

APPENDIX 2: Data of EMI test

Conducted Emission
(Power Supply: SONY)

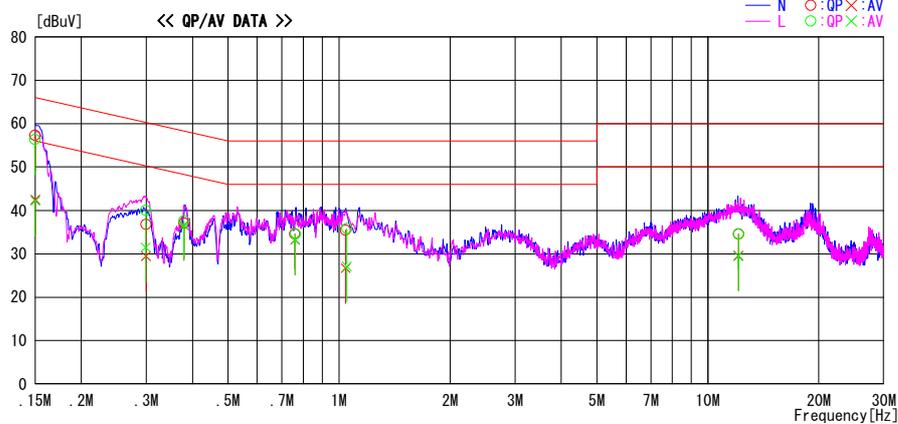
DATA OF CONDUCTED EMISSION TEST

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

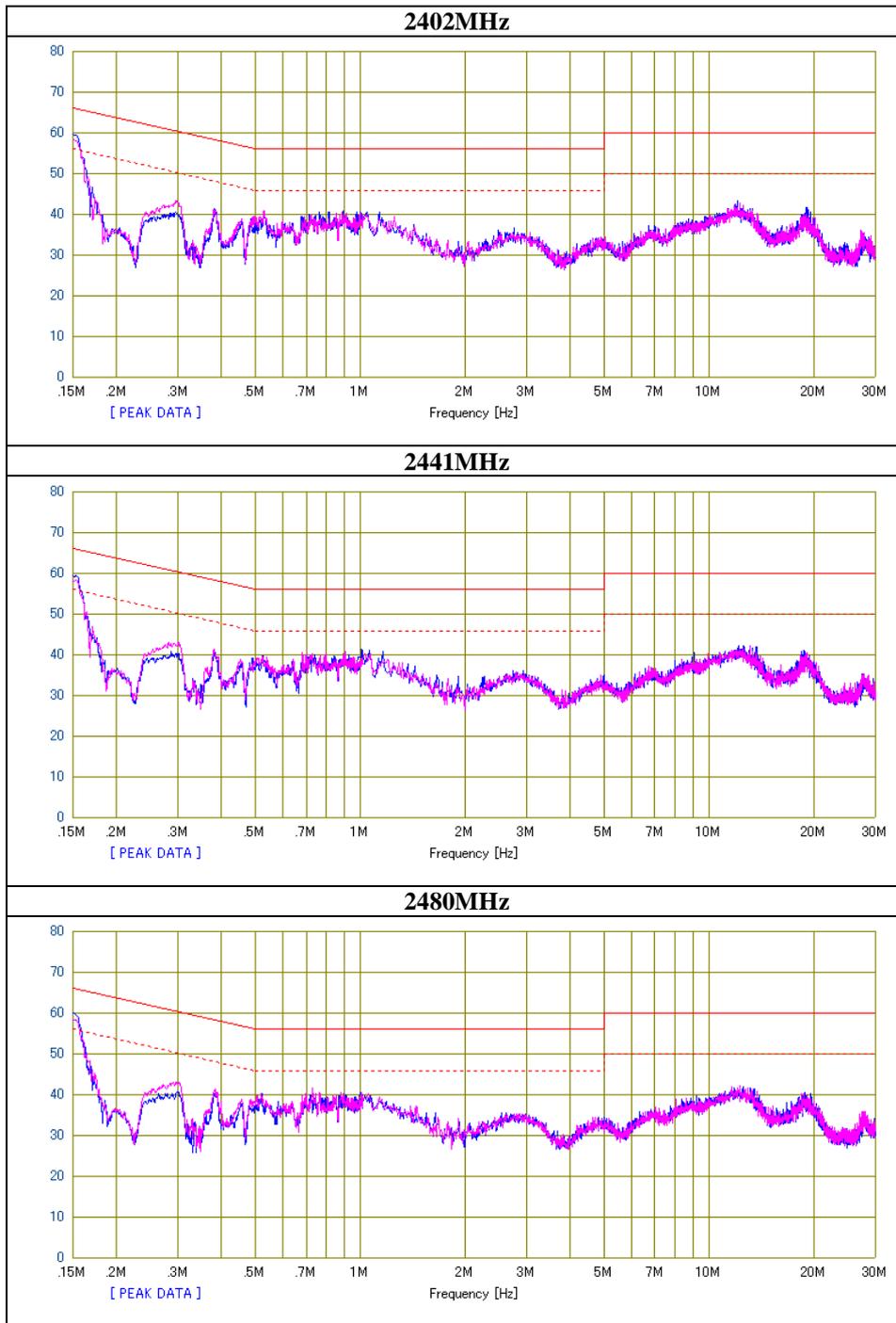


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	44.2	29.4	13.1	57.3	42.5	66.0	56.0	8.7	13.5	N	
0.29957	23.5	16.2	13.3	36.8	29.5	60.3	50.3	23.5	20.8	N	
0.37988	23.8	23.3	13.3	37.1	36.6	58.3	48.3	21.2	11.7	N	
0.75973	21.3	20.0	13.3	34.6	33.3	56.0	46.0	21.4	12.7	N	
1.04111	22.2	13.4	13.3	35.5	26.7	56.0	46.0	20.5	19.3	N	
12.10112	20.5	15.5	14.1	34.6	29.6	60.0	50.0	25.4	20.4	N	
0.15000	43.2	29.1	13.1	56.3	42.2	66.0	56.0	9.7	13.8	L	
0.29895	26.7	18.2	13.3	40.0	31.5	60.3	50.3	20.3	18.8	L	
0.37998	24.3	23.3	13.3	37.6	36.6	58.3	48.3	20.7	11.7	L	
0.76052	21.3	19.9	13.3	34.6	33.2	56.0	46.0	21.4	12.8	L	
1.04968	22.5	13.8	13.3	35.8	27.1	56.0	46.0	20.2	18.9	L	
12.10584	20.4	15.4	14.1	34.5	29.5	60.0	50.0	25.5	20.5	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 DH5



Conducted Emission
(Power Supply: SONY)

