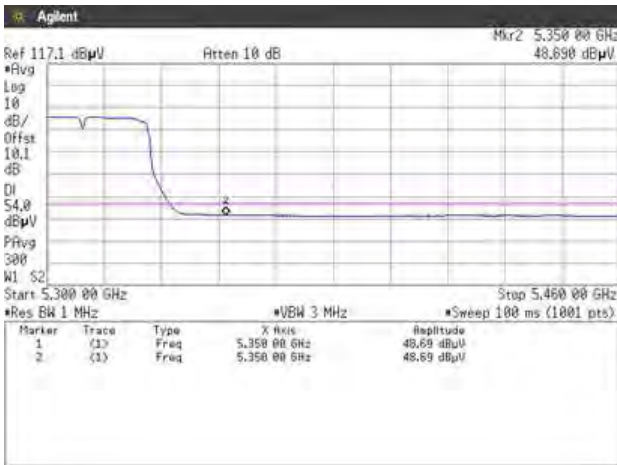


[IEEE802.11n (HT40)]

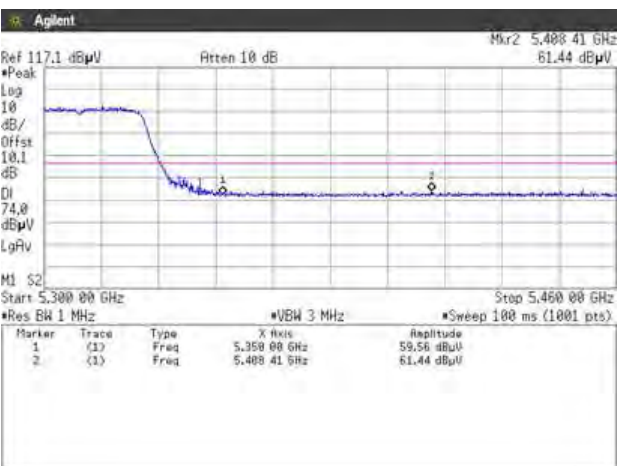
5.3GHz Band, Channel High
Horizontal
Peak



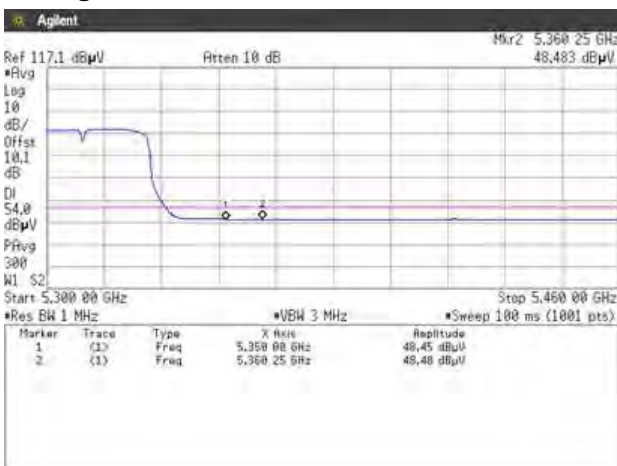
Average



Vertical
Peak

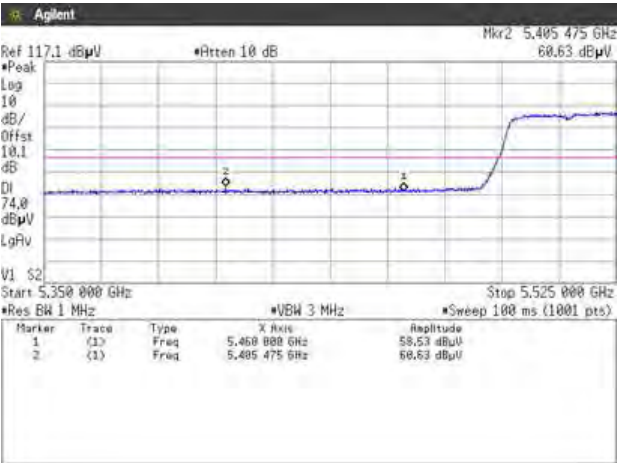


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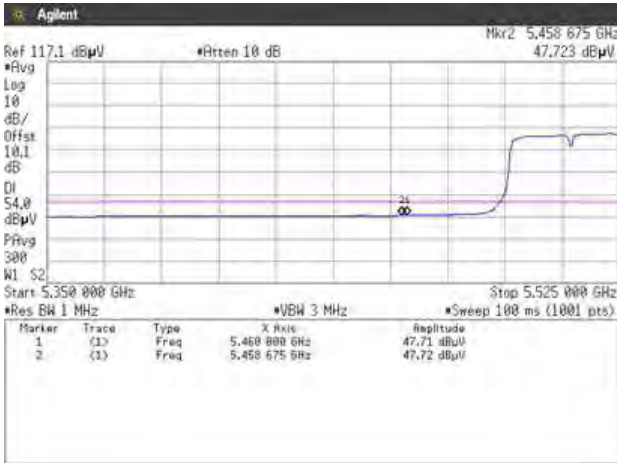


[IEEE802.11n (HT40)]

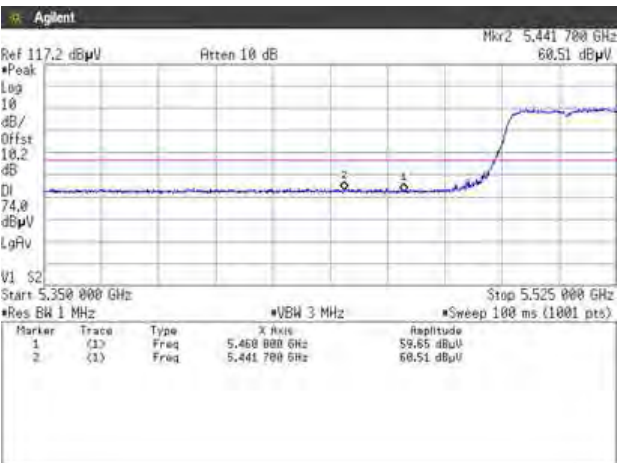
5.6GHz Band, Channel Low
Horizontal
Peak



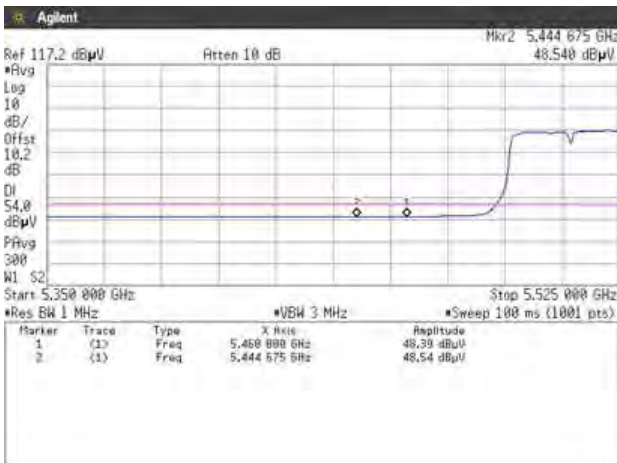
Average



Vertical
Peak

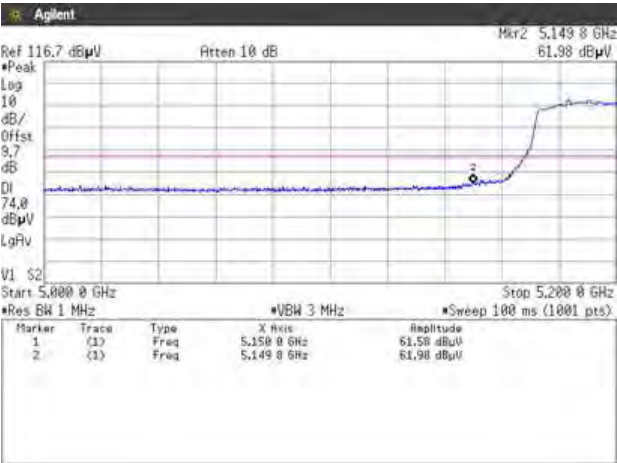


Average

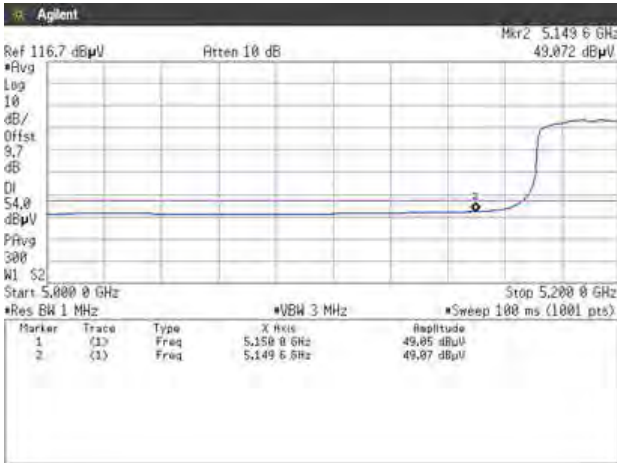


[IEEE802.11ac (HT80)]

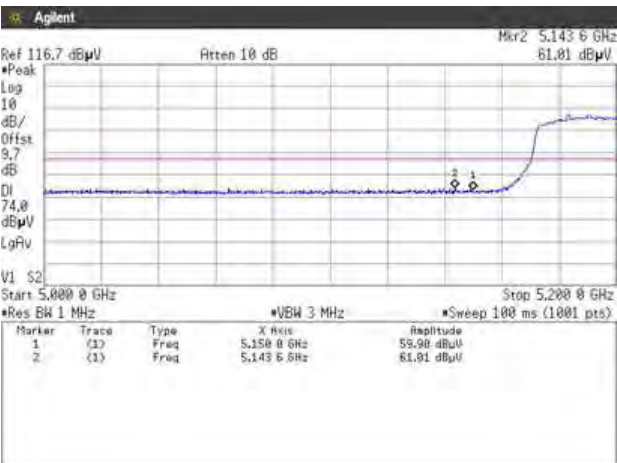
5.2GHz Band, Channel Low
Horizontal
Peak



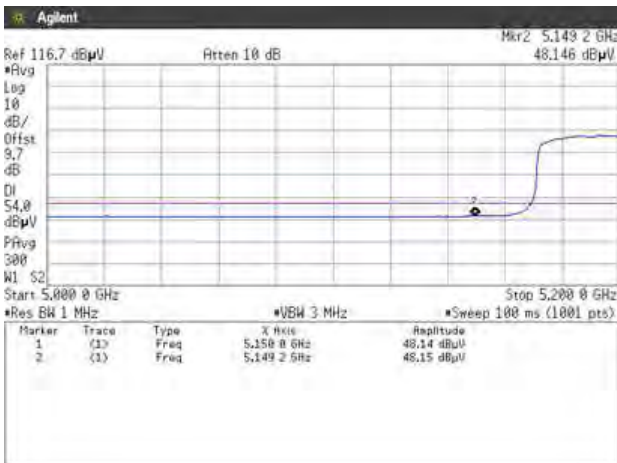
Average



Vertical
Peak

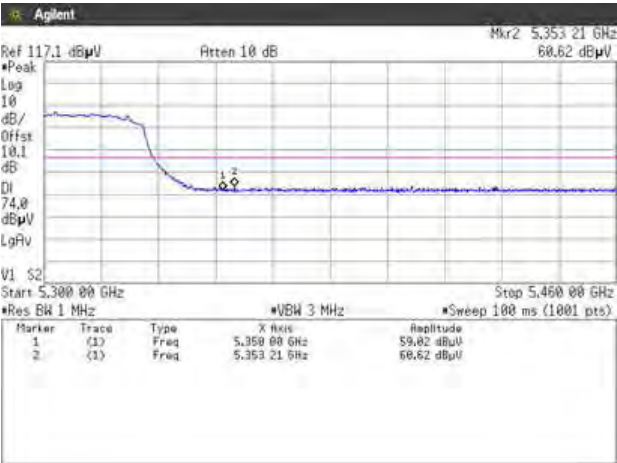


Average

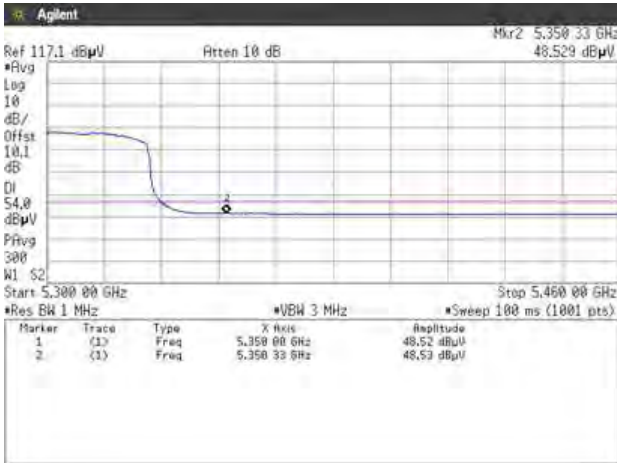


[IEEE802.11ac (HT80)]

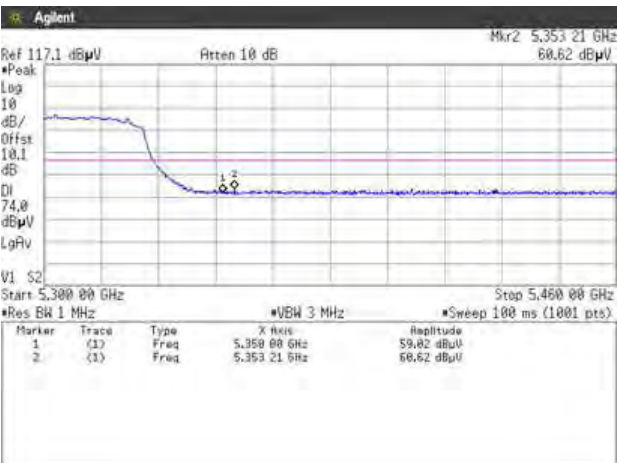
5.3GHz Band, Channel High
Horizontal
Peak



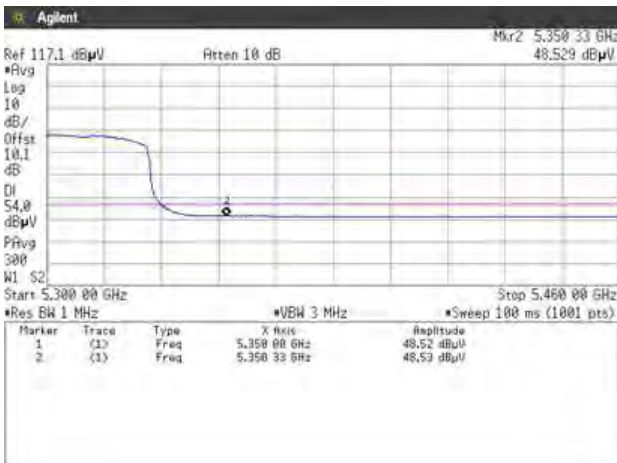
Average



Vertical
Peak

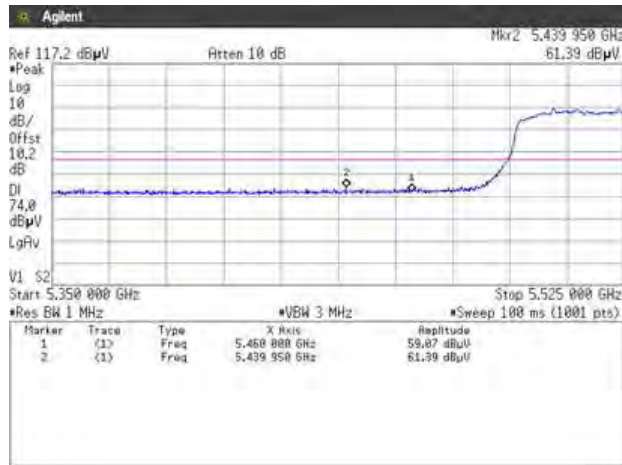


Average

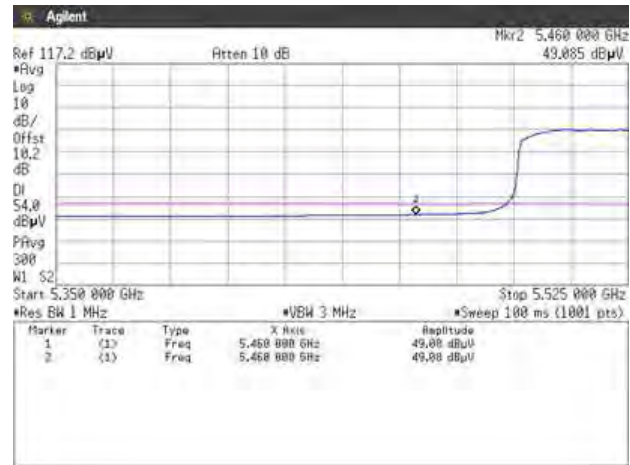


[IEEE802.11ac (HT80)]

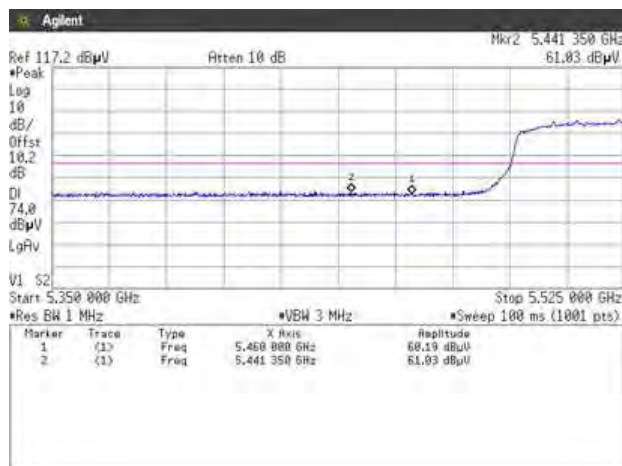
5.6GHz Band, Channel Low Horizontal Peak



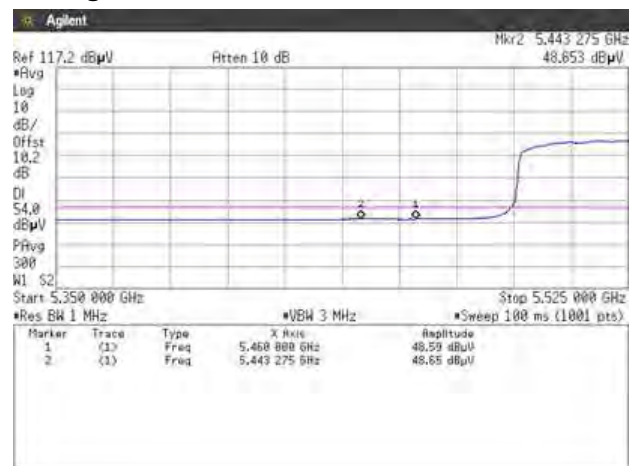
Average



Vertical Peak



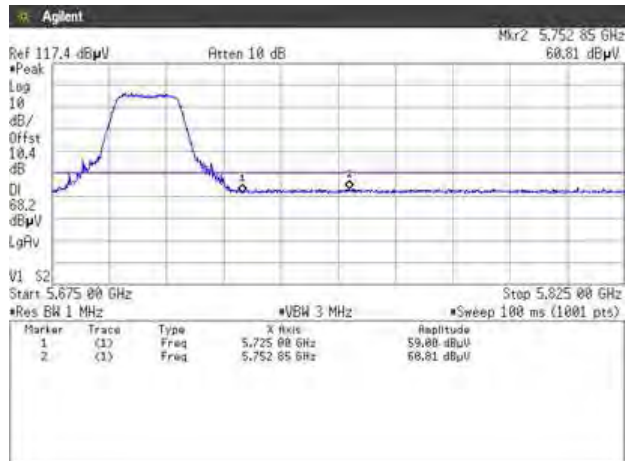
Average



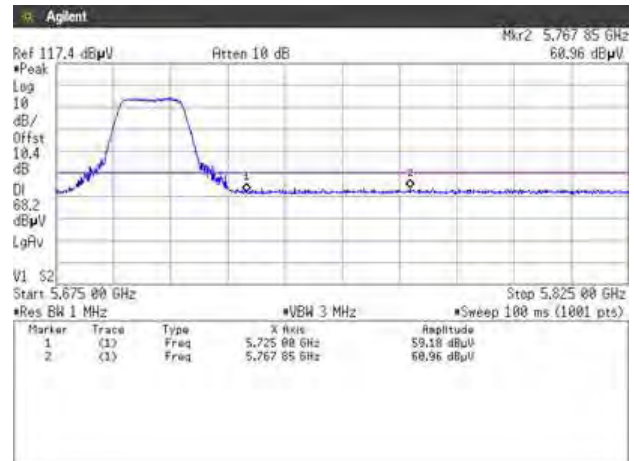
7.4.2 Non-Restricted Bandedge

[IEEE802.11a]

5.6GHz Band, Channel High
Peak
Horizontal

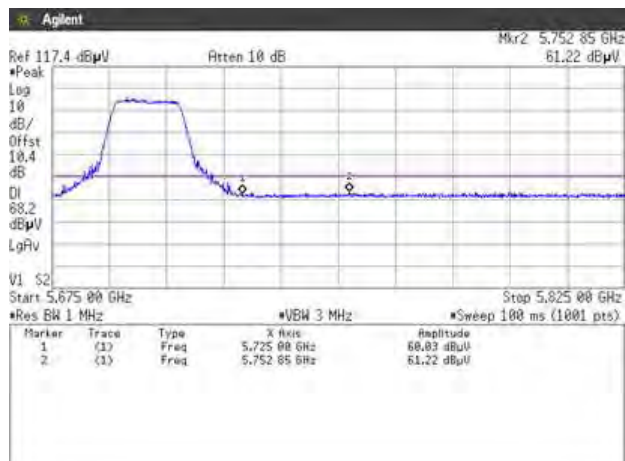


Vertical

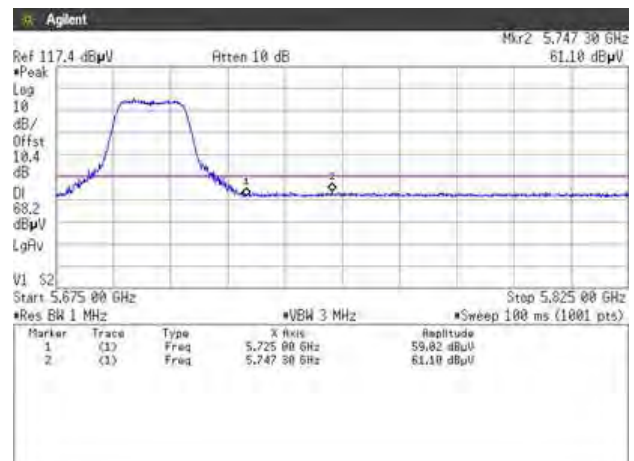


[IEEE802.11n (HT20)]

5.6GHz Band, Channel High
Peak
Horizontal

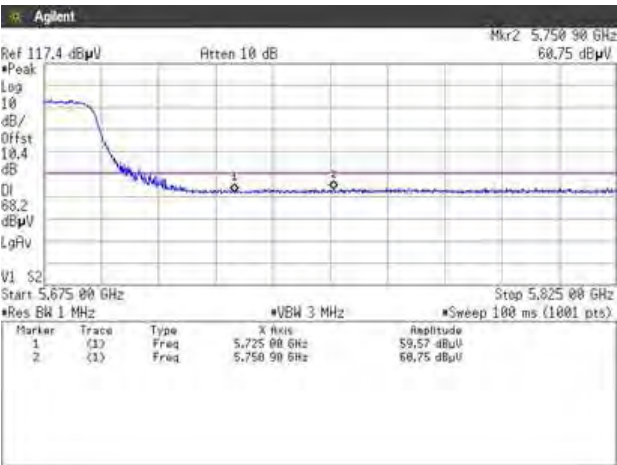


Vertical

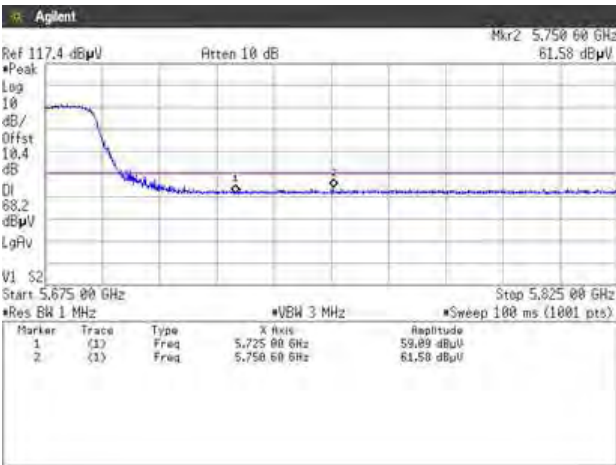


[IEEE802.11n (HT40)]

5.6GHz Band, Channel High
Peak
Horizontal

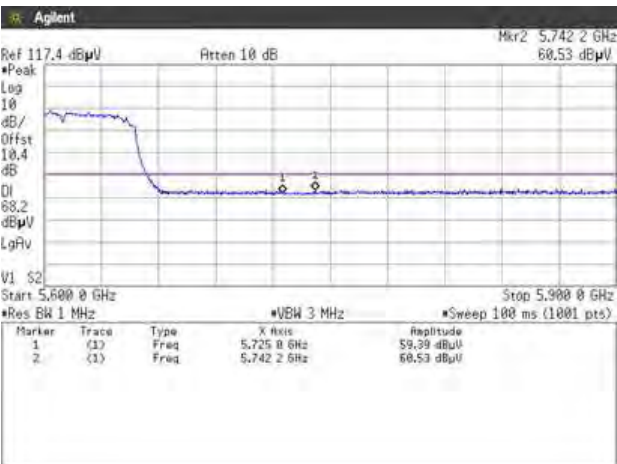


Vertical

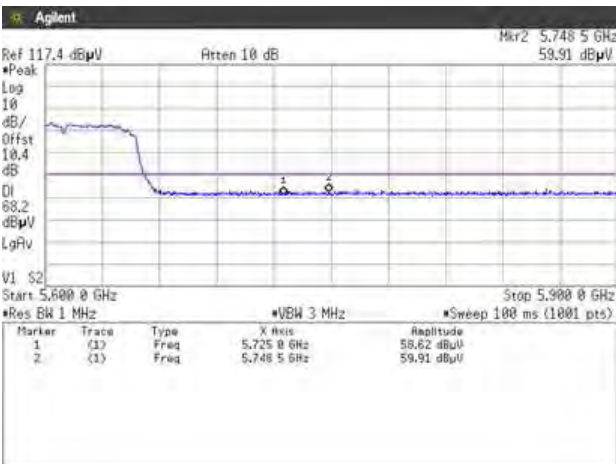


[IEEE802.11ac (HT80)]

5.6GHz Band, Channel High
Peak
Horizontal



Vertical



7.4.3 Radiated Emissions

Date	: May 9, 2017		
Temperature	: 24.1 [°C]		
Humidity	: 27.1 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 11, 2017		
Temperature	: 22.4 [°C]		
Humidity	: 46.3 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 12, 2017		
Temperature	: 26.0 [°C]		
Humidity	: 32.6 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 16, 2017		
Temperature	: 22.1 [°C]		
Humidity	: 38.7 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 17, 2017		
Temperature	: 23.2 [°C]		
Humidity	: 29.4 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 18, 2017		
Temperature	: 23.1 [°C]		
Humidity	: 31.1 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 19, 2017		
Temperature	: 24.1 [°C]		
Humidity	: 30.6 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 23, 2017		
Temperature	: 22.9 [°C]		
Humidity	: 44.2 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 24, 2017		
Temperature	: 23.2 [°C]		
Humidity	: 44.3 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>
Date	: May 31, 2017		
Temperature	: 24.0 [°C]		
Humidity	: 41.9 [%]	Test engineer	:
Test place	: 3m Semi-anechoic chamber		<u>Taiki Watanabe</u>

[IEEE802.11a]
(5.2GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11a	36	5180	10360.00	H	PK	48.0	10.3		58.3	68.2	9.9
	40	5200	10400.00	H	PK	46.3	10.4		56.7	68.2	11.5
	48	5240	10480.00	H	PK	46.4	10.5		56.9	68.2	11.3

(5.3GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11a	52	5260	10520.00	H	PK	47.0	10.6		57.6	68.2	10.6
	56	5280	10560.00	H	PK	47.7	10.6		58.3	68.2	9.9
	64	5320	10640.00	H	PK	47.3	10.7		58.0	74.0	16.0
			10640.00	H	AV	36.0	10.7		46.7	54.0	7.3

(5.6GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11a	100	5500	5462.10	H	PK	50.4	10.2		60.6	68.2	7.6
			5462.50	V	PK	49.5	10.2		59.7	68.2	8.5
			11000.00	H	PK	47.4	11.1		58.5	74.0	15.5
			11000.00	H	AV	35.7	11.1		46.8	54.0	7.2
	116	5580	11160.00	H	PK	47.9	11.4		59.3	74.0	14.7
			11160.00	H	AV	36.2	11.4		47.6	54.0	6.4
	140	5700	11400.00	H	PK	46.5	11.6		58.1	74.0	15.9
			11400.00	H	AV	35.5	11.6		47.1	54.0	6.9

Note:

1. Emission Level (Margin) = Limit - [Reading + C.F (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 30MHz to 1000MHz at the 3 meters distance.
3. No emission was detected in the receive mode.

[IEEE802.11n (HT20)]
(5.2GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11n (20MHz)	36	5180	10360.00	H	PK	47.8	10.3		58.1	68.2	10.1
	40	5200	10400.00	H	PK	45.7	10.4		56.1	68.2	12.1
	48	5240	10480.00	H	PK	46.0	10.5		56.5	68.2	11.7

(5.3GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11n (20MHz)	52	5260	10520.00	H	PK	46.9	10.6		57.5	68.2	10.7
	56	5280	10560.00	H	PK	46.6	10.6		57.2	68.2	11.0
	64	5320	10640.00	H	PK	46.8	10.7		57.5	74.0	16.5
			10640.00	H	AV	36.0	10.7		46.7	54.0	7.3

(5.6GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11n (20MHz)	100	5500	5462.10	H	PK	50.4	10.2		60.6	68.2	7.6
			5468.50	V	PK	49.5	10.2		59.7	68.2	8.5
			11000.00	H	PK	47.1	11.2		58.3	74.0	15.7
			11000.00	H	AV	35.8	11.2		47.0	54.0	7.0
	116	5580	11160.00	H	PK	47.8	11.4		59.2	74.0	14.8
			11160.00	H	AV	36.1	11.4		47.5	54.0	6.5
	140	5700	11400.00	H	PK	47.2	11.6		58.8	74.0	15.2
			11400.00	H	AV	35.9	11.6		47.5	54.0	6.5

Note:

1. Emission Level (Margin) = Limit - [Reading + C.F (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 30MHz to 1000MHz at the 3 meters distance.
3. No emission was detected in the receive mode.

[IEEE802.11n (HT40)]
(5.2GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11n (40MHz)	38	5190	10380.00	H	PK	47.2	10.3		57.5	68.2	10.7
	46	5230	10460.00	H	PK	47.7	10.5		58.2	68.2	10.0

(5.3GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11n (40MHz)	54	5270	10540.00	H	PK	47.1	10.6		57.7	68.2	10.5
	62	5310	10620.00	H	PK	46.9	11.3		58.2	74.0	15.8
			10620.00	H	AV	36.6	11.3		47.9	54.0	6.1

(5.6GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11n (40MHz)	102	5510	5468.00	H	PK	50.6	10.2		60.8	68.2	7.4
			5468.10	V	PK	50.3	10.2		60.5	68.2	7.7
			11020.00	H	PK	46.5	11.2		57.7	74.0	16.3
			11020.00	H	AV	36.0	11.2		47.2	54.0	6.8
	110	5550	11100.00	H	PK	47.1	11.2		58.3	74.0	15.7
			11100.00	H	AV	36.9	11.2		48.1	54.0	5.9
	134	5670	11340.00	H	PK	47.2	11.5		58.7	74.0	15.3
			11340.00	H	AV	36.2	11.5		47.7	54.0	6.3

Note:

1. Emission Level (Margin) = Limit - [Reading + C.F (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 30MHz to 1000MHz at the 3 meters distance.
3. No emission was detected in the receive mode.

[IEEE802.11ac (HT80)]
(5.2GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11ac (80MHz)	42	5210	10420.00	H	PK	46.2	10.4		56.6	68.2	11.6

(5.3GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11ac (80MHz)	58	5290	10580.00	H	PK	46.8	10.6		57.4	68.2	10.8

(5.6GHz Band)

Mode	Channel	Frequency (MHz)	Frequency (MHz)	ANT H/V	Detector PK/AV	Reading (dBμV)	C.F (dB)	DCF (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
802.11ac (80MHz)	106	5530	5469.80	H	PK	51.4	10.6		62.0	68.2	6.2
			5465.60	V	PK	50.8	10.6		61.4	68.2	6.8
			11060.00	H	PK	46.3	11.2		57.5	74.0	16.5
			11060.00	H	AV	37.9	11.2	0.17	49.3	54.0	4.7
	122	5610	11220.00	H	PK	47.0	11.4		58.4	74.0	15.6
			11220.00	H	AV	36.6	11.4	0.17	48.2	54.0	5.8

Note:

1. Emission Level (Margin) = Limit - [Reading + C.F (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 30MHz to 1000MHz at the 3 meters distance.
3. No emission was detected in the receive mode.

7.4.4 Measurement chart

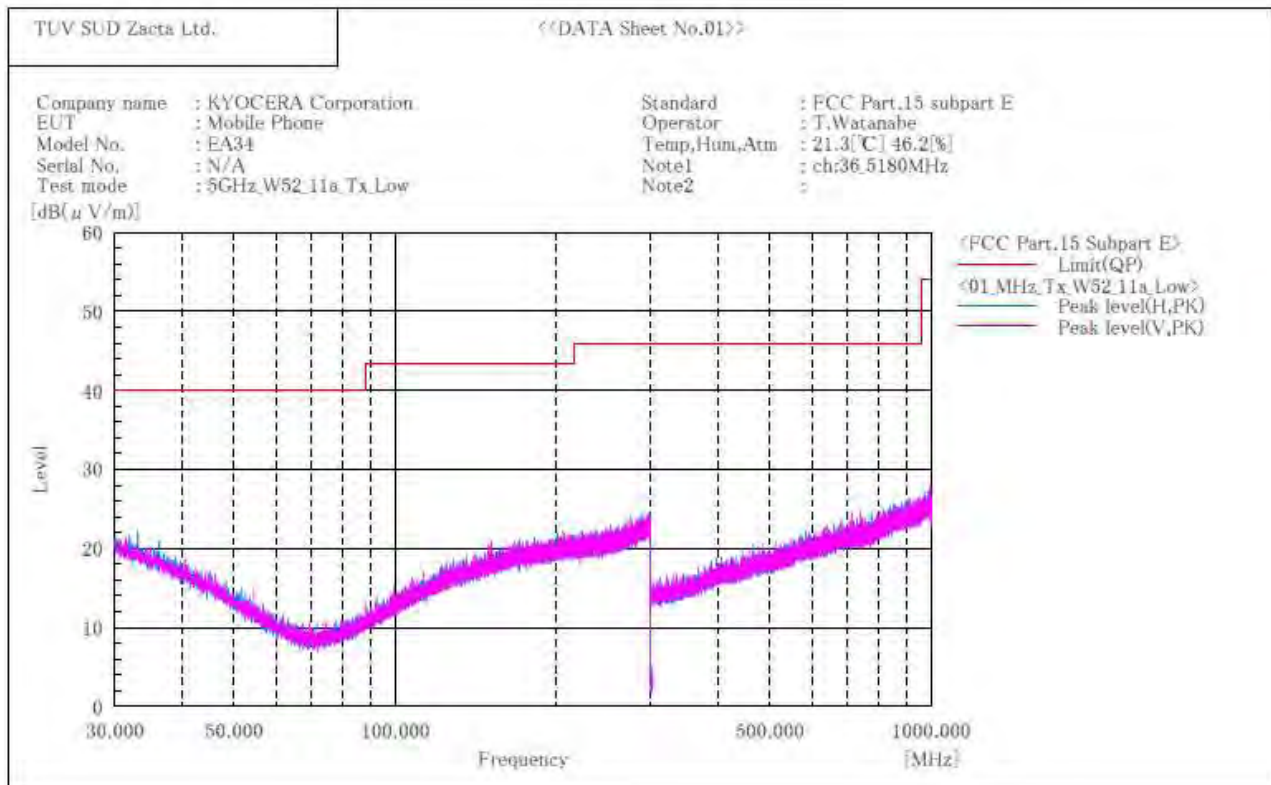
7.4.4.1 Transmission mode

[11a]

W52 / Channel Low

BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

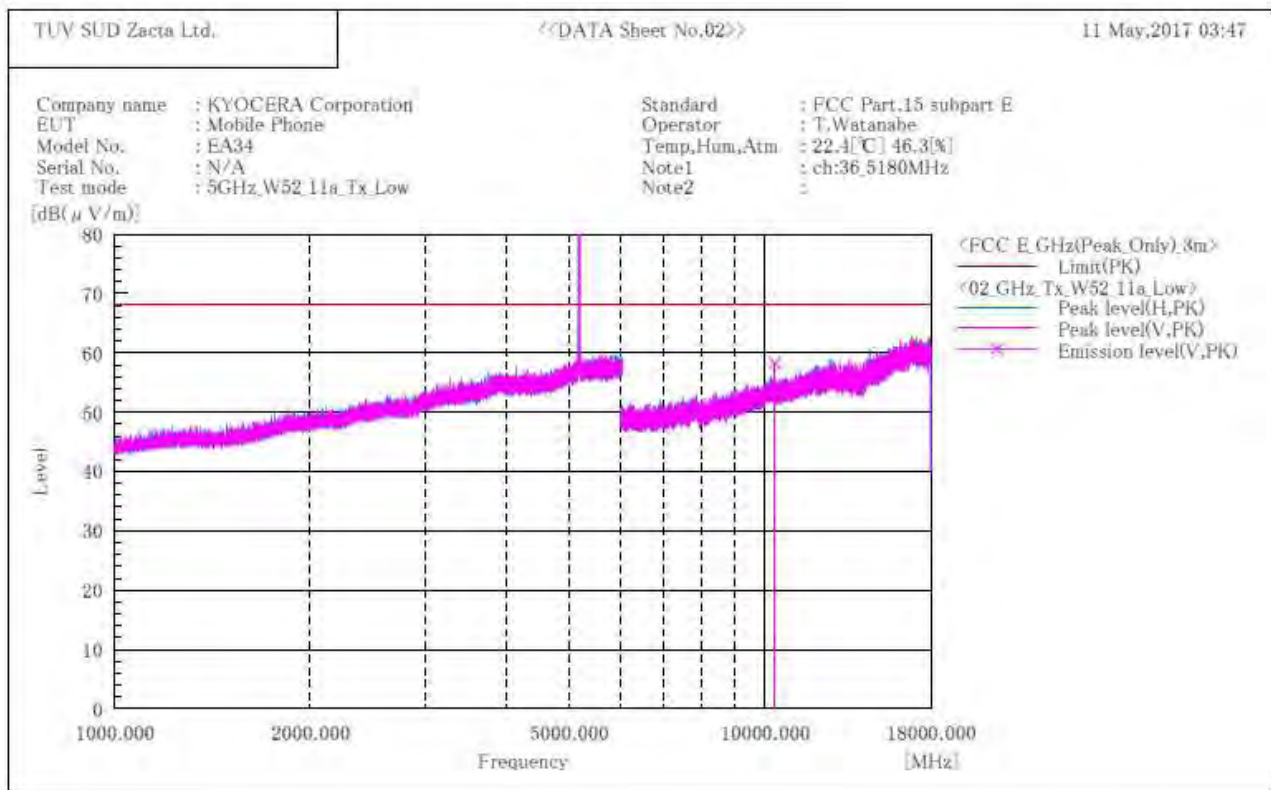
No.	Frequency (P)	c.f	Height	Angle
	[MHz]	[dB(1/m)]	[cm]	[°]

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.

