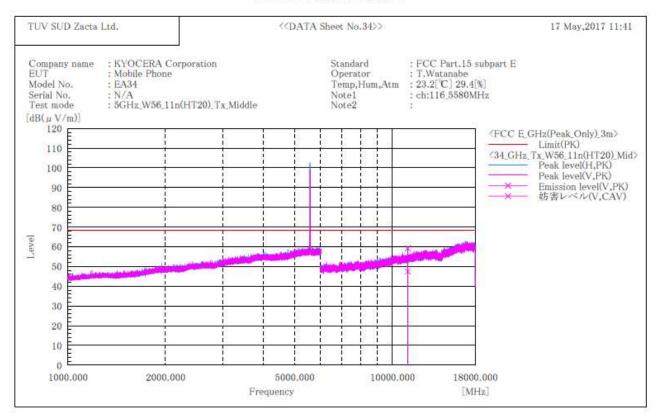


[11n(HT20)] W56 / Channel Middle ABOVE 1GHz

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



Final Result

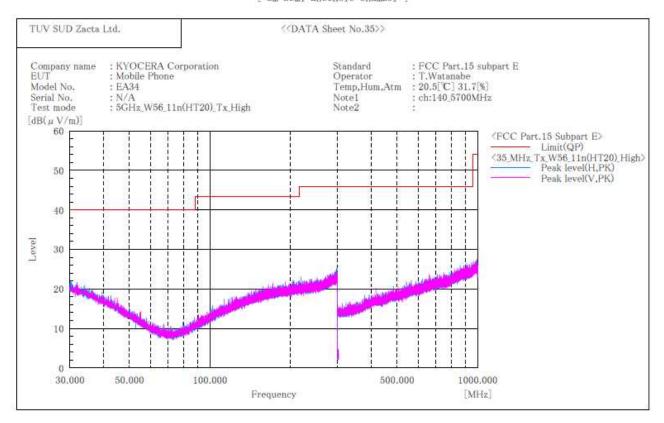
No.	Frequency	(P)	Reading	Reading	c. f	Result	Result	Limit	Margin	Margin	Height	Angle	Remark
			PK	CAV		PK	CAV	PK	PK	CAV			
	[MHz]		[dB(µV)]	[dB(µV)]	[dB(1/m)]	[dB(µV/m)]	$[dB(\mu V/m)]$	[dB (µ V/m)]	[dB]	[dB]	[cm]		
- 1	11160,000	V	47.8	36.1	11.4	59.2	47.5	74.0	14.8	6.5	107.0	74.0	

- 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]



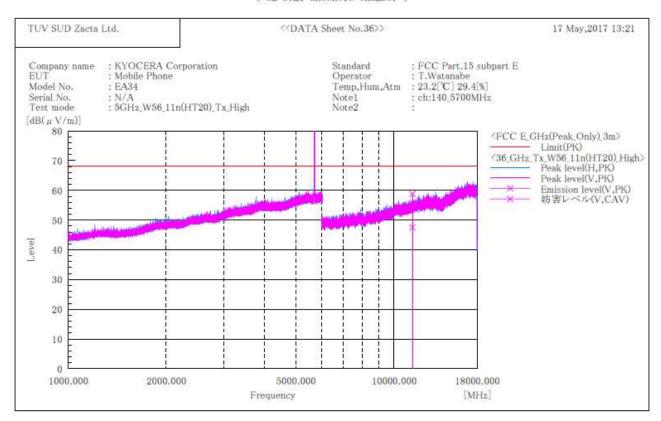
Final Result

- 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

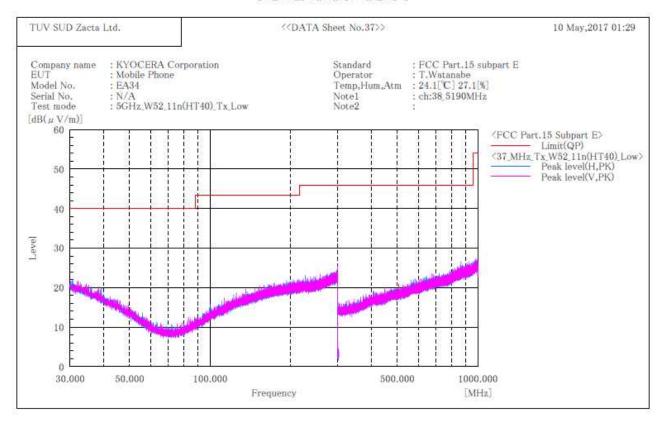
No.	Frequency	(P)	Reading	Reading	c. f	Result	Result	Limit	Margin	Margin	Height	Angle	Remark
			PK	CAV		PK	CAV	PK	PK	CAV			
	MHz		[dB(μV)]	[dB(uV)]	[dB(1/m)]	[dB(µV/m)]	[dB(\(V/m)]	$[dB(\mu V/m)]$	[dB]	[dB]	[cm]	(°)	
1	11400, 000	V	47.2	35, 9	11.6	58.8	47.5	74.0	15, 2	6.5	132.0	69.0	

- 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)] W52 / Channel Low BELOW 1GHz

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



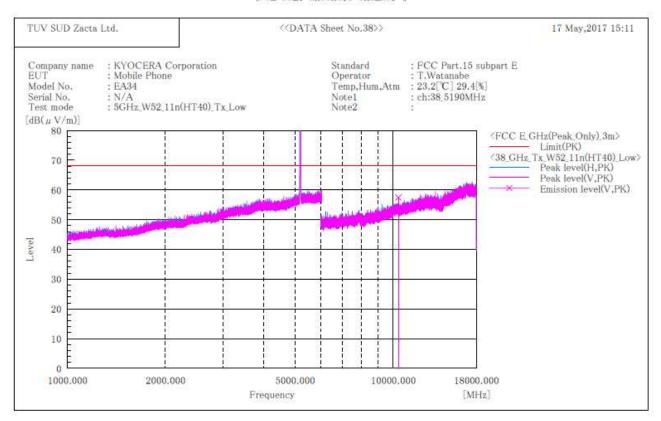
Final Result

- 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 Low ABOVE 1GHz

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



Final Result

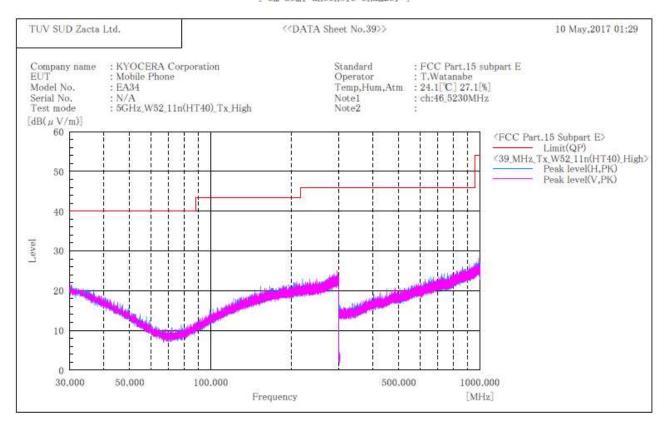
No.	Frequency	(P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μ V/m)]	PK [dB]	[cm]	["]	
1	10380,000	V	47.2		57. 5		10.7	106.0	31.0	

