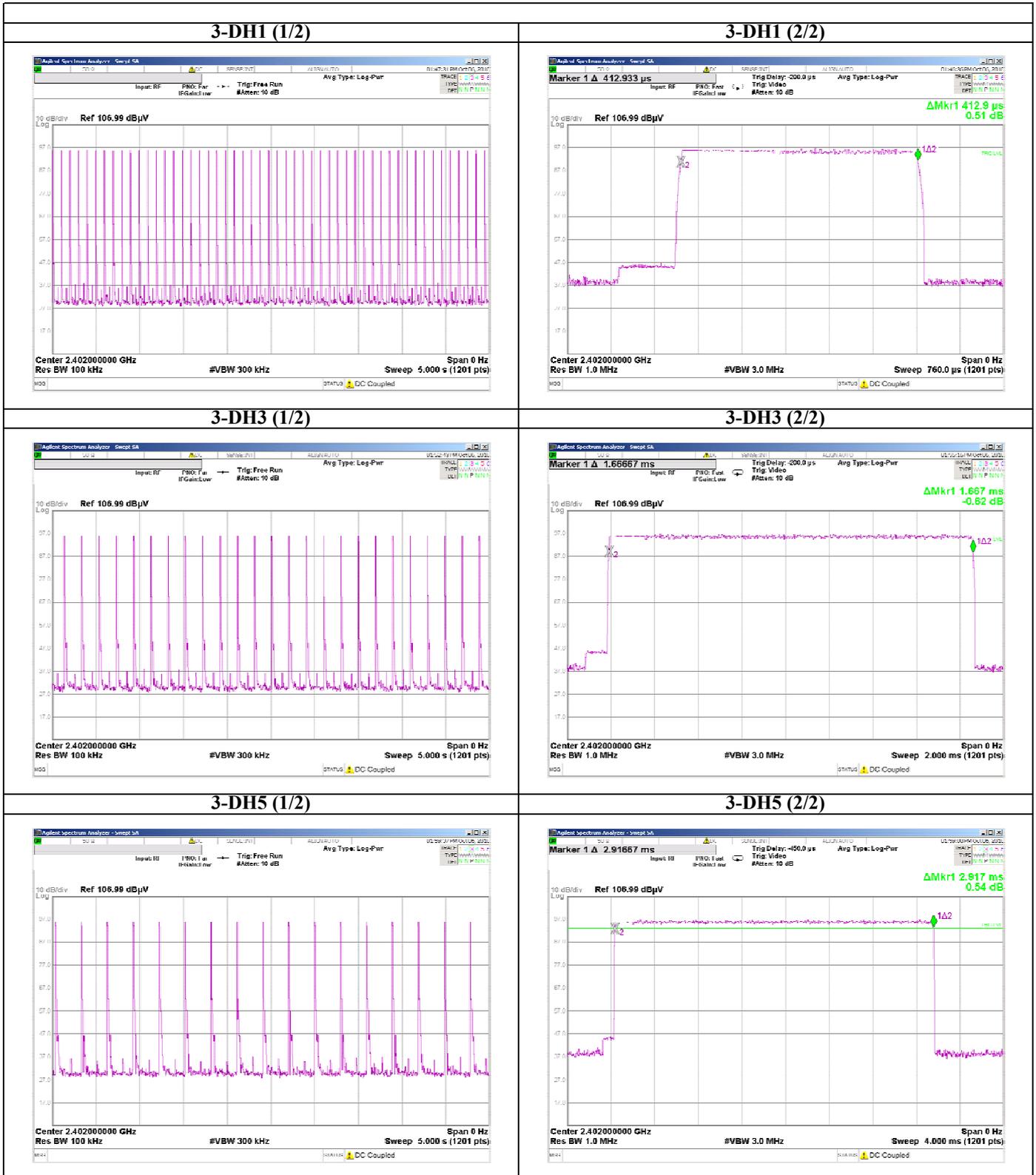


Dwell time



UL Japan, Inc.
Shonan EMC Lab.

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Dwell time



UL Japan, Inc.
Shonan EMC Lab.

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Peak Output Power (Conducted)

Test place UL Japan, Inc. Shonan EMC Lab. No.6 Shielded Room
 Date 2010/10/6
 Temperature / Humidity 20deg.C. , 58%
 Engineer Hikaru Shirasawa
 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	-10.26	1.16	9.95	0.85	1.22	20.97	125	20.12
Mid	2441.0	-10.19	1.13	9.95	0.89	1.23	20.97	125	20.08
High	2480.0	-10.25	1.13	9.95	0.83	1.21	20.97	125	20.14

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	-10.30	1.16	9.95	0.81	1.20	20.97	125	20.16
Mid	2441.0	-10.30	1.13	9.95	0.78	1.20	20.97	125	20.19
High	2480.0	-10.60	1.13	9.95	0.48	1.12	20.97	125	20.49

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	-10.18	1.16	9.95	0.93	1.24	20.97	125	20.04
Mid	2441.0	-10.31	1.13	9.95	0.77	1.19	20.97	125	20.20
High	2480.0	-10.58	1.13	9.95	0.50	1.12	20.97	125	20.47

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.

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Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Semi Anechoic Chamber
 Date September 27, 2010 September 28, 2010
 Temperature / Humidity 23deg.C. , 60% 22deg.C. , 65%
 Engineer 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.	107.084	QP	43.1	11.4	7.9	31.8	30.6	43.5	12.9	300	148	
Hori.	178.497	QP	37.2	16.0	8.6	31.8	30.0	43.5	13.5	240	226	
Hori.	243.009	QP	40.1	17.2	9.2	31.7	34.8	46.0	11.2	152	341	
Hori.	432.009	QP	41.8	16.5	7.4	31.9	33.8	46.0	12.2	100	341	
Hori.	486.012	QP	42.3	17.1	7.7	31.9	35.2	46.0	10.8	100	126	
Hori.	1601.993	PK	50.6	25.8	12.7	40.0	49.1	74.0	24.9	182	170	
Hori.	2390.000	PK	46.9	27.1	13.3	39.8	47.5	74.0	26.5	100	0	
Hori.	2400.000	PK	55.8	27.1	13.5	39.8	56.6	74.0	17.4	100	347	
Hori.	3203.035	PK	48.1	28.5	4.8	40.4	41.0	74.0	33.0	100	0	
Hori.	4006.008	PK	50.4	29.3	5.1	40.3	44.5	74.0	29.5	100	350	
Hori.	4804.000	PK	55.3	30.8	5.4	40.2	51.3	74.0	22.7	100	314	
Hori.	7206.000	PK	48.3	36.0	6.7	38.9	52.1	74.0	21.9	100	305	
Hori.	9608.000	PK	47.0	38.3	7.7	38.8	54.2	74.0	19.8	100	359	
Hori.	12010.000	PK	47.6	39.1	9.0	38.7	57.0	74.0	17.0	100	359	
Hori.	1601.993	AV	45.1	25.8	12.7	40.0	43.6	54.0	10.4	182	170	VBW:10Hz
Hori.	3203.035	AV	35.6	28.5	4.8	40.4	28.5	54.0	25.5	100	0	VBW:10Hz
Hori.	4006.008	AV	40.2	29.3	5.1	40.3	34.3	54.0	19.7	100	350	VBW:10Hz
Vert.	34.329	QP	37.6	16.7	7.0	31.8	29.5	40.0	10.5	100	14	
Vert.	558.557	QP	35.4	18.2	8.2	32.0	29.8	46.0	16.2	100	168	
Vert.	1601.980	PK	50.7	25.8	12.7	40.0	49.2	74.0	24.8	100	312	
Vert.	2390.000	PK	46.7	27.1	13.3	39.8	47.3	74.0	26.7	100	0	
Vert.	2400.000	PK	53.9	27.1	13.5	39.8	54.7	74.0	19.3	100	264	
Vert.	3203.042	PK	47.1	28.5	4.8	40.4	40	74.0	34.0	100	45	
Vert.	4006.017	PK	48.4	29.3	5.1	40.3	42.5	74.0	31.5	100	225	
Vert.	4804.000	PK	58.4	30.8	5.4	40.2	54.4	74.0	19.6	100	177	
Vert.	7206.000	PK	48.2	36.0	6.7	38.9	52	74.0	22.0	100	359	
Vert.	9608.000	PK	47.2	38.3	7.7	38.8	54.4	74.0	19.6	100	0	
Vert.	12010.000	PK	46.9	39.1	9.0	38.7	56.3	74.0	17.7	100	0	
Vert.	1601.980	AV	43.5	25.8	12.7	40.0	42.0	54.0	12.0	100	312	VBW:10Hz
Vert.	3203.042	AV	35.2	28.5	4.8	40.4	28.1	54.0	25.9	100	45	VBW:10Hz
Vert.	4006.017	AV	36.1	29.3	5.1	40.3	30.2	54.0	23.8	100	225	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amprifier)

*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.	2390.000	AV	34.1	27.1	13.3	39.8	-30.7	4.0	54.0	50.0	VBW:300Hz
Hori.	2400.000	AV	47.1	27.1	13.5	39.8	-30.7	17.2	54.0	36.8	VBW:300Hz
Hori.	4808.000	AV	50.3	30.8	5.4	40.2	-30.7	15.6	54.0	38.4	VBW:300Hz
Hori.	7206.000	AV	35.8	36.0	6.7	38.9	-30.7	8.9	54.0	45.1	VBW:300Hz
Hori.	9608.000	AV	35.4	38.3	7.7	38.8	-30.7	11.9	54.0	42.1	VBW:300Hz
Hori.	12010.000	AV	35.8	39.1	9.0	38.7	-30.7	14.5	54.0	39.5	VBW:300Hz
Vert.	2390.000	AV	34.1	27.1	13.3	39.8	-30.7	4.0	54.0	50.0	VBW:300Hz
Vert.	2400.000	AV	44.6	27.1	13.5	39.8	-30.7	14.7	54.0	39.3	VBW:300Hz
Vert.	4804.000	AV	55.0	30.8	5.4	40.2	-30.7	20.3	54.0	33.7	VBW:300Hz
Vert.	7206.000	AV	36.4	36.0	6.7	38.9	-30.7	9.5	54.0	44.5	VBW:300Hz
Vert.	9608.000	AV	35.3	38.3	7.7	38.8	-30.7	11.8	54.0	42.2	VBW:300Hz
Vert.	12010.000	AV	35.9	39.1	9.0	38.7	-30.7	14.6	54.0	39.4	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amprifier) + Dwell time factor (Refer to page 33)

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

*No noise was detected above the 5th order harmonics.

UL Japan, Inc.

Shonan EMC Lab.