[11a]
W52 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

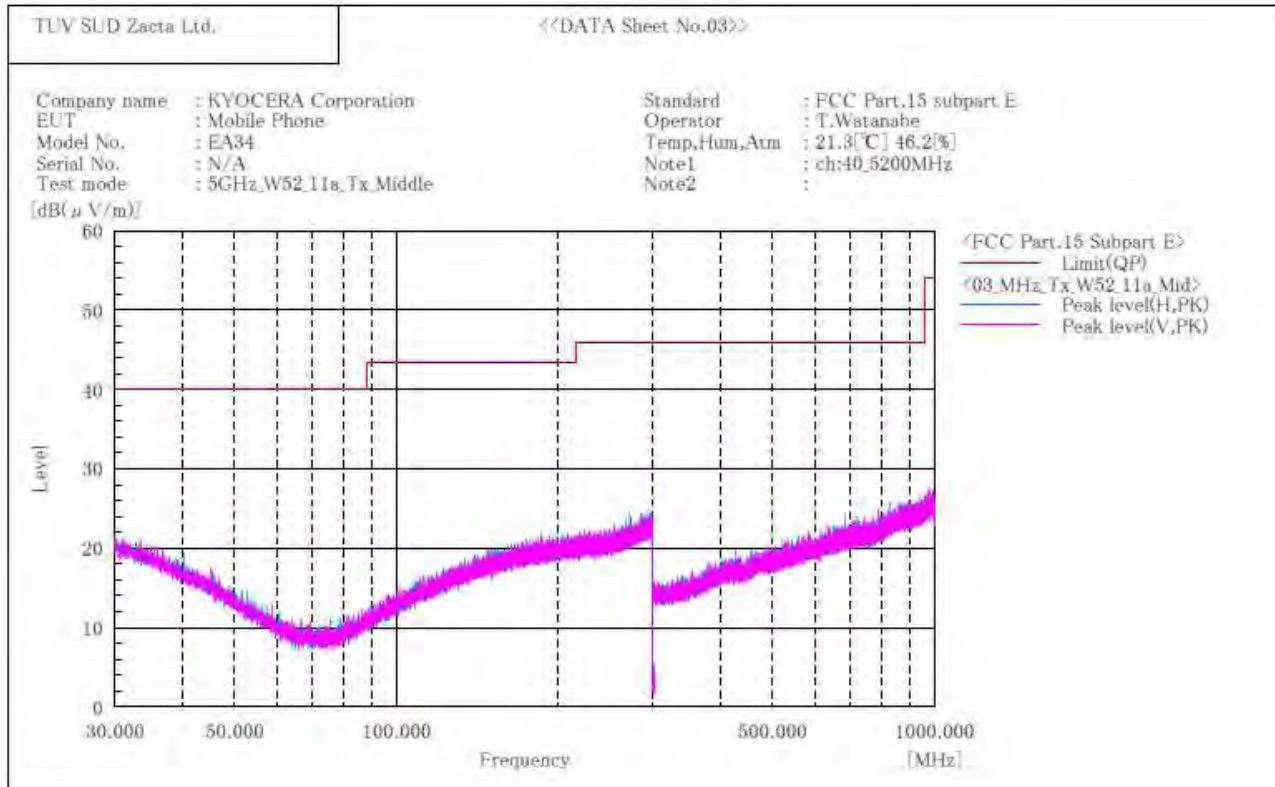
No.	Frequency (P)	Reading	c.f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	[°]	
1	10360.000	V 48.0	10.3	58.3	68.2	9.9	136.0	231.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11a]
W52 / Channel Middle
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

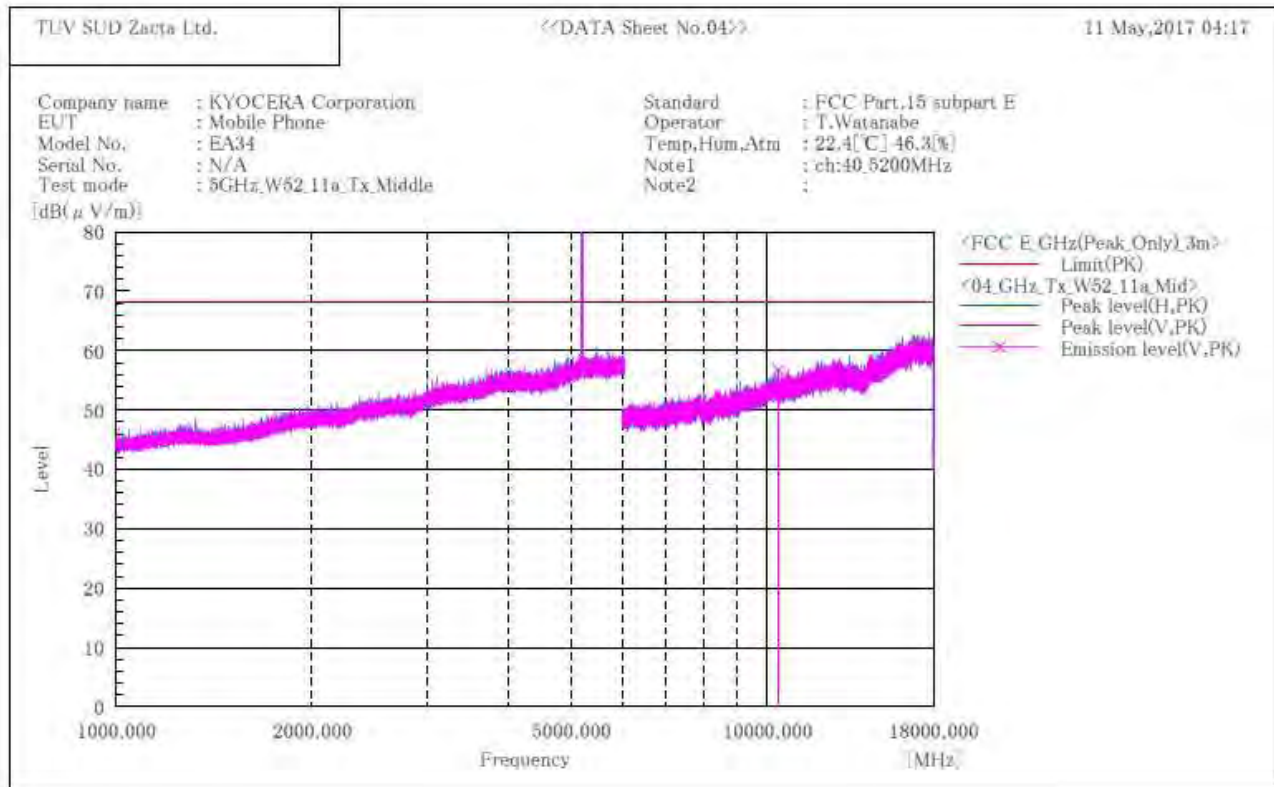
No.	Frequency (P)	c.f	Height	Angle
	[MHz]	[dB(1/m)]	[cm]	[°]

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.

[11a]
W52 / Channel Middle
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

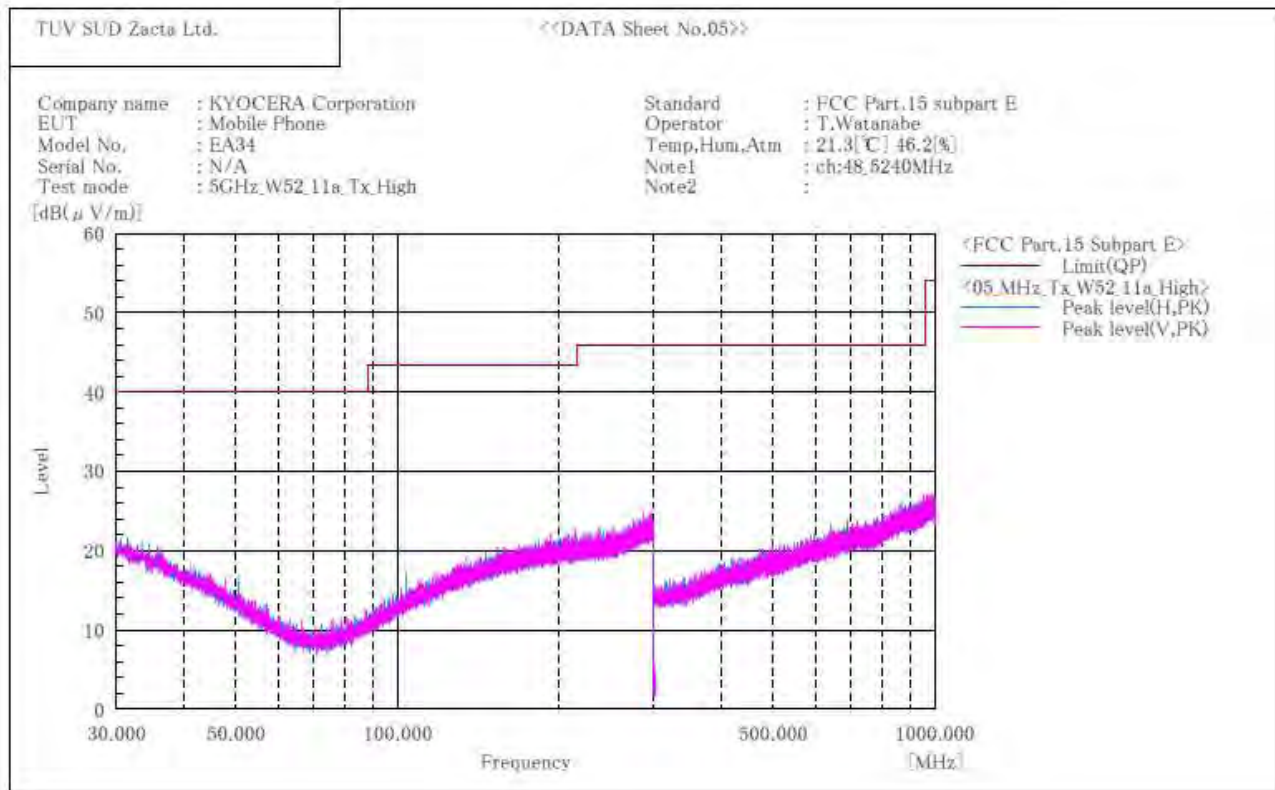
No.	Frequency (P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	[°]	
1	10400.000	V 46.3	10.4	56.7	68.2	11.5	142.0	238.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

**[11a]
W52 / Channel High
BELOW 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

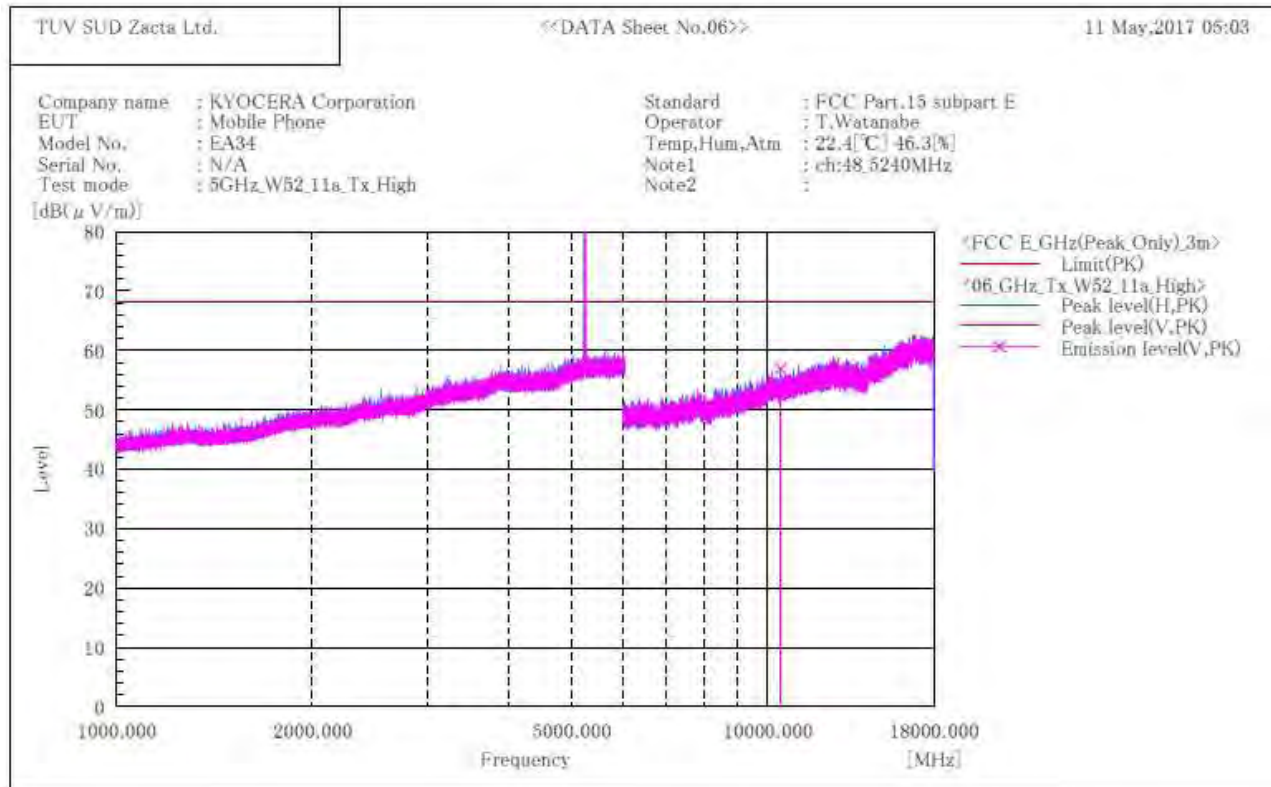
No.	Frequency (P)	c.f	Height	Angle
	[MHz]	[dB(μV/m)]	[cm]	[°]

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.

**[11a]
W52 / Channel High
ABOVE 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

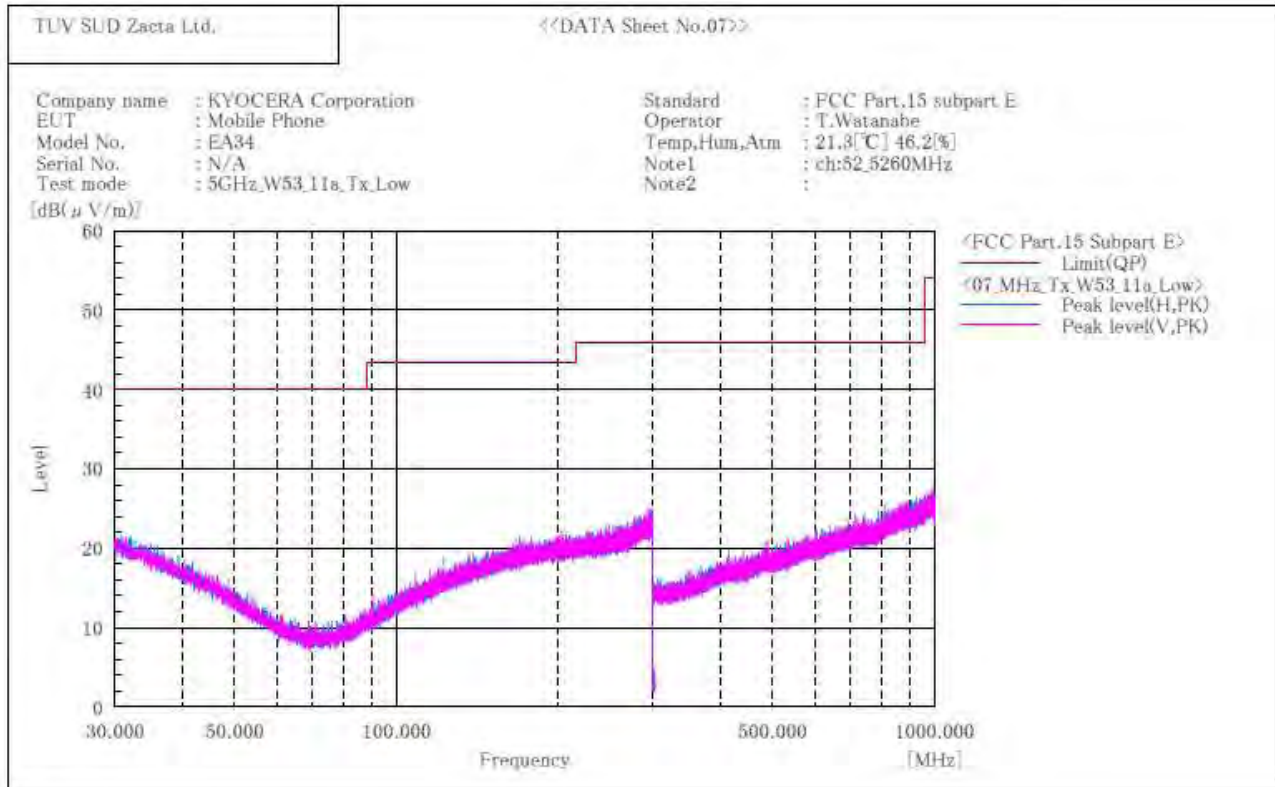
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]	Remark
1	10480.000	V	46.4	10.5	56.9	68.2	11.3	133.0	235.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11a]
W53 / Channel Low
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

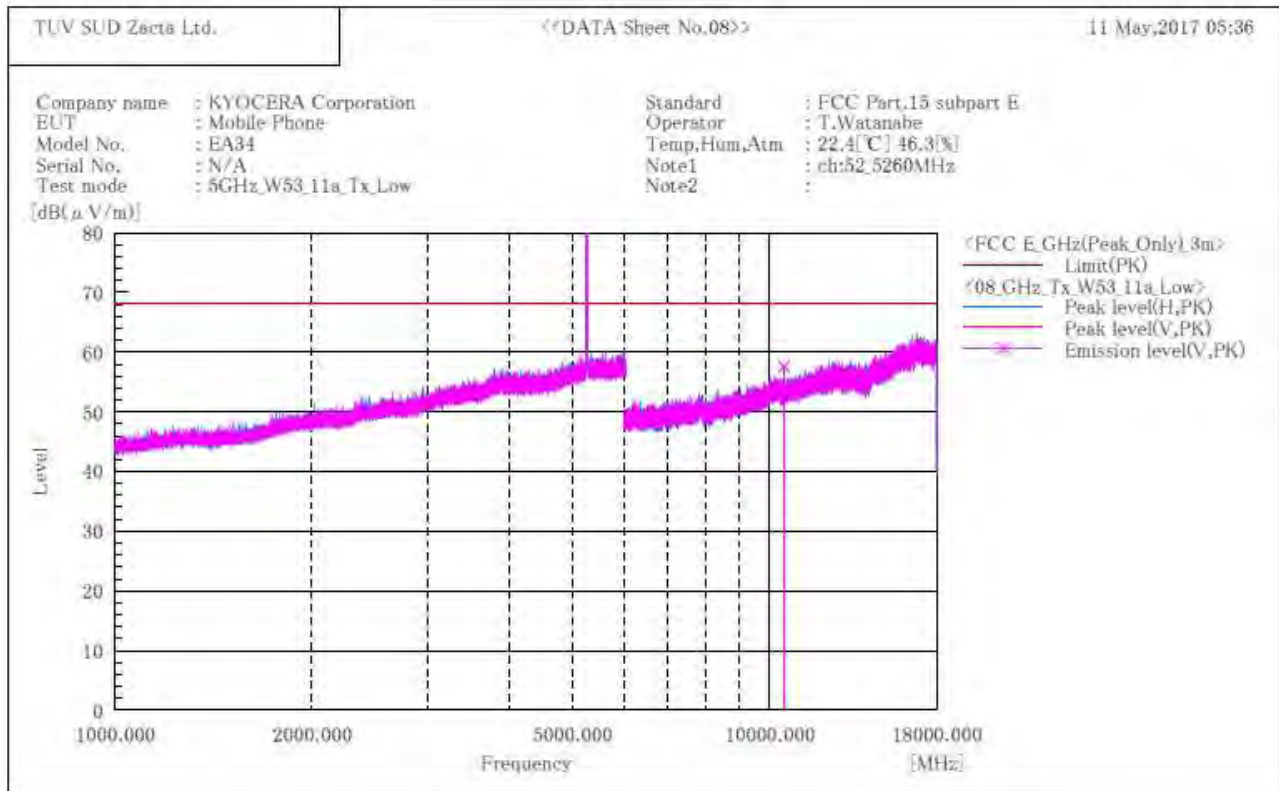
No.	Frequency (P)	c.f	Height	Angle
	[MHz]	[dB(1/m)]	[cm]	[°]

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.

**[11a]
W53 / Channel Low
ABOVE 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

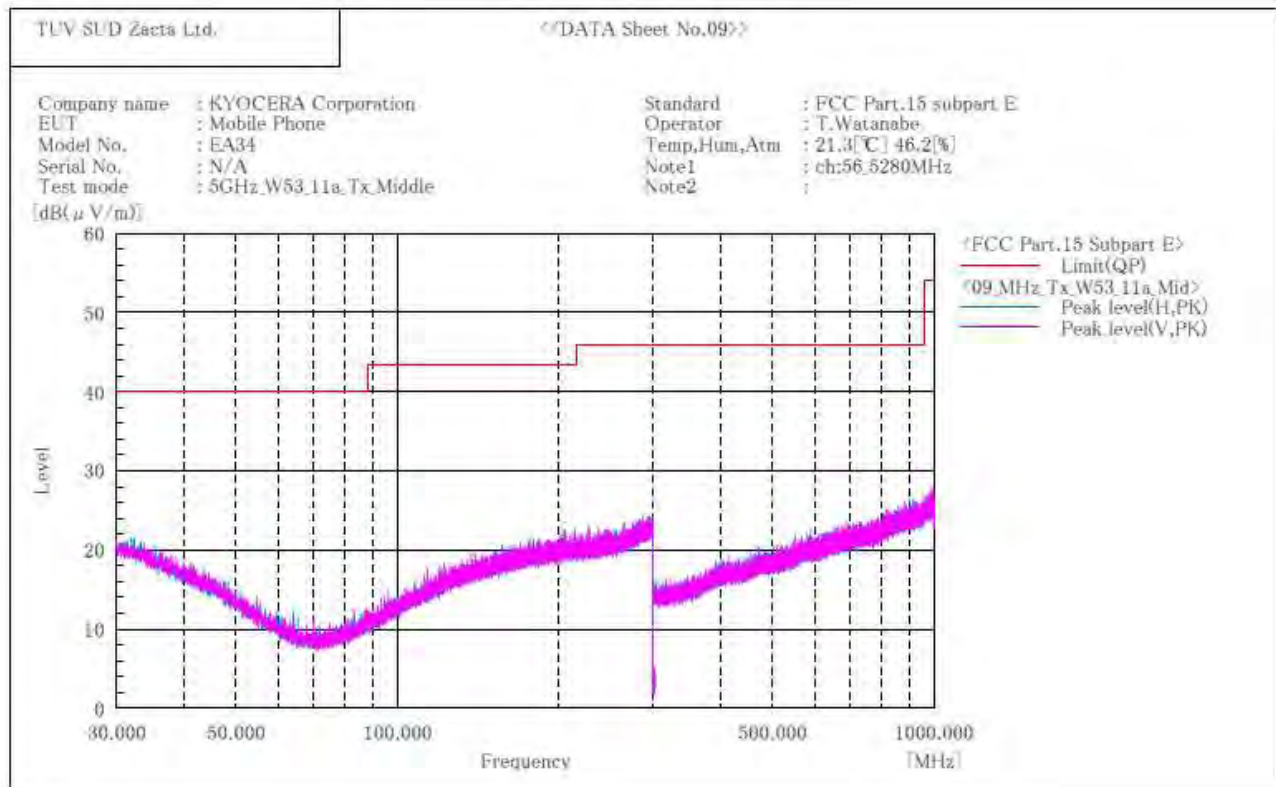
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	c, f [dB(1/m)]	Result PK [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]	Remark
1	10520.000	V	47.0	10.6	57.6	68.2	10.6	115.0	322.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

**[11a]
W53 / Channel Middle
BELOW 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

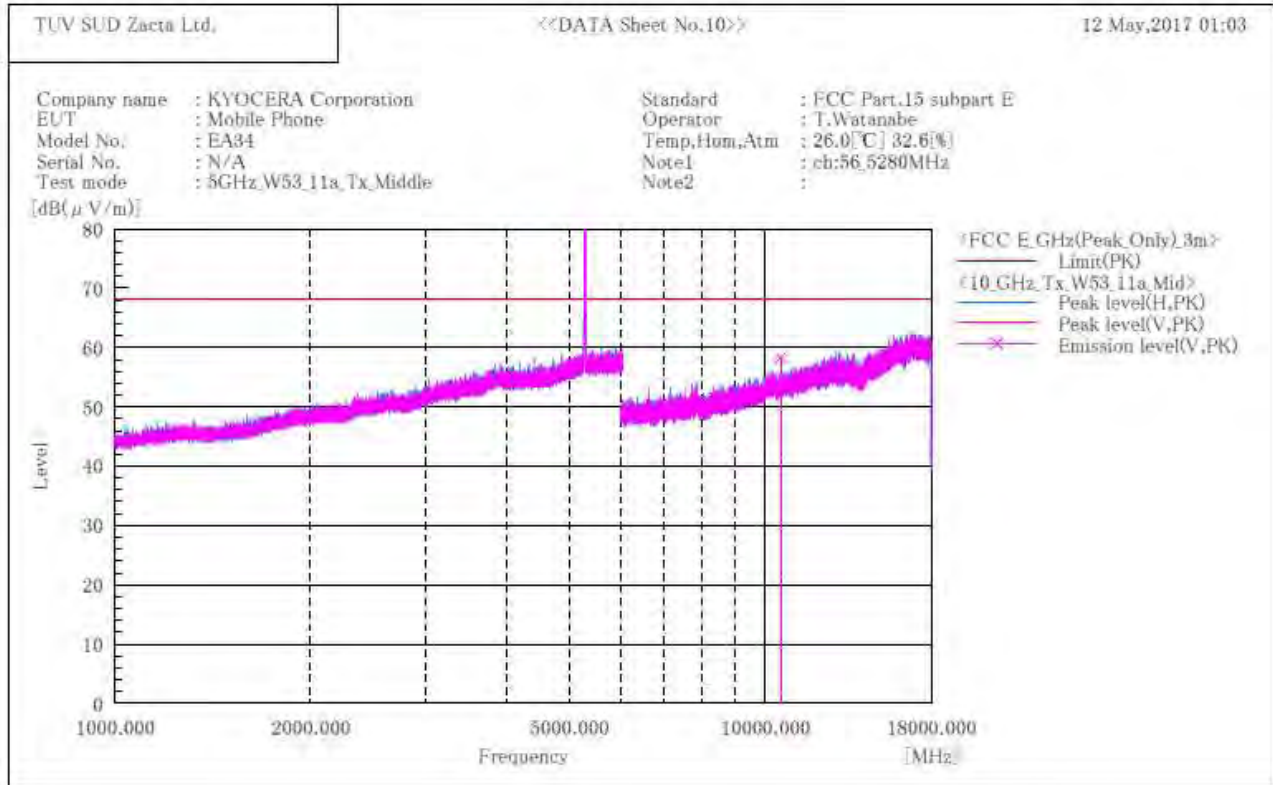
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11a]
W53 / Channel Middle
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

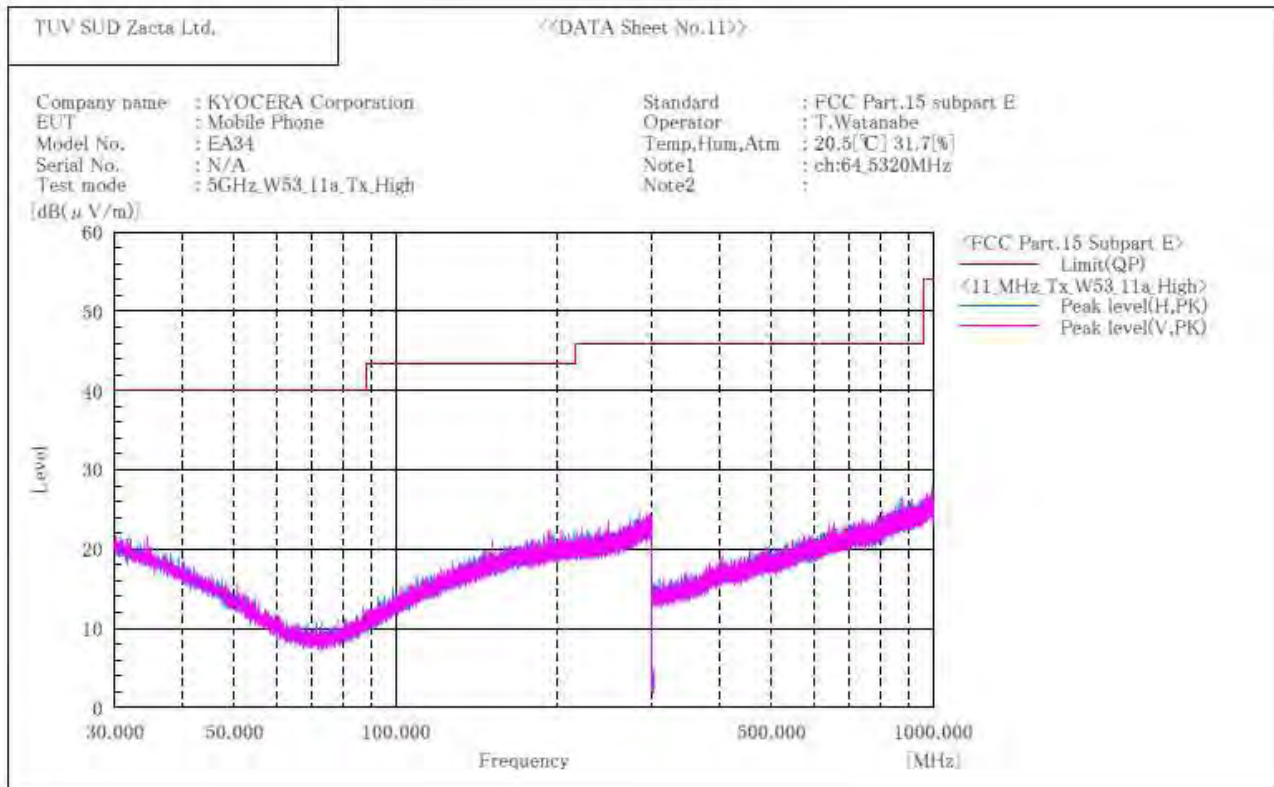
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]	Remark
1	10560.000	V	47.7	10.6	58.3	68.2	9.9	116.0	189.0	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

**[11a]
W53 / Channel High
BELOW 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

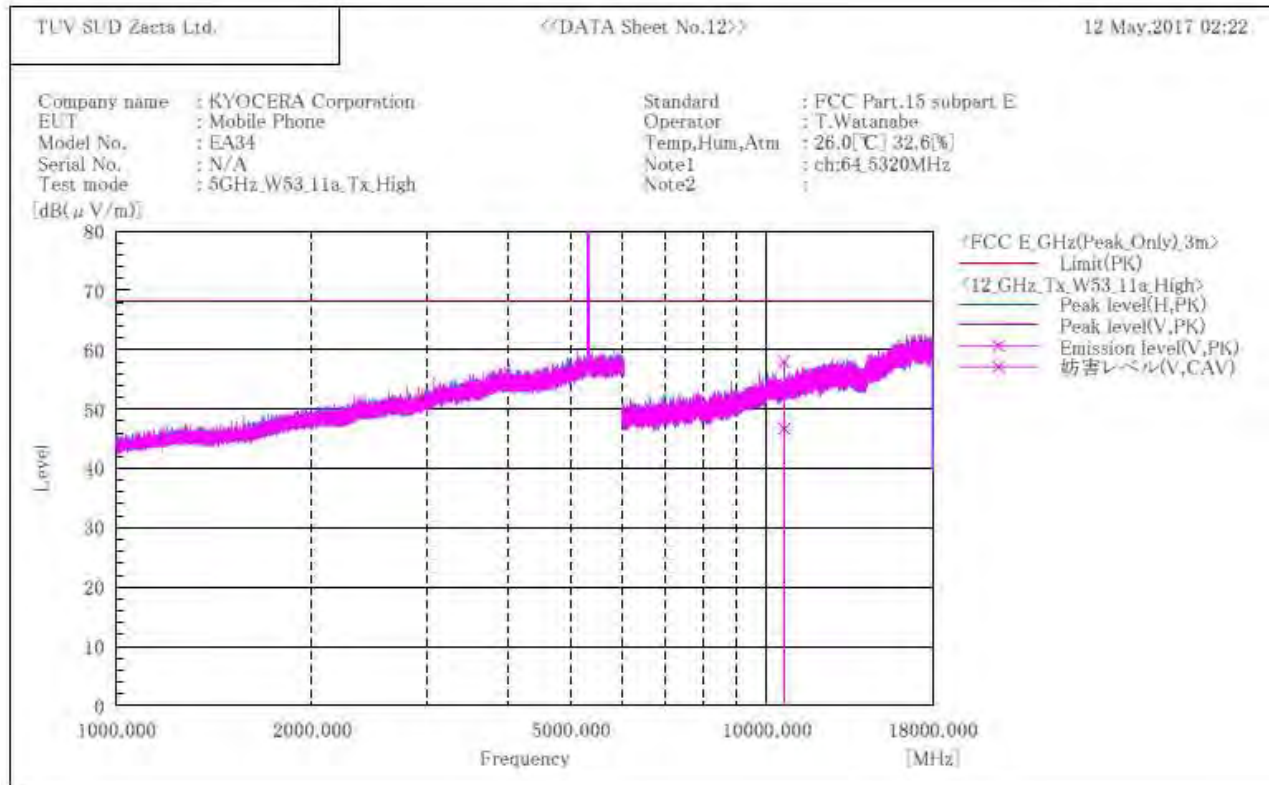
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11a]
W53 / Channel High
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

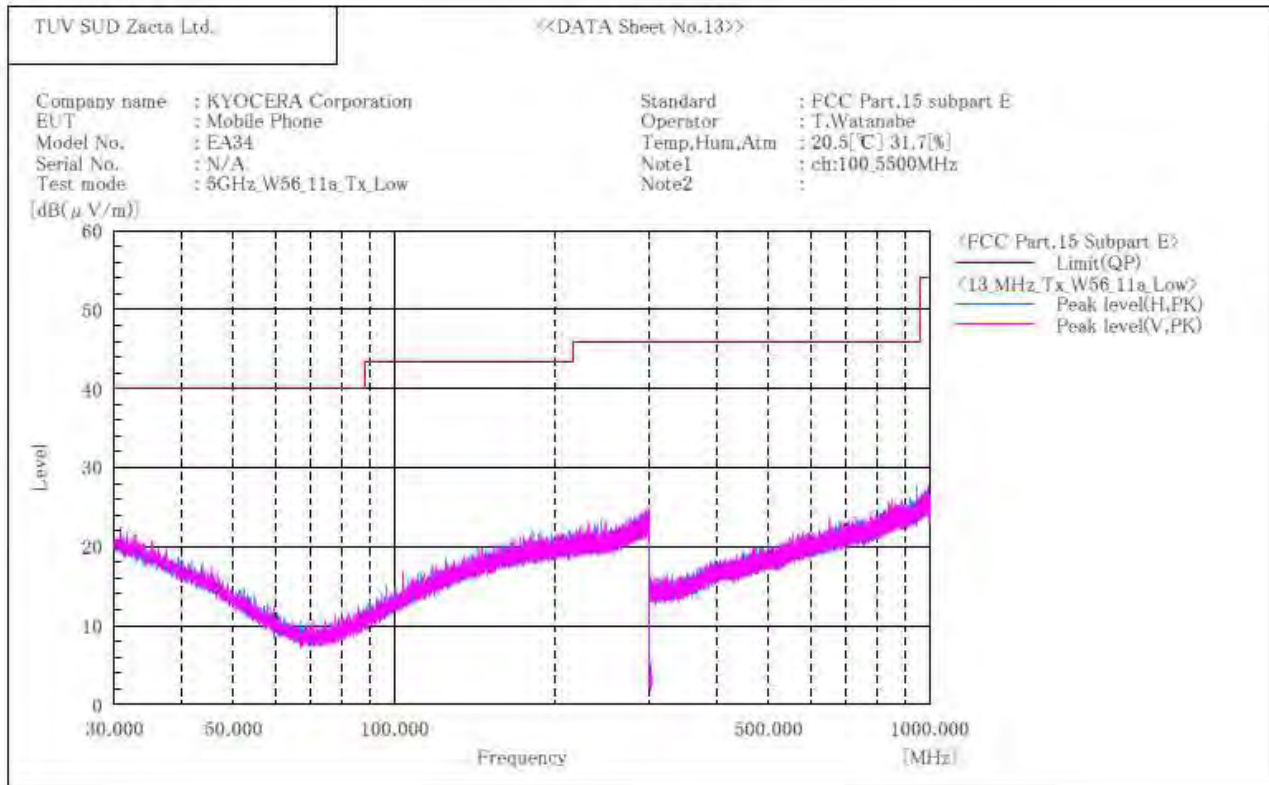
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	10640.000	V	47.3	36.0	19.7	58.0	46.7	74.0	16.0	7.3	102.0	182.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

