

APPENDIX 2: Data of EMI test

Conducted Emission
(Power Supply: SONY)

DATA OF CONDUCTED EMISSION TEST

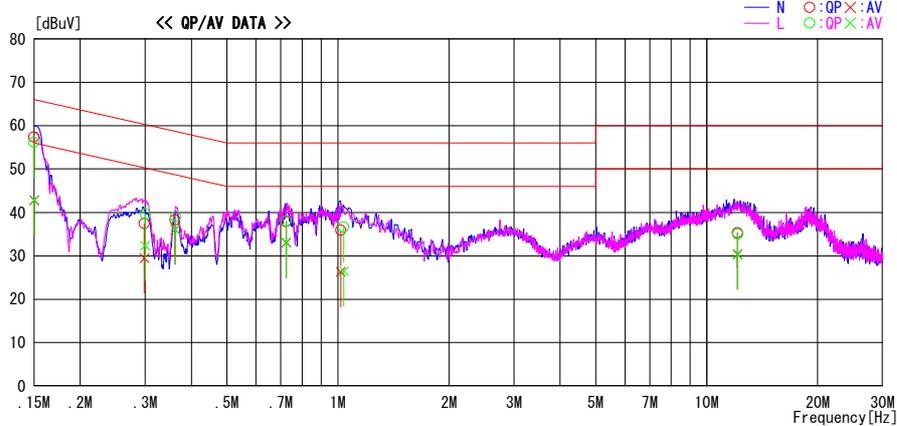
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2011/03/19

Report No. : 31HE0085-HO-01

Temp./Humi. : 22deg.C / 33% RH
Engineer : Satofumi Matsuyama

Mode / Remarks : BT Tx, 2402MHz, DH5

LIMIT : FCC15.207 QP
FCC15.207 AV

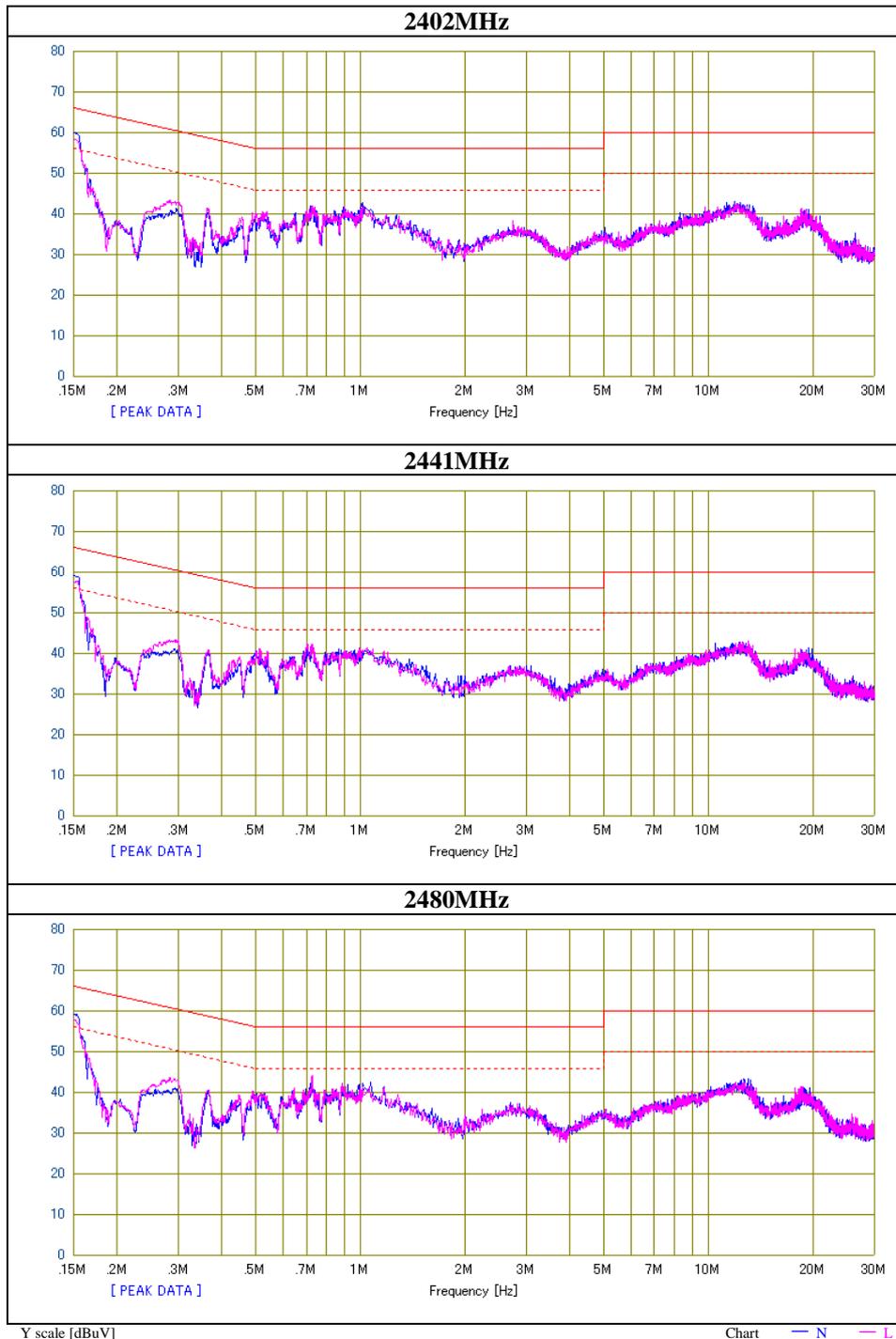


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	44.3	29.7	13.1	57.4	42.8	66.0	56.0	8.6	13.2	N	
0.29885	24.1	16.2	13.3	37.4	29.5	60.3	50.3	22.9	20.8	N	
0.36196	24.9	22.8	13.3	38.2	36.1	58.7	48.7	20.5	12.6	N	
0.72358	24.6	19.7	13.3	37.9	33.0	56.0	46.0	18.1	13.0	N	
1.01761	22.6	13.0	13.3	35.9	26.3	56.0	46.0	20.1	19.7	N	
12.11121	21.2	16.3	14.1	35.3	30.4	60.0	50.0	24.7	19.6	N	
0.15000	43.1	29.8	13.1	56.2	42.9	66.0	56.0	9.8	13.1	L	
0.30033	26.4	19.1	13.3	39.7	32.4	60.2	50.2	20.5	17.8	L	
0.36224	25.7	22.8	13.3	39.0	36.1	58.7	48.7	19.7	12.6	L	
0.72445	24.8	19.8	13.3	38.1	33.1	56.0	46.0	17.9	12.9	L	
1.03642	23.3	13.2	13.3	36.6	26.5	56.0	46.0	19.4	19.5	L	
12.13365	20.9	16.2	14.1	35.0	30.3	60.0	50.0	25.0	19.7	L	

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT [dBuV] = READING [dBuV] + C. F [dB] (L1SN LOSS + CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission
 (Power Supply: SONY)

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31HE0085-HO-01
Date	03/19/2011
Temperature/ Humidity	22 deg.C / 33% RH
Engineer	Satofumi Matsuyama
Mode	Tx DH5



Conducted Emission
(Power Supply: SONY)

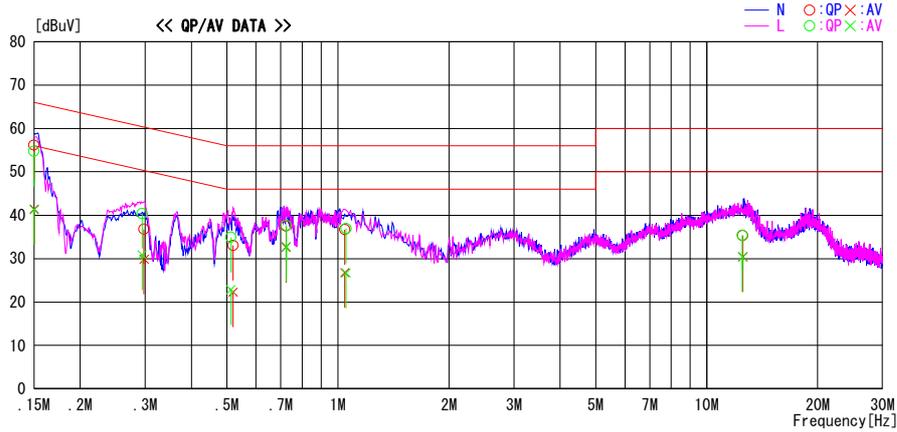
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
 Date : 2011/03/19

Report No. : 31HE0085-HO-01
 Temp./Humi. : 22deg.C / 33% RH
 Engineer : Satofumi Matsuyama

Mode / Remarks : BT Tx, 2402MHz, 3DH5,

LIMIT : FCC15.207 QP
 FCC15.207 AV

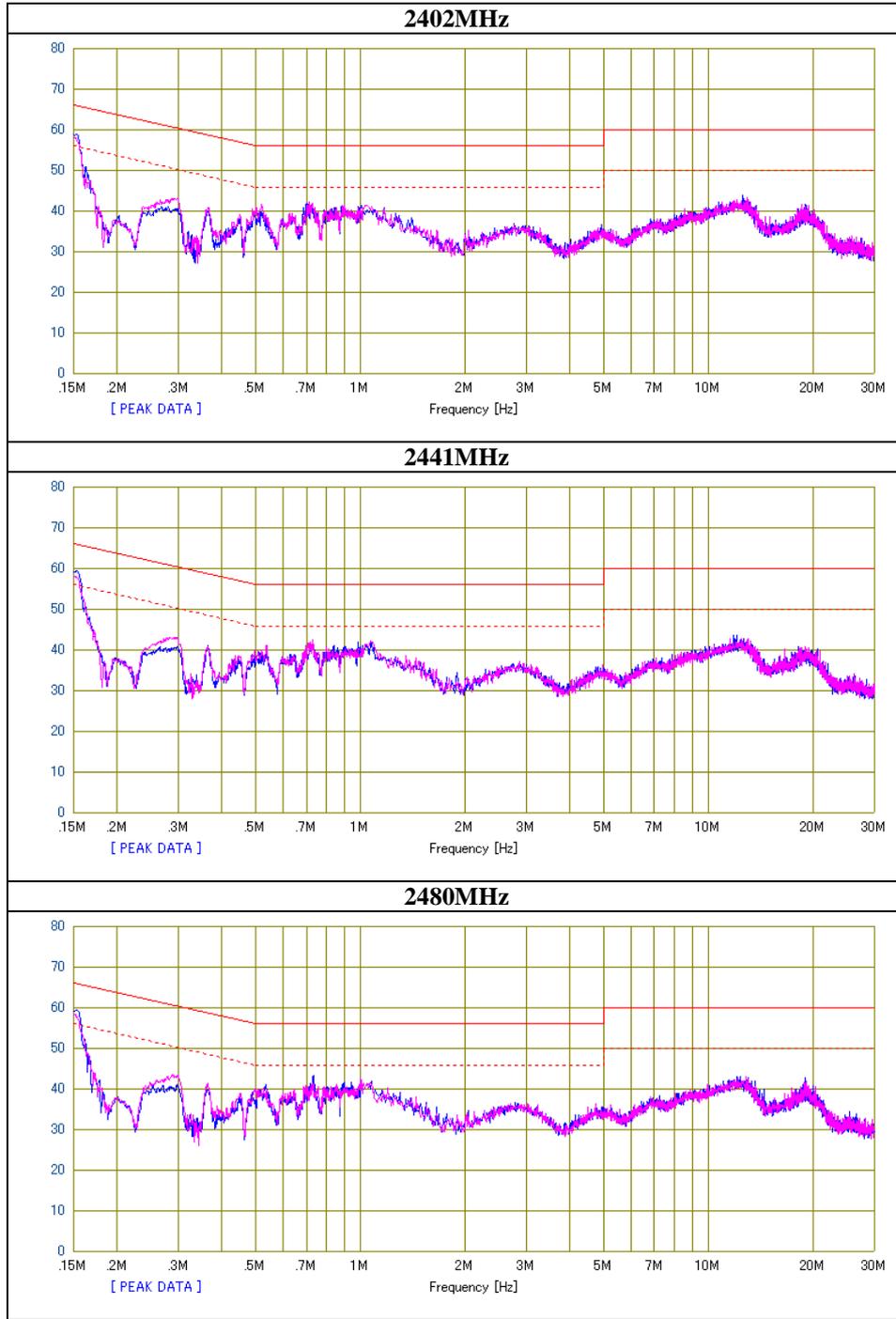


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	43.1	28.3	13.1	56.2	41.4	66.0	56.0	9.8	14.6	N	
0.29790	23.5	16.6	13.3	36.8	29.9	60.3	50.3	23.5	20.4	N	
0.51967	19.8	9.0	13.3	33.1	22.3	56.0	46.0	22.9	23.7	N	
0.72319	24.2	19.3	13.3	37.5	32.6	56.0	46.0	18.5	13.4	N	
1.04325	23.4	13.5	13.3	36.7	26.8	56.0	46.0	19.3	19.2	N	
12.51866	21.2	16.3	14.1	35.3	30.4	60.0	50.0	24.7	19.6	N	
0.15000	41.6	28.2	13.1	54.7	41.3	66.0	56.0	11.3	14.7	L	
0.29455	27.1	17.6	13.3	40.4	30.9	60.4	50.4	20.0	19.5	L	
0.51219	21.6	9.5	13.3	34.9	22.8	56.0	46.0	21.1	23.2	L	
0.72482	24.4	19.5	13.3	37.7	32.8	56.0	46.0	18.3	13.2	L	
1.05244	23.6	13.4	13.3	36.9	26.7	56.0	46.0	19.1	19.3	L	
12.49886	21.3	16.3	14.1	35.4	30.4	60.0	50.0	24.6	19.6	L	

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT [dBuV] = READING [dBuV] + C. F [dB] (LISN LOSS + CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission
(Power Supply: SONY)

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31HE0085-HO-01
Date	03/19/2011
Temperature/ Humidity	22 deg.C / 33% RH
Engineer	Satofumi Matsuyama
Mode	Tx 3DH5



Conducted Emission
(Power Supply: DELTA)

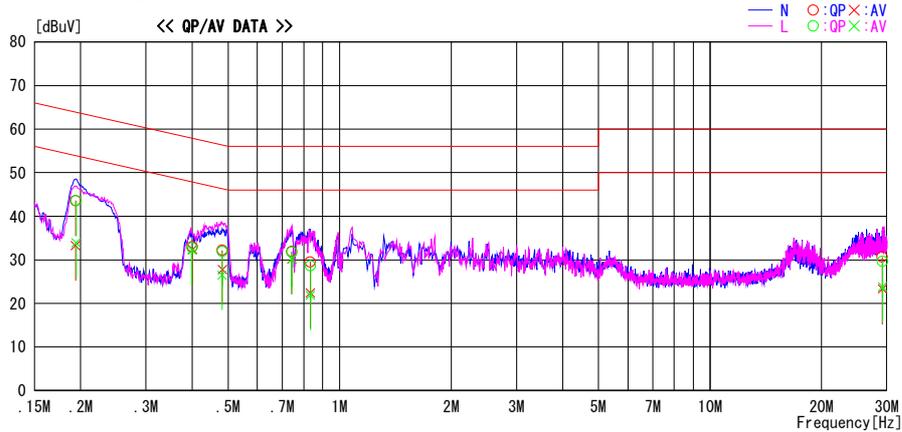
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
 Date : 2011/03/21

Report No. : 31HE0085-HO-01
 Temp./Humi. : 21deg.C / 32% RH
 Engineer : Tomotaka Sasagawa