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Facsimile : +81 463 50 6401

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Semi Anechoic Chamber
Date September 27, 2010 September 28, 2010
Temperature / Humidity 23deg.C. , 60% 22deg.C. , 65%
Engineer 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.	107.185	QP	43.1	11.4	7.9	31.8	30.6	43.5	12.9	300	144	
Hori.	178.501	QP	37.2	16.0	8.6	31.8	30.0	43.5	13.5	240	225	
Hori.	243.186	QP	40.4	17.2	9.2	31.7	35.1	46.0	10.9	151	343	
Hori.	431.864	QP	41.9	16.5	7.4	31.9	33.9	46.0	12.1	100	15	
Hori.	486.023	QP	42.3	17.1	7.7	31.9	35.2	46.0	10.8	100	170	
Hori.	1626.663	PK	49.6	25.9	12.7	40.0	48.2	74.0	25.8	103	136	
Hori.	3253.733	PK	47.1	28.6	4.9	40.4	40.2	74.0	33.8	100	0	
Hori.	4068.315	PK	48.1	29.4	5.1	40.3	42.3	74.0	31.7	100	351	
Hori.	4882.000	PK	54.9	31.1	5.5	40.1	51.4	74.0	22.6	117	48	
Hori.	7323.000	PK	46.9	36.3	6.9	39.0	51.1	74.0	22.9	100	8	
Hori.	9764.000	PK	44.9	38.4	7.8	39.1	52.0	74.0	22.0	100	0	
Hori.	12205.000	PK	45.7	39.2	9.2	38.7	55.4	74.0	18.6	100	359	
Hori.	1626.663	AV	42.9	25.9	12.7	40.0	41.5	54.0	12.5	103	136	VBW:10Hz
Hori.	3253.733	AV	36.3	28.6	4.9	40.4	29.4	54.0	24.6	100	0	VBW:10Hz
Hori.	4068.315	AV	36.8	29.4	5.1	40.3	31.0	54.0	23.0	100	351	VBW:10Hz
Vert.	34.329	QP	37.5	16.7	7.0	31.8	29.4	40.0	10.6	100	10	
Vert.	559.564	QP	35.5	18.3	8.2	32.0	30.0	46.0	16.0	100	169	
Vert.	1626.663	PK	50.7	25.9	12.7	40.0	49.3	74.0	24.7	100	327	
Vert.	3253.450	PK	47.1	28.6	4.9	40.4	40.2	74.0	33.8	100	0	
Vert.	4068.467	PK	48.7	29.4	5.1	40.3	42.9	74.0	31.1	100	197	
Vert.	4882.000	PK	58.7	31.1	5.5	40.1	55.2	74.0	18.8	100	177	
Vert.	7323.000	PK	47.2	36.3	6.9	39.0	51.4	74.0	22.6	100	359	
Vert.	9764.000	PK	46.8	38.4	7.8	39.1	53.9	74.0	20.1	100	7	
Vert.	12205.000	PK	45.9	39.2	9.2	38.7	55.6	74.0	18.4	100	358	
Vert.	1626.663	AV	45.1	25.9	12.7	40.0	43.7	54.0	10.3	100	327	VBW:10Hz
Vert.	3253.450	AV	35.3	28.6	4.9	40.4	28.4	54.0	25.6	100	0	VBW:10Hz
Vert.	4068.467	AV	35.8	29.4	5.1	40.3	30.0	54.0	24.0	100	197	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - 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	50.3	31.1	5.5	40.1	-30.7	16.1	54.0	37.9	VBW:300Hz
Hori.	7323.000	AV	35.4	36.3	6.9	39.0	-30.7	8.9	54.0	45.1	VBW:300Hz
Hori.	9764.000	AV	34.8	38.4	7.8	39.1	-30.7	11.2	54.0	42.8	VBW:300Hz
Hori.	12205.000	AV	34.1	39.2	9.2	38.7	-30.7	13.1	54.0	40.9	VBW:300Hz
Vert.	4882.000	AV	55.4	31.1	5.5	40.1	-30.7	21.2	54.0	32.8	VBW:300Hz
Vert.	7323.000	AV	35.2	36.3	6.9	39.0	-30.7	8.7	54.0	45.3	VBW:300Hz
Vert.	9764.000	AV	34.4	38.4	7.8	39.1	-30.7	10.8	54.0	43.2	VBW:300Hz
Vert.	12205.000	AV	34.1	39.2	9.2	38.7	-30.7	13.1	54.0	40.9	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter)
- Gain(Amplifier) + Dwell time factor (Refer to page 33)

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

*No noise was detected above the 5th order harmonics.

UL Japan, Inc.

Shonan EMC Lab.

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

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Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Semi Anechoic Chamber
Date September 27, 2010 September 28, 2010
Temperature / Humidity 23deg.C. , 60% 22deg.C. , 65%
Engineer 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.	106.834	QP	43.2	11.3	7.9	31.8	30.6	43.5	12.9	300	143	
Hori.	178.798	QP	37.3	16.0	8.6	31.8	30.1	43.5	13.4	241	227	
Hori.	243.186	QP	41.0	17.2	9.2	31.7	35.7	46.0	10.3	150	348	
Hori.	431.864	QP	42.0	16.5	7.4	31.9	34.0	46.0	12.0	100	16	
Hori.	485.170	QP	42.4	17.1	7.7	31.9	35.3	46.0	10.7	100	171	
Hori.	1652.668	PK	49.6	26.0	12.8	40.0	48.4	74.0	25.6	102	137	
Hori.	2483.500	PK	48.3	27.1	13.5	39.7	49.2	74.0	24.8	293	117	
Hori.	3305.350	PK	47.5	28.7	4.9	40.4	40.7	74.0	33.3	100	0	
Hori.	4130.607	PK	48.6	29.5	5.1	40.3	42.9	74.0	31.1	100	353	
Hori.	4960.000	PK	57.9	31.3	5.5	40.0	54.7	74.0	19.3	100	15	
Hori.	7440.000	PK	47.2	36.5	7.1	39.1	51.7	74.0	22.3	100	8	
Hori.	9920.000	PK	46.0	38.4	8.1	39.3	53.2	74.0	20.8	100	0	
Hori.	12400.000	PK	44.7	39.2	9.5	38.6	54.8	74.0	19.2	100	359	
Hori.	1652.668	AV	41.8	26.0	12.8	40.0	40.6	54.0	13.4	102	137	VBW:10Hz
Hori.	3305.350	AV	37.0	28.7	4.9	40.4	30.2	54.0	23.8	100	0	VBW:10Hz
Hori.	4130.607	AV	37.6	29.5	5.1	40.3	31.9	54.0	22.1	100	353	VBW:10Hz
Vert.	34.329	QP	37.6	16.7	7.0	31.8	29.5	40.0	10.5	100	15	
Vert.	560.922	QP	35.7	18.3	8.2	32.0	30.2	46.0	15.8	100	172	
Vert.	1652.661	PK	50.7	26.0	12.8	40.0	49.5	74.0	24.5	100	327	
Vert.	2483.500	PK	47.7	27.1	13.5	39.7	48.6	74.0	25.4	100	51	
Vert.	3304.600	PK	47.6	28.7	4.9	40.4	40.8	74.0	33.2	100	0	
Vert.	4129.783	PK	48.4	29.5	5.1	40.3	42.7	74.0	31.3	100	359	
Vert.	4960.000	PK	60.0	31.3	5.5	40.0	56.8	74.0	17.2	111	178	
Vert.	7440.000	PK	47.0	36.5	7.1	39.1	51.5	74.0	22.5	100	359	
Vert.	9920.000	PK	45.3	38.4	8.1	39.3	52.5	74.0	21.5	100	0	
Vert.	12400.000	PK	44.7	39.2	9.5	38.6	54.8	74.0	19.2	100	359	
Vert.	1652.661	AV	45.3	26.0	12.8	40.0	44.1	54.0	9.9	100	327	VBW:10Hz
Vert.	3304.600	AV	35.8	28.7	4.9	40.4	29.0	54.0	25.0	100	0	VBW:10Hz
Vert.	4129.783	AV	35.9	29.5	5.1	40.3	30.2	54.0	23.8	100	359	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - 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.	2483.500	AV	37.0	27.1	13.5	39.7	-30.7	7.2	54.0	46.8	VBW:300Hz
Hori.	4960.000	AV	54.3	31.3	5.5	40.0	-30.7	20.4	54.0	33.6	VBW:300Hz
Hori.	7440.000	AV	35.6	36.5	7.1	39.1	-30.7	9.4	54.0	44.6	VBW:300Hz
Hori.	9920.000	AV	33.9	38.4	8.1	39.3	-30.7	10.4	54.0	43.6	VBW:300Hz
Hori.	12400.000	AV	32.8	39.2	9.5	38.6	-30.7	12.2	54.0	41.8	VBW:300Hz
Vert.	2483.500	AV	36.0	27.1	13.5	39.7	-30.7	6.2	54.0	47.8	VBW:300Hz
Vert.	4960.000	AV	56.8	31.3	5.5	40.0	-30.7	22.9	54.0	31.1	VBW:300Hz
Vert.	7440.000	AV	35.1	36.5	7.1	39.1	-30.7	8.9	54.0	45.1	VBW:300Hz
Vert.	9920.000	AV	33.5	38.4	8.1	39.3	-30.7	10.0	54.0	44.0	VBW:300Hz
Vert.	12400.000	AV	32.8	39.2	9.5	38.6	-30.7	12.2	54.0	41.8	VBW:300Hz

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

- Gain(Amplifier) + Dwell time factor (Refer to page 33)

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

*No noise was detected above the 5th order harmonics.

UL Japan, Inc.

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Facsimile : +81 463 50 6401

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Semi Anechoic Chamber
Date September 27, 2010 September 28, 2010
Temperature / Humidity 23deg.C. , 60% 22deg.C. , 65%
Engineer 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.	107.101	QP	43.1	11.4	7.9	31.8	30.6	43.5	12.9	307	140	
Hori.	178.529	QP	37.3	16.0	8.6	31.8	30.1	43.5	13.4	252	223	
Hori.	243.015	QP	42.7	17.2	9.2	31.7	37.4	46.0	8.6	150	339	
Hori.	432.005	QP	41.6	16.5	7.4	31.9	33.6	46.0	12.4	100	347	
Hori.	486.006	QP	42.0	17.1	7.7	31.9	34.9	46.0	11.1	100	135	
Hori.	1601.999	PK	50.3	25.8	12.7	40.0	48.8	74.0	25.2	124	174	
Hori.	2390.000	PK	46.6	27.1	13.3	39.8	47.2	74.0	26.8	100	0	
Hori.	2400.000	PK	57.8	27.1	13.5	39.8	58.6	74.0	15.4	100	355	
Hori.	3204.074	PK	48.3	28.5	4.8	40.4	41.2	74.0	32.8	100	0	
Hori.	4004.000	PK	48.3	29.3	5.1	40.3	42.4	74.0	31.6	100	298	
Hori.	4804.000	PK	50.1	30.8	5.4	40.2	46.1	74.0	27.9	100	121	
Hori.	7206.000	PK	47.6	36.0	6.7	38.9	51.4	74.0	22.6	100	359	
Hori.	9608.000	PK	46.1	38.3	7.7	38.8	53.3	74.0	20.7	100	0	
Hori.	12010.000	PK	47.6	39.1	9.0	38.7	57.0	74.0	17.0	100	0	
Hori.	1601.999	AV	44.7	25.8	12.7	40.0	43.2	54.0	10.8	124	174	VBW:10Hz
Hori.	3204.074	AV	36.2	28.5	4.8	40.4	29.1	54.0	24.9	100	0	VBW:10Hz
Hori.	4004.000	AV	37.3	29.3	5.1	40.3	31.4	54.0	22.6	100	298	VBW:10Hz
Vert.	34.711	QP	36.3	16.6	7.0	31.8	28.1	40.0	11.9	100	17	
Vert.	559.455	QP	35.2	18.2	8.2	32.0	29.6	46.0	16.4	100	171	
Vert.	1602.008	PK	50.1	25.8	12.7	40.0	48.6	74.0	25.4	100	307	
Vert.	2390.000	PK	46.8	27.1	13.3	39.8	47.4	74.0	26.6	100	0	
Vert.	2400.000	PK	56.6	27.1	13.5	39.8	57.4	74.0	16.6	100	261	
Vert.	3203.758	PK	47.9	28.5	4.8	40.4	40.8	74.0	33.2	100	97	
Vert.	4003.885	PK	47.2	29.3	5.1	40.3	41.3	74.0	32.7	100	172	
Vert.	4804.000	PK	52.7	30.8	5.4	40.2	48.7	74.0	25.3	100	156	
Vert.	7206.000	PK	49.0	36.0	6.7	38.9	52.8	74.0	21.2	100	359	
Vert.	9608.000	PK	47.0	38.3	7.7	38.8	54.2	74.0	19.8	100	0	
Vert.	12010.000	PK	46.6	39.1	9.0	38.7	56.0	74.0	18.0	100	0	
Vert.	1602.008	AV	44.6	25.8	12.7	40.0	43.1	54.0	10.9	100	307	VBW:10Hz
Vert.	3203.758	AV	36.3	28.5	4.8	40.4	29.2	54.0	24.8	100	97	VBW:10Hz
Vert.	4003.885	AV	36.4	29.3	5.1	40.3	30.5	54.0	23.5	100	172	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - 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.	2390.000	AV	34.4	27.1	13.3	39.8	-30.7	4.3	54.0	49.7	VBW:300Hz
Hori.	2400.000	AV	44.9	27.1	13.5	39.8	-30.7	15.0	54.0	39.0	VBW:300Hz
Hori.	4804.000	AV	40.1	30.8	5.4	40.2	-30.7	5.4	54.0	48.6	VBW:300Hz
Hori.	7206.000	AV	36.4	36.0	6.7	38.9	-30.7	9.5	54.0	44.5	VBW:300Hz
Hori.	9608.000	AV	36.0	38.3	7.7	38.8	-30.7	12.5	54.0	41.5	VBW:300Hz
Hori.	12010.000	AV	35.9	39.1	9.0	38.7	-30.7	14.6	54.0	39.4	VBW:300Hz
Vert.	2390.000	AV	34.9	27.1	13.3	39.8	-30.7	4.8	54.0	49.2	VBW:300Hz
Vert.	2400.000	AV	42.9	27.1	13.5	39.8	-30.7	13.0	54.0	41.0	VBW:300Hz
Vert.	4804.000	AV	42.9	30.8	5.4	40.2	-30.7	8.2	54.0	45.8	VBW:300Hz
Vert.	7206.000	AV	36.4	36.0	6.7	38.9	-30.7	9.5	54.0	44.5	VBW:300Hz
Vert.	9608.000	AV	35.4	38.3	7.7	38.8	-30.7	11.9	54.0	42.1	VBW:300Hz
Vert.	12010.000	AV	35.9	39.1	9.0	38.7	-30.7	14.6	54.0	39.4	VBW:300Hz