- 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)] W52 / Channel High BELOW 1GHz

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



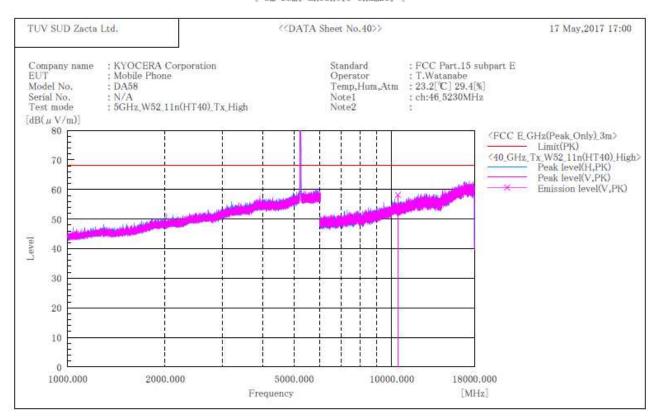
Final Result

- 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

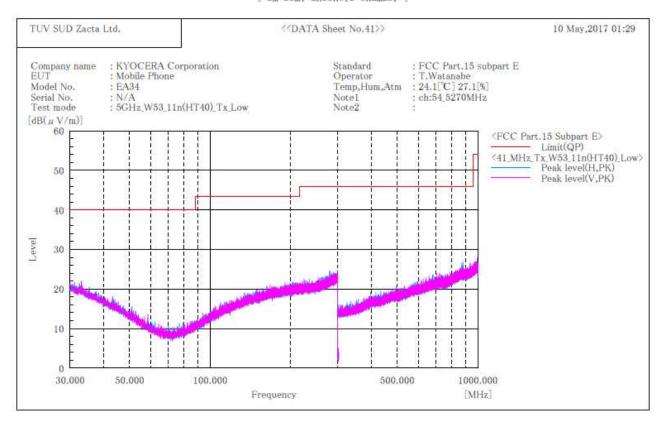
No.	Frequency	(P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
			PK		PK	PK	PK			
	[MHz]		$[dB(\mu V)]$	[dB(1/m)]	$[dB(\mu V/m)]$	$[dB(\mu V/m)]$	[dB]	[cm]	[°]	
1	10460.000	V	47, 7	10.5	58. 2	68, 2	10.0	113.0	238.0	

- 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]



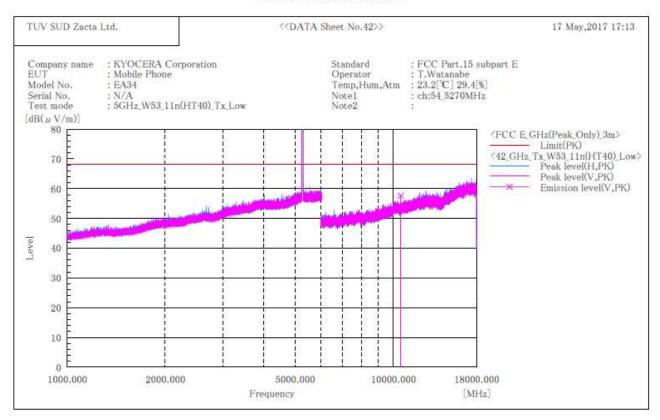
Final Result

- 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

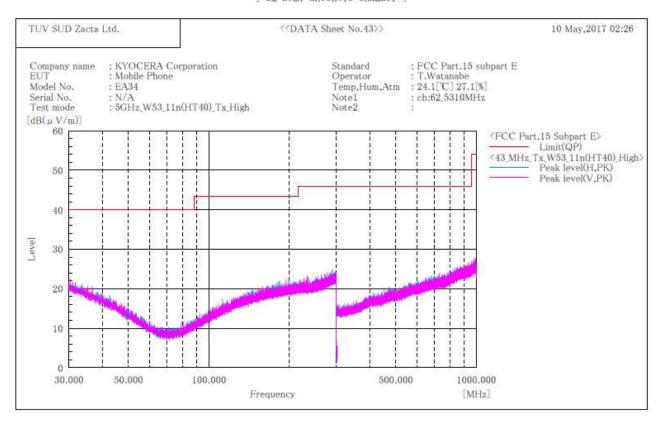
No.	Frequency	(P)	Reading	c. f	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	[0]	
1	10540, 000	V					10.5	146, 0	321.0	

- 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]



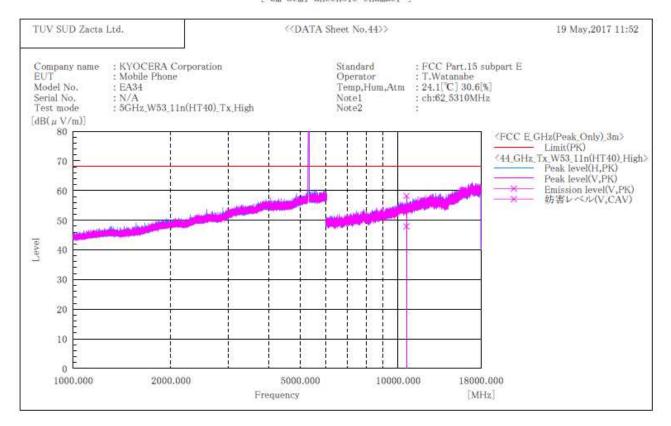
Final Result

- 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]





