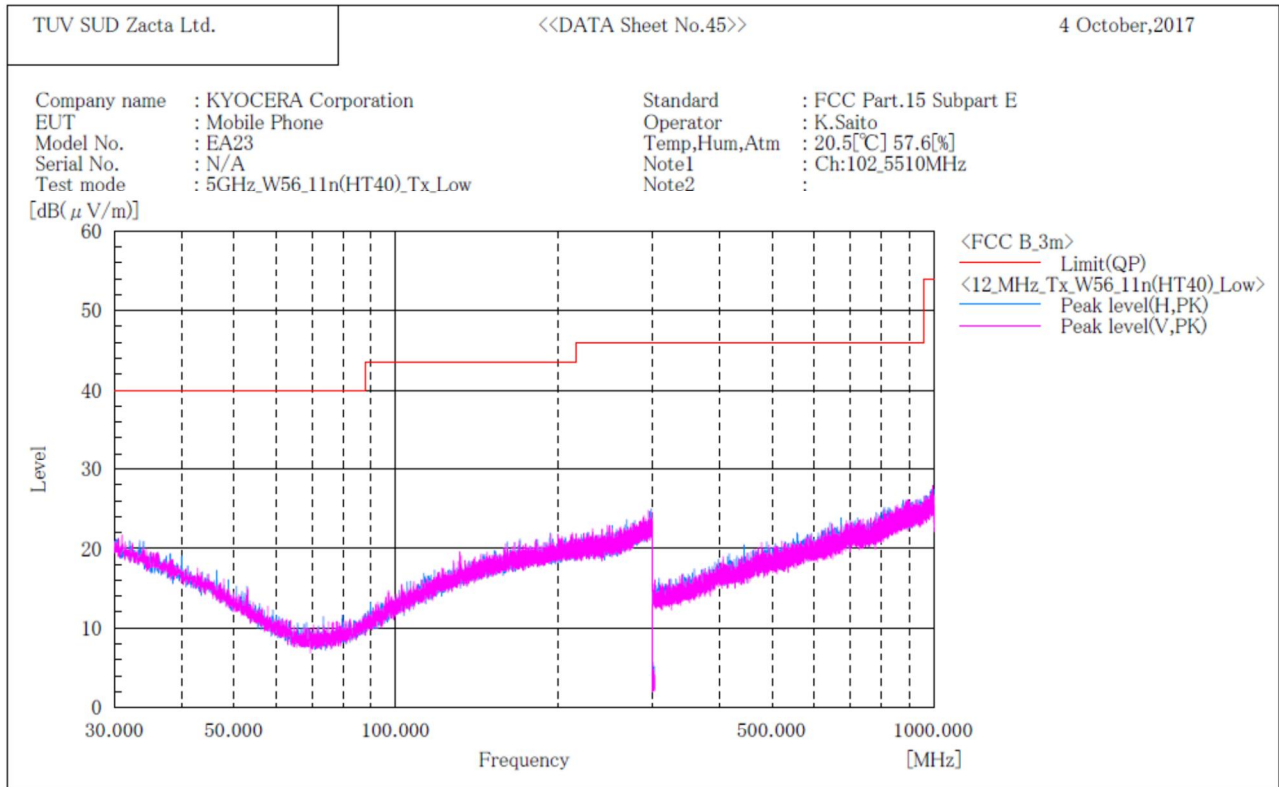


[11n(HT40)]
W56 / Channel Low
BELOW 1GHz

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



Final Result

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

Note:

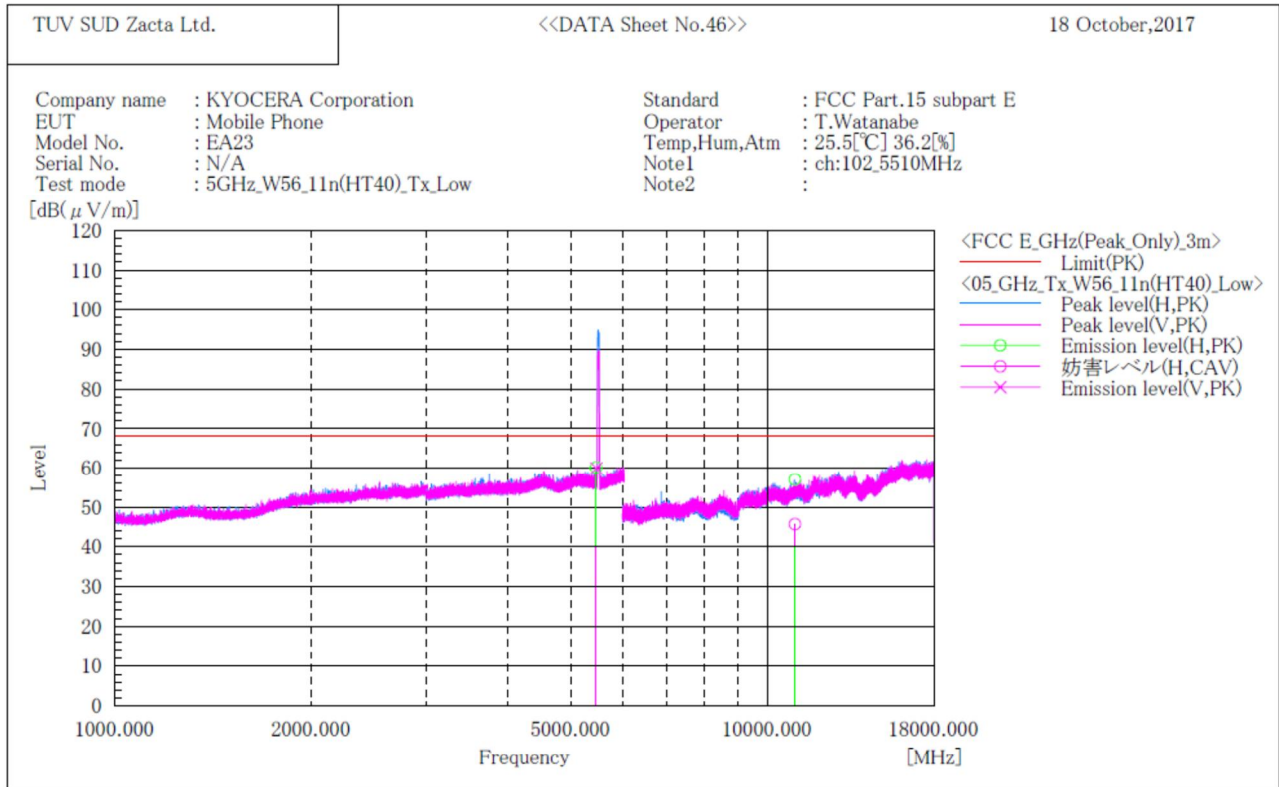
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



Zacta

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

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



Final Result

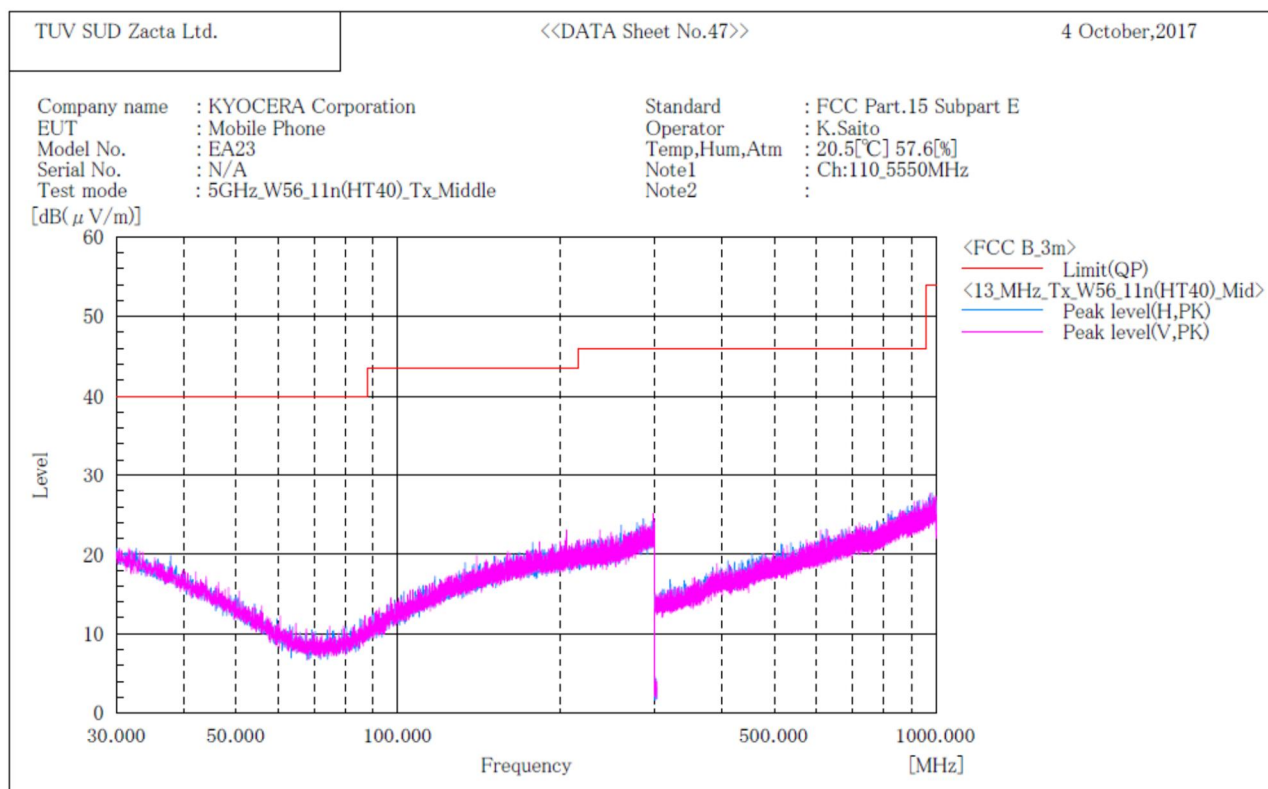
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]
1	5463.550	H	49.9	-----	10.2	60.1	-----	68.2	8.1	-----	143.0	135.0
2	5468.190	V	49.7	-----	10.2	59.9	-----	68.2	8.3	-----	115.0	316.0
3	11020.000	H	46.4	35.1	10.6	57.0	45.7	74.0	17.0	8.3	116.0	251.0

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:

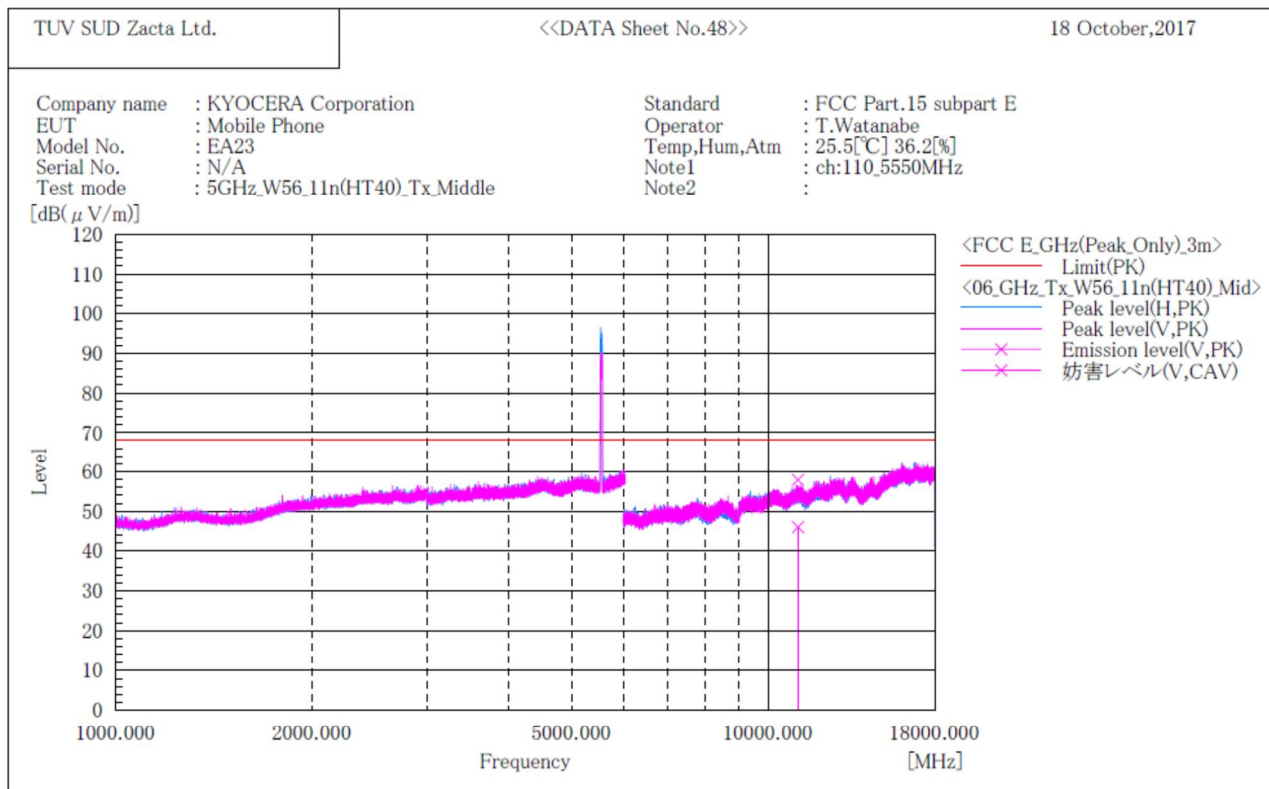
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



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[11n(HT40)]
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 [°]
1	11100.000	V	47.1	35.2	10.8	57.9	46.0	74.0	16.1	8.0	158.0	119.0

Note:

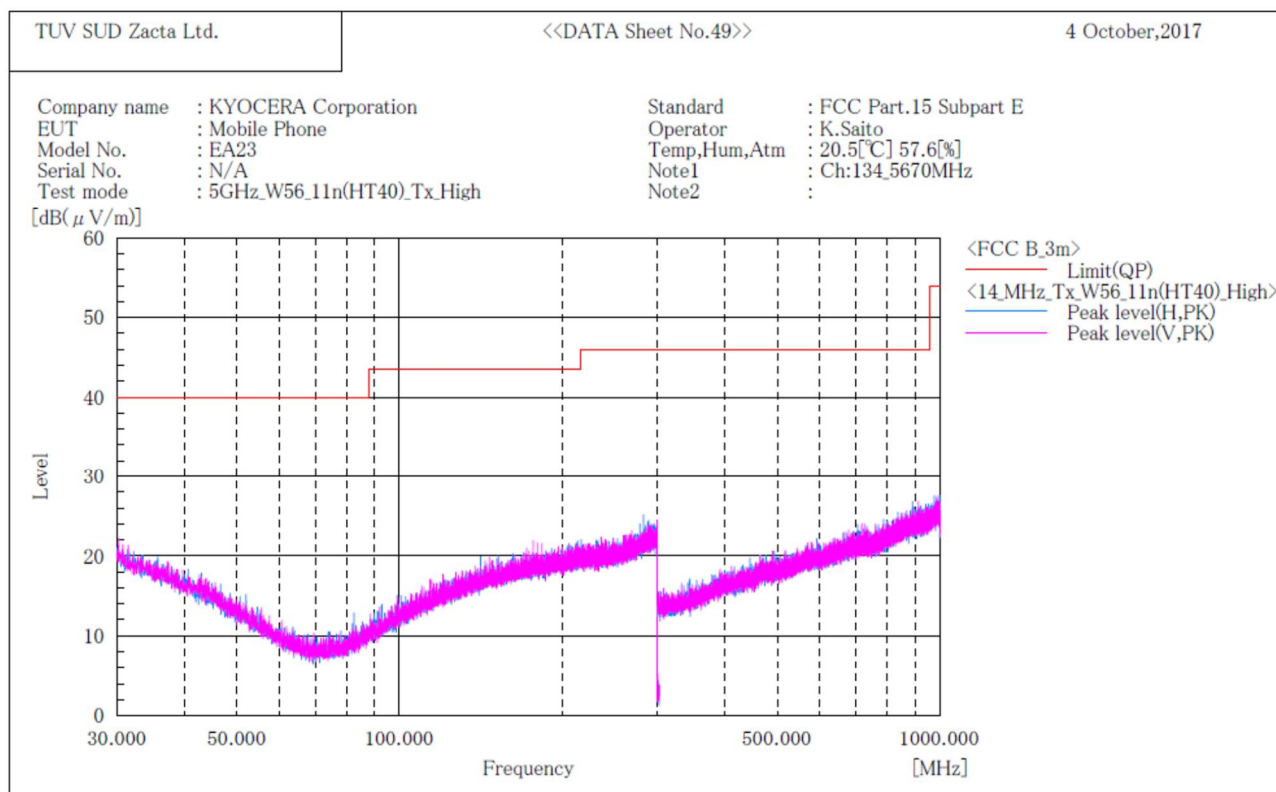
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



Zacta

[11n(HT40)]
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:

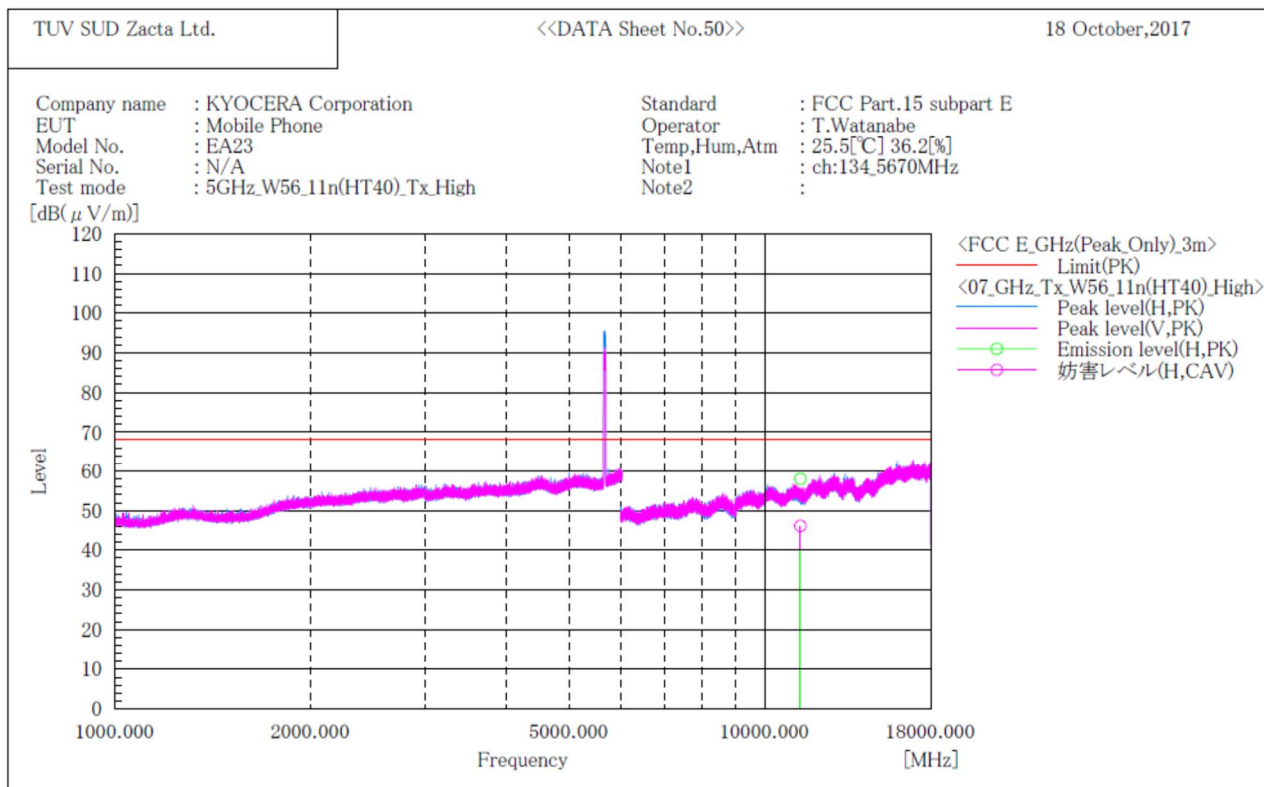
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



Zacta

[11n(HT40)]
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 [°]
1	11340.000	H	46.9	35.0	11.1	58.0	46.1	74.0	16.0	7.9	152.0	144.0

Note:

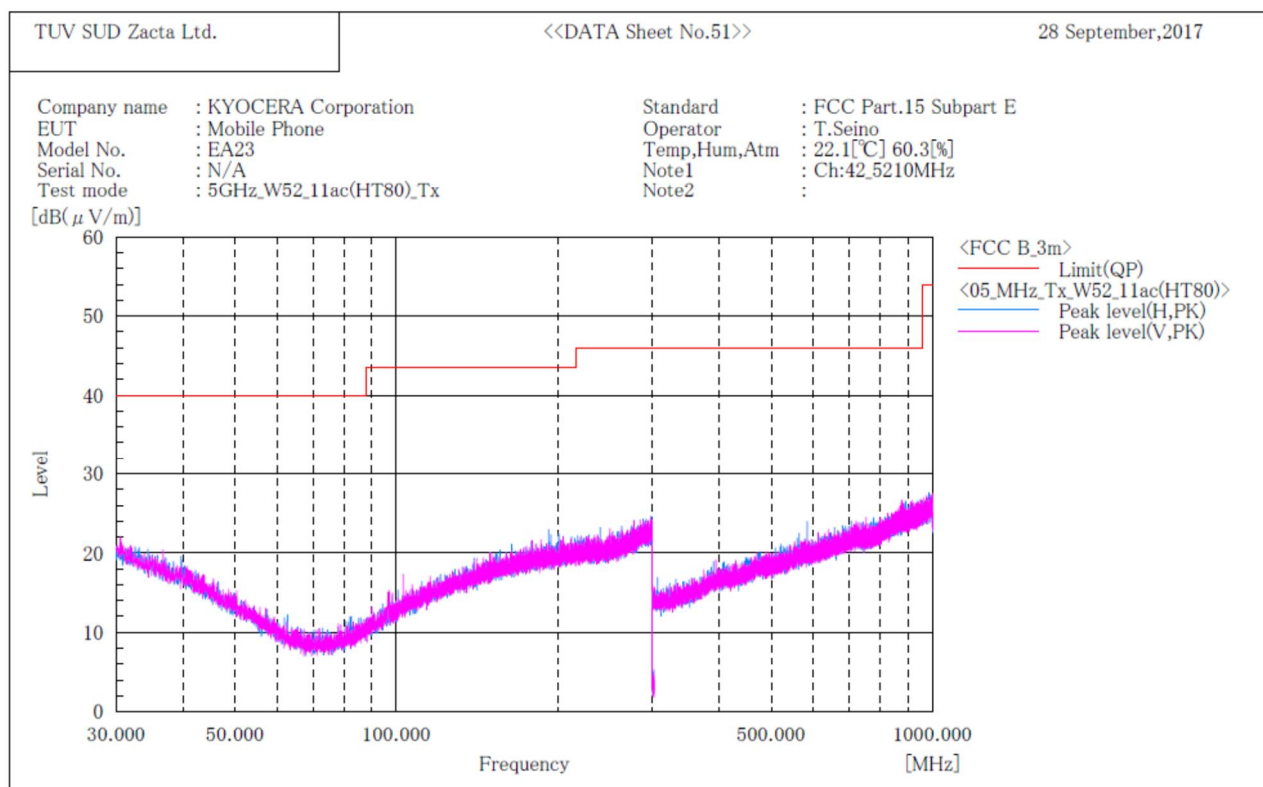
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



Zacta

[11n(HT80)]
W52
BELOW 1GHz

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



Final Result

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

Note:

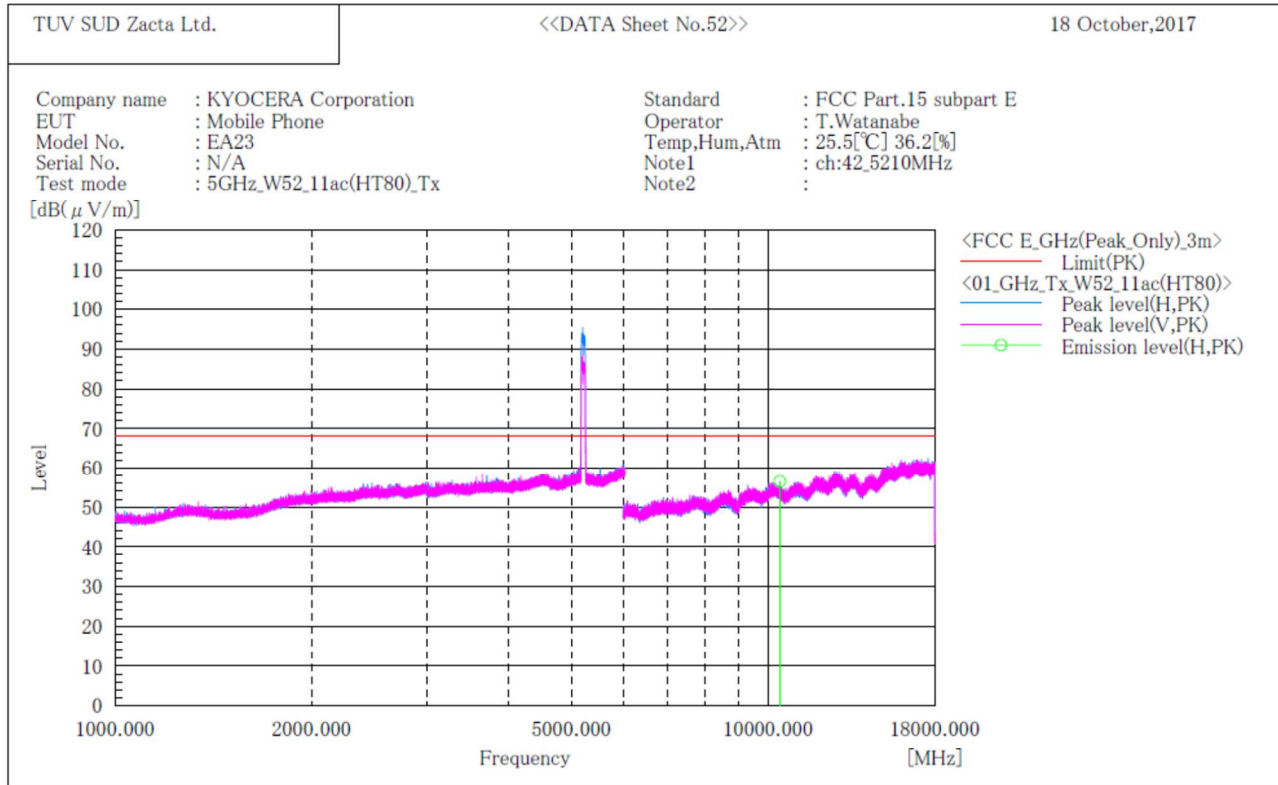
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



Zacta

[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 [°]
1	10420.000	H	46.6	9.9	56.5	68.2	11.7	163.0	211.0

Note:

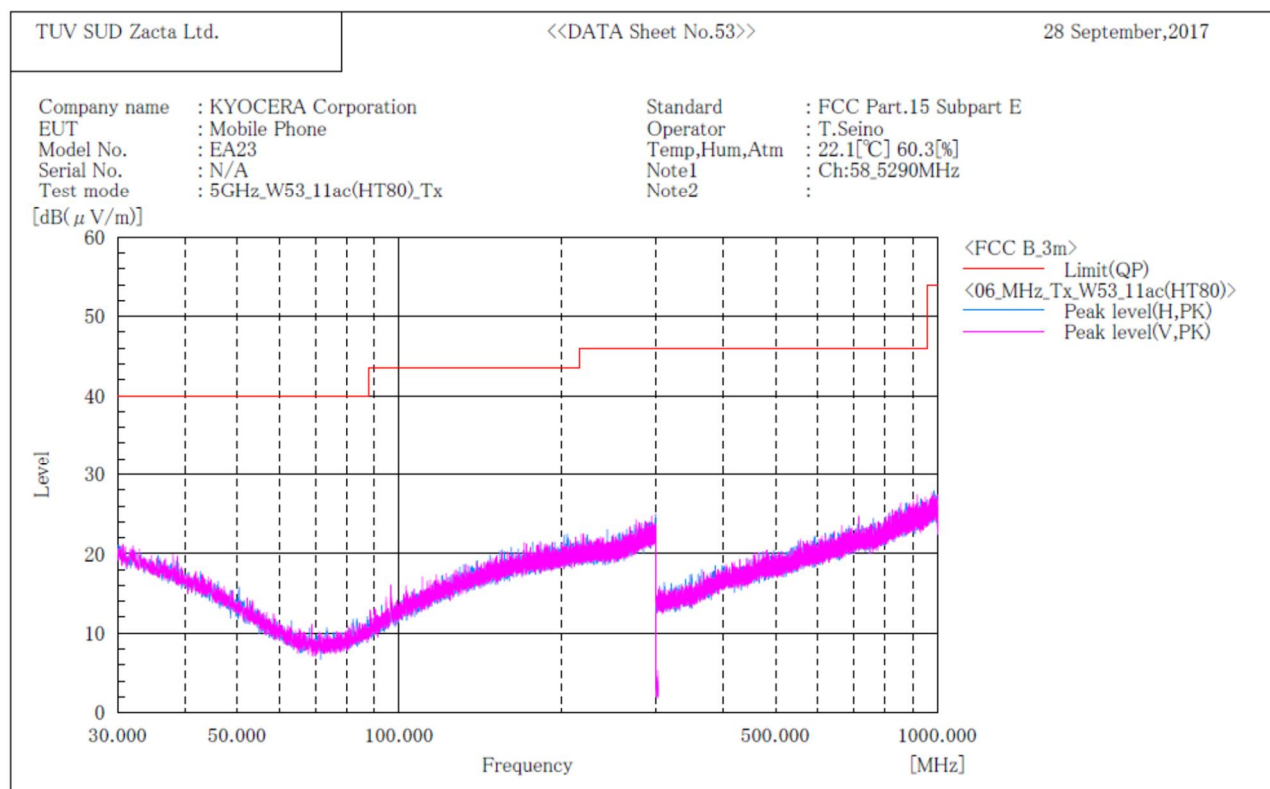
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