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

- Gain(Amplifier) + Dwell time factor (Refer to page 34)

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

*No noise was detected above the 5th order harmonics.

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.1 Semi Anechoic Chamber
Date September 27, 2010 September 28, 2010
Temperature / Humidity 23deg.C. , 60% 22deg.C. , 65%
Engineer 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.	107.122	QP	43.0	11.4	7.9	31.8	30.5	43.5	13.0	300	140	
Hori.	178.530	QP	37.4	16.0	8.6	31.8	30.2	43.5	13.3	250	225	
Hori.	243.186	QP	42.8	17.2	9.2	31.7	37.5	46.0	8.5	150	332	
Hori.	432.000	QP	41.5	16.5	7.4	31.9	33.5	46.0	12.5	100	358	
Hori.	485.999	QP	42.1	17.1	7.7	31.9	35.0	46.0	11.0	100	130	
Hori.	1626.633	PK	49.9	25.9	12.7	40.0	48.5	74.0	25.5	133	168	
Hori.	3253.268	PK	48.2	28.6	4.9	40.4	41.3	74.0	32.7	100	359	
Hori.	4067.626	PK	48.4	29.4	5.1	40.3	42.6	74.0	31.4	100	298	
Hori.	4882.000	PK	50.6	31.1	5.5	40.1	47.1	74.0	26.9	100	10	
Hori.	7323.000	PK	47.2	36.3	6.9	39.0	51.4	74.0	22.6	100	359	
Hori.	9764.000	PK	46.8	38.4	7.8	39.1	53.9	74.0	20.1	100	0	
Hori.	12205.000	PK	46.1	39.2	9.2	38.7	55.8	74.0	18.2	100	0	
Hori.	1626.633	AV	44.9	25.9	12.7	40.0	43.5	54.0	10.5	133	168	VBW:10Hz
Hori.	3253.268	AV	35.9	28.6	4.9	40.4	29.0	54.0	25.0	100	359	VBW:10Hz
Hori.	4067.626	AV	37.1	29.4	5.1	40.3	31.3	54.0	22.7	100	298	VBW:10Hz
Vert.	34.721	QP	36.5	16.6	7.0	31.8	28.3	40.0	11.7	100	17	
Vert.	563.728	QP	35.4	18.3	8.2	32.0	29.9	46.0	16.1	100	170	
Vert.	1626.670	PK	50.1	25.9	12.7	40.0	48.7	74.0	25.3	100	328	
Vert.	3253.260	PK	47.5	28.6	4.9	40.4	40.6	74.0	33.4	100	96	
Vert.	4067.674	PK	47.2	29.4	5.1	40.3	41.4	74.0	32.6	100	179	
Vert.	4882.000	PK	52.6	31.1	5.5	40.1	49.1	74.0	24.9	134	177	
Vert.	7323.000	PK	46.6	36.3	6.9	39.0	50.8	74.0	23.2	100	359	
Vert.	9764.000	PK	46.3	38.4	7.8	39.1	53.4	74.0	20.6	100	0	
Vert.	12205.000	PK	44.3	39.2	9.2	38.7	54.0	74.0	20.0	100	359	
Vert.	1626.670	AV	44.8	25.9	12.7	40.0	43.4	54.0	10.6	100	328	VBW:10Hz
Vert.	3253.260	AV	36.4	28.6	4.9	40.4	29.5	54.0	24.5	100	96	VBW:10Hz
Vert.	4067.674	AV	35.8	29.4	5.1	40.3	30.0	54.0	24.0	100	179	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amprifier)

*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	52.6	31.1	5.5	40.1	-30.7	18.4	54.0	35.6	VBW:300Hz
Hori.	7323.000	AV	46.6	36.3	6.9	39.0	-30.7	20.1	54.0	33.9	VBW:300Hz
Hori.	9764.000	AV	46.3	38.4	7.8	39.1	-30.7	22.7	54.0	31.3	VBW:300Hz
Hori.	12205.000	AV	44.3	39.2	9.2	38.7	-30.7	23.3	54.0	30.7	VBW:300Hz
Vert.	4882.000	AV	43.1	31.1	5.5	40.1	-30.7	8.9	54.0	45.1	VBW:300Hz
Vert.	7323.000	AV	35.5	36.3	6.9	39.0	-30.7	9.0	54.0	45.0	VBW:300Hz
Vert.	9764.000	AV	34.5	38.4	7.8	39.1	-30.7	10.9	54.0	43.1	VBW:300Hz
Vert.	12205.000	AV	34.2	39.2	9.2	38.7	-30.7	13.2	54.0	40.8	VBW:300Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter)
- Gain(Amprifier) + Dwell time factor (Refer to page 34)

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

*No noise was detected above the 5th order harmonics.

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.1 Semi Anechoic Chamber
Date September 27, 2010 September 28, 2010
Temperature / Humidity 23deg.C. , 60% 22deg.C. , 65%
Engineer 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.	106.834	QP	43.1	11.3	7.9	31.8	30.5	43.5	13.0	300	144	
Hori.	178.257	QP	37.5	16.0	8.6	31.8	30.3	43.5	13.2	252	217	
Hori.	243.186	QP	42.9	17.2	9.2	31.7	37.6	46.0	8.4	150	341	
Hori.	431.864	QP	41.4	16.5	7.4	31.9	33.4	46.0	12.6	100	351	
Hori.	485.170	QP	42.0	17.1	7.7	31.9	34.9	46.0	11.1	100	132	
Hori.	1652.657	PK	49.4	26.0	12.8	40.0	48.2	74.0	25.8	113	135	
Hori.	2483.500	PK	47.2	27.1	13.5	39.7	48.1	74.0	25.9	110	359	
Hori.	3305.308	PK	47.5	28.7	4.9	40.4	40.7	74.0	33.3	100	329	
Hori.	4130.760	PK	46.9	29.5	5.1	40.3	41.2	74.0	32.8	100	335	
Hori.	4960.000	PK	50.4	31.3	5.5	40.0	47.2	74.0	26.8	100	16	
Hori.	7440.000	PK	47.1	36.5	7.1	39.1	51.6	74.0	22.4	100	0	
Hori.	9920.000	PK	44.1	38.4	8.1	39.3	51.3	74.0	22.7	100	359	
Hori.	12400.000	PK	43.0	39.2	9.5	38.6	53.1	74.0	20.9	100	0	
Hori.	1652.657	AV	42.9	26.0	12.8	40.0	41.7	54.0	12.3	113	135	VBW:10Hz
Hori.	3305.308	AV	37.4	28.7	4.9	40.4	30.6	54.0	23.4	100	329	VBW:10Hz
Hori.	4130.760	AV	36.2	29.5	5.1	40.3	30.5	54.0	23.5	100	335	VBW:10Hz
Vert.	34.746	QP	36.6	16.5	7.0	31.8	28.3	40.0	11.7	100	21	
Vert.	553.908	QP	35.5	18.2	8.2	32.0	29.9	46.0	16.1	100	175	
Vert.	1653.000	PK	50.3	26.0	12.8	40.0	49.1	74.0	24.9	100	328	
Vert.	2483.500	PK	47.2	27.1	13.5	39.7	48.1	74.0	25.9	100	120	
Vert.	3305.270	PK	48.3	28.7	4.9	40.4	41.5	74.0	32.5	100	187	
Vert.	4127.730	PK	47.4	29.5	5.1	40.3	41.7	74.0	32.3	100	0	
Vert.	4960.000	PK	51.3	31.3	5.5	40.0	48.1	74.0	25.9	100	186	
Vert.	7440.000	PK	46.2	36.5	7.1	39.1	50.7	74.0	23.3	100	0	
Vert.	9920.000	PK	44.2	38.4	8.1	39.3	51.4	74.0	22.6	100	359	
Vert.	12400.000	PK	44.1	39.2	9.5	38.6	54.2	74.0	19.8	100	359	
Vert.	1653.000	AV	45.0	26.0	12.8	40.0	43.8	54.0	10.2	100	328	VBW:10Hz
Vert.	3305.270	AV	37.8	28.7	4.9	40.4	31.0	54.0	23.0	100	187	VBW:10Hz
Vert.	4127.730	AV	35.9	29.5	5.1	40.3	30.2	54.0	23.8	100	0	VBW:10Hz

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - 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.	2483.500	AV	35.1	27.1	13.5	39.7	-30.7	5.3	54.0	48.7	VBW:300Hz
Hori.	4960.000	AV	40.8	31.3	5.5	40.0	-30.7	6.9	54.0	47.1	VBW:300Hz
Hori.	7440.000	AV	35.7	36.5	7.1	39.1	-30.7	9.5	54.0	44.5	VBW:300Hz
Hori.	9920.000	AV	33.9	38.4	8.1	39.3	-30.7	10.4	54.0	43.6	VBW:300Hz
Hori.	12400.000	AV	33.0	39.2	9.5	38.6	-30.7	12.4	54.0	41.6	VBW:300Hz
Vert.	2483.500	AV	35.1	27.1	13.5	39.7	-30.7	5.3	54.0	48.7	VBW:300Hz
Vert.	4960.000	AV	42.7	31.3	5.5	40.0	-30.7	8.8	54.0	45.2	VBW:300Hz
Vert.	7440.000	AV	35.3	36.5	7.1	39.1	-30.7	9.1	54.0	44.9	VBW:300Hz
Vert.	9920.000	AV	33.6	38.4	8.1	39.3	-30.7	10.1	54.0	43.9	VBW:300Hz
Vert.	12400.000	AV	32.8	39.2	9.5	38.6	-30.7	12.2	54.0	41.8	VBW:300Hz

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

- Gain(Amplifier) + Dwell time factor (Refer to page 34)

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

*No noise was detected above the 5th order harmonics.

UL Japan, Inc.

Shonan EMC Lab.