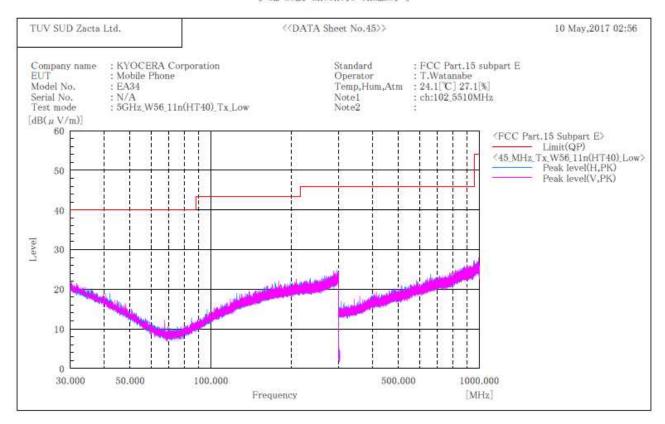
No.	Frequency	(P)	Reading	Reading	c.f	Result	Result	Limit	Margin	Margin	Height	Angle	Remark
			PK	CAV		PK	CAV	PK	PK	CAV			
	[MHz]		[dB(µV)]	[dB(µV)]	[dB(1/m)]	[dB(µV/m)]	[dB(µV/m)]	[dB (\(V / n)]	[dB]	[dB]	[cm]	[]	
1	10620.000	V	46.9	36, 6	11.3	58. 2	47.9	74.0	15, 8	6. 1	124.0	158.0	

- 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

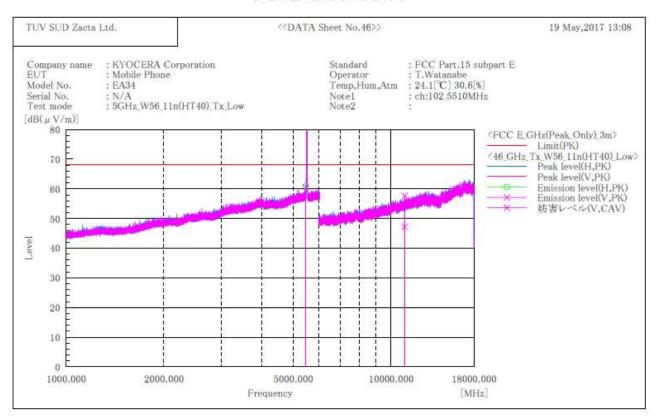
- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



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

****** RADIATED EMISSION ******

[3m Semi-anechoic chamber]



1000		Name Control	
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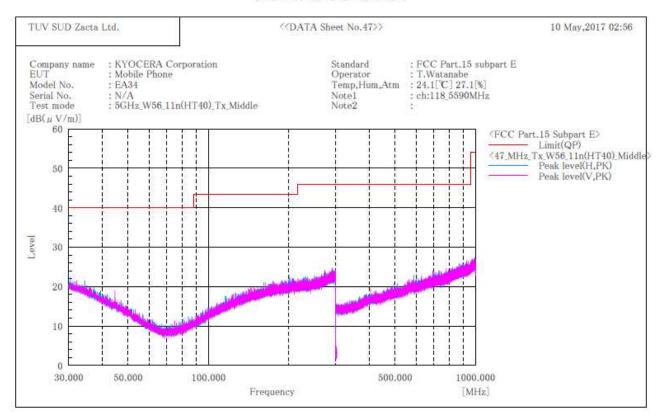
No.	Frequency	(F)	Reading PK	Reading CAV	c. f	Result PK	Result CAV	Limit PK	Margin PK	Margin CAV	Height	Angle	Remark
1	[MHz] 5468,000	Н	[dB(μV)] 50.6	[dB(µV)]		[dB(µV/m)] 60.8	$[dB(\mu V/m)]$	[dB(µV/m)] 68.2	[dB] 7.4	[dB]	[cm] 144.0	25.0	
2	5468, 100	¥	50.3		10.2	60.5		68. 2	7.7		206.0	276.0	
3	11020, 000	¥	46.5	36.0	11, 2	57.7	47.2	74.0	16.3	6.8	103.0	75.0	

- 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 Middle BELOW 1GHz

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



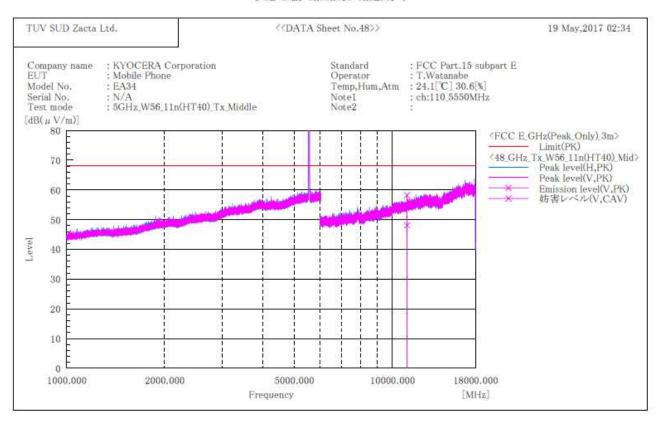
Final Result

- 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]



