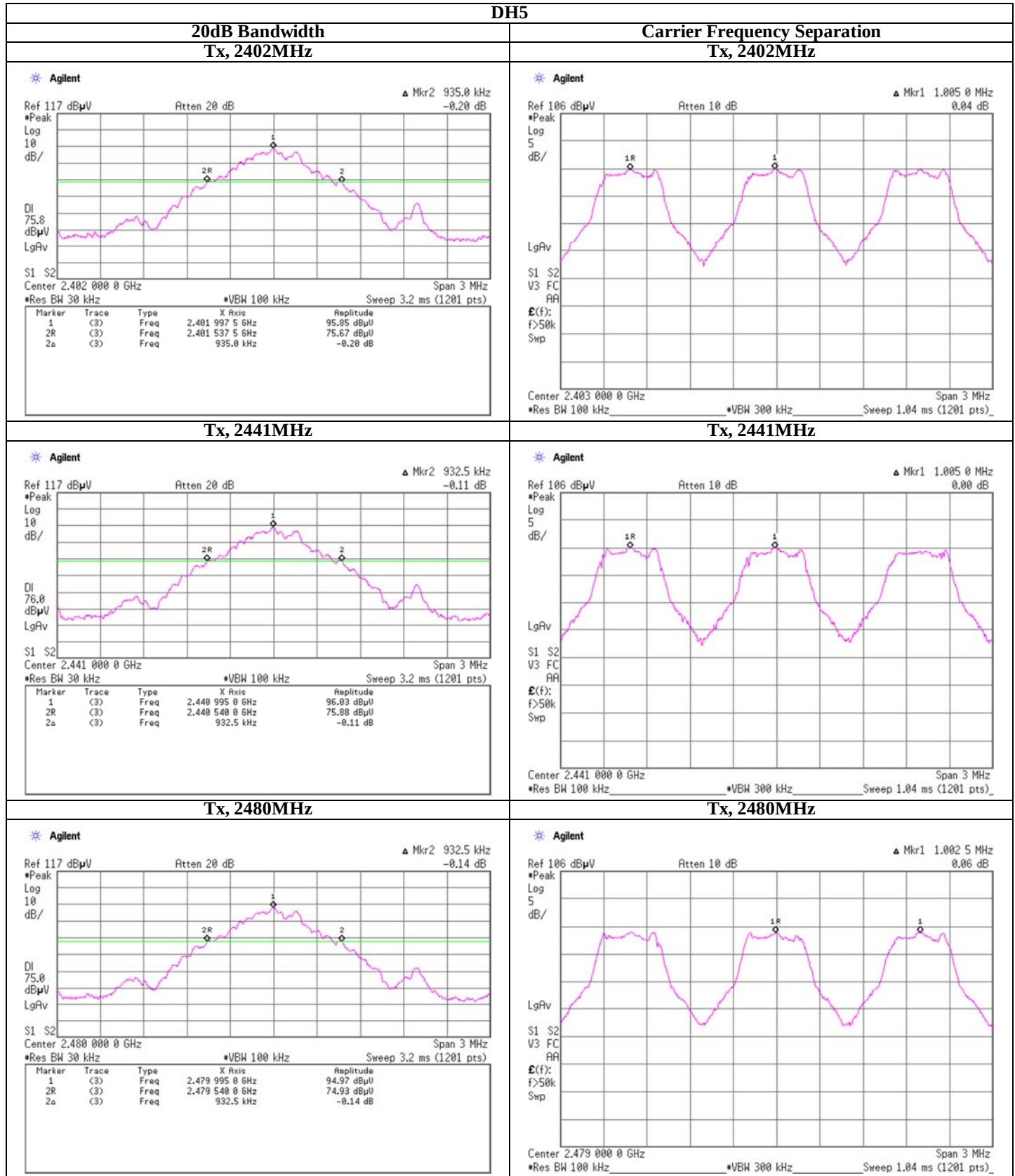

20dB Bandwidth and Carrier Frequency Separation

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
Date January 25, 2011
Temperature / Humidity 24deg.C. , 32%
Engineer Tatsuya Arai
Mode Tx

Mode	Freq. [MHz]	20dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency Separation [MHz]
DH5	2402.0	0.935	1.005	>= 0.623
DH5	2441.0	0.933	1.005	>= 0.622
DH5	2480.0	0.933	1.003	>= 0.622
3DH5	2402.0	1.298	1.005	>= 0.865
3DH5	2441.0	1.285	1.003	>= 0.857
3DH5	2480.0	1.270	1.003	>= 0.847

Limit: Two-thirds of 20dB Bandwidth or 25kHz (whichever is greater).
No limit applies to 20dB Bandwidth.

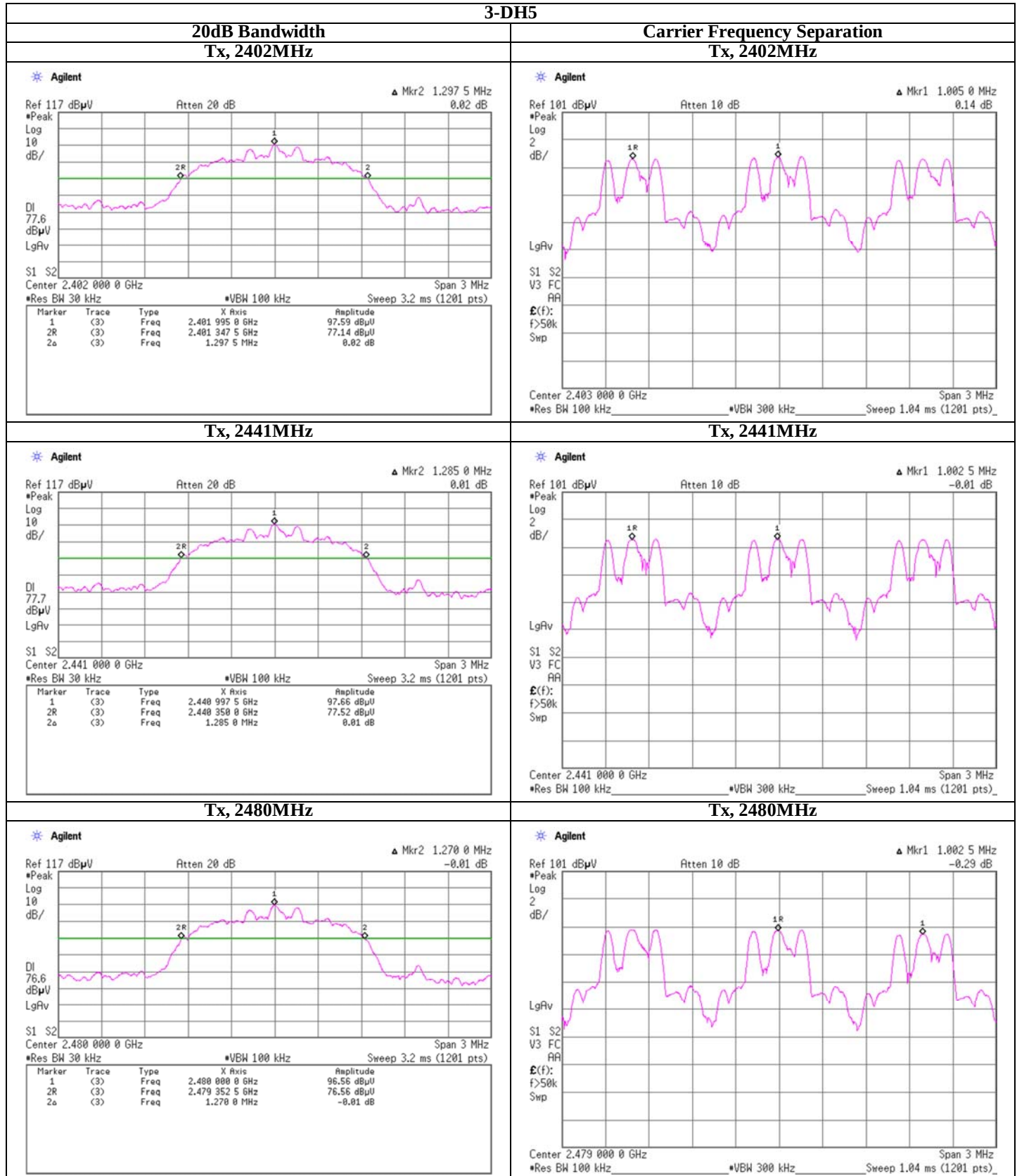
20dB Bandwidth and Carrier Frequency Separation



UL Japan, Inc.
Shonan EMC Lab.

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20dB Bandwidth and Carrier Frequency Separation



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Shonan EMC Lab.

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Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Number of Hopping Frequency (Conducted)

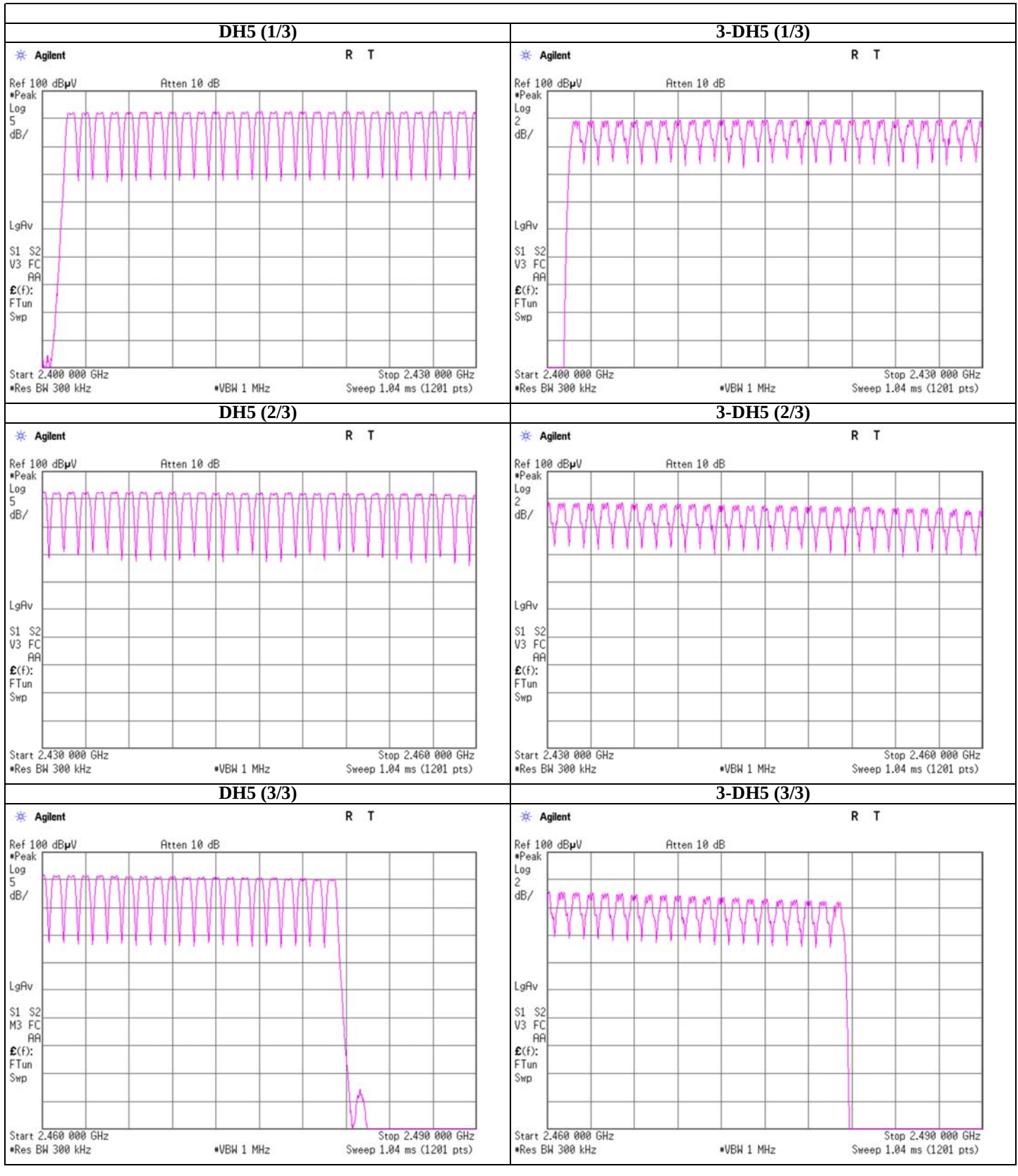
Test place UL Japan, Inc. Shonan EMC Lab. No.6 Shielded Room
Date January 27, 2011
Temperature / Humidity 24deg.C. , 34%
Engineer Shinichi Takano
Mode Tx,

Mode	Number of Channel [times]	Limit [times]
DH5	79	>=15
3-DH5	79	>=15

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Shonan EMC Lab.

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Number of Hopping Frequency



UL Japan, Inc.
Shonan EMC Lab.

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Dwell Time (Conducted)

Test place UL Japan, Inc. Shonan EMC Lab. No.6 Shielded Room
Date January 27, 2011
Temperature / Humidity 24deg.C. , 34%
Engineer Shinichi Takano
Mode Tx,

Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	50.4 times / 5.0 sec. x 31.6 sec. = 319 times	0.402	128	400
DH3	25.8 times / 5.0 sec. x 31.6 sec. = 164 times	1.659	272	400
DH5	17.0 times / 5.0 sec. x 31.6 sec. = 108 times	2.911	314	400
3DH1	50.6 times / 5.0 sec. x 31.6 sec. = 320 times	0.416	133	400
3DH3	25.6 times / 5.0 sec. x 31.6 sec. = 162 times	1.667	270	400
3DH5	17.0 times / 5.0 sec. x 31.6 sec. = 108 times	2.919	315	400

Sample Calculation

Result = Number of transmission x Length of transmittion time

*Average data of 5 tests.(except Inquiry)

Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	51	51	50	50	50	50.4
DH3	26	26	26	26	25	25.8
DH5	17	17	17	17	17	17.0
3DH1	51	50	50	51	51	50.6
3DH3	26	25	25	26	26	25.6
3DH5	17	17	17	17	17	17.0

Sample Calculation

Average= Summation(Sampling 1 to 5) / 5

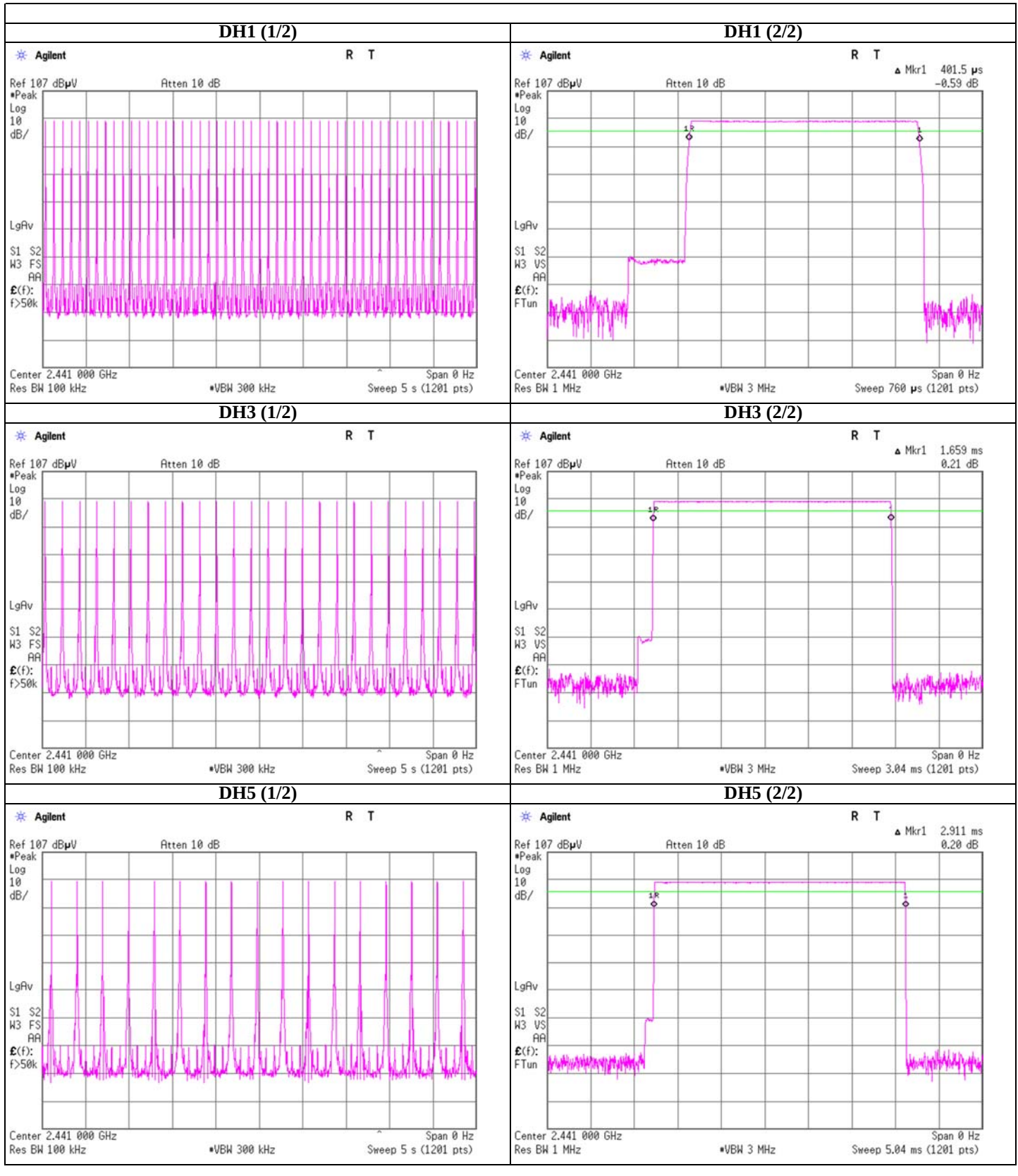
UL Japan, Inc.
Shonan EMC Lab.