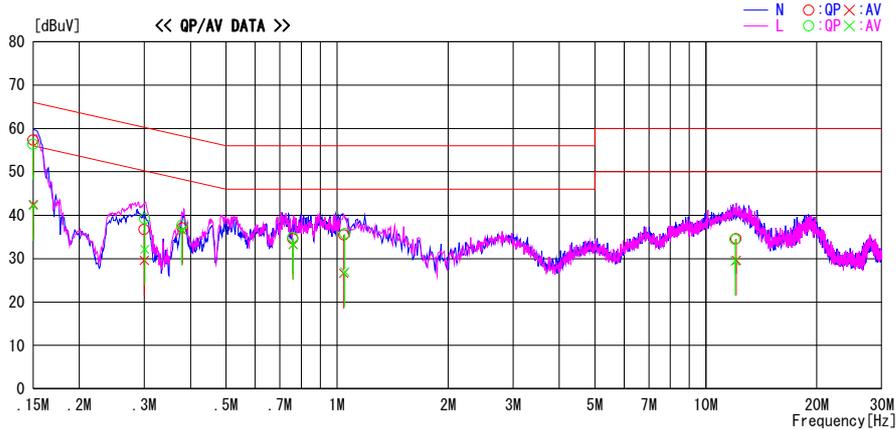
DATA OF CONDUCTED EMISSION TEST

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

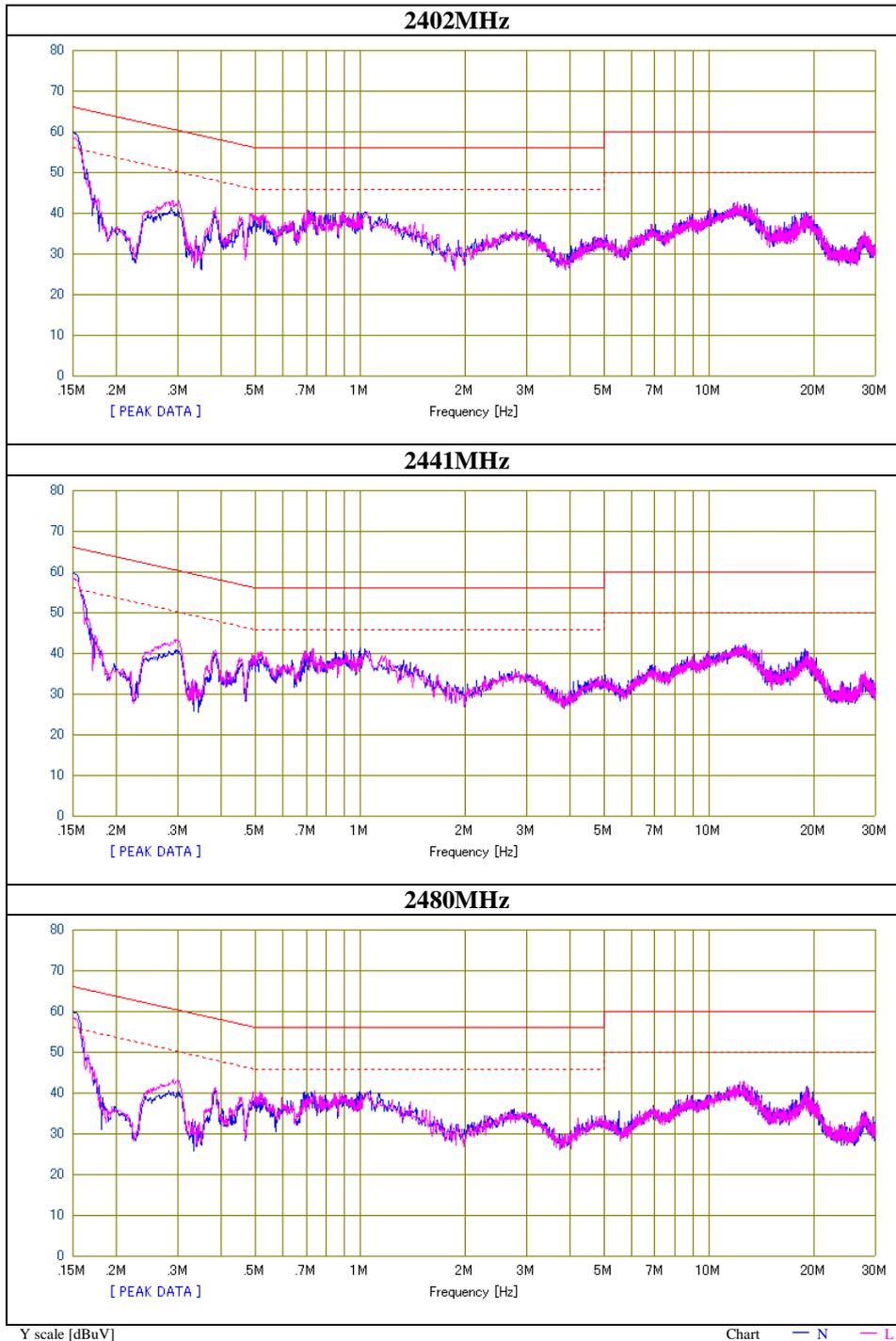


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	44.2	29.4	13.1	57.3	42.5	66.0	56.0	8.7	13.5	N	
0.30012	23.4	16.3	13.3	36.7	29.6	60.2	50.2	23.5	20.6	N	
0.38020	23.8	23.3	13.3	37.1	36.6	58.3	48.3	21.2	11.7	N	
0.75988	21.3	20.0	13.3	34.6	33.3	56.0	46.0	21.4	12.7	N	
1.04236	22.2	13.3	13.3	35.5	26.6	56.0	46.0	20.5	19.4	N	
12.08624	20.5	15.5	14.1	34.6	29.6	60.0	50.0	25.4	20.4	N	
0.15000	43.2	29.1	13.1	56.3	42.2	66.0	56.0	9.7	13.8	L	
0.30096	25.9	18.8	13.3	39.2	32.1	60.2	50.2	21.0	18.1	L	
0.37972	24.4	23.3	13.3	37.7	36.6	58.3	48.3	20.6	11.7	L	
0.75976	21.5	20.0	13.3	34.8	33.3	56.0	46.0	21.2	12.7	L	
1.05012	22.4	13.7	13.3	35.7	27.0	56.0	46.0	20.3	19.0	L	
12.00832	20.3	15.4	14.1	34.4	29.5	60.0	50.0	25.6	20.5	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)