Mode / Remarks : BT Tx, 2402MHz, DH5

LIMIT : FCC15.207 QP
 FCC15.207 AV

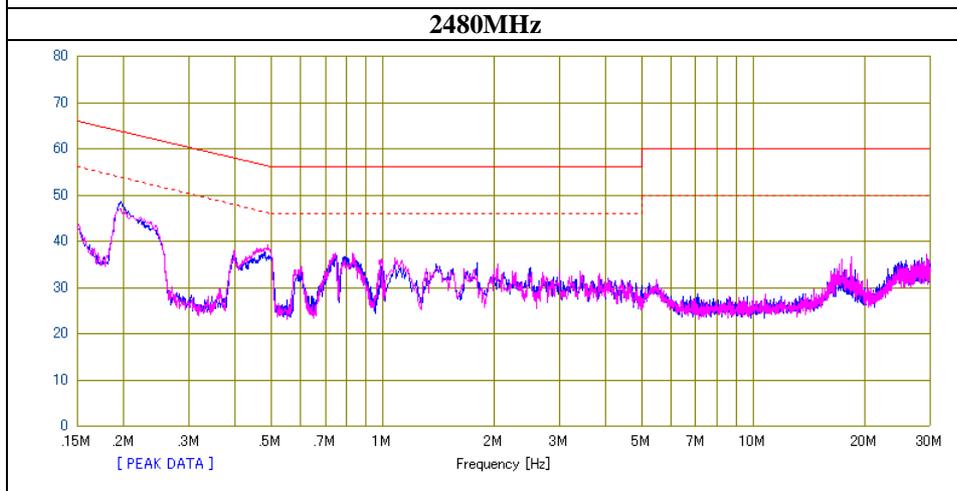
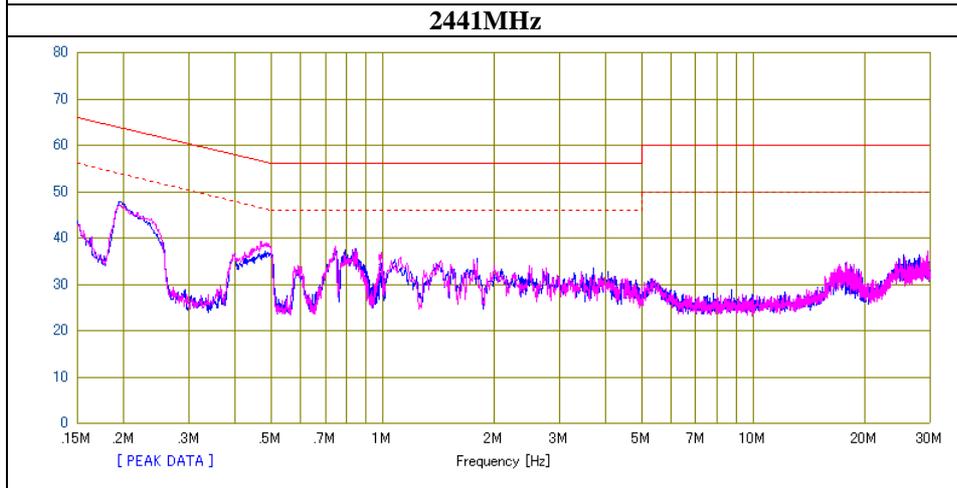
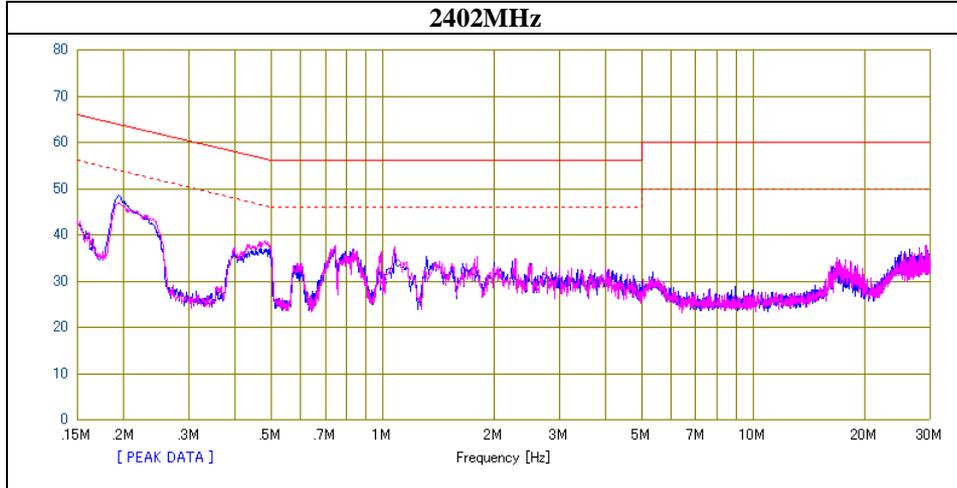


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.19350	30.5	20.2	13.1	43.6	33.3	63.9	53.9	20.3	20.6	N	
0.40056	19.7	19.1	13.3	33.0	32.4	57.8	47.8	24.8	15.4	N	
0.48234	18.9	14.5	13.3	32.2	27.8	56.3	46.3	24.1	18.5	N	
0.74334	18.6	16.9	13.3	31.9	30.2	56.0	46.0	24.1	15.8	N	
0.83381	16.2	9.1	13.3	29.5	22.4	56.0	46.0	26.5	23.6	N	
29.15795	15.8	8.5	14.8	30.6	23.3	60.0	50.0	29.4	26.7	N	
0.19437	30.5	20.8	13.1	43.6	33.9	63.8	53.8	20.2	19.9	L	
0.39969	19.5	18.9	13.3	32.8	32.2	57.9	47.9	25.1	15.7	L	
0.48147	18.6	13.2	13.3	31.9	26.5	56.3	46.3	24.4	19.8	L	
0.74334	18.5	16.9	13.3	31.8	30.2	56.0	46.0	24.2	15.8	L	
0.83468	15.3	8.6	13.3	28.6	21.9	56.0	46.0	27.4	24.1	L	
29.17800	14.9	9.0	14.8	29.7	23.8	60.0	50.0	30.3	26.2	L	

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT[dBuV]=READING[dBuV]+C.F[dB] (L1SN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission
(Power Supply: DELTA)

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31HE0085-HO-01
Date	03/21/2011
Temperature/ Humidity	21 deg.C / 32% RH
Engineer	Tomotaka Sasagawa
Mode	Tx DH5



Y scale [dBuV]

Chart — N — L

Conducted Emission
(Power Supply: DELTA)

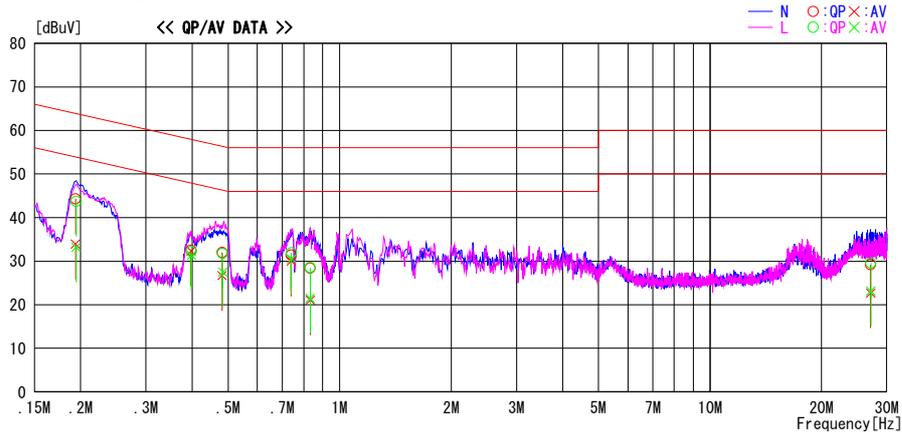
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
 Date : 2011/03/21

Report No. : 31HE0085-HO-01
 Temp./Humi. : 21deg. C / 32% RH
 Engineer : Tomotaka Sasagawa

Mode / Remarks : BT Tx, 2402MHz, 3DH5

LIMIT : FCC15.207 QP
 FCC15.207 AV

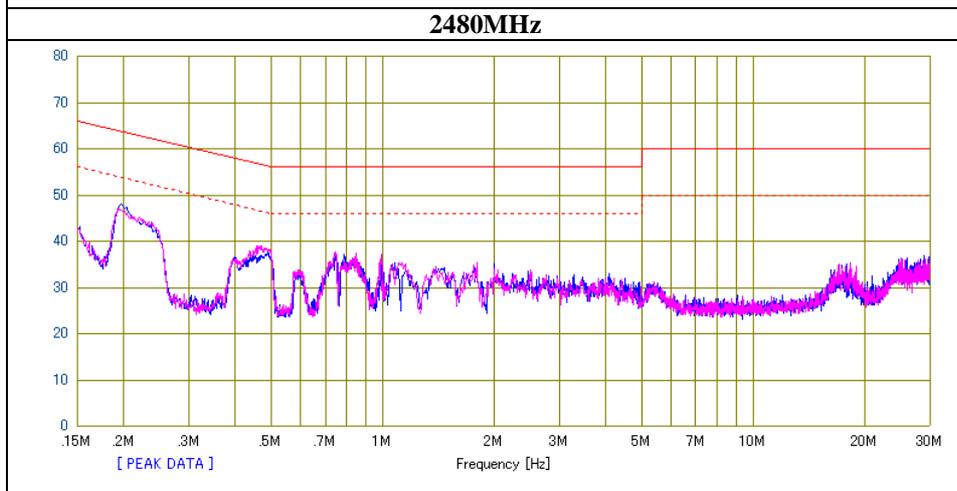
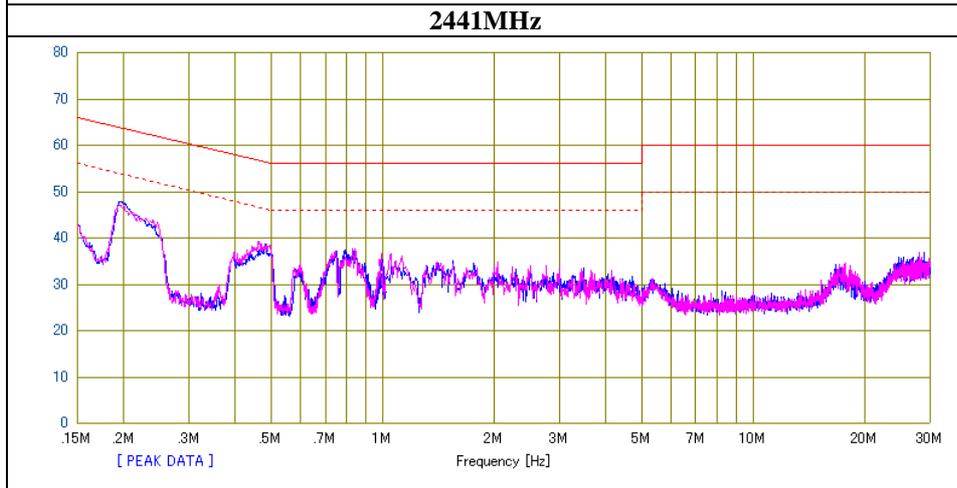
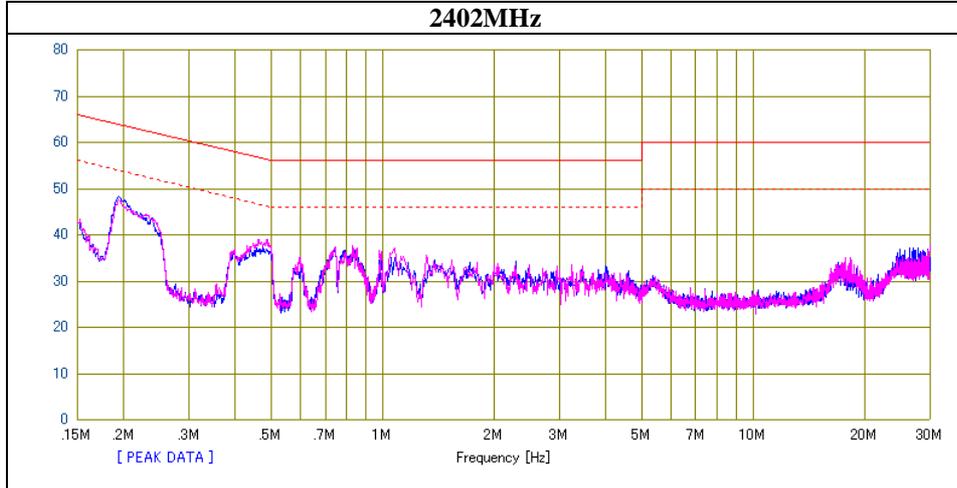


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.19350	31.2	20.8	13.1	44.3	33.9	63.9	53.9	19.6	20.0	N	
0.39708	19.2	19.0	13.3	32.5	32.3	57.9	47.9	25.4	15.6	N	
0.48147	18.7	13.4	13.3	32.0	26.7	56.3	46.3	24.3	19.6	N	
0.73986	18.1	16.7	13.3	31.4	30.0	56.0	46.0	24.6	16.0	N	
0.83381	15.1	7.8	13.3	28.4	21.1	56.0	46.0	27.6	24.9	N	
27.11284	14.5	8.0	14.7	29.2	22.7	60.0	50.0	30.8	27.3	N	
0.19437	30.6	20.1	13.1	43.7	33.2	63.8	53.8	20.1	20.6	L	
0.39795	18.9	18.0	13.3	32.2	31.3	57.9	47.9	25.7	16.6	L	
0.48321	18.5	14.2	13.3	31.8	27.5	56.3	46.3	24.5	18.8	L	
0.74160	18.6	17.2	13.3	31.9	30.5	56.0	46.0	24.1	15.5	L	
0.83207	15.2	8.2	13.3	28.5	21.5	56.0	46.0	27.5	24.5	L	
27.13289	14.9	8.5	14.7	29.6	23.2	60.0	50.0	30.4	26.8	L	

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT[dBuV]=READING[dBuV]+C.F[dB] (L1SN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission
(Power Supply: DELTA)

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31HE0085-HO-01
Date	03/21/2011
Temperature/ Humidity	21 deg.C / 32% RH
Engineer	Tomotaka Sasagawa
Mode	Tx 3DH5



Y scale [dBuV]

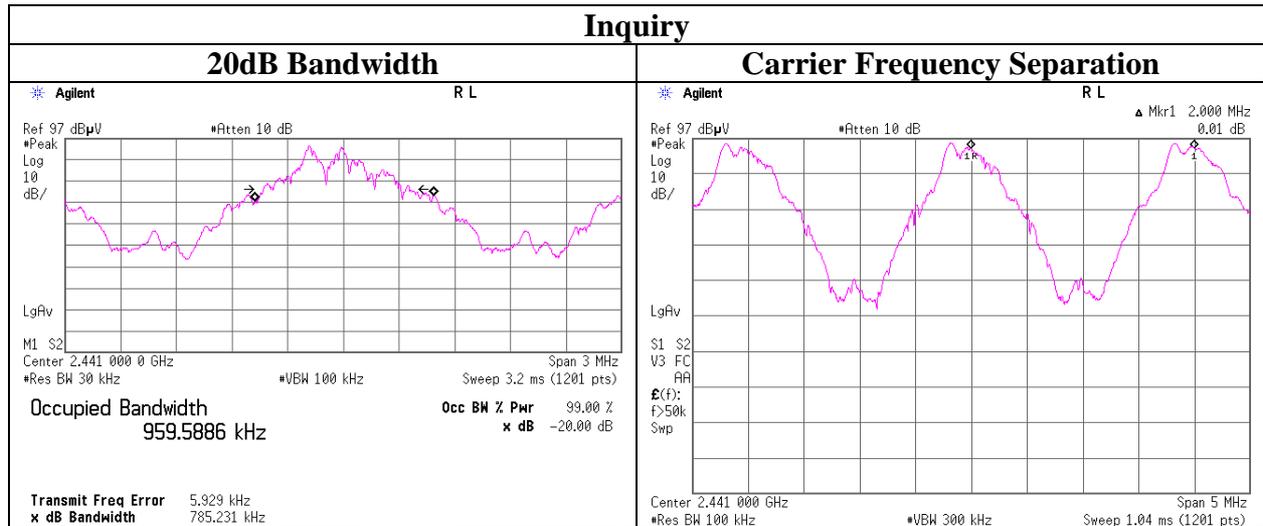
Chart — N — L

20dB Bandwidth and Carrier Frequency Separation

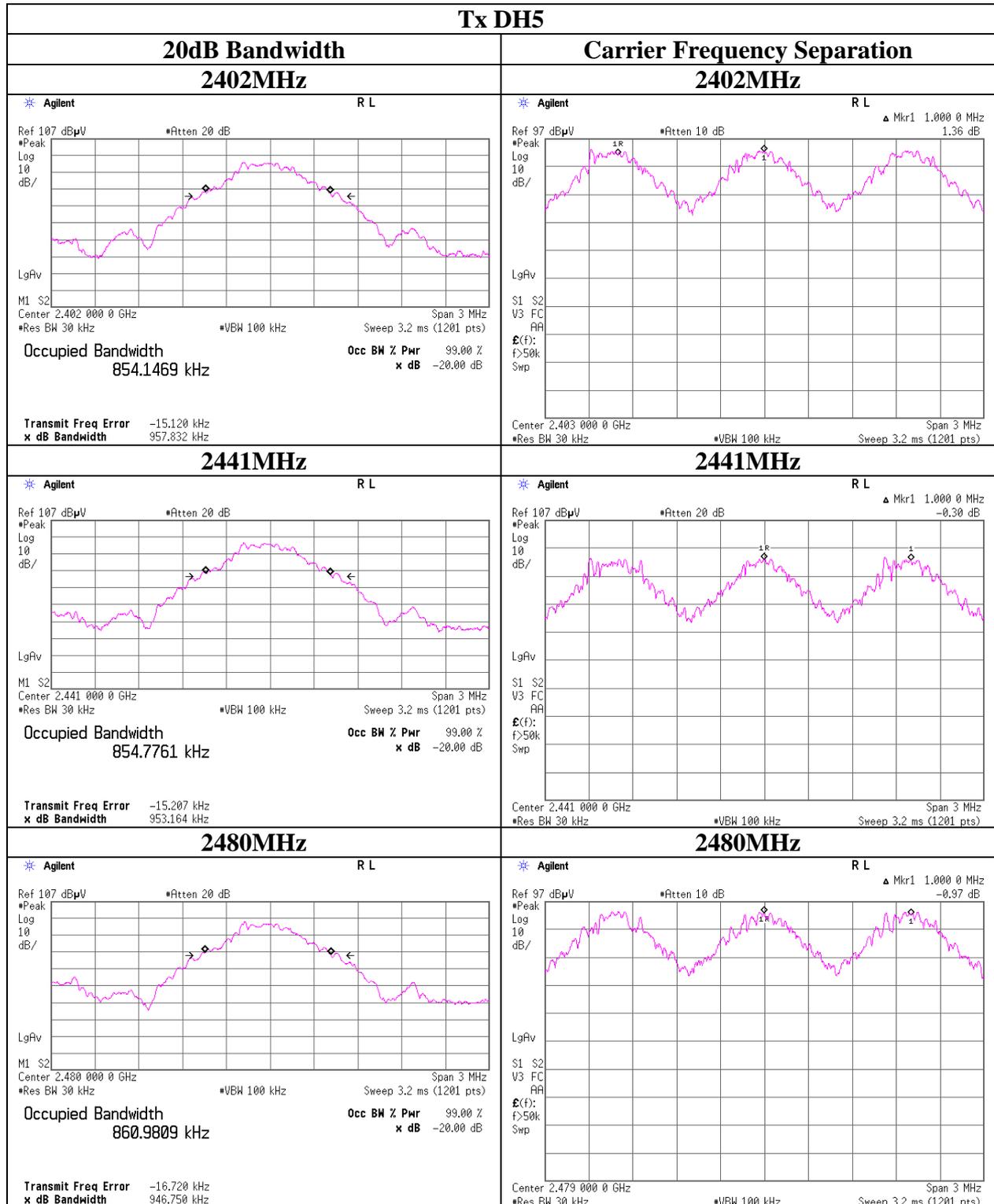
Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	31HE0085-HO-01
Date	3/24/2011
Temperature/ Humidity	22 deg.C / 38% RH
Engineer	Hiroshi Kukita
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