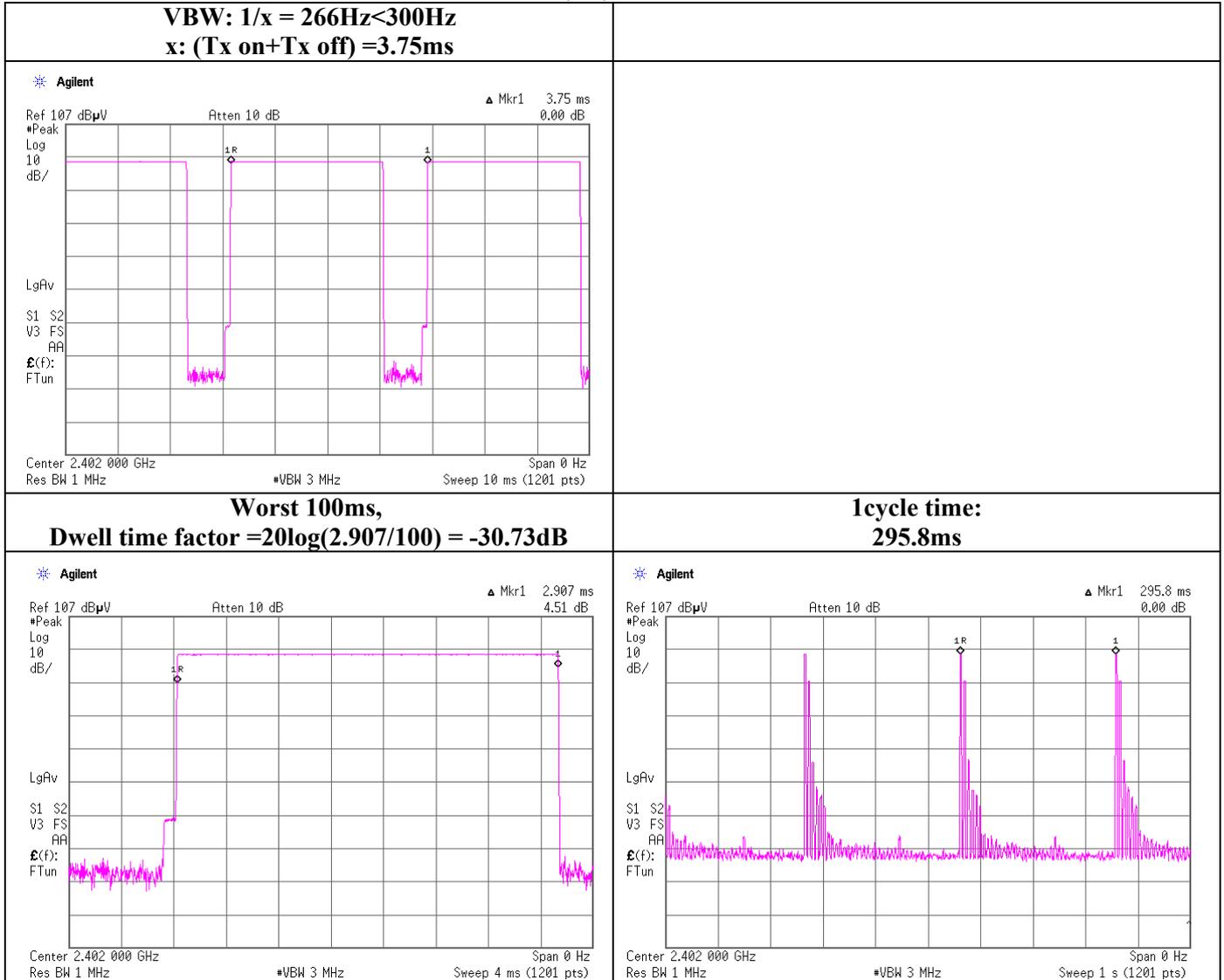
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Spurious emission (Radiated)

DH5,
 VBW (AV) Calculation



ON time of some channel during 100ms: Once
 This is the worst case in actual use of EUT.

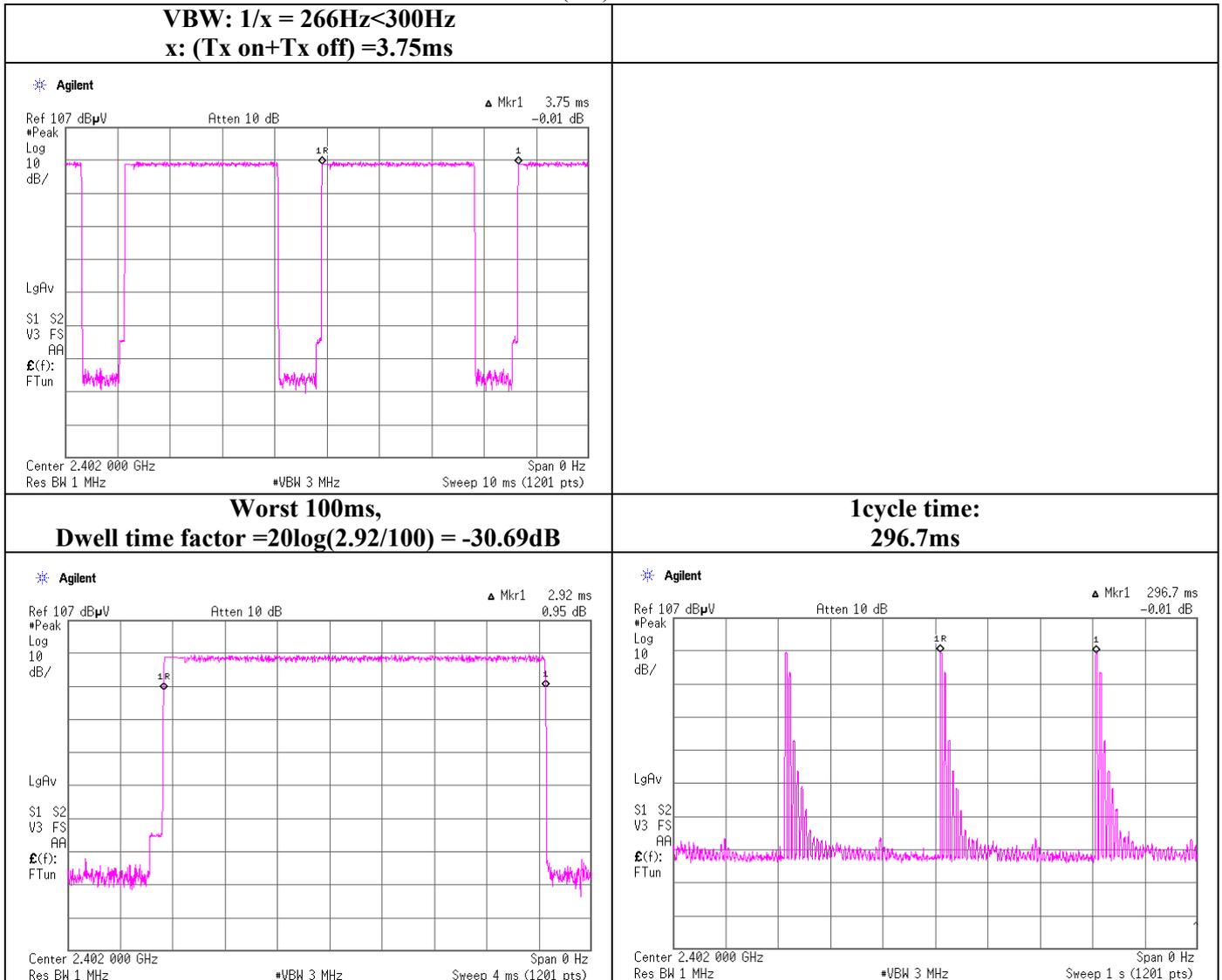
UL Japan, Inc.
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 Telephone : +81 463 50 6400
 Facsimile : +81 463 50 6401

Spurious emission (Radiated)

3-DH5,

VBW (AV) Calculation



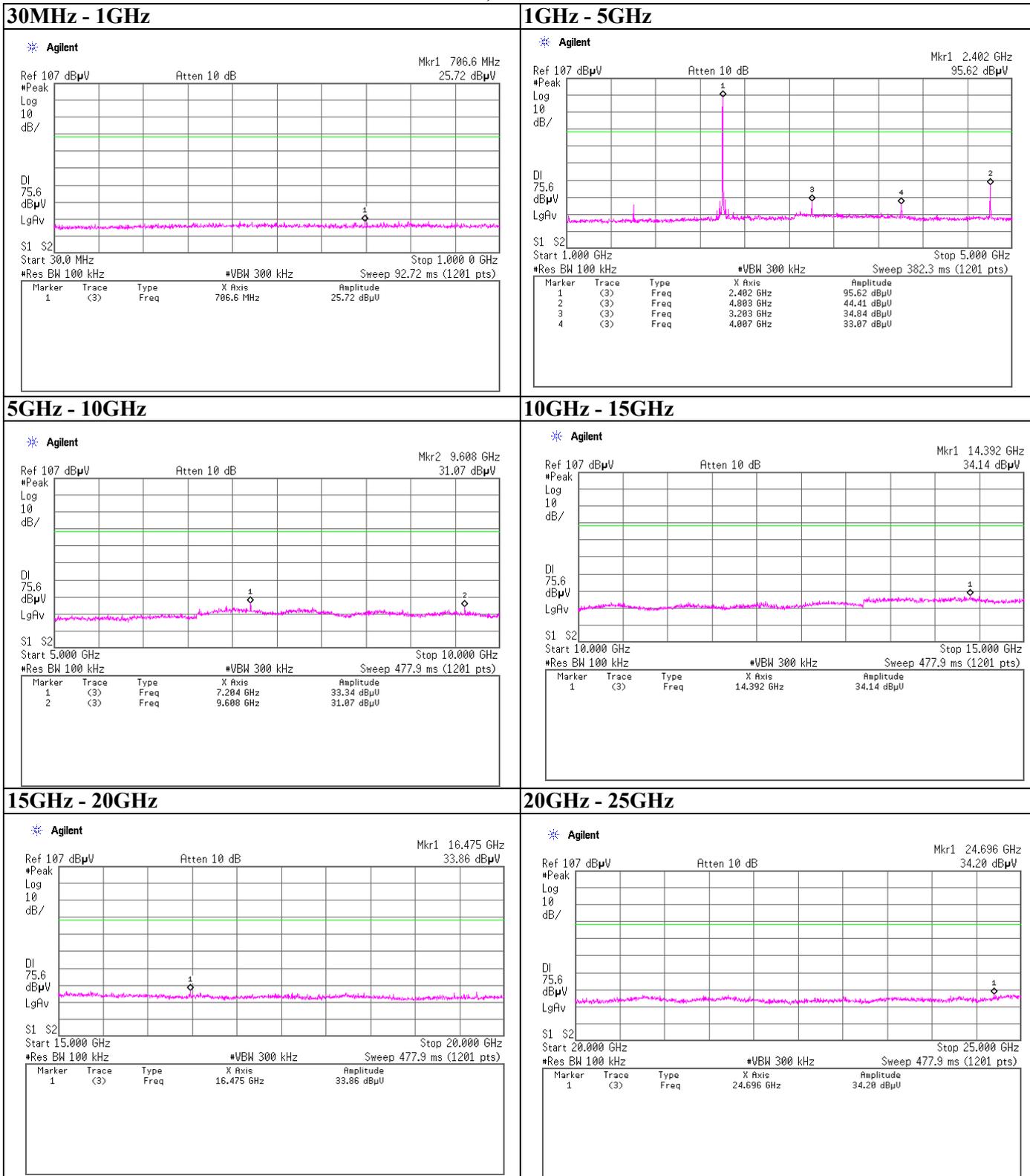
ON time of some channel during 100ms: Once
 This is the worst case in actual use of EUT.

UL Japan, Inc.
Shonan EMC Lab.