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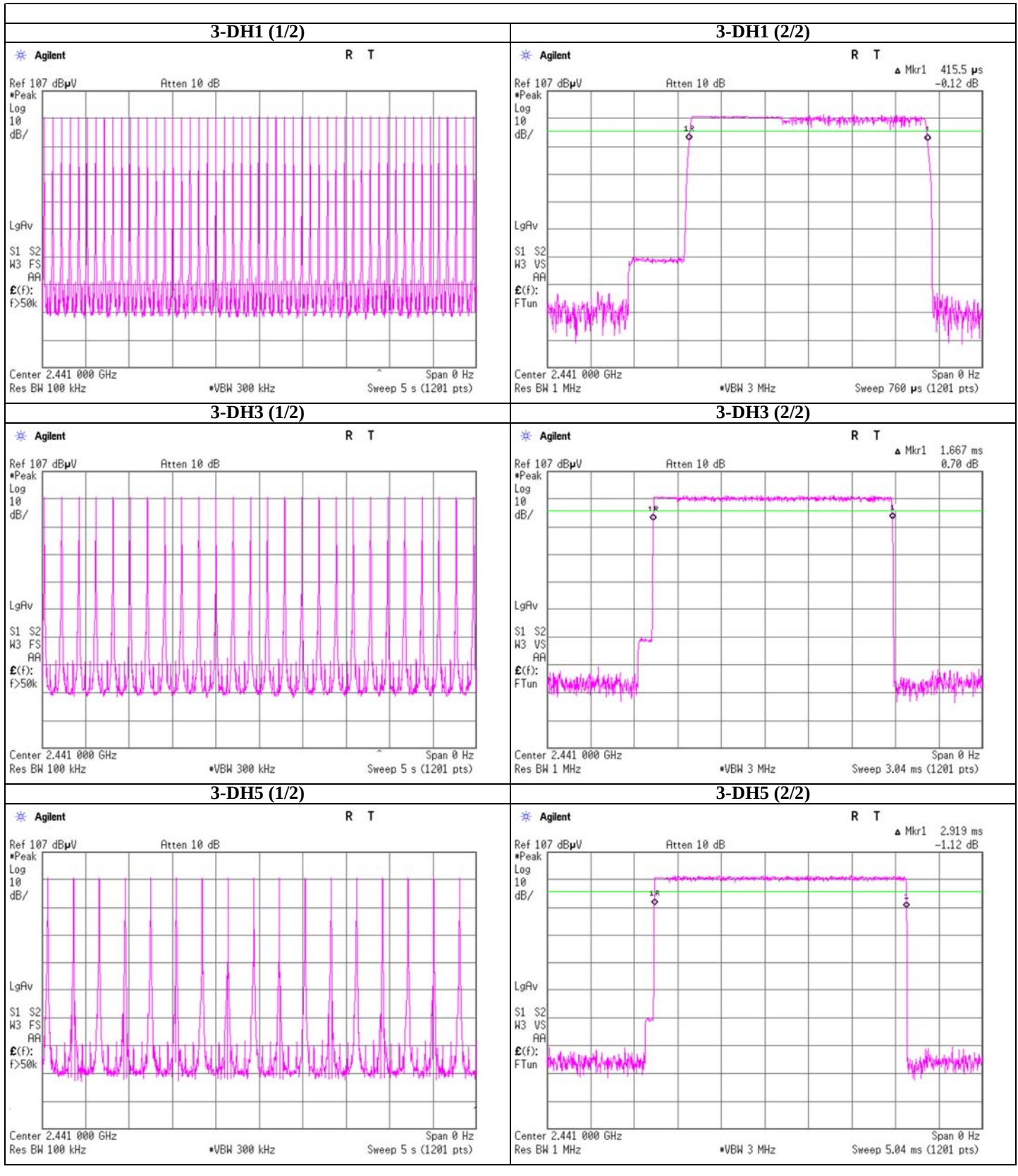
Dwell time



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Shonan EMC Lab.

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Dwell time



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Shonan EMC Lab.

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Peak Output Power (Conducted)

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
Date January 27, 2011
Temperature / Humidity 23deg.C. , 25%
Engineer Shinichi Takano
Mode Tx,

BDR (DH5)

Ch	Freq. [MHz]	P/M (PK) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-10.84	1.39	9.97	0.52	1.13	20.97	125	20.45
Mid	2441.0	-10.82	1.39	9.97	0.54	1.13	20.97	125	20.43
High	2480.0	-11.80	1.40	9.97	-0.43	0.91	20.97	125	21.40

EDR (2-DH5)

Ch	Freq. [MHz]	P/M (PK) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-8.41	1.39	9.97	2.95	1.97	20.97	125	18.02
Mid	2441.0	-8.45	1.39	9.97	2.91	1.96	20.97	125	18.06
High	2480.0	-9.48	1.40	9.97	1.89	1.54	20.97	125	19.08

EDR (3-DH5)

Ch	Freq. [MHz]	P/M (PK) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-8.38	1.39	9.97	2.98	1.98	20.97	125	17.99
Mid	2441.0	-8.41	1.39	9.97	2.95	1.97	20.97	125	18.02
High	2480.0	-9.34	1.40	9.97	2.03	1.59	20.97	125	18.94

Sample Calculation:

Result = Reading + Cable Loss (supplied by customer) + Atten. Loss

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

UL Japan, Inc.
Shonan EMC Lab.

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Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2402 MHz
Bluetooth, DH5,

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	191.993	QP	43.0	16.4	8.8	31.7	36.5	43.5	7.0	152	43	
Hori.	224.000	QP	44.2	16.9	9.1	31.7	38.5	46.0	7.5	152	10	
Hori.	295.997	QP	44.2	19.6	9.7	31.7	41.8	46.0	4.2	177	182	
Hori.	328.030	QP	55.4	14.7	6.6	31.6	45.1	46.0	0.9	120	326	
Hori.	351.991	QP	52.9	15.3	6.7	31.6	43.3	46.0	2.7	141	2	
Hori.	447.998	QP	48.0	17.2	7.4	31.6	41.0	46.0	5.0	102	198	
Hori.	464.008	QP	48.0	17.4	7.5	31.6	41.3	46.0	4.7	100	197	
Hori.	1601.500	PK	46.6	25.7	12.9	37.7	47.5	73.9	26.4	100	0	
Hori.	2350.000	PK	46.4	27.3	13.5	37.1	50.1	73.9	23.8	100	228	
Hori.	2377.000	PK	46.4	27.4	13.5	37.1	50.2	73.9	23.7	100	0	
Hori.	2390.000	PK	46.2	27.4	13.6	37.0	50.2	73.9	23.7	100	202	
Hori.	2400.000	PK	53.6	27.4	13.7	37.0	57.7	73.9	16.2	100	20	
Hori.	2740.000	PK	47.4	27.8	13.9	36.9	52.2	73.9	21.7	100	0	
Hori.	3203.000	PK	46.9	28.6	5.2	36.8	43.9	73.9	30.0	100	359	
Hori.	4007.000	PK	46.9	29.3	5.5	35.9	45.8	73.9	28.1	100	0	
Hori.	4804.000	PK	52.6	30.5	5.8	35.9	53.0	73.9	20.9	150	314	
Hori.	6285.328	PK	50.3	34.0	6.6	37.0	53.9	73.9	20.0	103	261	
Hori.	7206.000	PK	47.1	36.2	7.1	37.3	53.1	73.9	20.8	100	316	
Hori.	9608.000	PK	44.3	38.3	8.3	35.6	55.3	73.9	18.6	100	0	
Hori.	12010.000	PK	45.3	39.4	9.3	36.9	57.1	73.9	16.8	100	359	
Hori.	1601.500	AV	33.8	25.7	12.9	37.7	34.7	53.9	19.2	100	0	VBW:10Hz
Hori.	2350.000	AV	33.6	27.3	13.5	37.1	37.3	53.9	16.6	100	228	VBW:10Hz
Hori.	2377.000	AV	33.6	27.4	13.5	37.1	37.4	53.9	16.5	100	0	VBW:10Hz
Hori.	2740.000	AV	33.2	27.8	13.9	36.9	38.0	53.9	15.9	100	0	VBW:10Hz
Hori.	3203.000	AV	34.0	28.6	5.2	36.8	31.0	53.9	22.9	100	359	VBW:10Hz
Hori.	4007.000	AV	33.5	29.3	5.5	35.9	32.4	53.9	21.5	100	0	VBW:10Hz
Hori.	6285.328	AV	43.7	34.0	6.6	37.0	47.3	53.9	6.6	103	261	VBW:10Hz
Vert.	192.006	QP	43.9	16.4	8.8	31.7	37.4	43.5	6.1	100	149	
Vert.	295.998	QP	37.5	19.5	9.7	31.7	35.0	46.0	11.0	177	182	
Vert.	327.990	QP	45.9	14.7	6.6	31.6	35.6	46.0	10.4	100	275	
Vert.	1601.500	PK	49.0	25.7	12.9	37.7	49.9	73.9	24.0	100	19	
Vert.	2350.000	PK	46.5	27.3	13.5	37.1	50.2	73.9	23.7	100	0	
Vert.	2377.000	PK	46.4	27.4	13.5	37.1	50.2	73.9	23.7	100	16	
Vert.	2390.000	PK	47.1	27.4	13.6	37.0	51.1	73.9	22.8	100	0	
Vert.	2400.000	PK	53.4	27.4	13.7	37.0	57.5	73.9	16.4	100	21	
Vert.	2740.000	PK	46.5	27.8	13.9	36.9	51.3	73.9	22.6	100	0	
Vert.	3203.000	PK	46.4	28.6	5.2	36.8	43.4	73.9	30.5	100	30	
Vert.	4007.000	PK	46.0	29.3	5.5	35.9	44.9	73.9	29.0	100	359	
Vert.	4804.000	PK	51.6	30.5	5.8	35.9	52.0	73.9	21.9	112	36	
Vert.	6285.367	PK	48.9	34.0	6.6	37.0	52.5	73.9	21.4	100	273	
Vert.	7206.000	PK	45.7	36.2	7.1	37.3	51.7	73.9	22.2	100	0	
Vert.	9608.000	PK	45.3	38.3	8.3	35.6	56.3	73.9	17.6	100	359	
Vert.	12010.000	PK	44.4	39.4	9.3	36.9	56.2	73.9	17.7	100	0	
Vert.	1601.500	AV	41.3	25.7	12.9	37.7	42.2	53.9	11.7	100	19	VBW:10Hz
Vert.	2350.000	AV	33.6	27.3	13.5	37.1	37.3	53.9	16.6	100	0	VBW:10Hz
Vert.	2377.000	AV	34.1	27.4	13.5	37.1	37.9	53.9	16.0	100	16	VBW:10Hz
Vert.	2740.000	AV	33.9	27.8	13.9	36.9	38.7	53.9	15.2	100	0	VBW:10Hz
Vert.	3203.000	AV	34.9	28.6	5.2	36.8	31.9	53.9	22.0	100	30	VBW:10Hz
Vert.	4007.000	AV	33.6	29.3	5.5	35.9	32.5	53.9	21.4	100	359	VBW:10Hz
Vert.	6285.367	AV	42.5	34.0	6.6	37.0	46.1	53.9	7.8	100	273	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2402 MHz
Bluetooth, DH5,

Dwell time factor relaxation

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Dwell Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2390.000	AV	33.8	27.4	13.6	37.0	-24.7	13.1	53.9	40.8	VBW:300Hz
Hori.	2400.000	AV	42.2	27.4	13.7	37.0	-24.7	21.6	53.9	32.3	VBW:300Hz
Hori.	4804.000	AV	47.1	30.5	5.8	35.9	-24.7	22.8	53.9	31.1	VBW:300Hz
Hori.	7206.000	AV	35.4	36.2	7.1	37.3	-24.7	16.7	53.9	37.2	VBW:300Hz
Hori.	9608.000	AV	33.4	38.3	8.3	35.6	-24.7	19.7	53.9	34.2	VBW:300Hz
Hori.	12010.000	AV	33.6	39.4	9.3	36.9	-24.7	20.7	53.9	33.2	VBW:300Hz
Vert.	2390.000	AV	33.0	27.4	13.6	37.0	-24.7	12.3	53.9	41.6	VBW:300Hz
Vert.	2400.000	AV	41.9	27.4	13.7	37.0	-24.7	21.3	53.9	32.6	VBW:300Hz
Vert.	4804.000	AV	46.8	30.5	5.8	35.9	-24.7	22.5	53.9	31.4	VBW:300Hz
Vert.	7206.000	AV	35.4	36.2	7.1	37.3	-24.7	16.7	53.9	37.2	VBW:300Hz
Vert.	9608.000	AV	33.4	38.3	8.3	35.6	-24.7	19.7	53.9	34.2	VBW:300Hz
Vert.	12010.000	AV	33.7	39.4	9.3	36.9	-24.7	20.8	53.9	33.1	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)
- Gain(Amplifier) + Dwell time factor (Refer to dwell time data sheet)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2441 MHz
Bluetooth, DH5,

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	199.981	QP	44.9	16.5	8.9	31.7	38.6	43.5	4.9	243	26	
Hori.	287.998	QP	43.8	19.2	9.6	31.7	40.9	46.0	5.1	121	165	
Hori.	296.220	QP	43.8	19.6	9.7	31.7	41.4	46.0	4.6	116	174	
Hori.	320.003	QP	55.2	14.5	6.5	31.6	44.6	46.0	1.4	151	93	
Hori.	351.991	QP	52.9	15.3	6.7	31.6	43.3	46.0	2.7	119	88	
Hori.	392.006	QP	47.3	16.3	7.1	31.6	39.1	46.0	6.9	128	83	
Hori.	1627.000	PK	46.9	25.8	12.9	37.7	47.9	73.9	26.0	112	258	
Hori.	2390.000	PK	46.6	27.4	13.6	37.0	50.6	73.9	23.3	100	0	
Hori.	2493.000	PK	46.8	27.4	13.6	36.9	50.9	73.9	23.0	100	121	
Hori.	3257.000	PK	46.2	28.7	5.2	36.8	43.3	73.9	30.6	100	0	
Hori.	4070.000	PK	45.7	29.3	5.5	35.9	44.6	73.9	29.3	100	359	
Hori.	4882.000	PK	48.3	30.8	5.9	35.9	49.1	73.9	24.8	113	306	
Hori.	6285.325	PK	48.8	34.0	6.6	37.0	52.4	73.9	21.5	100	238	
Hori.	7323.000	PK	47.7	36.4	7.2	37.3	54.0	73.9	19.9	100	0	
Hori.	9764.000	PK	46.0	38.5	8.3	35.8	57.0	73.9	16.9	100	359	
Hori.	12205.000	PK	40.5	39.4	9.5	36.9	52.5	73.9	21.4	100	0	
Hori.	1627.000	AV	37.5	25.8	12.9	37.7	38.5	53.9	15.4	112	258	VBW:10Hz
Hori.	2390.000	AV	33.6	27.4	13.6	37.0	37.6	53.9	16.3	100	0	VBW:10Hz
Hori.	2493.000	AV	37.4	27.4	13.6	36.9	41.5	53.9	12.4	100	121	VBW:10Hz
Hori.	3257.000	AV	34.4	28.7	5.2	36.8	31.5	53.9	22.4	100	0	VBW:10Hz
Hori.	4070.000	AV	33.5	29.3	5.5	35.9	32.4	53.9	21.5	100	359	VBW:10Hz
Hori.	6285.325	AV	41.2	34.0	6.6	37.0	44.8	53.9	9.1	100	238	VBW:10Hz
Vert.	167.999	QP	41.1	15.7	8.6	31.8	33.6	43.5	9.9	100	341	
Vert.	200.002	QP	41.2	16.5	8.9	31.7	34.9	43.5	8.6	100	173	
Vert.	384.006	QP	41.3	16.1	7.0	31.6	32.8	46.0	13.2	100	19	
Vert.	1627.000	PK	48.8	25.8	12.9	37.7	49.8	73.9	24.1	100	60	
Vert.	2390.000	PK	46.0	27.4	13.6	37.0	50.0	73.9	23.9	125	39	
Vert.	2493.000	PK	46.0	27.4	13.6	36.9	50.1	73.9	23.8	100	359	
Vert.	3257.000	PK	46.2	28.7	5.2	36.8	43.3	73.9	30.6	100	35	
Vert.	4070.000	PK	45.9	29.3	5.5	35.9	44.8	73.9	29.1	100	0	
Vert.	4882.000	PK	50.3	30.8	5.9	35.9	51.1	73.9	22.8	100	58	
Vert.	6285.325	PK	48.5	34.0	6.6	37.0	52.1	73.9	21.8	100	285	
Vert.	7323.000	PK	48.2	36.4	7.2	37.3	54.5	73.9	19.4	100	0	
Vert.	9764.000	PK	46.0	38.5	8.3	35.8	57.0	73.9	16.9	100	359	
Vert.	12205.000	PK	46.4	39.4	9.5	36.9	58.4	73.9	15.5	100	0	
Vert.	1627.000	AV	40.9	25.8	12.9	37.7	41.9	53.9	12.0	100	60	VBW:10Hz
Vert.	2390.000	AV	33.6	27.4	13.6	37.0	37.6	53.9	16.3	125	39	VBW:10Hz
Vert.	2493.000	AV	33.6	27.4	13.6	36.9	37.7	53.9	16.2	100	359	VBW:10Hz
Vert.	3257.000	AV	35.6	28.7	5.2	36.8	32.7	53.9	21.2	100	35	VBW:10Hz
Vert.	4070.000	AV	33.5	29.3	5.5	35.9	32.4	53.9	21.5	100	0	VBW:10Hz
Vert.	6285.325	AV	40.2	34.0	6.6	37.0	43.8	53.9	10.1	100	285	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Dwell time factor relaxation