Mode	Freq. [MHz]	20dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.958	1.000	>= 0.639
DH5	2441.0	0.953	1.000	>= 0.635
DH5	2480.0	0.947	1.000	>= 0.631
3DH5	2402.0	1.314	1.000	>= 0.876
3DH5	2441.0	1.301	1.000	>= 0.867
3DH5	2480.0	1.290	1.000	>= 0.860
Inquiry	2441.0	0.785	2.000	>= 0.523

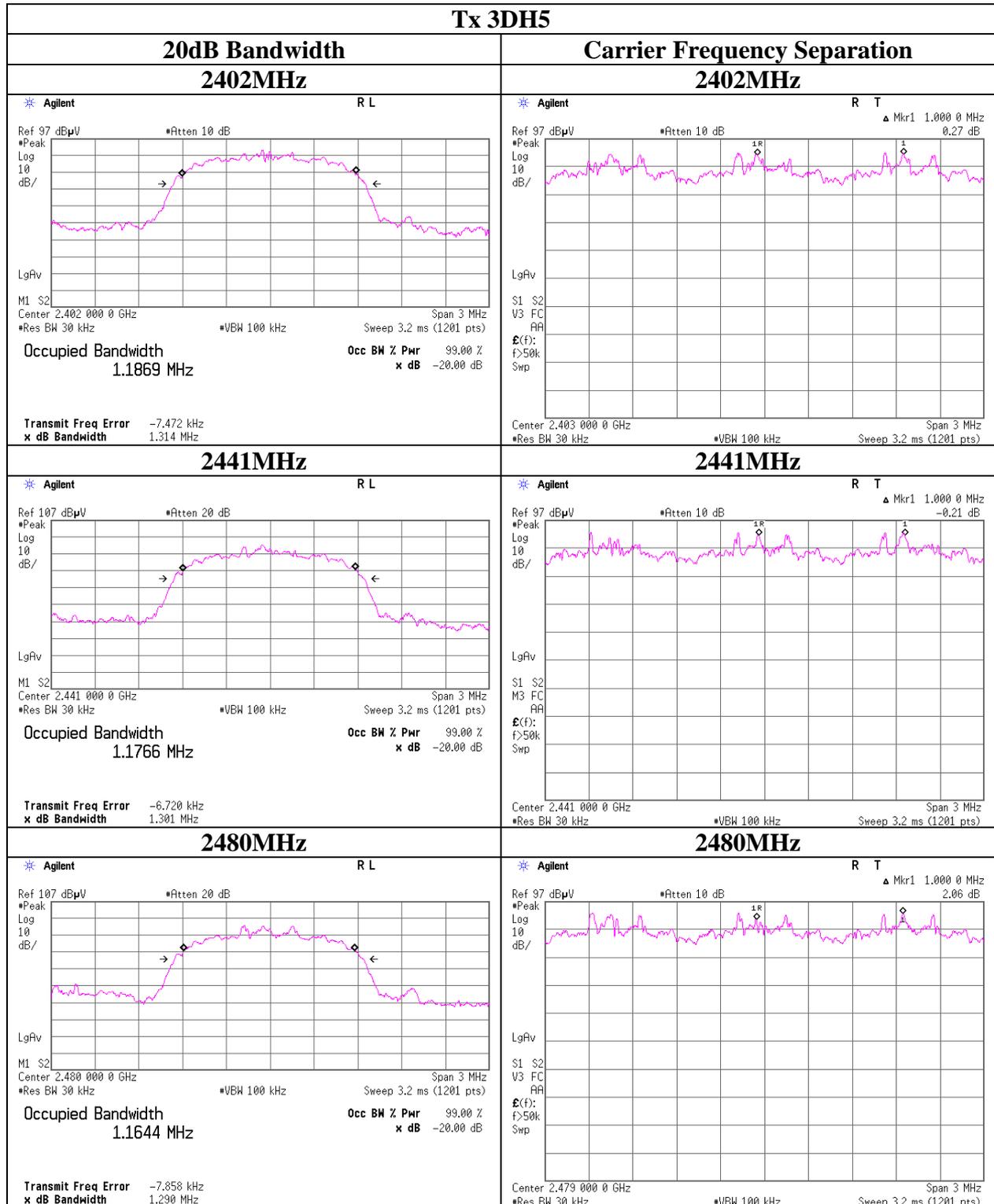
Limit: Two-thirds of 20dB Bandwidth or 25kHz (whichever is greater).
 No limit applies to 20dB Bandwidth.



20dB Bandwidth and Carrier Frequency Separation



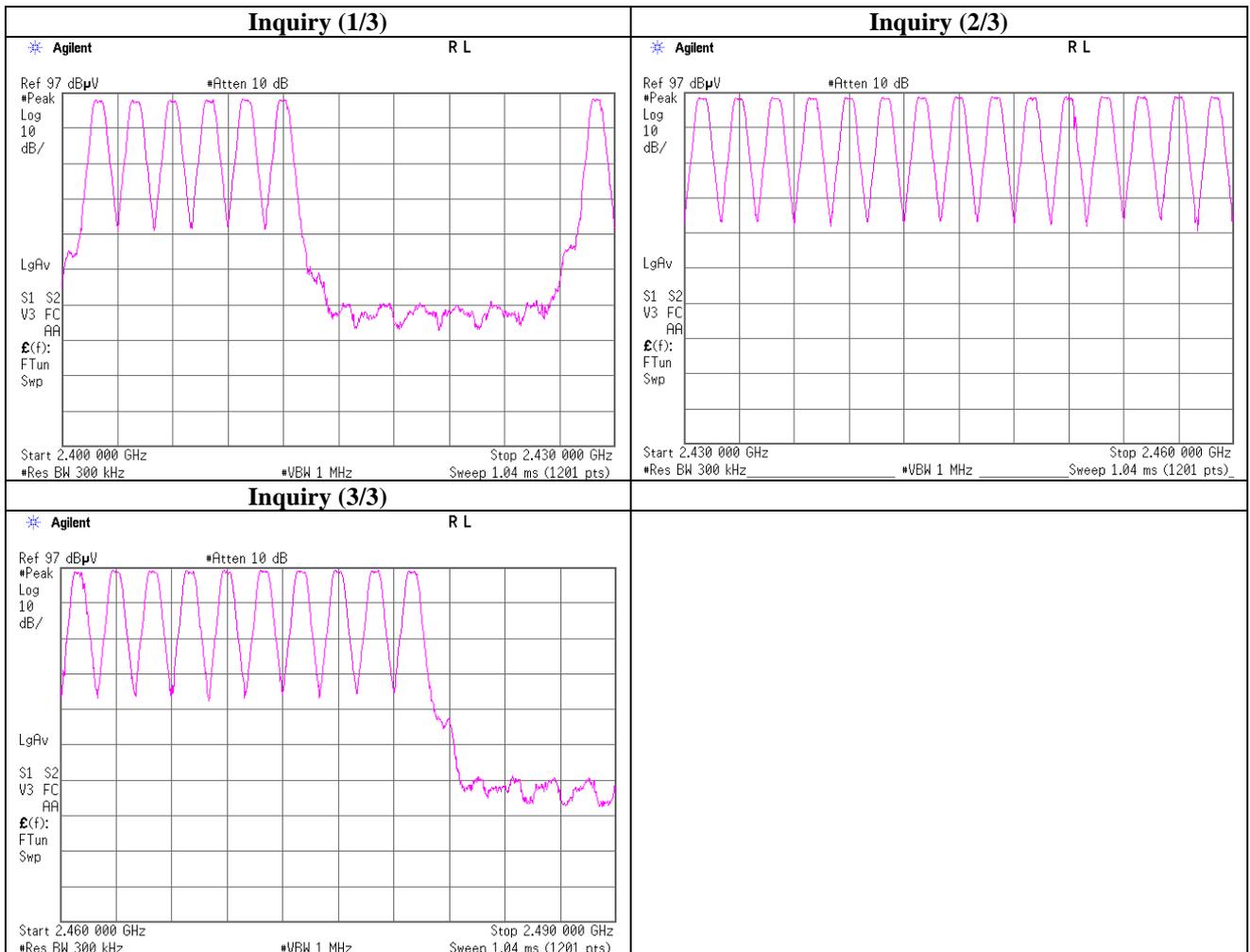
20dB Bandwidth and Carrier Frequency Separation



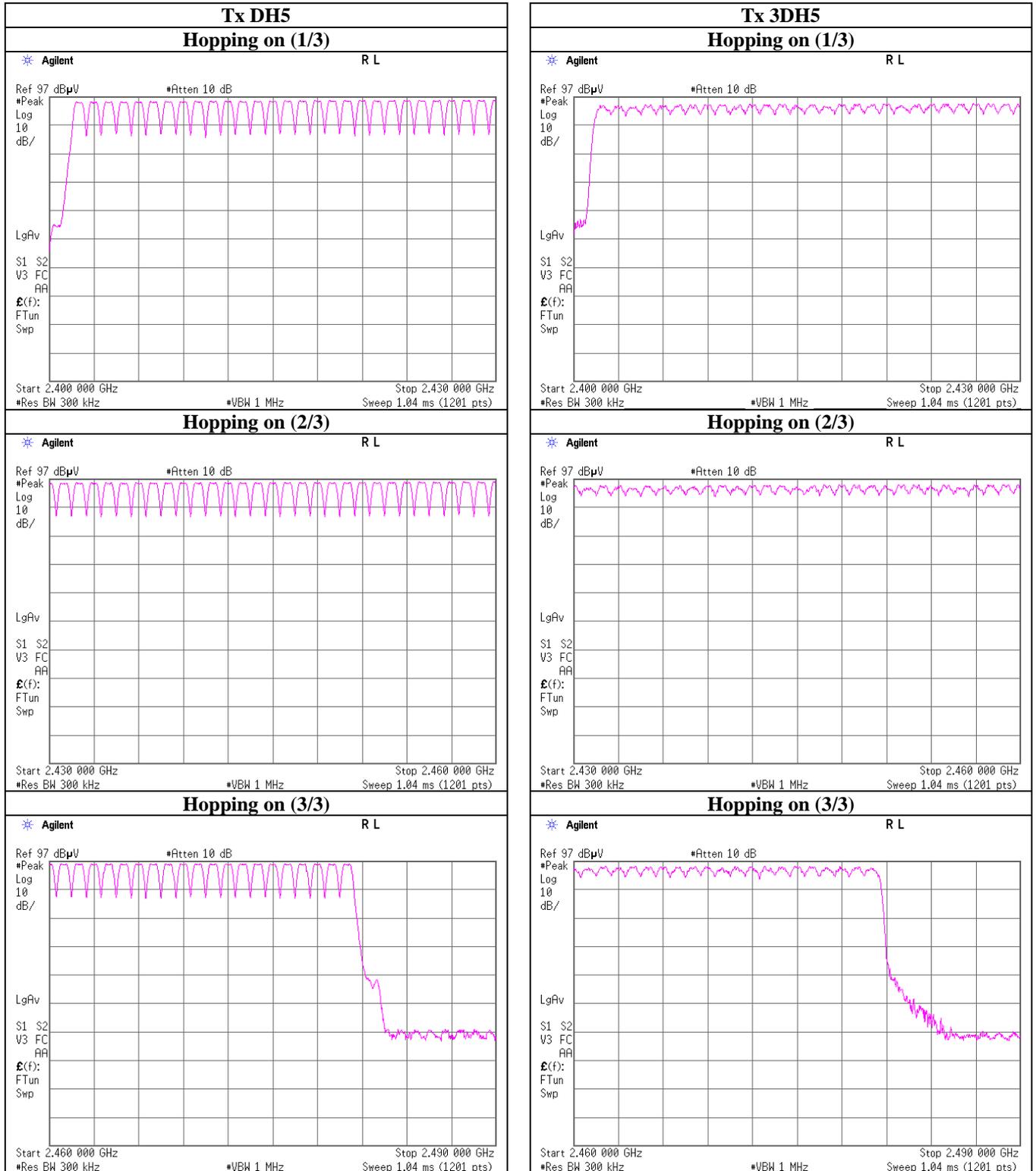
Number of Hopping Frequency

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	31HE0085-HO-01
Date	3/24/2011
Temperature/ Humidity	22 deg.C / 38% RH
Engineer	Hiroshi Kukita
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

Mode	Number of channel [times]	Limit [times]
DH5	79	>= 15
3DH5	79	>= 15
Inquiry	32	>= 15



Number of Hopping Frequency



Dwell time

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	31HE0085-HO-01
Date	04/04/2011
Temperature/ Humidity	23 deg.C / 32% RH
Engineer	Takumi Shimada
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

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	51.2 times / 5 sec. x 31.6 sec. = 324 times	0.420	136	400
DH3	26.0 times / 5 sec. x 31.6 sec. = 165 times	1.692	279	400
DH5	19.4 times / 5 sec. x 31.6 sec. = 123 times	2.932	361	400
3DH1	50.6 times / 5 sec. x 31.6 sec. = 320 times	0.421	135	400
3DH3	26.0 times / 5 sec. x 31.6 sec. = 165 times	1.697	280	400
3DH5	19.6 times / 5 sec. x 31.6 sec. = 124 times	2.927	363	400
Inquiry	100.0 times / 1 sec. x 12.8 sec. = 1280 times	0.123	157	400

Sample Calculation

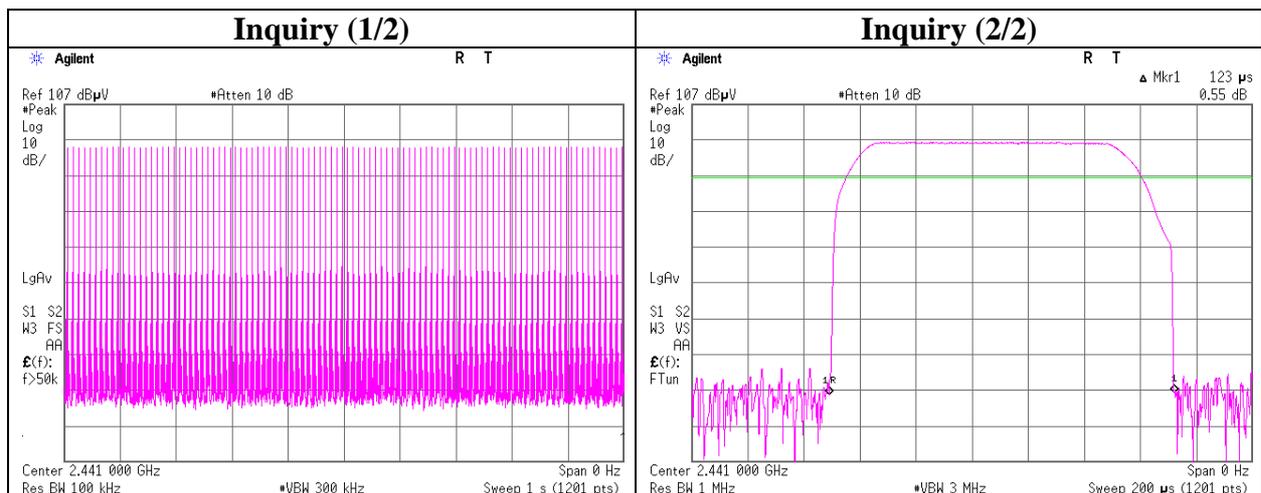
Result = Number of transmission x Length of transmission time