**[11a]
W56 / Channel Low
BELOW 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

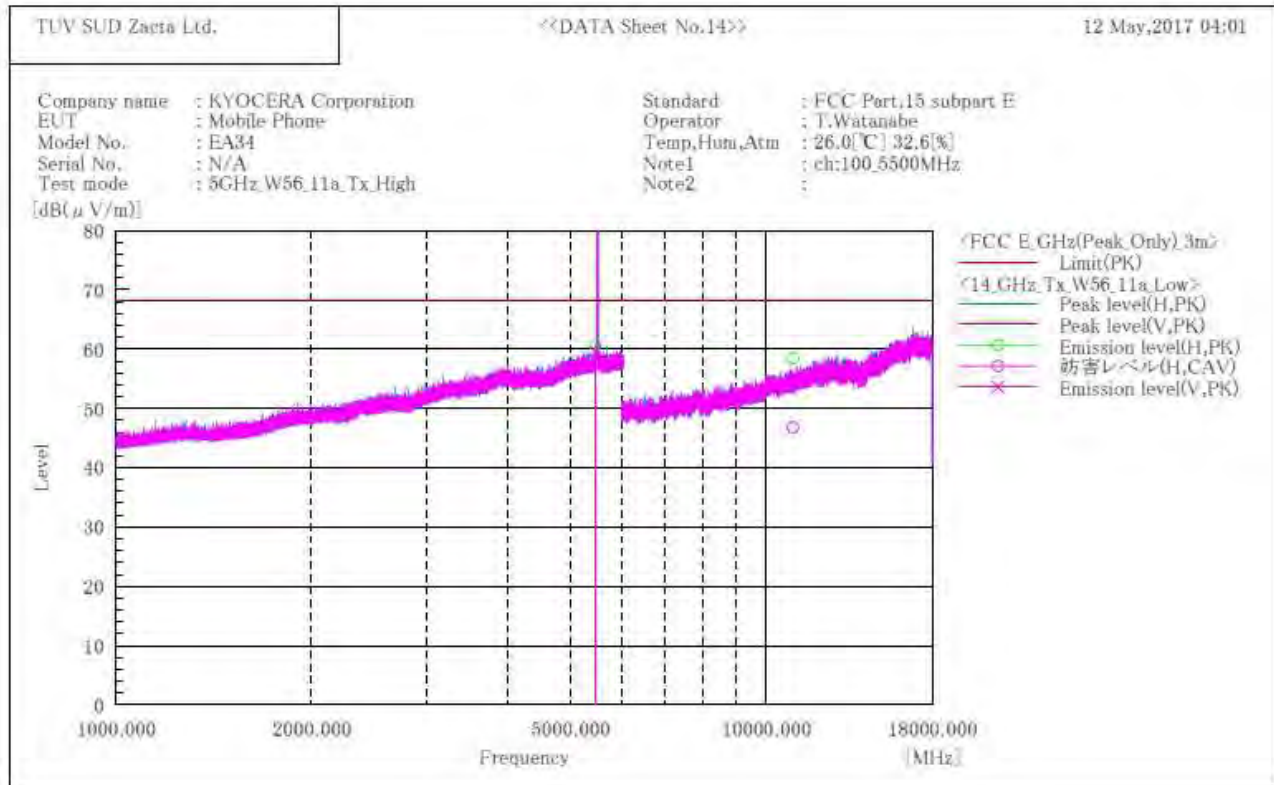
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11a]
W56 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

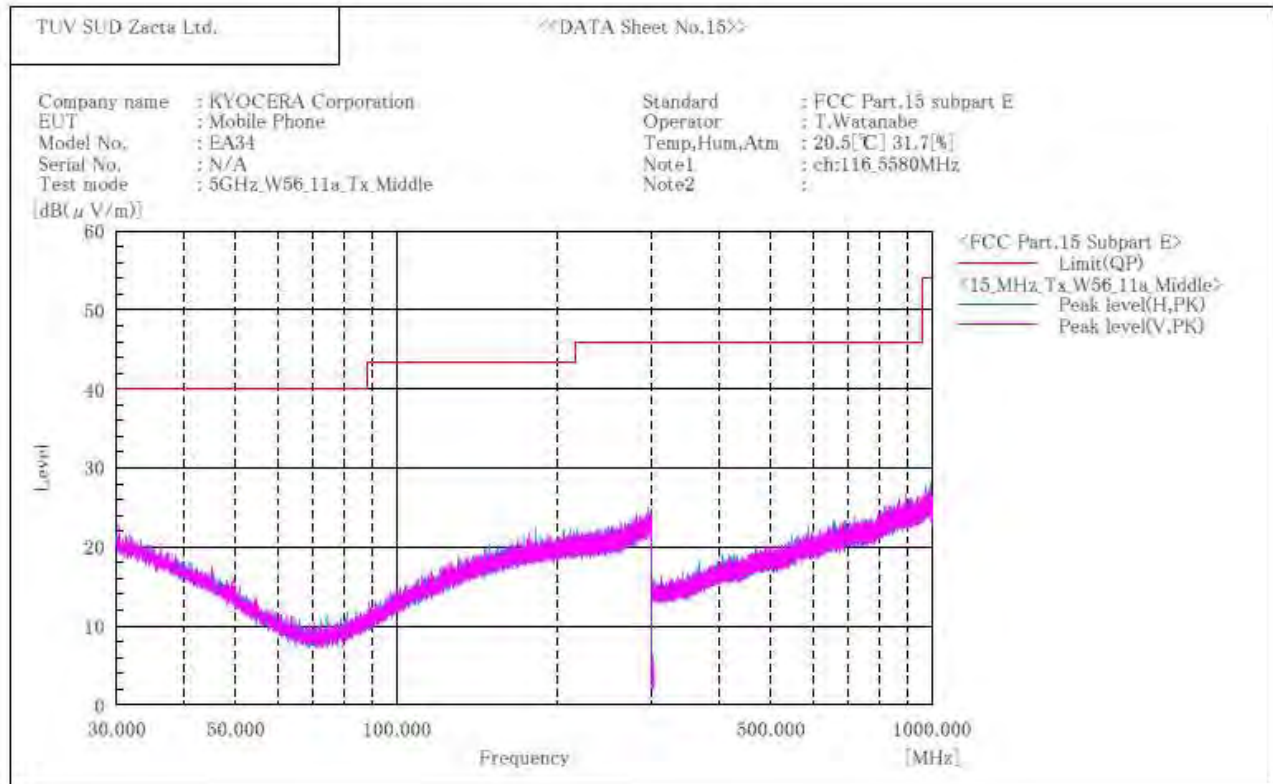
No.	Frequency (P)	Reading PK	Reading CAV	c.f	Result PK	Result CAV	Limit PK	Margin PK	Margin CAV	Height	Angle	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]	
1	5462.100	H	50.4	10.2	60.6		68.2	7.6		132.0	181.0	
2	5468.500	V	49.5	10.2	59.7		68.2	8.5		107.0	51.0	
3	11000.000	H	47.4	11.1	58.5	46.8	74.0	15.5	7.2	113.0	76.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11a]
W56 / Channel Middle
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

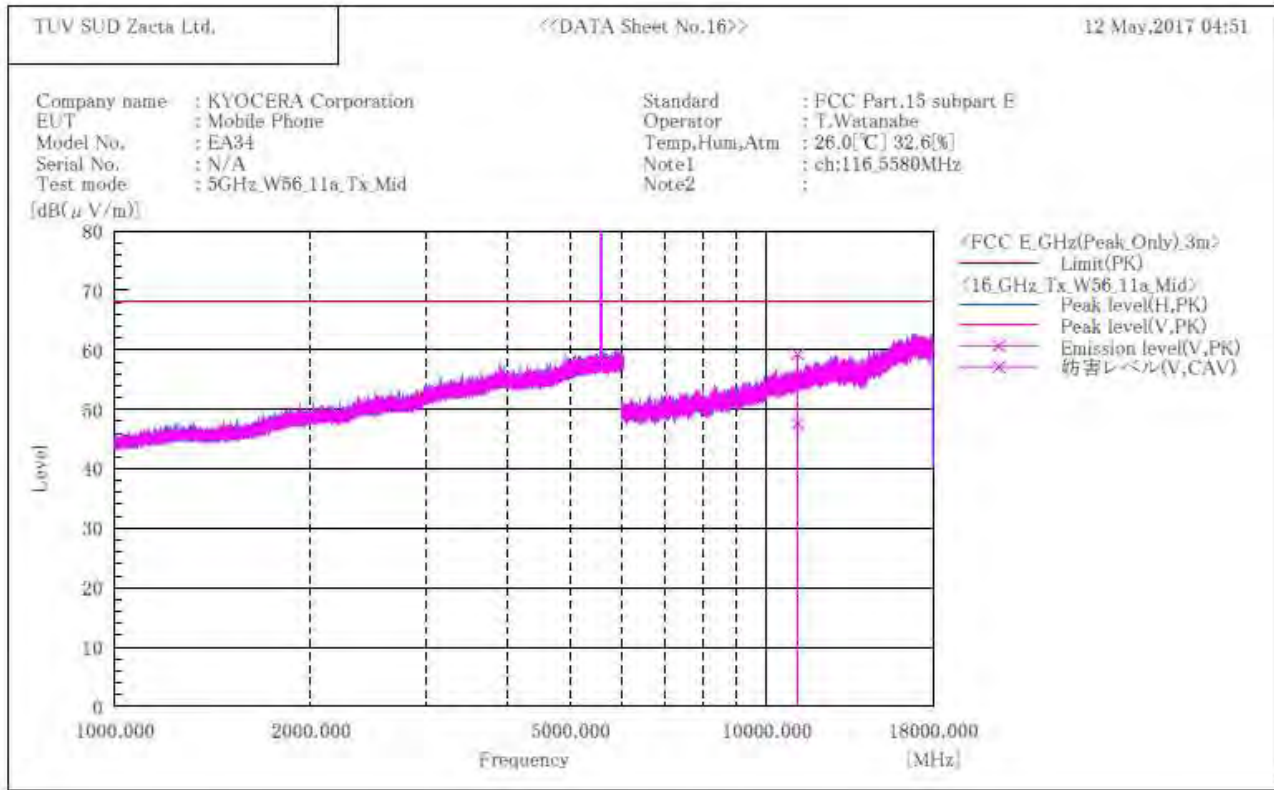
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

**[11a]
W56 / Channel Middle
ABOVE 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

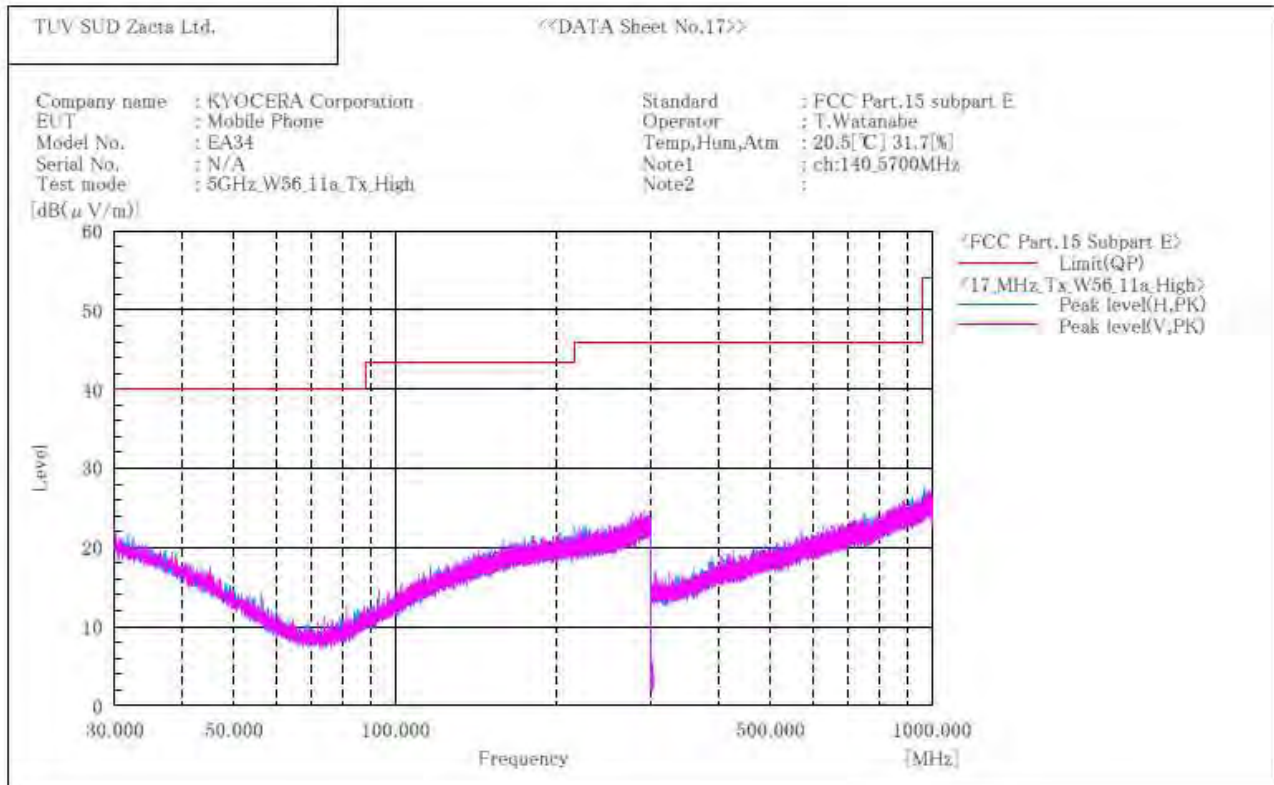
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	11160.000	V	47.9	36.2	11.4	59.3	47.6	74.0	14.7	6.4	120.0	0.0	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

**[11a]
W56 / Channel High
BELOW 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

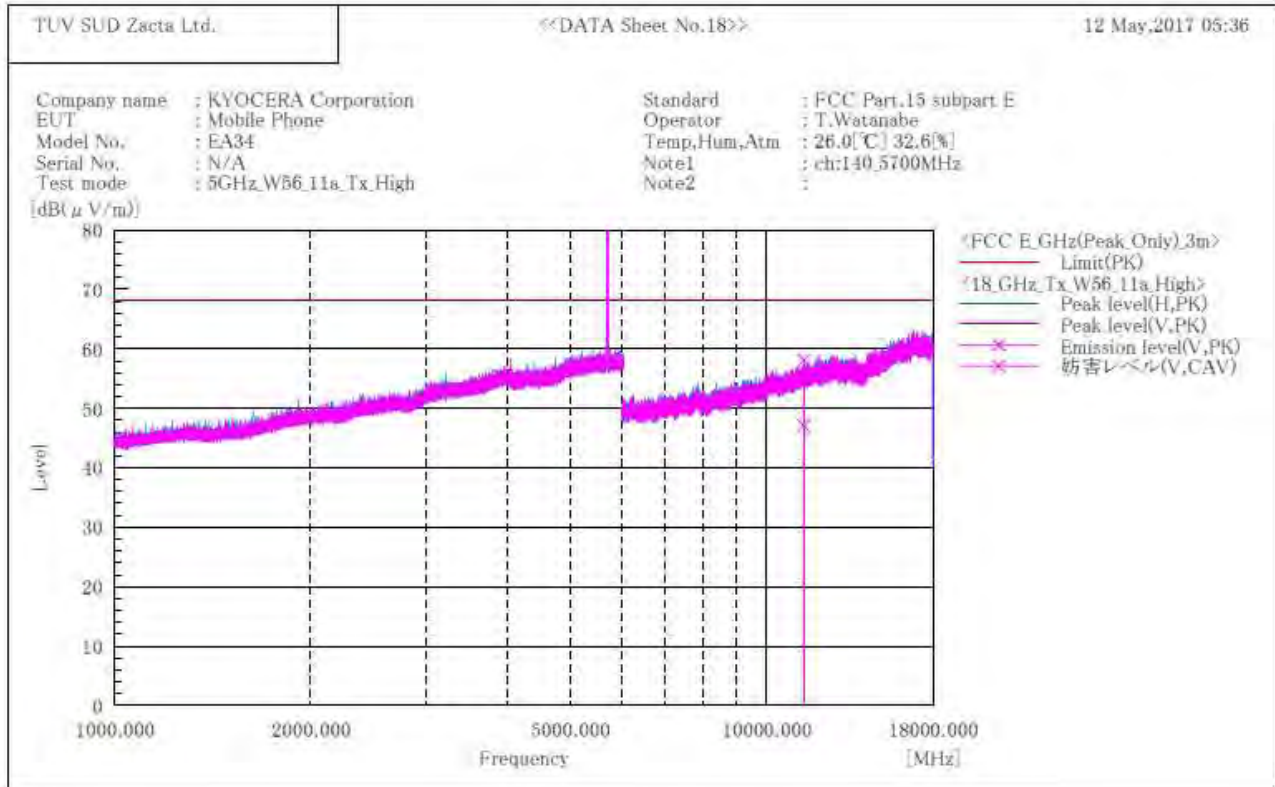
No.	Frequency (P)	c, f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

**[11a]
W56 / Channel High
ABOVE 1GHz**

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

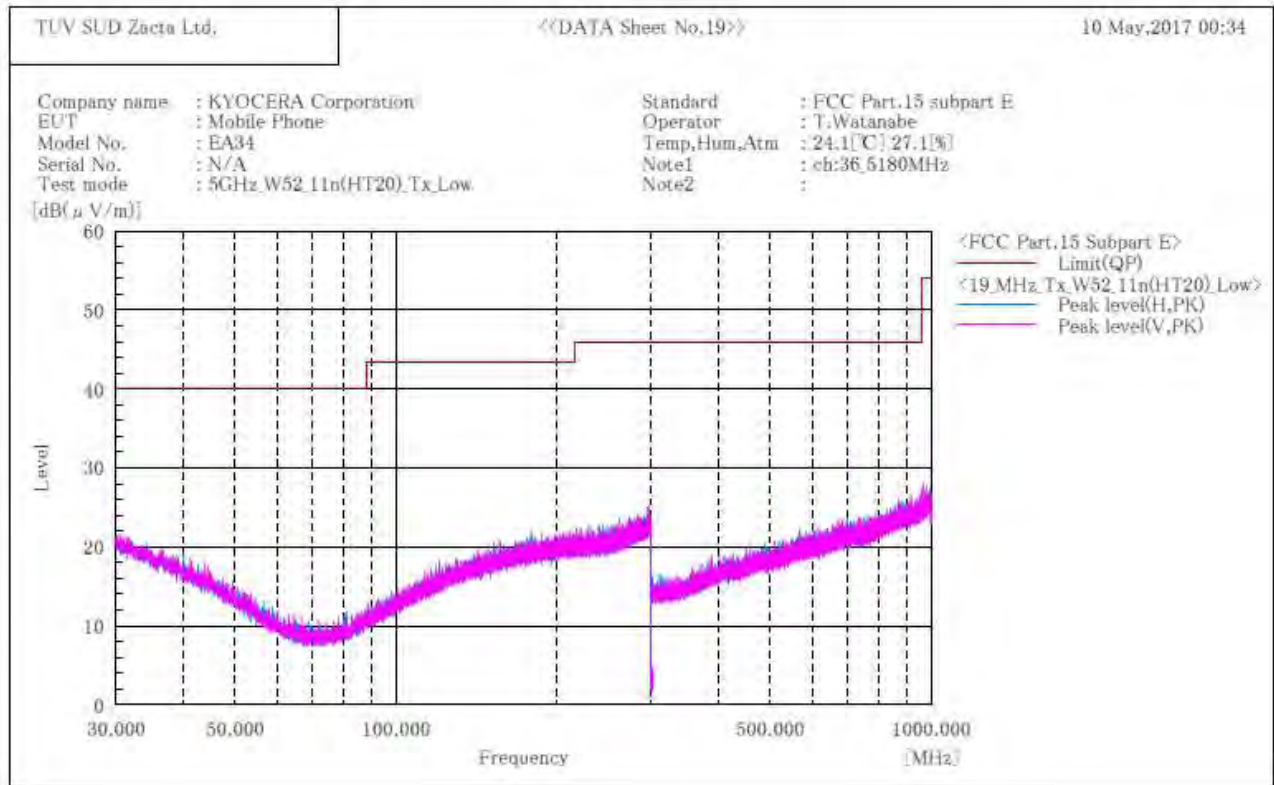
No.	Frequency	(P)	Reading	Reading	c.f	Result	Result	Limit	Margin	Margin	Height	Angle	Remark
	[MHz]		PK	CAV		PK	CAV	PK	PK	CAV	[cm]	[°]	
			[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]			
1	11400.090	V	46.5	35.5	11.6	58.1	47.1	74.0	15.9	6.9	115.0	318.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT20)]
W52 / Channel Low
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

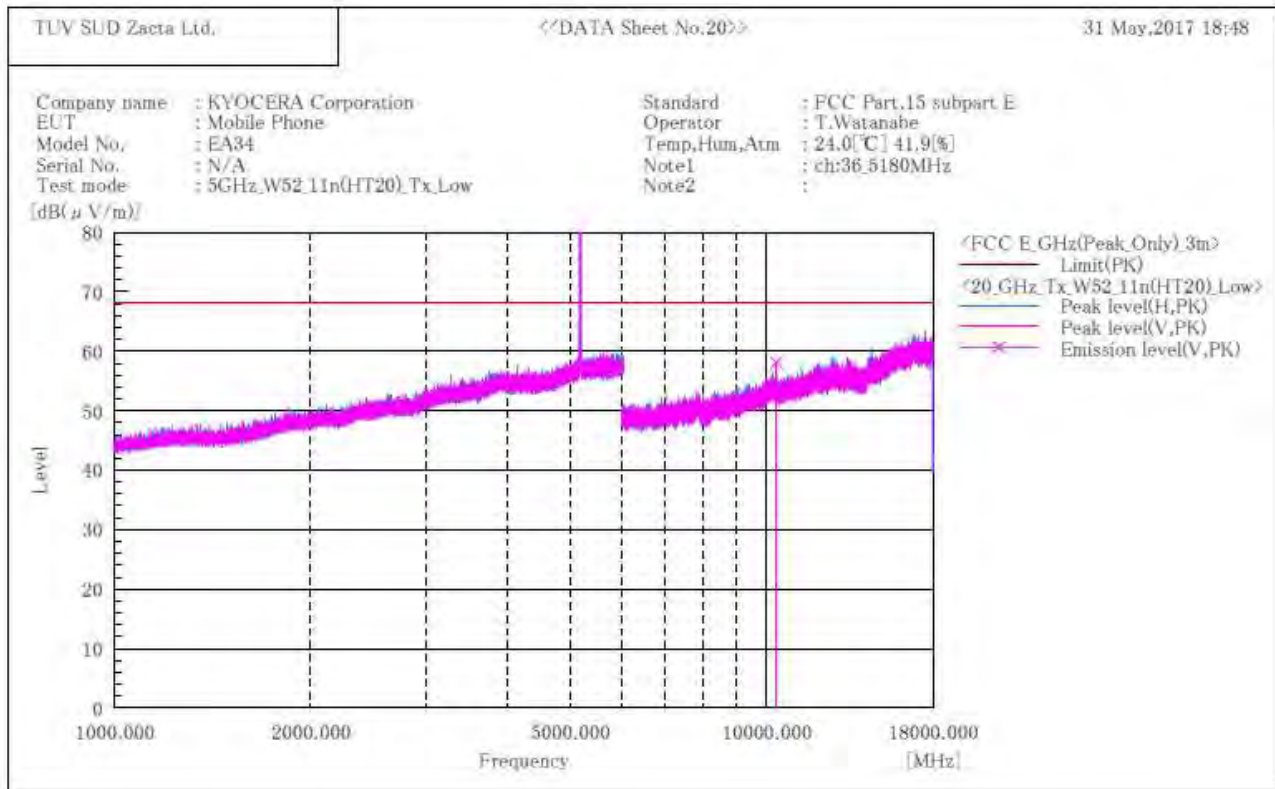
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W52 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

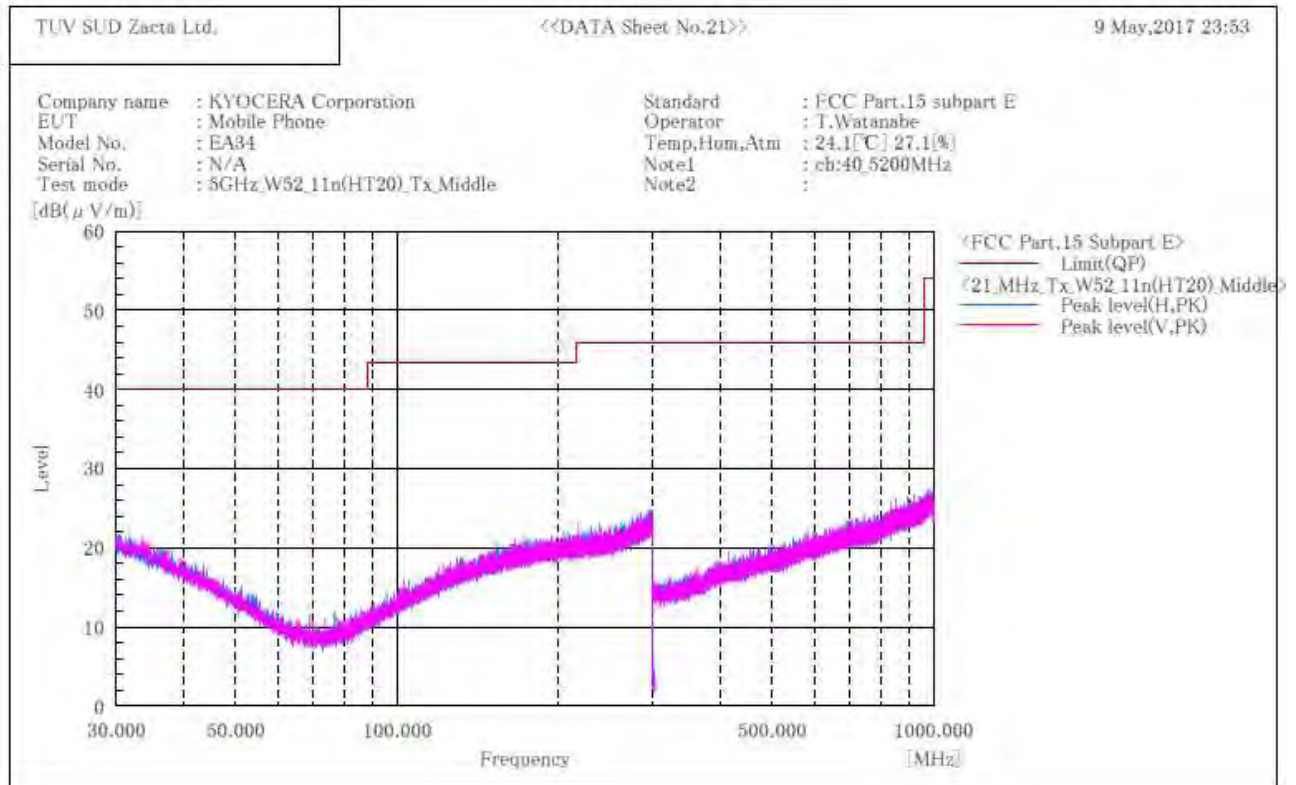
No.	Frequency	(P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	[°]	
1	10360.000	V	47.8	10.3	58.1	68.2	10.1	107.0	339.0	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT20)]
W52 / Channel Middle
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

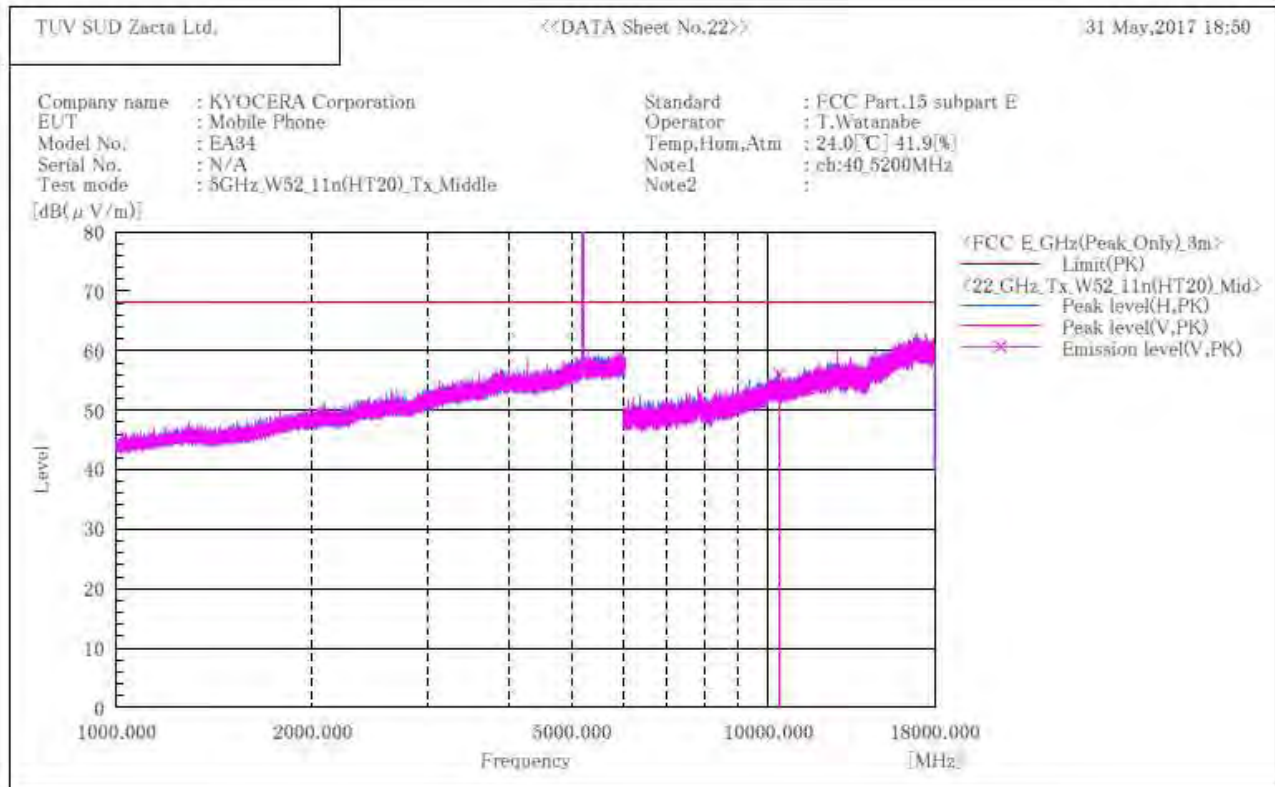
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W52 / Channel Middle
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

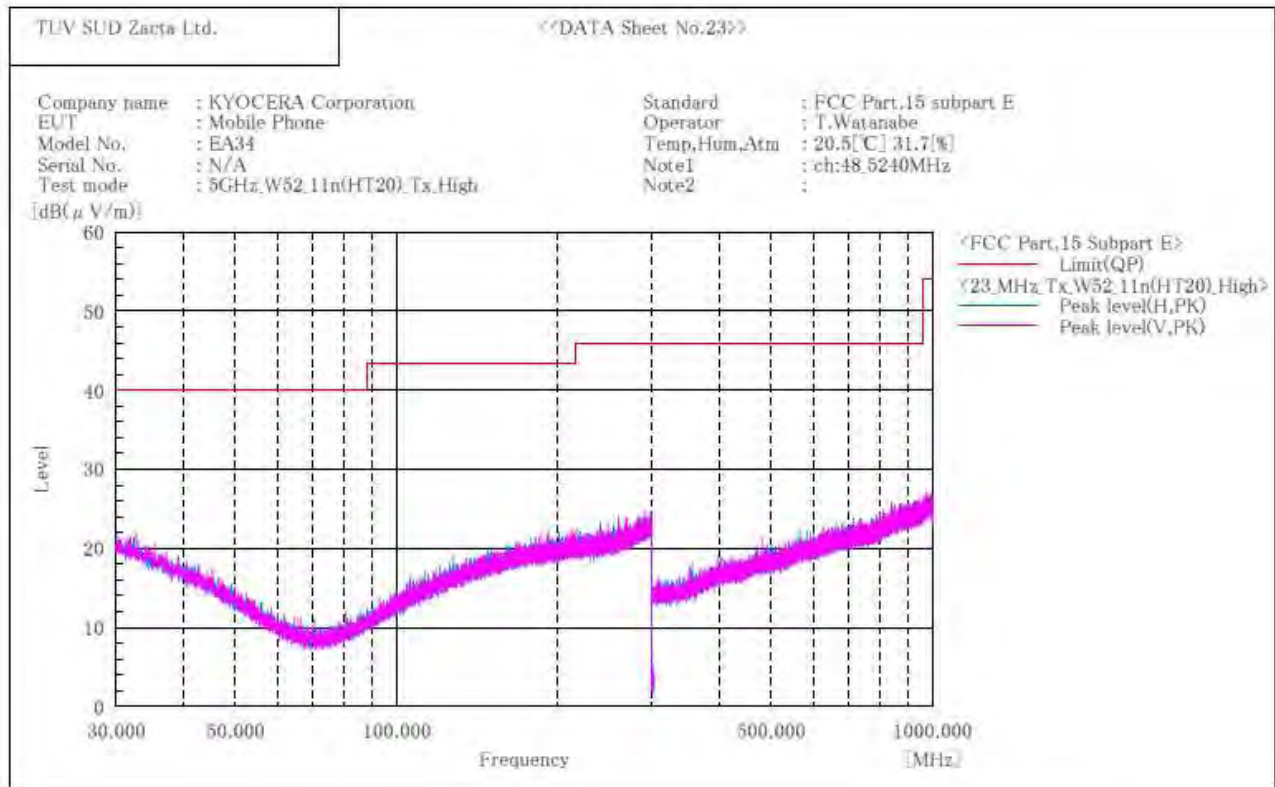
No.	Frequency (P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	[°]	
1	10400.000	V 45.7	10.4	56.1	68.2	12.1	127.0	61.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT20)]
W52 / Channel High
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

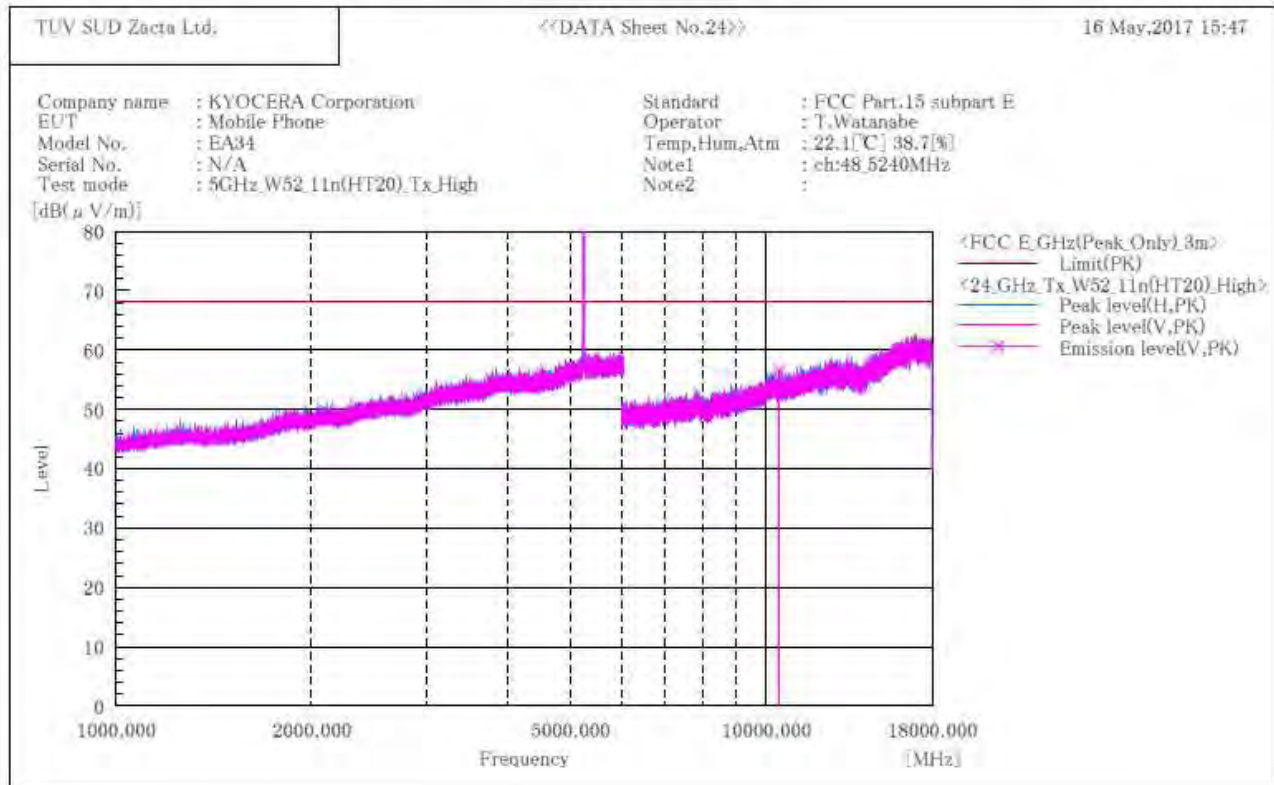
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W52 / Channel High
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