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Dwell Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	4882.000	AV	37.9	30.8	5.9	35.9	-24.7	14.0	53.9	39.9	VBW:300Hz
Hori.	7323.000	AV	34.6	36.4	7.2	37.3	-24.7	16.2	53.9	37.7	VBW:300Hz
Hori.	9764.000	AV	33.3	38.5	8.3	35.8	-24.7	19.6	53.9	34.3	VBW:300Hz
Hori.	12205.000	AV	28.0	39.4	9.5	36.9	-24.7	15.3	53.9	38.6	VBW:300Hz
Vert.	4882.000	AV	38.5	30.8	5.9	35.9	-24.7	14.6	53.9	39.3	VBW:300Hz
Vert.	7323.000	AV	35.2	36.4	7.2	37.3	-24.7	16.8	53.9	37.1	VBW:300Hz
Vert.	9764.000	AV	33.2	38.5	8.3	35.8	-24.7	19.5	53.9	34.4	VBW:300Hz
Vert.	12205.000	AV	33.5	39.4	9.5	36.9	-24.7	20.8	53.9	33.1	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

- Gain(Amplifier) + Dwell time factor (Refer to dwell time data sheet)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2480 MHz
Bluetooth, DH5,

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	191.998	QP	47.4	16.4	8.8	31.7	40.9	43.5	2.6	176	256	
Hori.	200.005	QP	44.1	16.5	8.9	31.7	37.8	43.5	5.7	177	175	
Hori.	288.003	QP	38.8	19.2	9.6	31.7	35.9	46.0	10.1	183	165	
Hori.	352.012	QP	51.7	15.3	6.7	31.6	42.1	46.0	3.9	136	352	
Hori.	360.026	QP	48.6	15.5	6.8	31.6	39.3	46.0	6.7	130	80	
Hori.	1652.500	PK	48.0	25.9	12.9	37.7	49.1	73.9	24.8	118	99	
Hori.	2483.500	PK	46.7	27.4	13.6	36.9	50.8	73.9	23.1	100	359	
Hori.	2484.000	PK	49.2	27.4	13.6	36.9	53.3	73.9	20.6	100	359	
Hori.	2490.150	PK	47.0	27.4	13.6	36.9	51.1	73.9	22.8	100	359	
Hori.	2507.000	PK	46.4	27.5	13.7	36.9	50.7	73.9	23.2	100	0	
Hori.	2533.000	PK	45.6	27.5	13.7	36.9	49.9	73.9	24.0	100	359	
Hori.	3307.000	PK	47.5	28.8	5.3	36.8	44.8	73.9	29.1	100	0	
Hori.	4137.000	PK	46.0	29.4	5.6	35.9	45.1	73.9	28.8	100	359	
Hori.	4960.000	PK	49.6	31.0	5.9	35.9	50.6	73.9	23.3	100	344	
Hori.	6285.000	PK	50.0	34.0	6.6	37.0	53.6	73.9	20.3	115	239	
Hori.	7440.000	PK	47.8	36.7	7.2	37.3	54.4	73.9	19.5	100	0	
Hori.	9920.000	PK	46.3	38.7	8.5	35.9	57.6	73.9	16.3	100	359	
Hori.	12400.000	PK	46.1	39.4	9.6	36.8	58.3	73.9	15.6	100	0	
Hori.	1652.500	AV	40.5	25.9	12.9	37.7	41.6	53.9	12.3	118	99	VBW:10Hz
Hori.	2484.000	AV	36.4	27.4	13.6	36.9	40.5	53.9	13.4	100	359	VBW:10Hz
Hori.	2490.150	AV	33.8	27.4	13.6	36.9	37.9	53.9	16.0	100	359	VBW:10Hz
Hori.	2507.000	AV	33.7	27.5	13.7	36.9	38.0	53.9	15.9	100	0	VBW:10Hz
Hori.	2533.000	AV	33.8	27.5	13.7	36.9	38.1	53.9	15.8	100	359	VBW:10Hz
Hori.	3307.000	AV	34.1	28.8	5.3	36.8	31.4	53.9	22.5	100	0	VBW:10Hz
Hori.	4137.000	AV	33.7	29.4	5.6	35.9	32.8	53.9	21.1	100	359	VBW:10Hz
Hori.	6285.000	AV	41.5	34.0	6.6	37.0	45.1	53.9	8.8	115	239	VBW:10Hz
Vert.	191.994	QP	43.7	16.4	8.8	31.7	37.2	43.5	6.3	100	116	
Vert.	200.001	QP	40.9	16.5	8.9	31.7	34.6	43.5	8.9	100	111	
Vert.	224.002	QP	40.5	17.0	9.1	31.7	34.9	46.0	11.1	100	335	
Vert.	352.006	QP	46.2	14.5	6.5	31.6	35.6	46.0	10.4	100	2	
Vert.	1652.500	PK	48.9	25.9	12.9	37.7	50.0	73.9	23.9	100	72	
Vert.	2483.500	PK	47.6	27.4	13.6	36.9	51.7	73.9	22.2	100	0	
Vert.	2484.000	PK	49.3	27.4	13.6	36.9	53.4	73.9	20.5	100	0	
Vert.	2490.150	PK	47.8	27.4	13.6	36.9	51.9	73.9	22.0	100	0	
Vert.	2507.000	PK	46.4	27.5	13.7	36.9	50.7	73.9	23.2	100	359	
Vert.	2533.000	PK	46.6	27.5	13.7	36.9	50.9	73.9	23.0	100	151	
Vert.	3307.000	PK	46.8	28.8	5.3	36.8	44.1	73.9	29.8	106	97	
Vert.	4137.000	PK	45.9	29.4	5.6	35.9	45.0	73.9	28.9	100	359	
Vert.	4960.000	PK	50.9	31.0	5.9	35.9	51.9	73.9	22.0	109	98	
Vert.	6285.313	PK	50.2	34.0	6.6	37.0	53.8	73.9	20.1	111	211	
Vert.	7440.000	PK	47.8	36.7	7.2	37.3	54.4	73.9	19.5	100	222	
Vert.	9920.000	PK	46.4	38.7	8.5	35.9	57.7	73.9	16.2	100	0	
Vert.	12400.000	PK	46.3	39.4	9.6	36.8	58.5	73.9	15.4	100	359	
Vert.	1652.500	AV	41.0	25.9	12.9	37.7	42.1	53.9	11.8	100	72	VBW:10Hz
Vert.	2484.000	AV	35.1	27.4	13.6	36.9	39.2	53.9	14.7	100	0	VBW:10Hz
Vert.	2490.150	AV	34.0	27.4	13.6	36.9	38.1	53.9	15.8	100	0	VBW:10Hz
Vert.	2507.000	AV	33.7	27.5	13.7	36.9	38.0	53.9	15.9	100	359	VBW:10Hz
Vert.	2533.000	AV	34.0	27.5	13.7	36.9	38.3	53.9	15.6	100	151	VBW:10Hz
Vert.	3307.000	AV	33.4	28.8	5.3	36.8	30.7	53.9	23.2	106	97	VBW:10Hz
Vert.	4137.000	AV	33.5	29.4	5.6	35.9	32.6	53.9	21.3	100	359	VBW:10Hz
Vert.	6285.313	AV	43.0	34.0	6.6	37.0	46.6	53.9	7.3	111	211	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2480 MHz
Bluetooth, DH5,

Dwell time factor relaxation

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Dwell Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2483.500	AV	33.6	27.4	13.6	36.9	-24.7	13.0	53.9	40.9	VBW:300Hz
Hori.	4960.000	AV	39.6	31.0	5.9	35.9	-24.7	15.9	53.9	38.0	VBW:300Hz
Hori.	7440.000	AV	35.0	36.7	7.2	37.3	-24.7	16.9	53.9	37.0	VBW:300Hz
Hori.	9920.000	AV	33.5	38.7	8.5	35.9	-24.7	20.1	53.9	33.8	VBW:300Hz
Hori.	12400.000	AV	33.2	39.4	9.6	36.8	-24.7	20.7	53.9	33.2	VBW:300Hz
Vert.	2483.500	AV	33.9	27.4	13.6	36.9	-24.7	13.3	53.9	40.6	VBW:300Hz
Vert.	4960.000	AV	40.6	31.0	5.9	35.9	-24.7	16.9	53.9	37.0	VBW:300Hz
Vert.	7440.000	AV	35.0	36.7	7.2	37.3	-24.7	16.9	53.9	37.0	VBW:300Hz
Vert.	9920.000	AV	33.6	38.7	8.5	35.9	-24.7	20.2	53.9	33.7	VBW:300Hz
Vert.	12400.000	AV	33.3	39.4	9.6	36.8	-24.7	20.8	53.9	33.1	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

- Gain(Amplifier) + Dwell time factor (Refer to dwell time data sheet)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2402 MHz
Bluetooth, 3-DH5,

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	255.988	QP	47.9	17.7	9.4	31.7	43.3	46.0	2.7	138	168	
Hori.	264.005	QP	48.4	18.1	9.4	31.7	44.2	46.0	1.8	165	154	
Hori.	327.999	QP	52.7	14.7	6.6	31.6	42.4	46.0	3.6	141	67	
Hori.	360.005	QP	54.1	15.5	6.8	31.6	44.8	46.0	1.2	127	358	
Hori.	415.989	QP	52.0	16.7	7.2	31.6	44.3	46.0	1.7	100	80	
Hori.	424.001	QP	50.2	16.9	7.3	31.6	42.8	46.0	3.2	116	279	
Hori.	439.992	QP	46.2	17.1	7.3	31.6	39.0	46.0	7.0	100	70	
Hori.	1603.000	PK	47.4	25.7	12.9	37.7	48.3	73.9	25.6	100	0	
Hori.	2350.000	PK	47.0	27.3	13.5	37.1	50.7	73.9	23.2	100	0	
Hori.	2377.000	PK	46.3	27.4	13.5	37.1	50.1	73.9	23.8	100	359	
Hori.	2390.000	PK	46.5	27.4	13.6	37.0	50.5	73.9	23.4	100	0	
Hori.	2400.000	PK	64.3	27.4	13.7	37.0	68.4	73.9	5.5	123	54	
Hori.	3203.000	PK	46.6	28.6	5.2	36.8	43.6	73.9	30.3	100	359	
Hori.	4007.000	PK	45.7	29.3	5.5	35.9	44.6	73.9	29.3	100	195	
Hori.	4804.000	PK	54.6	30.5	5.8	35.9	55.0	73.9	18.9	164	318	
Hori.	6285.317	PK	50.5	34.0	6.6	37.0	54.1	73.9	19.8	115	278	
Hori.	7206.000	PK	48.0	36.2	7.1	37.3	54.0	73.9	19.9	100	0	
Hori.	9608.000	PK	45.4	38.3	8.3	35.6	56.4	73.9	17.5	100	359	
Hori.	12010.000	PK	44.8	39.4	9.3	36.9	56.6	73.9	17.3	100	0	
Hori.	1603.000	AV	37.2	25.7	12.9	37.7	38.1	53.9	15.8	100	0	VBW:10Hz
Hori.	2350.000	AV	33.6	27.3	13.5	37.1	37.3	53.9	16.6	100	0	VBW:10Hz
Hori.	2377.000	AV	33.5	27.4	13.5	37.1	37.3	53.9	16.6	100	359	VBW:10Hz
Hori.	3203.000	AV	34.0	28.6	5.2	36.8	31.0	53.9	22.9	100	359	VBW:10Hz
Hori.	4007.000	AV	33.6	29.3	5.5	35.9	32.5	53.9	21.4	100	195	VBW:10Hz
Hori.	6285.317	AV	45.1	34.0	6.6	37.0	48.7	53.9	5.2	115	278	VBW:10Hz
Vert.	248.001	QP	44.7	17.4	9.3	31.7	39.7	46.0	6.3	100	7	
Vert.	256.001	QP	45.6	17.7	9.4	31.7	41.0	46.0	5.0	100	357	
Vert.	368.000	QP	45.4	15.7	6.9	31.6	36.4	46.0	9.6	100	14	
Vert.	1603.000	PK	48.5	25.7	12.9	37.7	49.4	73.9	24.5	100	0	
Vert.	2350.000	PK	45.6	27.3	13.5	37.1	49.3	73.9	24.6	100	0	
Vert.	2377.000	PK	46.4	27.4	13.5	37.1	50.2	73.9	23.7	100	358	
Vert.	2390.000	PK	46.7	27.4	13.6	37.0	50.7	73.9	23.2	100	0	
Vert.	2400.000	PK	66.6	27.4	13.7	37.0	70.7	73.9	3.2	105	55	
Vert.	3203.000	PK	47.0	28.6	5.2	36.8	44.0	73.9	29.9	100	67	
Vert.	4007.000	PK	46.4	29.3	5.5	35.9	45.3	73.9	28.6	100	359	
Vert.	4804.000	PK	53.6	30.5	5.8	35.9	54.0	73.9	19.9	100	70	
Vert.	6285.300	PK	49.5	34.0	6.6	37.0	53.1	73.9	20.8	160	270	
Vert.	7206.000	PK	47.3	36.2	7.1	37.3	53.3	73.9	20.6	100	0	
Vert.	9608.000	PK	46.5	38.3	8.3	35.6	57.5	73.9	16.4	100	359	
Vert.	12010.000	PK	45.3	39.4	9.3	36.9	57.1	73.9	16.8	100	0	
Vert.	1603.000	AV	41.6	25.7	12.9	37.7	42.5	53.9	11.4	100	0	VBW:10Hz
Vert.	2350.000	AV	34.1	27.3	13.5	37.1	37.8	53.9	16.1	100	0	VBW:10Hz
Vert.	2377.000	AV	34.5	27.4	13.5	37.1	38.3	53.9	15.6	100	358	VBW:10Hz
Vert.	3203.000	AV	36.6	28.6	5.2	36.8	33.6	53.9	20.3	100	67	VBW:10Hz
Vert.	4007.000	AV	34.0	29.3	5.5	35.9	32.9	53.9	21.0	100	359	VBW:10Hz
Vert.	6285.300	AV	41.6	34.0	6.6	37.0	45.2	53.9	8.7	160	270	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2402 MHz
 Bluetooth, 3-DH5,