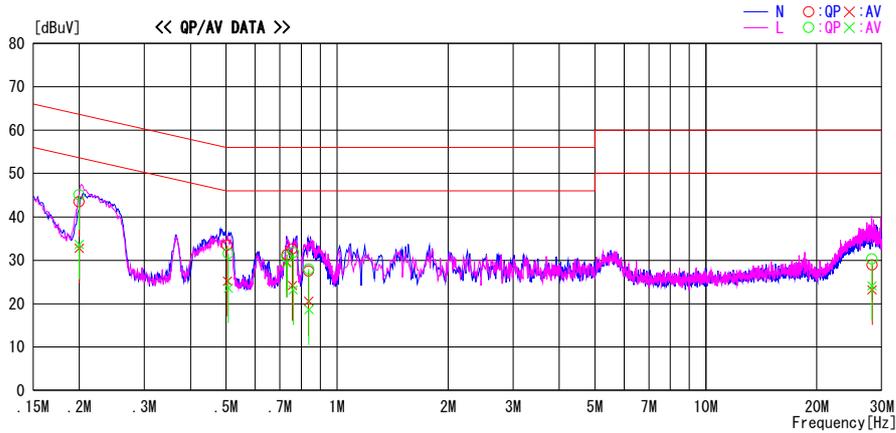
DATA OF CONDUCTED EMISSION TEST

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

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

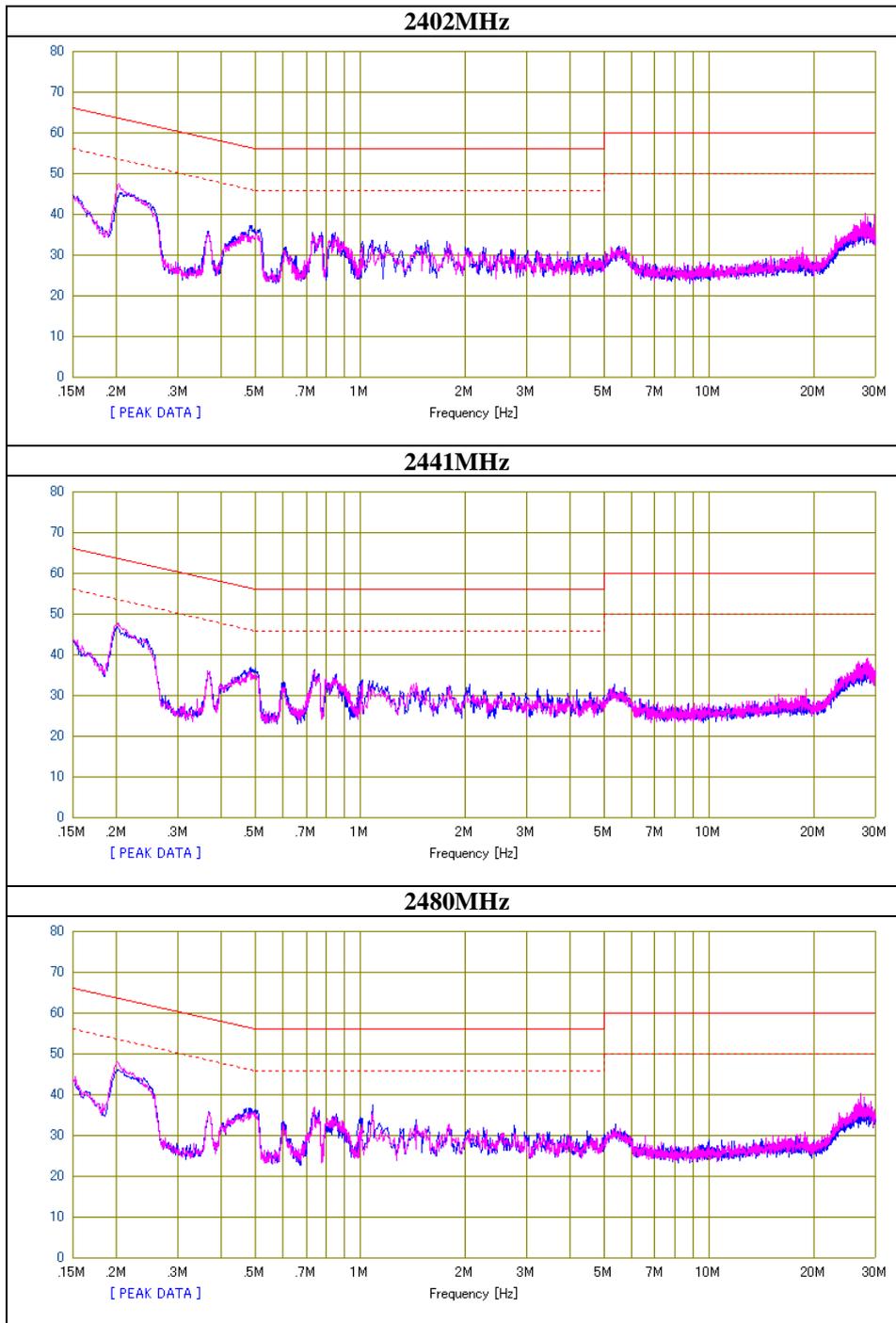


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.19992	30.4	19.7	13.1	43.5	32.8	63.6	53.6	20.1	20.8	N	
0.50393	20.2	11.9	13.3	33.5	25.2	56.0	46.0	22.5	20.8	N	
0.73098	18.0	16.3	13.3	31.3	29.6	56.0	46.0	24.7	16.4	N	
0.75657	19.3	10.9	13.3	32.6	24.2	56.0	46.0	23.4	21.8	N	
0.83735	14.2	7.3	13.3	27.5	20.6	56.0	46.0	28.5	25.4	N	
28.24472	14.1	8.4	14.8	28.9	23.2	60.0	50.0	31.1	26.8	N	
0.19984	32.0	20.6	13.1	45.1	33.7	63.6	53.6	18.5	19.9	L	
0.50701	18.2	10.3	13.3	31.5	23.6	56.0	46.0	24.5	22.4	L	
0.73052	17.5	16.1	13.3	30.8	29.4	56.0	46.0	25.2	16.6	L	
0.76067	18.5	9.9	13.3	31.8	23.2	56.0	46.0	24.2	22.8	L	
0.83886	14.7	5.3	13.3	28.0	18.6	56.0	46.0	28.0	27.4	L	
28.20852	15.5	9.3	14.8	30.3	24.1	60.0	50.0	29.7	25.9	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: DELTA)

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: DELTA)