*Average data of 5 tests.(except Inquiry)

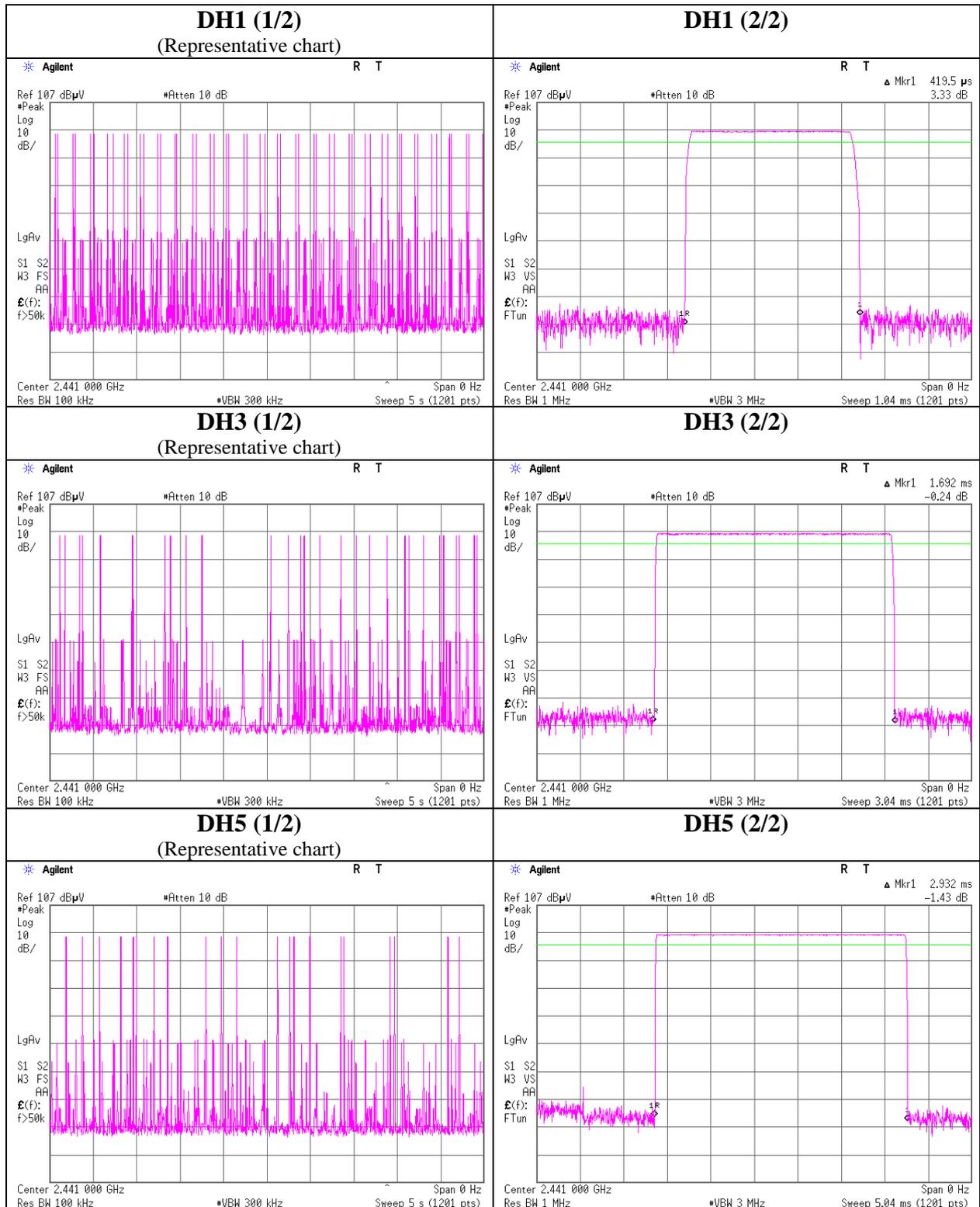
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	51	51	52	51	51	51.2
DH3	28	26	25	22	29	26
DH5	21	19	19	20	18	19.4
3DH1	50	51	51	50	51	50.6
3DH3	28	25	27	24	26	26
3DH5	22	16	18	21	21	19.6

Sample Calculation

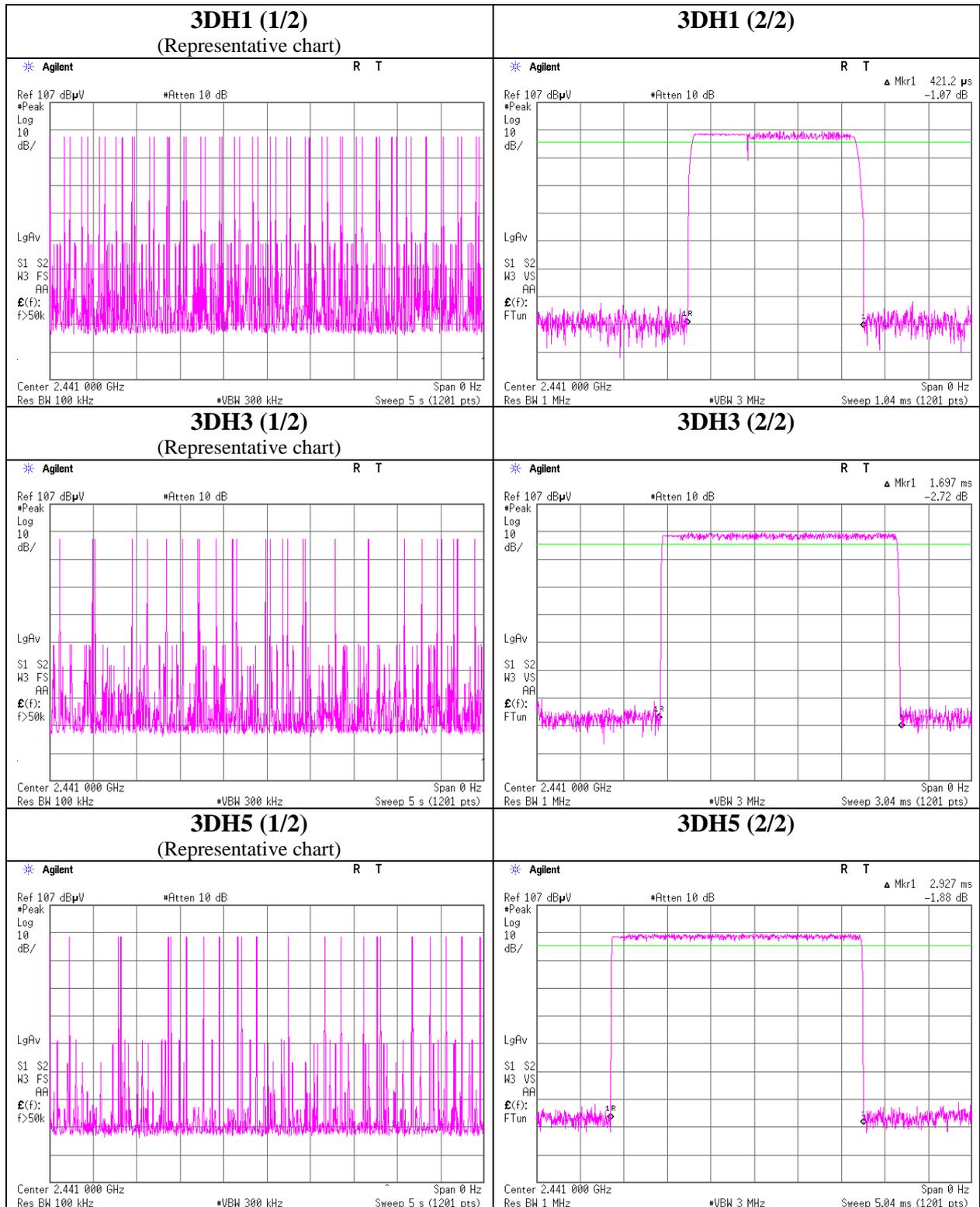
Average= Summation(Sampling 1 to 5) / 5



Dwell time



Dwell time



Maximum Peak Output Power

Test place : Head Office EMC Lab. No.4 Measurement Room
Report No. : 31HE0085-HO-01
Date : 03/11/2011
Temperature/ Humidity : 24 deg.C/ 26% RH
Engineer : Satofumi Matsuyama
Mode : Tx (Hopping off) DH5/3DH5/Inquiry

Mode	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
DH5	2402.0	-10.21	0.80	10.08	0.67	1.17	20.97	125	20.30
DH5	2441.0	-9.48	0.80	10.08	1.40	1.38	20.97	125	19.57
DH5	2480.0	-9.30	0.80	10.08	1.58	1.44	20.97	125	19.39
2DH5	2402.0	-9.71	0.80	10.08	1.17	1.31	20.97	125	19.80
2DH5	2441.0	-8.88	0.80	10.08	2.00	1.58	20.97	125	18.97
2DH5	2480.0	-8.74	0.80	10.08	2.14	1.64	20.97	125	18.83
3DH5	2402.0	-9.45	0.80	10.08	1.43	1.39	20.97	125	19.54
3DH5	2441.0	-8.68	0.80	10.08	2.20	1.66	20.97	125	18.77
3DH5	2480.0	-8.57	0.80	10.08	2.31	1.70	20.97	125	18.66
Inquiry	2441.0	-9.22	0.80	10.08	1.66	1.47	20.97	125	19.31

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied)+ Attenuator

Test was not performed at AFH mode, because the decrease of number of channel (min: 20ch) at AFH mode does not influence on the output power and bandwidth of the EUT.

As this device had AFH mode and frequency separation could not meet the requirement of over 20dB BW without 2/3 relaxation, 125mW power limit was applied to it.

Radiated Spurious Emission
(Power Supply: DELTA)

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31HE0085-HO-01
Date 03/14/2011 03/14/2011 03/15/2011
Temperature/ Humidity 20 deg.C/ 49% RH 20 deg.C/ 24% RH 22 deg.C/ 47% RH
Engineer Yutaka Yoshida Yutaka Yoshida Takumi Shimada
(1-10GHz) (30-1000MHz) (10-26.5GHz)
Mode Tx, DH5 2402MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	30.010	QP	26.3	17.9	7.0	32.1	19.1	40.0	20.9	
Hori	63.547	QP	43.0	7.8	7.5	32.0	26.3	40.0	13.7	
Hori	106.754	QP	40.4	11.3	8.0	32.0	27.7	43.5	15.8	
Hori	312.104	QP	40.0	16.0	9.7	31.9	33.8	46.0	12.2	
Hori	576.008	QP	37.4	19.8	11.3	32.1	36.4	46.0	9.6	
Hori	865.337	QP	29.2	23.8	12.7	31.5	34.2	46.0	11.8	
Hori	2390.000	PK	47.9	27.7	2.3	32.6	45.3	73.9	28.6	
Hori	2400.000	PK	61.9	27.7	2.4	32.6	59.4	-	-	See 20dBc Data Sheet
Hori	3191.270	PK	52.4	29.4	2.8	32.2	52.4	73.9	21.5	
Hori	4804.000	PK	42.4	31.6	4.9	31.9	47.0	73.9	26.9	
Hori	7206.000	PK	42.2	36.2	6.0	32.4	52.0	73.9	21.9	
Hori	9608.000	PK	41.3	38.0	6.8	32.9	53.2	73.9	20.7	
Hori	24020.000	PK	45.9	37.8	-1.4	31.6	50.7	73.9	23.2	
Hori	2390.000	AV	32.3	27.7	2.3	32.6	29.7	53.9	24.2	
Hori	2400.000	AV	57.2	27.7	2.4	32.6	54.7	-	-	See 20dBc Data Sheet
Hori	3191.270	AV	37.4	29.4	2.8	32.2	37.4	53.9	16.5	
Hori	4804.000	AV	34.6	31.6	4.9	31.9	39.2	53.9	14.7	
Hori	7206.000	AV	31.0	36.2	6.0	32.4	40.8	53.9	13.1	
Hori	9608.000	AV	30.3	38.0	6.8	32.9	42.2	53.9	11.7	
Hori	24020.000	AV	33.9	37.8	-1.4	31.6	38.7	53.9	15.2	
Vert	31.623	QP	35.2	17.4	7.0	32.1	27.5	40.0	12.5	
Vert	63.648	QP	41.0	7.8	7.5	32.0	24.3	40.0	15.7	
Vert	105.172	QP	48.7	11.1	8.0	32.0	35.8	43.5	7.7	
Vert	308.603	QP	43.3	15.9	9.7	31.9	37.0	46.0	9.0	
Vert	576.003	QP	34.0	19.8	11.3	32.1	33.0	46.0	13.0	
Vert	863.992	QP	23.4	23.7	12.7	31.5	28.3	46.0	17.7	
Vert	2390.000	PK	50.9	27.7	2.3	32.6	48.3	73.9	25.6	
Vert	2400.000	PK	65.8	27.7	2.4	32.6	63.3	-	-	See 20dBc Data Sheet
Vert	3191.270	PK	58.8	29.4	2.8	32.2	58.8	73.9	15.1	
Vert	4804.000	PK	43.4	31.6	4.9	31.9	48.0	73.9	25.9	
Vert	7206.000	PK	41.6	36.2	6.0	32.4	51.4	73.9	22.5	
Vert	9608.000	PK	41.5	38.0	6.8	32.9	53.4	73.9	20.5	
Vert	24020.000	PK	45.7	37.8	-1.4	31.6	50.5	73.9	23.4	
Vert	2390.000	AV	34.0	27.7	2.3	32.6	31.4	53.9	22.6	
Vert	2400.000	AV	60.8	27.7	2.4	32.6	58.3	-	-	See 20dBc Data Sheet
Vert	3191.270	AV	34.4	29.4	2.8	32.2	34.4	53.9	19.5	
Vert	4804.000	AV	35.7	31.6	4.9	31.9	40.3	53.9	13.6	
Vert	7206.000	AV	31.0	36.2	6.0	32.4	40.8	53.9	13.1	
Vert	9608.000	AV	30.3	38.0	6.8	32.9	42.2	53.9	11.7	
Vert	24020.000	AV	34.0	37.8	-1.4	31.6	38.8	53.9	15.1	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

*For the band edge of the carrier and the harmonics that emission was found, the test was performed with VBW of the average detector set at 270Hz. For other average detectors, VBW was set at 10Hz.