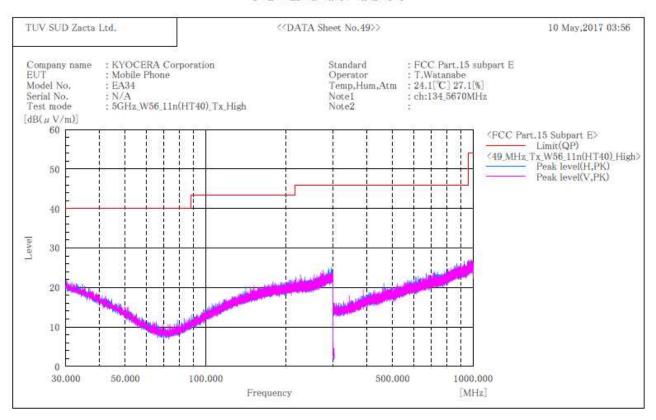


- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



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

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



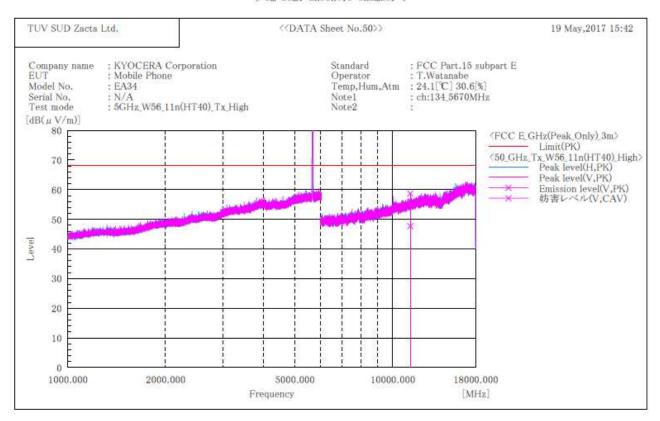
Final Result

- 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

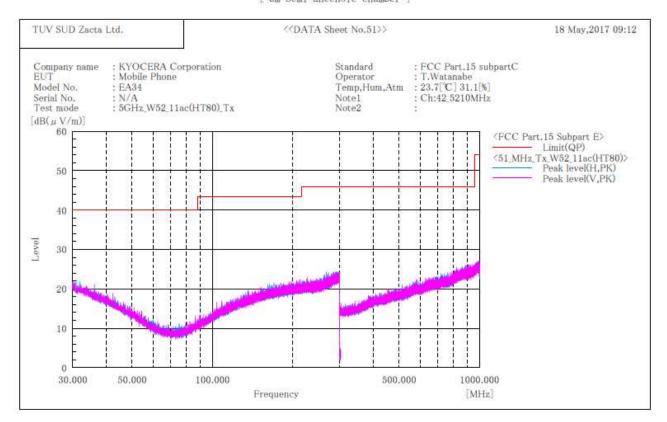
No.	Frequency	(P)	Reading	Reading	c. f	Result	Result	Limit	Margin	Margin	Height	Angle	Remark
			PK	CAV		PK	CAV	PK	PK	CAV			
	[MHz]		[dB(\(V \)]	$[dB(\mu V)]$	[dB(1/m)]			dB (μ V/m)]	[dB]	[dB]	[cm]	F-1	
1	11340,000	V	47. 2	36. 2	11.5	58. 7	47.7	74.0	15.3	6.3	103.0	0.0	

- 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]



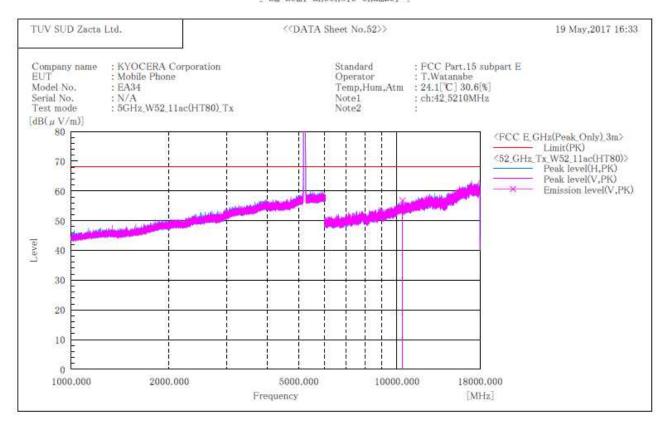
Final Result

- 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

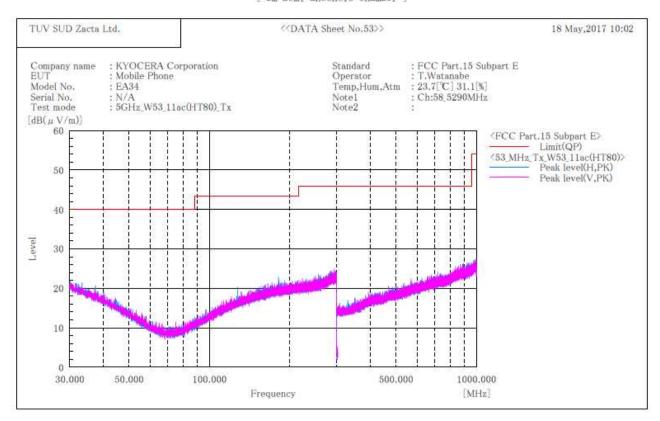
No.	Frequency	(P)	Reading PK	c. f	Result PK	Limit PK	Margin PK	Height	Angle	Remark
	[MHz]		[dB(μV)]	[dB(1/m)]	$[dB(\mu V/m)]$	$[dB(\mu V/m)]$	[dB]	[cm]	[]	
1	10420, 000	V	46. 4	10.4	56. 8	68. 2	11.4	124.0	65.0	

- 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)] W53 BELOW 1GHz

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



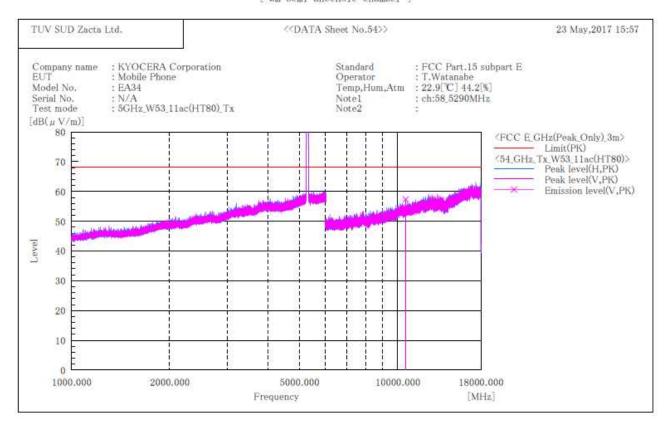
Final Result

- 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

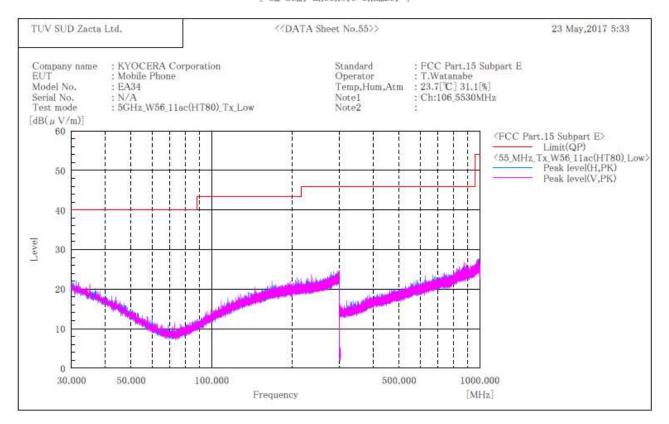
No.	Frequency	(P)			Result	Limit	Margin	Height	Angle	Remark
	[MHz]		PK [dB(μV)]	[dB(1/m)]	PK [dB(μV/m)]	PK [dB(μV/m)]	PK [dB]	[cm]	["]	
1	10580, 000	V	46.8	10.6	57.4	68. 2	10.8	107.0	212.0	

- 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]



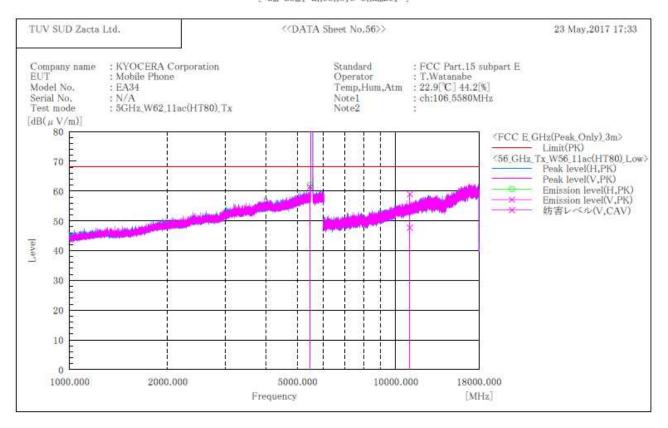
Final Result

- 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]