Zacta

[11n(HT80)]
W53
BELOW 1GHz

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



Final Result

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

Note:

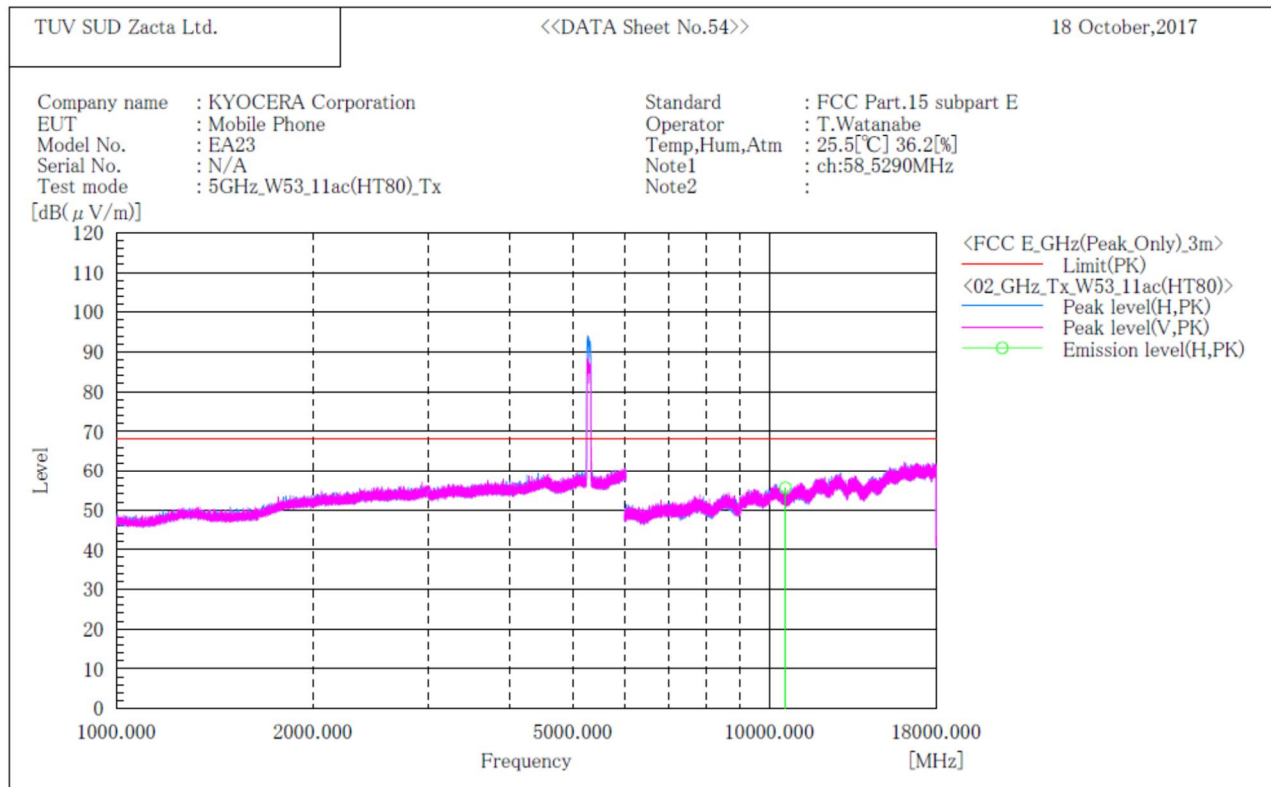
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



Zacta

[11n(HT80)]
W53
ABOVE 1GHz

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



Final Result

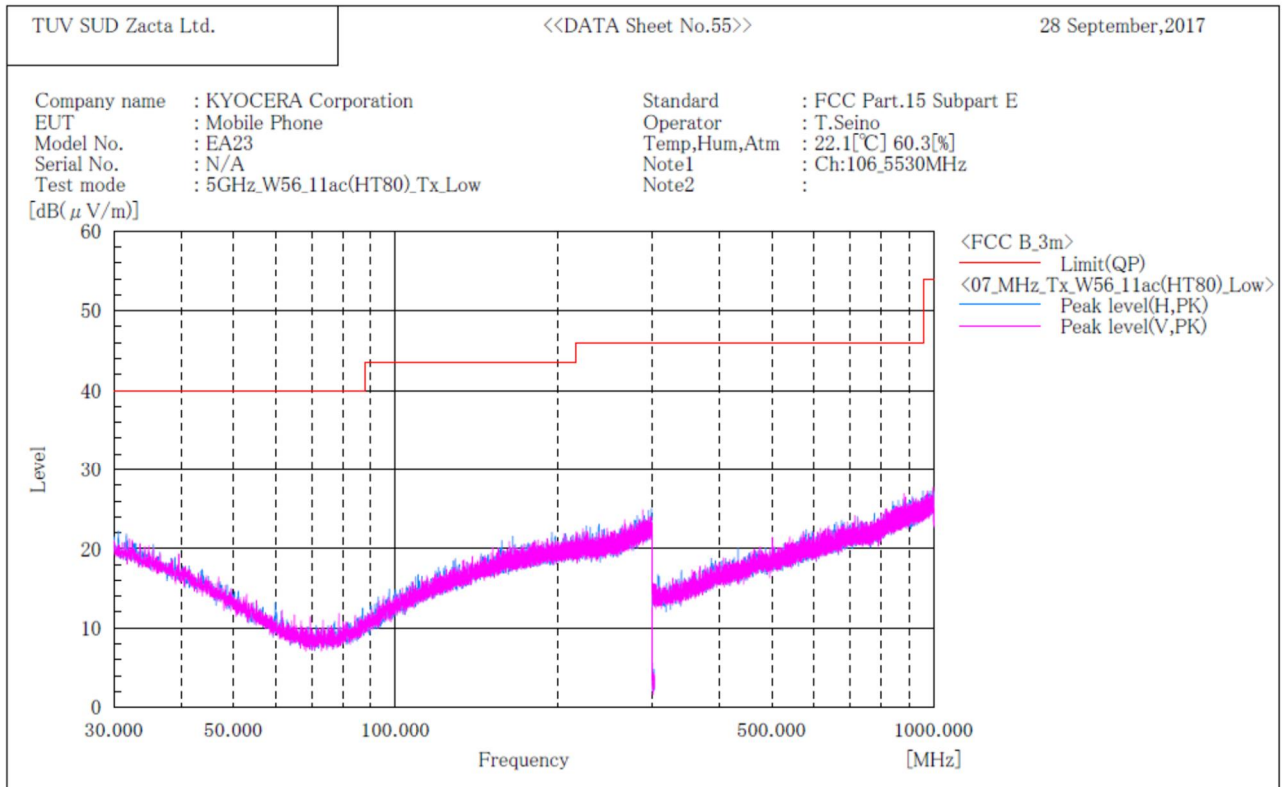
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	c. f [dB(1/m)]	Result PK [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]
1	10580.000	H	45.4	10.1	55.5	68.2	12.7	161.0	111.0

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

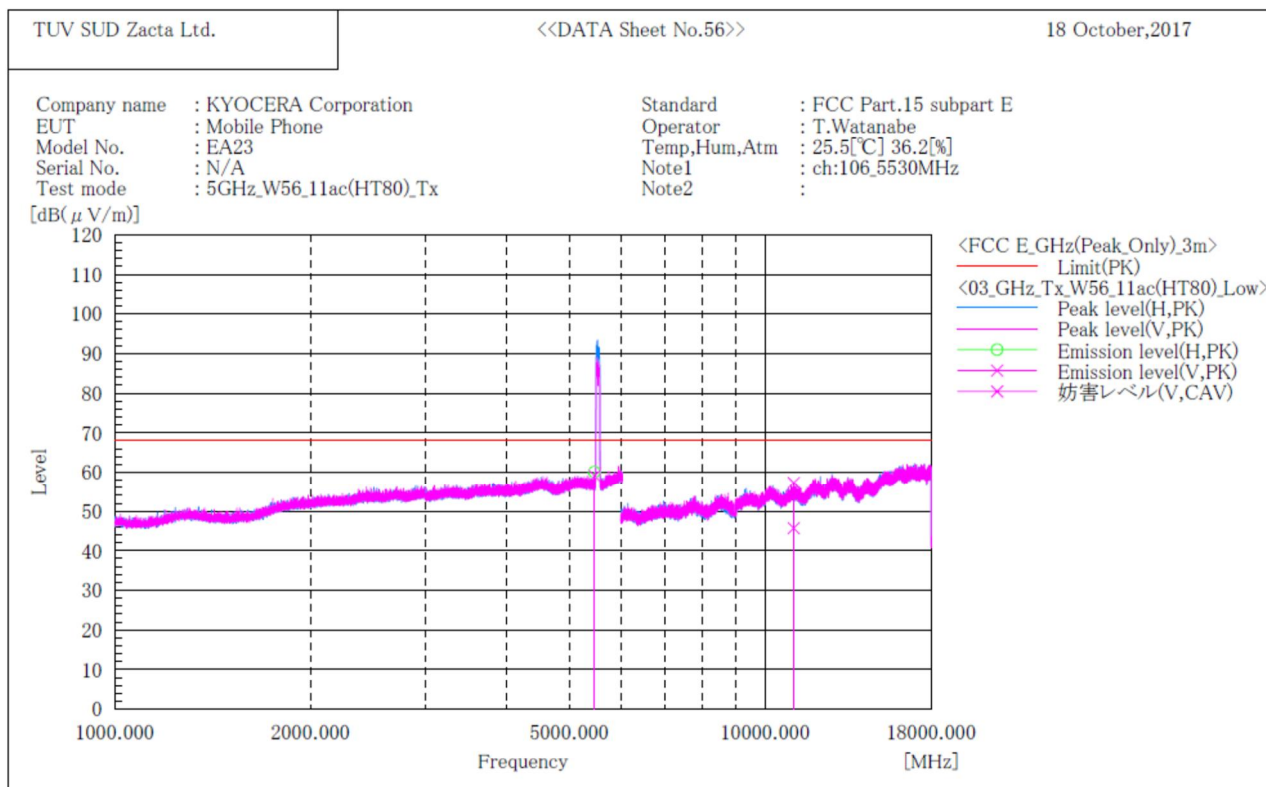
No.	Frequency (P)	c.f	Height	Angle
	[MHz]	[dB(1/m)]	[cm]	[°]

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)]
W56 / Channel Low
ABOVE 1GHz

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



Final Result

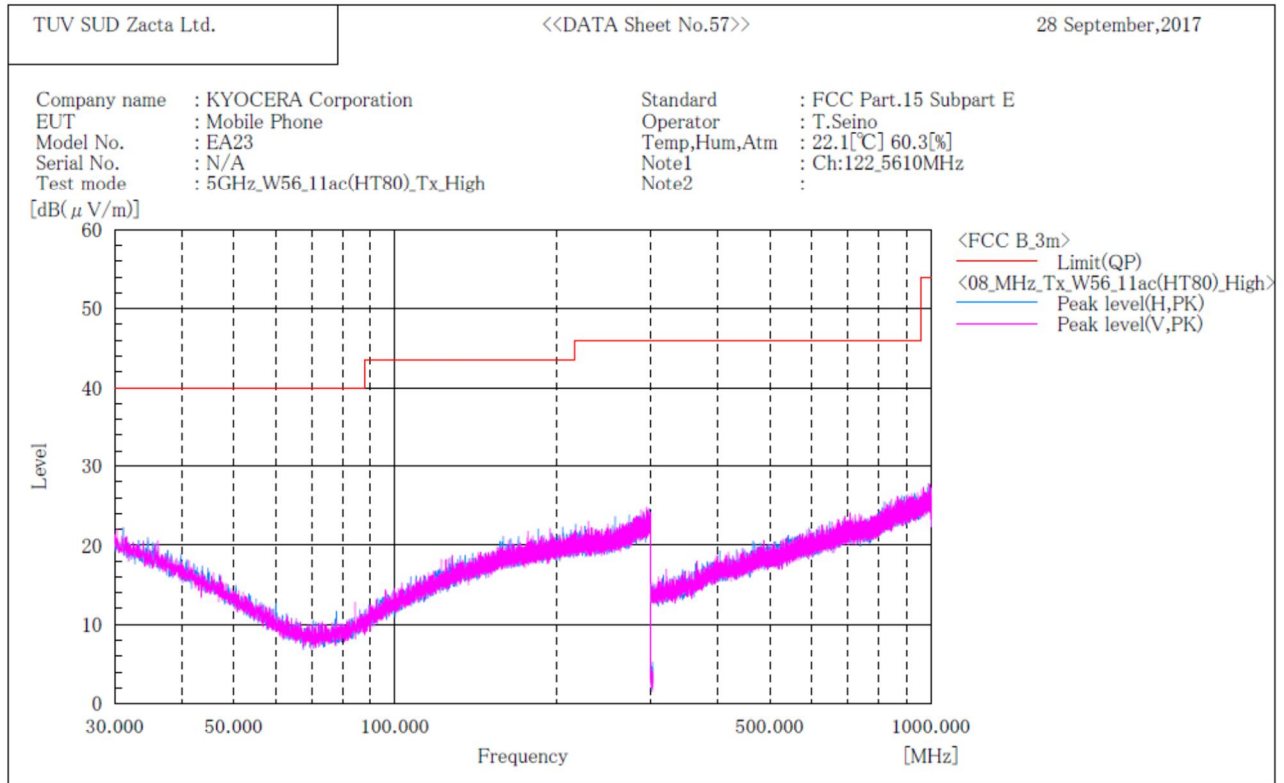
No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [°]
1	5460.640	H	49.9	-----	10.2	60.1	-----	68.2	8.1	-----	128.0	146.0
2	5464.660	V	48.9	-----	10.2	59.1	-----	68.2	9.1	-----	107.0	325.0
3	11060.000	V	46.6	35.0	10.7	57.3	45.7	74.0	16.7	8.3	118.0	22.0