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2402.000	PK	96.8	27.7	2.4	32.6	94.3	-	-	Carrier
Hori	2400.000	PK	46.9	27.7	2.4	32.6	44.4	74.3	29.9	
Vert	2402.000	PK	99.7	27.7	2.4	32.6	97.2	-	-	Carrier
Vert	2400.000	PK	49.8	27.7	2.4	32.6	47.3	77.2	29.9	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

Radiated Spurious Emission
(Power Supply: DELTA)

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31HE0085-HO-01
Date 03/14/2011 03/14/2011 03/15/2011
Temperature/ Humidity 20 deg.C/ 49% RH 20 deg.C/ 24% RH 22 deg.C/ 47% RH
Engineer Yutaka Yoshida Yutaka Yoshida Takumi Shimada
(1-10GHz) (30-1000MHz) (10-26.5GHz)
Mode Tx, DH5 2441MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	30.690	QP	26.2	17.7	7.0	32.1	18.8	40.0	21.2	
Hori	63.666	QP	43.2	7.8	7.5	32.0	26.5	40.0	13.5	
Hori	108.794	QP	39.9	11.6	8.1	32.0	27.6	43.5	15.9	
Hori	306.198	QP	38.3	15.9	9.7	31.9	32.0	46.0	14.0	
Hori	576.000	QP	37.5	19.8	11.3	32.1	36.5	46.0	9.5	
Hori	863.994	QP	29.2	23.7	12.7	31.5	34.1	46.0	11.9	
Hori	3192.730	PK	53.4	29.4	2.8	32.2	53.4	73.9	20.5	
Hori	4882.000	PK	42.7	31.9	5.0	31.9	47.7	73.9	26.2	
Hori	7323.000	PK	42.6	36.2	6.1	32.4	52.5	73.9	21.4	
Hori	9764.000	PK	43.1	38.1	6.8	32.9	55.1	73.9	18.8	
Hori	24410.000	PK	45.5	37.9	-1.3	31.4	50.7	73.9	23.2	
Hori	3192.730	AV	38.0	29.4	2.8	32.2	38.0	53.9	15.9	
Hori	4882.000	AV	32.6	31.9	5.0	31.9	37.6	53.9	16.3	
Hori	7323.000	AV	32.3	36.2	6.1	32.4	42.2	53.9	11.7	
Hori	9764.000	AV	31.8	38.1	6.8	32.9	43.8	53.9	10.1	
Hori	24410.000	AV	33.5	37.9	-1.3	31.4	38.7	53.9	15.2	
Vert	31.420	QP	34.9	17.5	7.0	32.1	27.3	40.0	12.7	
Vert	63.706	QP	41.0	7.8	7.5	32.0	24.3	40.0	15.7	
Vert	105.211	QP	49.0	11.1	8.0	32.0	36.1	43.5	7.4	
Vert	307.396	QP	43.0	15.9	9.7	31.9	36.7	46.0	9.3	
Vert	576.001	QP	32.0	19.8	11.3	32.1	31.0	46.0	15.0	
Vert	863.993	QP	22.3	23.7	12.7	31.5	27.2	46.0	18.8	
Vert	3192.730	PK	58.5	29.4	2.8	32.2	58.5	73.9	15.4	
Vert	4882.000	PK	41.7	31.9	5.0	31.9	46.7	73.9	27.2	
Vert	7323.000	PK	41.4	36.2	6.1	32.4	51.3	73.9	22.6	
Vert	9764.000	PK	41.2	38.1	6.8	32.9	53.2	73.9	20.7	
Vert	24410.000	PK	45.4	37.9	-1.3	31.4	50.6	73.9	23.3	
Vert	3192.730	AV	41.9	29.4	2.8	32.2	41.9	53.9	12.0	
Vert	4882.000	AV	33.4	31.9	5.0	31.9	38.4	53.9	15.5	
Vert	7323.000	AV	30.6	36.2	6.1	32.4	40.5	53.9	13.4	
Vert	9764.000	AV	30.3	38.1	6.8	32.9	42.3	53.9	11.6	
Vert	24410.000	AV	33.4	37.9	-1.3	31.4	38.6	53.9	15.3	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

*For the band edge of the carrier and the harmonics that emission was found, the test was performed with VBW of the average detector set at 270Hz. For other average detectors, VBW was set at 10Hz.

Radiated Spurious Emission
(Power Supply: DELTA)

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31HE0085-HO-01
Date 03/14/2011 03/14/2011 03/15/2011
Temperature/ Humidity 20 deg.C/ 49% RH 20 deg.C/ 24% RH 22 deg.C/ 47% RH
Engineer Yutaka Yoshida Yutaka Yoshida Takumi Shimada
(1-10GHz) (30-1000MHz) (10-26.5GHz)
Mode Tx, DH5 2480MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	32.164	QP	24.6	17.3	7.0	32.1	16.8	40.0	23.2	
Hori	63.547	QP	42.7	7.8	7.5	32.0	26.0	40.0	14.0	
Hori	108.779	QP	40.0	11.6	8.0	32.0	27.6	43.5	15.9	
Hori	307.366	QP	39.3	15.9	9.7	31.9	33.0	46.0	13.0	
Hori	576.005	QP	37.8	19.8	11.3	32.1	36.8	46.0	9.2	
Hori	863.997	QP	29.4	23.7	12.7	31.5	34.3	46.0	11.7	
Hori	2483.500	PK	47.9	27.6	2.4	32.6	45.3	73.9	28.6	
Hori	3190.990	PK	52.2	29.4	2.8	32.2	52.2	73.9	21.7	
Hori	4960.000	PK	40.9	32.1	4.9	31.9	46.0	73.9	27.9	
Hori	7440.000	PK	43.1	36.2	6.1	32.4	53.0	73.9	20.9	
Hori	9920.000	PK	41.6	38.2	6.9	32.9	53.8	73.9	20.1	
Hori	24800.000	PK	47.6	38.0	-1.1	31.2	53.3	73.9	20.6	
Hori	2483.500	AV	34.4	27.6	2.4	32.6	31.8	53.9	22.1	
Hori	3190.990	AV	36.9	29.4	2.8	32.2	36.9	53.9	17.0	
Hori	4960.000	AV	33.9	32.1	4.9	31.9	39.0	53.9	14.9	
Hori	7440.000	AV	31.3	36.2	6.1	32.4	41.2	53.9	12.7	
Hori	9920.000	AV	30.9	38.2	6.9	32.9	43.1	53.9	10.8	
Hori	24800.000	AV	34.9	38.0	-1.1	31.2	40.6	53.9	13.3	
Vert	31.804	QP	34.8	17.4	7.0	32.1	27.1	40.0	12.9	
Vert	63.547	QP	40.6	7.8	7.5	32.0	23.9	40.0	16.1	
Vert	105.211	QP	49.2	11.1	8.0	32.0	36.3	43.5	7.2	
Vert	306.208	QP	43.3	15.9	9.7	31.9	37.0	46.0	9.0	
Vert	576.007	QP	34.8	19.8	11.3	32.1	33.8	46.0	12.2	
Vert	863.989	QP	24.9	23.7	12.7	31.5	29.8	46.0	16.2	
Vert	2483.500	PK	48.8	27.6	2.4	32.6	46.2	73.9	27.7	
Vert	3190.990	PK	58.4	29.4	2.8	32.2	58.4	73.9	15.5	
Vert	4960.000	PK	40.0	32.1	4.9	31.9	45.1	73.9	28.8	
Vert	7440.000	PK	42.2	36.2	6.1	32.4	52.1	73.9	21.8	
Vert	9920.000	PK	42.5	38.2	6.9	32.9	54.7	73.9	19.2	
Vert	24800.000	PK	47.8	38.0	-1.1	31.2	53.5	73.9	20.4	
Vert	2483.500	AV	34.9	27.6	2.4	32.6	32.3	53.9	21.6	
Vert	3190.990	AV	42.1	29.4	2.8	32.2	42.1	53.9	11.8	
Vert	4960.000	AV	30.5	32.1	4.9	31.9	35.6	53.9	18.3	
Vert	7440.000	AV	31.4	36.2	6.1	32.4	41.3	53.9	12.6	
Vert	9920.000	AV	30.8	38.2	6.9	32.9	43.0	53.9	10.9	
Vert	24800.000	AV	35.0	38.0	-1.1	31.2	40.7	53.9	13.2	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

*The 10th harmonic was not seen so the result was its base noise level.
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

*For the band edge of the carrier and the harmonics that emission was found, the test was performed with VBW of the average detector set at 270Hz. For other average detectors, VBW was set at 10Hz.

Radiated Spurious Emission
(Power Supply: DELTA)

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31HE0085-HO-01
Date 03/14/2011 03/14/2011 03/15/2011
Temperature/ Humidity 20 deg.C/ 49% RH 20 deg.C/ 24% RH 22 deg.C/ 47% RH
Engineer Yutaka Yoshida Takumi Shimada Takumi Shimada
(1-10GHz) (30-1000MHz) (10-26.5GHz)
Mode Tx, 3DH5 2402MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	31.623	QP	24.9	17.4	7.0	32.1	17.2	40.0	22.8	
Hori	63.928	QP	42.2	7.7	7.5	32.0	25.4	40.0	14.6	
Hori	108.789	QP	40.0	11.6	8.1	32.0	27.7	43.5	15.8	
Hori	309.730	QP	38.2	15.9	9.7	31.9	31.9	46.0	14.1	
Hori	576.009	QP	37.8	19.8	11.3	32.1	36.8	46.0	9.2	
Hori	863.982	QP	29.5	23.7	12.7	31.5	34.4	46.0	11.6	
Hori	2390.000	PK	45.5	27.7	2.3	32.6	42.9	73.9	31.0	
Hori	2400.000	PK	61.0	27.7	2.4	32.6	58.5	-	-	See 20dBc Data Sheet
Hori	3187.870	PK	53.8	29.4	2.8	32.2	53.8	73.9	20.1	
Hori	4804.000	PK	43.6	31.6	4.9	31.9	48.2	73.9	25.7	
Hori	7206.000	PK	42.9	36.2	6.0	32.4	52.7	73.9	21.2	
Hori	9608.000	PK	42.5	38.0	6.8	32.9	54.4	73.9	19.5	
Hori	24020.000	PK	45.9	37.8	-1.4	31.6	50.7	73.9	23.2	
Hori	2390.000	AV	32.2	27.7	2.3	32.6	29.6	53.9	24.4	
Hori	2400.000	AV	56.7	27.7	2.4	32.6	54.2	-	-	See 20dBc Data Sheet
Hori	3187.870	AV	36.0	29.4	2.8	32.2	36.0	53.9	17.9	
Hori	4804.000	AV	32.8	31.6	4.9	31.9	37.4	53.9	16.5	
Hori	7206.000	AV	30.4	36.2	6.0	32.4	40.2	53.9	13.7	
Hori	9608.000	AV	30.0	38.0	6.8	32.9	41.9	53.9	12.0	
Hori	24020.000	AV	34.3	37.8	-1.4	31.6	39.1	53.9	14.8	
Vert	31.476	QP	34.3	17.5	7.0	32.1	26.7	40.0	13.3	
Vert	63.547	QP	40.7	7.8	7.5	32.0	24.0	40.0	16.0	
Vert	104.728	QP	49.5	11.0	8.0	32.0	36.5	43.5	7.0	
Vert	308.556	QP	42.7	15.9	9.7	31.9	36.4	46.0	9.6	
Vert	576.007	QP	34.8	19.8	11.3	32.1	33.8	46.0	12.2	
Vert	863.995	QP	25.3	23.7	12.7	31.5	30.2	46.0	15.8	
Vert	2390.000	PK	52.8	27.7	2.3	32.6	50.2	73.9	23.7	
Vert	2400.000	PK	63.8	27.7	2.4	32.6	61.3	-	-	See 20dBc Data Sheet
Vert	3187.870	PK	58.9	29.4	2.8	32.2	58.9	73.9	15.0	
Vert	4804.000	PK	32.0	31.6	4.9	31.9	36.6	73.9	37.3	
Vert	4804.000	PK	42.6	31.6	4.9	31.9	47.2	73.9	26.7	
Vert	7206.000	PK	41.8	36.2	6.0	32.4	51.6	73.9	22.3	
Vert	9608.000	PK	42.3	38.0	6.8	32.9	54.2	73.9	19.7	
Vert	24020.000	PK	45.9	37.8	-1.4	31.6	50.7	73.9	23.2	
Vert	2390.000	AV	34.9	27.7	2.3	32.6	32.3	53.9	21.6	
Vert	2400.000	AV	55.6	27.7	2.4	32.6	53.1	-	-	See 20dBc Data Sheet
Vert	3187.870	AV	40.0	29.4	2.8	32.2	40.0	53.9	13.9	
Vert	7206.000	AV	30.5	36.2	6.0	32.4	40.3	53.9	13.6	
Vert	9608.000	AV	30.1	38.0	6.8	32.9	42.0	53.9	11.9	
Vert	24020.000	AV	34.2	37.8	-1.4	31.6	39.0	53.9	14.9	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.54dB

*For the band edge of the carrier and the harmonics that emission was found, the test was performed with VBW of the average detector set at 270Hz. For other average detectors, VBW was set at 10Hz.

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2402.000	PK	92.8	27.7	2.4	32.6	90.3	-	-	Carrier
Hori	2400.000	PK	52.8	27.7	2.4	32.6	50.3	70.3	20.0	
Vert	2402.000	PK	97.4	27.7	2.4	32.6	94.9	-	-	Carrier
Vert	2400.000	PK	55.8	27.7	2.4	32.6	53.3	74.9	21.6	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

Radiated Spurious Emission
(Power Supply: DELTA)

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31HE0085-HO-01
Date 03/14/2011 03/14/2011 03/15/2011
Temperature/ Humidity 20 deg.C/ 49% RH 20 deg.C/ 24% RH 22 deg.C/ 47% RH
Engineer Yutaka Yoshida Takumi Shimada Takumi Shimada
(1-10GHz) (30-1000MHz) (10-26.5GHz)
Mode Tx, 3DH5 2441MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	30.678	QP	25.4	17.7	7.0	32.1	18.0	40.0	22.0	
Hori	63.446	QP	43.0	7.8	7.5	32.0	26.3	40.0	13.7	
Hori	108.789	QP	40.2	11.6	8.1	32.0	27.9	43.5	15.6	
Hori	312.064	QP	40.2	16.0	9.7	31.9	34.0	46.0	12.0	
Hori	576.010	QP	37.6	19.8	11.3	32.1	36.6	46.0	9.4	
Hori	863.988	QP	29.6	23.7	12.7	31.5	34.5	46.0	11.5	
Hori	3187.533	PK	55.8	29.4	2.8	32.2	55.8	73.9	18.1	
Hori	4882.000	PK	41.0	31.9	5.0	31.9	46.0	73.9	27.9	
Hori	7323.000	PK	41.9	36.2	6.1	32.4	51.8	73.9	22.1	
Hori	9764.000	PK	42.5	38.1	6.8	32.9	54.5	73.9	19.4	
Hori	24410.000	PK	45.5	37.9	-1.3	31.4	50.7	73.9	23.2	
Hori	3187.533	AV	37.0	29.4	2.8	32.2	37.0	53.9	17.0	
Hori	4882.000	AV	29.3	31.9	5.0	31.9	34.3	53.9	19.6	
Hori	7323.000	AV	30.2	36.2	6.1	32.4	40.1	53.9	13.8	
Hori	9764.000	AV	29.9	38.1	6.8	32.9	41.9	53.9	12.0	
Hori	24410.000	AV	33.5	37.9	-1.3	31.4	38.7	53.9	15.2	
Vert	31.458	QP	34.4	17.5	7.0	32.1	26.8	40.0	13.2	
Vert	63.647	QP	41.0	7.8	7.5	32.0	24.3	40.0	15.7	
Vert	104.669	QP	49.3	11.0	8.0	32.0	36.3	43.5	7.2	
Vert	310.921	QP	42.6	16.0	9.7	31.9	36.4	46.0	9.6	
Vert	576.009	QP	34.8	19.8	11.3	32.1	33.8	46.0	12.2	
Vert	863.988	QP	25.9	23.7	12.7	31.5	30.8	46.0	15.2	
Vert	3187.533	PK	59.2	29.4	2.8	32.2	59.2	73.9	14.7	
Vert	4882.000	PK	41.7	31.9	5.0	31.9	46.7	73.9	27.2	
Vert	7323.000	PK	42.7	36.2	6.1	32.4	52.6	73.9	21.3	
Vert	9764.000	PK	42.2	38.1	6.8	32.9	54.2	73.9	19.7	
Vert	24410.000	PK	45.6	37.9	-1.3	31.4	50.8	73.9	23.1	
Vert	3187.533	AV	40.0	29.4	2.8	32.2	40.0	53.9	13.9	
Vert	4882.000	AV	29.7	31.9	5.0	31.9	34.7	53.9	19.2	
Vert	7323.000	AV	30.1	36.2	6.1	32.4	40.0	53.9	13.9	
Vert	9764.000	AV	30.1	38.1	6.8	32.9	42.1	53.9	11.8	
Vert	24410.000	AV	33.5	37.9	-1.3	31.4	38.7	53.9	15.2	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 10GHz-26.5GHz $20\log(3.0m/1.0m) = 9.5dB$

*For the band edge of the carrier and the harmonics that emission was found, the test was performed with VBW of the average detector set at 270Hz. For other average detectors, VBW was set at 10Hz.