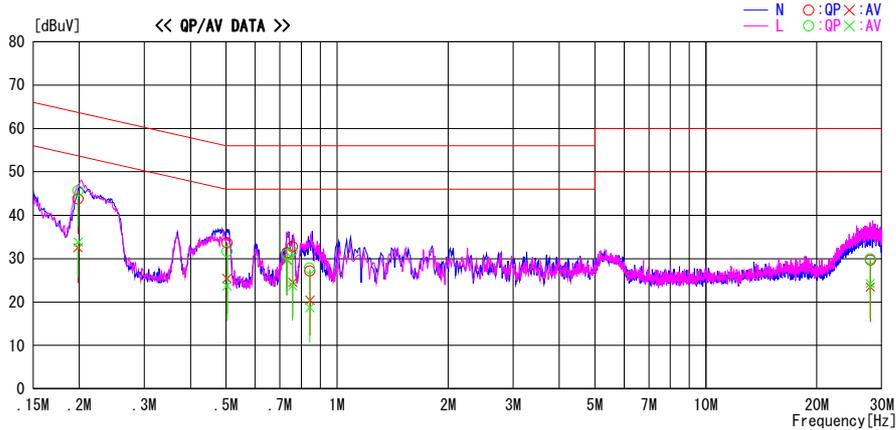
DATA OF CONDUCTED EMISSION TEST

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

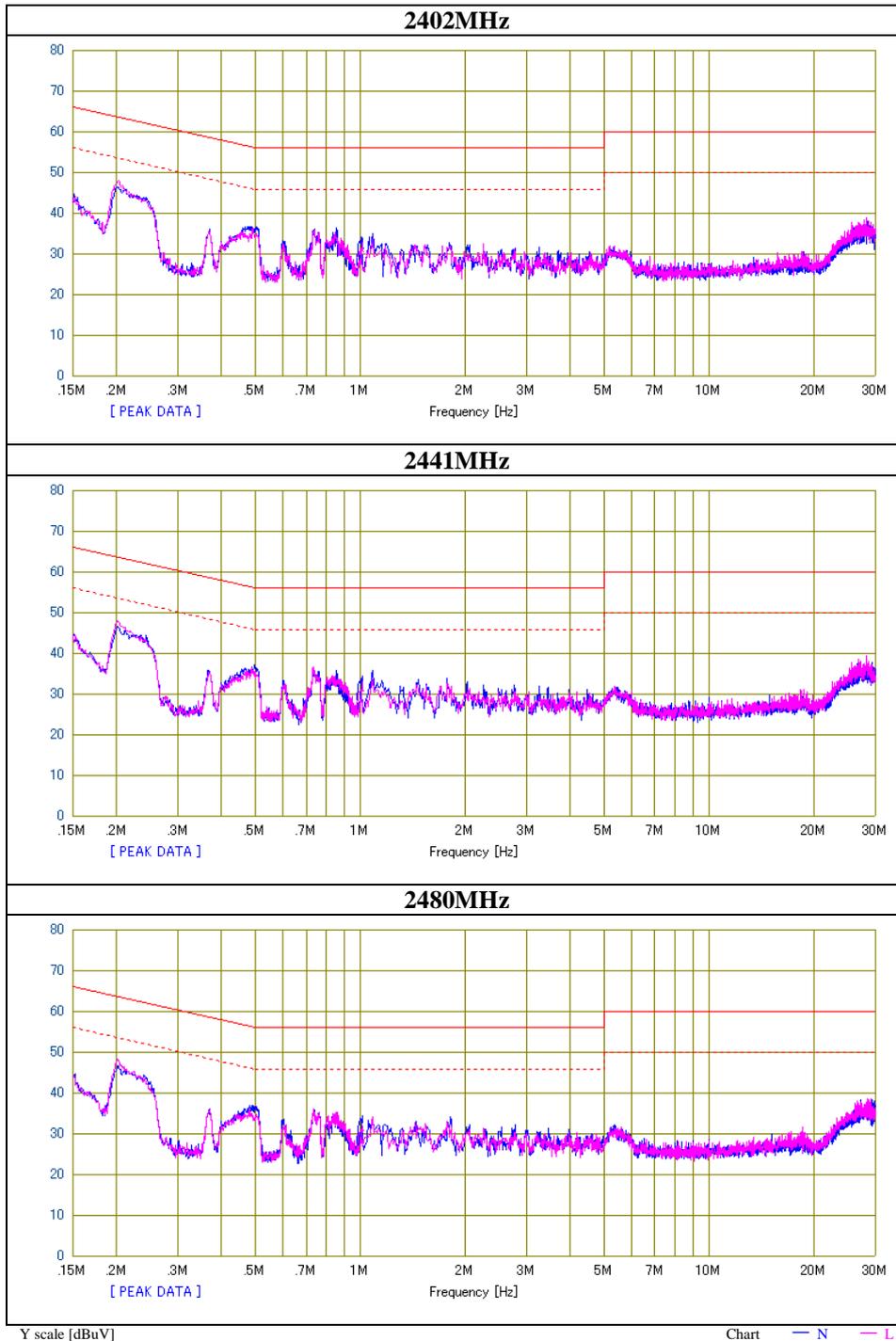


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.19832	30.7	19.4	13.1	43.8	32.5	63.7	53.7	19.9	21.2	N	
0.50342	20.3	12.1	13.3	33.6	25.4	56.0	46.0	22.4	20.6	N	
0.73176	18.1	16.4	13.3	31.4	29.7	56.0	46.0	24.6	16.3	N	
0.75762	19.4	11.2	13.3	32.7	24.5	56.0	46.0	23.3	21.5	N	
0.84426	13.9	7.1	13.3	27.2	20.4	56.0	46.0	28.8	25.6	N	
27.93161	14.9	8.7	14.8	29.7	23.5	60.0	50.0	30.3	26.5	N	
0.19850	32.5	20.7	13.1	45.6	33.8	63.7	53.7	18.1	19.9	L	
0.50322	18.3	10.4	13.3	31.6	23.7	56.0	46.0	24.4	22.3	L	
0.73186	17.7	16.3	13.3	31.0	29.6	56.0	46.0	25.0	16.4	L	
0.75656	18.4	10.5	13.3	31.7	23.8	56.0	46.0	24.3	22.2	L	
0.84246	14.5	5.4	13.3	27.8	18.7	56.0	46.0	28.2	27.3	L	
27.89285	15.1	9.5	14.8	29.9	24.3	60.0	50.0	30.1	25.7	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: DELTA)