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
	[MHz]	[dB(1/m)]	[cm]	[°]

Note:

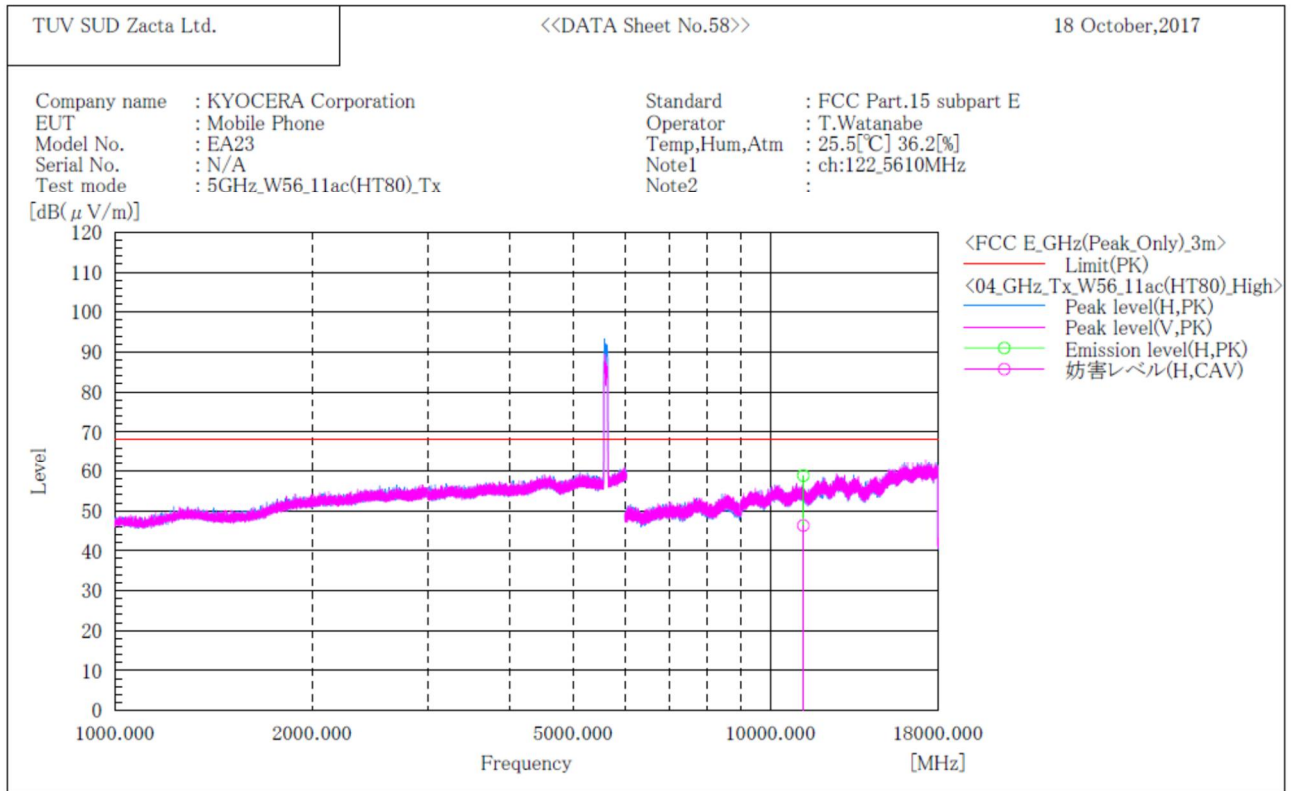
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



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[11n(HT80)]
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	
	[MHz]	[dB (μ V)]	[dB (μ V)]	[dB(1/m)]	[dB (μ V/m)]	[dB (μ V/m)]	[dB (μ V/m)]	[dB]	[dB]	[cm]	[°]	
1	11220.000	H	47.8	35.3	11.0	58.8	46.3	74.0	15.2	7.7	153.0	289.0

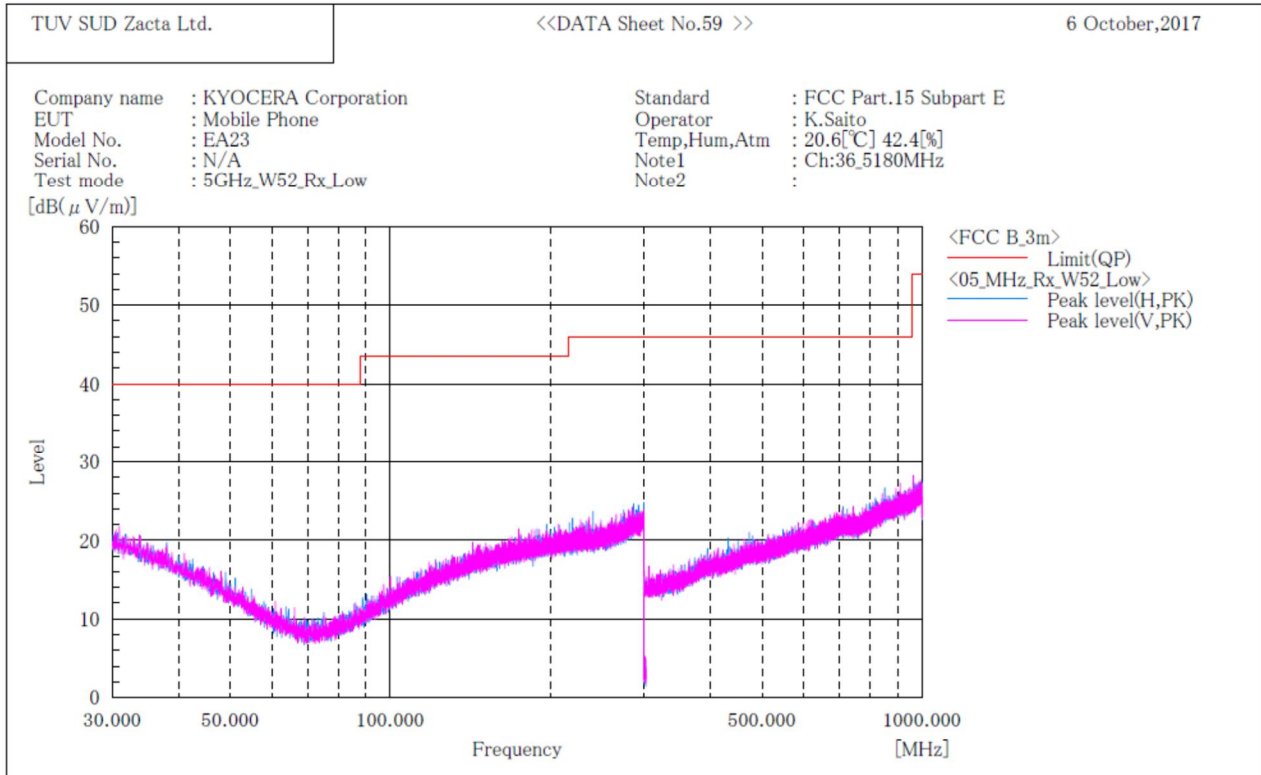
Note:

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

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:

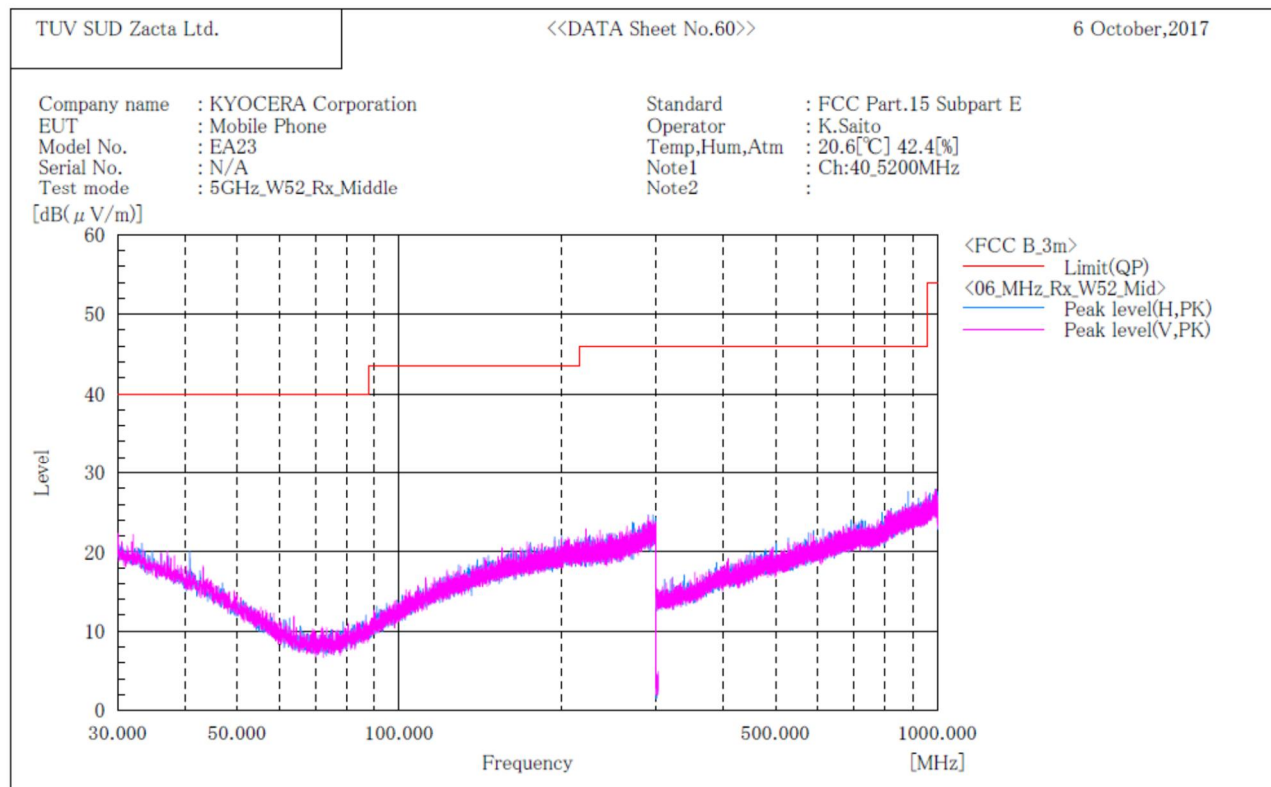
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



Zacta

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:

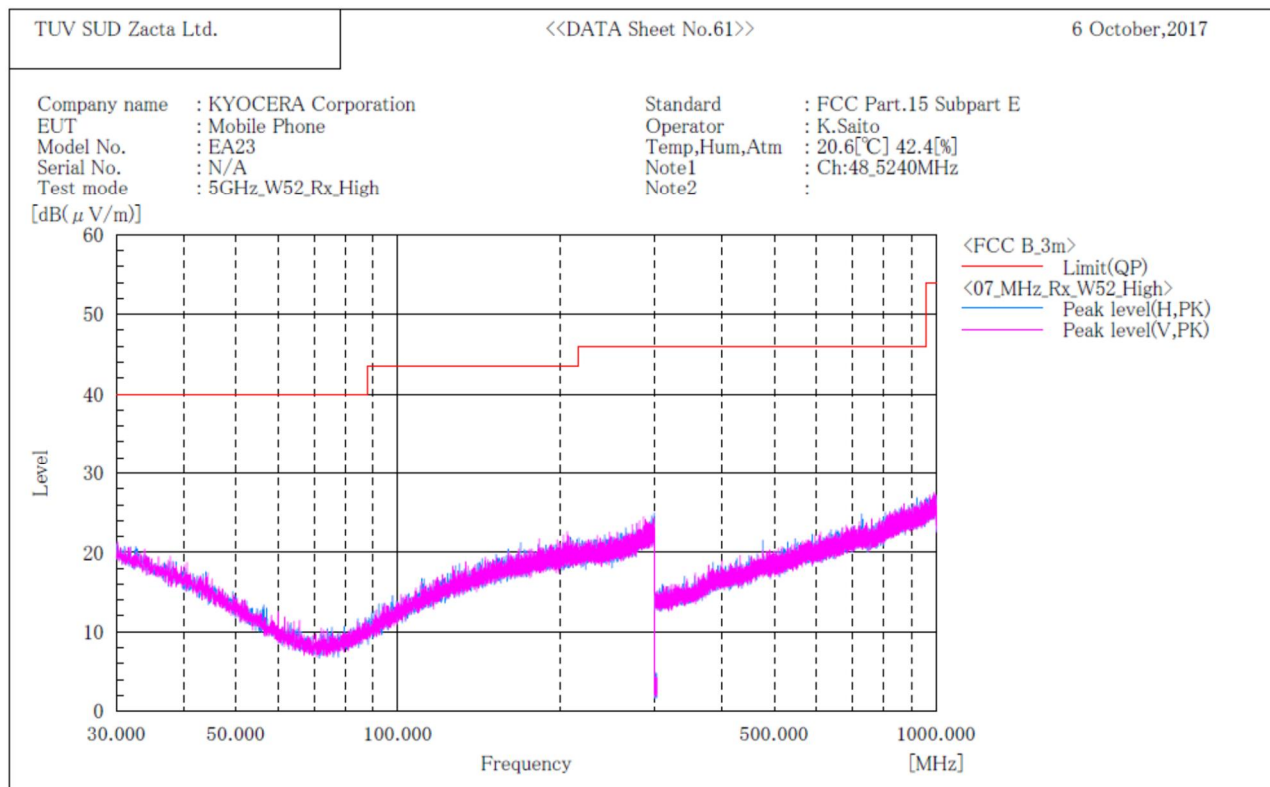
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



Zacta

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:

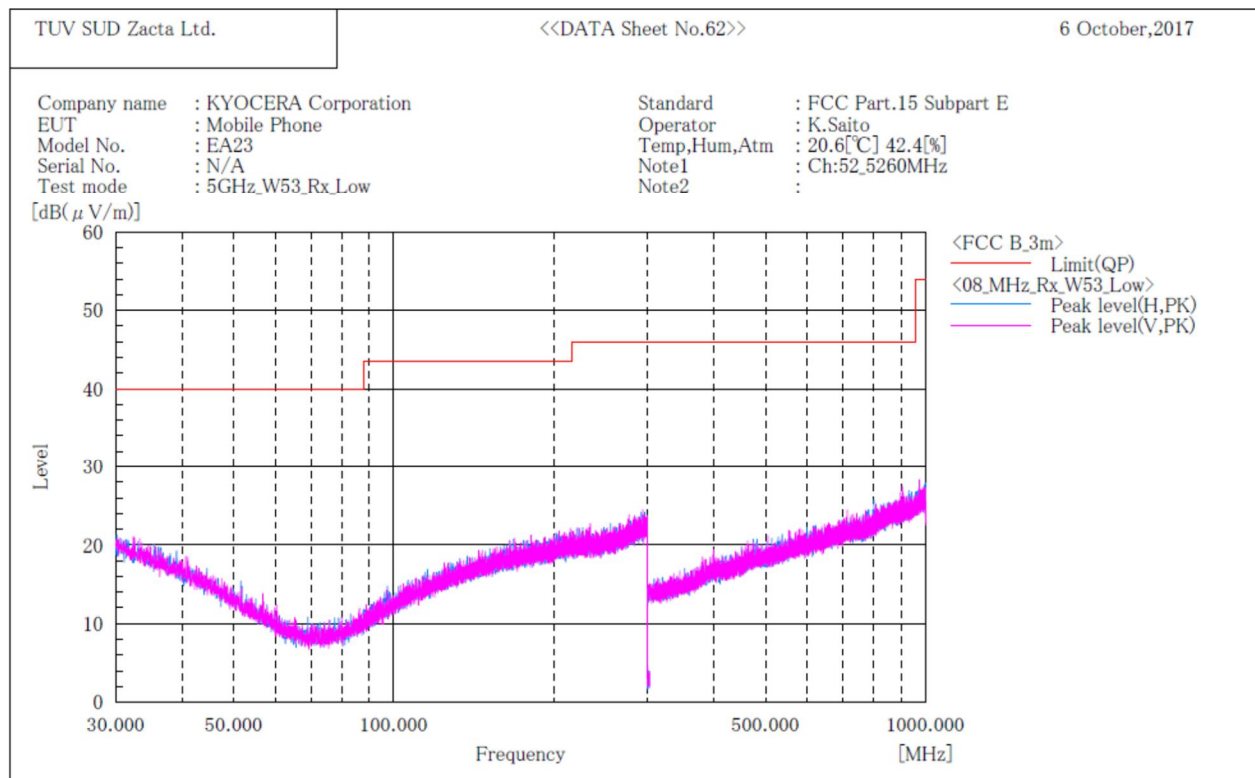
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



Zacta

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:

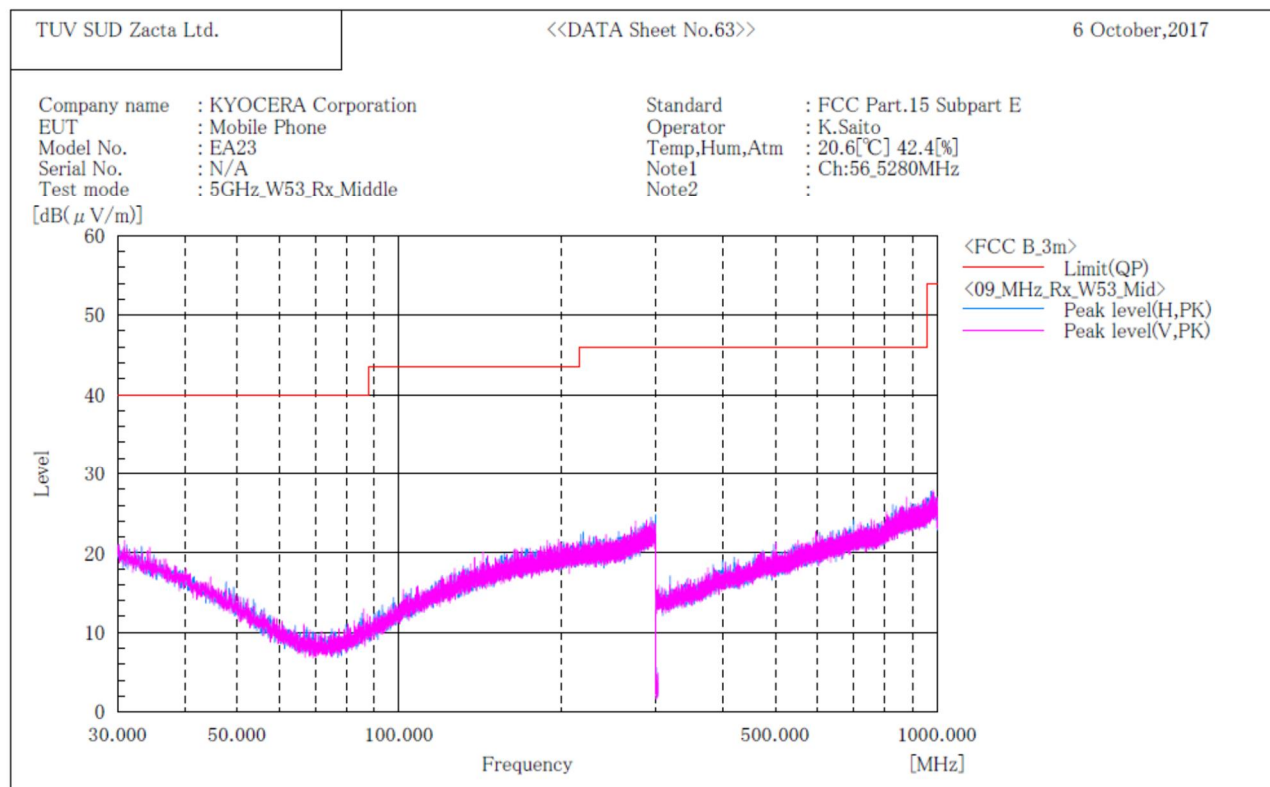
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



Zacta

W53 / Channel Middle BELOW 1GHz

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



Final Result

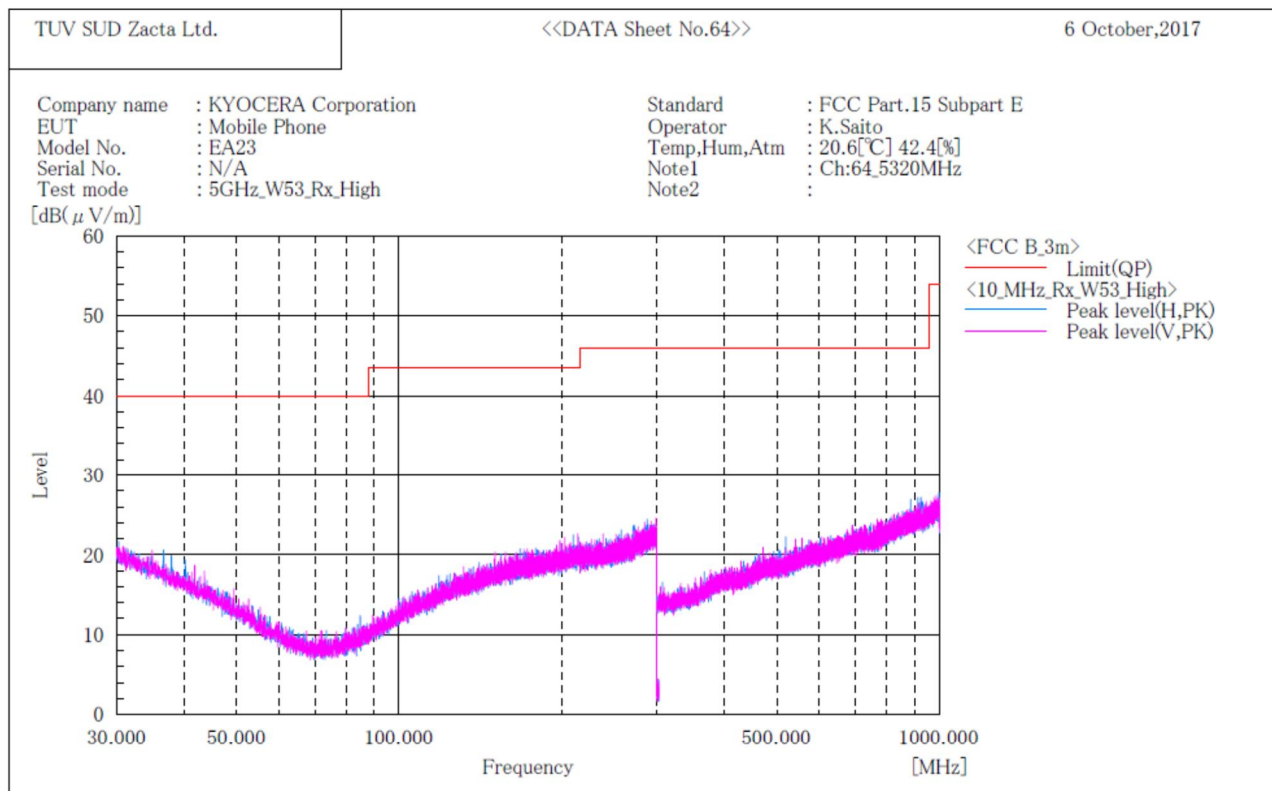
No.	Frequency (P)	c.f	Height	Angle	Remark
	[MHz]	[dB(1/m)]	[cm]	[°]	

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:

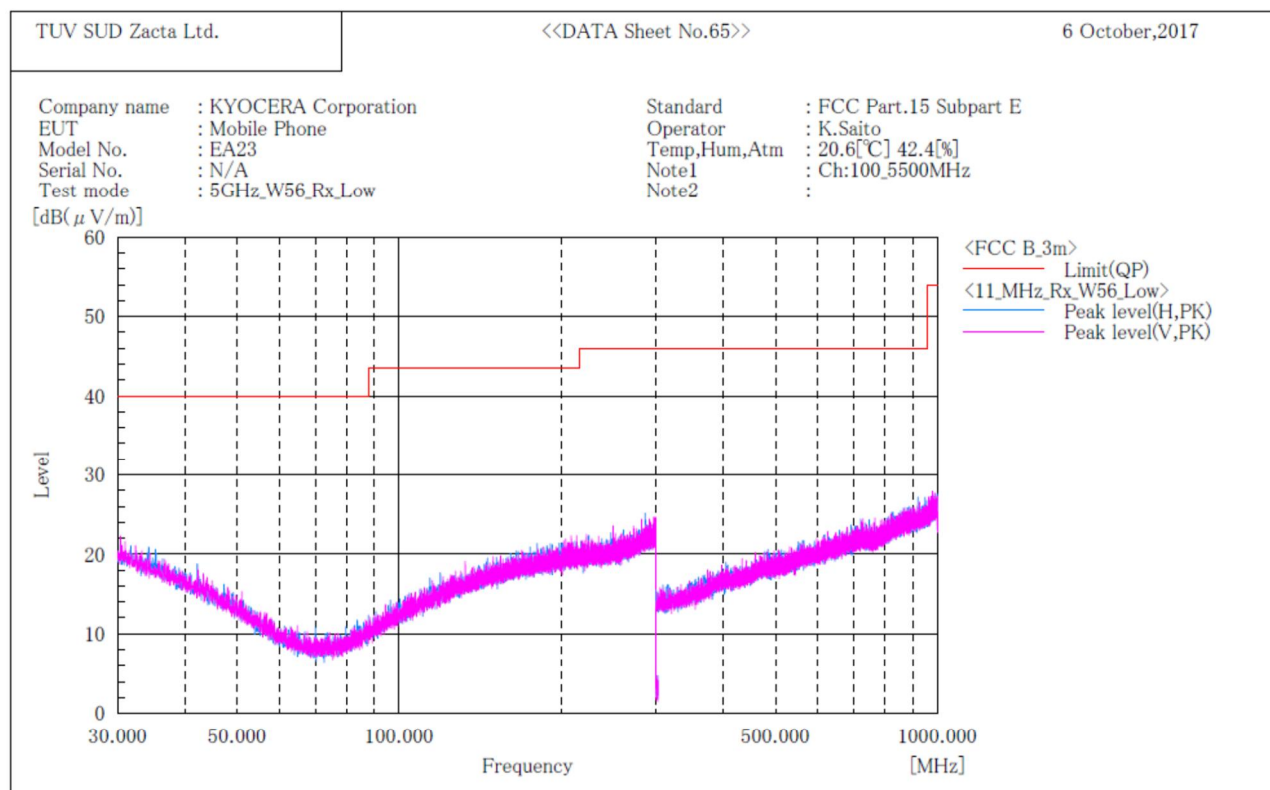
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



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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:

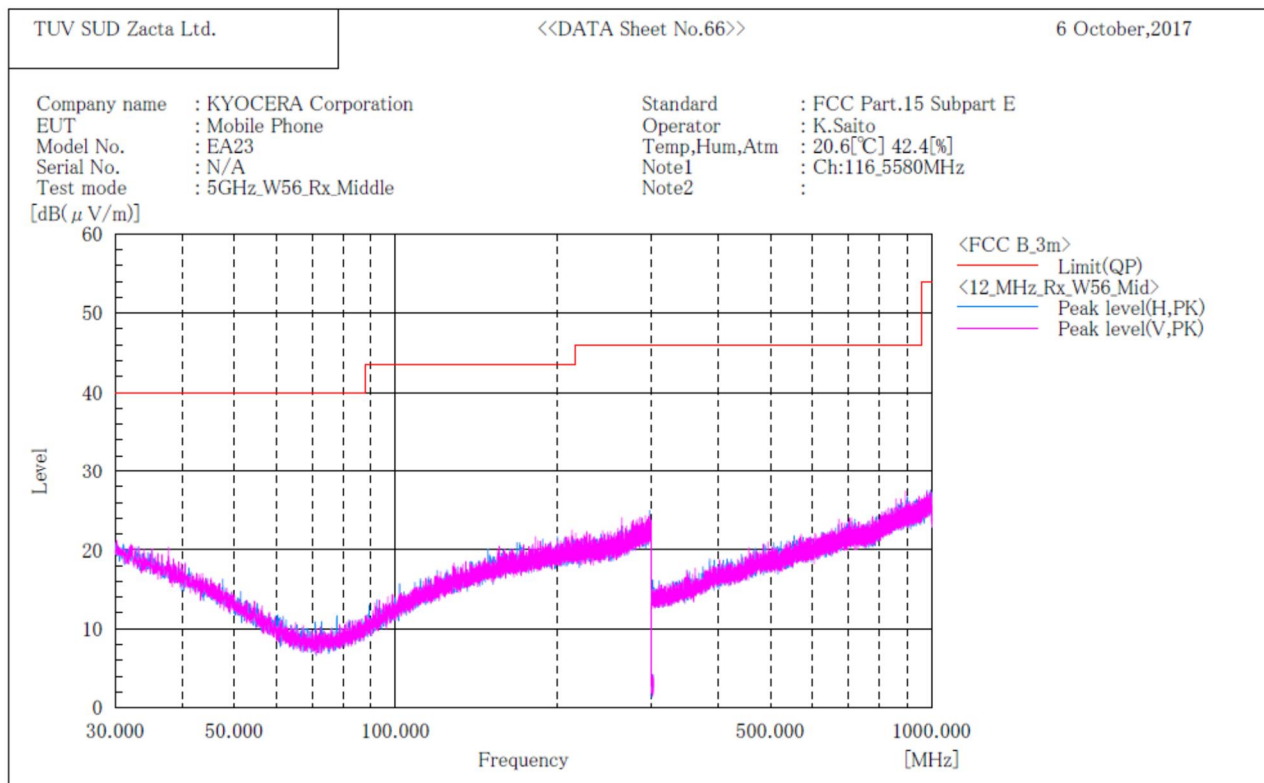
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