Dwell time factor relaxation

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Dwell Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2390.000	AV	33.1	27.4	13.6	37.0	-24.7	12.4	53.9	41.5	VBW:300Hz
Hori.	2400.000	AV	50.8	27.4	13.7	37.0	-24.7	30.2	53.9	23.7	VBW:300Hz
Hori.	4804.000	AV	45.6	30.5	5.8	35.9	-24.7	21.3	53.9	32.6	VBW:300Hz
Hori.	7206.000	AV	34.7	36.2	7.1	37.3	-24.7	16.0	53.9	37.9	VBW:300Hz
Hori.	9608.000	AV	32.8	38.3	8.3	35.6	-24.7	19.1	53.9	34.8	VBW:300Hz
Hori.	12010.000	AV	33.1	39.4	9.3	36.9	-24.7	20.2	53.9	33.7	VBW:300Hz
Vert.	2390.000	AV	33.5	27.4	13.6	37.0	-24.7	12.8	53.9	41.1	VBW:300Hz
Vert.	2400.000	AV	53.3	27.4	13.7	37.0	-24.7	32.7	54.9	22.2	VBW:300Hz
Vert.	4804.000	AV	44.9	30.5	5.8	35.9	-24.7	20.6	53.9	33.3	VBW:300Hz
Vert.	7206.000	AV	34.7	36.2	7.1	37.3	-24.7	16.0	53.9	37.9	VBW:300Hz
Vert.	9608.000	AV	33.0	38.3	8.3	35.6	-24.7	19.3	53.9	34.6	VBW:300Hz
Vert.	12010.000	AV	33.0	39.4	9.3	36.9	-24.7	20.1	53.9	33.8	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)
- Gain(Amplifier) + Dwell time factor (Refer to dwell time data sheet)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2441 MHz
Bluetooth, 3-DH5,

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	255.997	QP	46.6	17.7	9.4	31.7	42.0	46.0	4.0	136	159	
Hori.	264.001	QP	42.7	18.1	9.4	31.7	38.5	46.0	7.5	146	351	
Hori.	328.000	QP	48.5	14.7	6.6	31.6	38.2	46.0	7.8	141	172	
Hori.	360.005	QP	53.3	15.5	6.8	31.6	44.0	46.0	2.0	100	358	
Hori.	416.001	QP	49.4	16.7	7.2	31.6	41.7	46.0	4.3	119	121	
Hori.	424.000	QP	48.0	16.9	7.3	31.6	40.6	46.0	5.4	107	341	
Hori.	439.997	QP	48.2	17.1	7.3	31.6	41.0	46.0	5.0	113	52	
Hori.	1600.000	PK	48.6	25.7	12.9	37.7	49.5	73.9	24.4	100	292	
Hori.	2390.000	PK	45.9	27.4	13.6	37.0	49.9	73.9	24.0	100	359	
Hori.	2413.000	PK	45.6	27.4	13.7	37.0	49.7	73.9	24.2	100	0	
Hori.	3257.000	PK	46.3	28.7	5.2	36.8	43.4	73.9	30.5	100	0	
Hori.	4070.000	PK	46.5	29.3	5.5	35.9	45.4	73.9	28.5	100	359	
Hori.	4882.000	PK	53.4	30.8	5.9	35.9	54.2	73.9	19.7	122	137	
Hori.	7323.000	PK	47.8	36.4	7.2	37.3	54.1	73.9	19.8	100	340	
Hori.	9764.000	PK	46.5	38.5	8.3	35.8	57.5	73.9	16.4	138	359	
Hori.	12205.000	PK	46.3	39.4	9.5	36.9	58.3	73.9	15.6	100	0	
Hori.	1600.000	AV	38.0	25.7	12.9	37.7	38.9	53.9	15.0	100	292	VBW:10Hz
Hori.	2390.000	AV	32.0	27.4	13.6	37.0	36.0	53.9	17.9	100	359	VBW:10Hz
Hori.	2413.000	AV	32.0	27.4	13.7	37.0	36.1	53.9	17.8	100	0	VBW:10Hz
Hori.	3257.000	AV	33.4	28.7	5.2	36.8	30.5	53.9	23.4	100	0	VBW:10Hz
Hori.	4070.000	AV	32.9	29.3	5.5	35.9	31.8	53.9	22.1	100	359	VBW:10Hz
Vert.	247.992	QP	43.1	17.4	9.3	31.7	38.1	46.0	7.9	100	4	
Vert.	256.006	QP	43.8	17.7	9.4	31.7	39.2	46.0	6.8	100	1	
Vert.	359.988	QP	46.9	15.7	6.9	31.6	37.9	46.0	8.1	100	81	
Vert.	1600.000	PK	49.6	25.7	12.9	37.7	50.5	73.9	23.4	100	21	
Vert.	2390.000	PK	45.5	27.4	13.6	37.0	49.5	73.9	24.4	100	0	
Vert.	2413.000	PK	47.0	27.4	13.7	37.0	51.1	73.9	22.8	100	359	
Vert.	3257.000	PK	46.9	28.7	5.2	36.8	44.0	73.9	29.9	100	0	
Vert.	4070.000	PK	45.6	29.3	5.5	35.9	44.5	73.9	29.4	100	359	
Vert.	4882.000	PK	50.5	30.8	5.9	35.9	51.3	73.9	22.6	100	312	
Vert.	7323.000	PK	48.2	36.4	7.2	37.3	54.5	73.9	19.4	100	0	
Vert.	9764.000	PK	46.3	38.5	8.3	35.8	57.3	73.9	16.6	100	357	
Vert.	12205.000	PK	46.8	39.4	9.5	36.9	58.8	73.9	15.1	100	0	
Vert.	1600.000	AV	37.5	25.7	12.9	37.7	38.4	53.9	15.5	100	21	VBW:10Hz
Vert.	2390.000	AV	34.0	27.4	13.6	37.0	38.0	53.9	15.9	100	0	VBW:10Hz
Vert.	2413.000	AV	34.5	27.4	13.7	37.0	38.6	53.9	15.3	100	359	VBW:10Hz
Vert.	3257.000	AV	33.0	28.7	5.2	36.8	30.1	53.9	23.8	100	0	VBW:10Hz
Vert.	4070.000	AV	32.0	29.3	5.5	35.9	30.9	53.9	23.0	100	359	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Dwell time factor relaxation

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Dwell Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	4882.000	AV	40.2	30.8	5.9	35.9	-24.7	16.3	53.9	37.6	VBW:300Hz
Hori.	7323.000	AV	34.5	36.4	7.2	37.3	-24.7	16.1	53.9	37.8	VBW:300Hz
Hori.	9764.000	AV	33.3	38.5	8.3	35.8	-24.7	19.6	53.9	34.3	VBW:300Hz
Hori.	12205.000	AV	33.8	39.4	9.5	36.9	-24.7	21.1	53.9	32.8	VBW:300Hz
Vert.	4882.000	AV	34.9	30.8	5.9	35.9	-24.7	11.0	53.9	42.9	VBW:300Hz
Vert.	7323.000	AV	33.2	36.4	7.2	37.3	-24.7	14.8	53.9	39.1	VBW:300Hz
Vert.	9764.000	AV	31.8	38.5	8.3	35.8	-24.7	18.1	53.9	35.8	VBW:300Hz
Vert.	12205.000	AV	33.7	39.4	9.5	36.9	-24.7	21.0	53.9	32.9	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter)

- Gain(Amplifier) + Dwell time factor (Refer to dwell time data sheet)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

UL Japan, Inc.

Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2480 MHz
Bluetooth, 3-DH5,

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	255.999	QP	47.5	17.7	9.4	31.7	42.9	46.0	3.1	135	158	
Hori.	263.991	QP	45.5	18.1	9.4	31.7	41.3	46.0	4.7	143	333	
Hori.	328.000	QP	54.7	14.7	6.6	31.6	44.4	46.0	1.6	114	321	
Hori.	359.992	QP	53.4	15.5	6.8	31.6	44.1	46.0	1.9	102	78	
Hori.	416.000	QP	49.7	16.7	7.2	31.6	42.0	46.0	4.0	100	342	
Hori.	424.000	QP	52.1	16.9	7.3	31.6	44.7	46.0	1.3	106	71	
Hori.	439.988	QP	49.8	17.1	7.3	31.6	42.6	46.0	3.4	103	241	
Hori.	2483.500	PK	54.3	27.4	13.6	36.9	58.4	73.9	15.5	100	211	
Hori.	2507.000	PK	46.2	27.5	13.7	36.9	50.5	73.9	23.4	100	0	
Hori.	3307.000	PK	46.8	28.8	5.3	36.8	44.1	73.9	29.8	100	359	
Hori.	4133.000	PK	46.3	29.4	5.6	35.9	45.4	73.9	28.5	100	0	
Hori.	4960.000	PK	49.9	31.0	5.9	35.9	50.9	73.9	23.0	100	140	
Hori.	6285.321	PK	51.1	34.0	6.6	37.0	54.7	73.9	19.2	102	273	
Hori.	7440.000	PK	47.9	36.7	7.2	37.3	54.5	73.9	19.4	100	0	
Hori.	9920.000	PK	46.2	38.7	8.5	35.9	57.5	73.9	16.4	100	359	
Hori.	12400.000	PK	46.2	39.4	9.6	36.8	58.4	73.9	15.5	100	0	
Hori.	2507.000	AV	33.0	27.5	13.7	36.9	37.3	53.9	16.6	100	0	VBW:10Hz
Hori.	3307.000	AV	34.3	28.8	5.3	36.8	31.6	53.9	22.3	100	359	VBW:10Hz
Hori.	4133.000	AV	33.6	29.4	5.6	35.9	32.7	53.9	21.2	100	0	VBW:10Hz
Hori.	6285.321	AV	45.4	34.0	6.6	37.0	49.0	53.9	4.9	102	273	VBW:10Hz
Vert.	248.000	QP	42.3	17.4	9.3	31.7	37.3	46.0	8.7	100	2	
Vert.	255.995	QP	43.6	17.7	9.4	31.7	39.0	46.0	7.0	100	1	
Vert.	359.987	QP	43.7	15.5	6.8	31.6	34.4	46.0	11.6	100	98	
Vert.	2483.500	PK	57.1	27.4	13.6	36.9	61.2	73.9	12.7	102	136	
Vert.	2507.000	PK	45.3	27.5	13.7	36.9	49.6	73.9	24.3	100	0	
Vert.	3307.000	PK	47.2	28.8	5.3	36.8	44.5	73.9	29.4	100	70	
Vert.	4133.000	PK	45.8	29.4	5.6	35.9	44.9	73.9	29.0	100	0	
Vert.	4960.000	PK	48.7	31.0	5.9	35.9	49.7	73.9	24.2	100	33	
Vert.	6285.346	PK	50.4	34.0	6.6	37.0	54.0	73.9	19.9	146	262	
Vert.	7440.000	PK	47.3	36.7	7.2	37.3	53.9	73.9	20.0	100	359	
Vert.	9920.000	PK	46.9	38.7	8.5	35.9	58.2	73.9	15.7	100	220	
Vert.	12400.000	PK	46.0	39.4	9.6	36.8	58.2	73.9	15.7	100	0	
Vert.	2507.000	AV	34.0	27.5	13.7	36.9	38.3	53.9	15.6	100	0	VBW:10Hz
Vert.	3307.000	AV	38.2	28.8	5.3	36.8	35.5	53.9	18.4	100	70	VBW:10Hz
Vert.	4133.000	AV	33.6	29.4	5.6	35.9	32.7	53.9	21.2	100	0	VBW:10Hz
Vert.	6285.346	AV	43.9	34.0	6.6	37.0	47.5	53.9	6.4	146	262	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.2 Semi Anechoic Chamber
Date January 26, 2011 January 27, 2011
Temperature / Humidity 25deg.C. , 35% 25deg.C. , 25%
Engineer Hikaru Shirasawa Hikaru Shirasawa
Mode Tx, 2480 MHz
Bluetooth, 3-DH5,

Dwell time factor relaxation

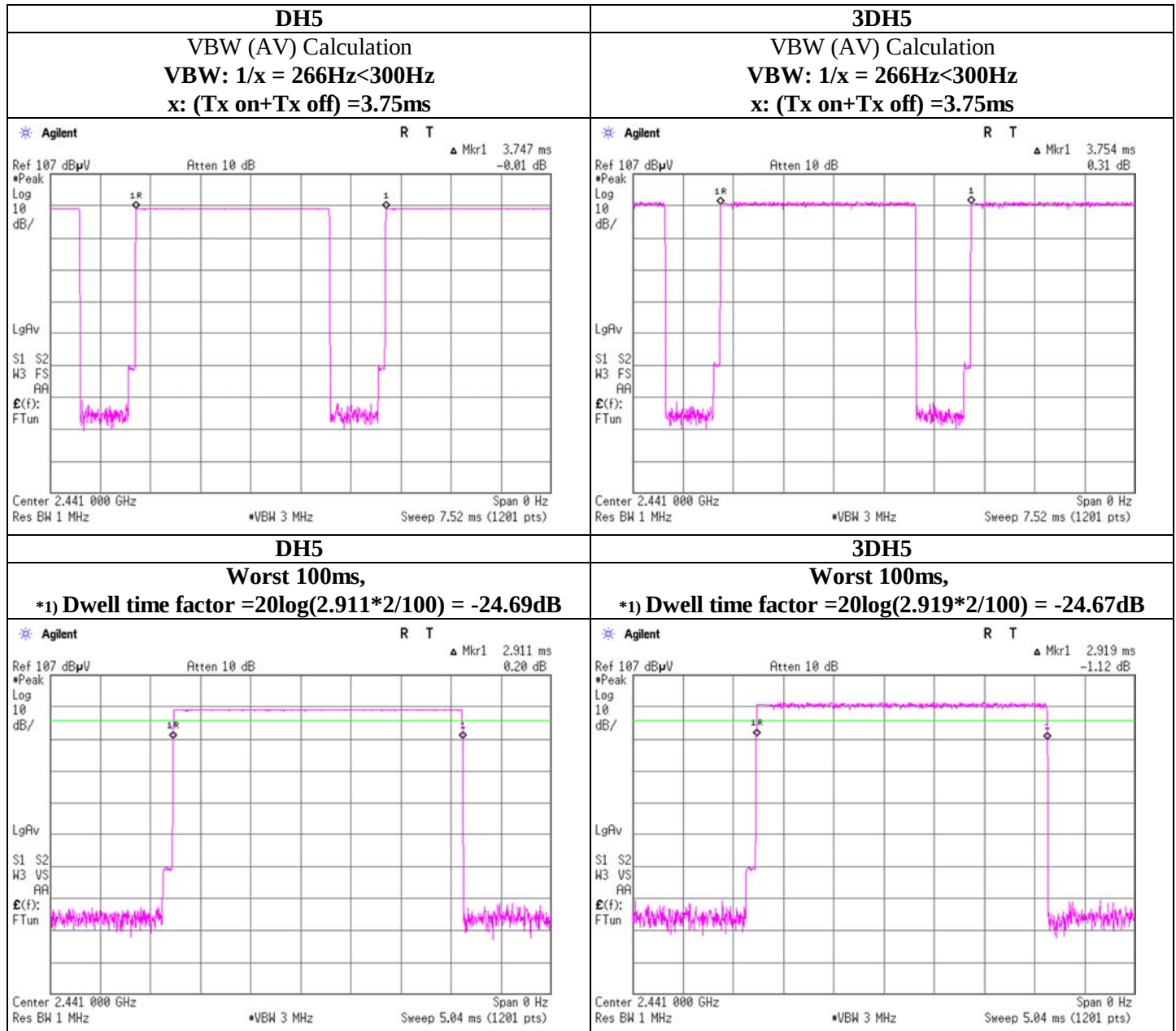
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Dwell Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2483.500	AV	42.7	27.4	13.6	36.9	-24.7	22.1	53.9	31.8	VBW:300Hz
Hori.	4960.000	AV	35.9	31.0	5.9	35.9	-24.7	12.2	53.9	41.7	VBW:300Hz
Hori.	7440.000	AV	34.9	36.7	7.2	37.3	-24.7	16.8	53.9	37.1	VBW:300Hz
Hori.	9920.000	AV	33.3	38.7	8.5	35.9	-24.7	19.9	53.9	34.0	VBW:300Hz
Hori.	12400.000	AV	32.7	39.4	9.6	36.8	-24.7	20.2	53.9	33.7	VBW:300Hz
Vert.	2483.500	AV	45.4	27.4	13.6	36.9	-24.7	24.8	53.9	29.1	VBW:300Hz
Vert.	4960.000	AV	38.3	31.0	5.9	35.9	-24.7	14.6	53.9	39.3	VBW:300Hz
Vert.	7440.000	AV	35.0	36.7	7.2	37.3	-24.7	16.9	53.9	37.0	VBW:300Hz
Vert.	9920.000	AV	33.4	38.7	8.5	35.9	-24.7	20.0	53.9	33.9	VBW:300Hz
Vert.	12400.000	AV	32.8	39.4	9.6	36.8	-24.7	20.3	53.9	33.6	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

- Gain(Amplifier) + Dwell time factor (Refer to dwell time data sheet)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Spurious emission (Radiated)



*1) ON time of some channel during 100ms: Twice
 This is the worst case in hopping sequence of Bluetooth.