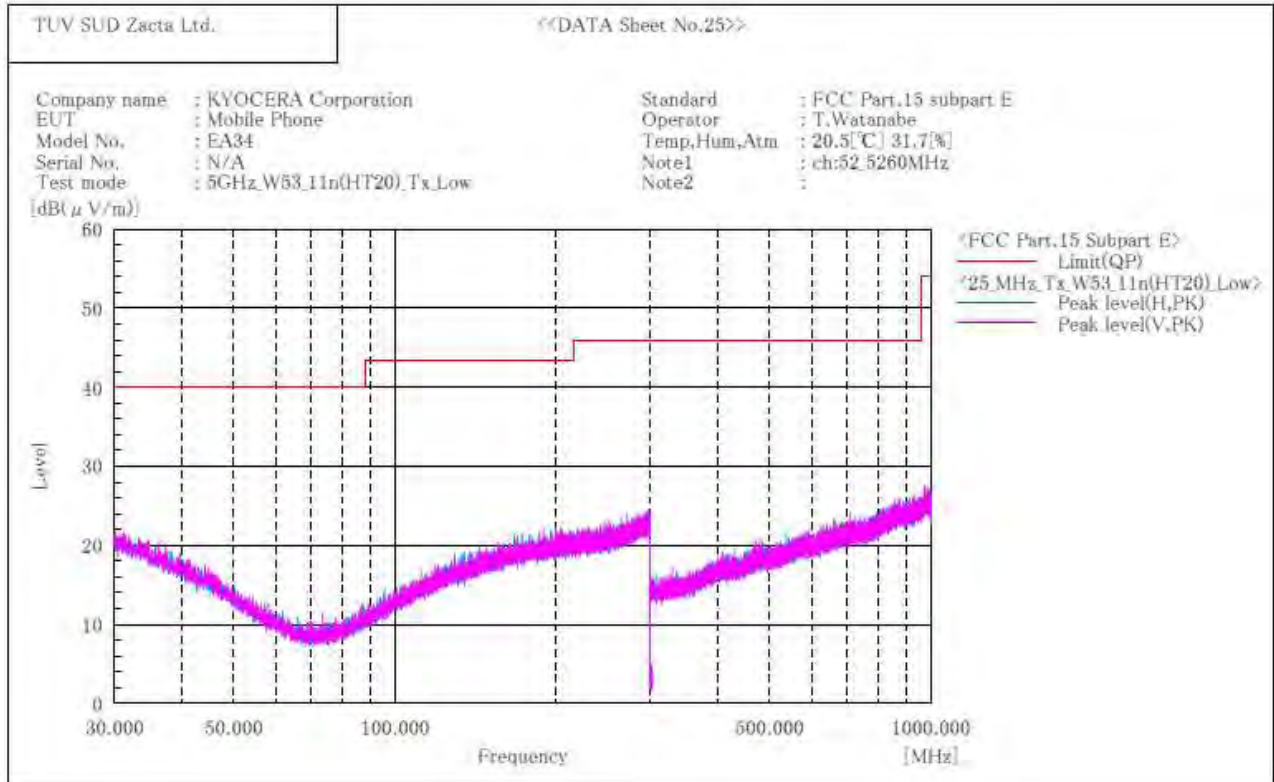
No.	Frequency (P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	[°]	
1	10480.000	V 46.0	10.5	56.5	68.2	11.7	119.0	320.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT20)]
W53 / Channel Low
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

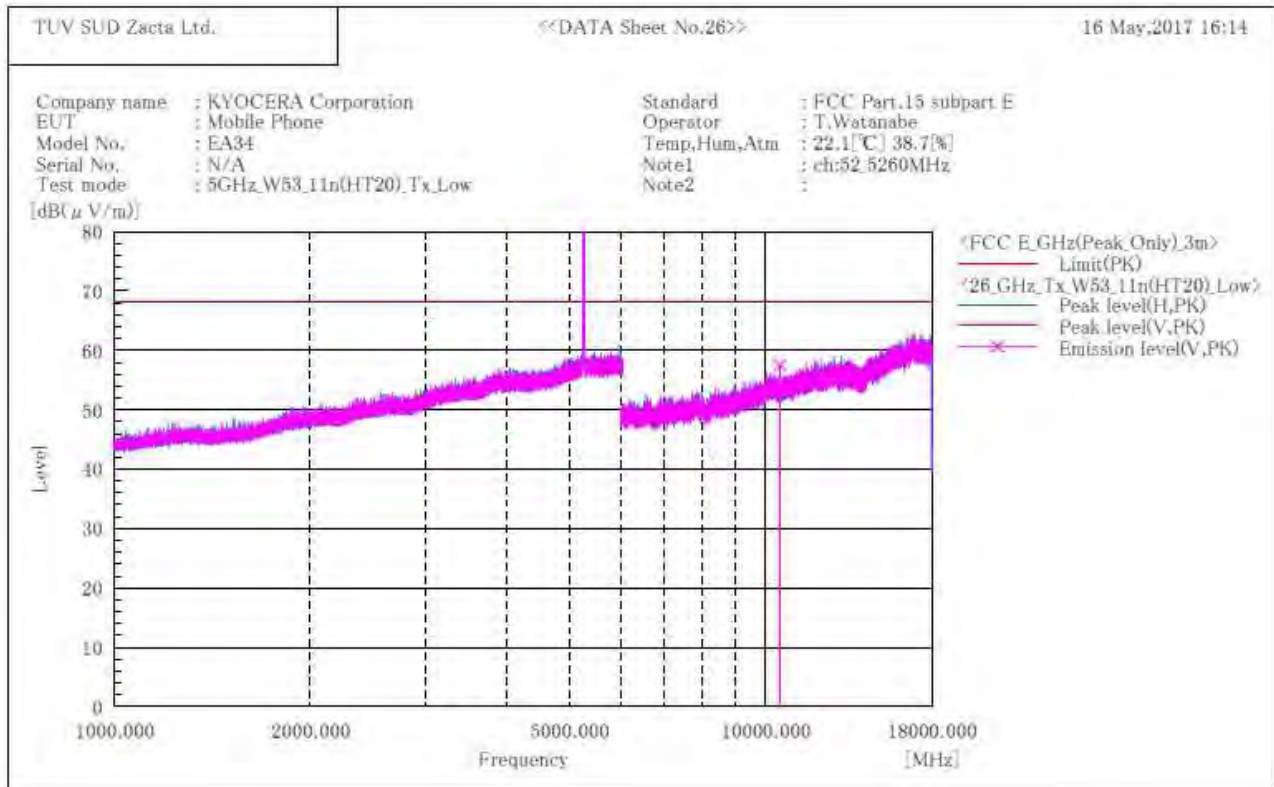
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W53 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

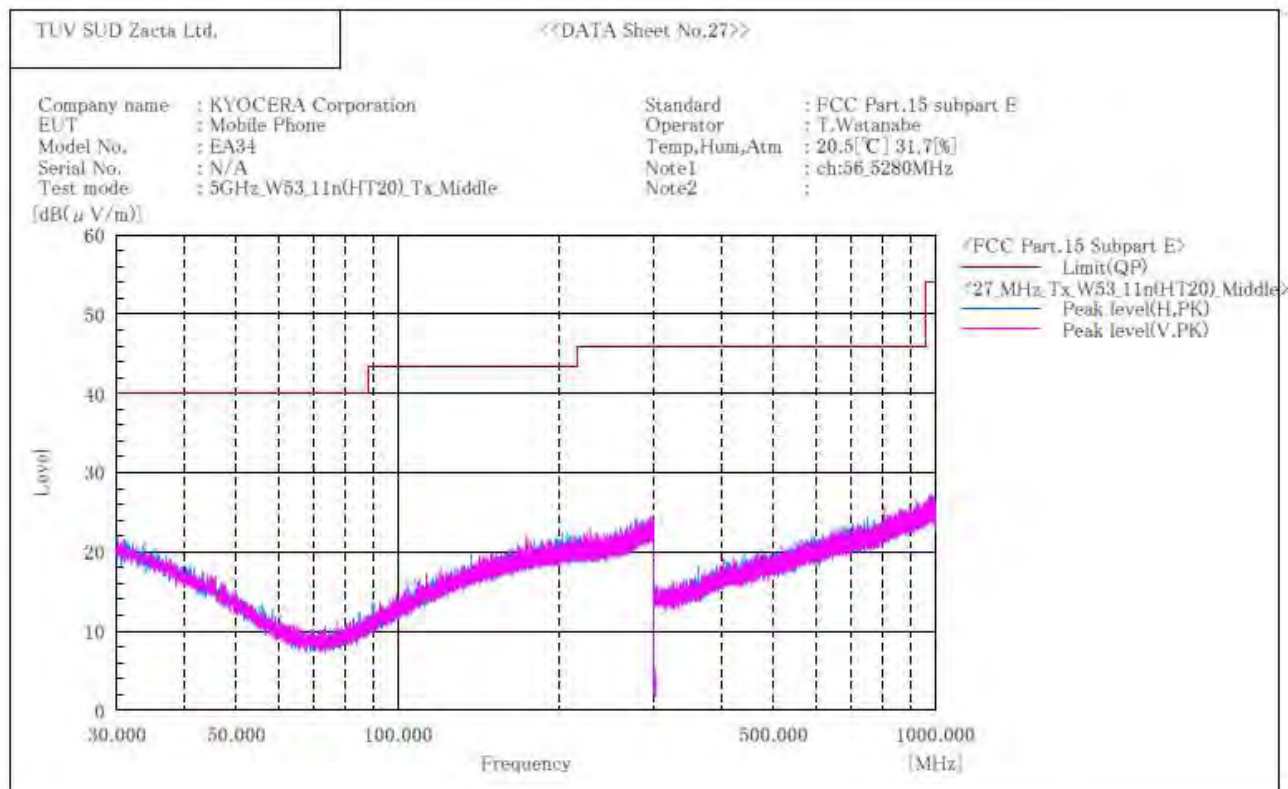
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]	Remark
1	10520.000	V	46.9	10.6	57.5	68.2	10.7	114.0	236.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT20)]
W53 / Channel Middle
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

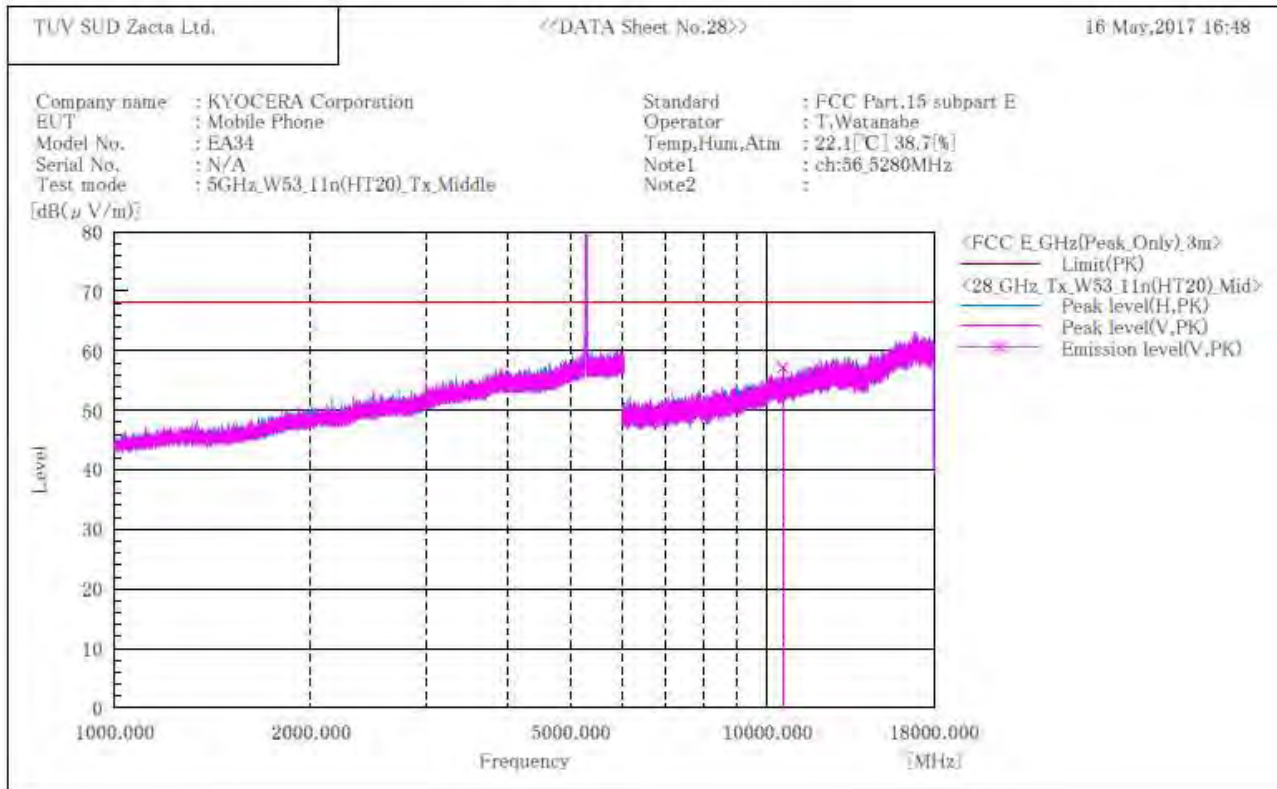
No.	Frequency (P)	c.F	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W53 / Channel Middle
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

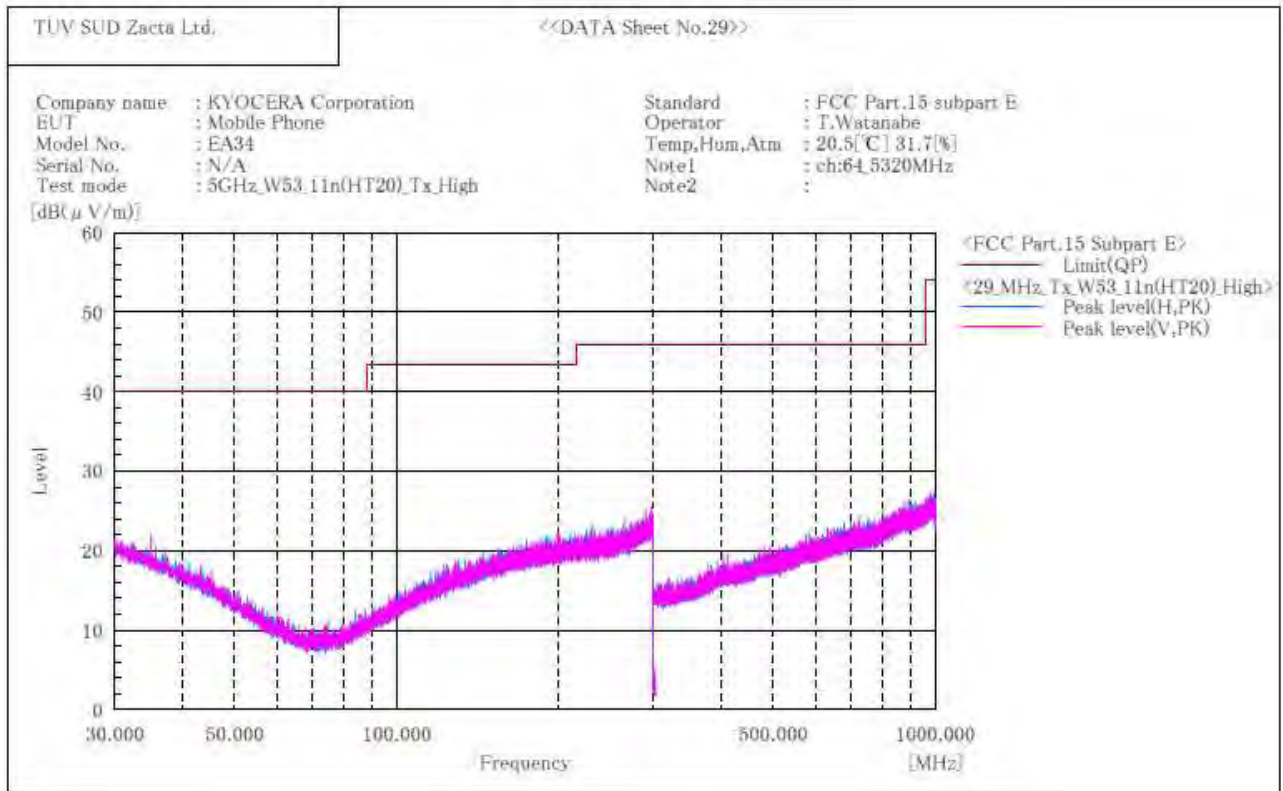
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]	Remark
1	10560.000	V	46.6	10.6	57.2	68.2	11.0	128.0	50.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT20)]
W53 / Channel High
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

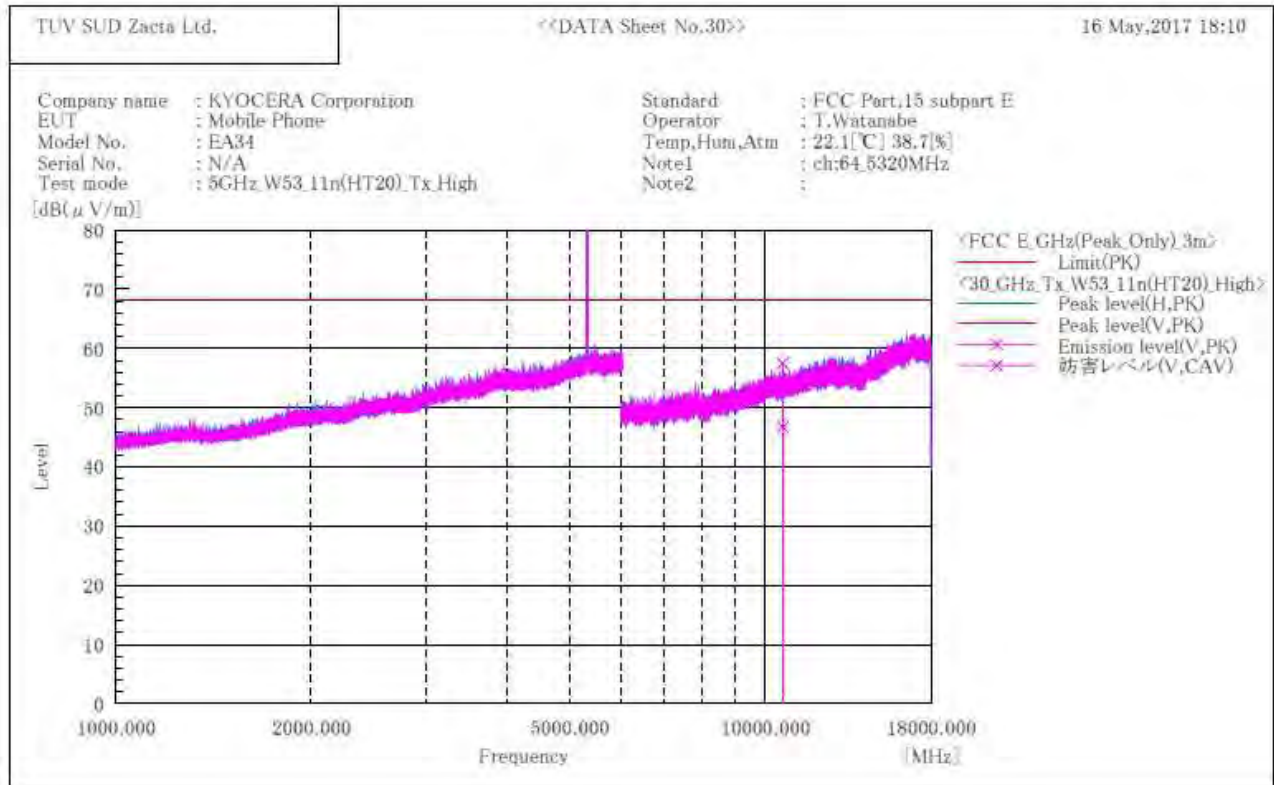
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W53 / Channel High
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	10640.000	V	46.8	36.0	10.7	57.5	46.7	74.0	16.5	7.3	129.0	317.0	

Note:

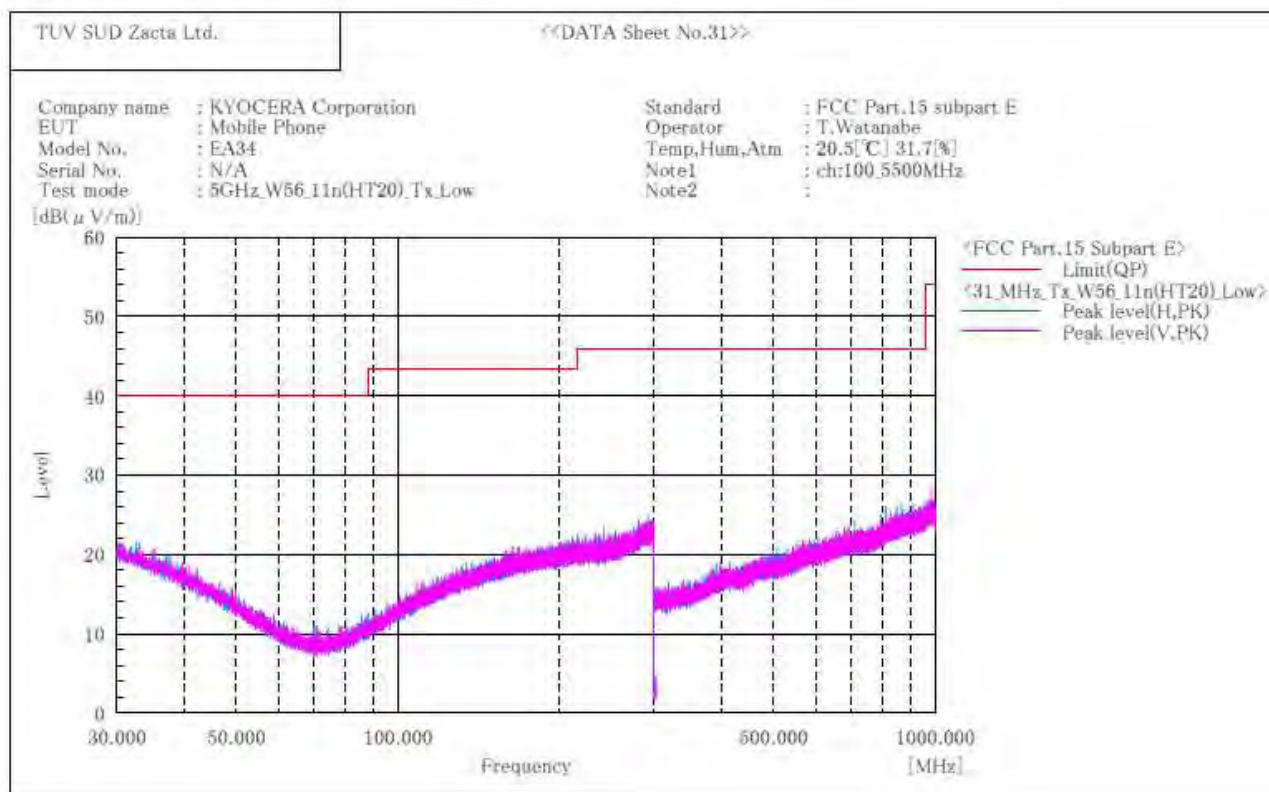
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



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[11n(HT20)]
W56 / Channel Low
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

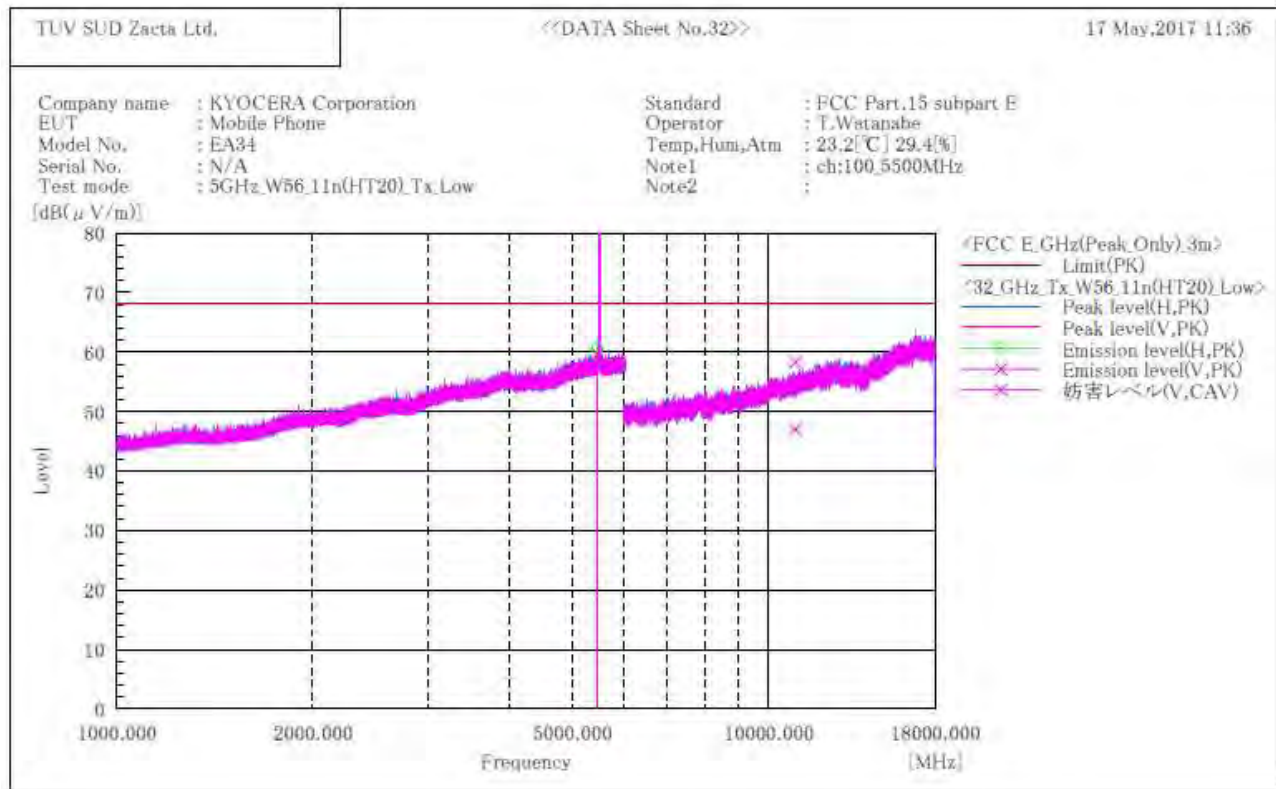
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W56 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

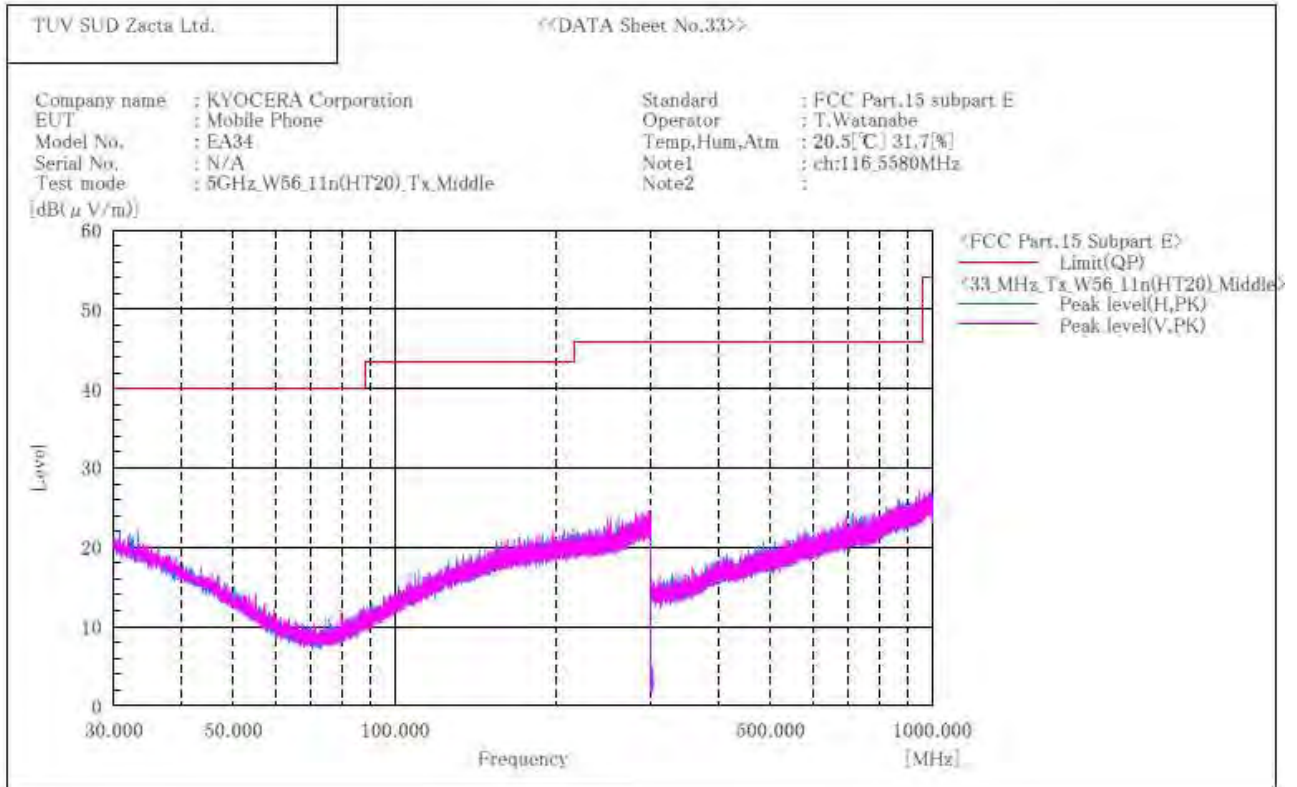
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	5468.100	H	50.4		10.2	60.6		68.2	7.6		132.0	181.0	
2	5468.500	V	49.5		10.2	59.7		68.2	8.5		107.0	51.0	
3	11000.000	V	47.1	35.8	11.2	58.3	47.0	74.0	15.7	7.0	122.0	77.0	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT20)]
W56 / Channel Middle
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

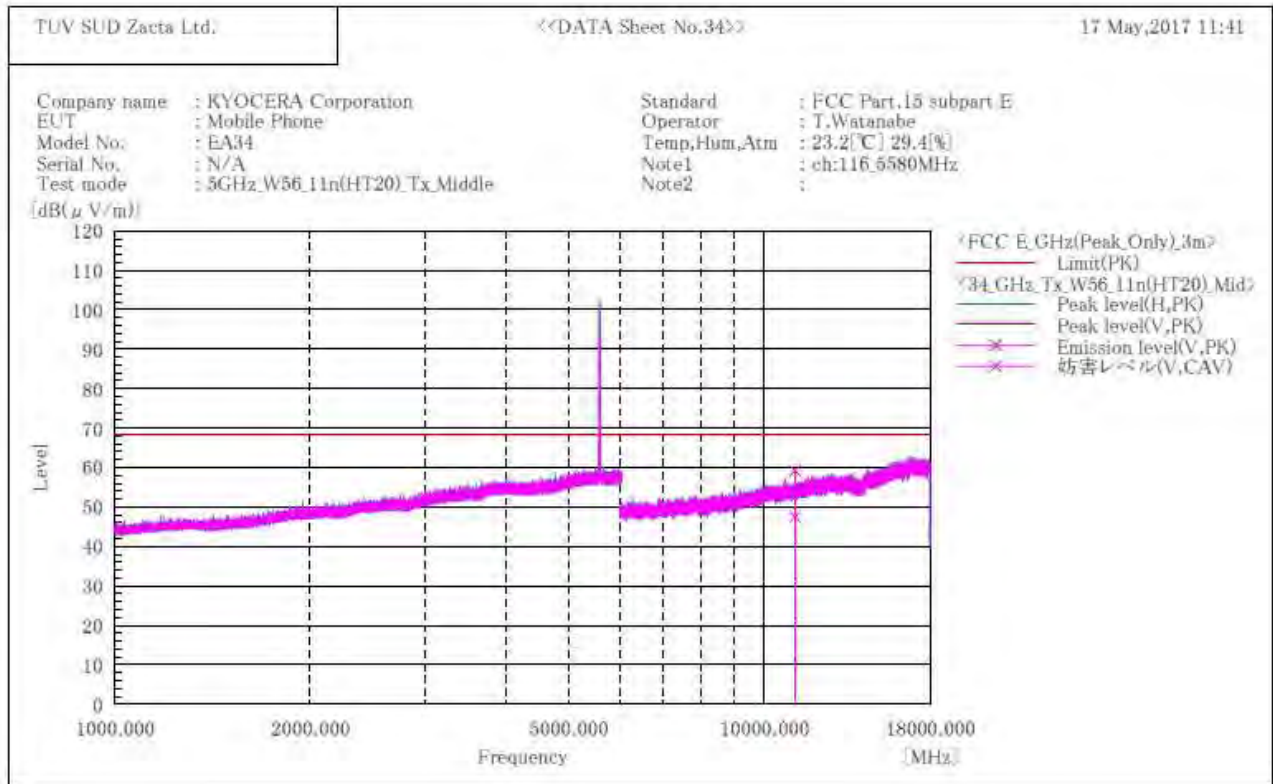
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W56 / Channel Middle
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

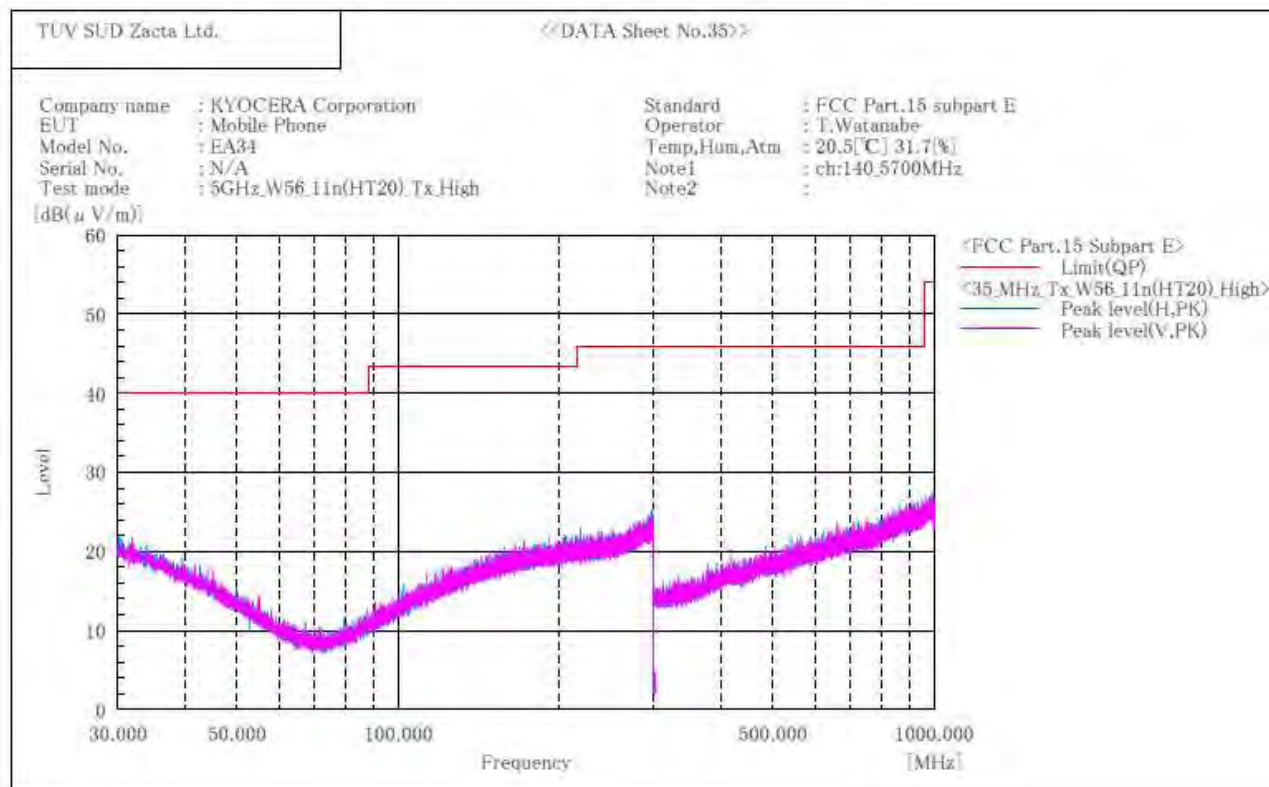
No.	Frequency	(P)	Reading PK	Reading CAV	c.f	Result PK	Result CAV	Limit PK	Margin PK	Margin CAV	Height	Angle	Remark
	[MHz]		[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]	
1	11160.000	V	47.8	36.1	11.4	59.2	47.5	74.0	14.8	6.5	107.0	74.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT20)]
W56 / Channel High
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

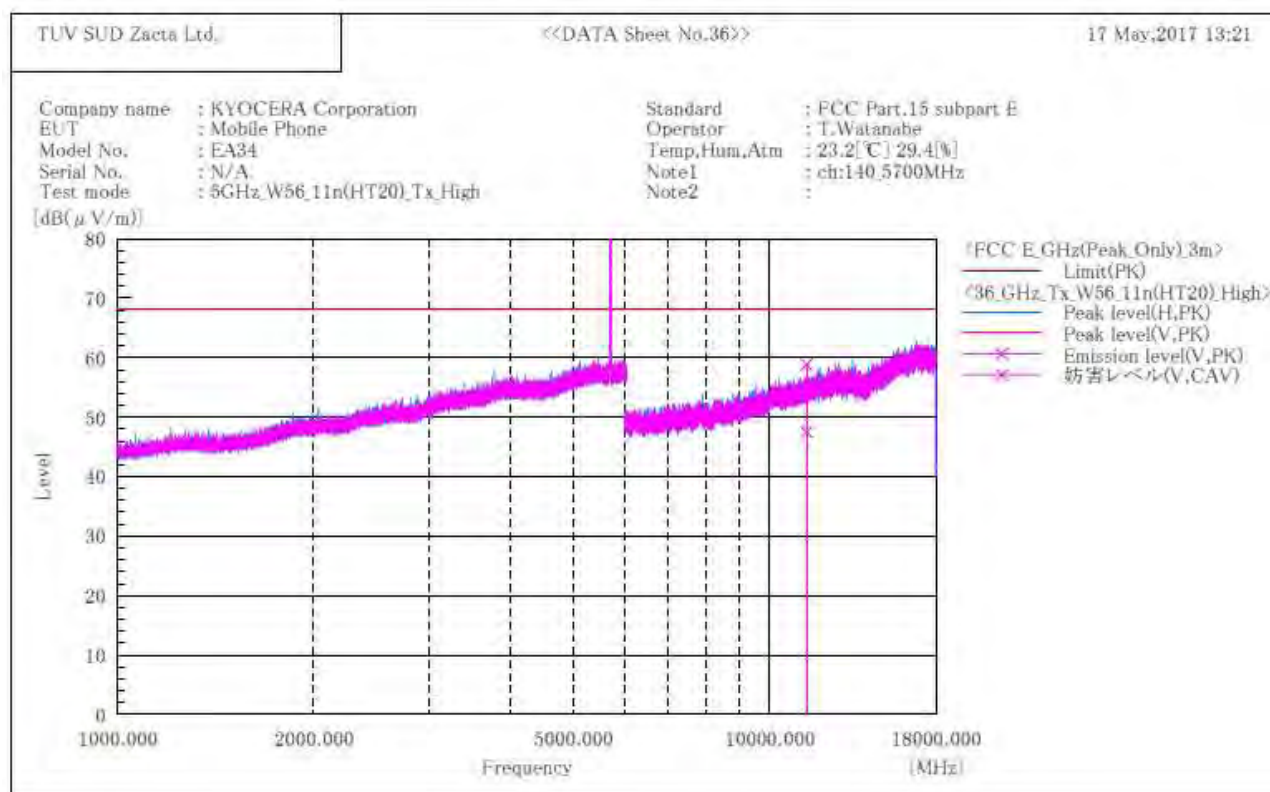
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT20)]
W56 / Channel High
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