No.	Frequency	(P)	Reading PK	Reading CAV	c.f	Result PK	Result CAV	Limit PK	Margin PK	Margin CAV	Height		Remark
	[MHz]		[dB(µV)]	[dB(µV)]	[dB(1/m)]	[dB(µV/m)]	$[dB(\mu V/m)]$	[dB(µV/m)]	[dB]	[dB]	[cm]	[]	
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:

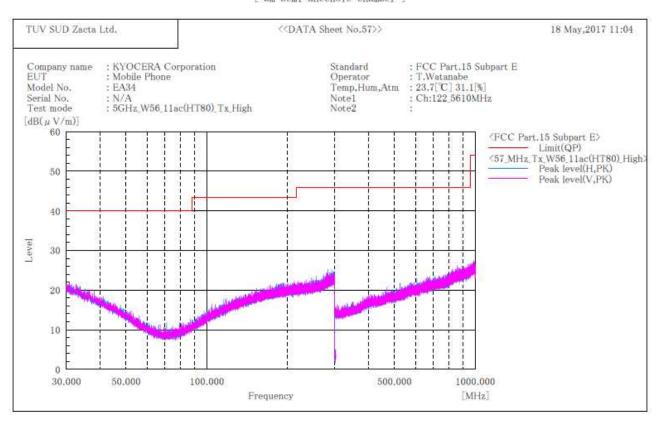
Final Result

- 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]



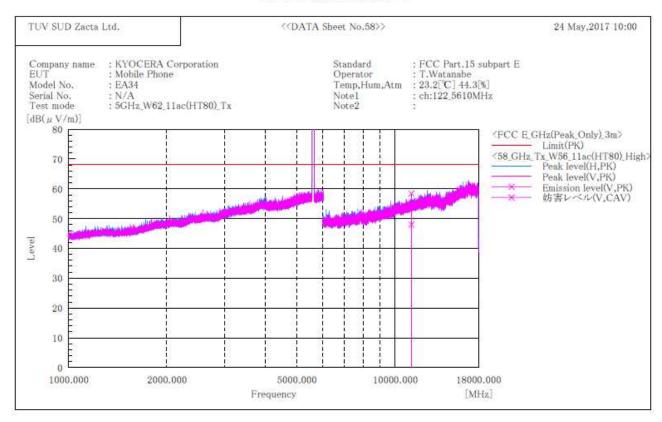
Final Result

- 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



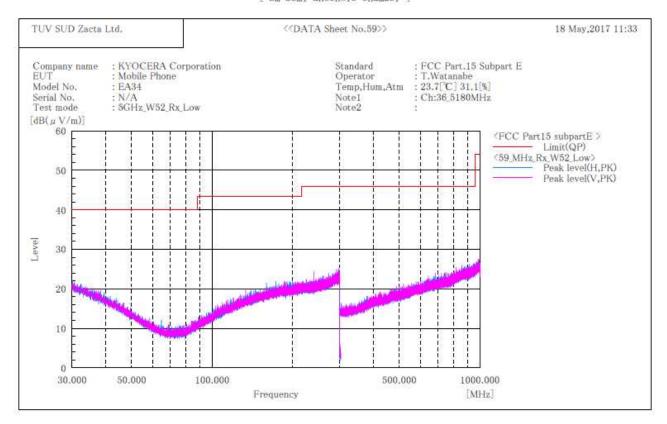
- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



7.4.4.2 Receive mode

W52 / Channel Low BELOW 1GHz

****** RADIATED EMISSION ****** I 3m Semi-anechoic chamber I



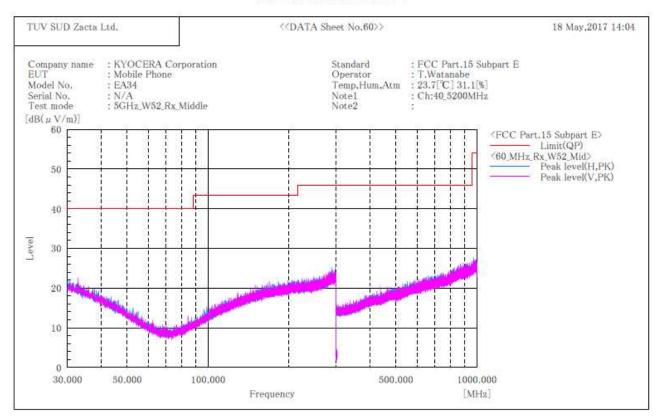
Final Result

- 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 Middle BELOW 1GHz

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



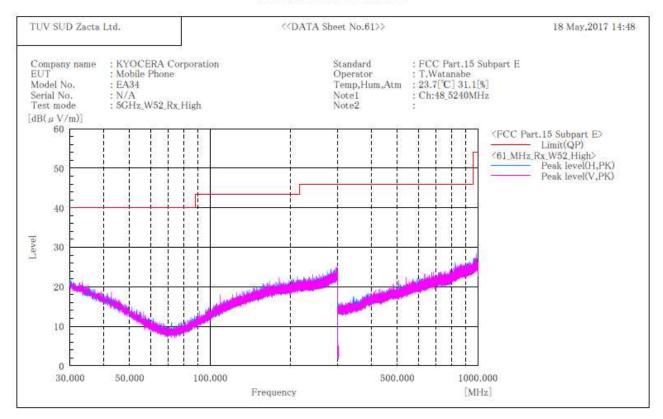
Final Result

- 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]



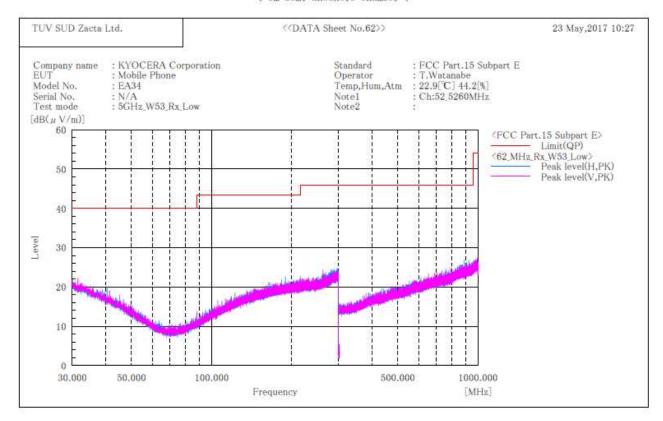
Final Result

- 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]