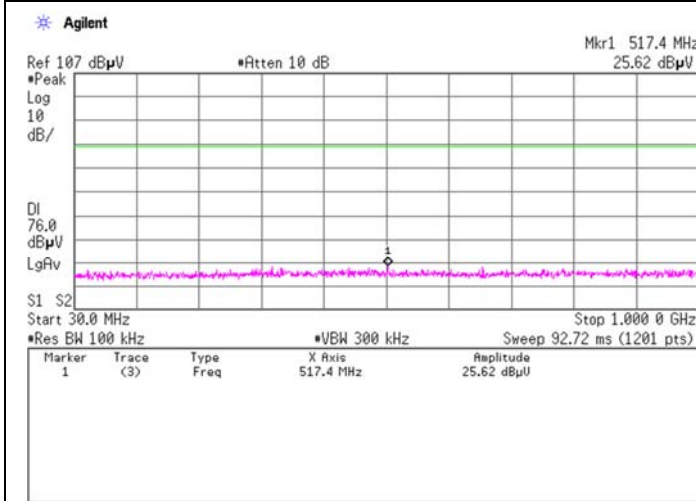
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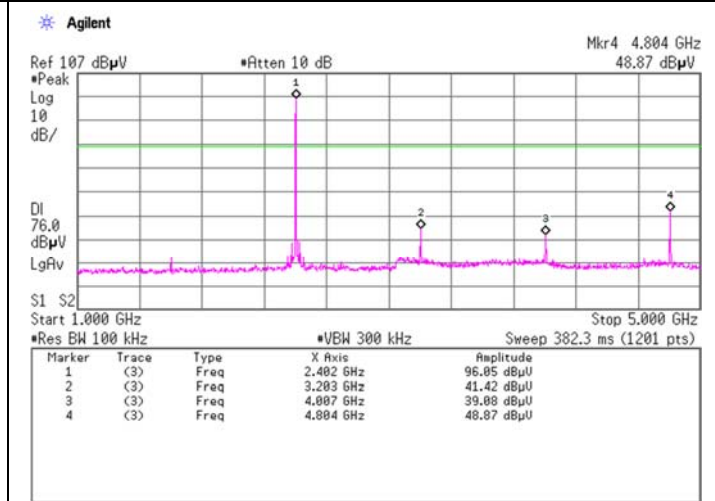
Spurious emission (Conducted)

DH5,
Tx, 2402MHz

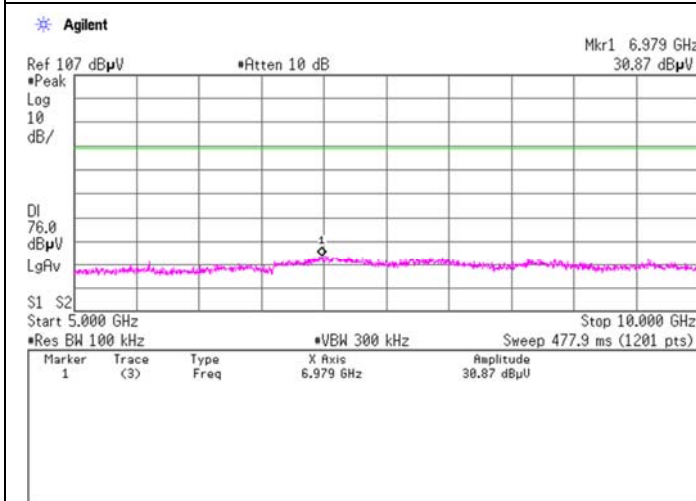
30MHz - 1GHz



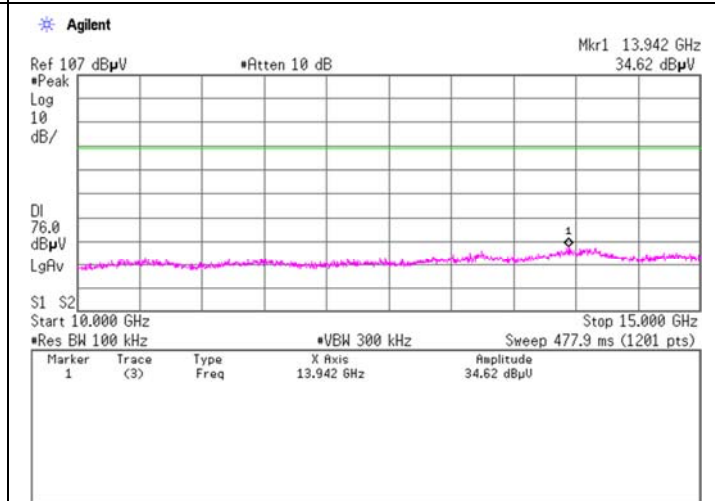
1GHz - 5GHz



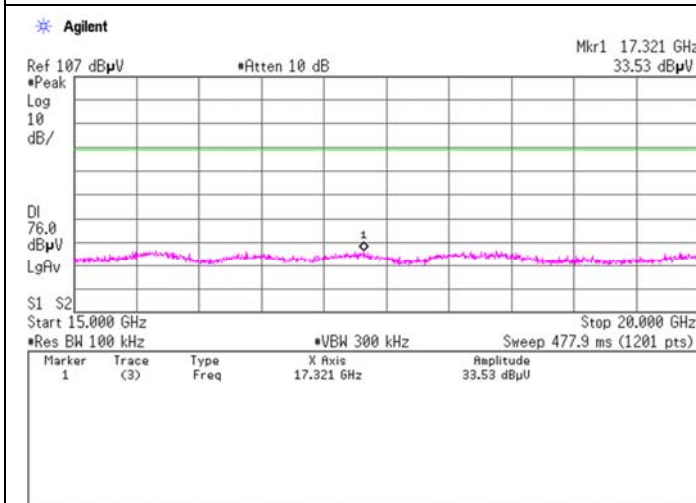
5GHz - 10GHz



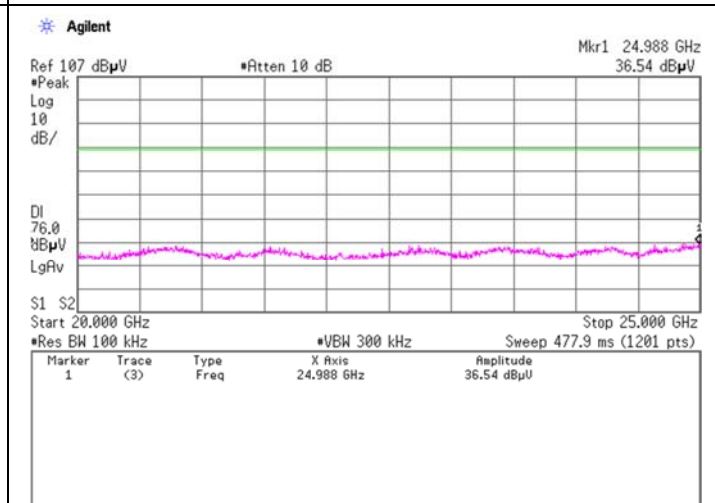
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



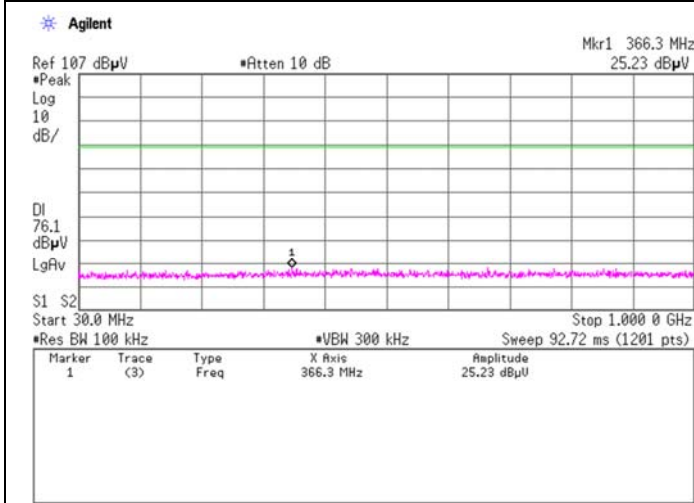
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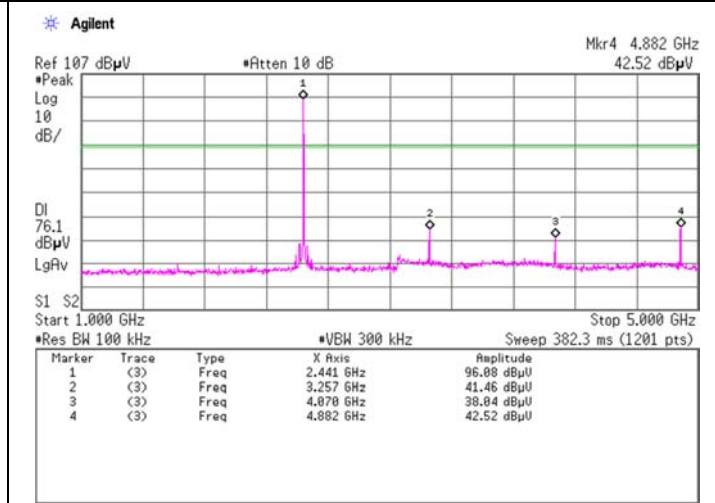
Spurious emission (Conducted)

DH5,
Tx, 2441MHz

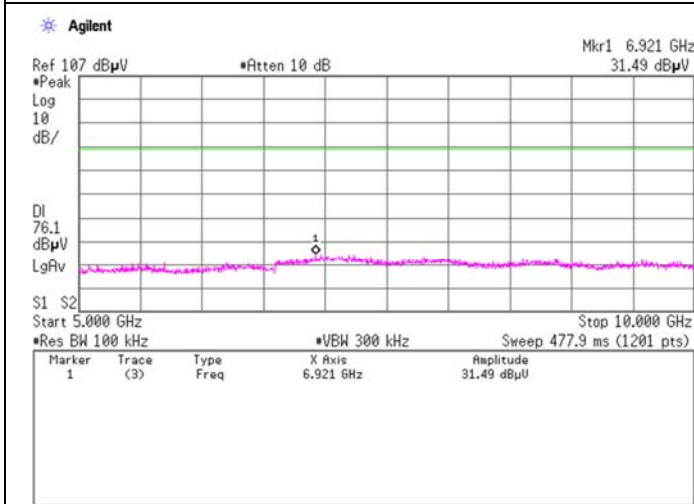
30MHz - 1GHz



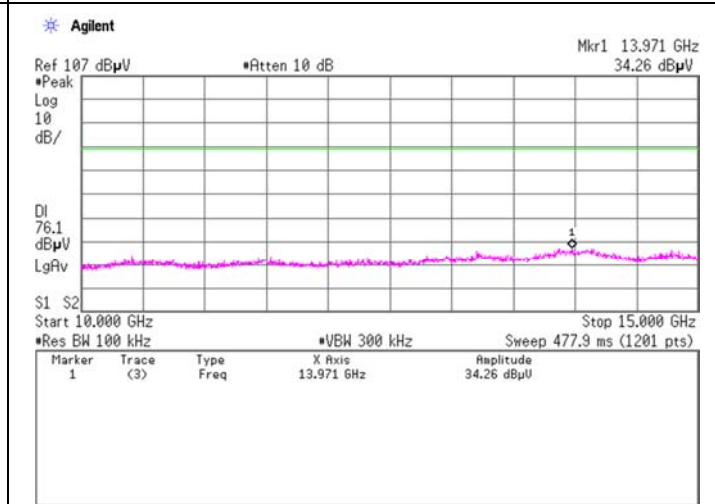
1GHz - 5GHz



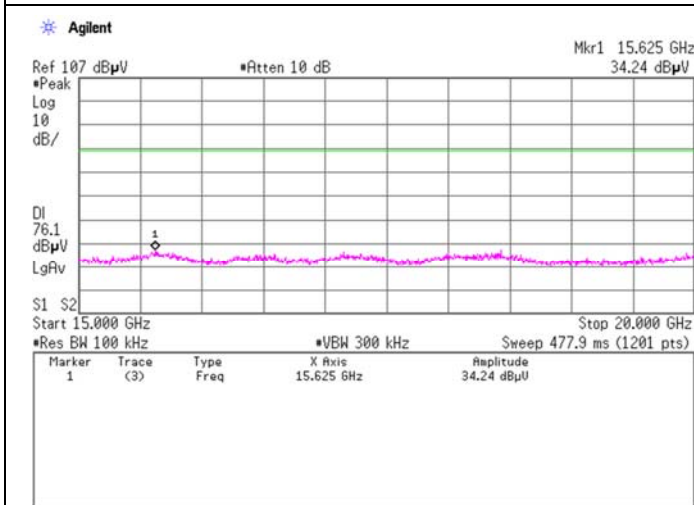
5GHz - 10GHz



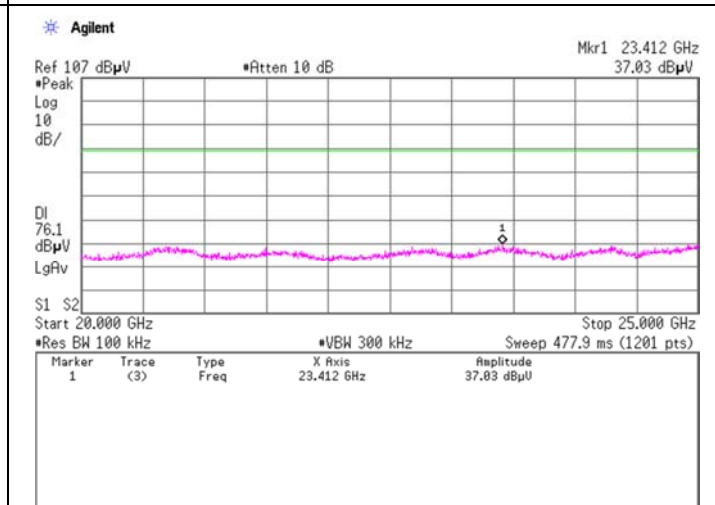
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



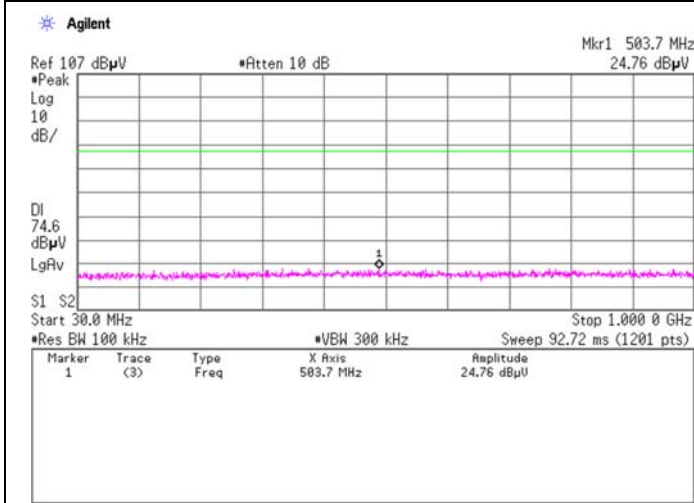
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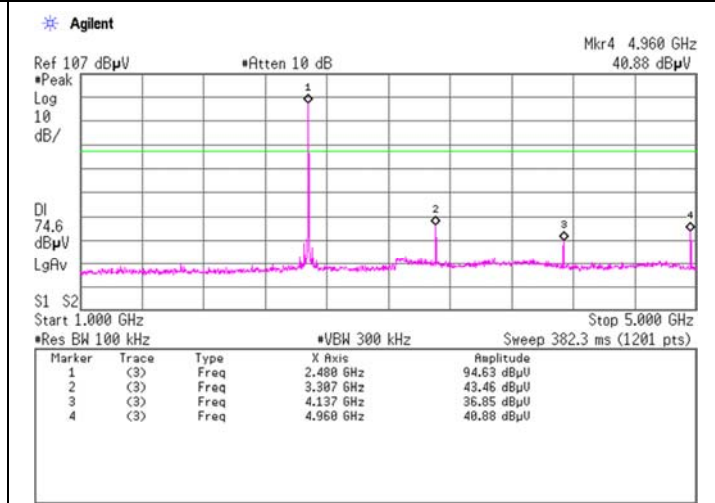
Spurious emission (Conducted)