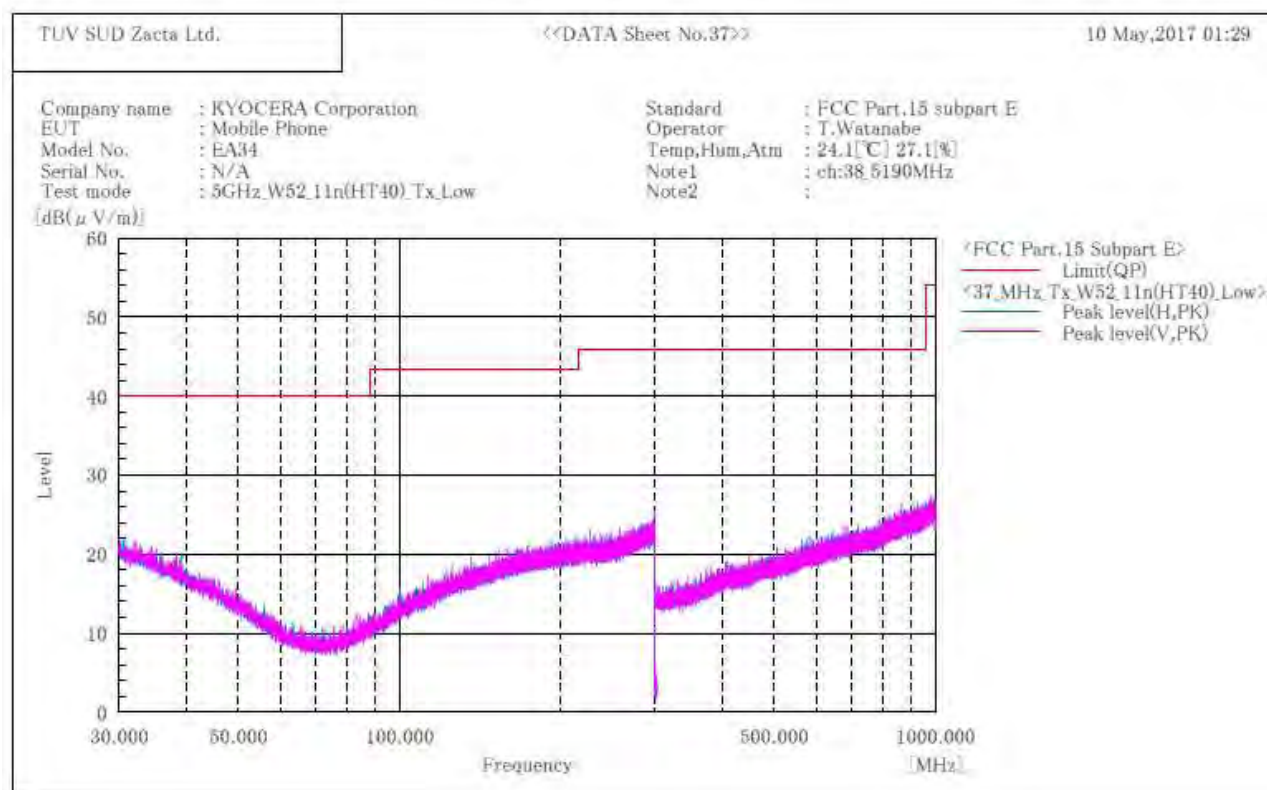
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	11400.000	V	47.2	35.9	11.6	58.8	47.5	74.0	15.2	6.5	132.0	69.0	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT40)]
W52 / Channel Low
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

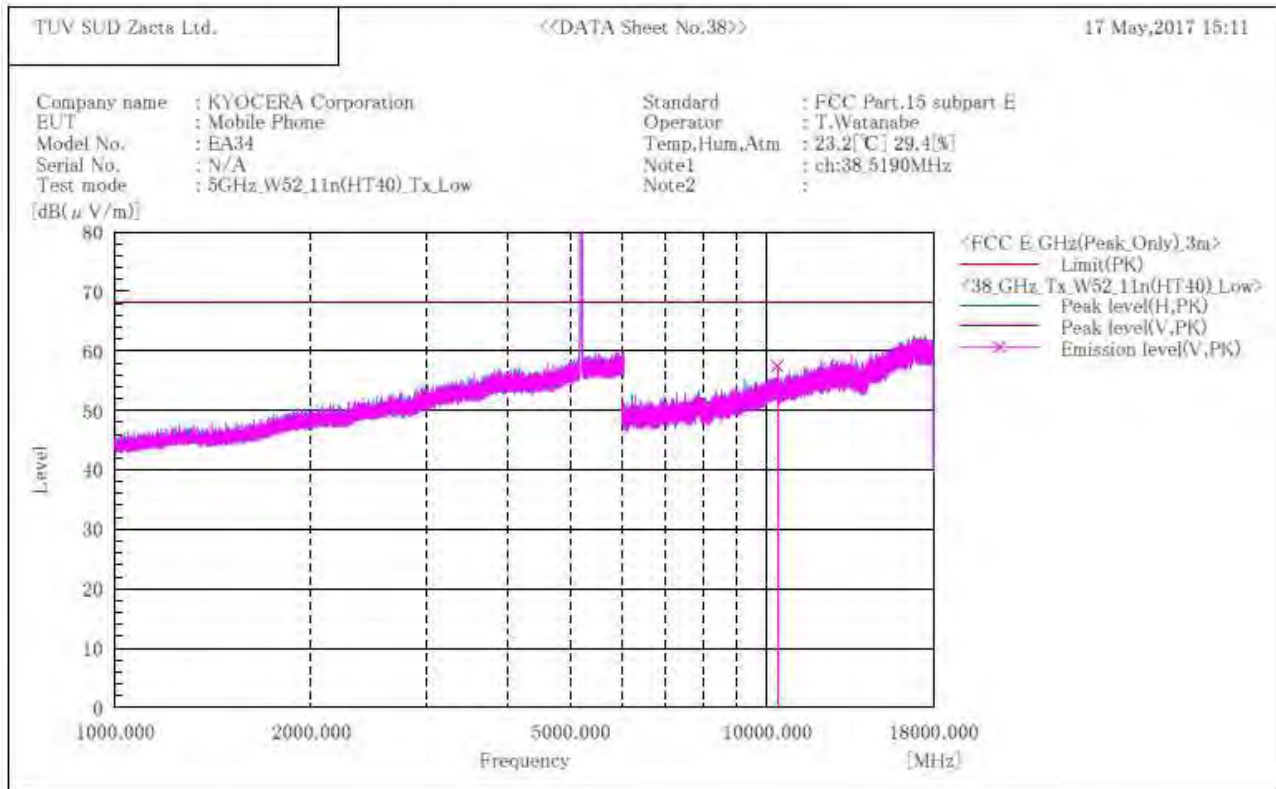
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



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[11n(HT40)]
W52 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

No.	Frequency (P)	Reading	c.f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	[°]	
1	10380.000	V 47.2	10.3	57.5	68.2	10.7	106.0	31.0	

Note:

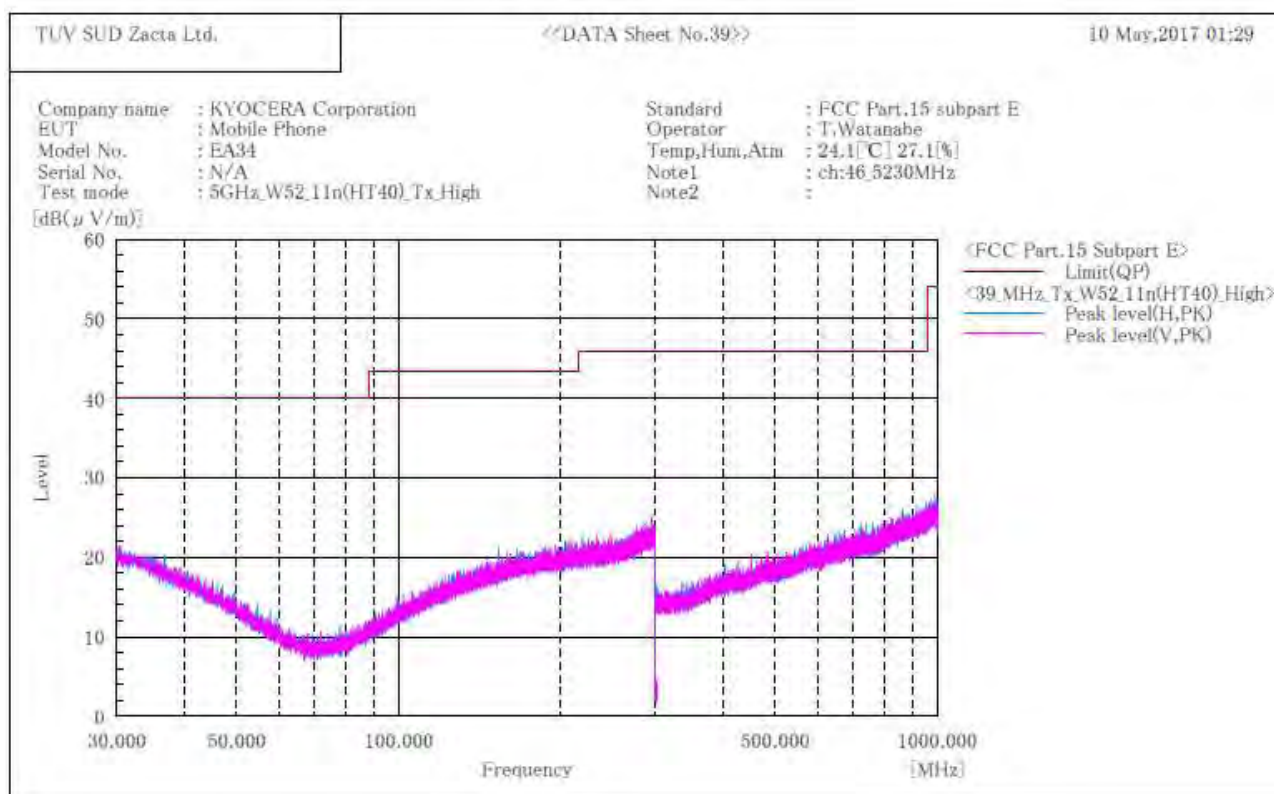
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



Zacta

[11n(HT40)]
W52 / Channel High
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

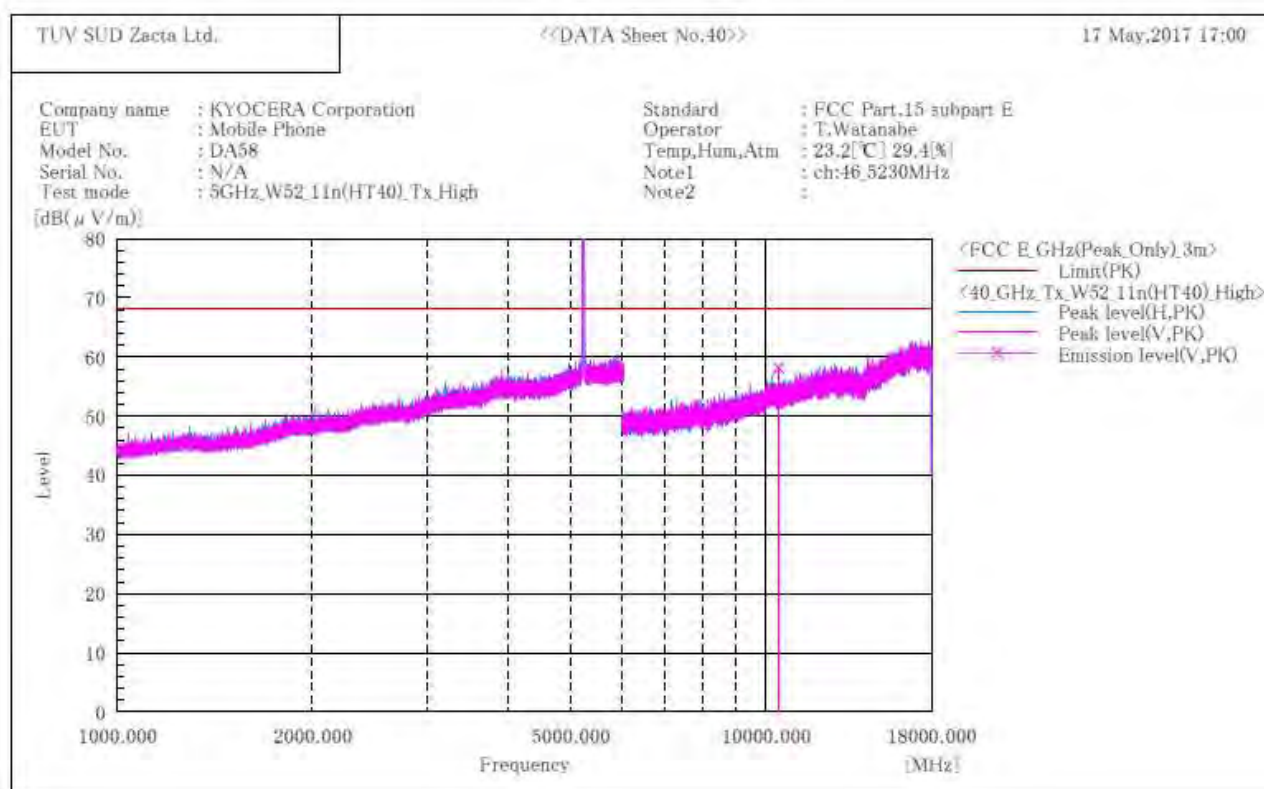
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT40)]
W52 / Channel High
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

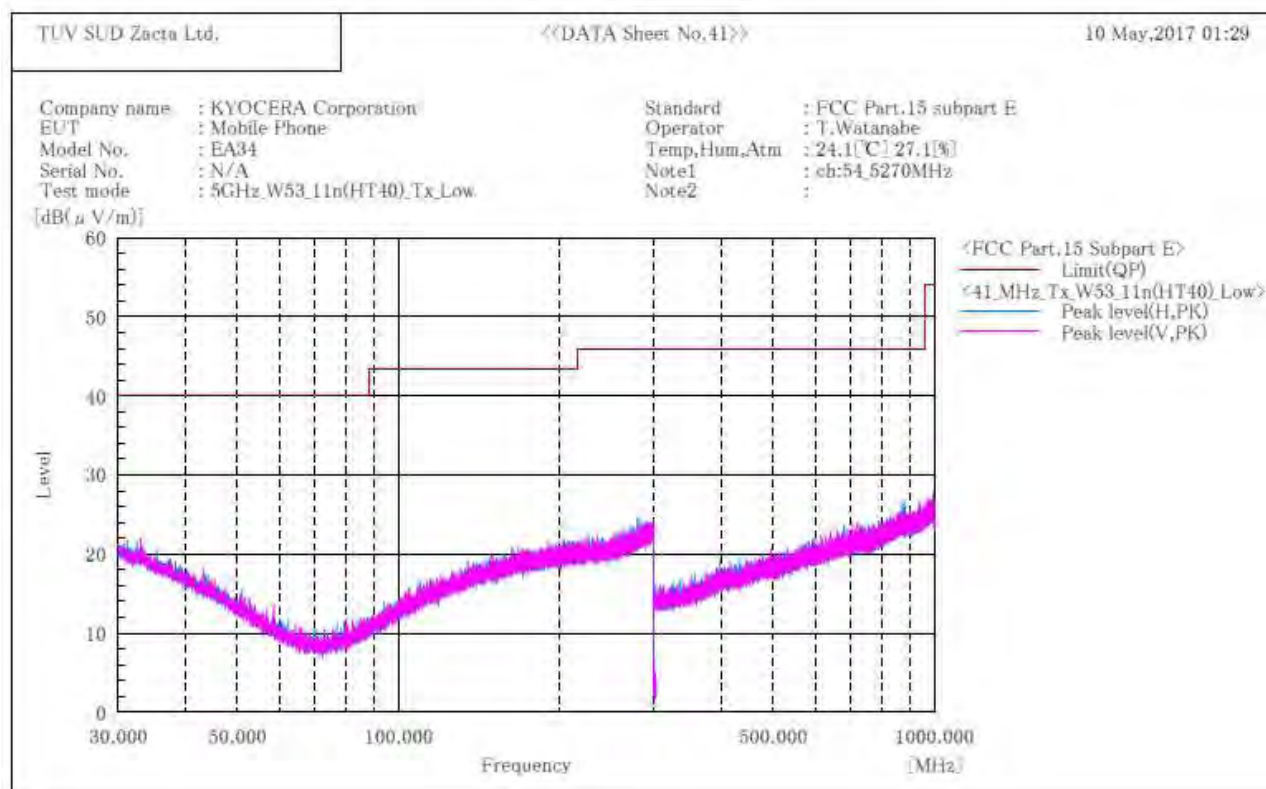
No.	Frequency (P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]	PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	[°]	
1	10460.000	V 47.7	10.5	58.2	68.2	10.0	113.0	238.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT40)]
W53 / Channel Low
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

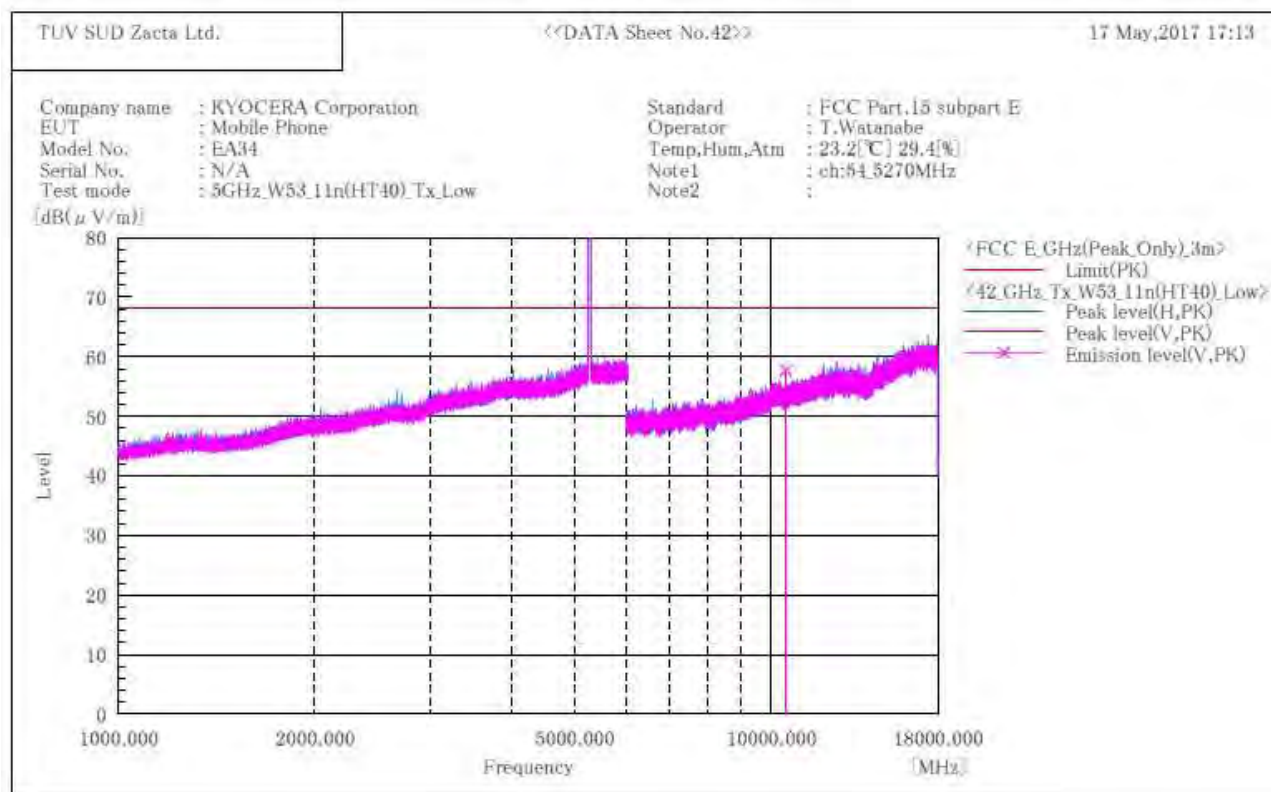
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT40)]
W53 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

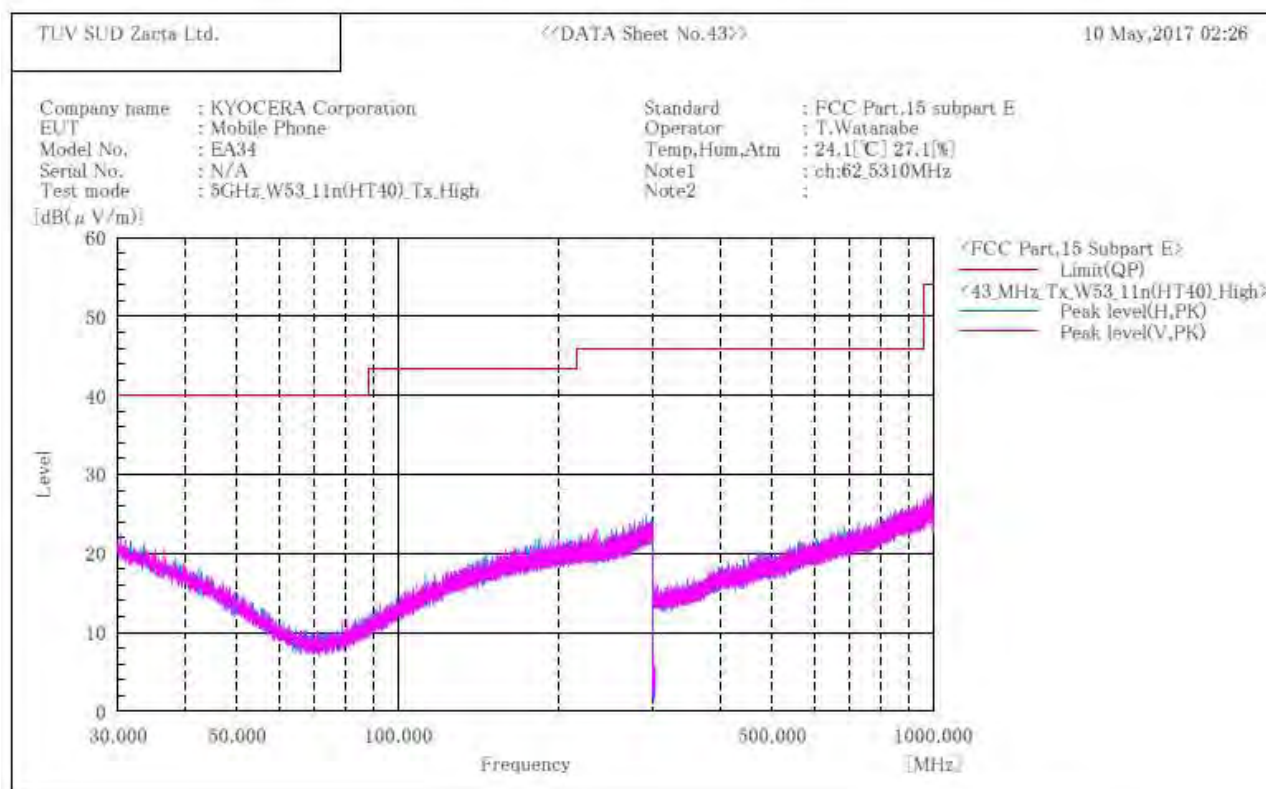
No.	Frequency (P)	Reading PK	c.f	Result PK	Limit PK	Margin PK	Height	Angle	Remark
	[MHz]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[cm]	[°]	
1	10540.000	47.1	10.6	57.7	68.2	10.5	146.0	321.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT40)]
W53 / Channel High
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

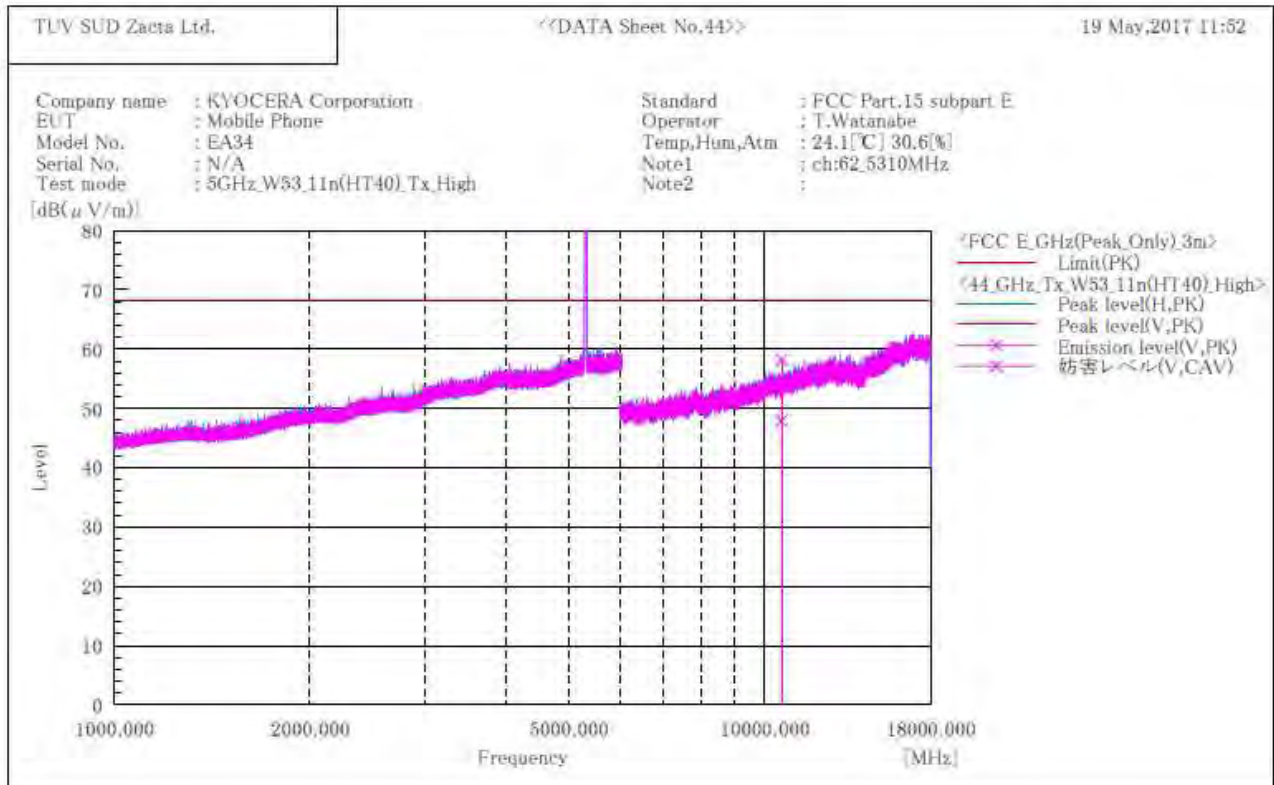
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT40)]
W53 / Channel High
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

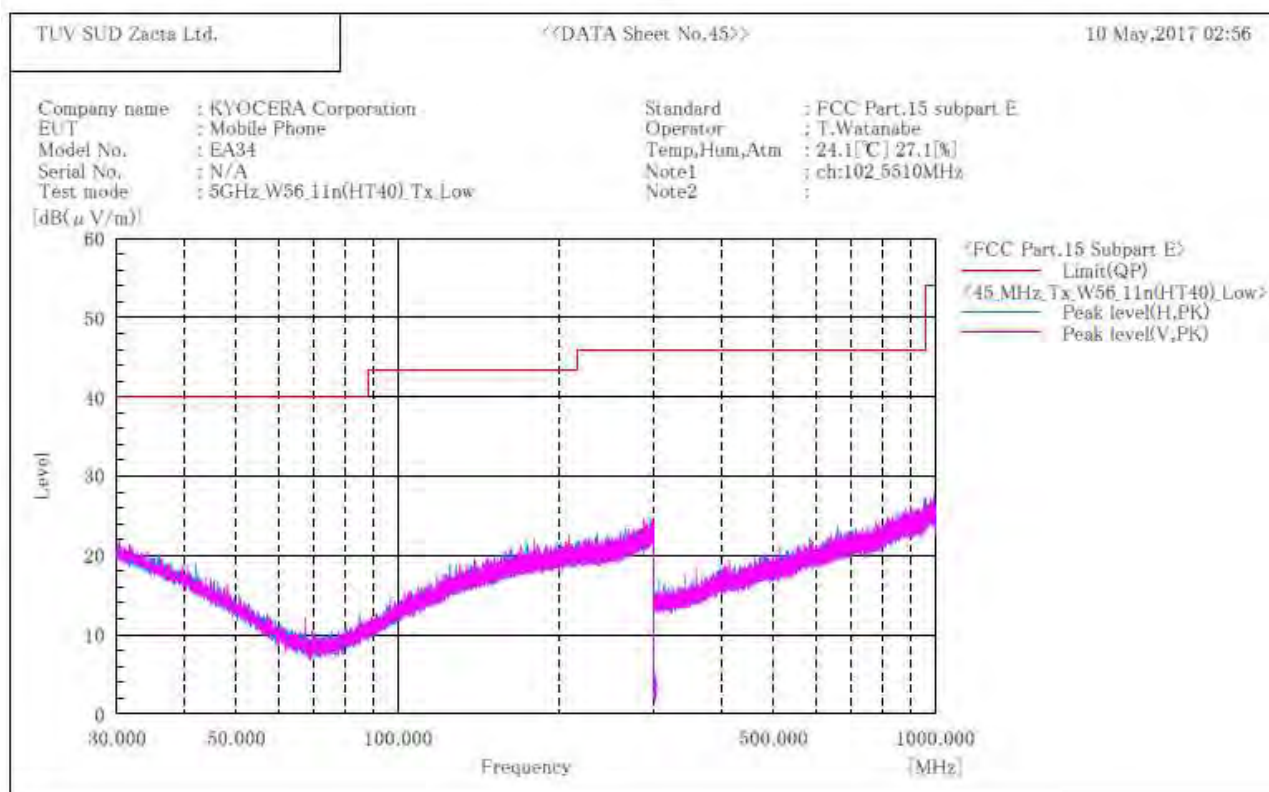
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(L/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	10620.000	V	46.9	36.6	11.3	58.2	47.9	74.0	15.8	6.1	124.0	158.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT40)]
W56 / Channel Low
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

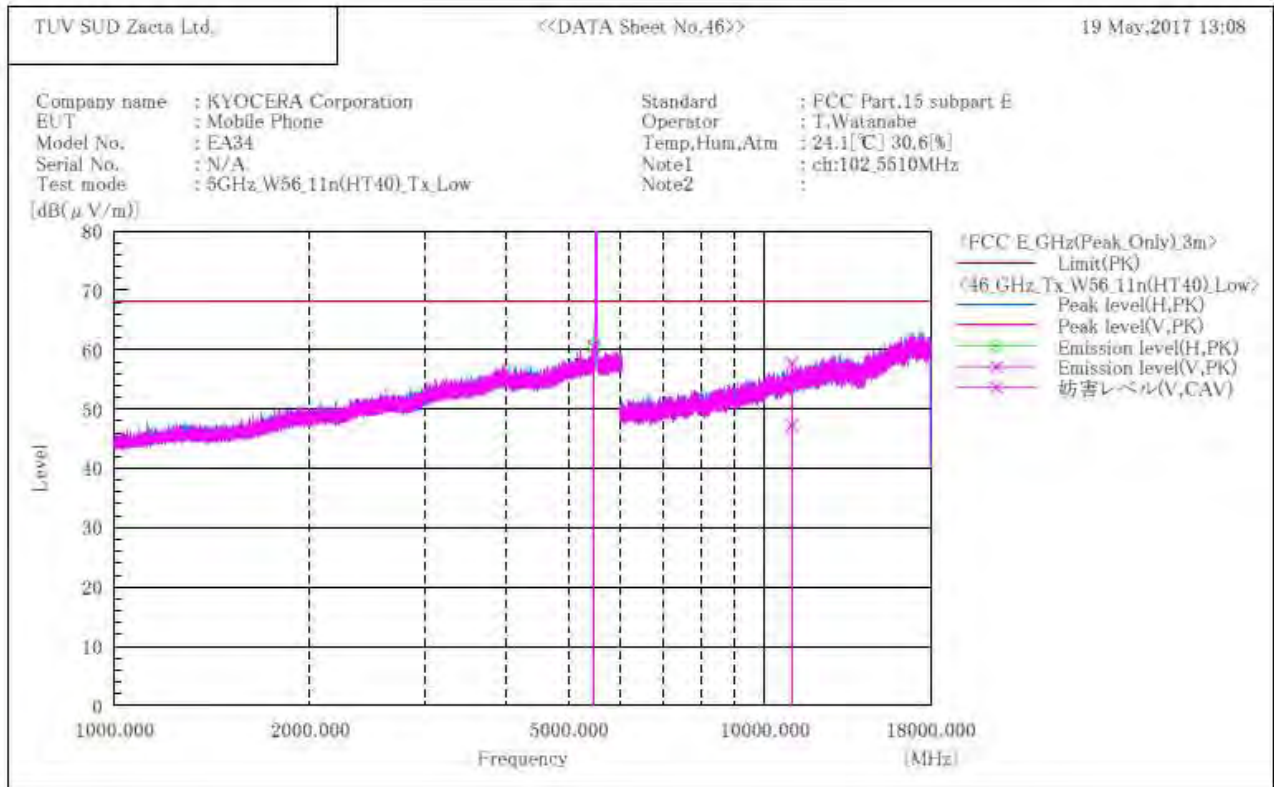
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT40)]
W56 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

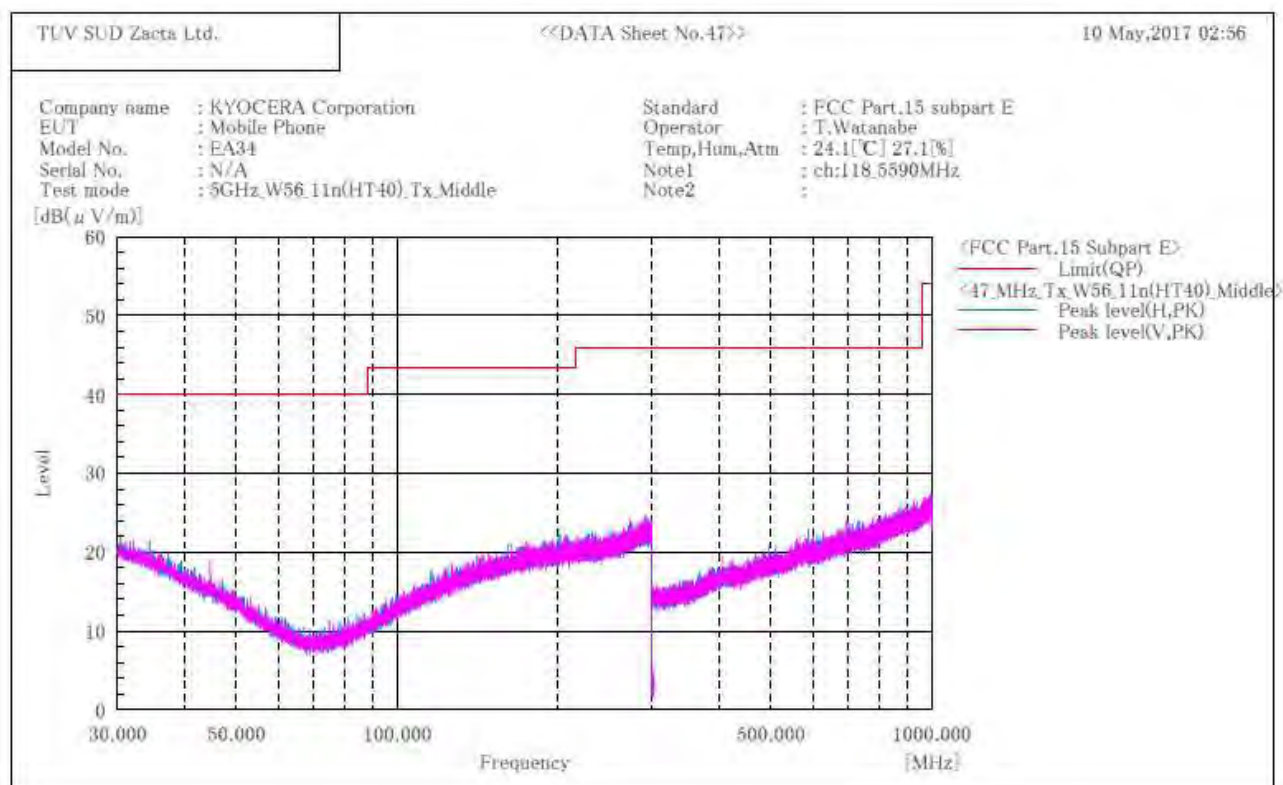
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	Factor [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	5468.000	H	50.6		10.2	60.8		68.2	7.4		144.0	25.0	
2	5468.100	V	50.3		10.2	60.5		68.2	7.7		206.0	276.0	
3	11020.000	V	46.5	30.0	11.2	57.7	47.2	74.0	16.3	0.8	103.0	75.0	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT40)]
W56 / Channel Middle
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