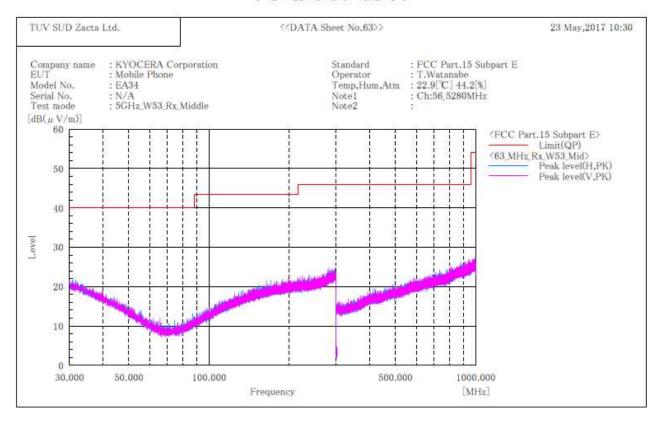
Final Result

- 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]



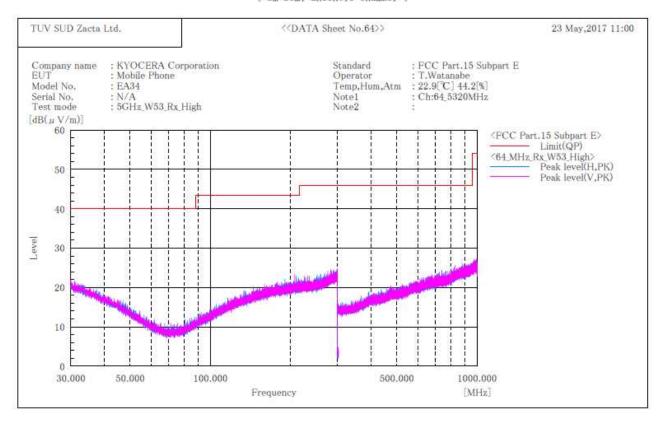
Final Result

- 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 High BELOW 1GHz

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



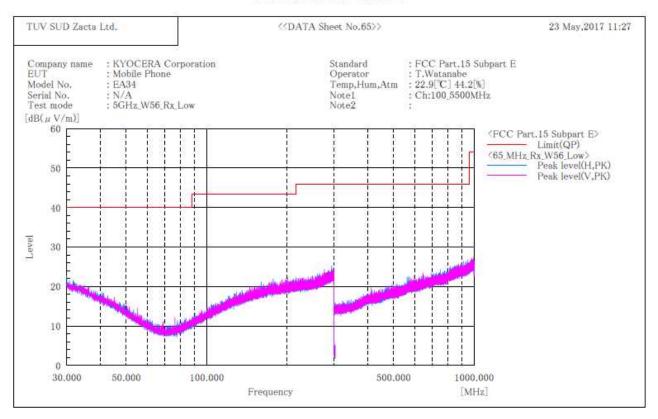
Final Result

- 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 Low **BELOW 1GHz**

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



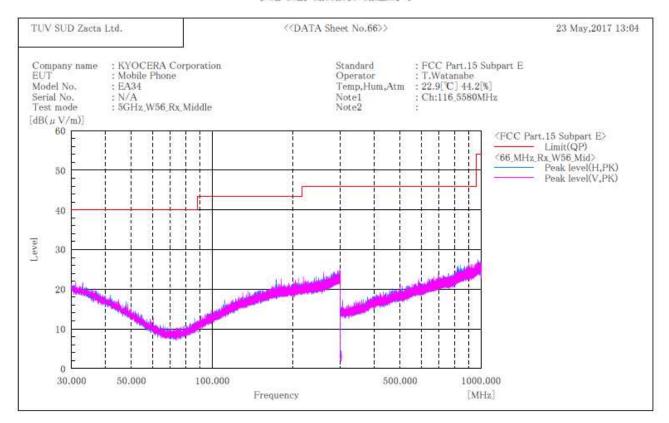
Final Result

- 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]



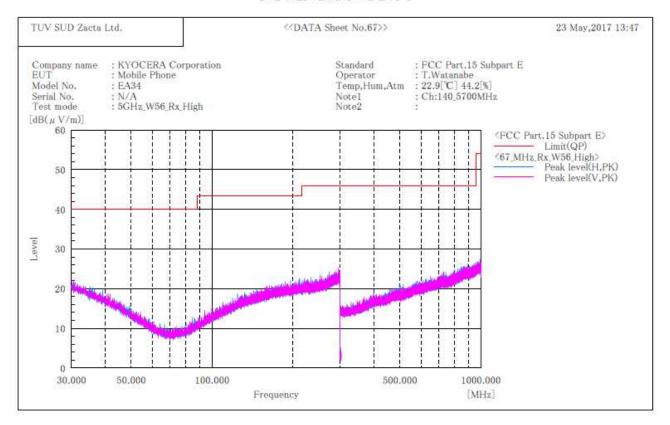
Final Result

- 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

- 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.



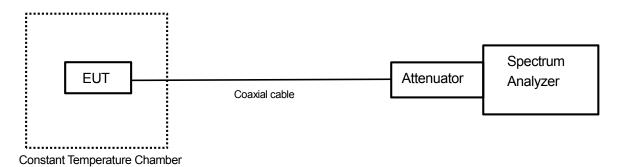
8. Frequency Stability

8.1 Measurement procedure [FCC 15.407(g)]

The EUT was placed of an inside of an constant temperature chamber as the temperature in the chamber was varied between -30°C and +60°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 channels center frequency was recorded.