Radiated Spurious Emission
Reference Data
(Power Supply: SONY)

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31HE0085-HO-01
Date 03/16/2011 03/14/2011 03/15/2011
Temperature/ Humidity 20 deg.C/ 33% RH 20 deg.C/ 24% RH 22 deg.C/ 47% RH
Engineer Yutaka Yoshida Takumi Shimada Takumi Shimada
(1-10GHz) (30-1000MHz) (10-26.5GHz)
Mode Tx, DH5 2441MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	31.510	QP	24.3	17.5	7.0	32.1	16.7	40.0	23.3	
Hori	108.783	QP	46.7	11.6	8.1	32.0	34.4	43.5	9.1	
Hori	199.538	QP	40.2	16.7	8.9	31.9	33.9	43.5	9.6	
Hori	310.854	QP	40.2	16.0	9.7	31.9	34.0	46.0	12.0	
Hori	405.000	QP	39.8	17.6	10.4	31.9	35.9	46.0	10.1	
Hori	576.008	QP	37.2	19.8	11.3	32.1	36.2	46.0	9.8	
Hori	3191.783	PK	56.4	28.5	2.9	31.9	55.9	73.9	18.0	
Hori	4882.000	PK	42.3	31.0	5.1	31.4	47.0	73.9	26.9	
Hori	7323.000	PK	43.3	35.9	6.3	32.5	53.0	73.9	20.9	
Hori	9764.000	PK	43.7	38.0	7.2	33.2	55.7	73.9	18.2	
Hori	24410.000	PK	45.6	37.9	-1.3	31.4	50.8	73.9	23.1	
Hori	3191.783	AV	36.4	28.5	2.9	31.9	35.9	53.9	18.0	
Hori	4882.000	AV	29.5	31.0	5.1	31.4	34.2	53.9	19.7	
Hori	7323.000	AV	30.6	35.9	6.3	32.5	40.3	53.9	13.6	
Hori	9764.000	AV	29.5	38.0	7.2	33.2	41.5	53.9	12.4	
Hori	24410.000	AV	33.5	37.9	-1.3	31.4	38.7	53.9	15.2	
Vert	31.623	QP	35.8	17.4	7.0	32.1	28.1	40.0	11.9	
Vert	106.758	QP	48.3	11.3	8.0	32.0	35.6	43.5	7.9	
Vert	197.456	QP	34.6	16.6	8.9	31.9	28.2	43.5	15.3	
Vert	306.217	QP	43.2	15.9	9.7	31.9	36.9	46.0	9.1	
Vert	404.992	QP	39.1	17.6	10.4	31.9	35.2	46.0	10.8	
Vert	576.010	QP	34.0	19.8	11.3	32.1	33.0	46.0	13.0	
Vert	3191.783	PK	58.1	28.5	2.9	31.9	57.6	73.9	16.3	
Vert	4882.000	PK	42.5	31.0	5.1	31.4	47.2	73.9	26.7	
Vert	7323.000	PK	42.8	35.9	6.3	32.5	52.5	73.9	21.4	
Vert	9764.000	PK	43.2	38.0	7.2	33.2	55.2	73.9	18.7	
Vert	24410.000	PK	45.4	37.9	-1.3	31.4	50.6	73.9	23.3	
Vert	3191.783	AV	37.1	28.5	2.9	31.9	36.6	53.9	17.3	
Vert	4882.000	AV	29.5	31.0	5.1	31.4	34.2	53.9	19.7	
Vert	7323.000	AV	30.6	35.9	6.3	32.5	40.3	53.9	13.6	
Vert	9764.000	AV	29.5	38.0	7.2	33.2	41.5	53.9	12.4	
Vert	24410.000	AV	33.5	37.9	-1.3	31.4	38.7	53.9	15.2	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

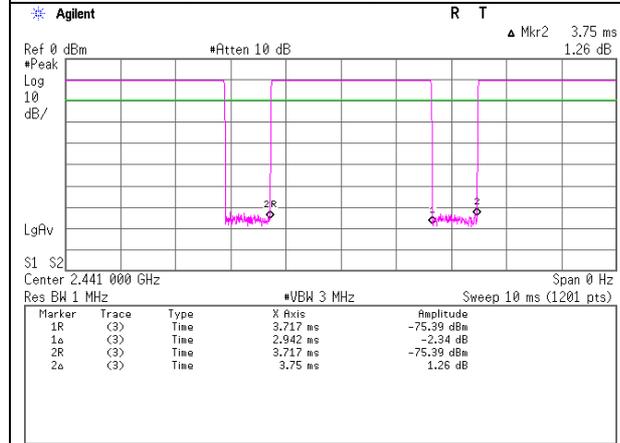
*The 10th harmonic was not seen so the result was its base noise level.
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

*For the band edge of the carrier and the harmonics that emission was found, the test was performed with VBW of the average detector set at 270Hz. For other average detectors, VBW was set at 10Hz.