Zacta

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:

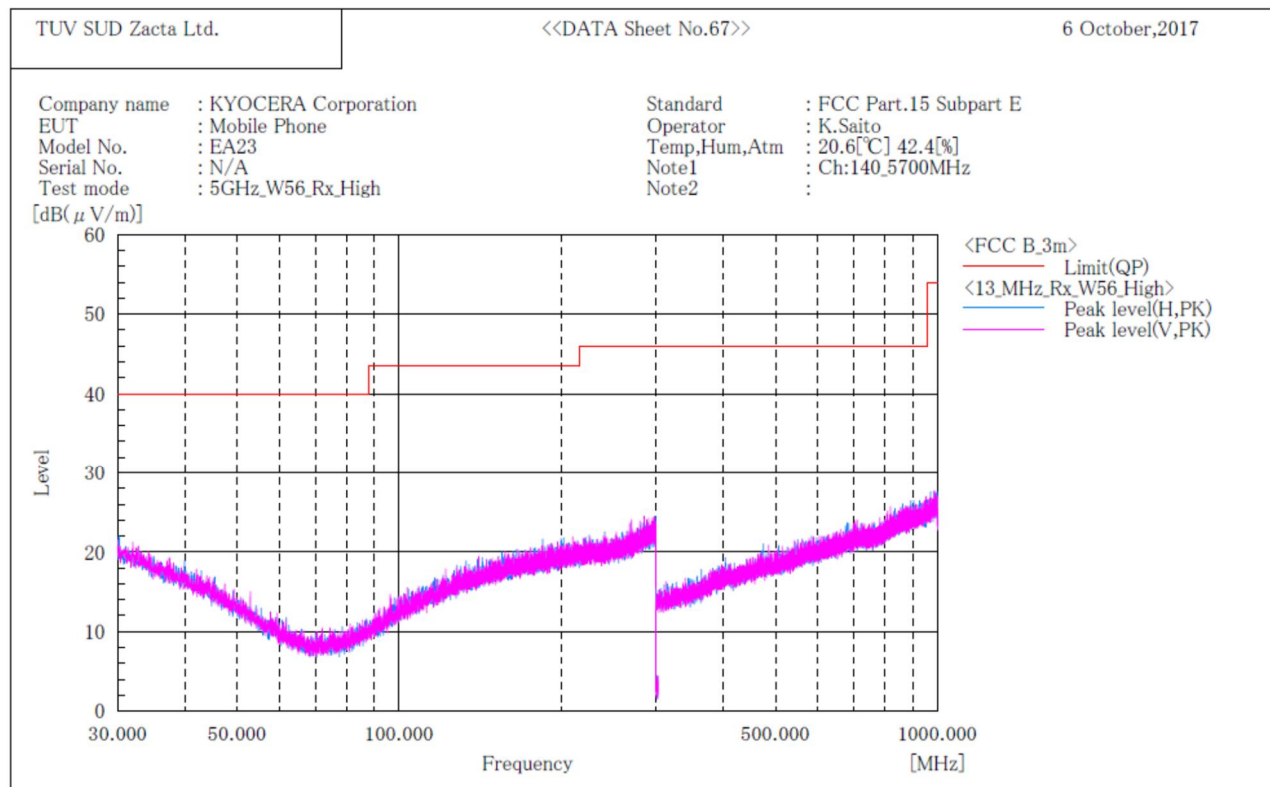
- Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



Zacta

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.

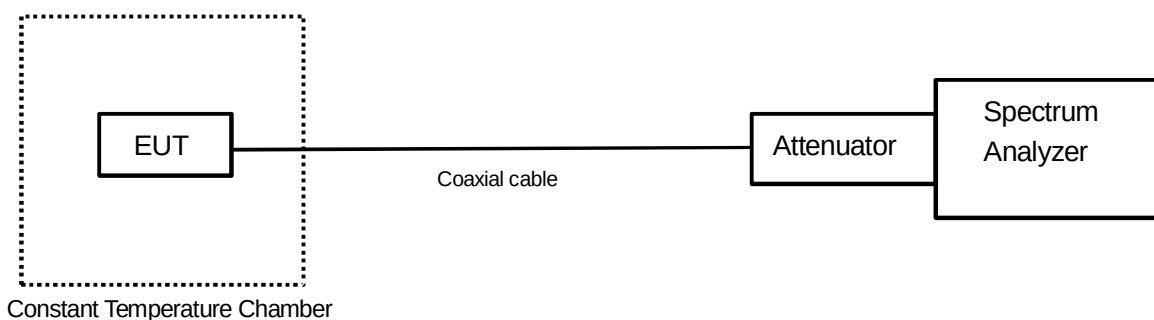
The EUT was set to operate with the following conditions.

- 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 : September 4, 2017
 Temperature : 22.2 [°C]
 Humidity : 53.9 [%]
 Test place : Shielded room No.4

Test engineer :
 Chiaki Kanno

[Channel: 36 (5180MHz)]

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.)	5180025907	0.00000000	5180021513	-0.84825831	5180028739	0.54671541	5180034161	1.59342832
	60	5180017769	-1.57103461	5180028581	0.51621363	5180029622	0.71717788	5180030930	0.96968627
	50	5180020750	-0.99555487	5180026643	0.14208423	5180025386	-0.10057865	5180027071	0.22470930
	40	5180020860	-0.97431945	5180022259	-0.70424358	5180015449	-2.01890882	5180018380	-1.45308154
	30	5180018721	-1.38725175	5180020914	-0.96389479	5180021447	-0.86099955	5180012388	-2.60983251
	20	5180020124	-1.11640368	5180004140	-4.20210254	5180023793	-0.40810607	5180019434	-1.24960765
	10	5180016052	-1.90250014	5180028225	0.44748811	5180011957	-2.69303672	5180019317	-1.27219441
	0	5180017286	-1.66427739	5180026599	0.13359007	5180013535	-2.38840504	5180020738	-0.99787146
	-10	5180025354	-0.10675622	5180028166	0.43609821	5180027324	0.27355076	5180015774	-1.95616782
	-20	5180033561	1.47759879	5180025246	-0.12760554	5180027345	0.27760479	5180041030	2.91948347
	-30	5180015261	-2.05520208	5180013117	-2.46909962	5180019485	-1.23976214	5179990838	-6.77004336
3.42	25	5180014968	-2.11176550	5180037277	2.19496972	5180100436	-2.98666460	5180025411	-0.09575242
4.18	25	5180022960	-0.56891607	5180014478	-2.20635962	5180007762	-3.50287823	5180034599	1.67798389

[Channel: 64 (5320MHz)]

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.)	5320011472	0.00000000	5320018433	1.30845583	5320028340	3.17066985	5320024479	2.44491954
	60	5319997335	-2.65732510	5319988815	-4.25882540	5320013784	0.43458553	5320026709	2.86409157
	50	5320011453	-0.00357142	5320024018	2.35826559	5320023207	2.20582231	5320011328	-0.02706761
	40	5320016583	0.96071221	5320005481	-1.12612539	5320013210	0.32669102	5320015345	0.72800595
	30	5319999846	-2.18533363	5320015762	0.80638924	5320009360	-0.39699163	5319997115	-2.69867839
	20	5320013372	0.35714209	5320012247	0.14567638	5320020530	1.70262791	5320015325	0.72424656
	10	5320015018	0.66653992	5320021470	1.87931926	5320024887	2.52161110	5320022139	2.00507086
	0	5320027626	3.03645962	5320029676	3.42179713	5320021121	1.81371789	5320032453	3.94378849
	-10	5320032001	3.85882627	5320039533	5.27461269	5320027698	3.04999342	5320036965	4.79190696
	-20	5320026824	2.88570806	5320028254	3.15450448	5320029008	3.29623349	5320020637	1.72274065
	-30	5320008974	-0.46954786	5320007363	-0.77236676	5320015495	0.75620138	5320007773	-0.69529925
3.42	25	5320037659	4.92235781	5320031267	3.72085664	5320032301	3.91521712	5320040711	5.49604078
4.18	25	5320026057	2.74153544	5320018096	1.24511010	5320003393	-1.51860575	5320014627	0.59304383



Zacta

[Channel: 140 (5700MHz)]

Power Supply	Temperature	Measurements Frequency (startup)	Frequency Tolerance (startup)	Measurements Frequency (2mins)	Frequency Tolerance (2mins)	Measurements Frequency (5mins)	Frequency Tolerance (5mins)	Measurements Frequency (10mins)	Frequency Tolerance (10mins)
[V]	[°C]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]
3.80	25(Ref.)	5700032614	0.00000000	5700009051	-4.13383600	5700015871	-2.93735161	5700023995	-1.51209661
	60	5700023717	-1.56086826	5700009430	-4.06734515	5700020477	-2.12928606	5700034871	0.39596265
	50	5700014944	-3.09998226	5700014357	-3.20296413	5700018617	-2.45559998	5700003083	-5.18084755
	40	5700021417	-1.96437473	5700023550	-1.59016634	5700003491	-5.10926901	5700003024	-5.19119837
	30	5700009027	-4.13804650	5699996413	-6.35101629	5700011618	-3.68348770	5700013002	-3.44068207
	20	5700013885	-3.28577067	5700008339	-4.25874756	5700008904	-4.15962532	5700005258	-4.79927079
	10	5700007966	-4.32418578	5700023481	-1.60227153	5700029817	-0.49069895	5700034672	0.36105057
	0	5700018398	-2.49402082	5700032370	-0.04280677	5700041813	1.61385042	5700032455	-0.02789458
	-10	5700029489	-0.54824248	5700032577	-0.00649119	5700034960	0.41157659	5700047238	2.56559936
	-20	5700030496	-0.37157682	5700034665	0.35982250	5700031344	-0.22280574	5700024476	-1.42771113
	-30	5700040164	1.32455382	5700025566	-1.23648415	5700017053	-2.72998438	5699998107	-6.05382501
3.42	25	5700004427	-4.94505942	5700027447	-0.90648604	5700030524	-0.36666457	5700017730	-2.61121313
4.18	25	5700031824	-0.13859570	5699993000	-6.94978480	5700006627	-4.55909672	5700027203	-0.94929281

9. AC Power Line Conducted Emissions

9.1 Measurement procedure [FCC 15.207]

Test was applied by following conditions.

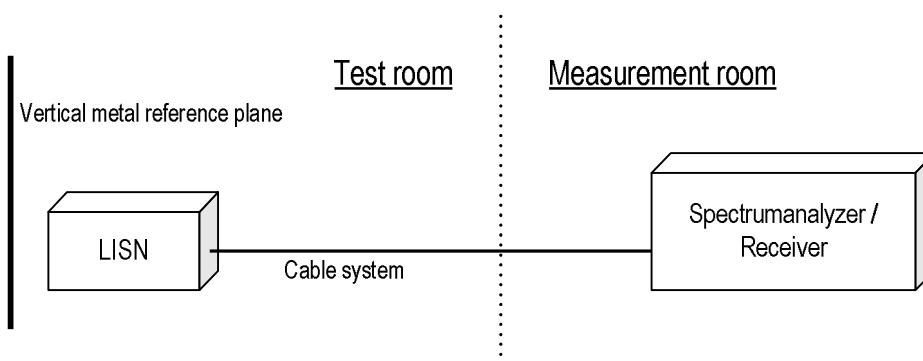
Test method	: ANSI C63.10
Frequency range	: 0.15MHz to 30MHz
Test place	: 3m Semi-anechoic chamber
EUT was placed on	: FRP table / (W)2.0m × (D)1.0m × (H)0.8m
Vertical Metal Reference Plane	: (W)2.0m × (H)2.0m 0.4m away from EUT
Test receiver setting	
- Detector	: Quasi-peak, Average
- Bandwidth	: 9kHz

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

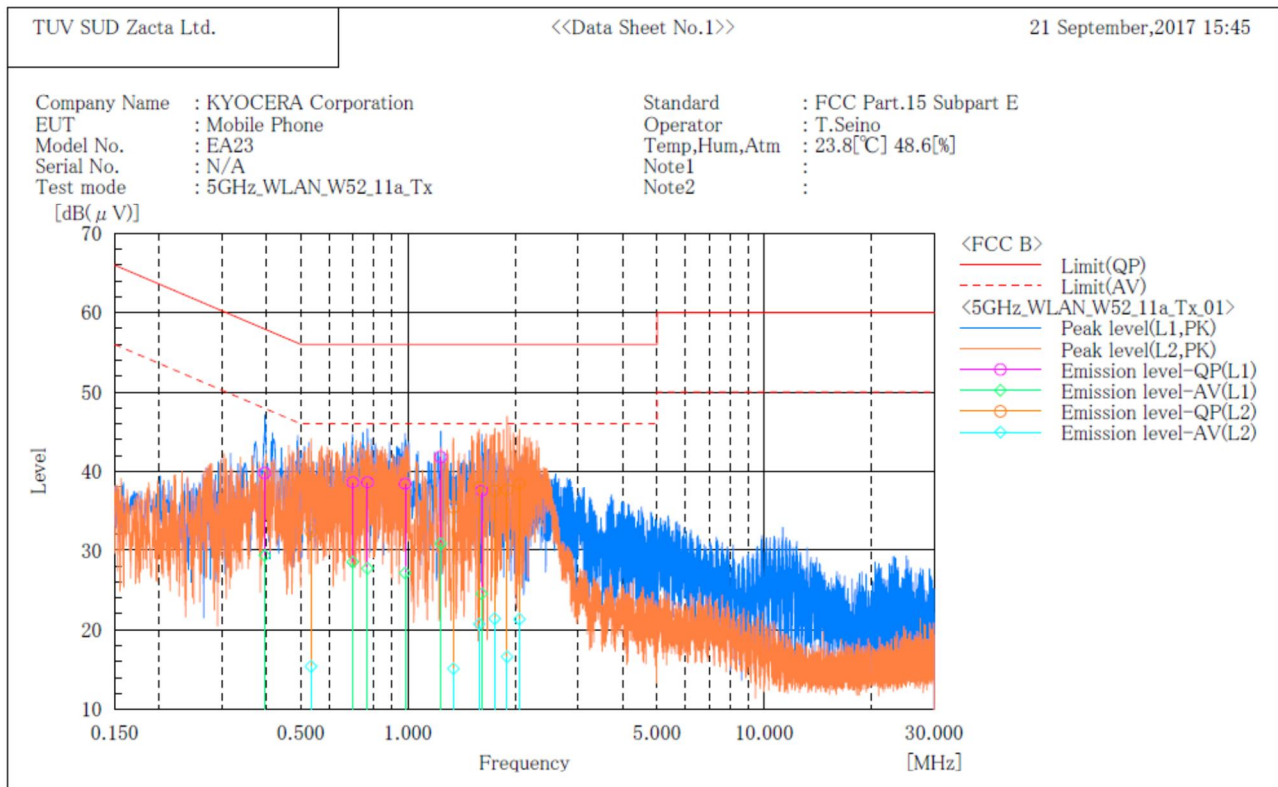
*: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