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

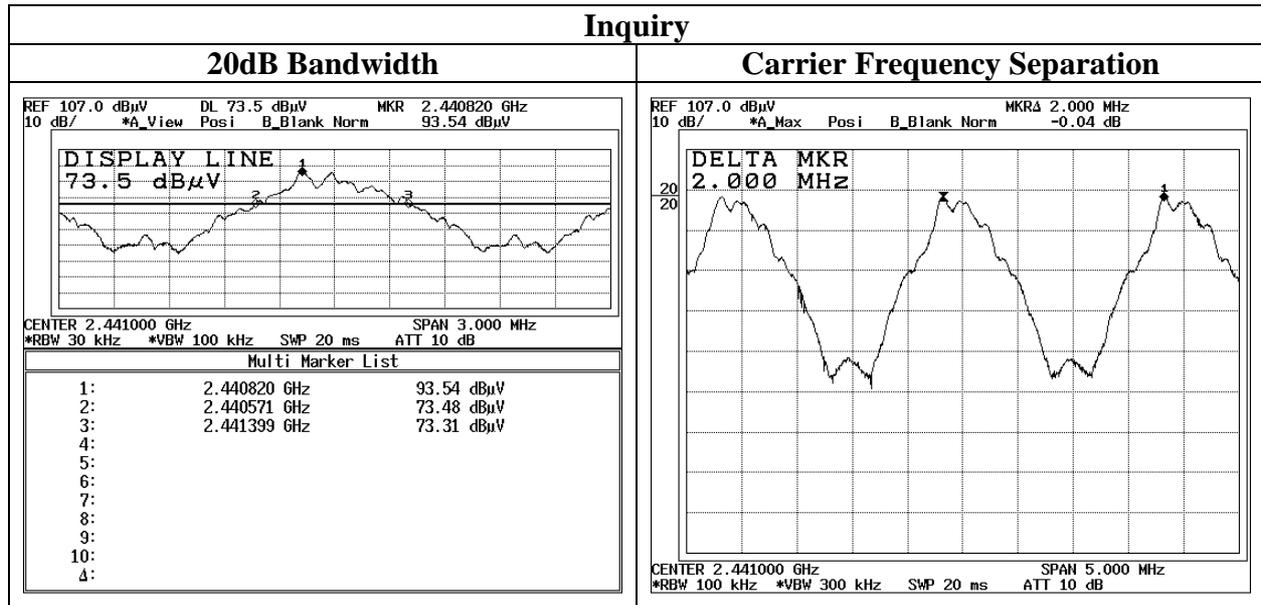


20dB Bandwidth and Carrier Frequency Separation

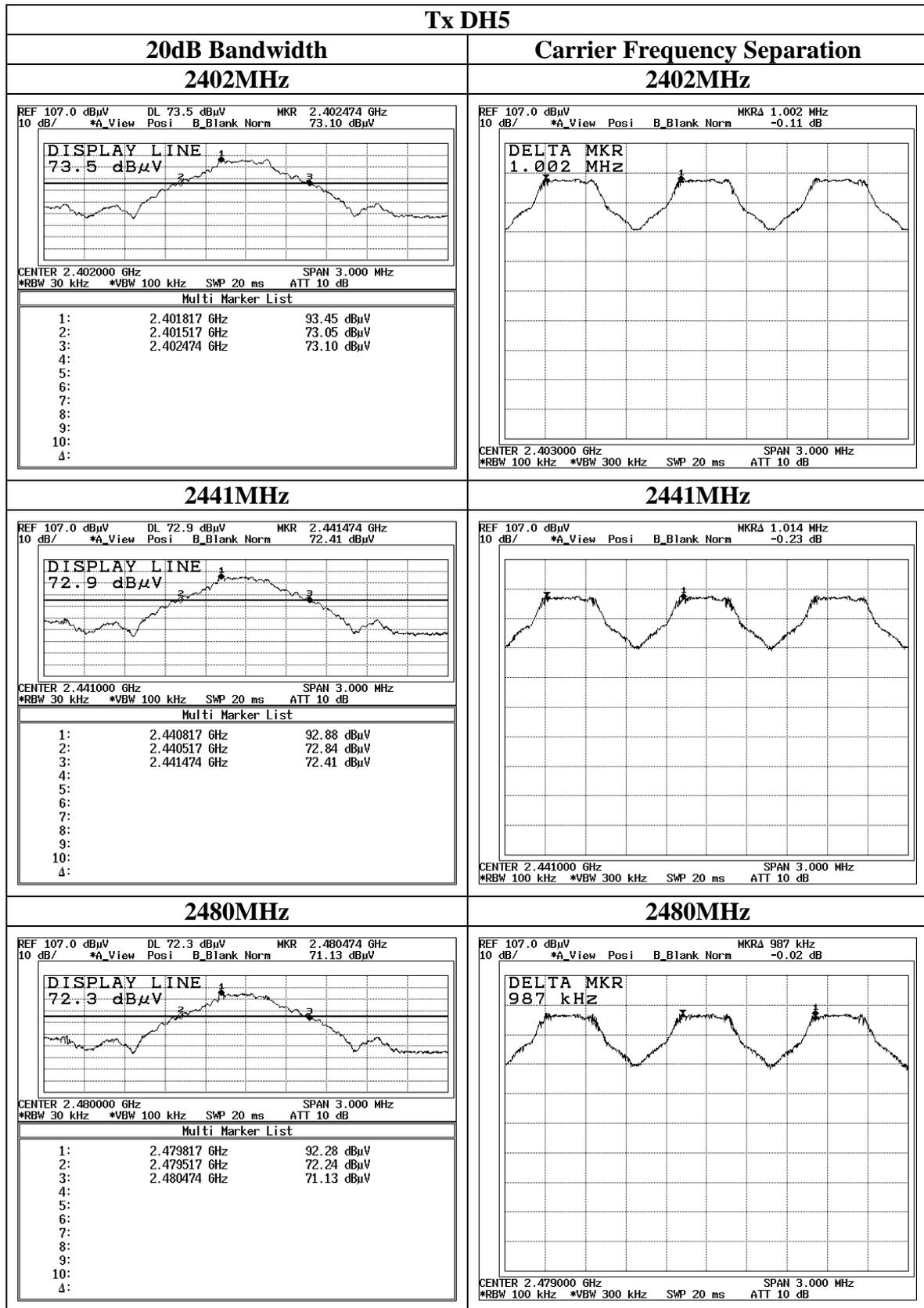
Test place	Head Office EMC Lab. No.6 Shielded Room
Report No.	31HE0085-HO-01
Date	03/23/2011
Temperature/ Humidity	23 deg.C / 24% RH
Engineer	Yutaka Yoshida
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

Mode	Freq. [MHz]	20dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.957	1.002	>= 0.638
DH5	2441.0	0.957	1.014	>= 0.638
DH5	2480.0	0.957	0.987	>= 0.638
3DH5	2402.0	1.296	1.011	>= 0.864
3DH5	2441.0	1.299	0.990	>= 0.866
3DH5	2480.0	1.272	0.987	>= 0.848
Inquiry	2441.0	0.828	2.000	>= 0.552