VBW (AV) Calculation

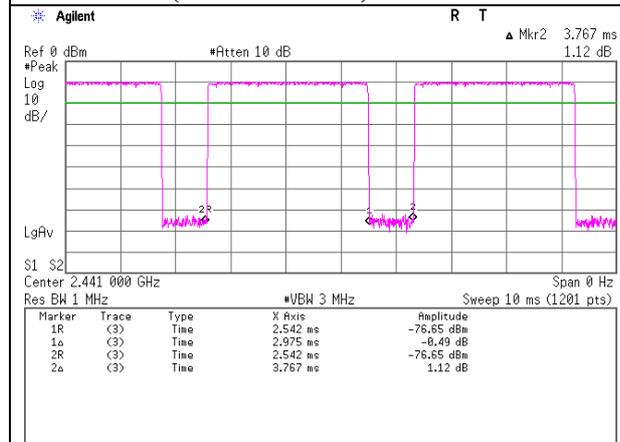
DH5

VBW: $1/x = 266\text{Hz} < 270\text{Hz}$
x: (Tx on+Tx off) = 3.75ms



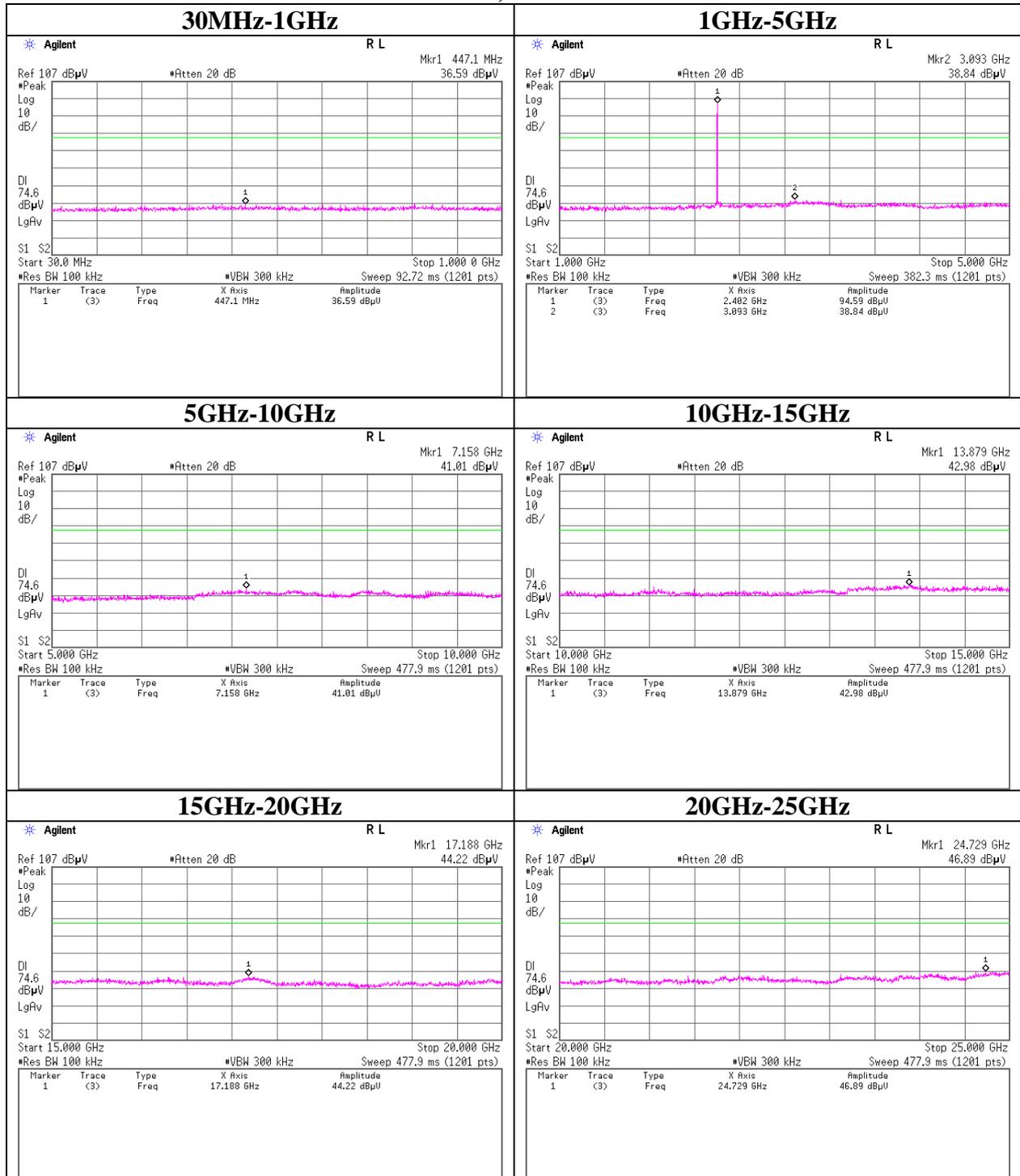
3DH5

VBW: $1/x = 265\text{Hz} < 270\text{Hz}$
x: (Tx on+Tx off) = 3.767ms



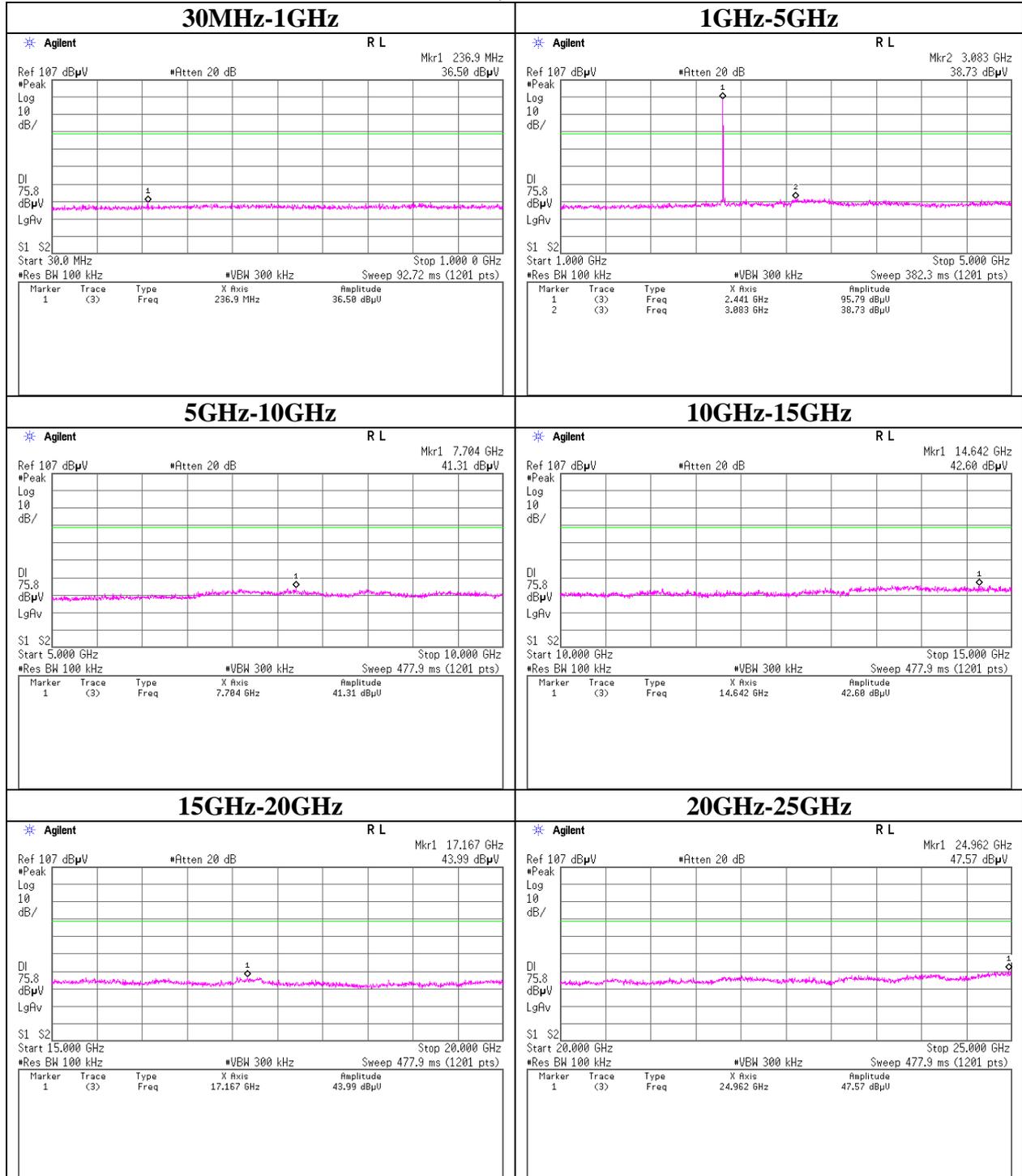
Conducted Spurious Emission

Tx DH5, 2402MHz



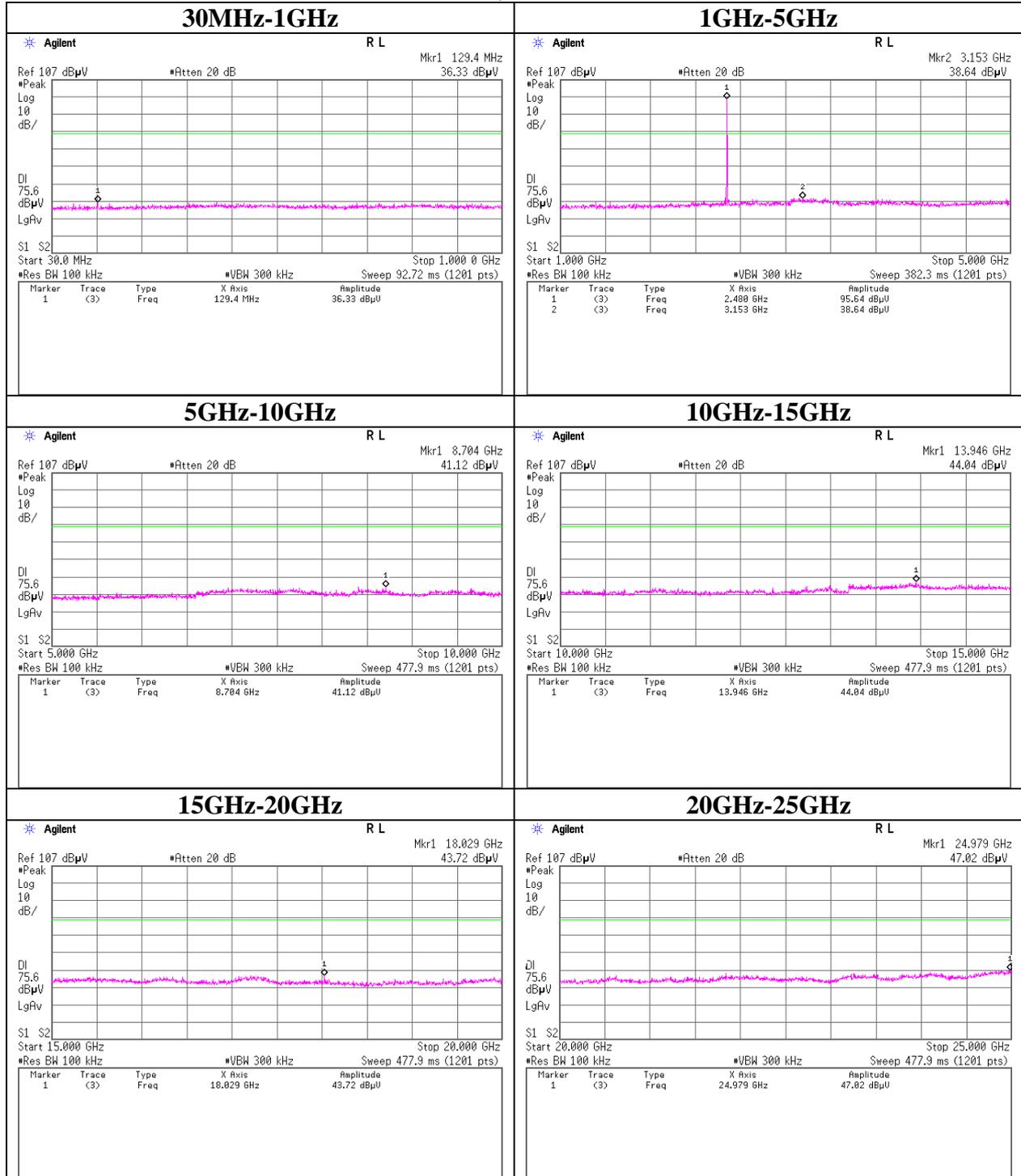
Conducted Spurious Emission

Tx DH5, 2441MHz



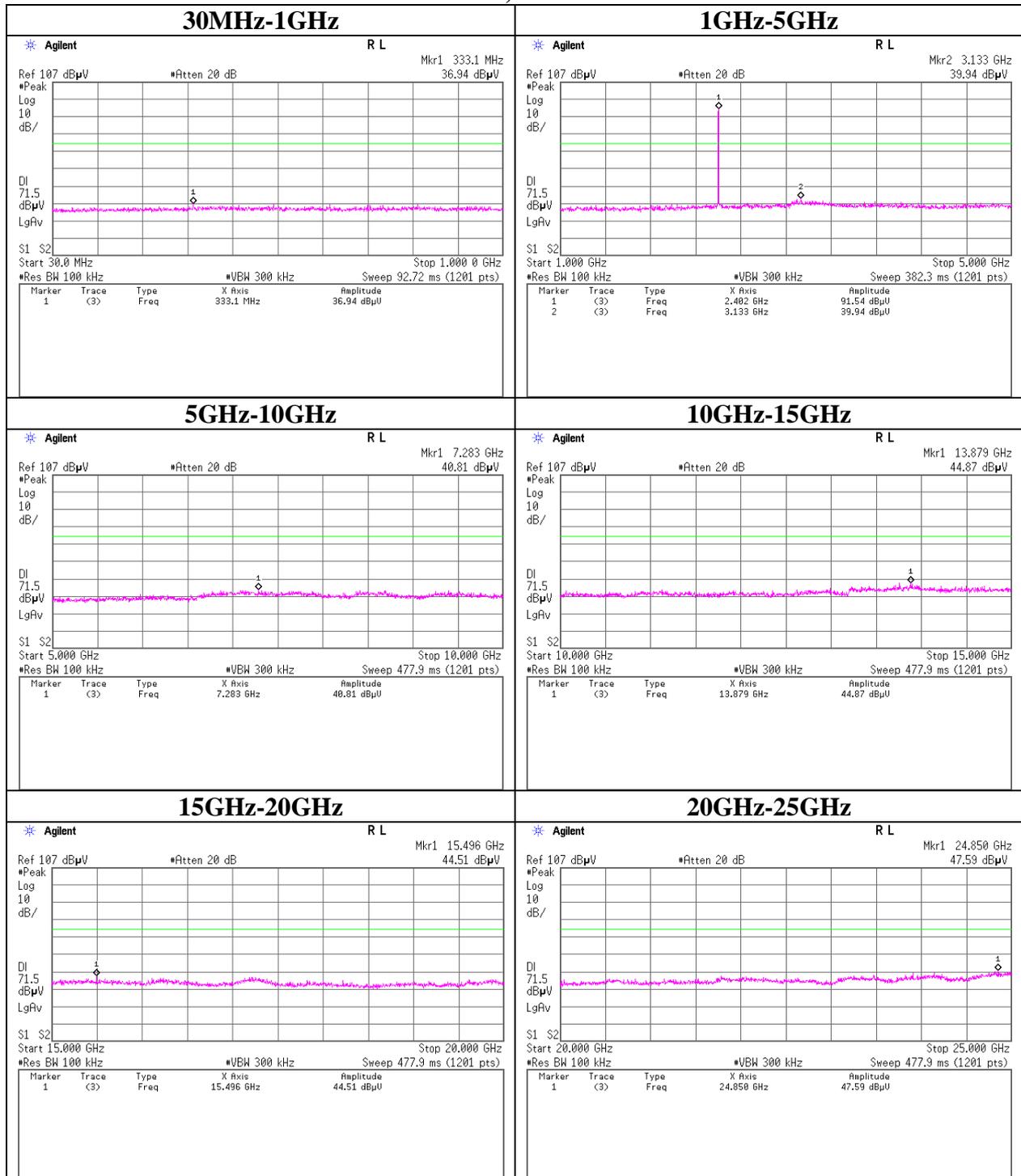
Conducted Spurious Emission

Tx DH5, 2480MHz



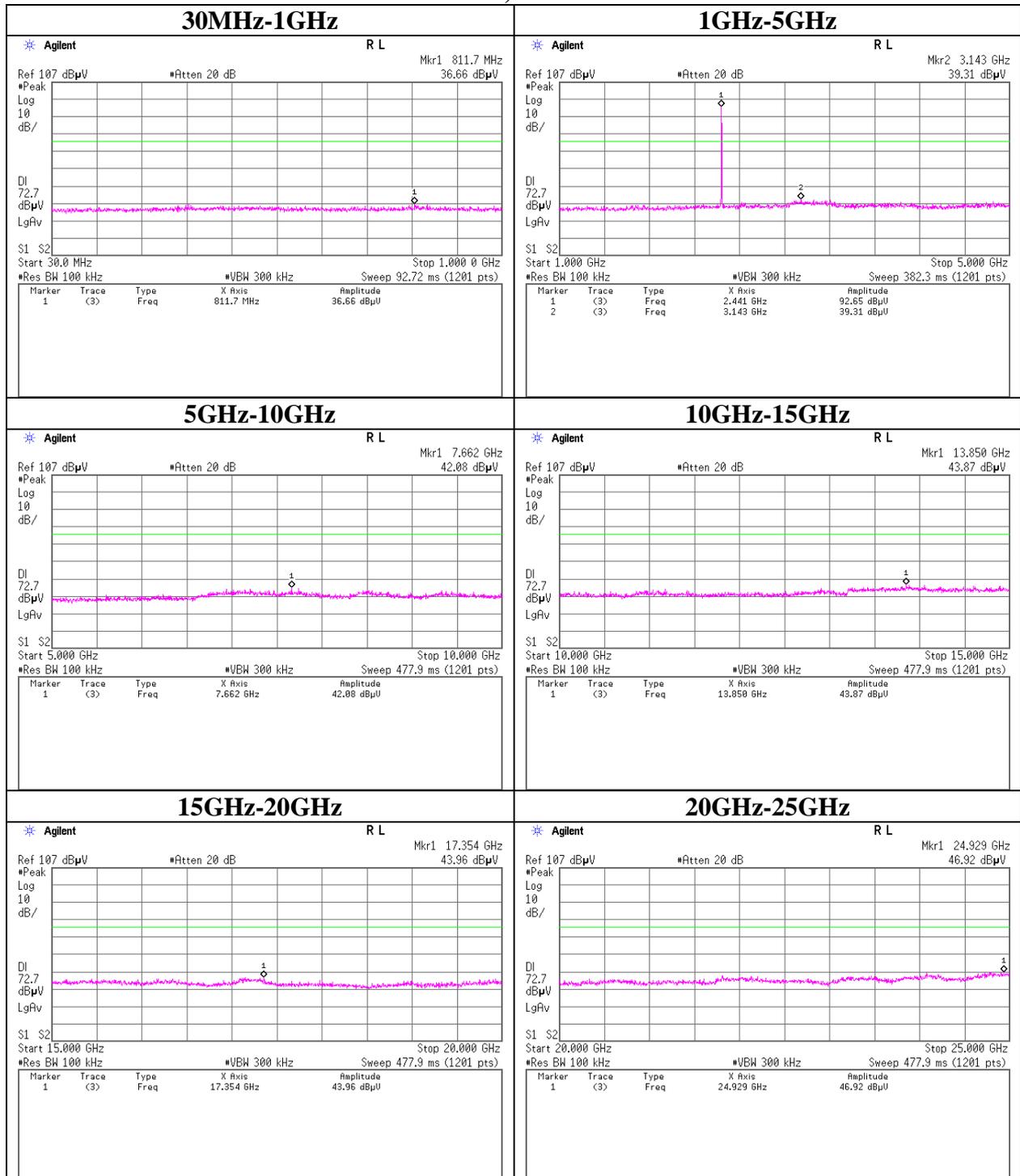
Conducted Spurious Emission

Tx 3DH5, 2402MHz



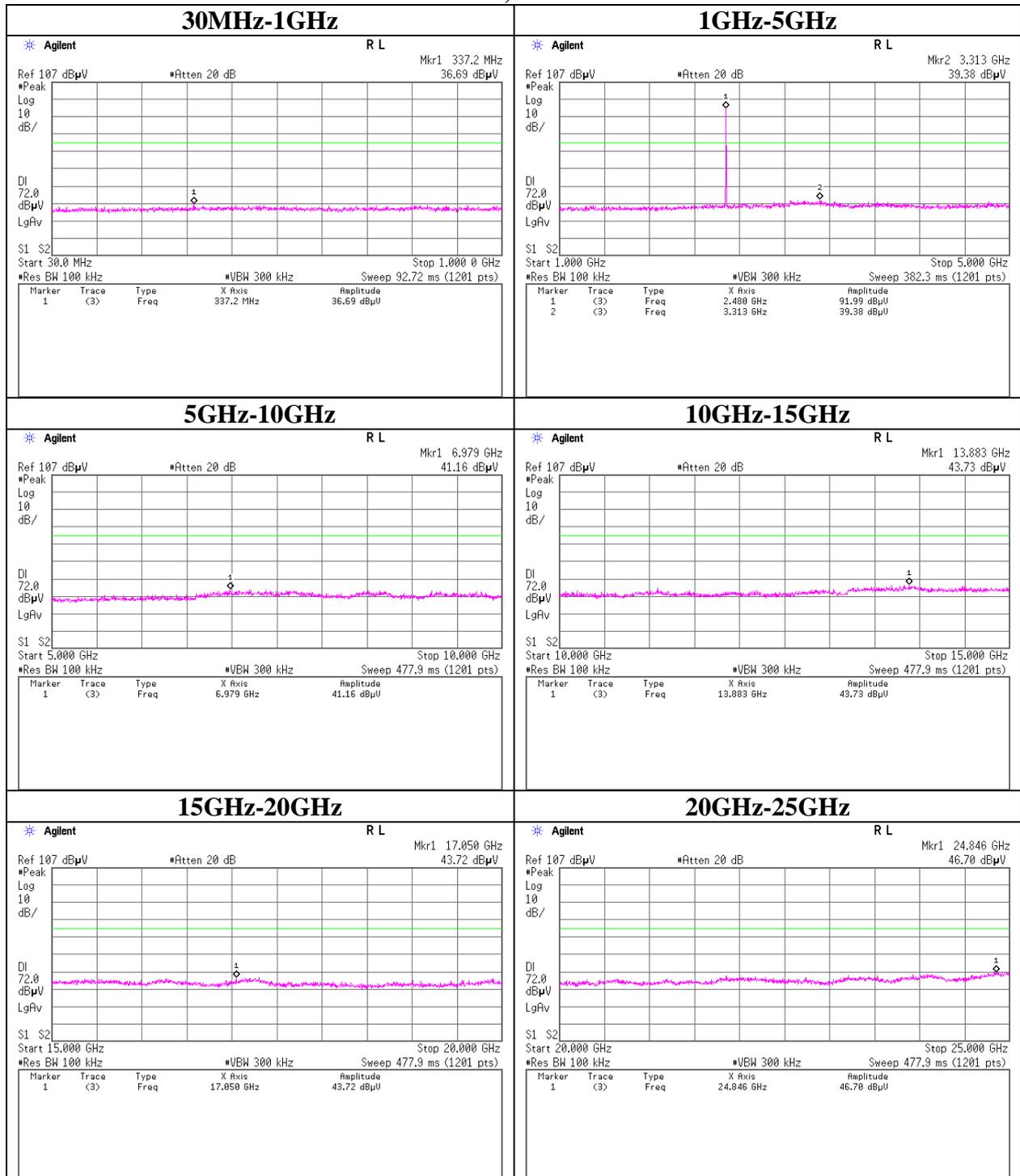
Conducted Spurious Emission

Tx 3DH5, 2441MHz



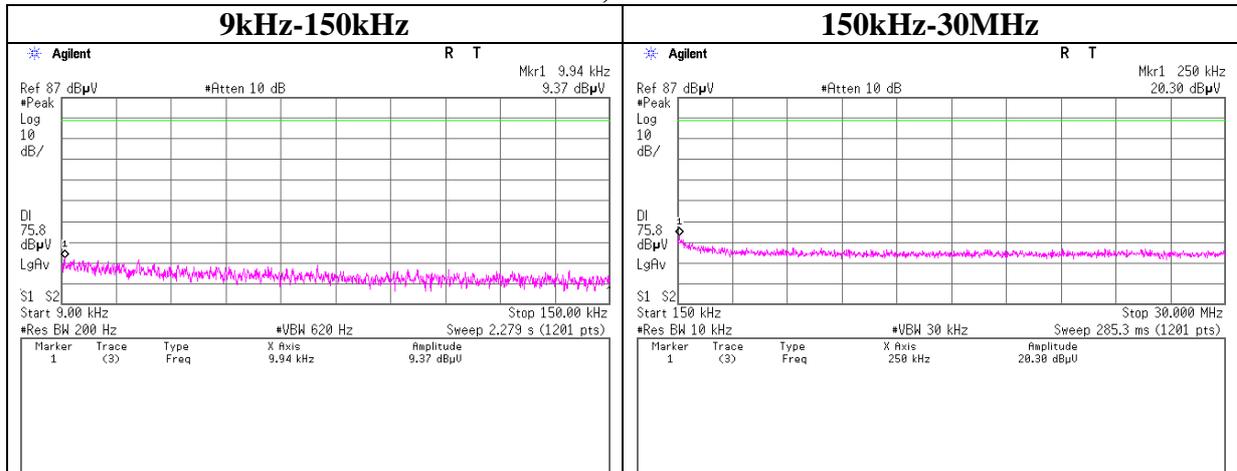
Conducted Spurious Emission

Tx 3DH5, 2480MHz

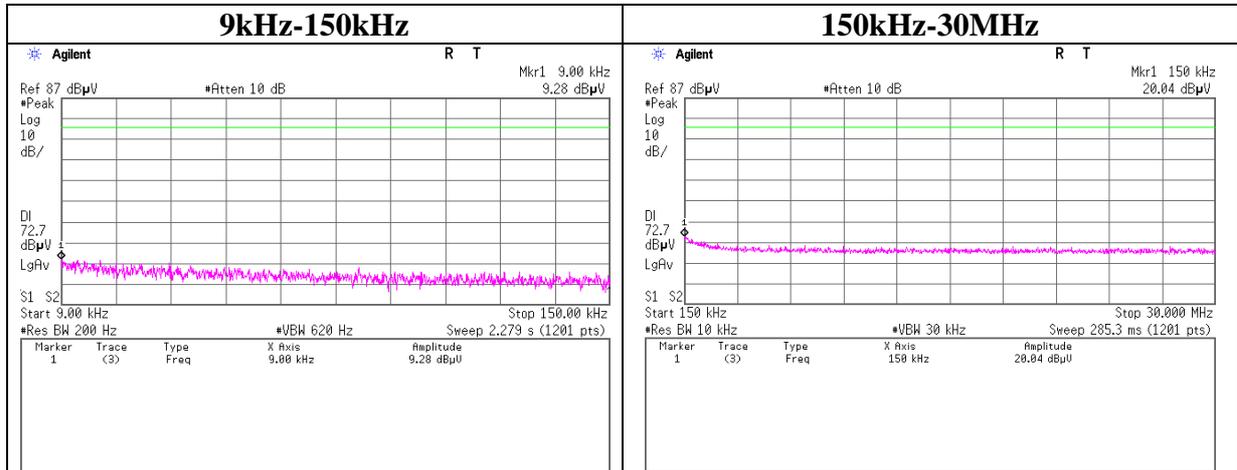


Conducted Spurious Emission(below 30MHz)