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Spurious emission (Conducted)

DH5,
 Tx, 2402MHz

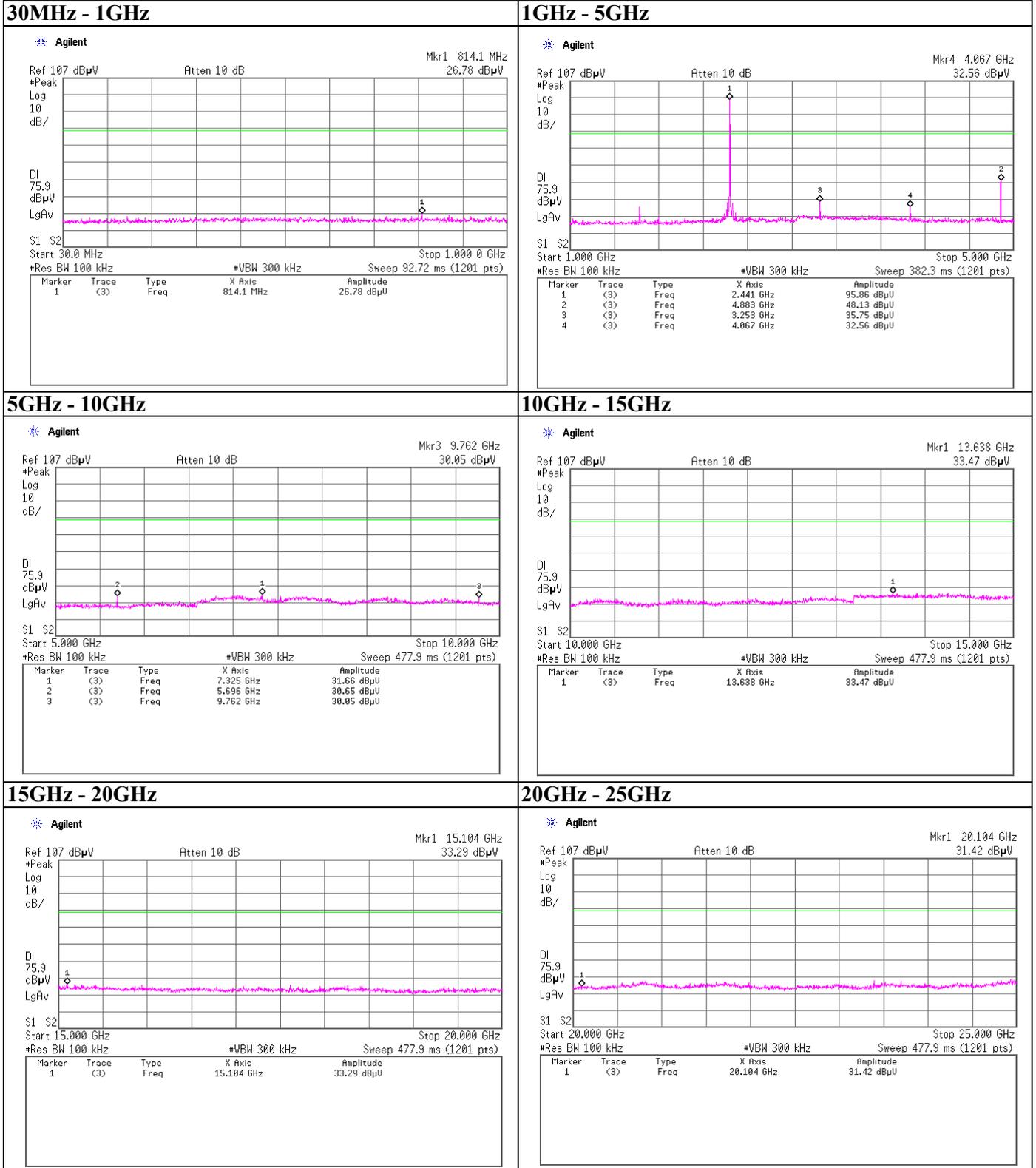


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Spurious emission (Conducted)

DH5,
 Tx, 2441MHz

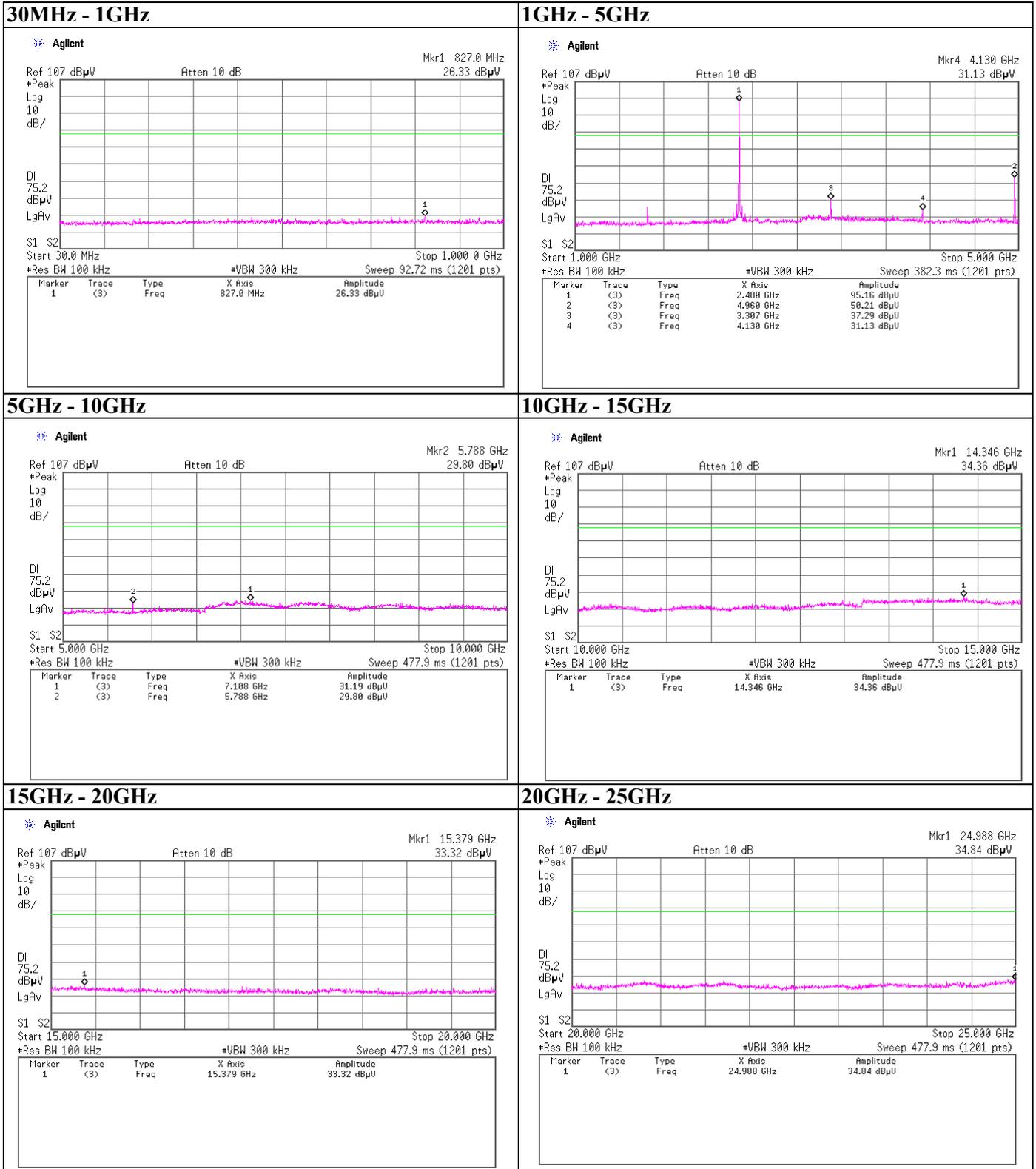


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Spurious emission (Conducted)

DH5,
 Tx, 2480MHz

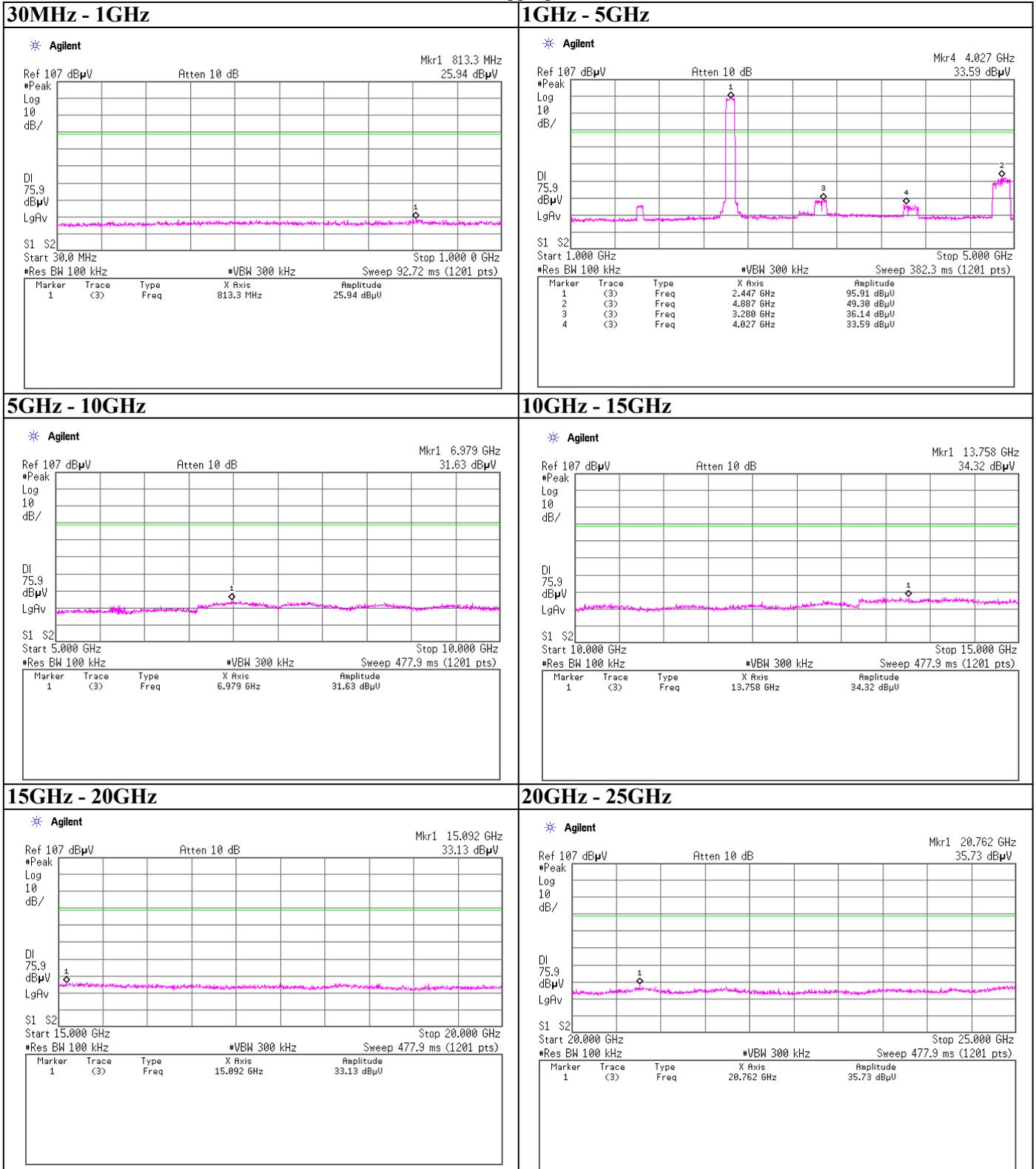


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 Facsimile : +81 463 50 6401

Spurious emission (Conducted)