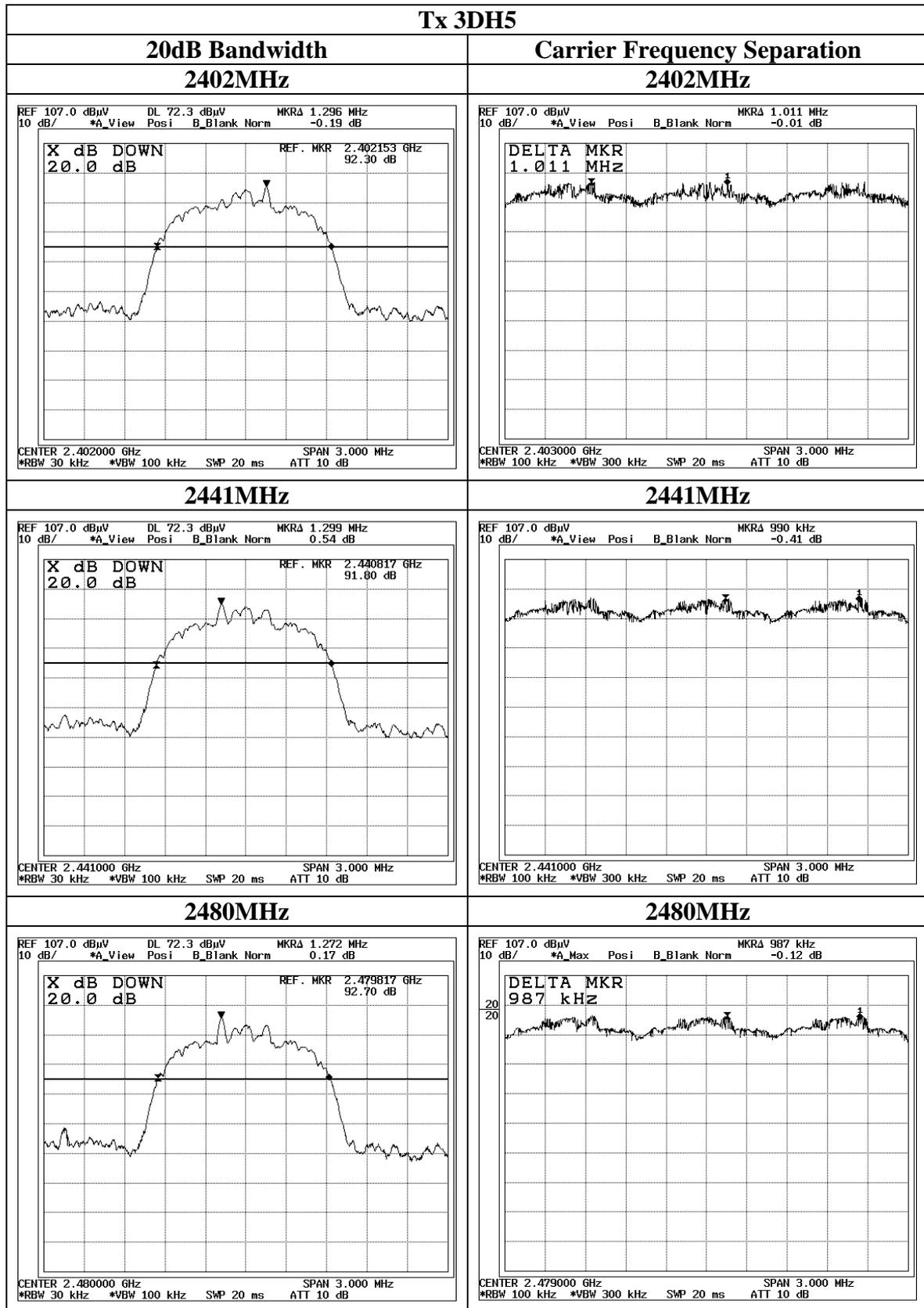
Limit: Two-thirds of 20dB Bandwidth or 25kHz (whichever is greater)
No limit applies to 20dB Bandwidth.



20dB Bandwidth and Carrier Frequency Separation



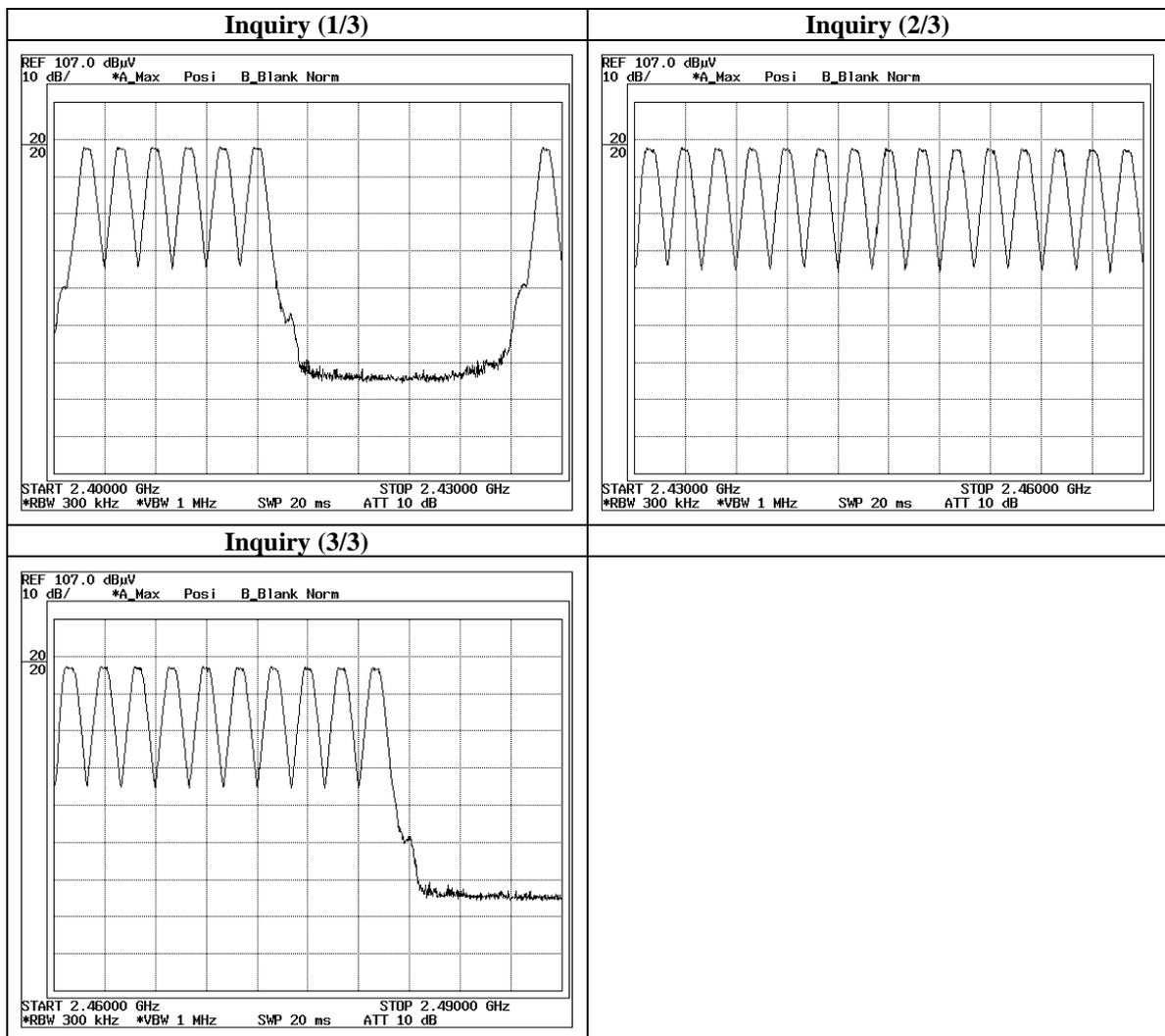
20dB Bandwidth and Carrier Frequency Separation