Tx DH5, 2441MHz

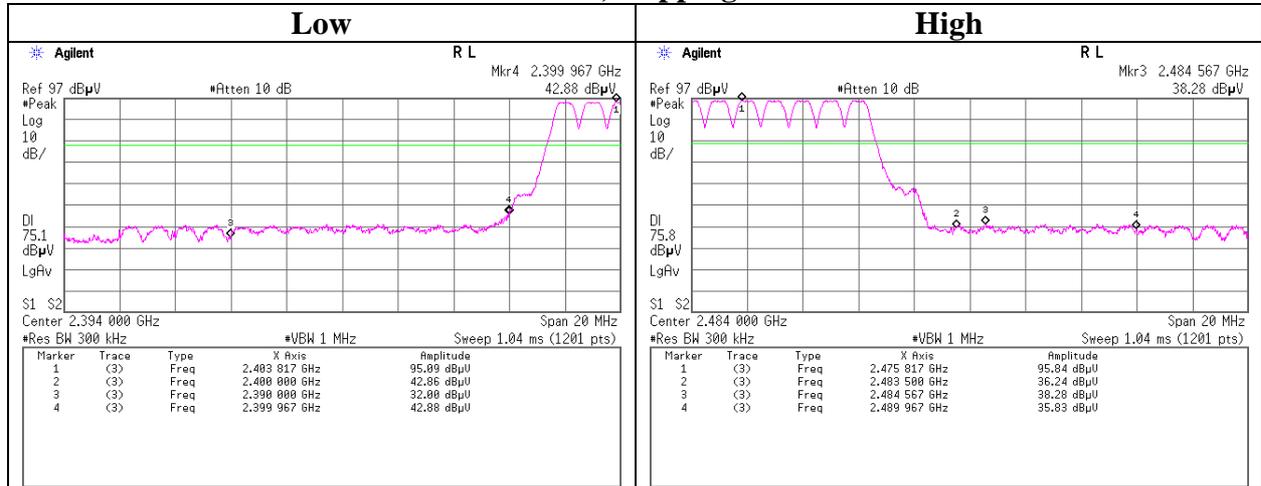


Tx 3DH5 2441MHz

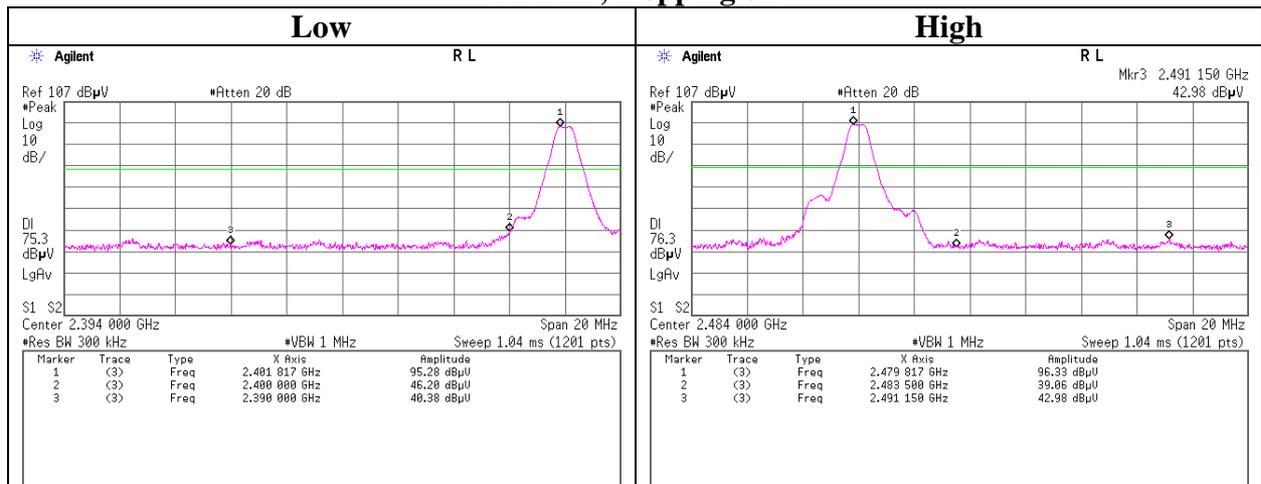


Conducted Emission Band Edge compliance

Tx DH5, Hopping on

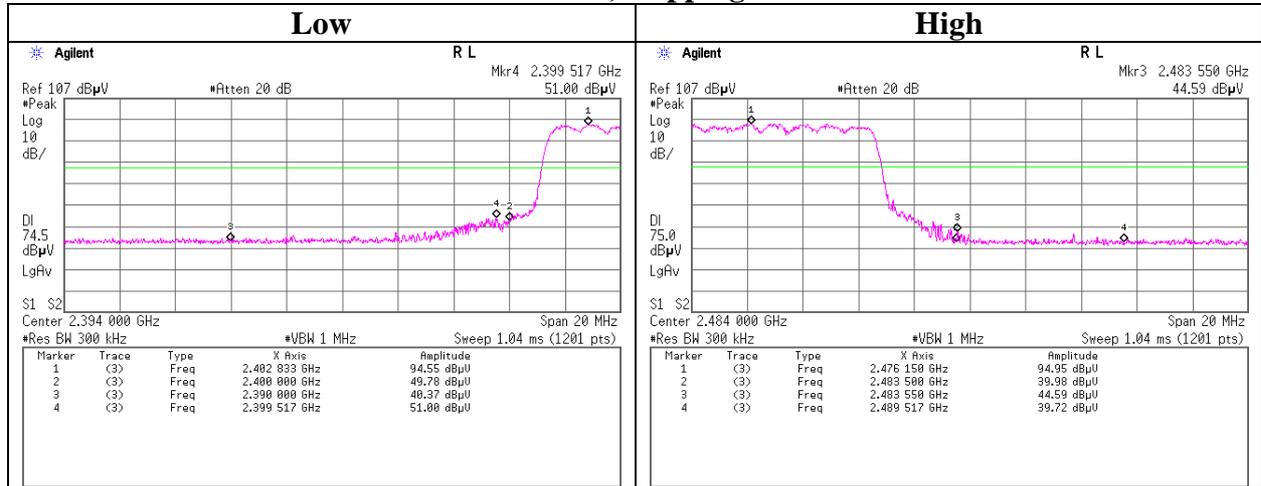


Tx DH5, Hopping off

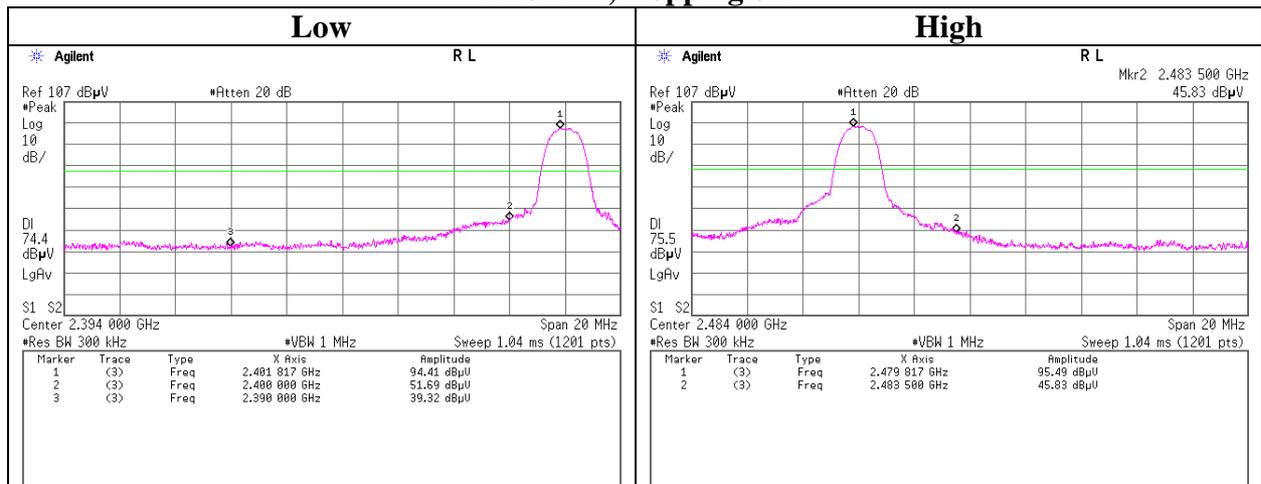


Conducted Emission Band Edge compliance

Tx 3DH5, Hopping on



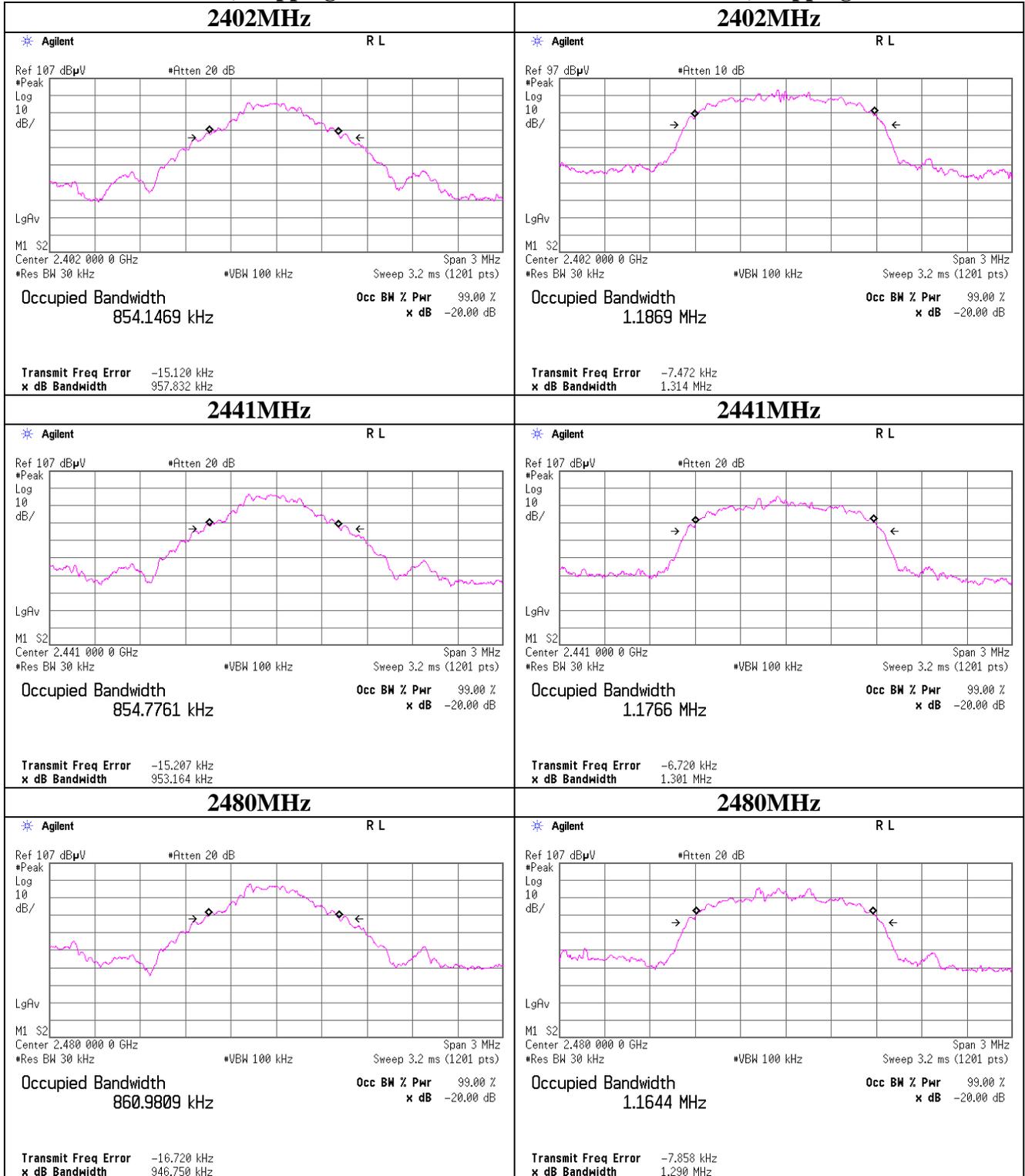
Tx 3DH5, Hopping off



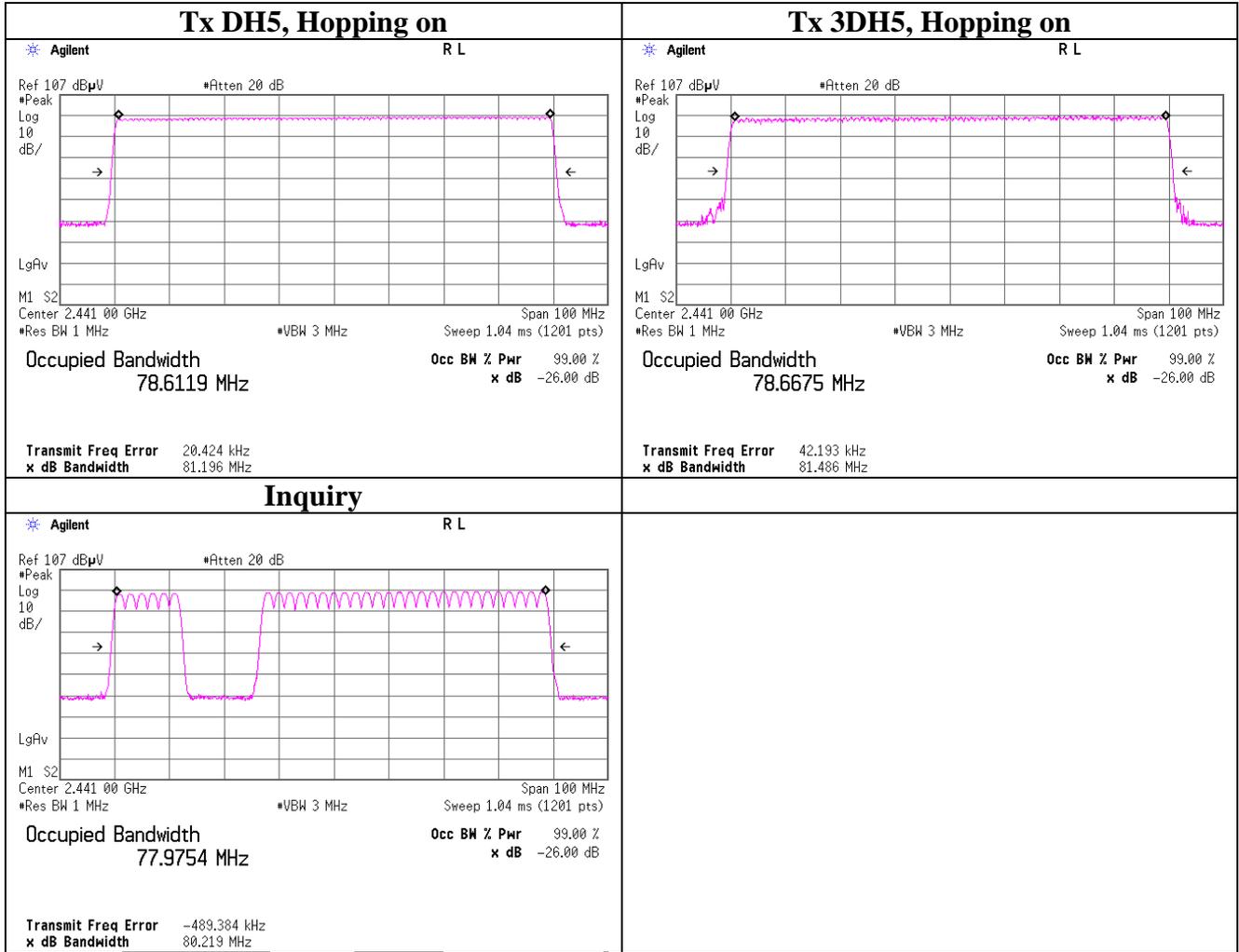
99% Occupied Bandwidth

Tx DH5, Hopping off

Tx 3DH5, Hopping off



99% Occupied Bandwidth



APPENDIX 3: Test instruments

EMI test equipment (1/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2011/03/01 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	RE/AT	2011/02/23 * 12
MJM-07	Measure	PROMART	SEN1955	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	RE	2010/11/18 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2010/08/08 * 12
MCC-56	Microwave Cable	Suhner	SUCOFLEX104	270875/4(1m) / 284655(5m)	RE	2011/03/02 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	MY39500780	RE	2011/03/10 * 12
MHF-20	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCC	607	RE	2010/09/21 * 12
MCC-79	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278923/4	RE	2010/12/02 * 12
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE/CE	2011/02/22 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE/CE	2011/02/23 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE/CE	-
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	RE/AT	2011/02/15 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2010/05/07 * 12
MCC-58	Microwave Cable	Suhner	SUCOFLEX104	246770(1m) / 250655(5m)	RE	2011/03/02 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2011/03/10 * 12
MHF-19	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCA	602	RE	2010/09/21 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	AT	2010/11/30 * 12
MAT-25	Attenuator(10dB)(above 1GHz)	Agilent	8493C	71642	AT	2010/06/22 * 12
MCC-66	Microwave Cable 1G-40GHz	Suhner	SUCOFLEX102	28636/2	AT	2010/04/27 * 12
MAT-23	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2011/03/14 * 12
MPM-13	Power Meter	Anritsu	ML2495A	0824014	AT	2010/11/01 * 12
MPSE-18	Power sensor	Anritsu	MA2411B	0738174	AT	2010/11/01 * 12

UL Japan, Inc.

Head Office EMC Lab.

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EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA917030 6	RE	2010/05/07 * 12
MCC-116	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290221/4	AT	2010/08/05 * 12
MSA-09	Spectrum Analyzer	Advantest	R3273	95090115	CE	2010/11/18 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	CE	2010/08/23 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(AE)	2011/02/20 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE(EUT)	2011/02/22 * 12
MTA-31	Terminator	TME	CT-01	-	CE	2011/01/05 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(3m)/sucoform141-PE(1m)/421-010(1.5m)/RFM-E321(Switcher)	-/00640	CE	2010/07/23 * 12
MAT-66	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2011/02/22 * 12
MOS-24	Thermo-Hygrometer	Custom	CTH-201	0005	AT	2011/02/23 * 12
MBM-10	Barometer	Sunoh	SBR121	832	AT	2010/12/13 * 36
MCC-114	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290212/4	AT	2010/08/05 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2011/03/14 * 12

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

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

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

**Test Item: CE: Conducted Emission
RE: Radiated Emission
AT: Antenna Terminal Conducted test**