DH5,
Tx, 2480MHz

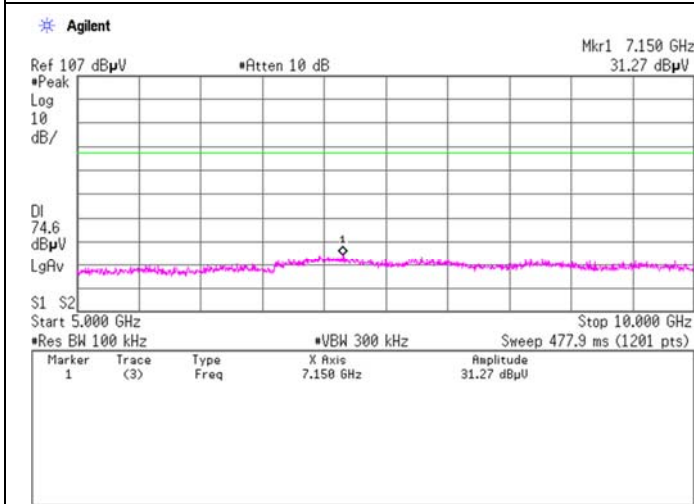
30MHz - 1GHz



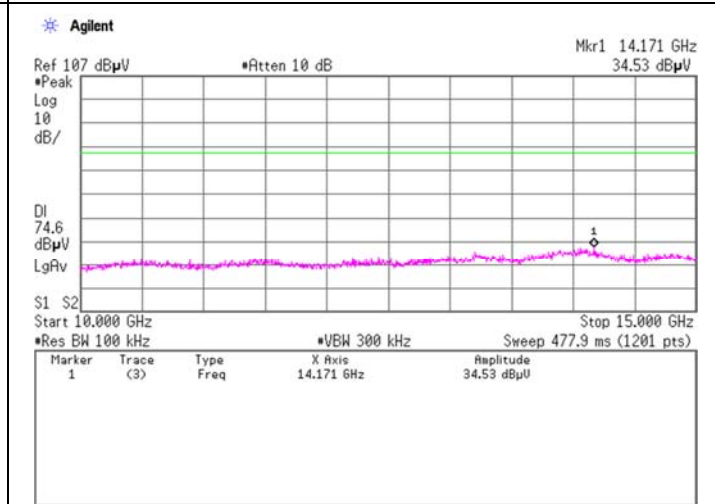
1GHz - 5GHz



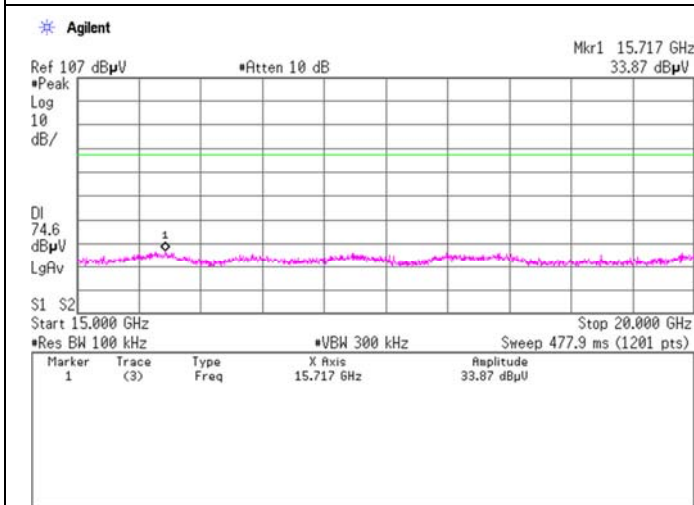
5GHz - 10GHz



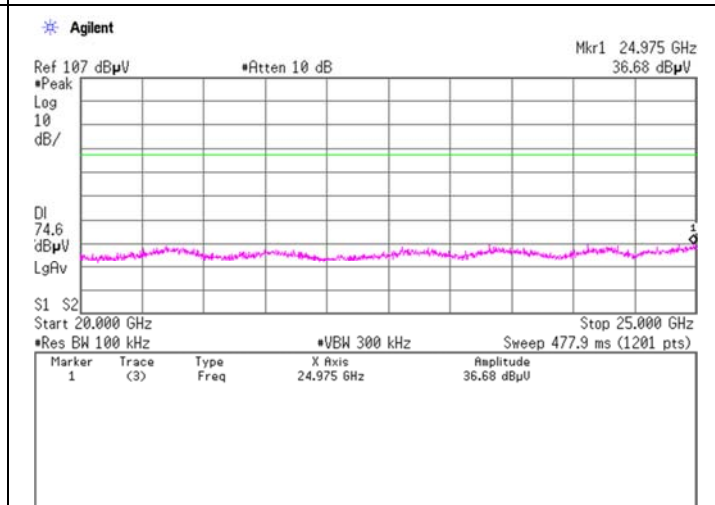
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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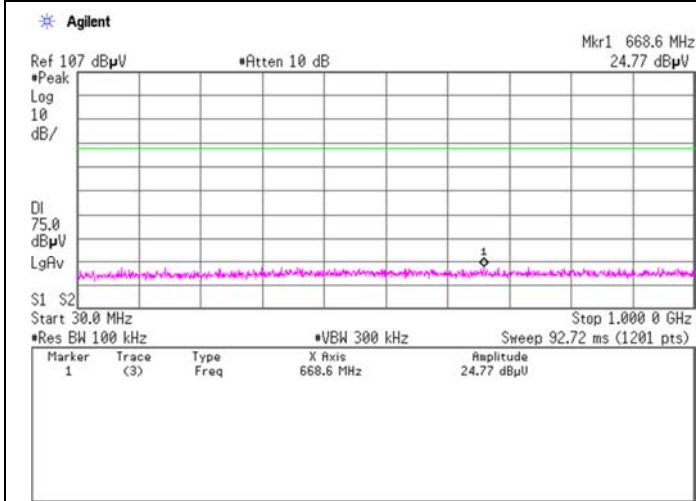
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

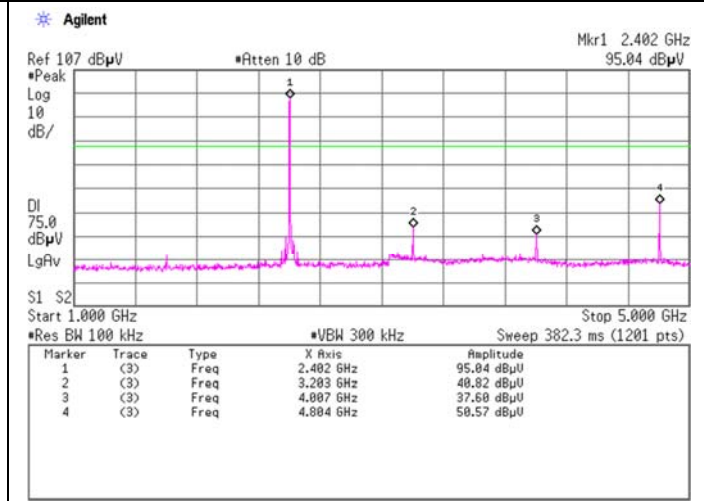
3-DH5,

Tx, 2402MHz

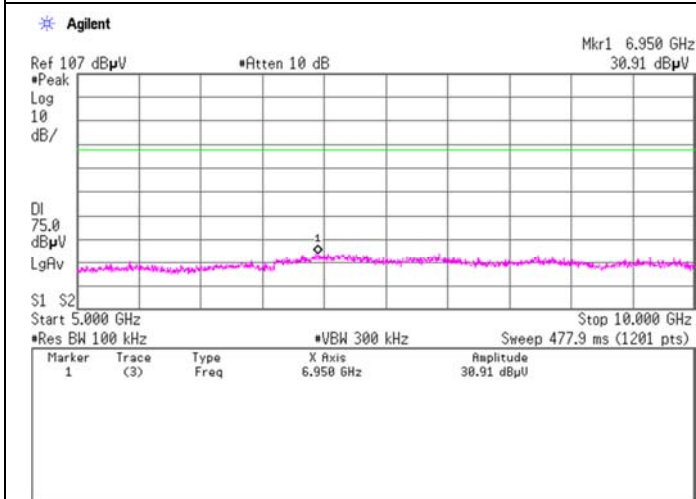
30MHz - 1GHz



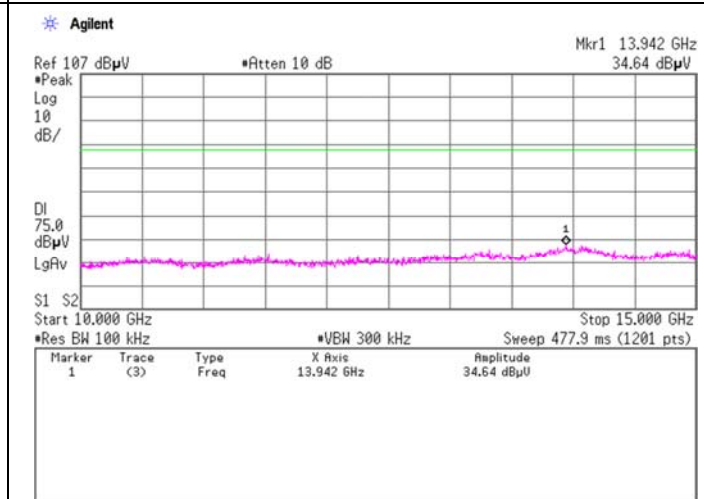
1GHz - 5GHz



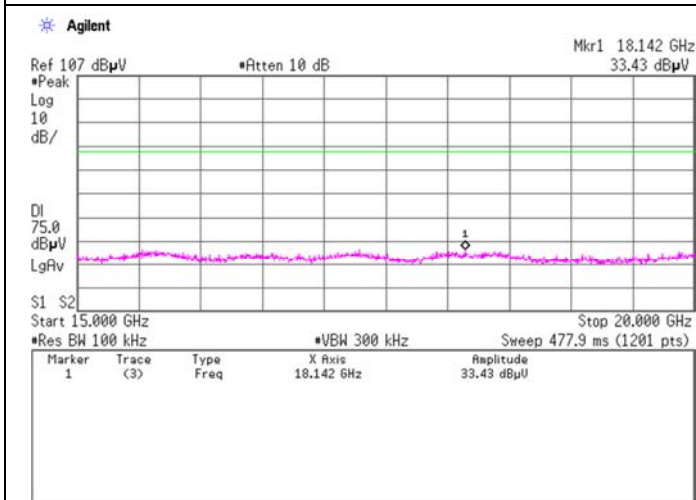
5GHz - 10GHz



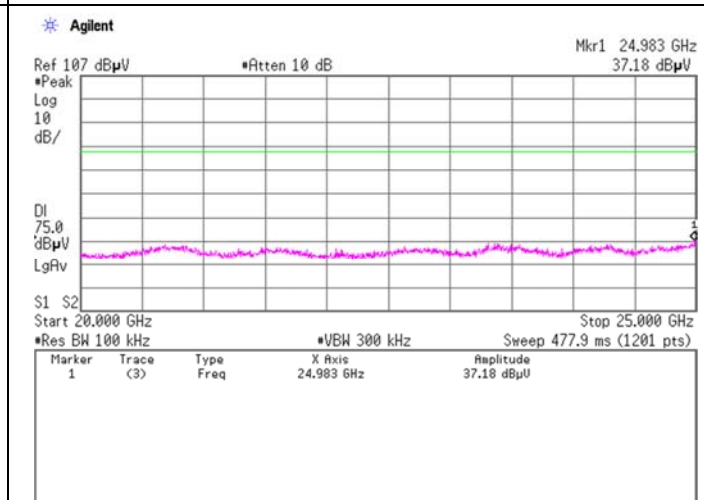
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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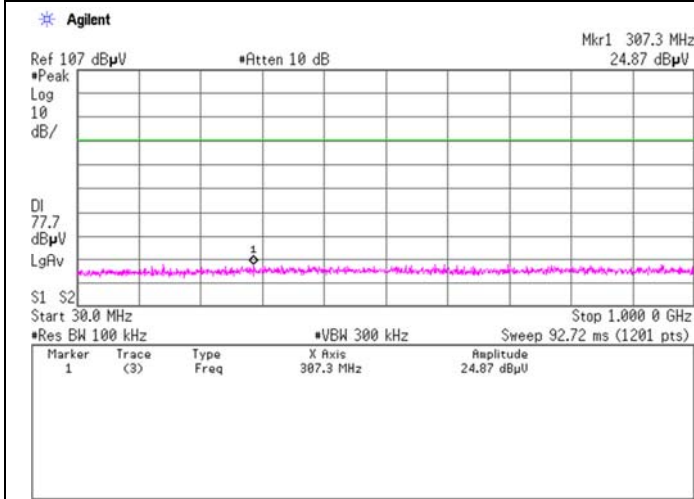
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

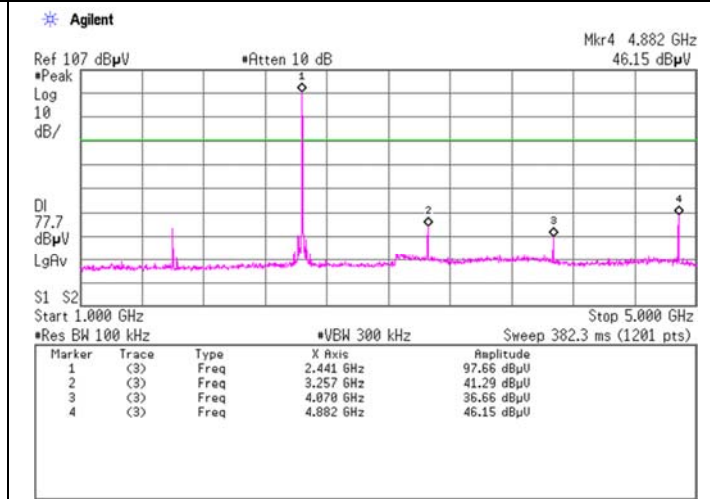
3-DH5,

Tx, 2441MHz

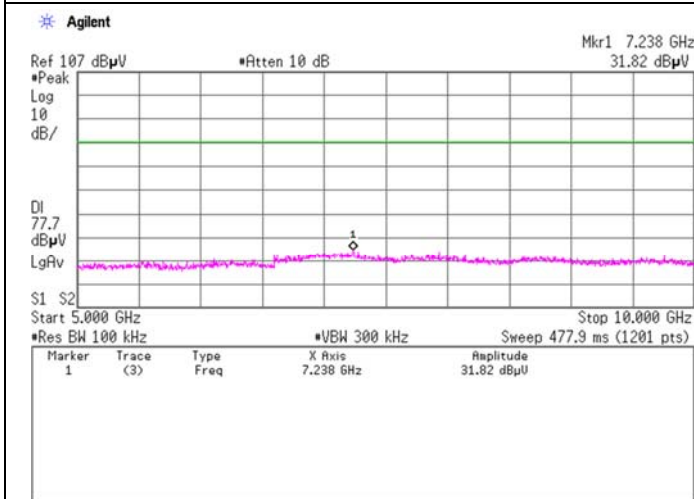
30MHz - 1GHz



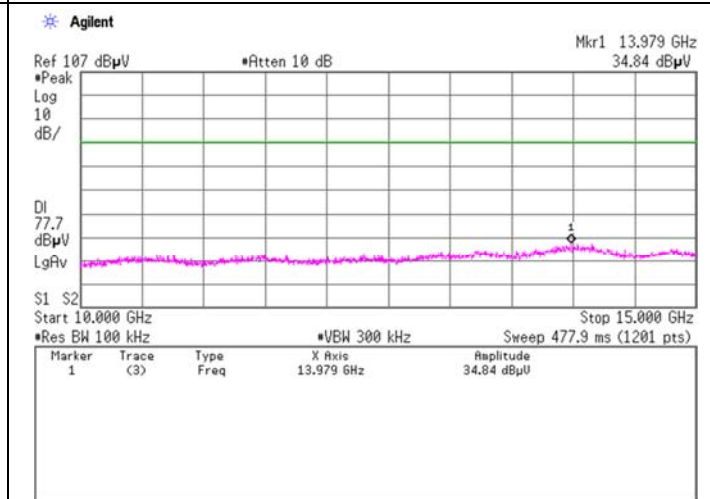
1GHz - 5GHz



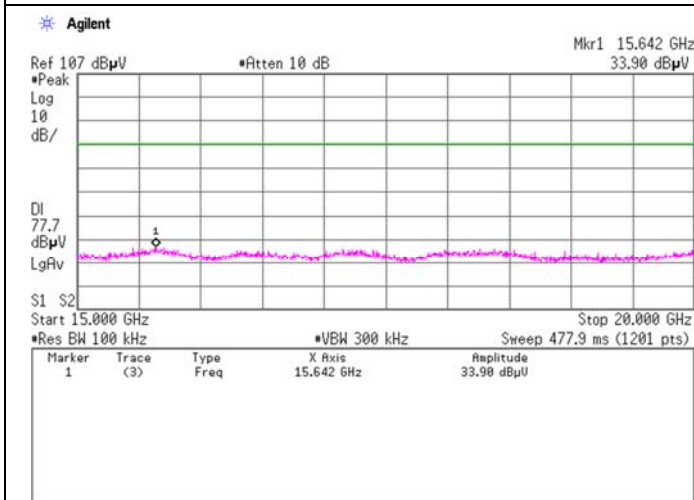
5GHz - 10GHz



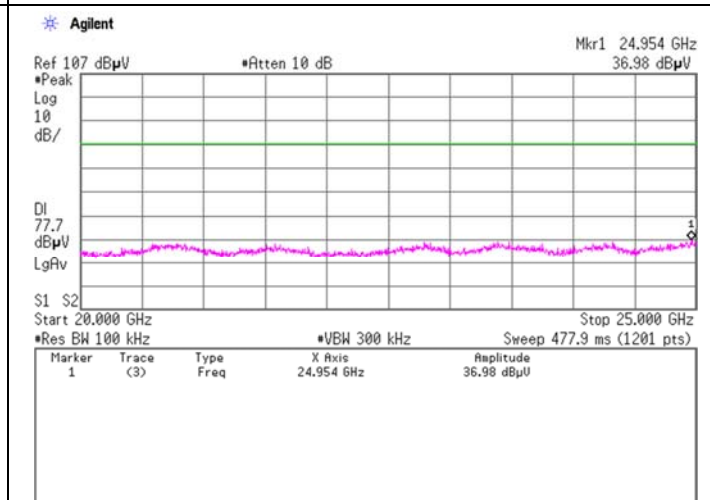
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