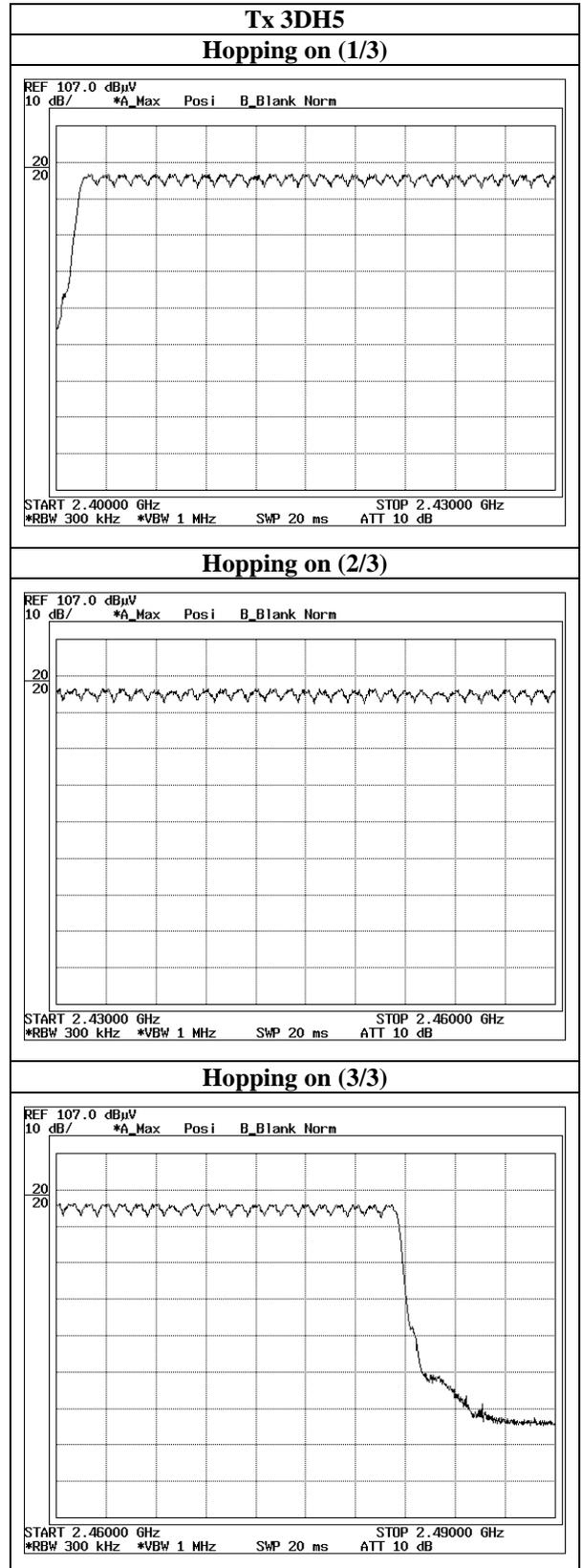
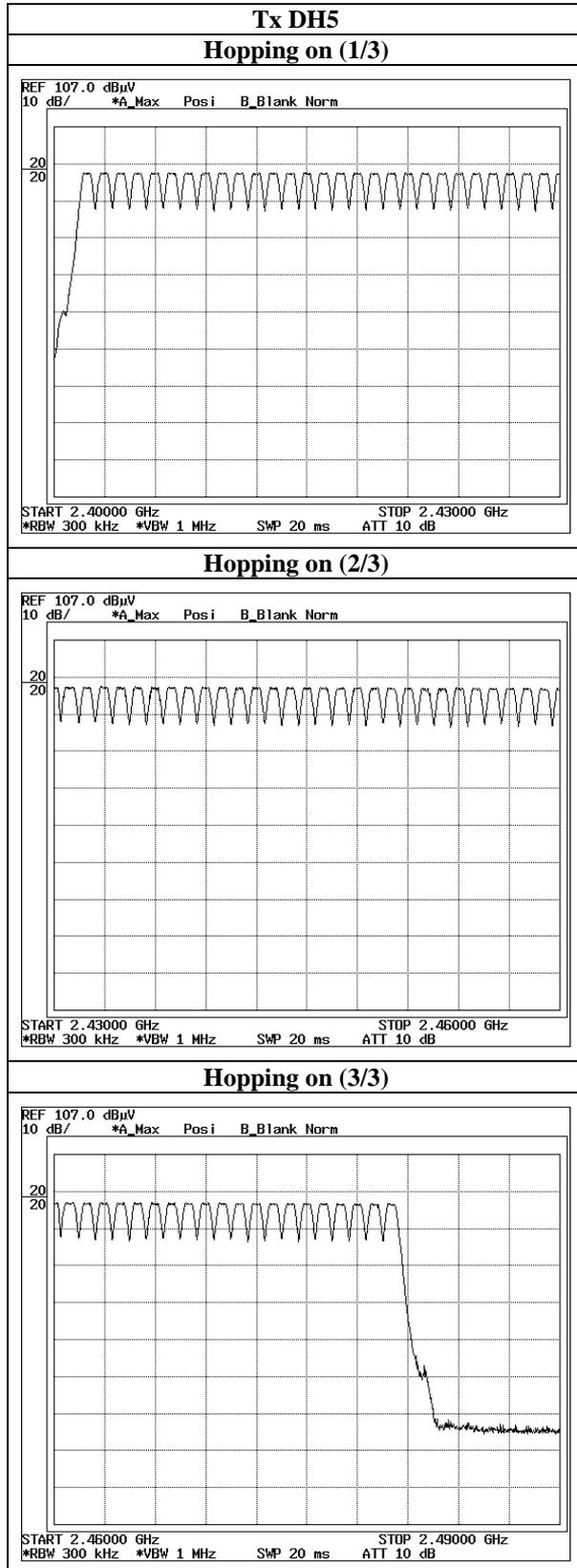
Number of Hopping Frequency

Test place	Head Office EMC Lab. No.6 Shielded Room
Report No.	31HE0085-HO-01
Date	03/23/2011
Temperature/ Humidity	23 deg.C / 24% RH
Engineer	Yutaka Yoshida
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 Shielded Room
Report No.	31HE0085-HO-01
Date	03/23/2011
Temperature/ Humidity	23 deg.C / 24% RH
Engineer	Yutaka Yoshida
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	49.2 times / 5 sec. x 31.6 sec. = 311 times	0.417	130	400
DH3	24.0 times / 5 sec. x 31.6 sec. = 152 times	1.674	254	400
DH5	18.4 times / 5 sec. x 31.6 sec. = 117 times	2.925	342	400
3DH1	48.8 times / 5 sec. x 31.6 sec. = 309 times	0.421	130	400
3DH3	23.8 times / 5 sec. x 31.6 sec. = 151 times	1.674	253	400
3DH5	15.2 times / 5 sec. x 31.6 sec. = 97 times	2.925	284	400
Inquiry	100.0 times / 1 sec. x 12.8 sec. = 1280 times	0.123	158	400