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



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

May 30, 2017 Date 23.6 [°C] 49.0 [%] Temperature Humidity

Test engineer Test place Shielded room No.4 Chiaki Kanno

[Channel: 36 (5180MHz)]

		· /•							
Power		Measurements	Frequency	Measurements	Frequency	Measurements	Frequency	Measurements	Frequency
Supply	Temperature	Frequency	Tolerance	Frequency	Tolerance	Frequency	Tolerance	Frequency	Tolerance
		(startup)	(startup)	(2mins)	(2mins)	(5mins)	(5mins)	(10mins)	(10mins)
[V]	[°C]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]
	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
3.80	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)]

	161. 04 (332	Measurements	Frequency	Measurements	Frequency	Measurements	Frequency	Measurements	Frequency
Power Supply	Temperature	Frequency	Tolerance	Frequency	Tolerance	Frequency	Tolerance	Frequency	Tolerance
		(startup)	(startup)	(2mins)	(2mins)	(5mins)	(5mins)	(10mins)	(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



[Chani	nel: 140 (57	700MHz)]							
Power		Measurements	Frequency	Measurements	Frequency	Measurements	Frequency	Measurements	Frequency
Supply	Temperature	Frequency	Tolerance	Frequency	Tolerance	Frequency	Tolerance	Frequency	Tolerance
Сирріу		(startup)	(startup)	(2mins)	(2mins)	(5mins)	(5mins)	(10mins)	(10mins)
[V]	[°C]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]	[Hz]	[ppm]
	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
3.80	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 \times (D)1.0m \times (H)0.8m Vertical Metal Reference Plane : (W)2.0m \times (H)2.0m 0.4m away from EUT

Test receiver setting

- Detector : Quasi-peak, Average

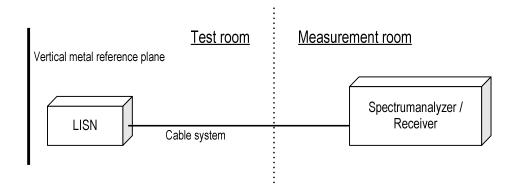
- Bandwidth : 9kHz

EUT and peripherals are connected to $50\Omega/50\mu H$ 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	Limit				
[MHz]	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 [%]

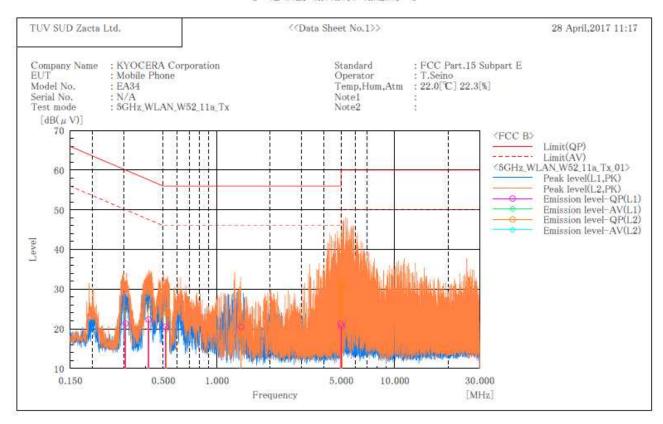
Test place : 3m Semi-anechoic chamber Tadahiro Seino

9.4 Test data

***** CONDUCTED EMISSION at MAINS PORT *****

[3m Semi-anechoic chamber]

Test engineer

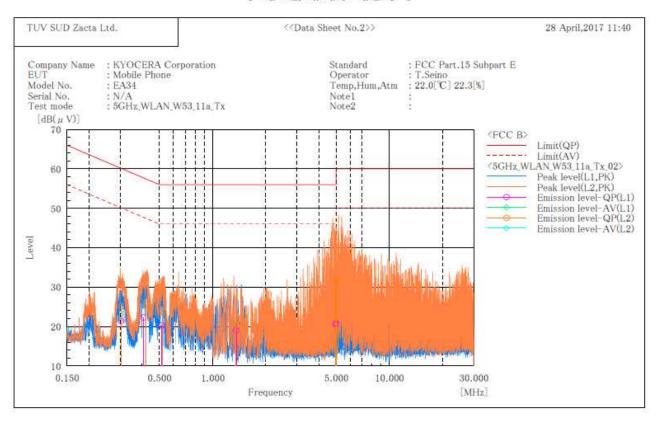


Final Result

	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]	[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
1 2 3 4 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]	[dB(µV)]	$[dB(\mu V)]$	[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
1 2 3 4 5	1.363	10.8	-3.5	10.4	21.2	6. 9	56. 0	46.0	34.8	39. 1
		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]



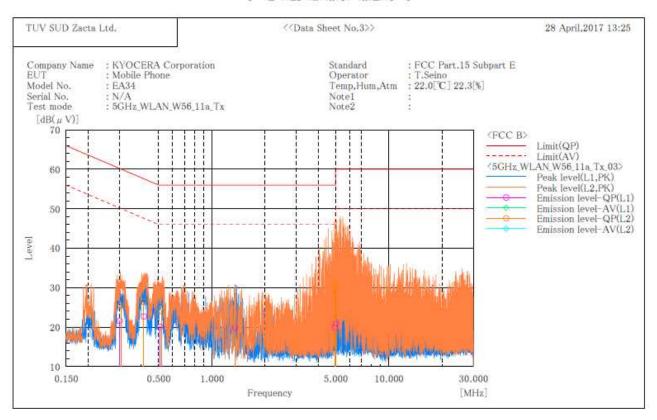
Final Result

-	L1 Phase									
No.	Frequency	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		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
1 2 3 4 5 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	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(µV)]	[dB(µV)]	[dB]	$[dB(\mu V)]$	[dB(µV)]	[dB(µV)]	[dB(µV)]	[dB]	[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
1 2 3 4 5	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

No.	Frequency	Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin
		QP	AV		QP	AV	QP	AV	QP	AV
	[MHz]	[dB(µV)]	[dB(µV)]	[dB]	[dB(µV)]	[dB(µV)]	[dB(µV)]	[dB(μV)]	[dB]	[dB]
1	0, 302	11.2	-2.6	10.4	21.6	7.8	60.2	50.2	38. 6	42.4
2 3	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 5 6	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	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	$[dB(\mu V)]$	[dB(μV)]	[dB]	[dB(µV)]	[dB(µV)]	[dB(µV)]	[dB(µV)]	[dB]	[dB]
1 2 3 4 5	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
		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]

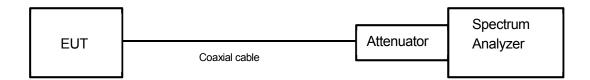
The duty cycle is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

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

May 27, 2017 Date Temperature 24.6 [°C]

49.8 [%] Humidity

Test engineer Shielded room No.4 Test place Chiaki Kanno



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

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

		E		Duty Cycle			DCF	DCF
Mode	Channel	Frequency (MHz)	On Time(ms)	On+Off Time(ms)	X	1/T	(dB) 10log(1/x)	(dB) 20log(1/x)
	36	5180						
	40	5200	1.276	1.284	0.994	783.7	0.027	0.054
	58	5240						
802.11n	52	5260		1.284	0.994	783.7	0.027	0.054
(20MHz)	56	5280	1.276					
(20111112)	64	5320						
	100	5500						
	116	5580	1.276	1.284	0.994	783.7	0.027	0.054
	140	5700						