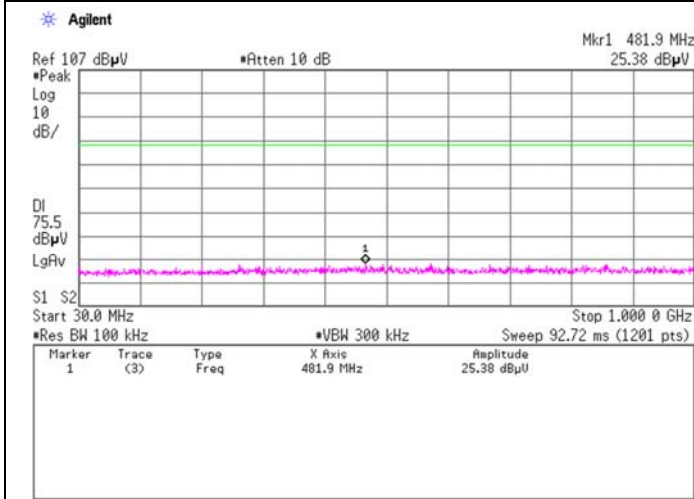
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

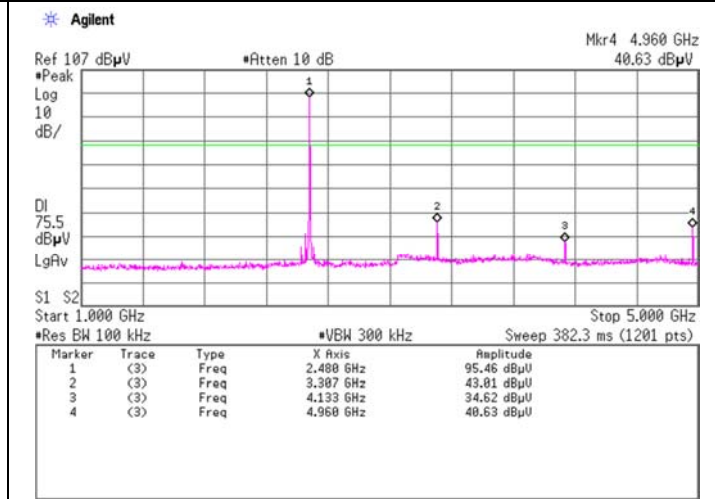
3-DH5,

Tx, 2480MHz

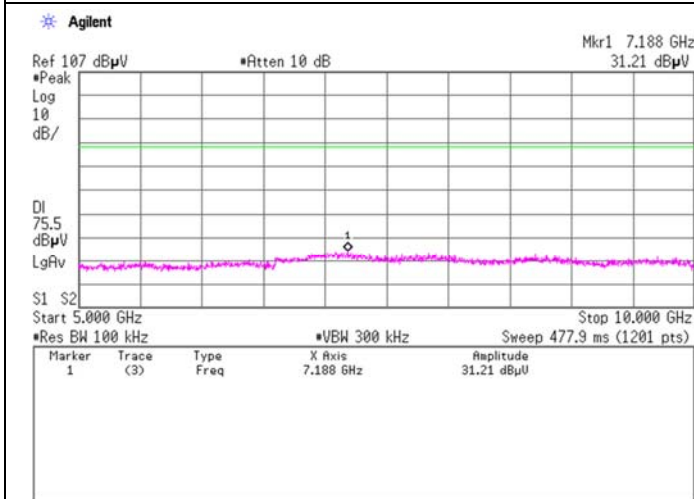
30MHz - 1GHz



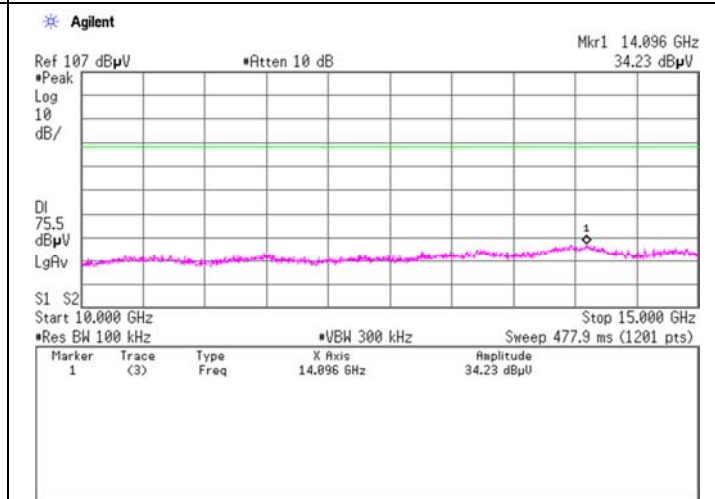
1GHz - 5GHz



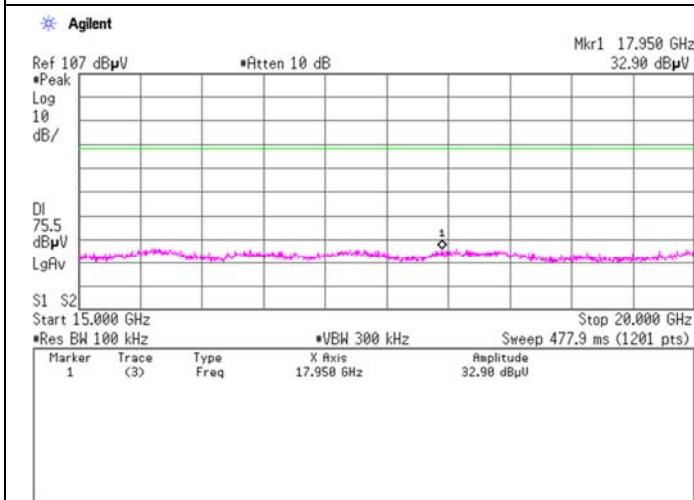
5GHz - 10GHz



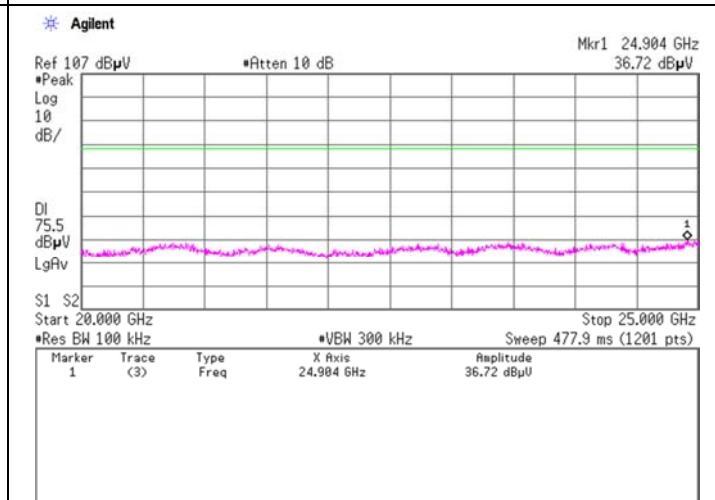
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



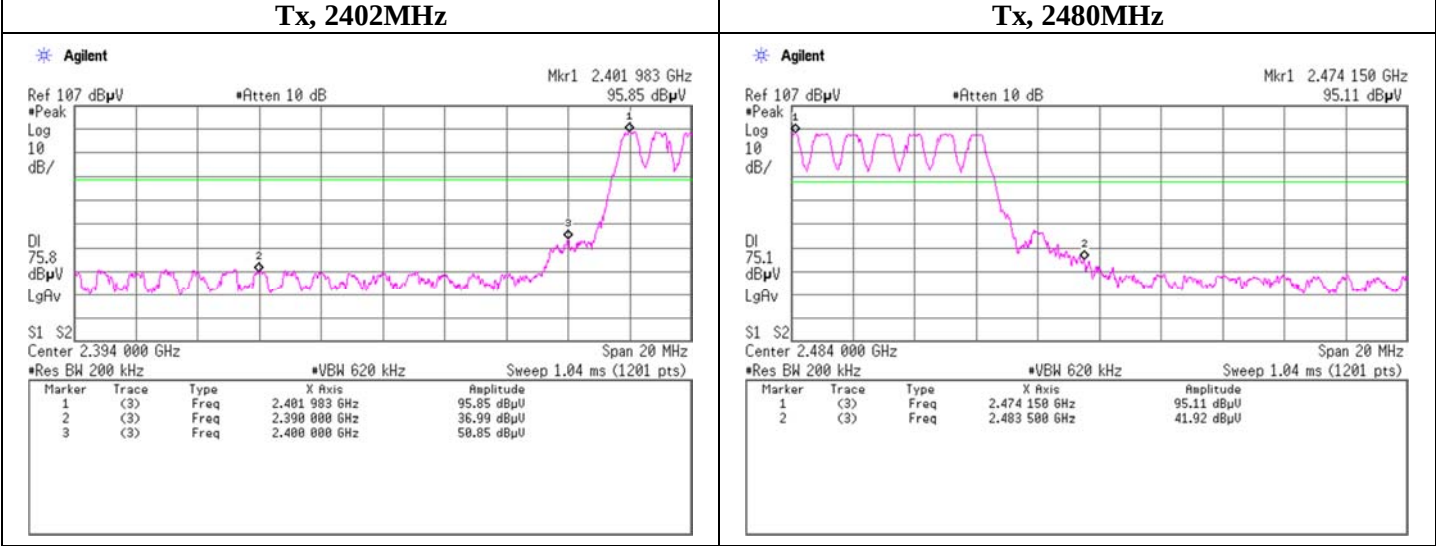
UL Japan, Inc.
Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

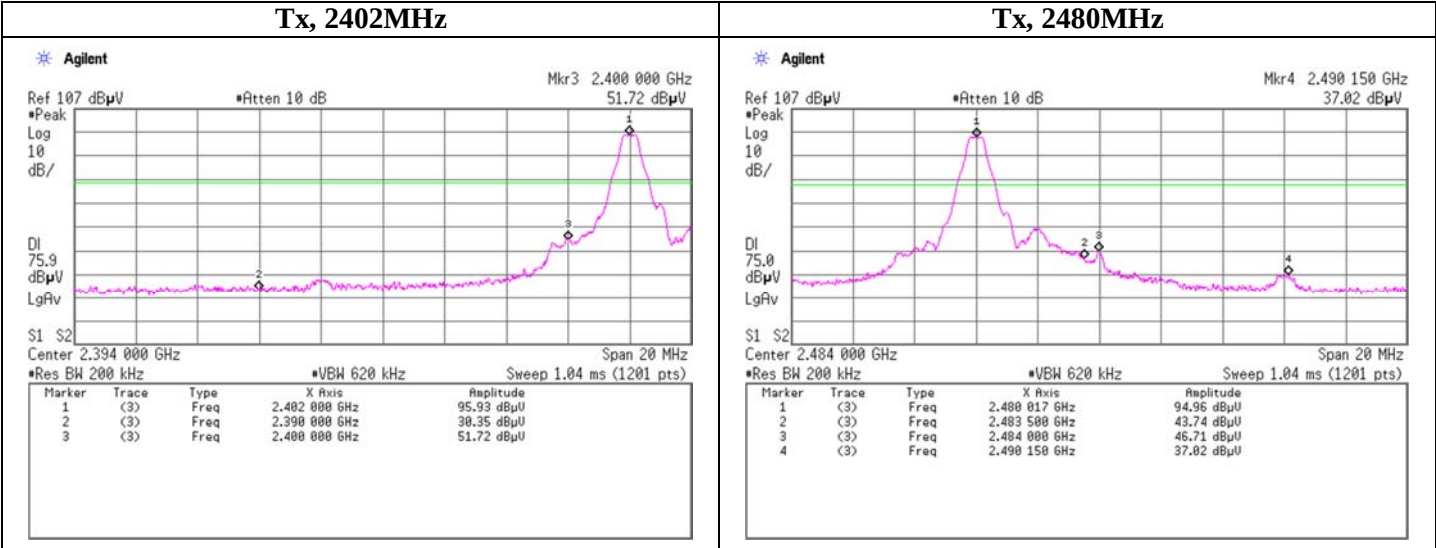
Spurious emission (Conducted)

Band Edge compliance
DH5,

Hopping ON



Hopping OFF



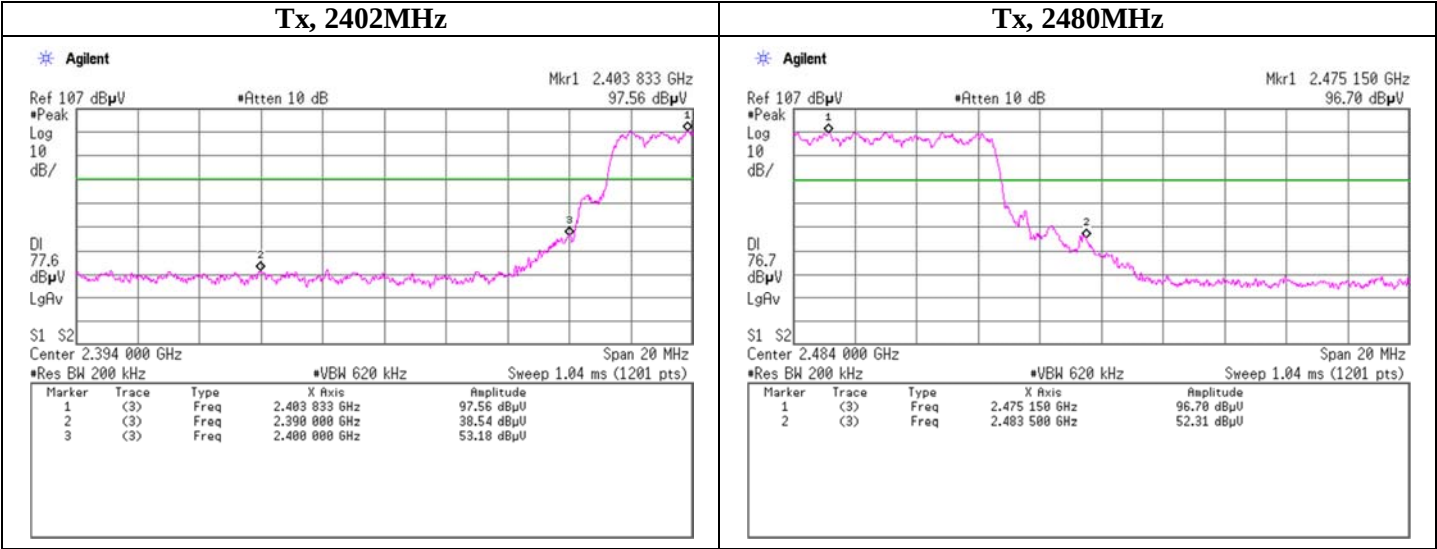
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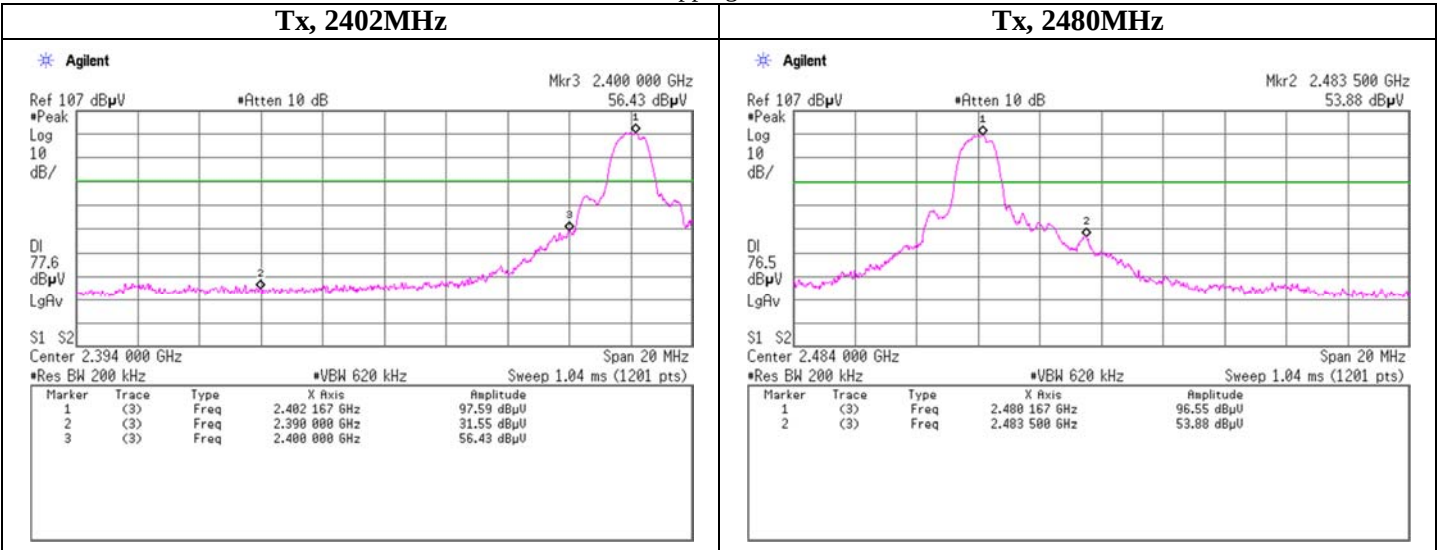
Spurious emission (Conducted)