Date : September 21, 2017
 Temperature : 23.8 [°C]
 Humidity : 28.6 [%]
 Test place : 3m Semi-anechoic chamber

Test engineer :
 Tadahiro Seino

9.4 Test data

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

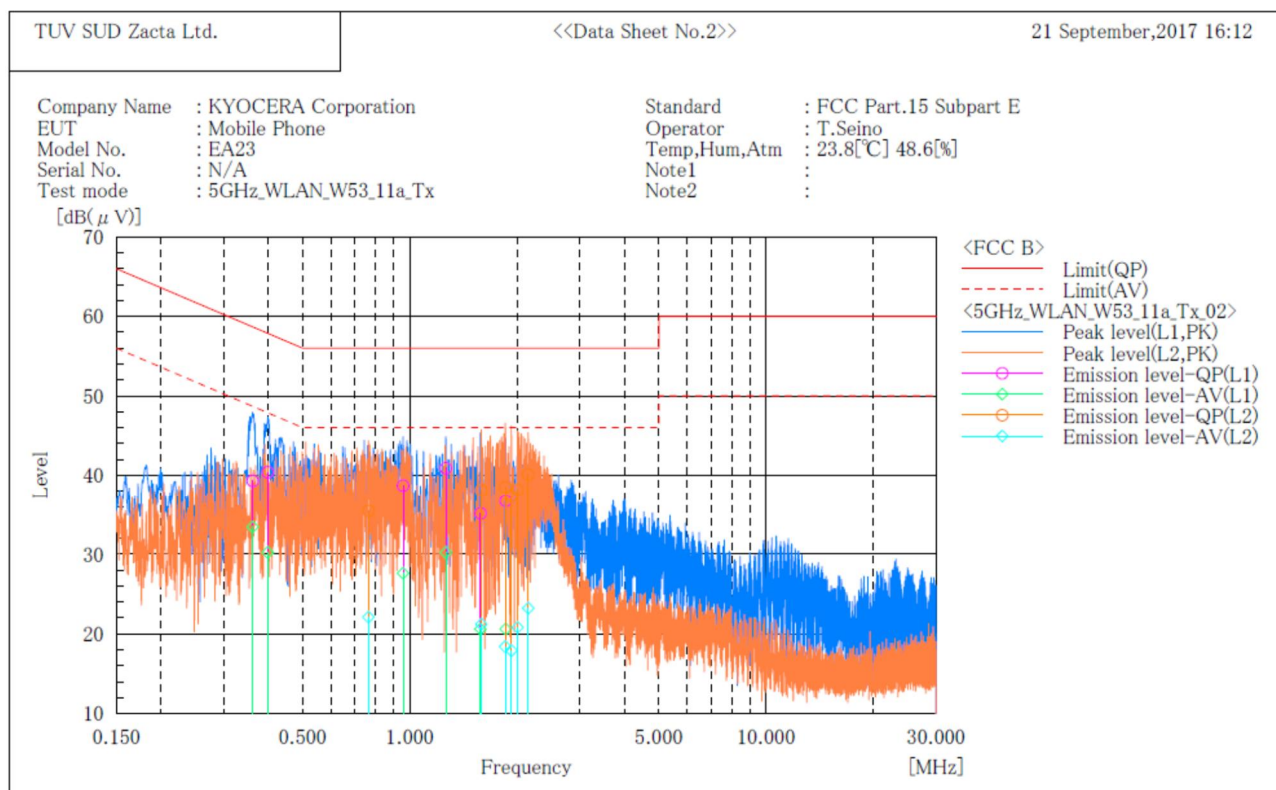


Final Result

--- L1 Phase ---										
No.	Frequency	Reading	Reading	c. f	Result	Result	Limit	Limit	Margin	Margin
	[MHz]	QP	AV		QP	AV	QP	AV	QP	AV
		[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.396	29.4	18.9	10.4	39.8	29.3	57.9	47.9	18.1	18.6
2	0.700	28.2	18.1	10.4	38.6	28.5	56.0	46.0	17.4	17.5
3	0.769	28.2	17.3	10.4	38.6	27.7	56.0	46.0	17.4	18.3
4	0.981	28.0	16.7	10.4	38.4	27.1	56.0	46.0	17.6	18.9
5	1.235	31.4	20.4	10.4	41.8	30.8	56.0	46.0	14.2	15.2
6	1.610	27.1	14.1	10.4	37.5	24.5	56.0	46.0	18.5	21.5

--- L2 Phase ---										
No.	Frequency	Reading	Reading	c. f	Result	Result	Limit	Limit	Margin	Margin
	[MHz]	QP	AV		QP	AV	QP	AV	QP	AV
		[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.534	22.0	5.0	10.4	32.4	15.4	56.0	46.0	23.6	30.6
2	1.340	25.0	4.7	10.4	35.4	15.1	56.0	46.0	20.6	30.9
3	1.583	27.6	10.3	10.4	38.0	20.7	56.0	46.0	18.0	25.3
4	1.751	26.8	10.7	10.7	37.5	21.4	56.0	46.0	18.5	24.6
5	1.896	27.1	6.1	10.5	37.6	16.6	56.0	46.0	18.4	29.4
6	2.054	27.9	10.8	10.5	38.4	21.3	56.0	46.0	17.6	24.7

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



Final Result

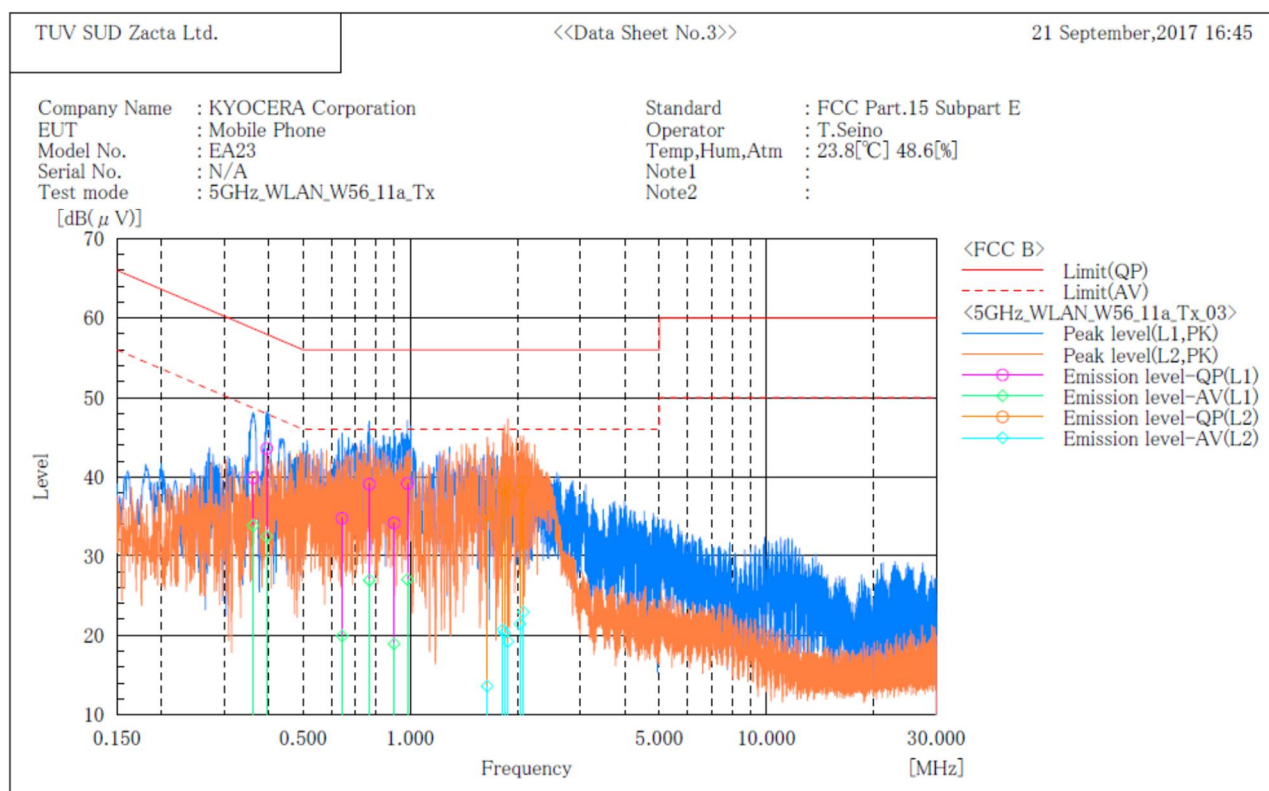
--- L1 Phase ---

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]	Remark
1	0.362	28.9	23.0	10.4	39.3	33.4	58.7	48.7	19.4	15.3	
2	0.399	30.0	19.8	10.4	40.4	30.2	57.9	47.9	17.5	17.7	
3	0.957	28.3	17.2	10.4	38.7	27.6	56.0	46.0	17.3	18.4	
4	1.262	30.5	19.8	10.4	40.9	30.2	56.0	46.0	15.1	15.8	
5	1.578	24.7	10.2	10.4	35.1	20.6	56.0	46.0	20.9	25.4	
6	1.858	26.3	10.2	10.4	36.7	20.6	56.0	46.0	19.3	25.4	

--- 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]	Remark
1	0.765	25.0	11.7	10.4	35.4	22.1	56.0	46.0	20.6	23.9	
2	1.586	27.7	10.8	10.4	38.1	21.2	56.0	46.0	17.9	24.8	
3	1.852	28.0	7.9	10.5	38.5	18.4	56.0	46.0	17.5	27.6	
4	1.927	26.8	7.4	10.5	37.3	17.9	56.0	46.0	18.7	28.1	
5	2.005	27.7	10.3	10.5	38.2	20.8	56.0	46.0	17.8	25.2	
6	2.149	29.6	12.7	10.5	40.1	23.2	56.0	46.0	15.9	22.8	

***** 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]	Remark
1	0.362	29.5	23.4	10.4	39.9	33.8	58.7	48.7	18.8	14.9	
2	0.395	33.2	22.0	10.4	43.6	32.4	58.0	48.0	14.4	15.6	
3	0.643	24.3	9.5	10.4	34.7	19.9	56.0	46.0	21.3	26.1	
4	0.767	28.7	16.5	10.4	39.1	26.9	56.0	46.0	16.9	19.1	
5	0.900	23.7	8.5	10.4	34.1	18.9	56.0	46.0	21.9	27.1	
6	0.981	28.8	16.6	10.4	39.2	27.0	56.0	46.0	16.8	19.0	

--- 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]	Remark
1	1.644	24.8	3.2	10.4	35.2	13.6	56.0	46.0	20.8	32.4	
2	1.817	28.1	10.2	10.5	38.6	20.7	56.0	46.0	17.4	25.3	
3	1.837	28.7	9.8	10.5	39.2	20.3	56.0	46.0	16.8	25.7	
4	1.881	27.4	8.7	10.5	37.9	19.2	56.0	46.0	18.1	26.8	
5	2.032	27.7	10.9	10.5	38.2	21.4	56.0	46.0	17.8	24.6	
6	2.077	28.8	12.4	10.5	39.3	22.9	56.0	46.0	16.7	23.1	

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

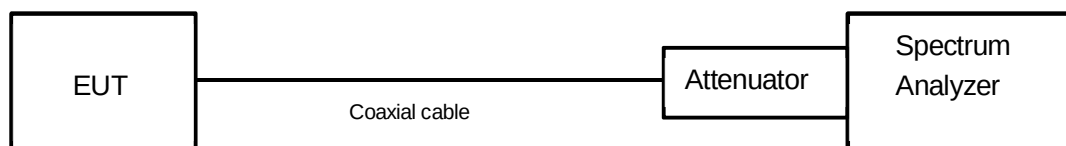
The EUT was set to operate with following conditions.