DH5,
Hopping

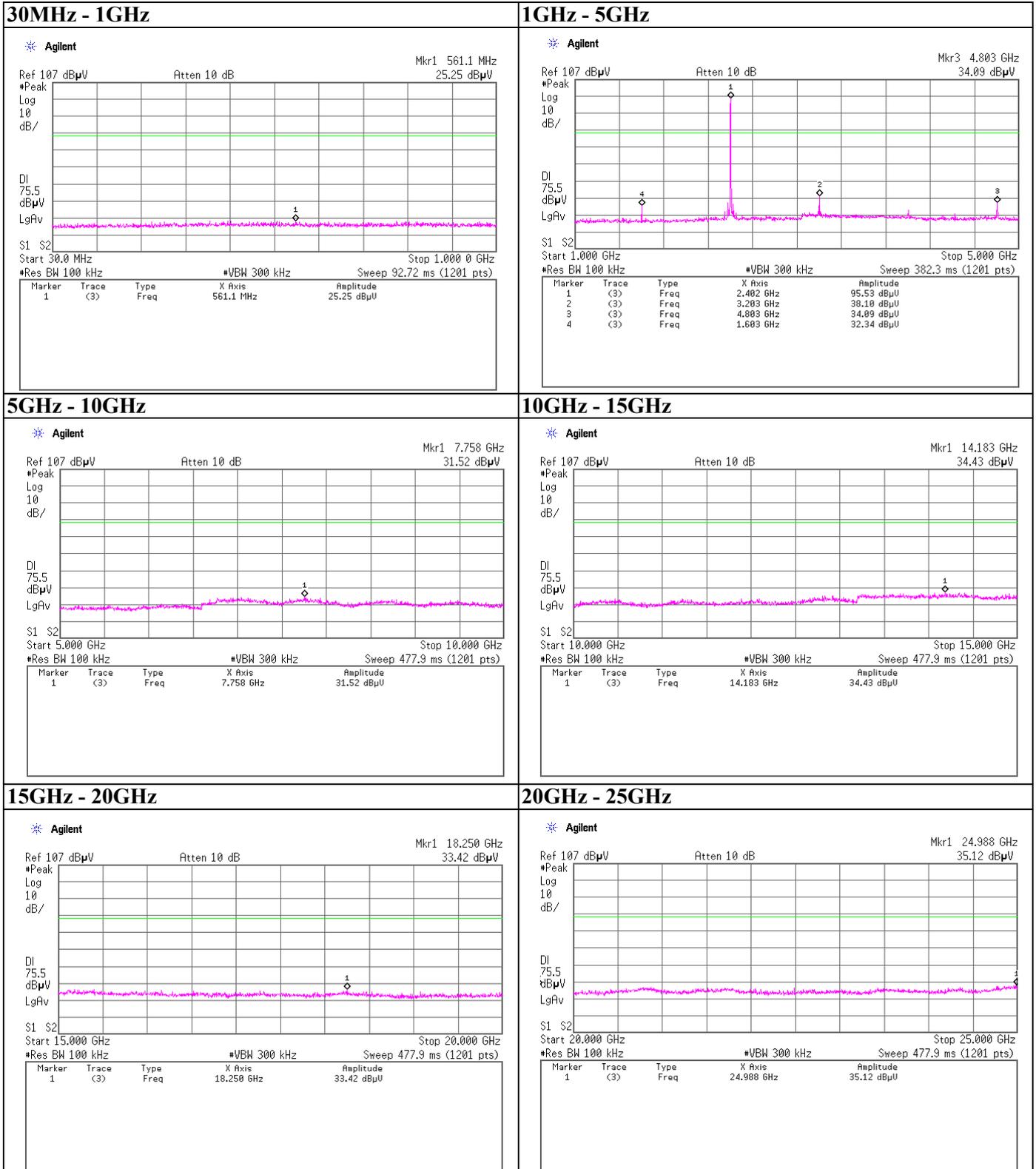


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Spurious emission (Conducted)

3-DH5,
 Tx, 2402MHz

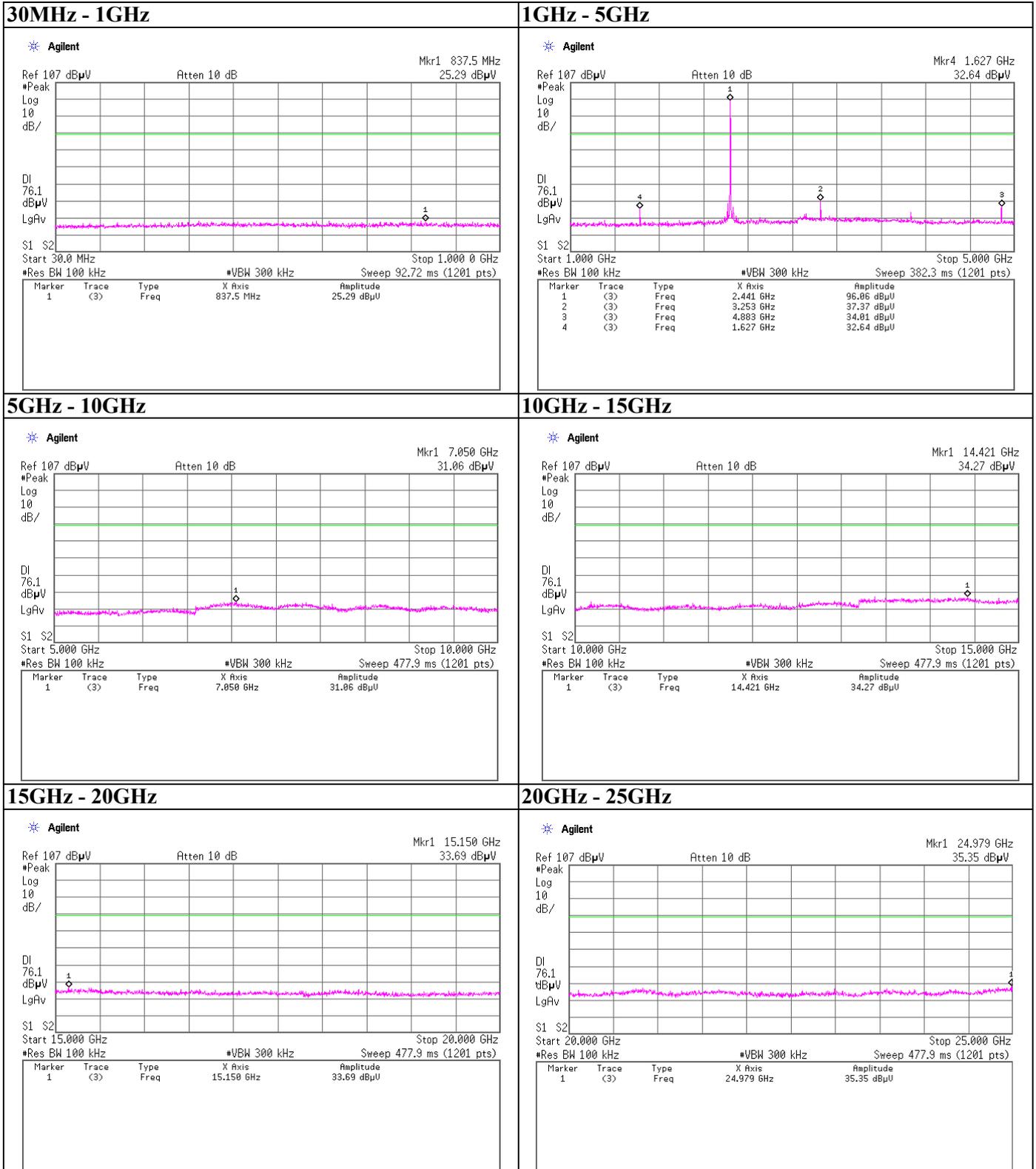


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 Telephone : +81 463 50 6400
 Facsimile : +81 463 50 6401

Spurious emission (Conducted)

3-DH5,
 Tx, 2441MHz

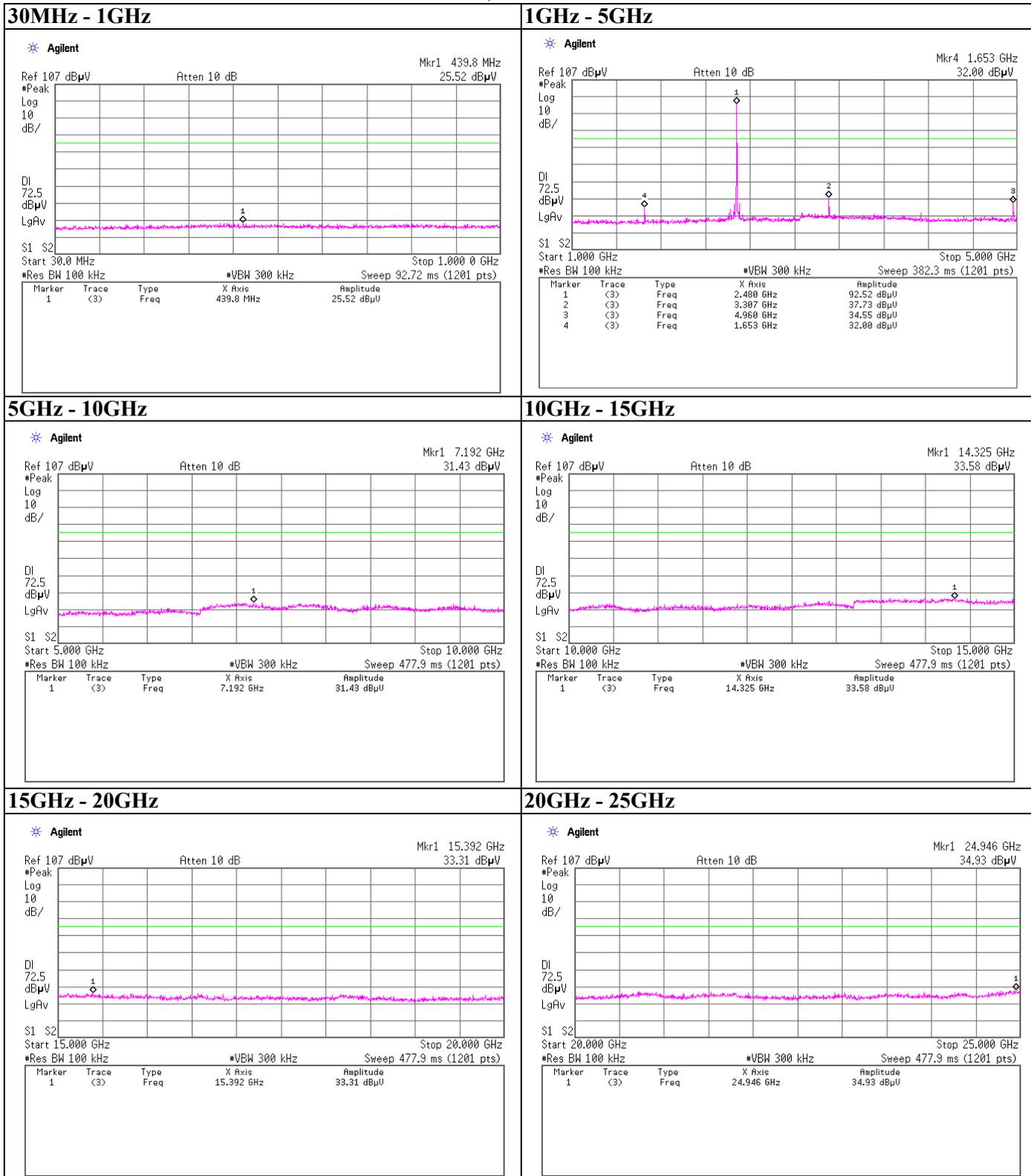


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 Facsimile : +81 463 50 6401

Spurious emission (Conducted)