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



	Channel	Frequency (MHz)		Duty Cycle			DCF	DCF
Mode			On Time(ms)	On+Off Time(ms)	X	1/T	(dB) 10log(1/x)	(dB) 20log(1/x)
	38	5190	0.636	0.646	0.985	1572.3	0.068	0.136
	46	5230	0.030		0.965			0.130
802.11n	54	5270	0.635	0.645	0.984	1574.8	0.068	0.136
(40MHz)	62	5310	0.033	0.043	0.904	1374.0	0.000	0.130
(40IVII IZ)	102	5510						0.136
	110	5550	0.636	0.646	0.985	1572.3	0.068	
	134	5670						

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

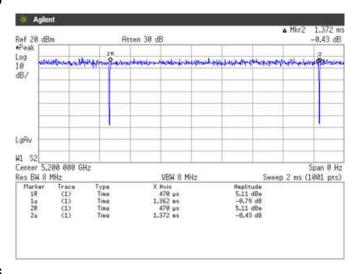
	Channel	Frequency (MHz)		Duty Cycle	DCF	DCF		
Mode			On	On+Off	×	1/T	(dB)	(dB)
			Time(ms)	Time(ms)	^	1/1	10log(1/x)	20log(1/x)
	42	5210	0.248	0.258	0.960	4040.4	0.179	0.358
802.11ac	58	5290	0.248	0.258	0.960	4040.4	0.179	0.358
(80MHz)	106	5530	0.248	0.258	0.960	4040.4	0.179	0.358
	122	5610	0.248	0.257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

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

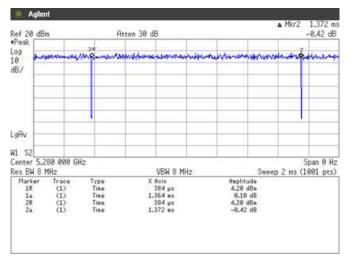


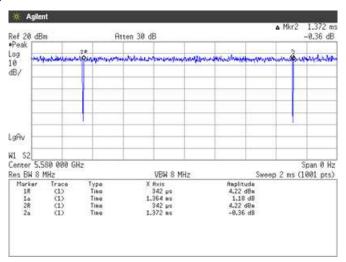
10.4 Trace data [IEEE802.11a]

Channel: 40



Channel: 56

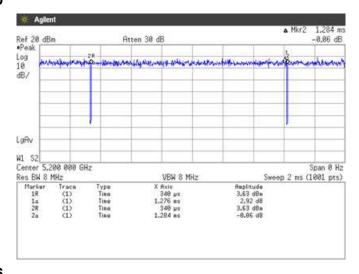




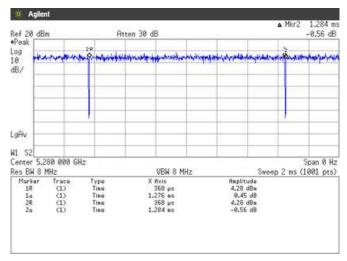


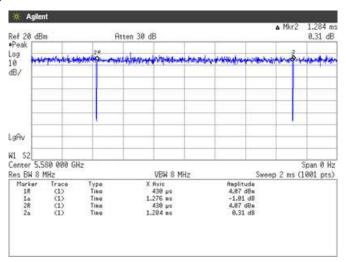
[IEEE802.11n (HT20)]

Channel: 40



Channel: 56

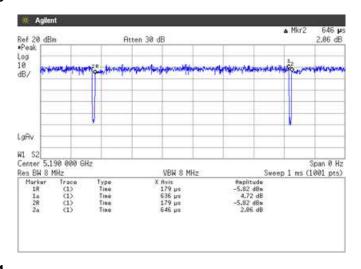




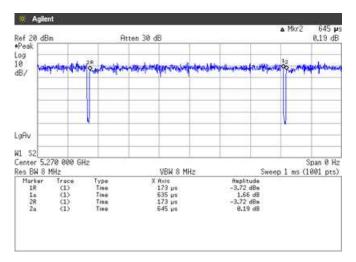


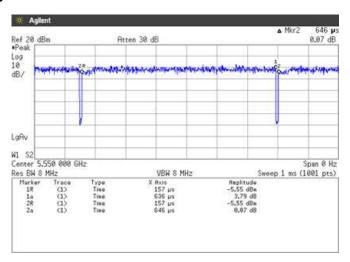
[IEEE802.11n (HT40)]

Channel: 38



Channel: 54

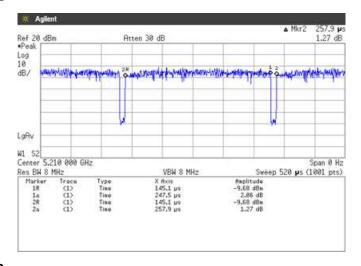


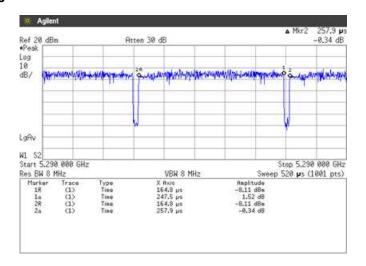




[IEEE802.11ac (HT80)]

Channel: 42

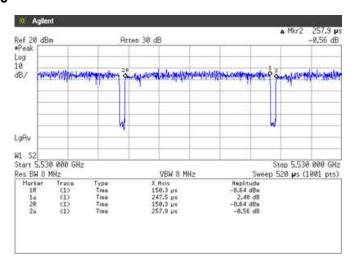


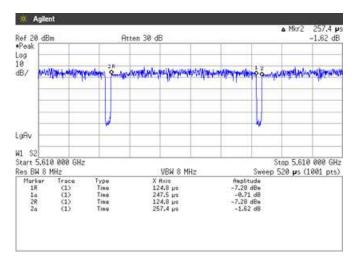




[IEEE802.11ac (HT80)]

Channel: 106







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	±3.0dB
Radiated emission (9kHz – 30MHz)	±4.4dB
Radiated emission (30MHz – 1000MHz)	±4.5dB
Radiated emission (1000MHz – 26GHz)	±3.9dB



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	ite number Facility	
	4224A-4 3m Semi-anechoic chamber		2017-12-03
4224A-5 10m Semi-anechoic chamb		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		SUCOFLEX104/9m	MY30037/4	Feb. 28, 2018	Feb. 3, 2017
		SUCOFLEX104/1m	my24610/4	Feb. 28, 2018	Feb. 3, 2017
	CHINED	SUCOFLEX104/8m	SN MY30031/4	Feb. 28, 2018	Feb. 2, 2017
	SUHNER	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.