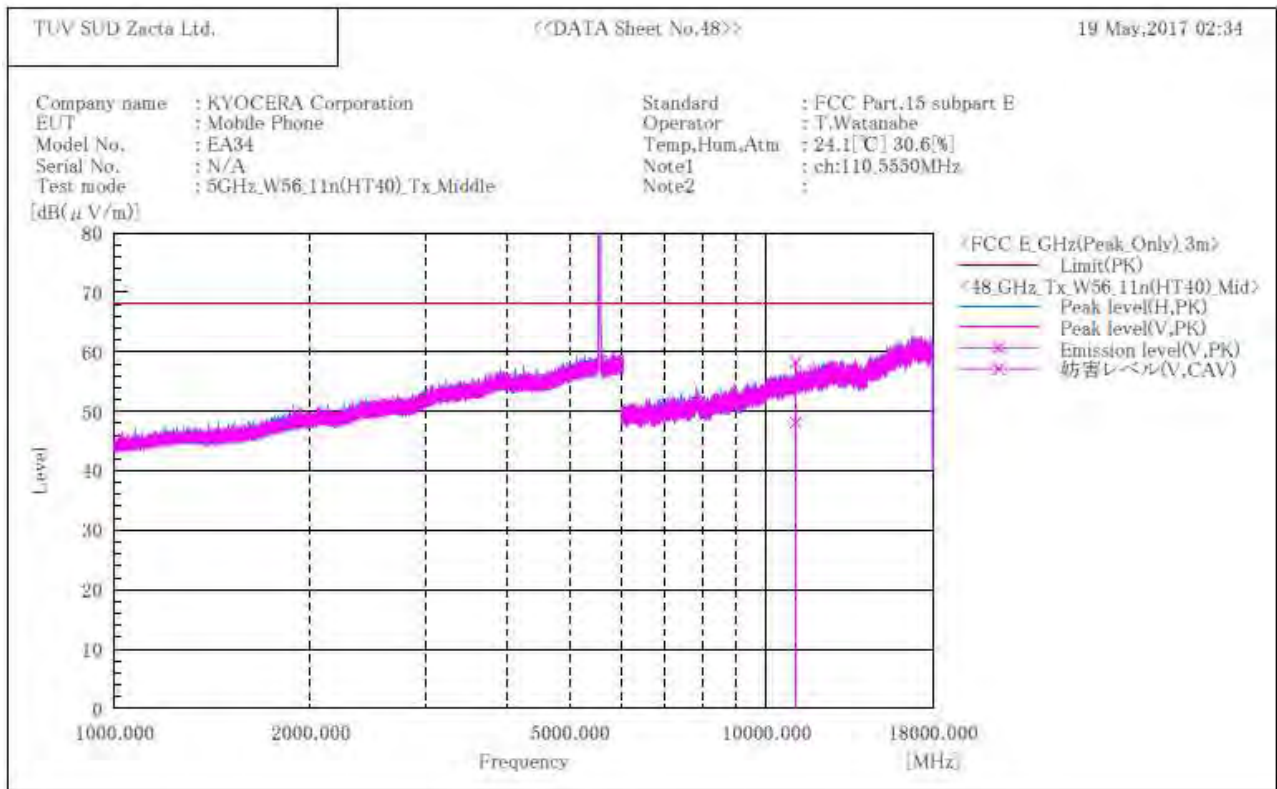
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT40)]
W56 / Channel Middle
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

No.	Frequency (P)	Reading PK	Reading CAV	c.f.	Result PK	Result CAV	Limit PK	Margin PK	Margin CAV	Height	Angle	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]	
1	11100.000	47.1	36.9	11.2	58.3	48.1	74.0	15.7	5.9	100.0	311.0	

Note:

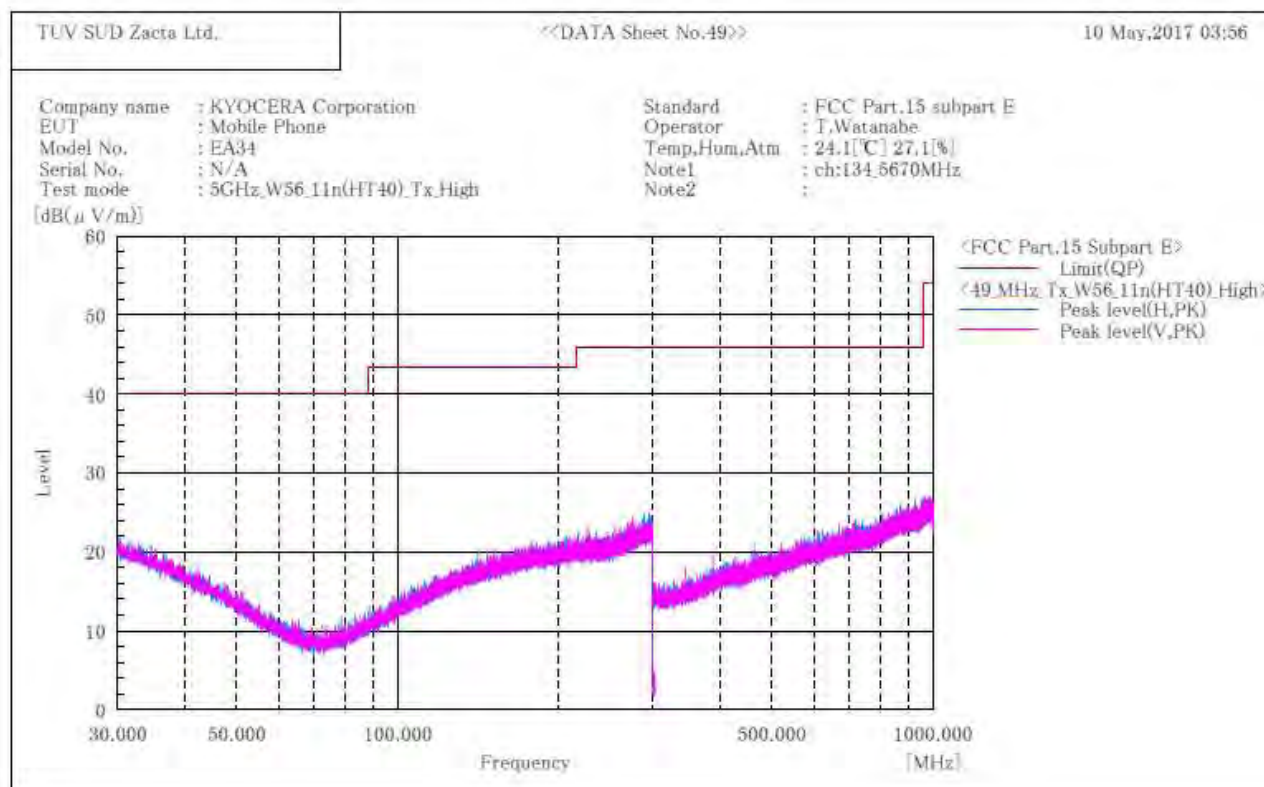
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



Zacta

[11n(HT40)]
W56 / Channel High
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

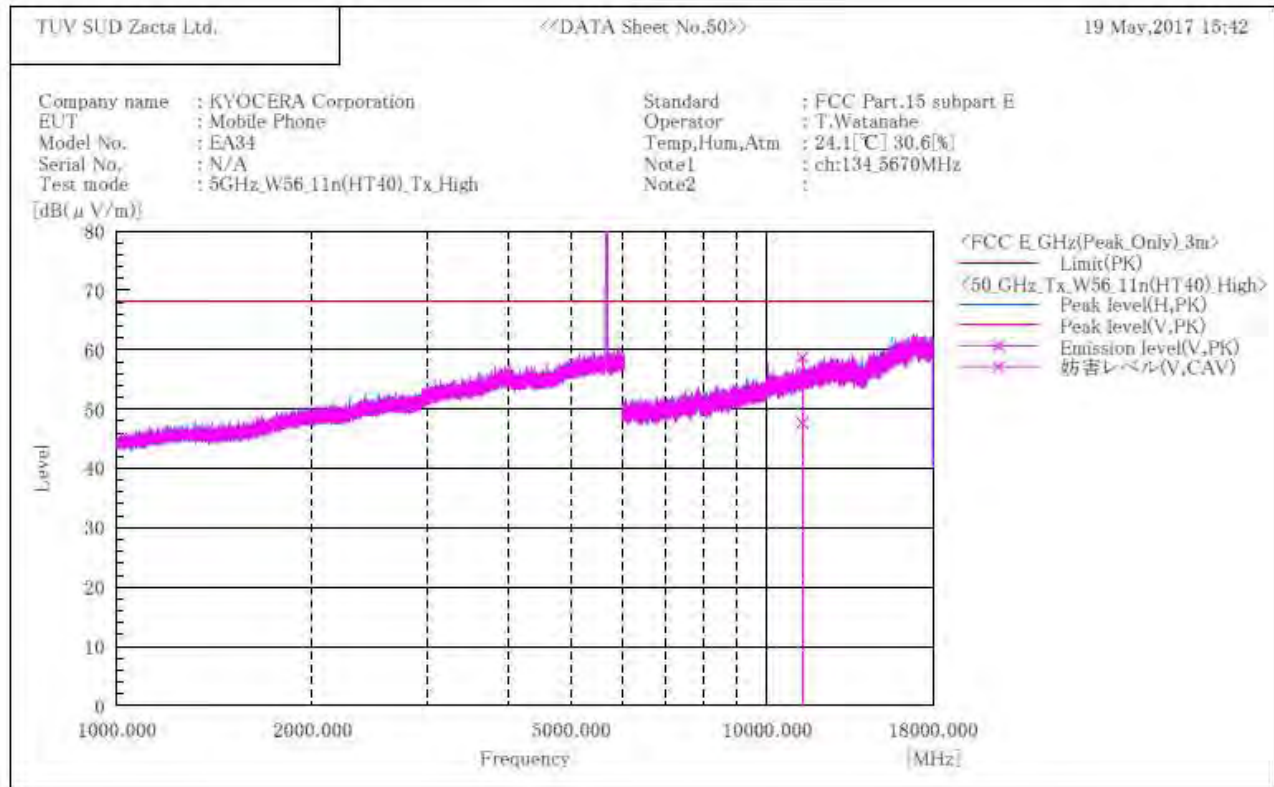
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT40)]
W56 / Channel High
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

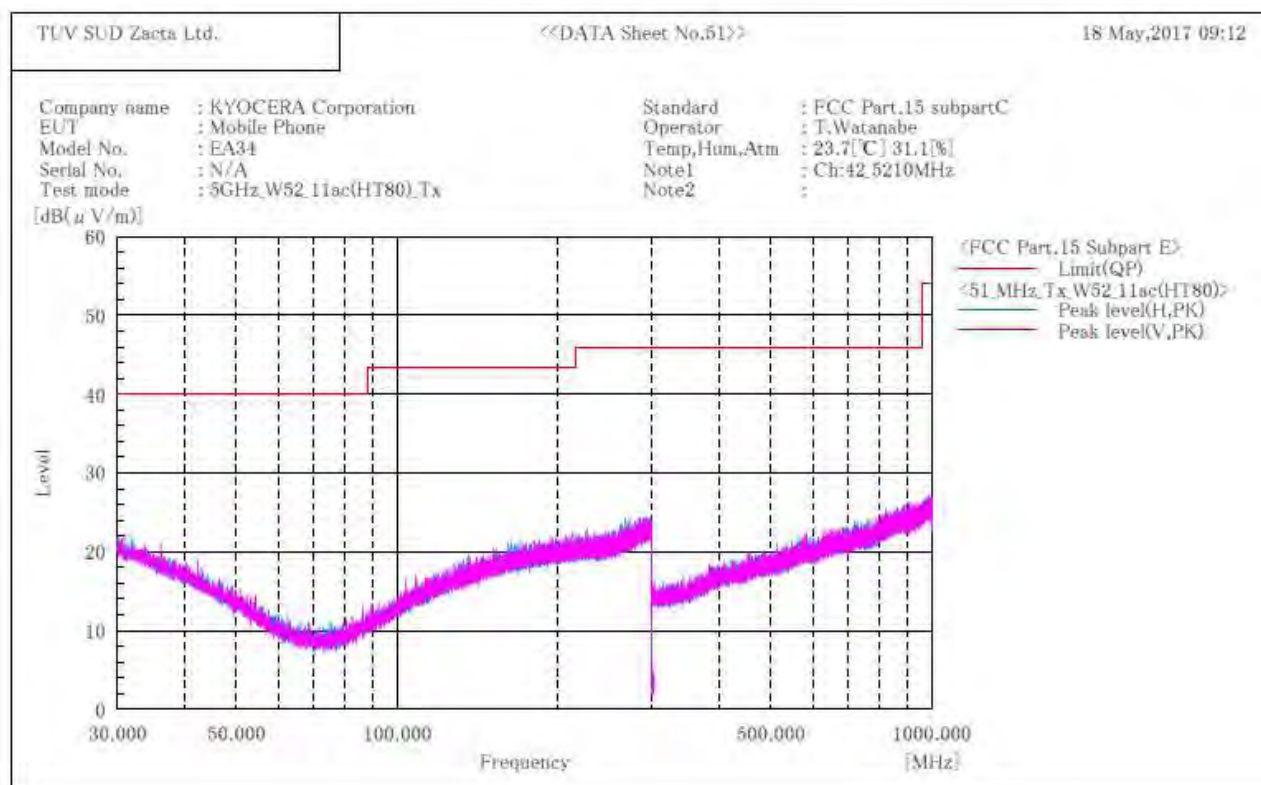
No.	Frequency	(P)	Reading PK	Reading CAV	c, f	Result PK	Result CAV	Limit PK	Margin PK	Margin CAV	Height	Angle	Remark
	[MHz]		[dB(μV)]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[dB]	[cm]	[°]	
1	11340.000	V	47.2	36.2	11.5	58.7	47.7	74.0	15.3	6.3	103.0	0.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT80)]
W52
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

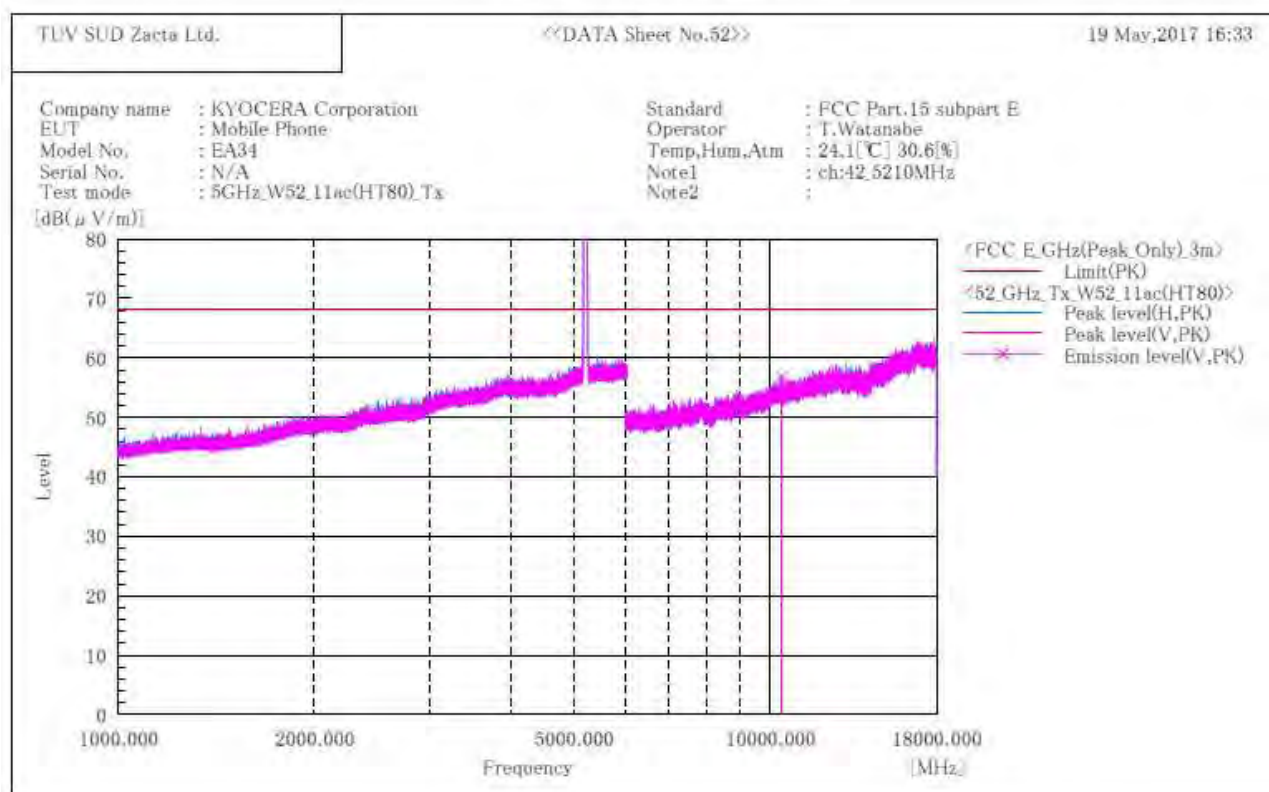
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT80)]
W52
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]	Remark
1	10420.000	V	46.4	10.4	56.8	68.2	11.4	124.0	65.0	

Note:

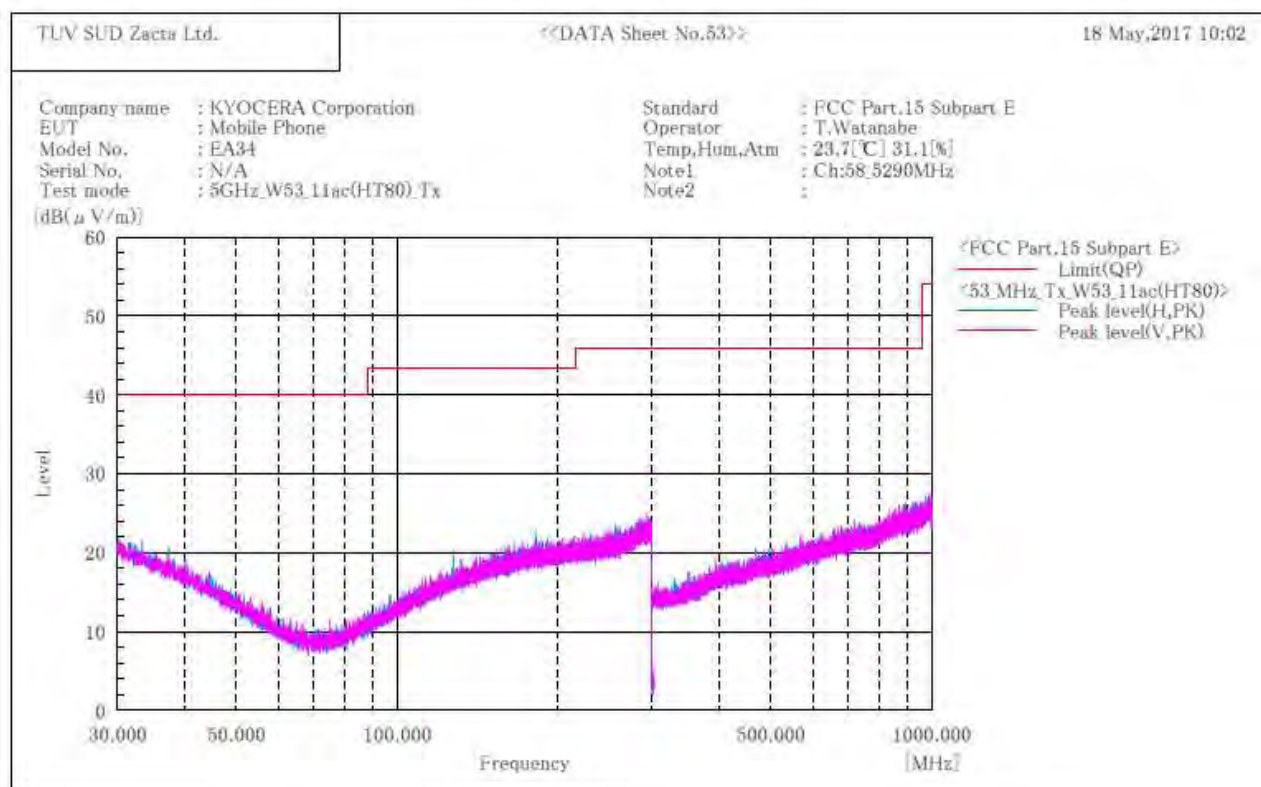
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



Zacta

[11n(HT80)]
W53
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

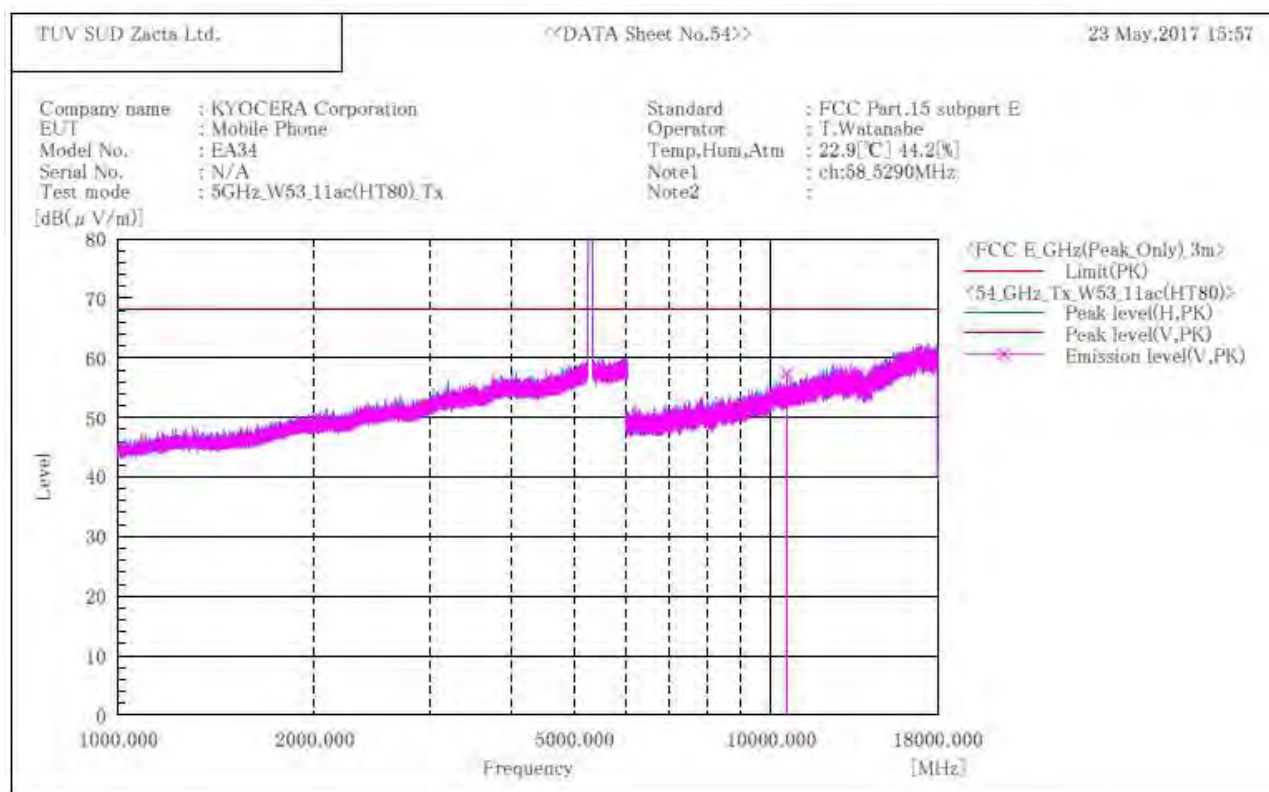
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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.

[11n(HT80)]
W53
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

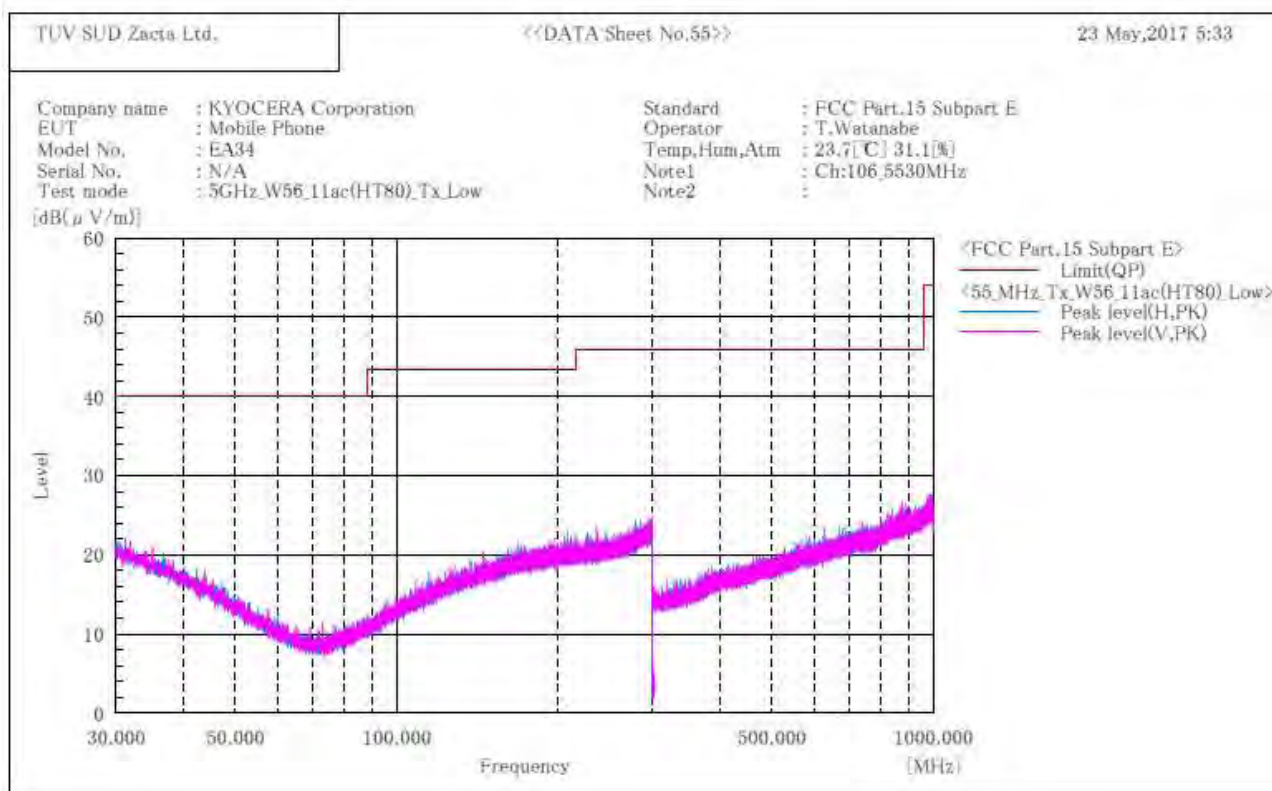
No.	Frequency (P)	Reading PK	c.f	Result PK	Limit PK	Margin PK	Height	Angle	Remark
	[MHz]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[cm]	[°]	
1	10580.000	46.8	10.6	57.4	68.2	10.8	107.0	212.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT80)]
W56 / Channel Low
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

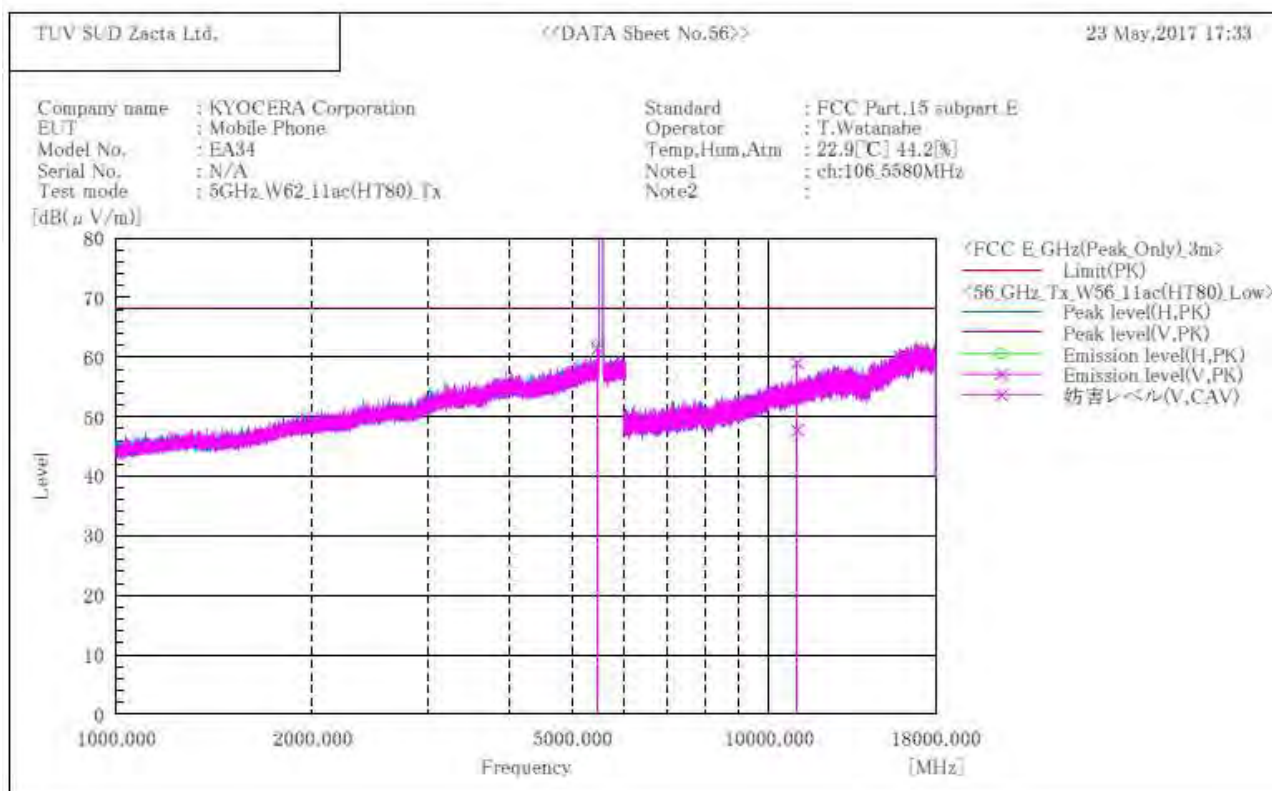
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



Zacta

[11n(HT80)]
W56 / Channel Low
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

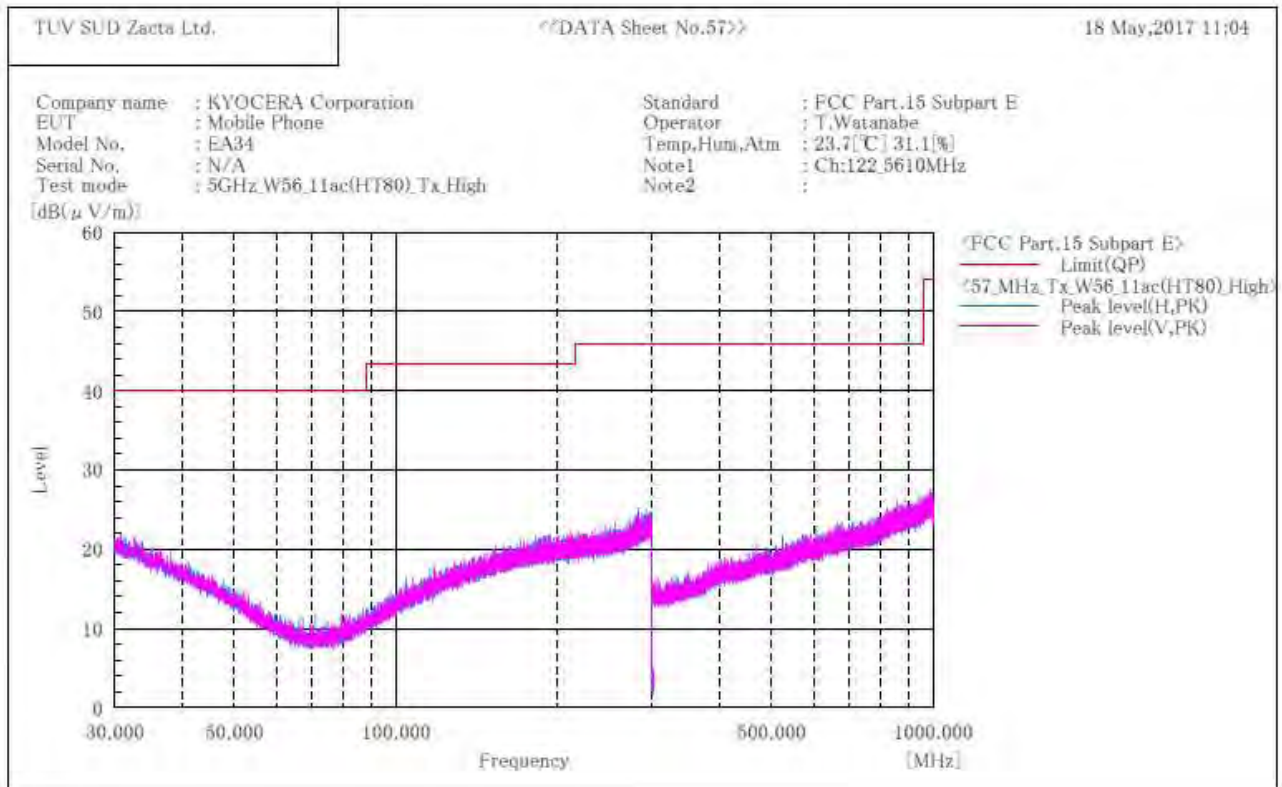
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	Δ.F [dB(μV/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	5469.800	H	51.4		10.6	62.0		68.2	6.2		126.0	179.0	
2	5465.600	V	50.8		10.6	61.4		68.2	6.8		100.0	93.0	
3	11060.000	V	47.8	36.5	11.2	59.0	47.7	74.0	15.0	6.3	117.0	311.0	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

[11n(HT80)]
W56 / Channel High
BELOW 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

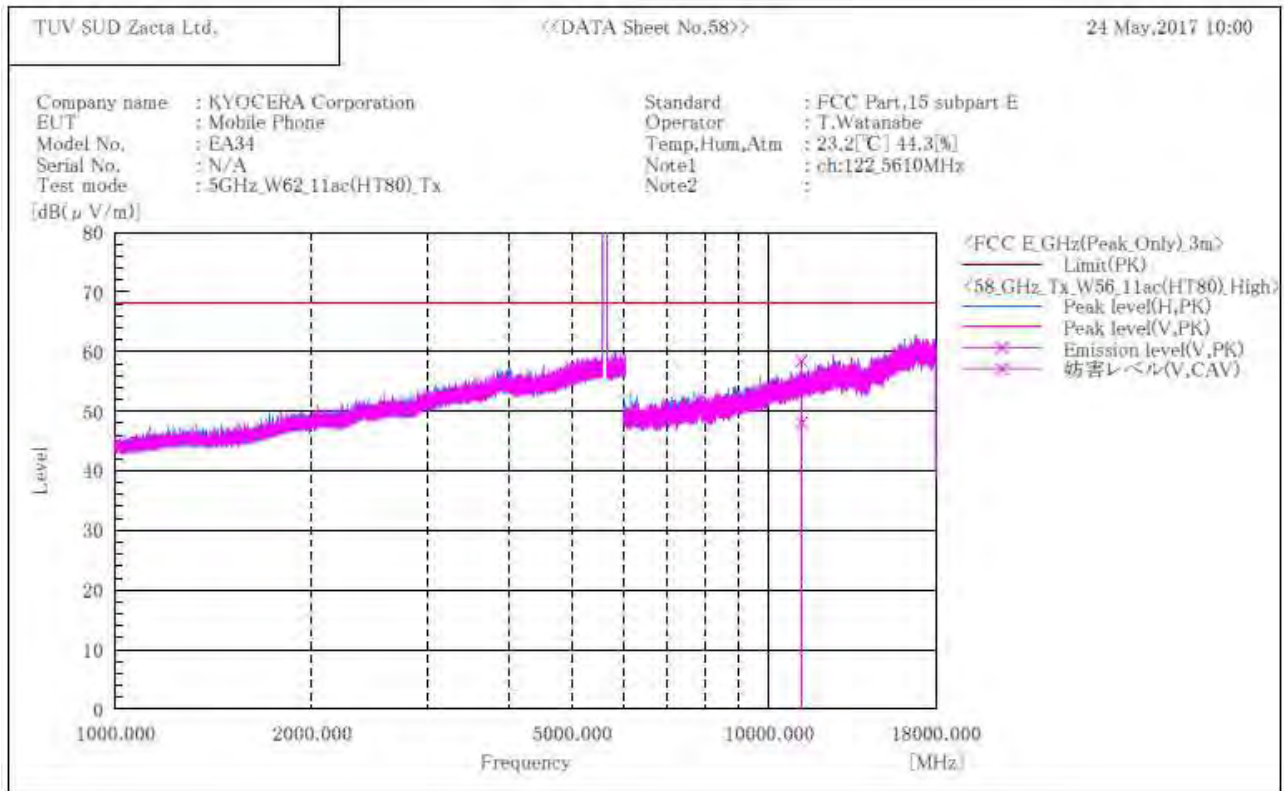
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(I/m)]	[cm]	[°]	

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.