3-DH5,
Tx, 2480MHz

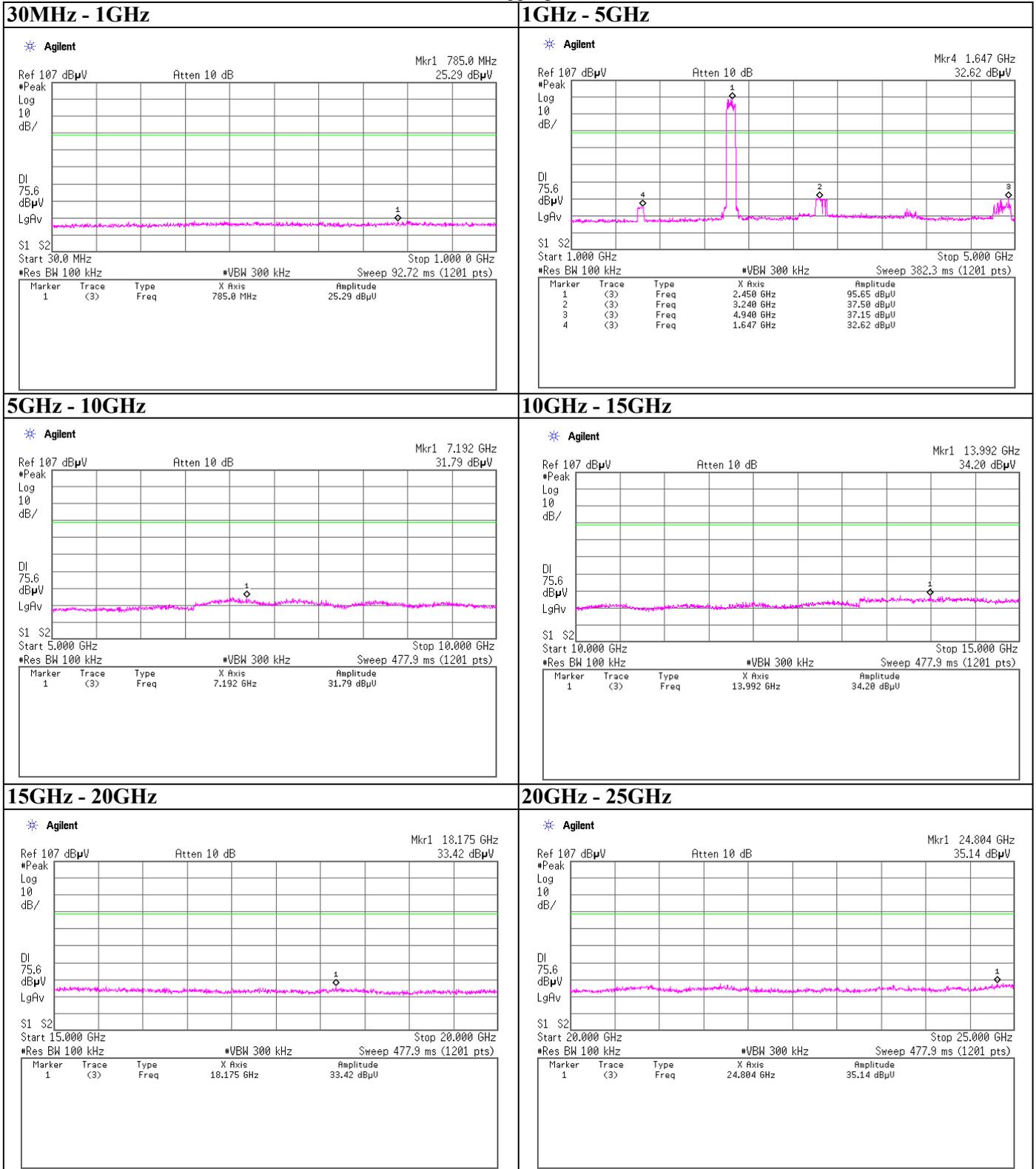


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Spurious emission (Conducted)

3-DH5,
Hopping



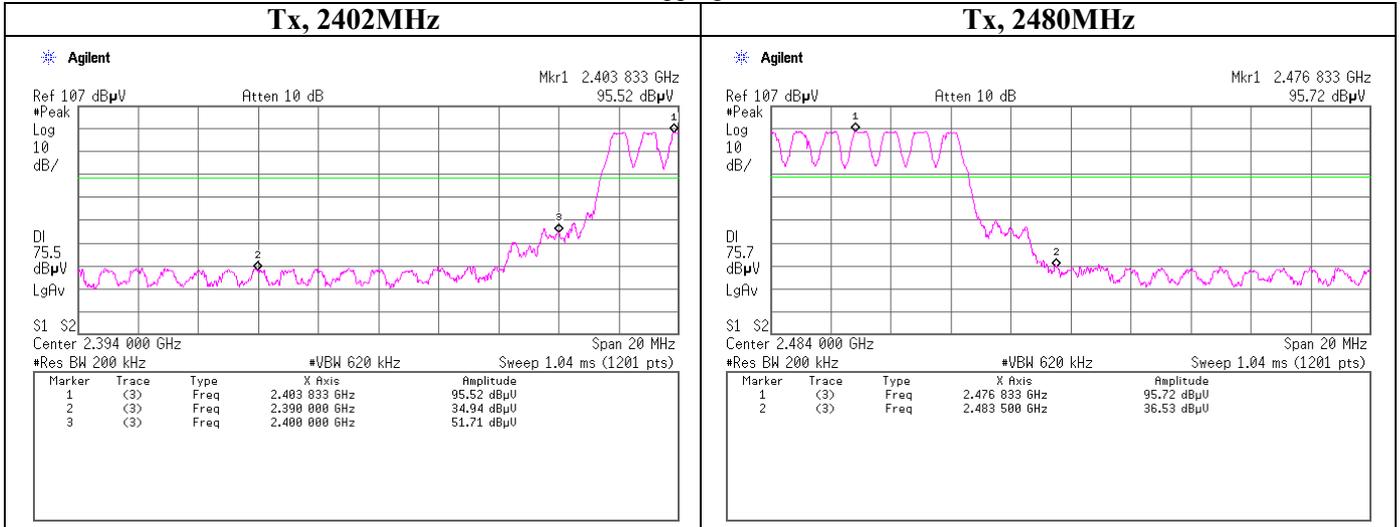
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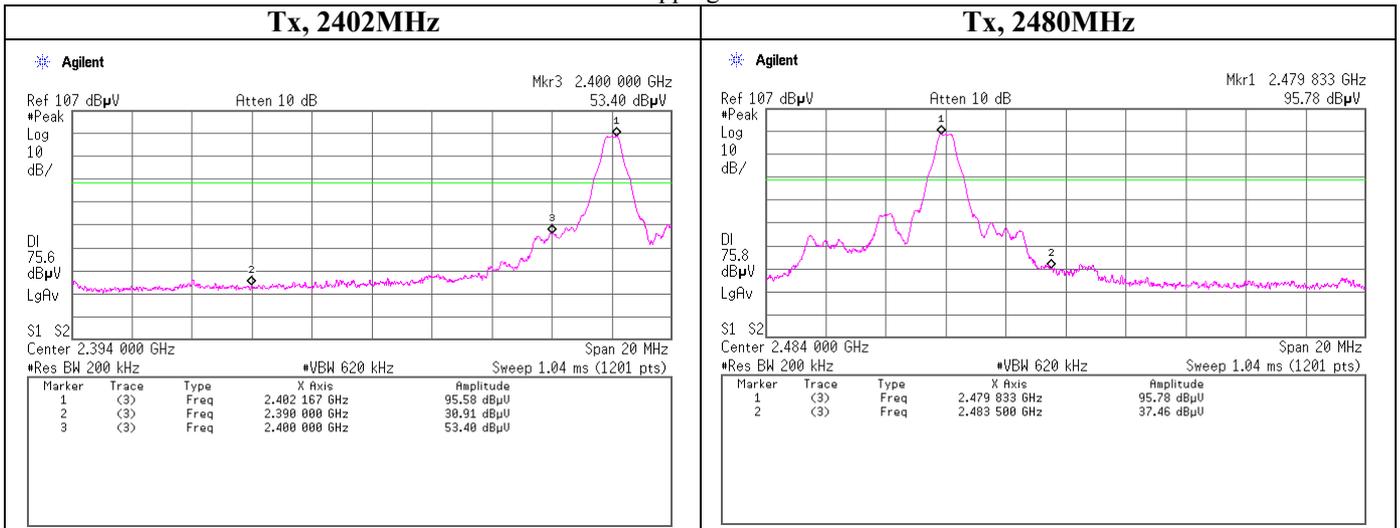
Spurious emission (Conducted)

Band Edge compliance
 DH5,

Hopping ON



Hopping OFF



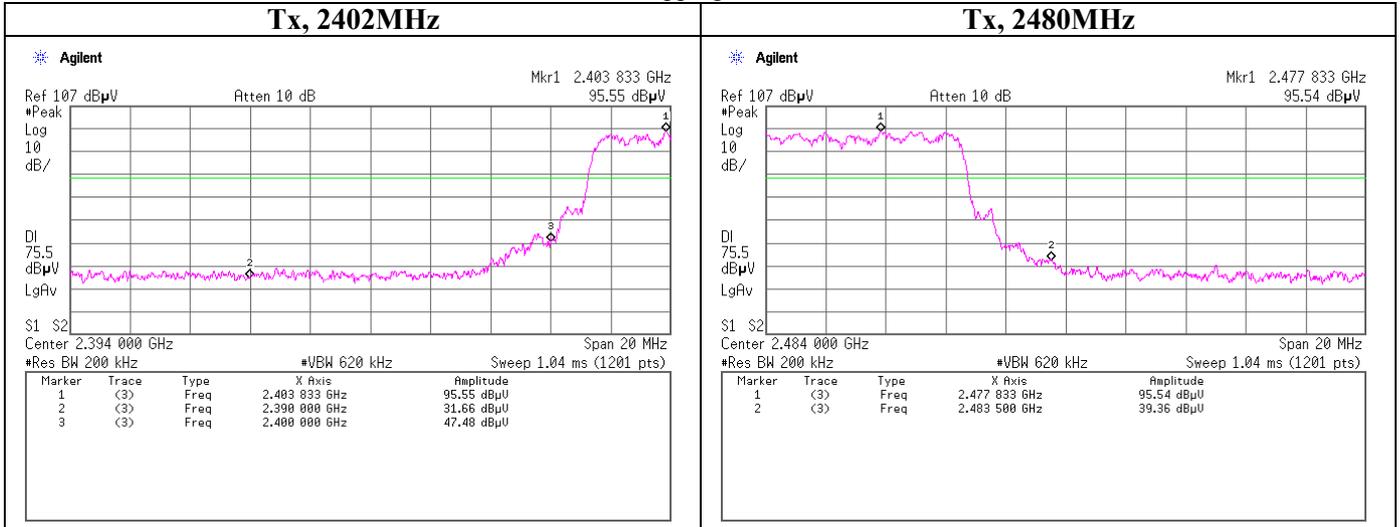
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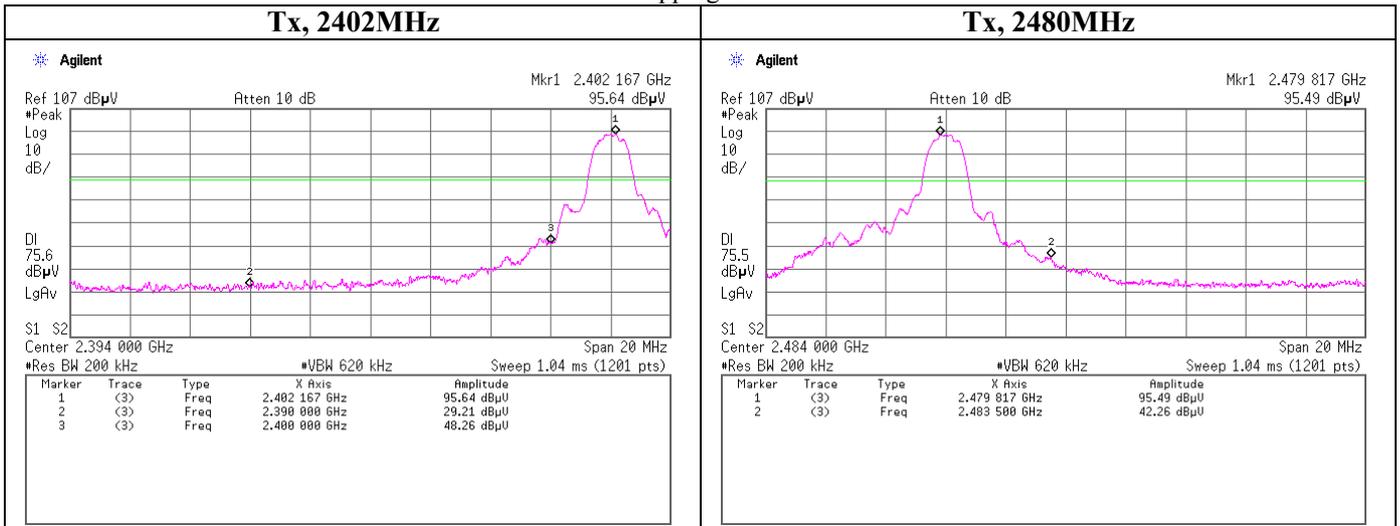
Spurious emission (Conducted)