Band Edge compliance
3-DH5,

Hopping ON



Hopping OFF

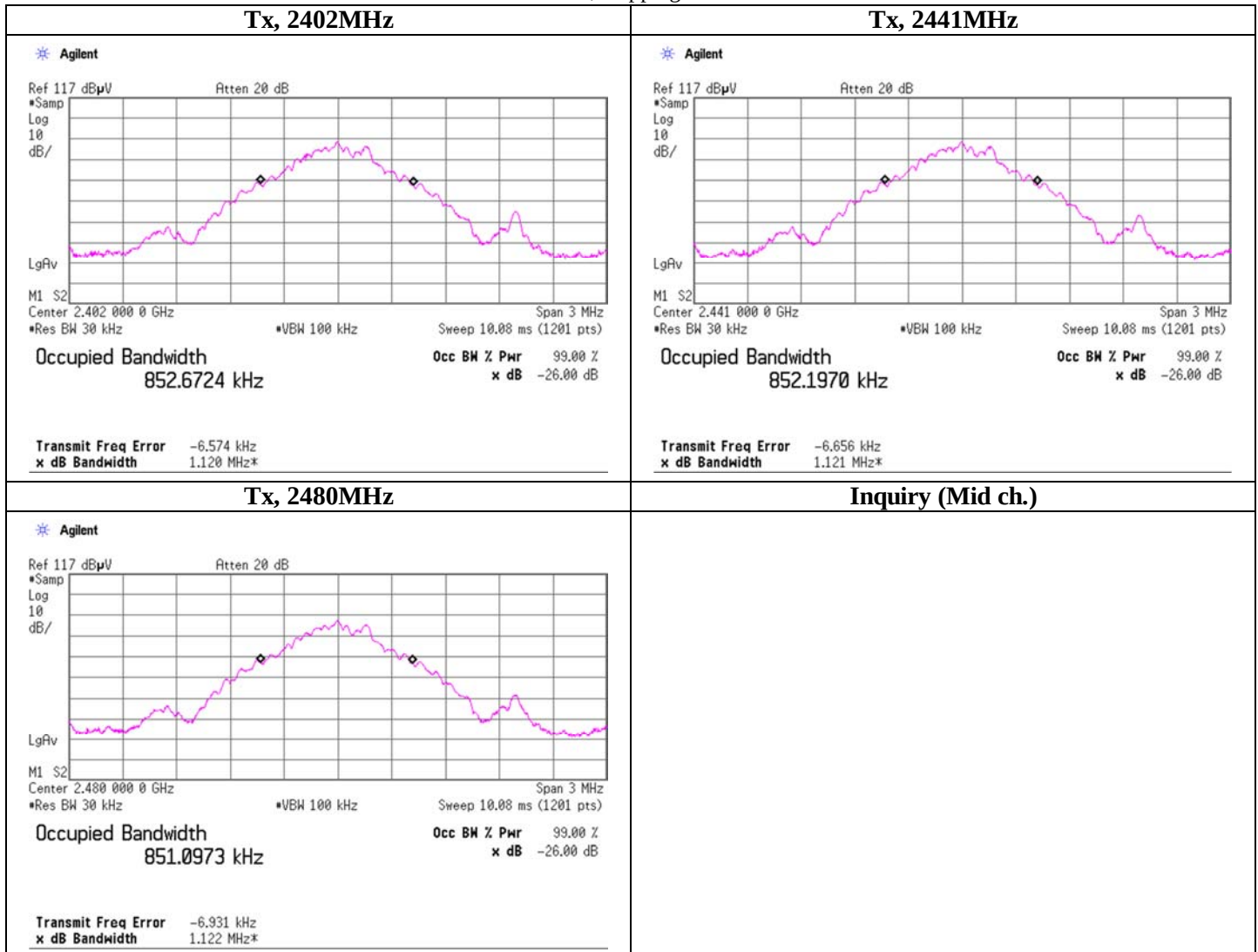


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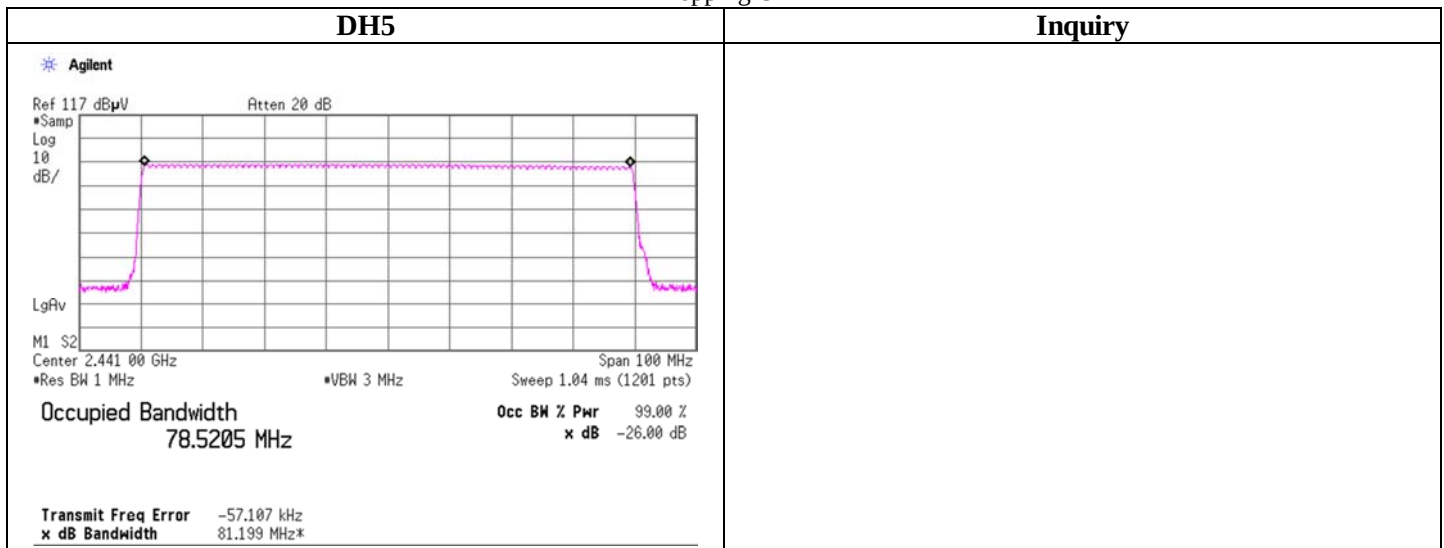
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

99% Occupied Bandwidth

DH5, Hopping Off



Hopping On

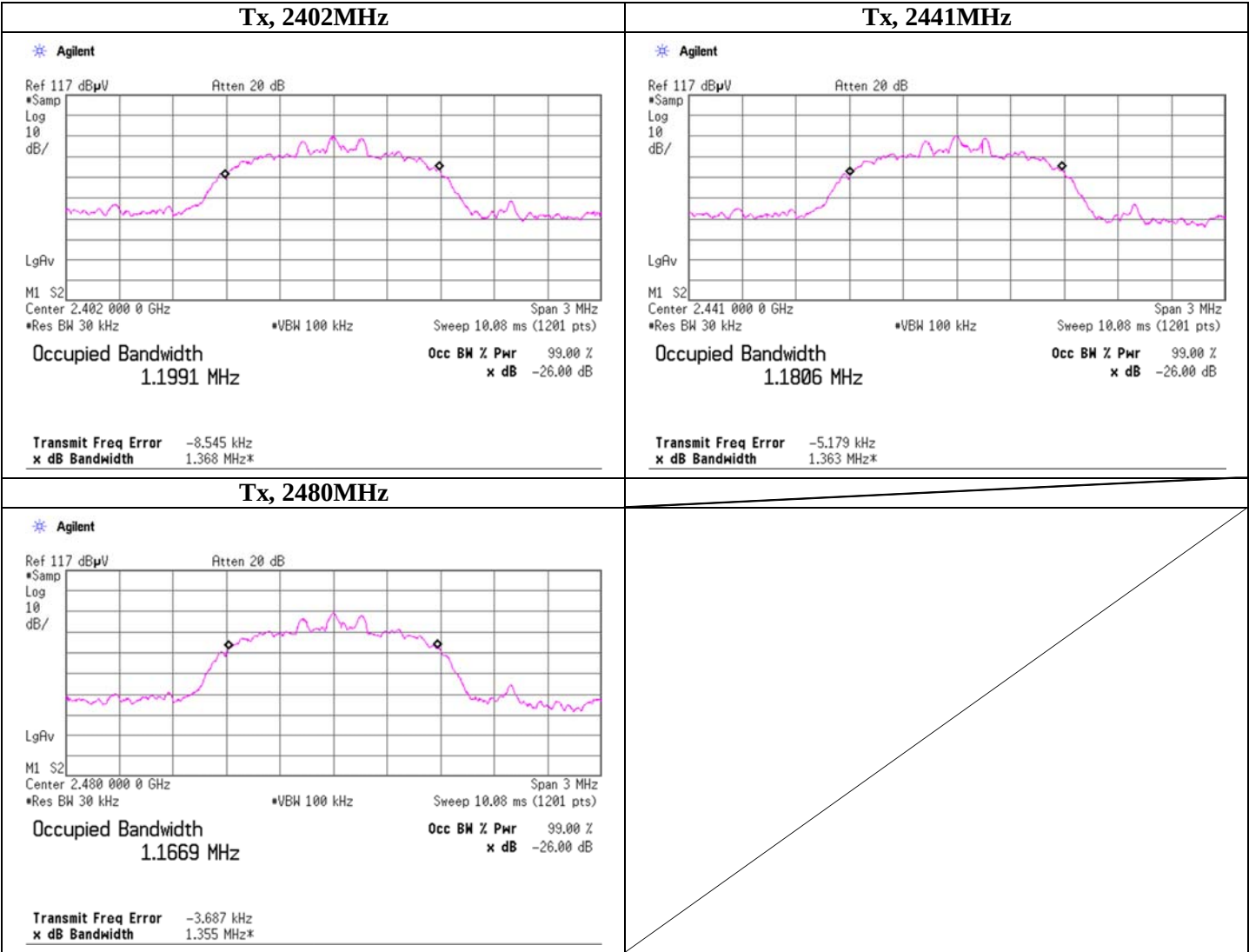


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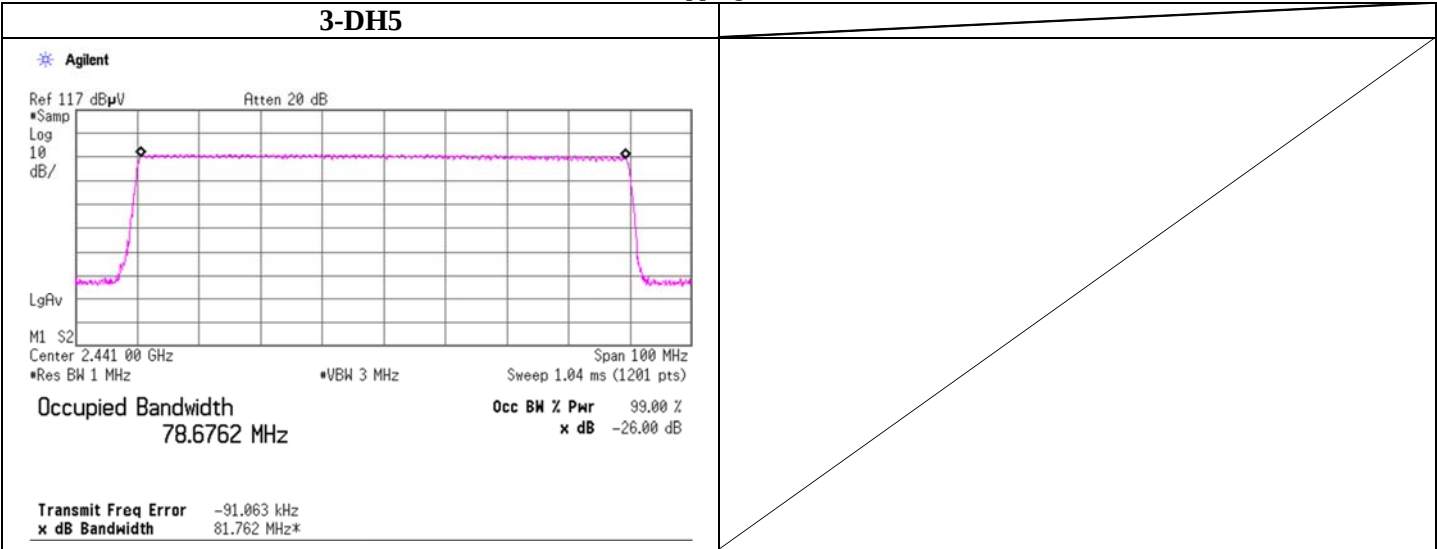
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
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99% Occupied Bandwidth

3-DH5, Hopping Off



Hopping On



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APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SSA-03	Spectrum Analyzer	Agilent	E4448A	MY48250152	AT	2010/11/16 * 12
SAT10-06	Attenuator(above1GHz)	Agilent	8493C-010	74865	AT	2010/03/05 * 12
SCC-G12	Coaxial Cable	Suhner	SUCOFLEX 102	30790/2	AT	2010/03/09 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2010/02/17 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	AT	2010/01/27 * 12
SPM-06	Power Meter	Anritsu	ML2495A	0850009	AT	2010/04/01 * 12
SPSS-03	Power sensor	Anritsu	MA2411B	0917063	AT	2010/04/01 * 12
SOS-10	Humidity Indicator	A&D	AD-5681	4064561	AT	2010/02/09 * 12
SAF-05	Pre Amplifier	TOYO Corporation	TPA0118-36	1440490	RE	2010/03/09 * 12
SCC-G02	Coaxial Cable	Suhner	SUCOFLEX 104A	46498/4A	RE	2010/04/09 * 12
SCC-G22	Coaxial Cable	Suhner	SUCOFLEX 104	296199/4	RE	2010/05/25 * 12
SHA-02	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-726	RE	2010/08/08 * 12
SOS-03	Humidity Indicator	A&D	AD-5681	4063325	RE	2010/02/09 * 12
SSA-01	Spectrum Analyzer	Agilent	N9010A-526	MY48031482	RE	2010/04/05 * 12
SJM-02	Measure	KOMELON	KMC-36	-	RE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV	-	RE	-
SAT10-04	Attenuator(above1GHz)	Agilent	8493C-010	74863	RE	2010/12/15 * 12
SFL-04	Low Pass Filter	MICROLAB/FXR	LA-20	-	RE	2010/12/15 * 12
SAF-02	Pre Amplifier	SONOMA	310N	290212	RE	2010/02/06 * 12
SAT6-02	Attenuator	JFW	50HF-006N	-	RE	2010/02/06 * 12
SAT3-02	Attenuator	JFW	50HF-003N	-	RE	2010/02/06 * 12
SBA-02	Biconical Antenna	Schwarzbeck	BBA9106	91032665	RE	2010/10/11 * 12
SCC-B1/B3/B5/B7/B8/B13/SRSE-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2010/04/02 * 12
SCC-B2/B4/B6/B7/B8/B13/SRSE-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2010/04/02 * 12
SLA-02	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0893	RE	2010/10/11 * 12
STR-02	Test Receiver	Rohde & Schwarz	ESCI	100575	RE	2010/08/18 * 12
SAEC-02(NSA)	Semi-Anechoic Chamber	TDK	SAEC-02(NSA)	2	RE	2010/09/04 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2010/03/29 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2010/03/02 * 12
SCC-G17	Coaxial Cable	Suhner	SUCOFLEX 104A	46291/4A	RE	2010/03/02 * 12

The expiration date of the calibration is the end of the expired month .

As for some calibrations performed after the tested dates , those test equipment have been controlled by means of an unbroken chains of calibrations .

All equipment is calibrated with traceable calibrations . Each calibration is traceable to the national or international standards .

Test Item :

RE: Radiated emission,

AT: Antenna terminal conducted test