[11n(HT80)]
W56 / Channel High
ABOVE 1GHz

***** RADIATED EMISSION *****
 [3m Semi-anechoic chamber]



Final Result

No.	Frequency [MHz]	[P]	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]	Remark
1	11230.000	V	47.0	36.6	11.4	58.4	48.0	74.0	15.6	6.0	107.0	306.0	

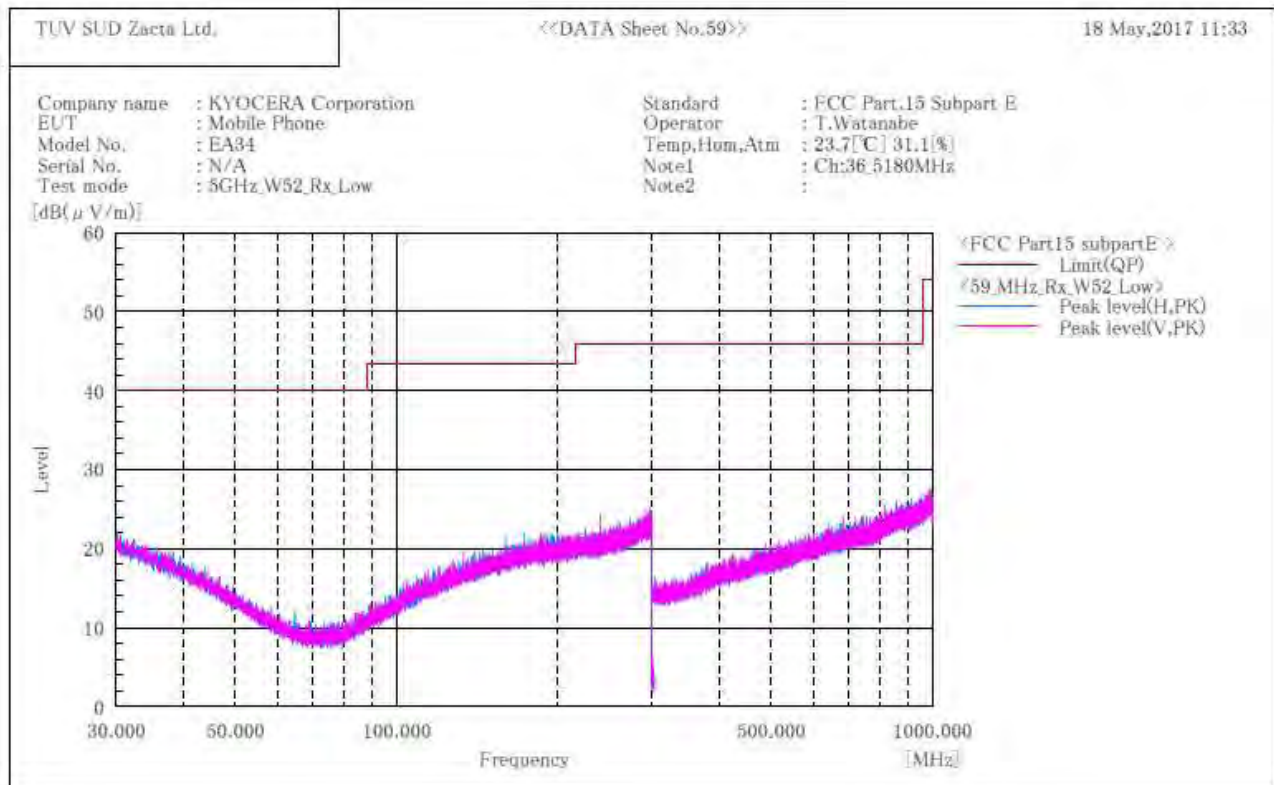
Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

7.4.4.2 Receive mode

W52 / Channel Low BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

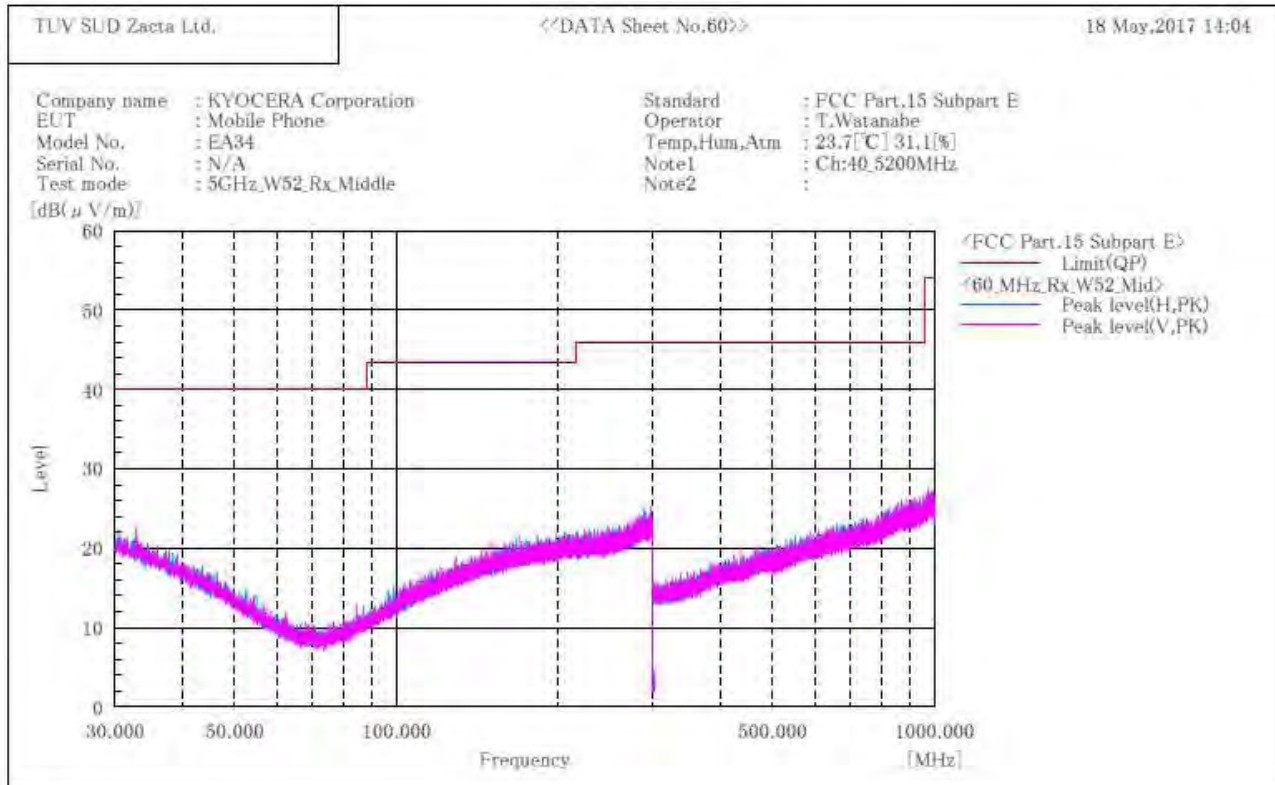
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

W52 / Channel Middle BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

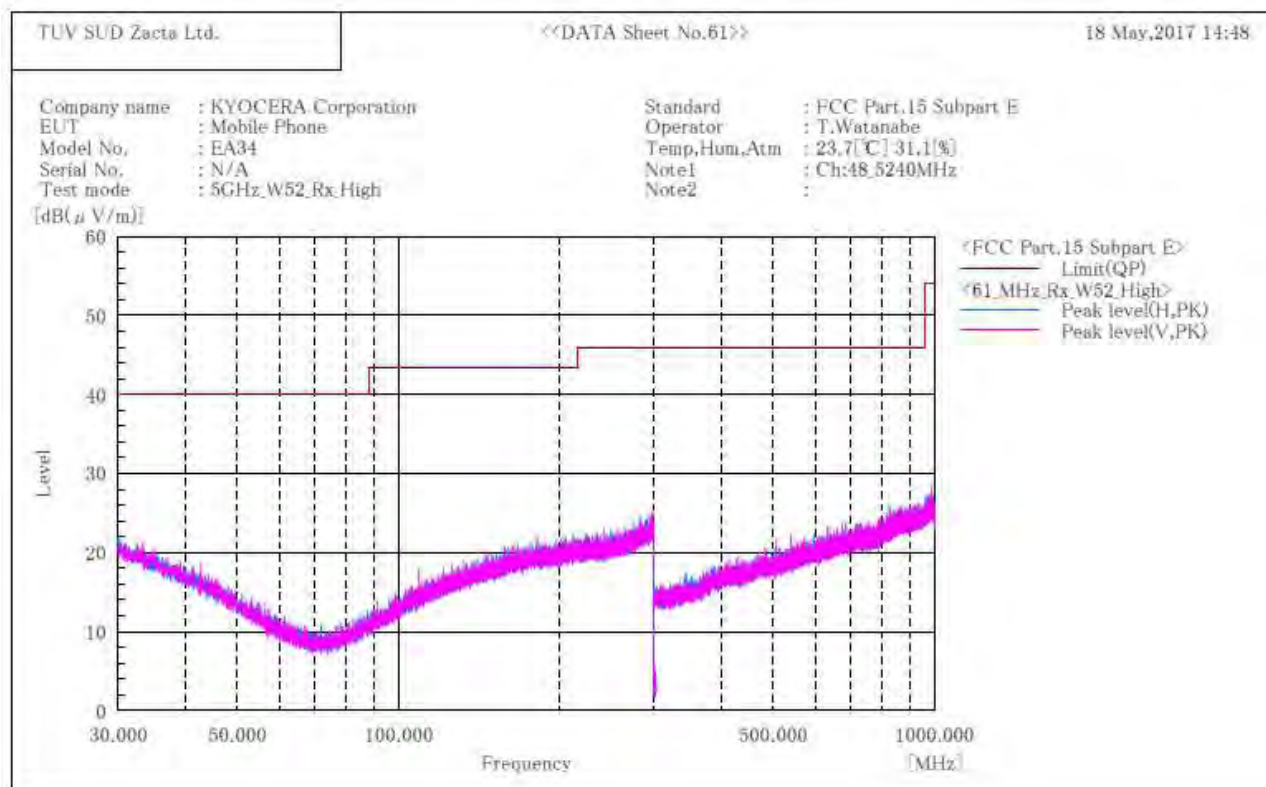
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

W52 / Channel High BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

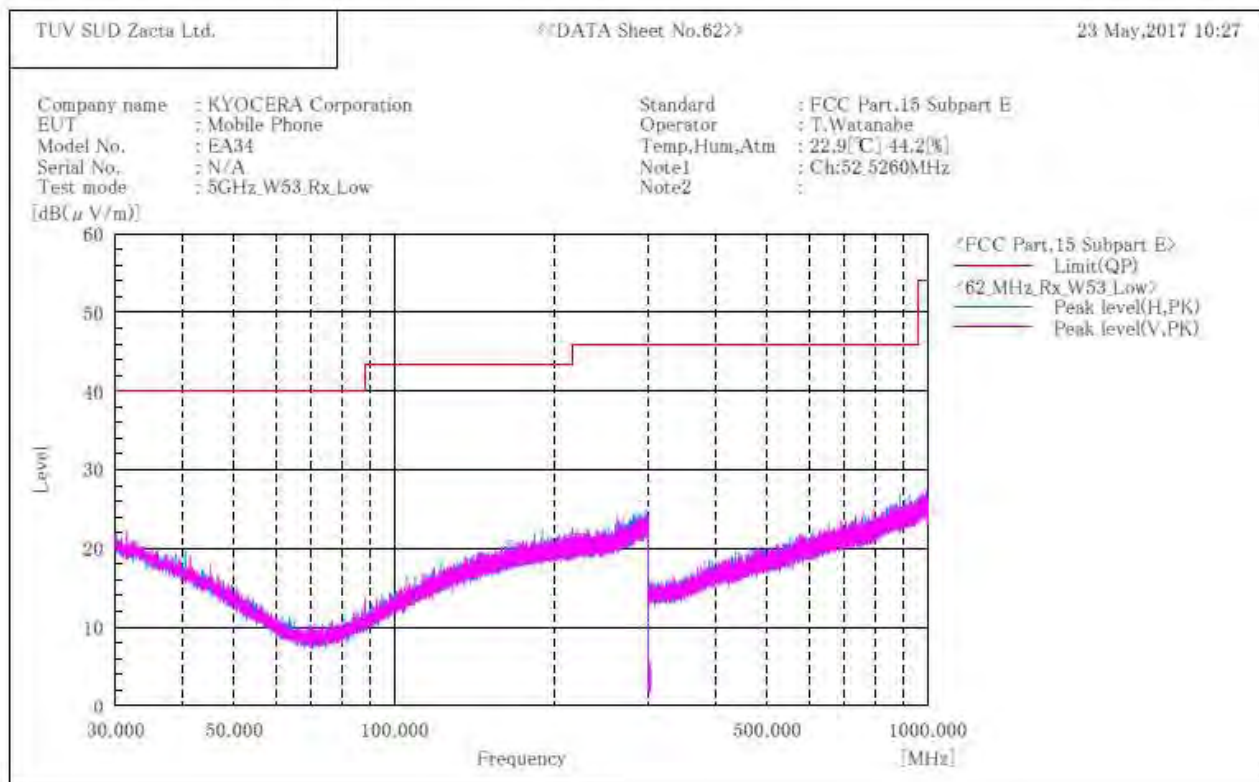
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

W53 / Channel Low BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

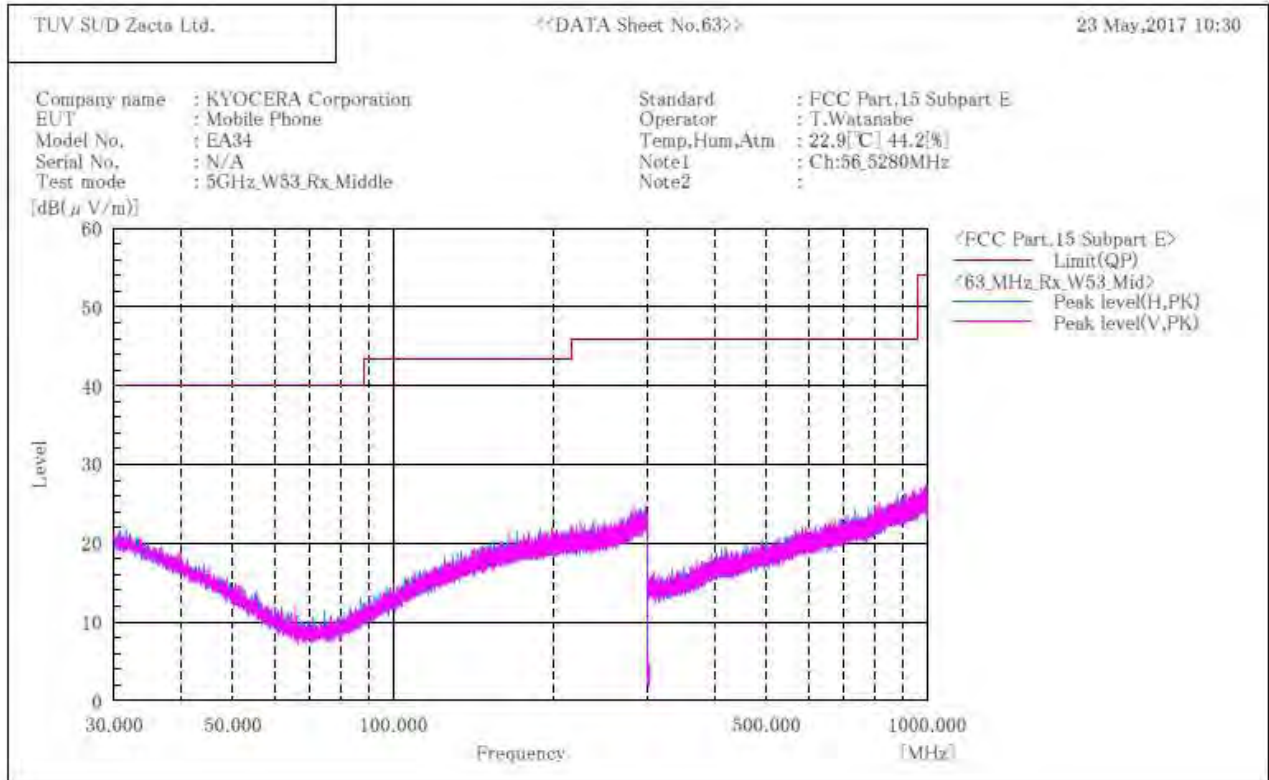
No.	Frequency (P)	c. F	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

W53 / Channel Middle BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

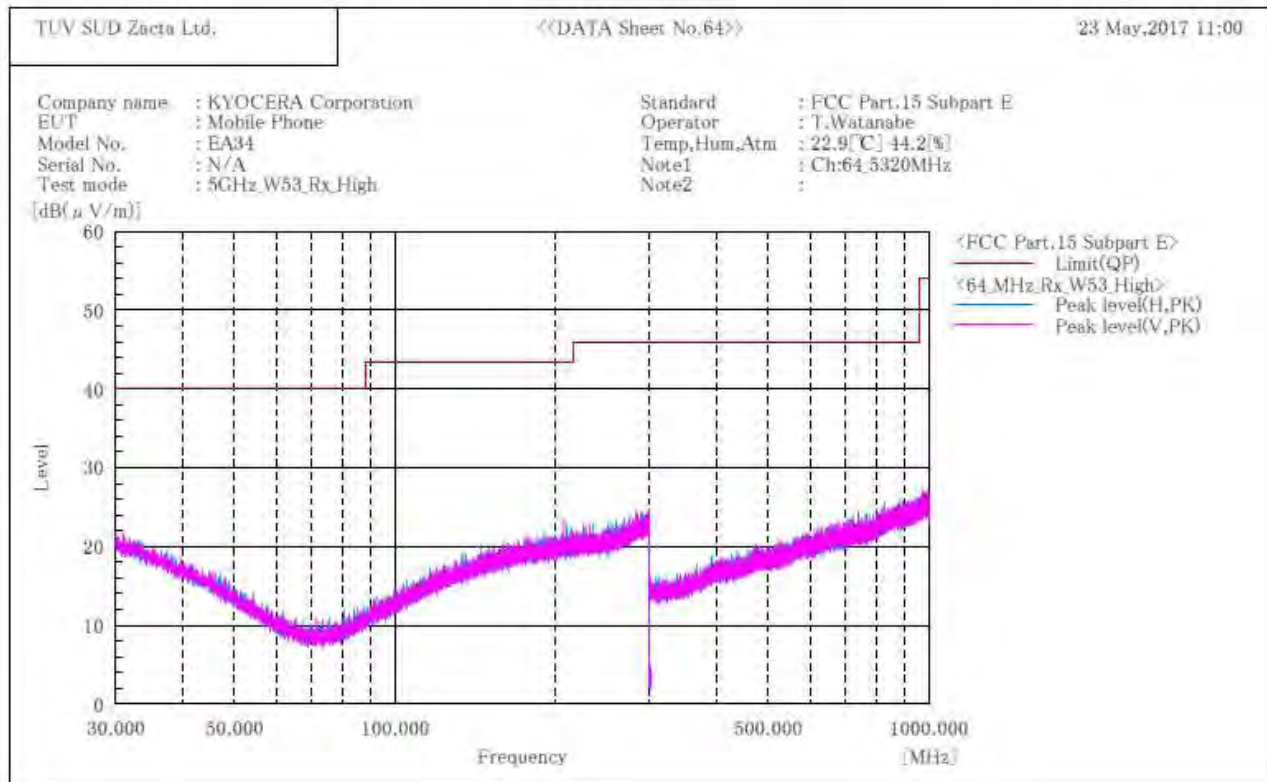
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

W53 / Channel High BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

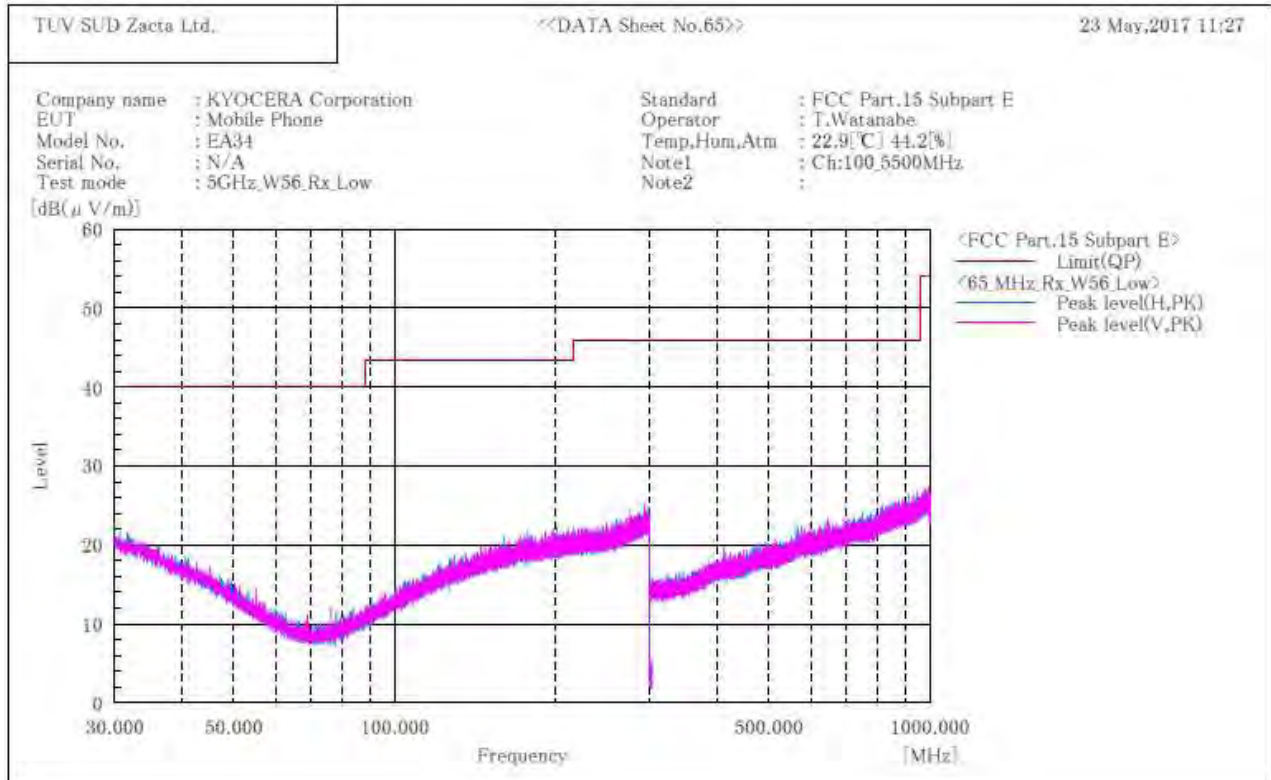
No.	Frequency (P)	c. f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

W56 / Channel Low BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

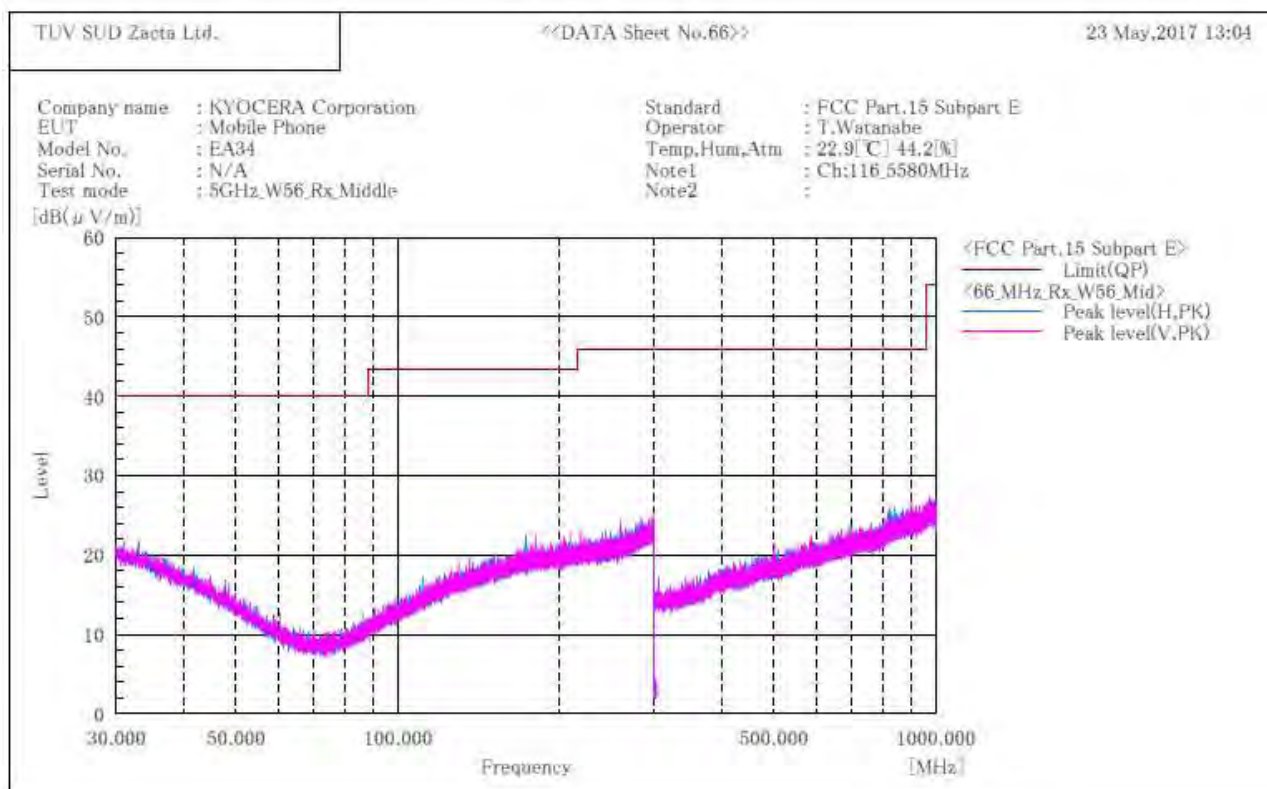
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

W56 / Channel Middle BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

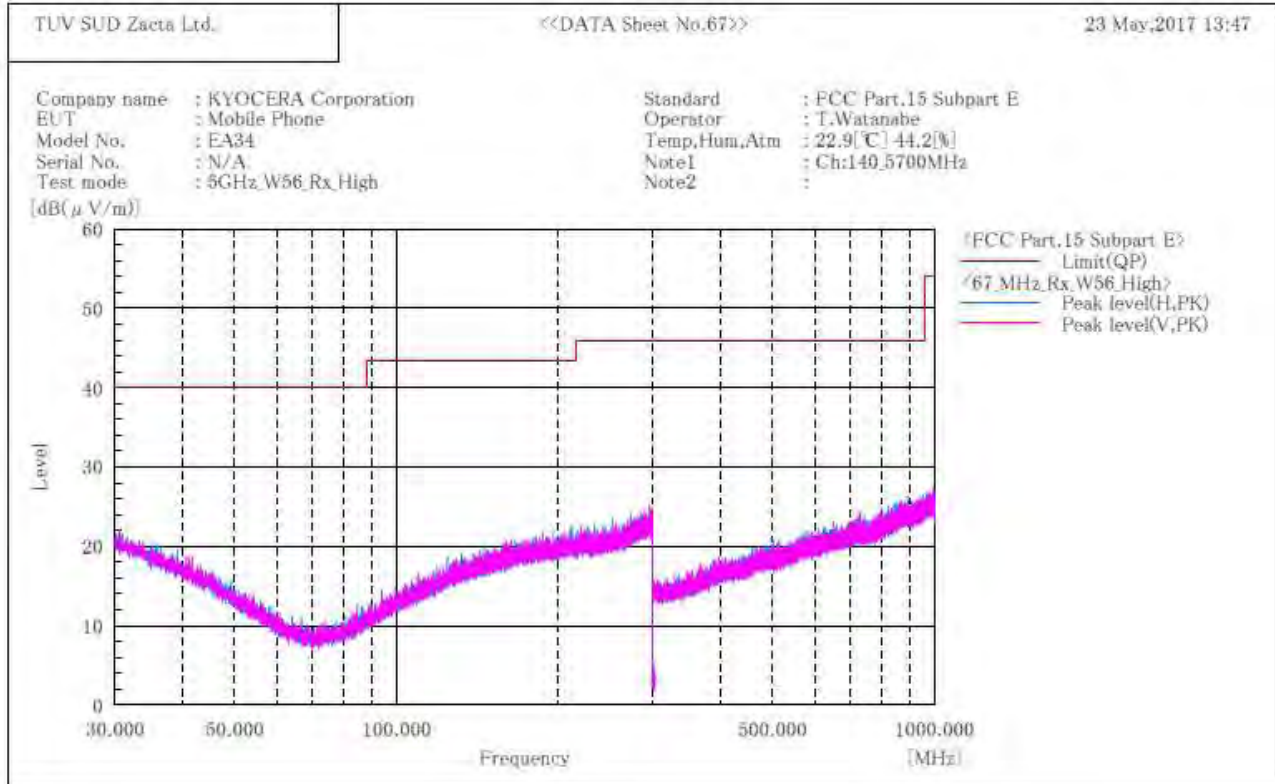
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

W56 / Channel High BELOW 1GHz

***** RADIATED EMISSION *****
[3m Semi-anechoic chamber]



Final Result

No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

8. Frequency Stability

8.1 Measurement procedure [FCC 15.407(g)]

The EUT was placed inside of a constant temperature chamber as the temperature in the chamber was varied between -30°C and $+60^{\circ}\text{C}$. The temperature was incremented by 10°C intervals and the unit was allowed to stabilize at each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

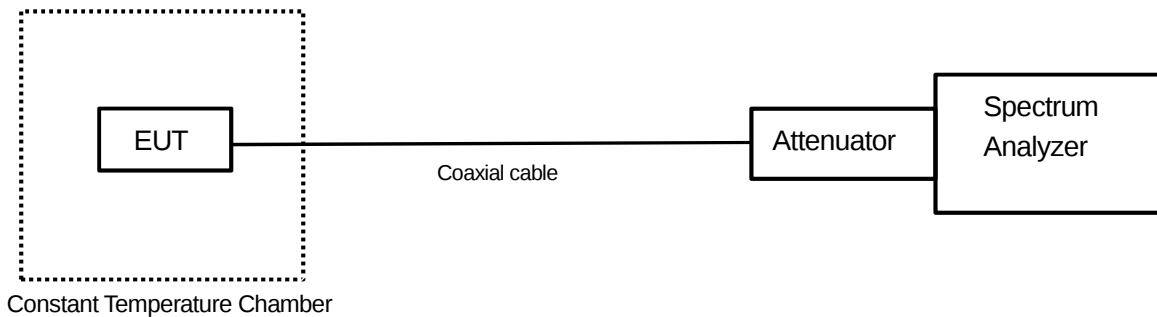
The EUT was set to operate with the following conditions.

- 5.2GHz Band, 5.3GHz Band, 5.6GHz Band

The test mode of EUT is as follows.

- Tx mode

- Test configuration



8.2 Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified.

8.3 Measurement result

Date : May 30, 2017
 Temperature : 23.6 [°C]
 Humidity : 49.0 [%]
 Test place : Shielded room No.4

Test engineer :
 Chiaki Kanno

[Channel: 36 (5180MHz)]

Power Supply	Temperature	Measurements	Frequency	Measurements	Frequency	Measurements	Frequency	Measurements	Frequency
[V]	[°C]	Frequency (startup)	Tolerance (startup)	Frequency (2mins)	Tolerance (2mins)	Frequency (5mins)	Tolerance (5mins)	Frequency (10mins)	Tolerance (10mins)
[V]	[°C]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]
3.80	25(Ref.)	5180013215	0.00000000	5180012392	-0.15887990	5180005702	-1.45038240	5180005837	-1.42432069
	60	5180024827	2.24169312	5180014601	0.26756688	5180014331	0.21544347	5180017072	0.74459270
	50	5180028581	2.96640170	5180032468	3.71678588	5180031117	3.45597574	5180020599	1.42547899
	40	5180012916	-0.05772186	5179995574	-3.40558977	5179998059	-2.92586126	5179993097	-3.88377388
	30	5180010232	-0.57586726	5180008673	-0.87683174	5180007152	-1.17046033	5180002960	-1.97972468
	20	5180011082	-0.41177501	5180007432	-1.11640642	5180001764	-2.21061212	5180002319	-2.10346954
	10	5180038689	4.91774807	5180027446	2.74729029	5180021256	1.55231264	5180022860	1.86196436
	0	5180019321	1.17876147	5180032075	3.64091735	5180021591	1.61698429	5180016077	0.55250824
	-10	5180025993	2.46678907	5180021389	1.57798825	5180017623	0.85096308	5180018577	1.03513249
	-20	5180033286	3.87470054	5180013742	0.10173719	5180019063	1.12895465	5180022308	1.75540093
	-30	5180025678	2.40597842	5180004552	-1.67238956	5180006787	-1.24092348	5180012609	-0.11698812
3.42	25	5180031183	3.46871702	5180011746	-0.28359001	5180001847	-2.19458900	5180004787	-1.62702288
4.18	25	5180018648	1.04883902	5180020031	1.31582676	5180022075	1.71042035	5180016838	0.69941907

[Channel: 64 (5320MHz)]

Power Supply	Temperature	Measurements	Frequency	Measurements	Frequency	Measurements	Frequency	Measurements	Frequency
[V]	[°C]	Frequency (startup)	Tolerance (startup)	Frequency (2mins)	Tolerance (2mins)	Frequency (5mins)	Tolerance (5mins)	Frequency (10mins)	Tolerance (10mins)
[V]	[°C]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]
3.80	25(Ref.)	5320019447	0.00000000	5320011422	-1.50845313	5320001122	-3.44453628	5319996324	-4.34641268
	60	5320019858	0.07725536	5320030388	2.05657143	5320023651	0.79022268	5320024791	1.00450761
	50	5320024937	1.03195111	5319994717	-4.64847925	5320019534	0.01635332	5320021337	0.35526186
	40	5319995683	-4.46690096	5320002297	-3.22367243	5320000140	-3.62912207	5320011858	-1.42649854
	30	5320039259	3.72404654	5320016165	-0.61691504	5320009572	-1.85619622	5320000915	-3.48344591
	20	5320035404	2.99942513	5320012908	-1.22913085	5320014998	-0.83627514	5320005094	-2.69792247
	10	5320036987	3.29698043	5320020288	0.15808213	5320021333	0.35450998	5320018112	-0.25093893
	0	5320031287	2.22555577	5320011830	-1.43176168	5320021937	0.46804340	5320025886	1.21033392
	-10	5320036893	3.27931132	5320029870	1.95920336	5320010684	-1.64717443	5320017953	-0.28082604
	-20	5320027653	1.54247556	5320022205	0.51841916	5320023570	0.77499717	5320024738	0.99454524
	-30	5320011709	-1.45450596	5320019815	0.06917268	5320022675	0.60676470	5320016562	-0.54229125
3.42	25	5320003380	-3.02010174	5320010369	-1.70638474	5320007362	-2.27160824	5320012907	-1.22931881
4.18	25	5320018042	-0.26409678	5320004542	-2.80168149	5320004971	-2.72104268	5320004348	-2.83814752

[Channel: 140 (5700MHz)]

Power Supply [V]	Temperature [°C]	Measurements Frequency (startup) [Hz]	Frequency Tolerance (startup) [ppm]	Measurements Frequency (2mins) [Hz]	Frequency Tolerance (2mins) [ppm]	Measurements Frequency (5mins) [Hz]	Frequency Tolerance (5mins) [ppm]	Measurements Frequency (10mins) [Hz]	Frequency Tolerance (10mins) [ppm]
3.80	25(Ref.)	5700012195	0.00000000	5700012506	0.05456129	5700016267	0.71438444	5700009142	-0.53561289
	60	5700016309	0.72175284	5700040322	4.93455085	5700037792	4.49069215	5700036289	4.22700850
	50	5700016601	0.77298080	5700034705	3.94911436	5700028544	2.86823948	5700025241	2.28876703
	40	5700016945	0.83333155	5700012173	-0.00385964	5699998652	-2.37595983	5700013337	0.20035045
	30	5700020464	1.45069865	5700021113	1.56455806	5700022105	1.73859277	5700023188	1.92859237
	20	5700030381	3.19051949	5700027357	2.65999431	5700021235	1.58596152	5700021645	1.65789119
	10	5700031258	3.34437881	5700022309	1.77438217	5700028516	2.86332721	5700027980	2.76929232
	0	5700032399	3.54455382	5700025331	2.30455647	5700022638	1.83210134	5700025211	2.28350389
	-10	5700037864	4.50332370	5700042137	5.25297122	5700039306	4.75630561	5700037207	4.38806079
	-20	5700049621	6.56595086	5700032054	3.48402763	5700037906	4.51069210	5700039641	4.81507742
	-30	5700020599	1.47438281	5700018582	1.12052392	5700004659	-1.32210243	5700008661	-0.61999867
3.42	25	5700026822	2.56613486	5700017914	1.00333119	5700019519	1.28490953	5700018084	1.03315568
4.18	25	5700017618	0.95140147	5700009352	-0.49877086	5699996262	-2.79525718	5700006244	-1.04403285

9. AC Power Line Conducted Emissions

9.1 Measurement procedure [FCC 15.207]

Test was applied by following conditions.

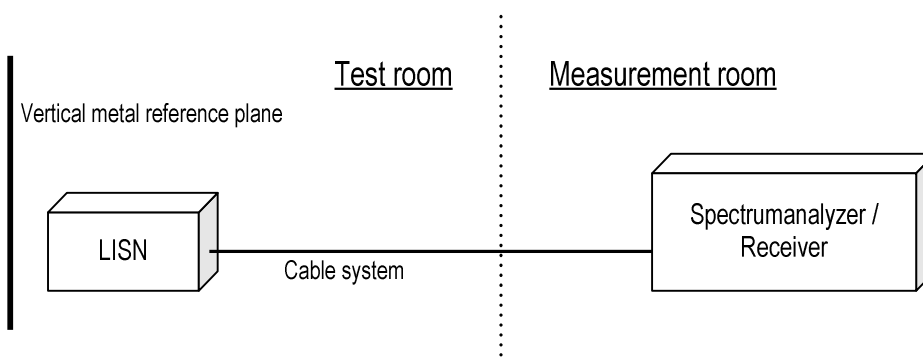
Test method	: ANSI C63.10
Frequency range	: 0.15MHz to 30MHz
Test place	: 3m Semi-anechoic chamber
EUT was placed on	: FRP table / (W)2.0m × (D)1.0m × (H)0.8m
Vertical Metal Reference Plane	: (W)2.0m × (H)2.0m 0.4m away from EUT
Test receiver setting	
- Detector	: Quasi-peak, Average
- Bandwidth	: 9kHz

EUT and peripherals are connected to 50Ω/50μH Line Impedance Stabilization Network (LISN) which are connected to reference ground plane, and are placed 80cm away from EUT. Excess of AC power cable is bundled in center.

LISN for peripheral is terminated in 50Ω.

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Maximum emission configuration is determined by manipulating the EUT, peripherals, interconnecting cables. Then, emission measurements are performed with test receiver in above setting to each current-carrying conductor of the mains port. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits.