Band Edge compliance
 3-DH5,

Hopping ON



Hopping OFF

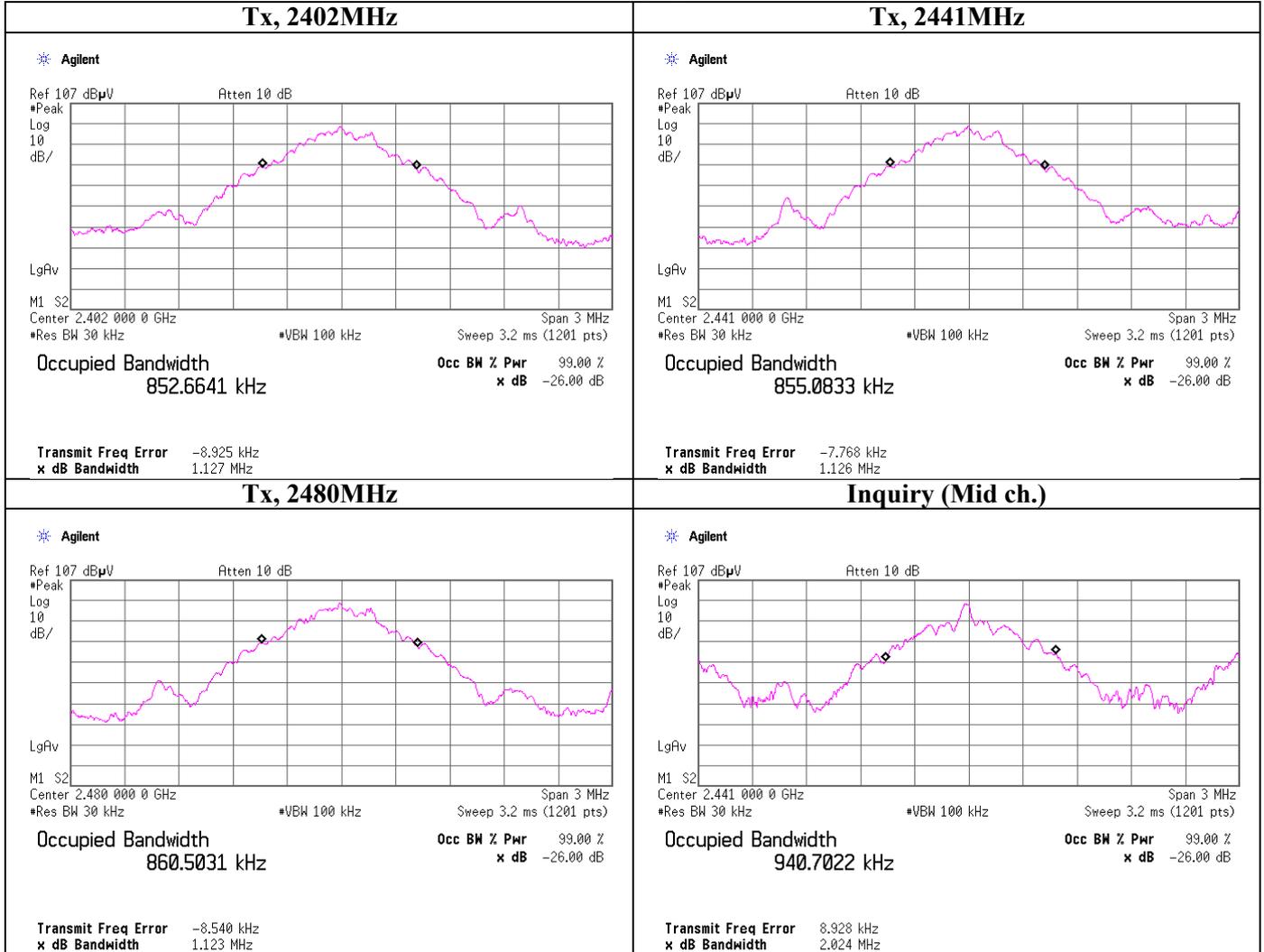


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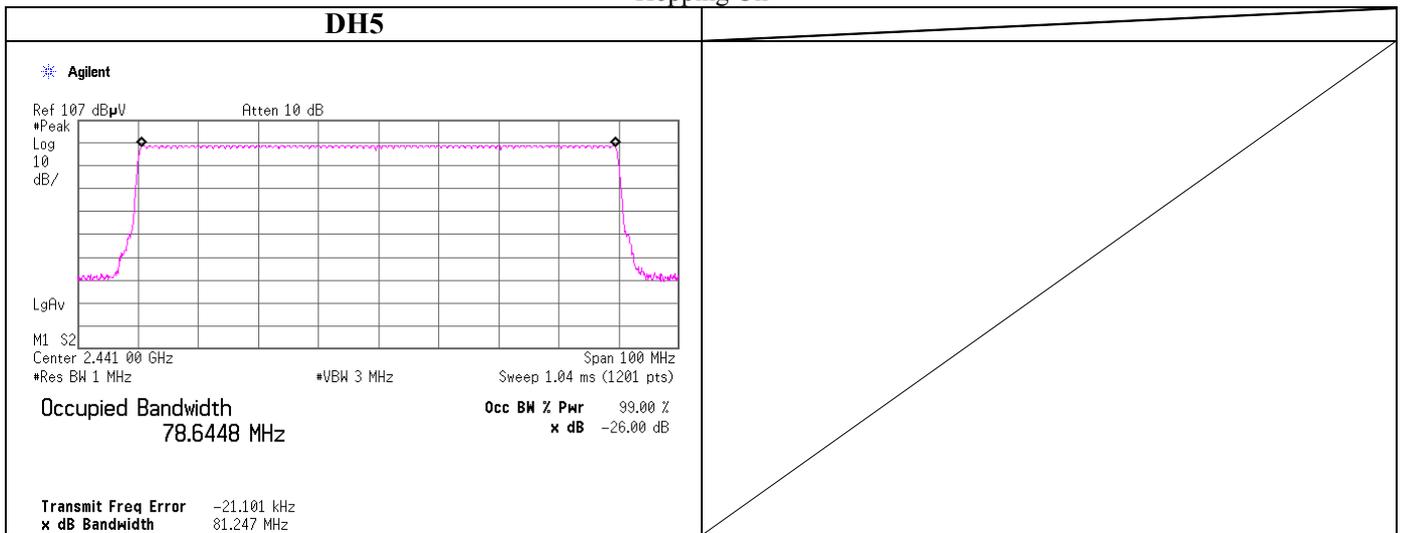
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99% Occupied Bandwidth

DH5, Hopping Off

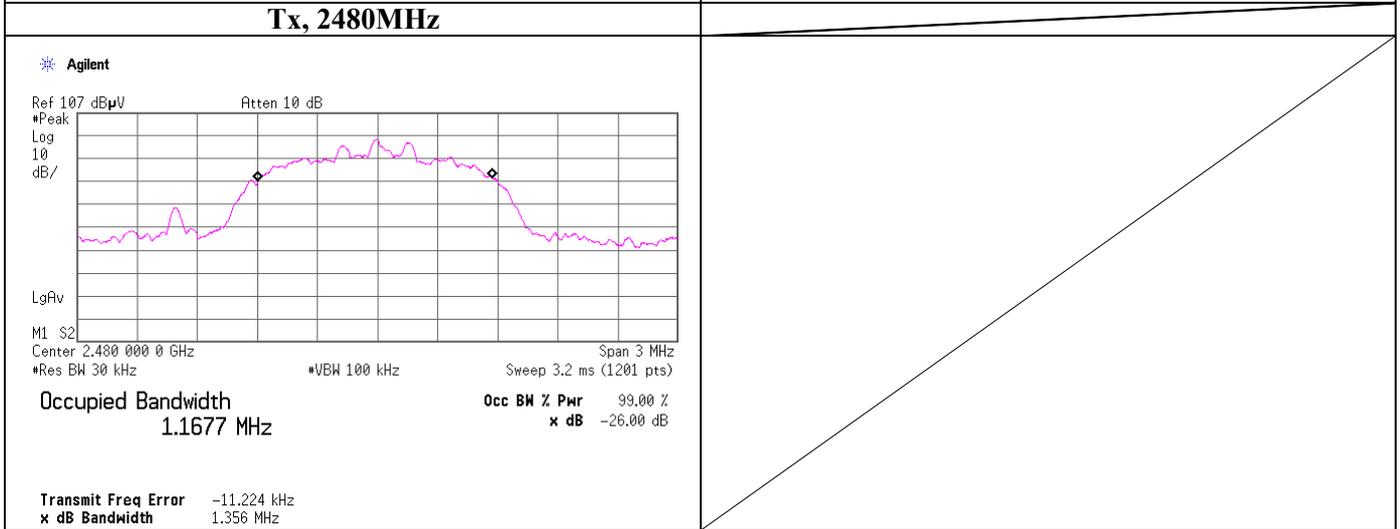
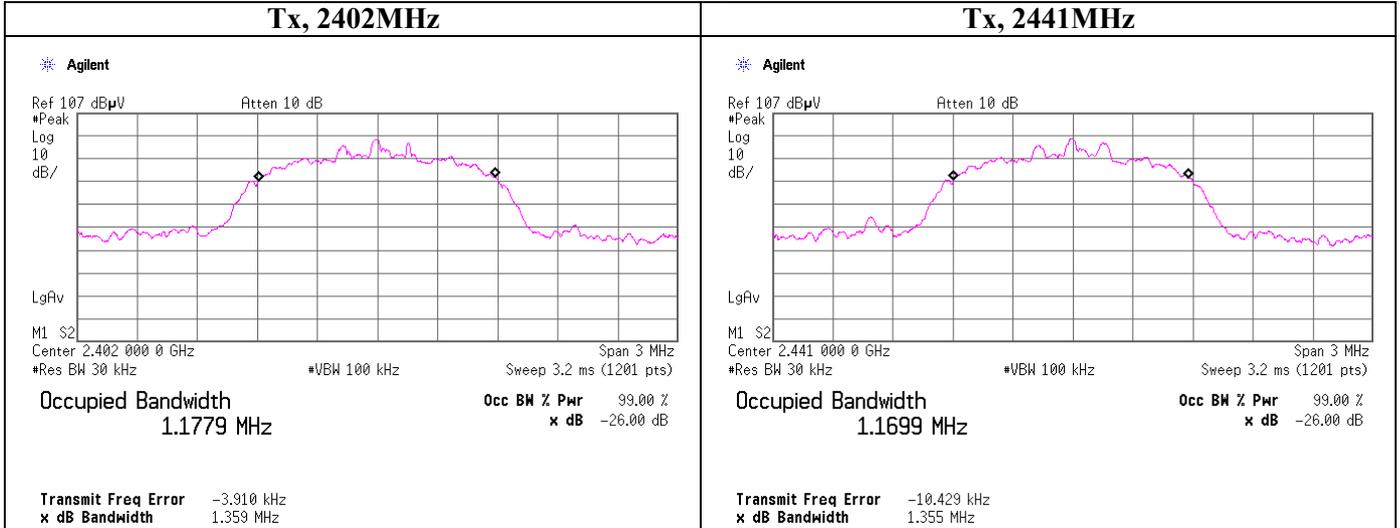


Hopping On



99% Occupied Bandwidth

3-DH5, Hopping Off



Hopping On