- 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 : September 1, 2017
Temperature : 24.2 [°C]
Humidity : 55.8 [%]
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	1.364	1.372	0.994	733.1	0.025	0.051
	40	5200						
	48	5240						
	52	5260	1.364	1.374	0.993	733.1	0.032	0.063
	56	5280						
	64	5320						
	100	5500	1.364	1.374	0.993	733.1	0.032	0.063
	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						
	48	5240						
	52	5260	1.274	1.284	0.992	784.9	0.034	0.068
	56	5280						
	64	5320						
	100	5500	1.274	1.284	0.992	784.9	0.034	0.068
	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	0.645	0.986	1572.3	0.061	0.122
	46	5230						
	54	5270	0.635	0.645	0.984	1574.8	0.068	0.136
	62	5310						
	102	5510	0.636	0.645	0.986	1572.3	0.061	0.122
	110	5550						
	134	5670						

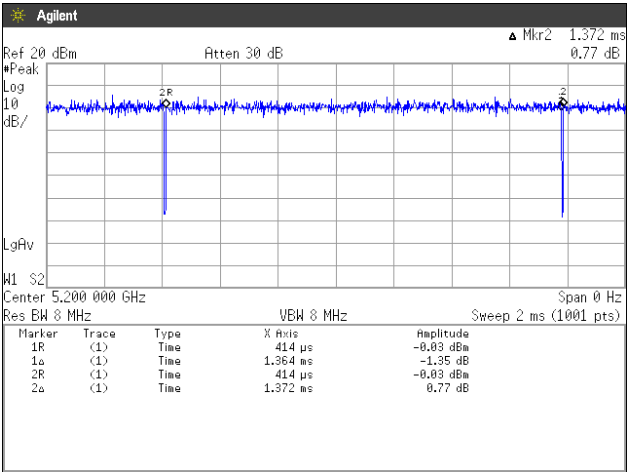
Note: X = On time / (On + Off time)

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	0.2480	0.2579	0.962	4032.3	0.170	0.340
	58	5290	0.2475	0.2579	0.960	4040.4	0.179	0.358
	106	5530	0.2480	0.2579	0.962	4032.3	0.170	0.340
	122	5610	0.2480	0.2579	0.962	4032.3	0.170	0.340

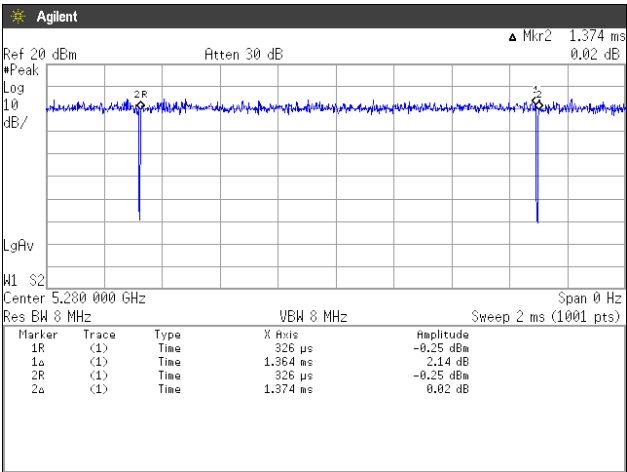
Note: X = On time / (On + Off time)

10.4 Trace data
[IEEE802.11a]

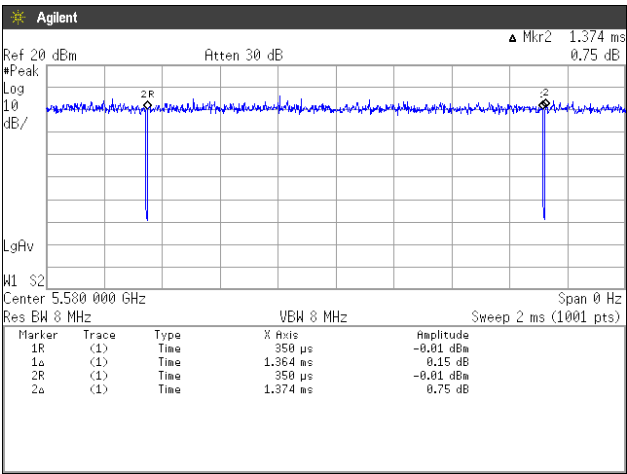
Channel: 40



Channel: 56

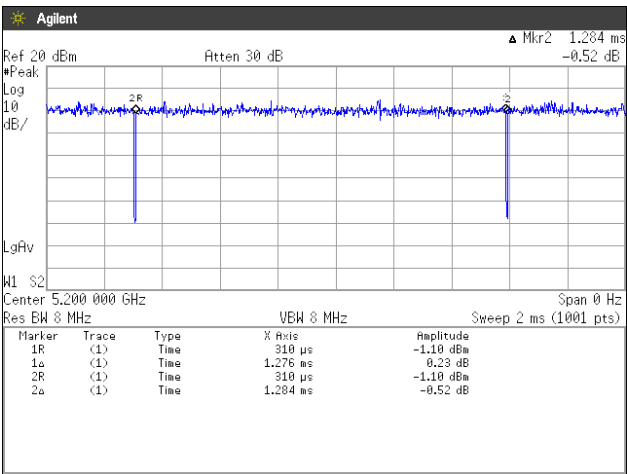


Channel: 116

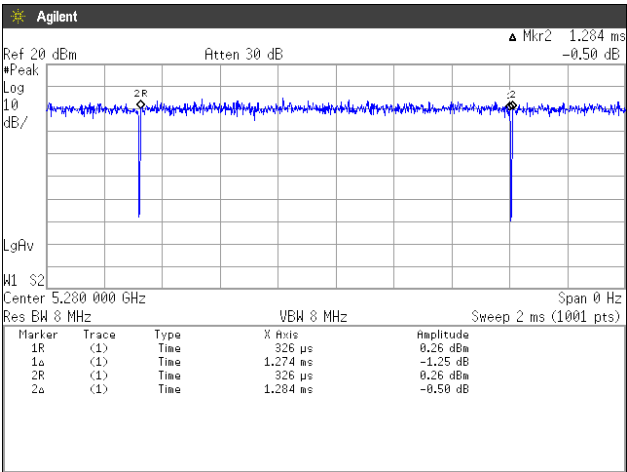


[IEEE802.11n (HT20)]

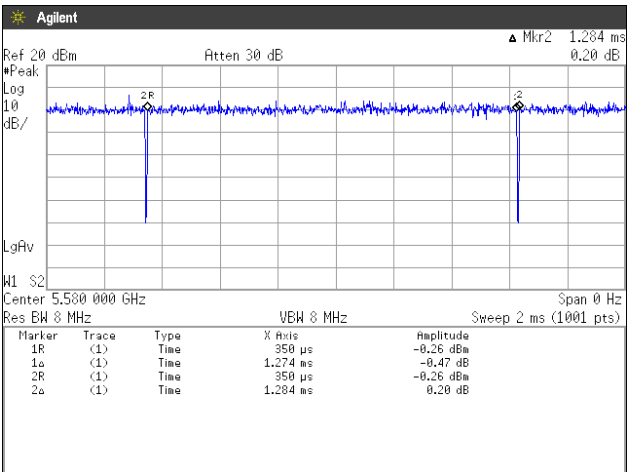
Channel: 40



Channel: 56

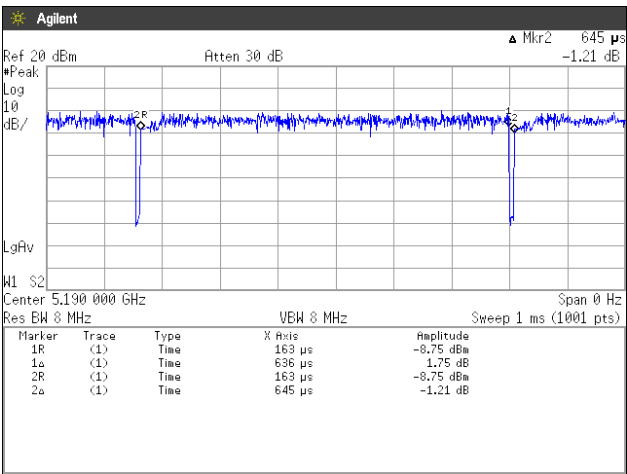


Channel: 116

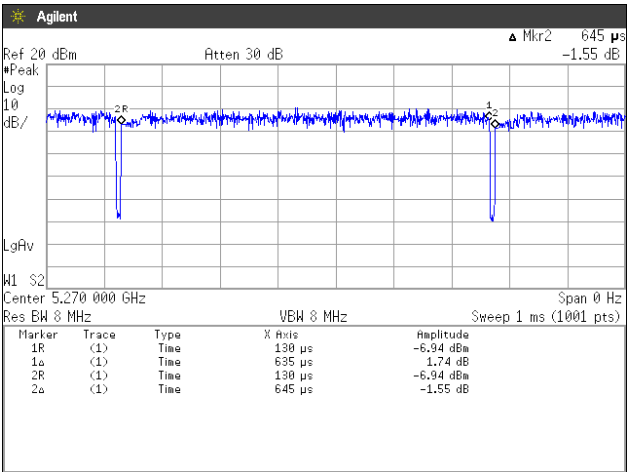


[IEEE802.11n (HT40)]

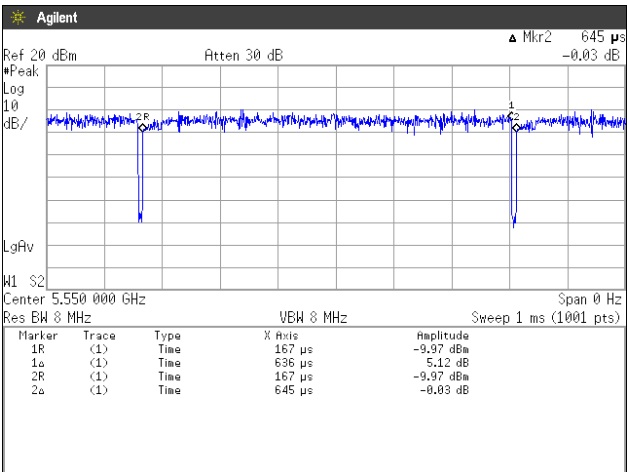
Channel: 38



Channel: 54

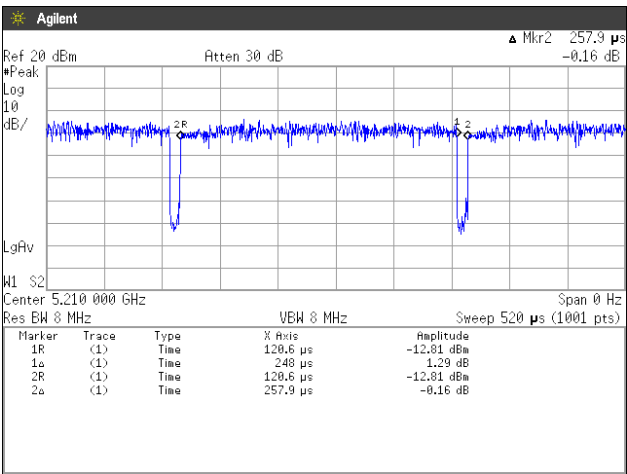


Channel: 110

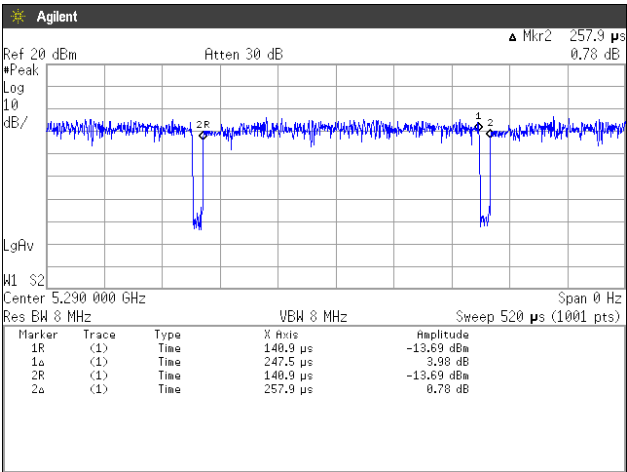


[IEEE802.11ac (HT80)]

Channel: 42

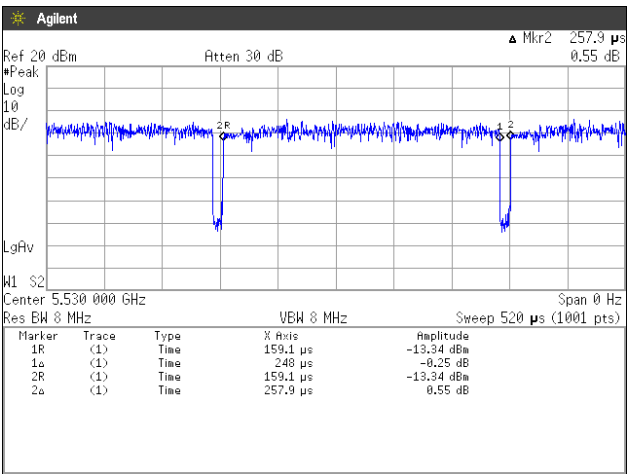


Channel: 58

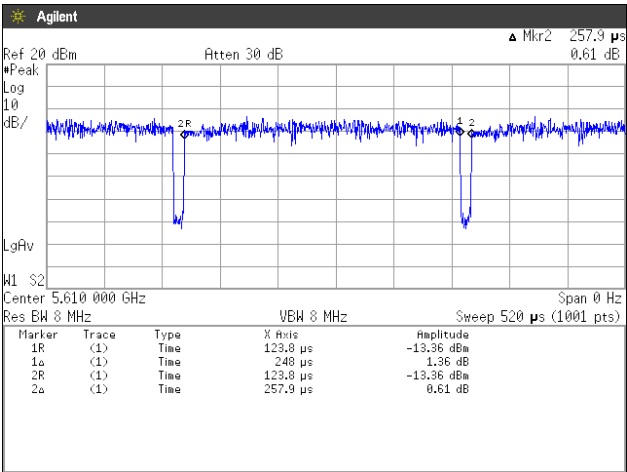


[IEEE802.11ac (HT80)]

Channel: 106



Channel: 122





Zacta

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, AMN (9kHz – 150kHz)	$\pm 3.8\text{dB}$
Conducted emission, AMN (150kHz – 30MHz)	$\pm 3.3\text{dB}$
Radiated emission (9kHz – 30MHz)	$\pm 3.0\text{dB}$
Radiated emission (30MHz – 1000MHz)	$\pm 4.7\text{dB}$
Radiated emission (1GHz – 6GHz)	$\pm 4.9\text{dB}$
Radiated emission (6GHz – 26GHz)	$\pm 5.2\text{dB}$

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	2019-07-03

Appendix A. Test equipment

Antenna port conducted test

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
Spectrum analyzer	Agilent Technologies	E4440A	US44302655	Jun. 30, 2018	Jun. 28, 2017
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	100765	Sep. 30, 2017	Sep. 8, 2016
				Sep. 30, 2018	Sep. 13, 2017
Spectrum analyzer	Agilent Technologies	E4447A	MY46180188	Mar. 31, 2018	Mar. 15, 2017
Preamplifier	ANRITSU	MH648A	M96057	Feb. 28, 2018	Feb. 1, 2017
Loop antenna	ROHDE&SCHWARZ	HFH2-Z2	100515	Feb. 28, 2018	Feb. 17, 2017
Attenuator	TDC	TAT-43B-06	N/A(S209)	May 31, 2018	May 23, 2017
Biconical antenna	Schwarzbeck	VHA9103/BBA9106	2155	Jul. 31, 2018	Jul. 18, 2017
Log periodic antenna	Schwarzbeck	UHALP9108A	0560	Jul. 31, 2018	Jul. 18, 2017
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, 2018	May 24, 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, 2018	Jun. 7, 2017
Double ridged guide antenna	A.H.Systems Inc.	SAS-574	469	Aug. 31, 2018	Aug. 8, 2017
Preamplifier	TSJ	MLA-1840-B03-35	1240332	Aug. 31, 2018	Aug. 8, 2017
Notch filter	Micro-Tronics	BRM50716	006	Jul. 31, 2018	Jul. 20, 2017
Microwave cable	HUBER+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	MY32976/4	Dec. 31, 2017	Dec. 2, 2016
		SUCOFLEX104/1.5m	MY19309/4	Feb. 28, 2018	Feb. 3, 2017
		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, 2018	May 30, 2017
3m Semi an-echoic Chamber	TOKIN	N/A	N/A(9002-SVSWR)	May 31, 2018	May 31, 2017

Conducted emission at mains port

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESCI	100765	Sep. 30, 2017	Sep. 8, 2016
				Sep. 30, 2018	Sep. 13, 2017
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-407F2	12-17-110-2	Apr. 30, 2018	Apr. 25, 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	HUBER+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.