- Test configuration



9.2 Calculation method

Emission level = Reading + (LISN. factor + Cable system loss)

Margin = Limit – Emission level

9.3 Limit

Frequency [MHz]	Limit	
	QP [dBuV]	AV [dBuV]
0.15-0.5	66-56*	56-46*
0.5-5	56	46
5-30	60	50

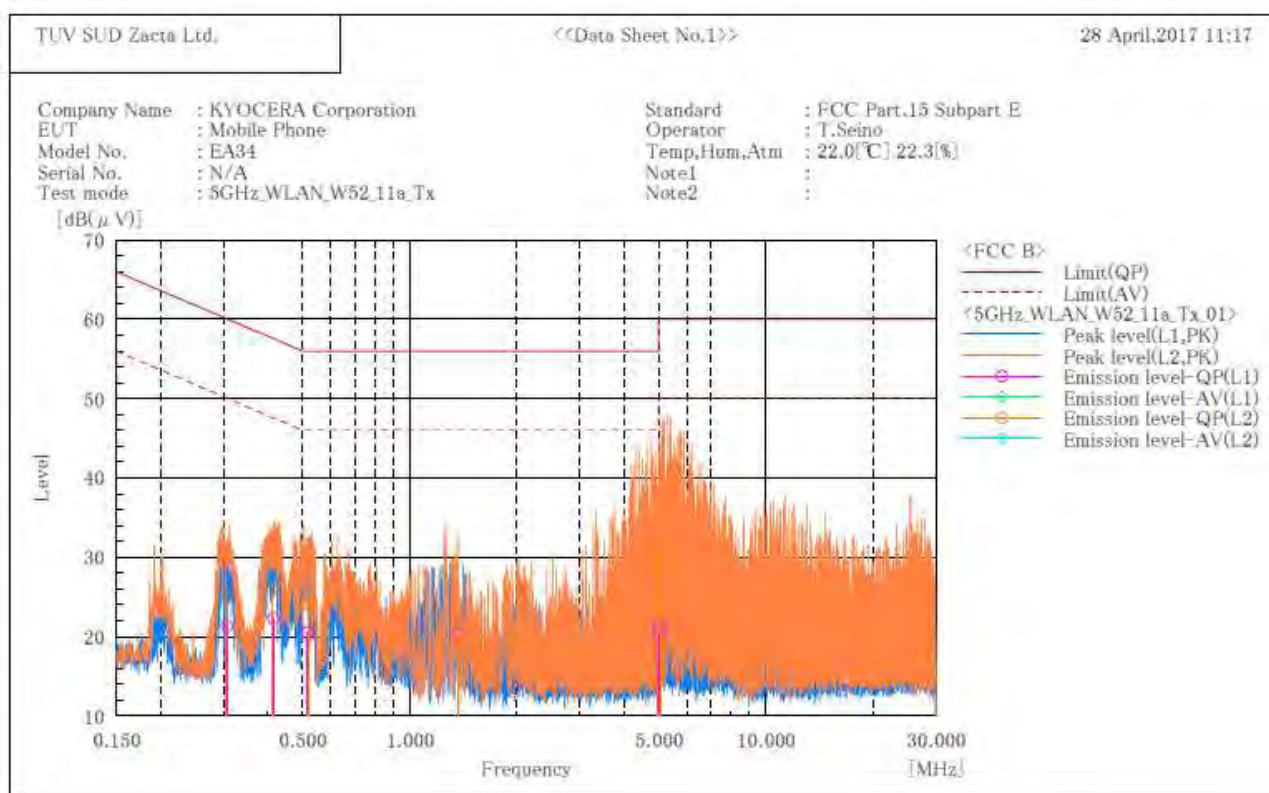
*: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

Date : April 28, 2017
 Temperature : 22.0 [°C]
 Humidity : 22.3 [%]
 Test place : 3m Semi-anechoic chamber

Test engineer : Tadahiro Seino

9.4 Test data

***** CONDUCTED EMISSION at MAINS PORT *****
 [3m Semi-anechoic chamber]

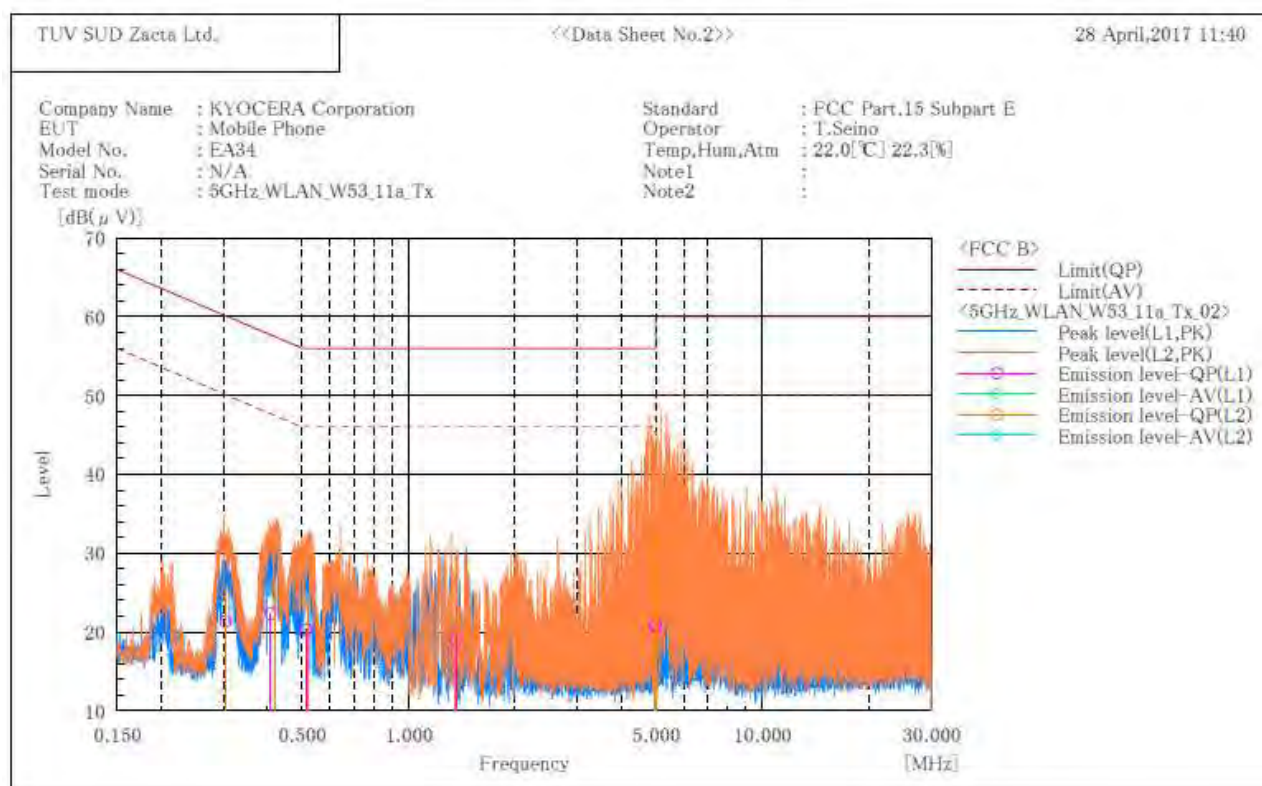


Final Result

— L1 Phase —										
No.	Frequency	Reading QP	Reading AV	c. F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.307	10.9	-2.9	10.4	21.3	7.5	60.1	50.1	38.8	42.6
2	0.414	11.9	-3.0	10.4	22.3	7.4	57.6	47.6	35.3	40.2
3	0.516	10.1	-3.4	10.4	20.5	7.0	56.0	46.0	35.5	39.0
4	1.373	10.1	-3.8	10.4	20.5	6.6	56.0	46.0	35.5	39.4
5	4.985	10.6	-4.2	10.7	21.3	6.5	56.0	46.0	34.7	39.5
6	5.032	9.9	-4.4	10.7	20.6	6.3	60.0	50.0	39.4	43.7

— L2 Phase —										
No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.305	14.7	-2.2	10.4	25.1	8.2	60.1	50.1	35.0	41.9
2	0.409	15.7	-2.2	10.4	26.1	8.2	57.7	47.7	31.6	39.5
3	0.521	13.7	-2.7	10.4	24.1	7.7	56.0	46.0	31.9	38.3
4	1.363	10.8	-3.5	10.4	21.2	6.9	56.0	46.0	34.8	39.1
5	4.981	20.2	-2.0	10.7	30.9	8.7	56.0	46.0	25.1	37.3
6	5.080	20.2	-2.2	10.7	30.9	8.5	60.0	50.0	29.1	41.5

***** CONDUCTED EMISSION at MAINS PORT *****
 [3m Semi-anechoic chamber]



Final Result

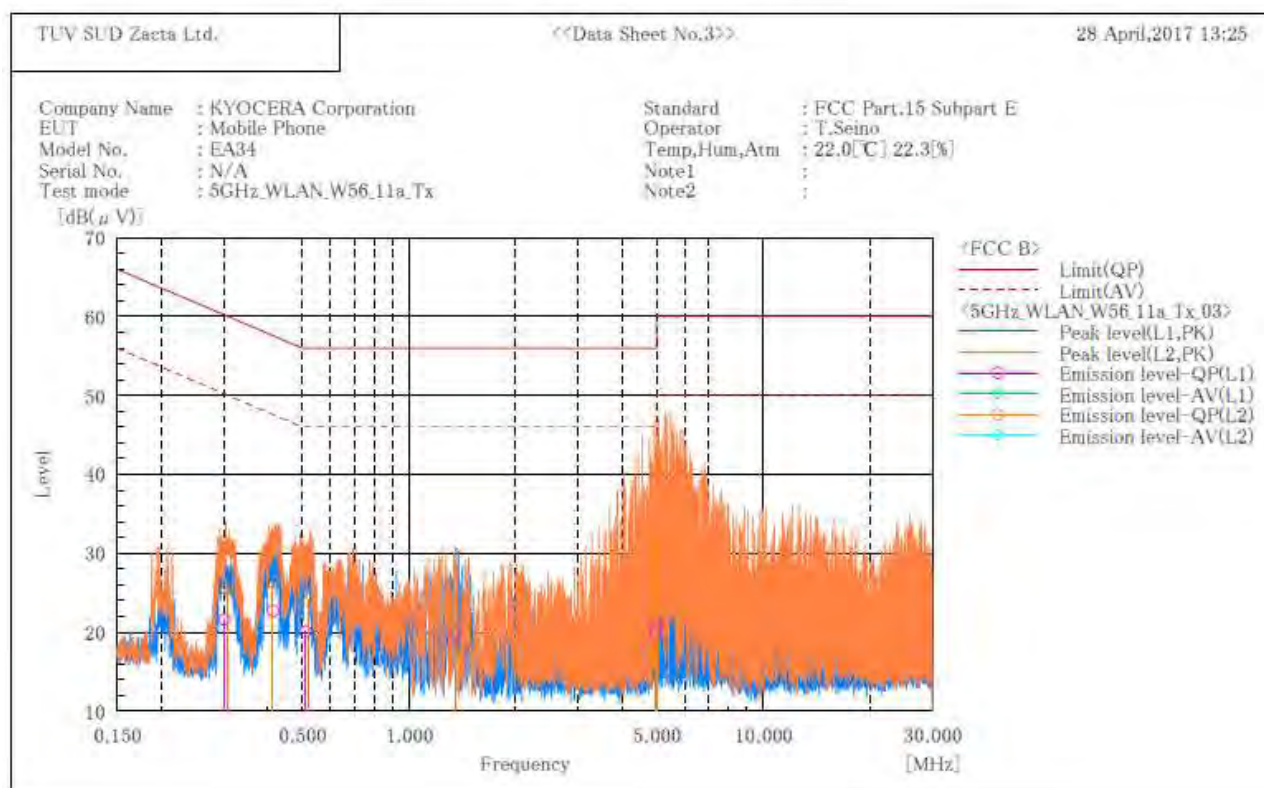
— L1 Phase —

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
1	0.304	10.9	-2.9	10.4	21.3	7.5	60.1	50.1	38.8	42.6
2	0.407	11.9	-2.9	10.4	22.3	7.5	57.7	47.7	35.4	40.2
3	0.515	9.9	-3.3	10.4	20.3	7.1	56.0	46.0	35.7	38.9
4	1.361	8.6	-3.8	10.4	19.0	6.6	56.0	46.0	37.0	39.4
5	4.972	9.9	-4.1	10.7	20.6	6.6	56.0	46.0	35.4	39.4
6	4.992	10.1	-4.2	10.7	20.8	6.5	56.0	46.0	35.2	39.5

— L2 Phase —

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
1	0.303	14.7	-2.2	10.4	25.1	8.2	60.2	50.2	35.1	42.0
2	0.421	15.4	-2.2	10.4	25.8	8.2	57.4	47.4	31.6	39.2
3	0.518	13.4	-2.8	10.4	23.8	7.6	56.0	46.0	32.2	38.4
4	1.356	10.7	-3.6	10.4	21.1	6.8	56.0	46.0	34.9	39.2
5	4.975	20.9	-2.2	10.7	31.6	8.5	56.0	46.0	24.4	37.5
6	4.997	21.1	-2.5	10.7	31.8	8.2	56.0	46.0	24.2	37.8

***** CONDUCTED EMISSION at MAINS PORT *****
[3m Semi-anechoic chamber]



Final Result

— L1 Phase —

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c. f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
1	0.302	11.2	-2.6	10.4	21.6	7.8	60.2	50.2	38.6	42.4
2	0.413	12.3	-2.5	10.4	22.7	7.9	57.6	47.6	34.9	39.7
3	0.510	9.7	-3.3	10.4	20.1	7.1	56.0	46.0	35.9	38.9
4	1.350	9.5	-3.7	10.4	19.9	6.7	56.0	46.0	36.1	39.3
5	4.970	9.2	-4.2	10.7	19.9	6.5	56.0	46.0	36.1	39.5
6	5.032	10.2	-4.2	10.7	20.9	6.5	60.0	50.0	39.1	43.5

— L2 Phase —

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c. f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
1	0.306	15.0	-1.8	10.4	25.4	8.6	60.1	50.1	34.7	41.5
2	0.412	16.1	-1.7	10.4	26.5	8.7	57.6	47.6	31.1	38.9
3	0.523	13.6	-2.6	10.4	24.0	7.8	56.0	46.0	32.0	38.2
4	1.348	10.7	-3.5	10.4	21.1	6.9	56.0	46.0	34.9	39.1
5	4.974	20.5	-2.2	10.7	31.2	8.5	56.0	46.0	24.8	37.5
6	5.015	18.8	-2.3	10.7	29.5	8.4	60.0	50.0	30.5	41.6

10. Duty Cycle

10.1 Measurement procedure

[KDB 789033 D02, Section B, Zero-Span Spectrum Analyzer Method]

The duty cycle 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;

- RBW=8MHz, VBW=8MHz, Span=0Hz, Sweep=Auto, Detector=Peak, Trace mode=Single

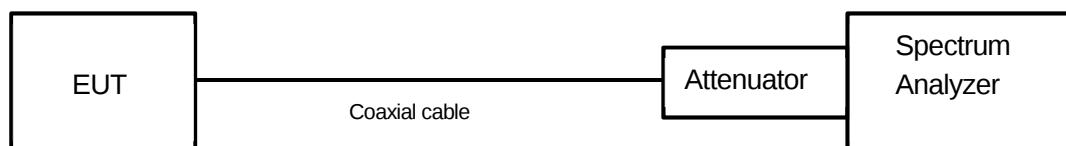
The EUT was set to operate with following conditions.

- 5.2GHz Band, 5.3GHz Band, 5.6GHz Band

The test mode of EUT is as follows.

- Tx mode

- Test configuration



10.2 Limit

None

10.3 Measurement result

Date : May 27, 2017
Temperature : 24.6 [°C]
Humidity : 49.8 [%]
Test place : Shielded room No.4

Test engineer : Chiaki Kanno

Mode	Channel	Frequency (MHz)	Duty Cycle				DCF (dB) 10log(1/x)	DCF (dB) 20log(1/x)
			On Time(ms)	On+Off Time(ms)	X	1/T		
802.11a	36	5180	1.362	1.372	0.993	734.2	0.032	0.064
	40	5200						
	58	5240						
	52	5260	1.364	1.372	0.994	733.1	0.025	0.051
	56	5280						
	64	5320						
	100	5500	1.364	1.372	0.994	733.1	0.025	0.051
	116	5580						
	140	5700						

Note: X = On time / (On + Off time)

Mode	Channel	Frequency (MHz)	Duty Cycle				DCF (dB) 10log(1/x)	DCF (dB) 20log(1/x)
			On Time(ms)	On+Off Time(ms)	X	1/T		
802.11n (20MHz)	36	5180	1.276	1.284	0.994	783.7	0.027	0.054
	40	5200						
	58	5240						
	52	5260	1.276	1.284	0.994	783.7	0.027	0.054
	56	5280						
	64	5320						
	100	5500	1.276	1.284	0.994	783.7	0.027	0.054
	116	5580						
	140	5700						

Note: X = On time / (On + Off time)

Mode	Channel	Frequency (MHz)	Duty Cycle				DCF (dB) 10log(1/x)	DCF (dB) 20log(1/x)
			On Time(ms)	On+Off Time(ms)	X	1/T		
802.11n (40MHz)	38	5190	0.636	0.646	0.985	1572.3	0.068	0.136
	46	5230						
	54	5270	0.635	0.645	0.984	1574.8	0.068	0.136
	62	5310						
	102	5510	0.636	0.646	0.985	1572.3	0.068	0.136
	110	5550						
	134	5670						

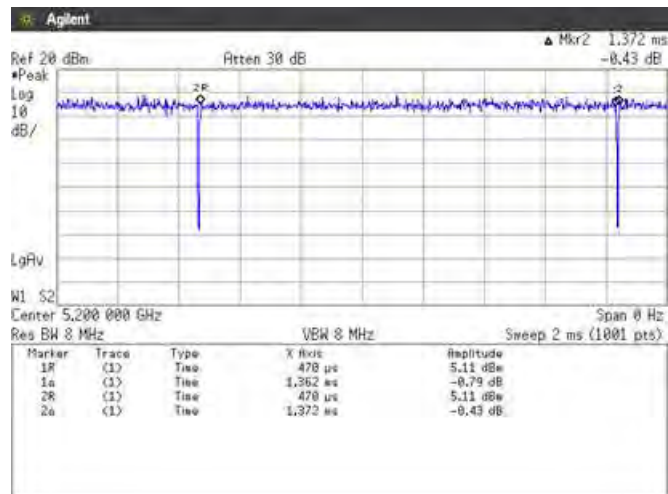
Note: X = On time / (On + Off time)

Mode	Channel	Frequency (MHz)	Duty Cycle				DCF (dB) 10log(1/x)	DCF (dB) 20log(1/x)
			On Time(ms)	On+Off Time(ms)	X	1/T		
802.11ac (80MHz)	42	5210	0.248	0.258	0.960	4040.4	0.179	0.358
	58	5290	0.248	0.258	0.960	4040.4	0.179	0.358
	106	5530	0.248	0.258	0.960	4040.4	0.179	0.358
	122	5610	0.248	0.257	0.962	4040.4	0.170	0.341

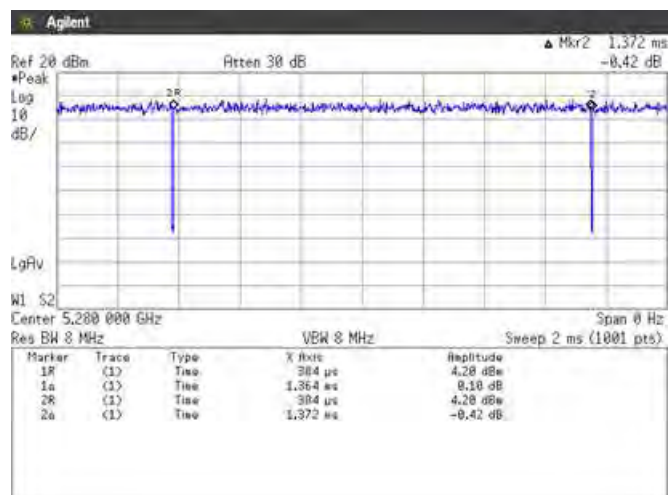
Note: X = On time / (On + Off time)

10.4 Trace data [IEEE802.11a]

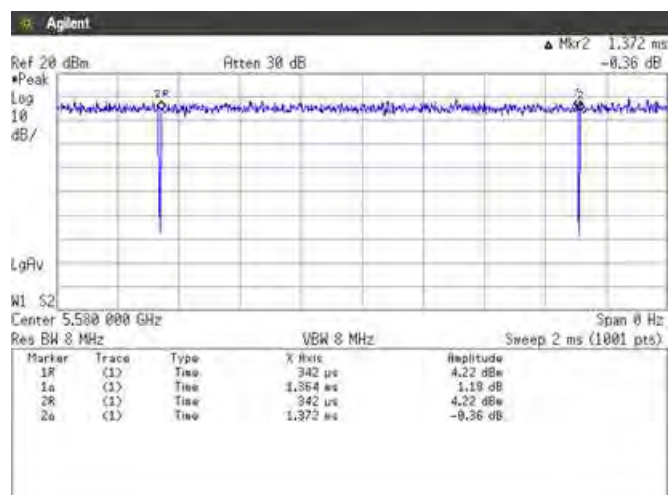
Channel: 40



Channel: 56

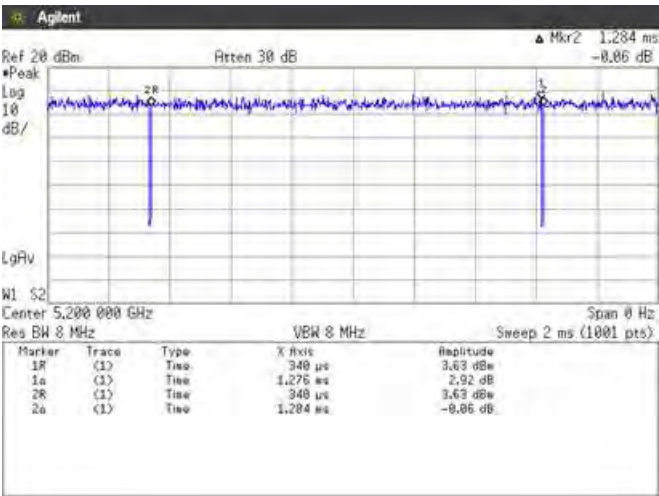


Channel: 116

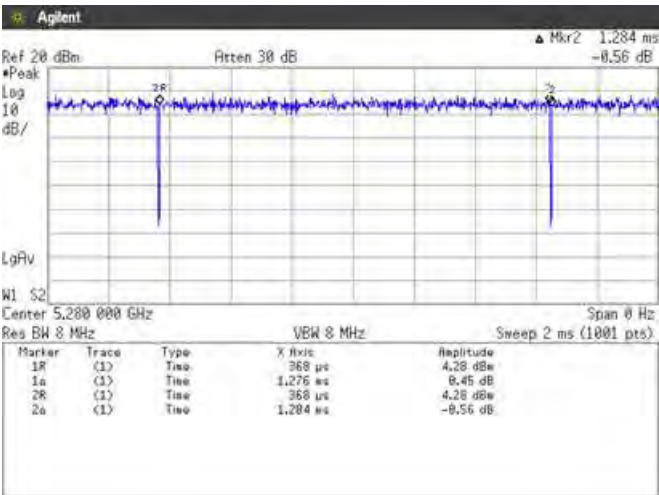


[IEEE802.11n (HT20)]

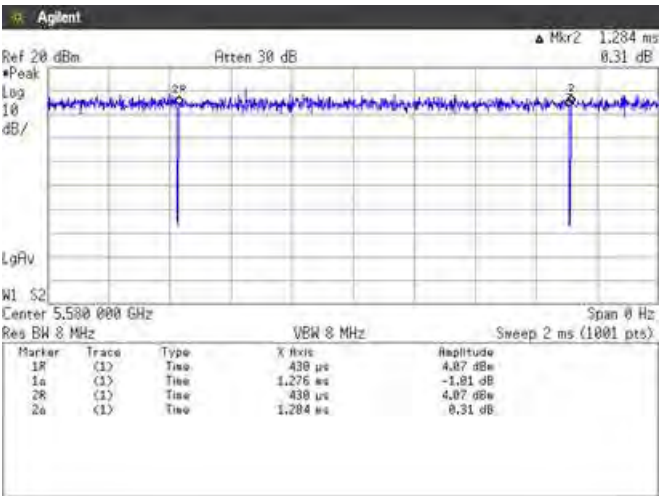
Channel: 40



Channel: 56

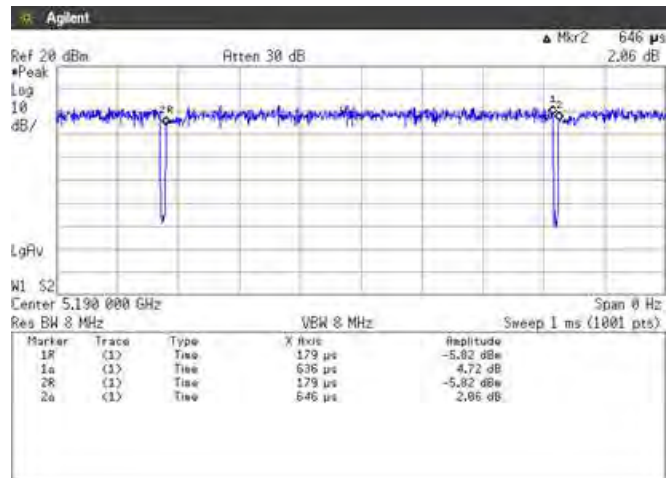


Channel: 116

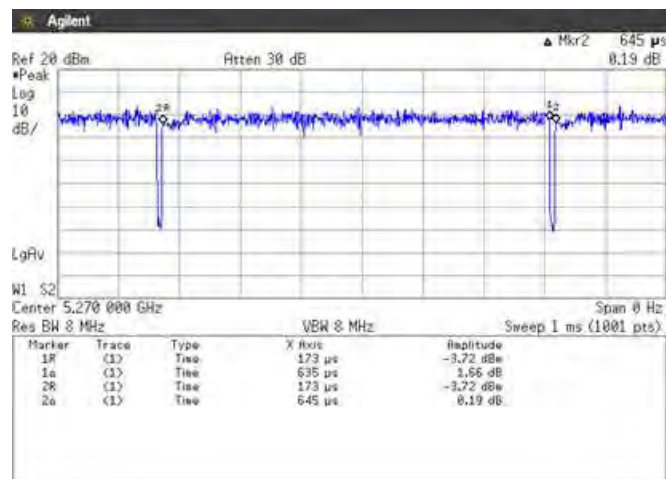


[IEEE802.11n (HT40)]

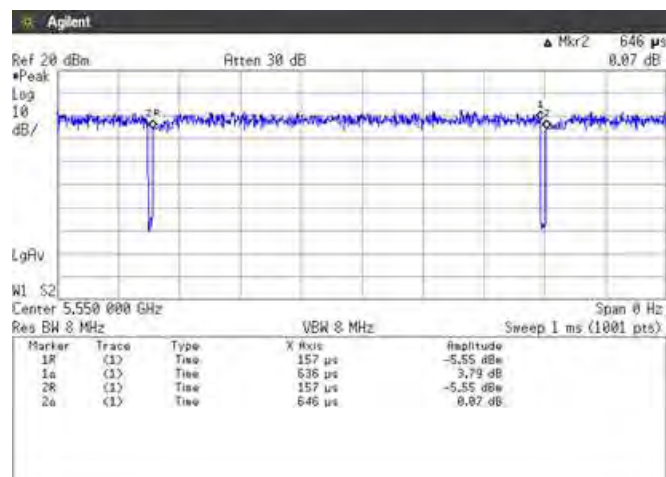
Channel: 38



Channel: 54

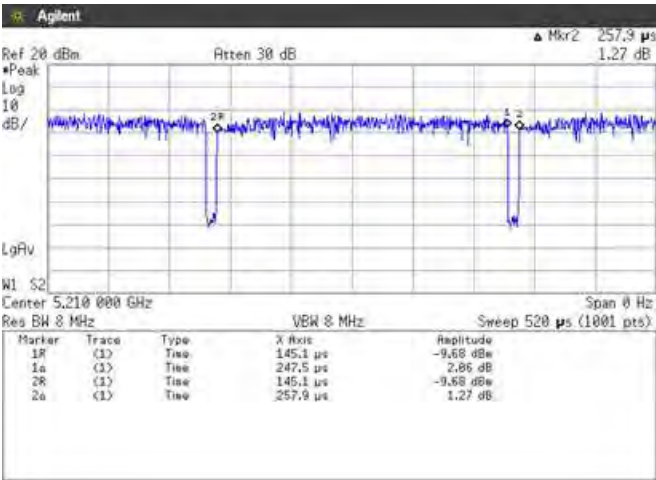


Channel: 110

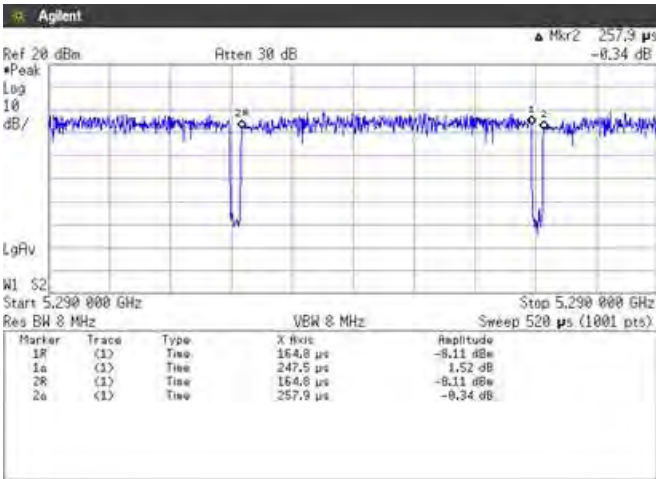


[IEEE802.11ac (HT80)]

Channel: 42

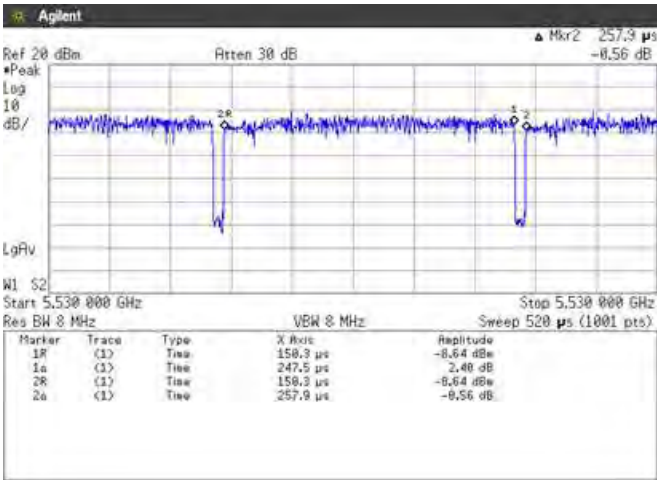


Channel: 58

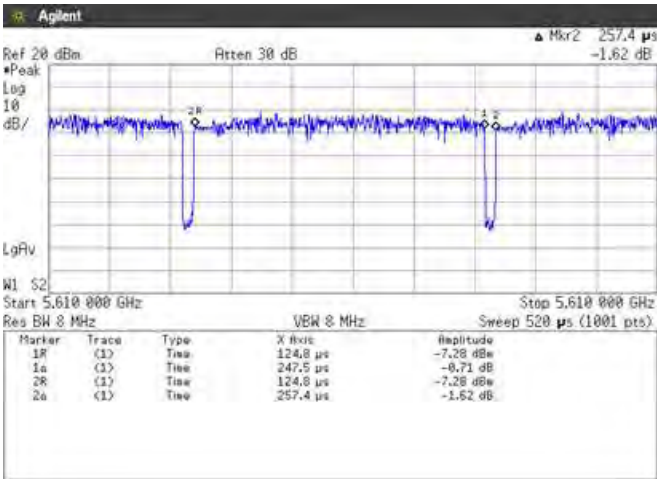


[IEEE802.11ac (HT80)]

Channel: 106



Channel: 122



11. Antenna requirement

According to FCC section 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.

The antenna is a special antenna mounted inside of the EUT. Therefore, the EUT complies with the antenna requirement of FCC section 15.203.

12. Uncertainty of measurement

Expanded uncertainties stated are calculated with a coverage Factor $k=2$.

Please note that these results are not taken into account when determining compliance or non-compliance with test result.

Test item	Measurement uncertainty
Conducted emission at mains port	$\pm 3.0\text{dB}$
Radiated emission (9kHz – 30MHz)	$\pm 4.4\text{dB}$
Radiated emission (30MHz – 1000MHz)	$\pm 4.5\text{dB}$
Radiated emission (1000MHz – 26GHz)	$\pm 3.9\text{dB}$

13. Laboratory Information

1. Location

Name: Yonezawa Testing Center
 Address: 5-4149-7, Hachimanpara, Yonezawa-shi, Yamagata, 992-1128 Japan
 Phone: +81-238-28-2881
 Fax: +81-238-28-2888

2. Accreditation and Registration

- 1) NVLAP
LAB CODE: 200306-0
- 2) VLAC
Accreditation No.: VLAC-013
- 3) BSMI
Laboratory Code: SL2-IN-E-6018, SL2-A1-E-6018

4) Industry Canada

Site number	Facility	Expiration date
4224A-4	3m Semi-anechoic chamber	2017-12-03
4224A-5	10m Semi-anechoic chamber No.1	2017-12-03
4224A-6	10m Semi-anechoic chamber No.2	2019-12-14

5) VCCI Council

Registration number	Expiration date
A-0166	2017-07-03

Appendix A. Test equipment

Antenna port conducted test

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
Spectrum analyzer	Agilent Technologies	E4440A	US40420937	Jul. 31, 2017	Jul. 15, 2016
Microwave cable	RS	YH-13S5	N/A(S403)	May 31, 2017	May 24, 2016
Attenuator	Weinschel	56-10	J4993	Nov. 30, 2017	Nov. 1, 2016
Temperature and humidity chamber	ESPEC	PL1KP	14007261	Jan. 31, 2018	Jan. 20, 2017

Radiated emission

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESCI	100764	Aug. 31, 2017	Aug. 19, 2016
Spectrum analyzer	Agilent Technologies	E4440A	US40420937	Jul. 31, 2017	Jul. 15, 2016
Preamplifier	ANRITSU	MH648A	M96057	Feb. 28, 2018	Feb. 1, 2017
Loop antenna	ROHDE&SCHWARZ	HFH2-Z2	892246/010	Feb. 28, 2018	Feb. 17, 2017
Attenuator	TDC	TAT-43B-06	N/A(S209)	May 31, 2017	May 10, 2016
Biconical antenna	Schwarzbeck	VHA9103/BBA9106	2155	Jun. 30, 2017	Jun. 2, 2016
Log periodic antenna	Schwarzbeck	UHALP9108A	0560	Jun. 30, 2017	Jun. 2, 2016
Attenuator	TME	CFA-01NPJ-6	N/A(S275)	Feb. 28, 2018	Feb. 3, 2017
Attenuator	TME	CFA-01NPJ-3	N/A(S272)	Feb. 28, 2018	Feb. 2, 2017
Preamplifier	TSJ	MLA-100M18-B02-40	1929118	Feb. 28, 2018	Feb. 3, 2017
Attenuator	AEROFLEX	26A-10	081217-08	May 31, 2017	May 24, 2016
Double ridged guide antenna	EMCO	3115	5205	Mar. 31, 2018	Mar. 15, 2017
Double ridged guide antenna	ETS LINDGREN	3117	00052315	Feb. 28, 2018	Feb. 23, 2017
Attenuator	Agilent Technologies	8491B	MY39268633	Feb. 28, 2018	Feb. 2, 2017
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	BBHA9170189	Jun. 30, 2017	Jun. 16, 2016
Preamplifier	TSJ	MLA-1840-B03-35	1240332	Jun. 30, 2017	Jun. 16, 2016
Notch filter	Micro-Tronics	BRM50716	006	Jul. 31, 2017	Jul. 20, 2016
Microwave cable	SUHNER	SUCOFLEX104/9m	MY30037/4	Feb. 28, 2018	Feb. 3, 2017
		SUCOFLEX104/1m	my24610/4	Feb. 28, 2018	Feb. 3, 2017
		SUCOFLEX104/8m	SN MY30031/4	Feb. 28, 2018	Feb. 2, 2017
		SUCOFLEX104/1.5m	322086/4	May 31, 2017	May 10, 2016
		SUCOFLEX104/1.5m	317226/4	May 31, 2017	May 10, 2016
		SUCOFLEX104/7m	41625/6	Feb. 28, 2018	Feb. 3, 2017
PC	DELL	DIMENSION E521	75465BX	N/A	N/A
Software	TOYO Corporation	EP5/RE-AJ	0611193/V5.6.0	N/A	N/A
Absorber	RIKEN	PFP30	N/A	N/A	N/A
3m Semi an-echoic Chamber	TOKIN	N/A	N/A(9002-NSA)	May 31, 2017	May 11, 2016
3m Semi an-echoic Chamber	TOKIN	N/A	N/A(9002-SVSWR)	May 31, 2017	May 12, 2016

Conducted emission at mains port

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESCI	100764	Aug. 31, 2017	Aug. 19, 2016
Attenuator	HUBER+SUHNER	6810.01.A	N/A (S411)	Feb. 28, 2018	Feb. 2, 2017
Line impedance stabilization network for EUT	Kyoritsu Electrical Works, Ltd.	KNW-407F	8-2003-1	Mar. 31, 2018	Mar. 13, 2017
Coaxial cable	FUJIKURA	5D-2W/4m	N/A (S350)	Feb. 28, 2018	Feb. 2, 2017
Coaxial cable	FUJIKURA	5D-2W/1m	N/A (S193)	Feb. 28, 2018	Feb. 3, 2017
Coaxial cable	SUHNER	RG214/U/10m	N/A (S194)	Feb. 28, 2018	Feb. 3, 2017
PC	DELL	DIMENSION	75465BX	N/A	N/A
Software	TOYO Corporation	EP5/CE-AJ	0611193/V5.4.11	N/A	N/A

*: The calibrations of the above equipment are traceable to NIST or equivalent standards of the reference organizations.