Sample Calculation

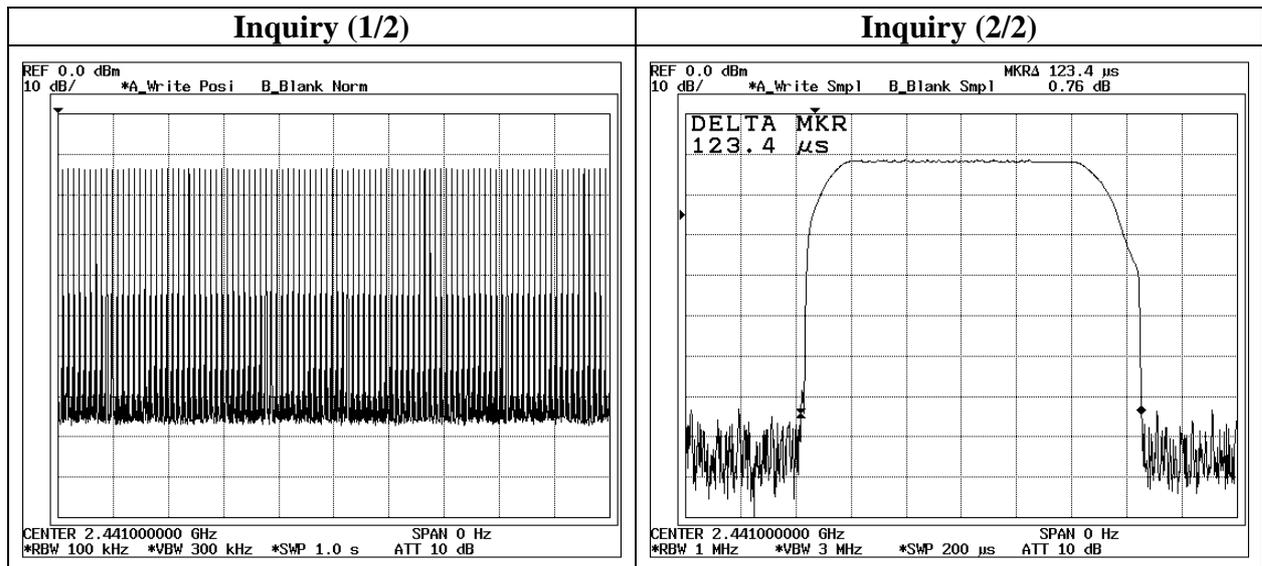
Result = Number of transmission x Length of transmission time

*Average data of 5 tests.(except Inquiry)

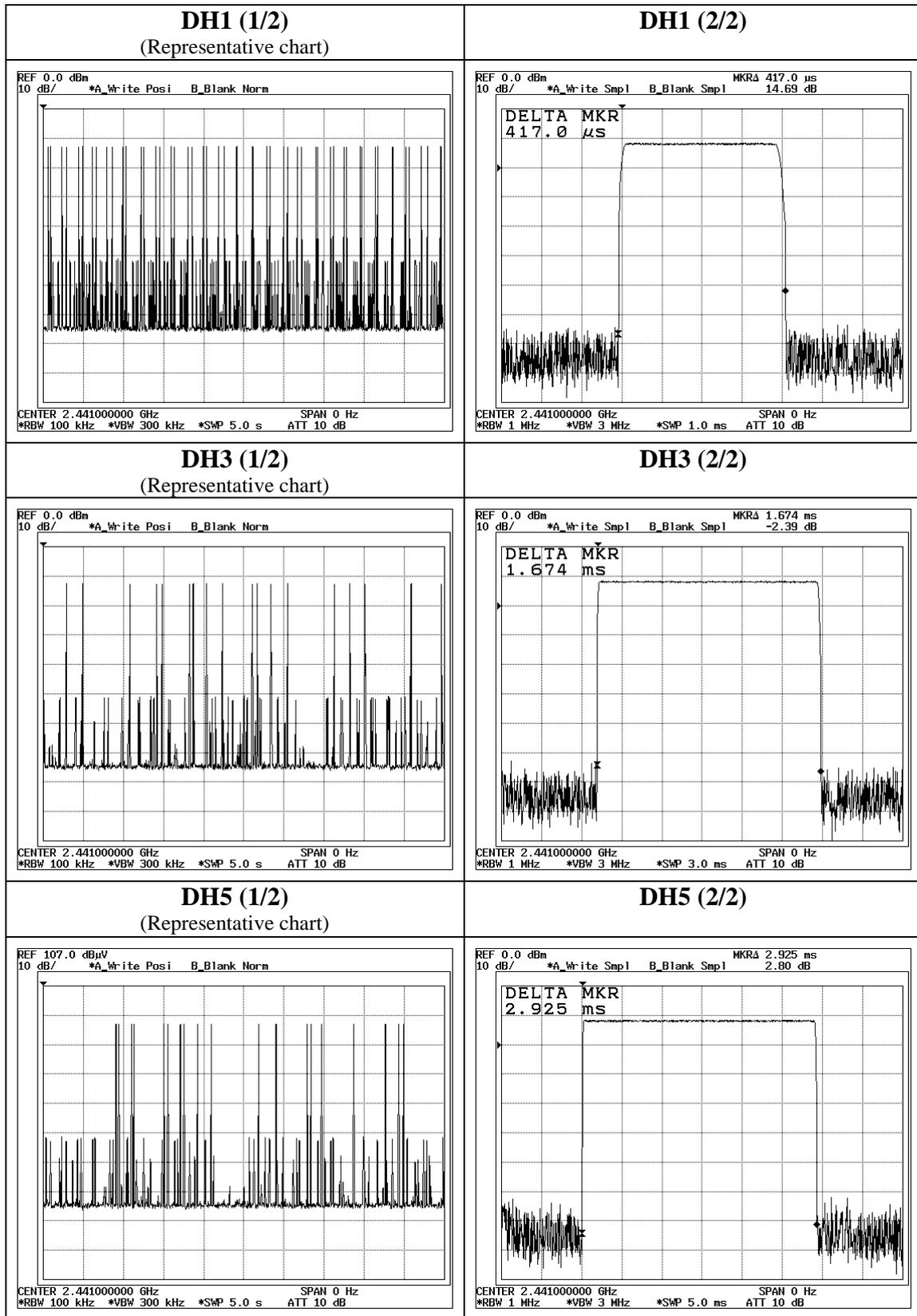
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	48	50	49	51	48	49.2
DH3	18	30	25	26	21	24
DH5	19	18	19	18	18	18.4
3DH1	50	49	49	50	46	48.8
3DH3	26	24	22	25	22	23.8
3DH5	14	11	16	20	15	15.2

Sample Calculation

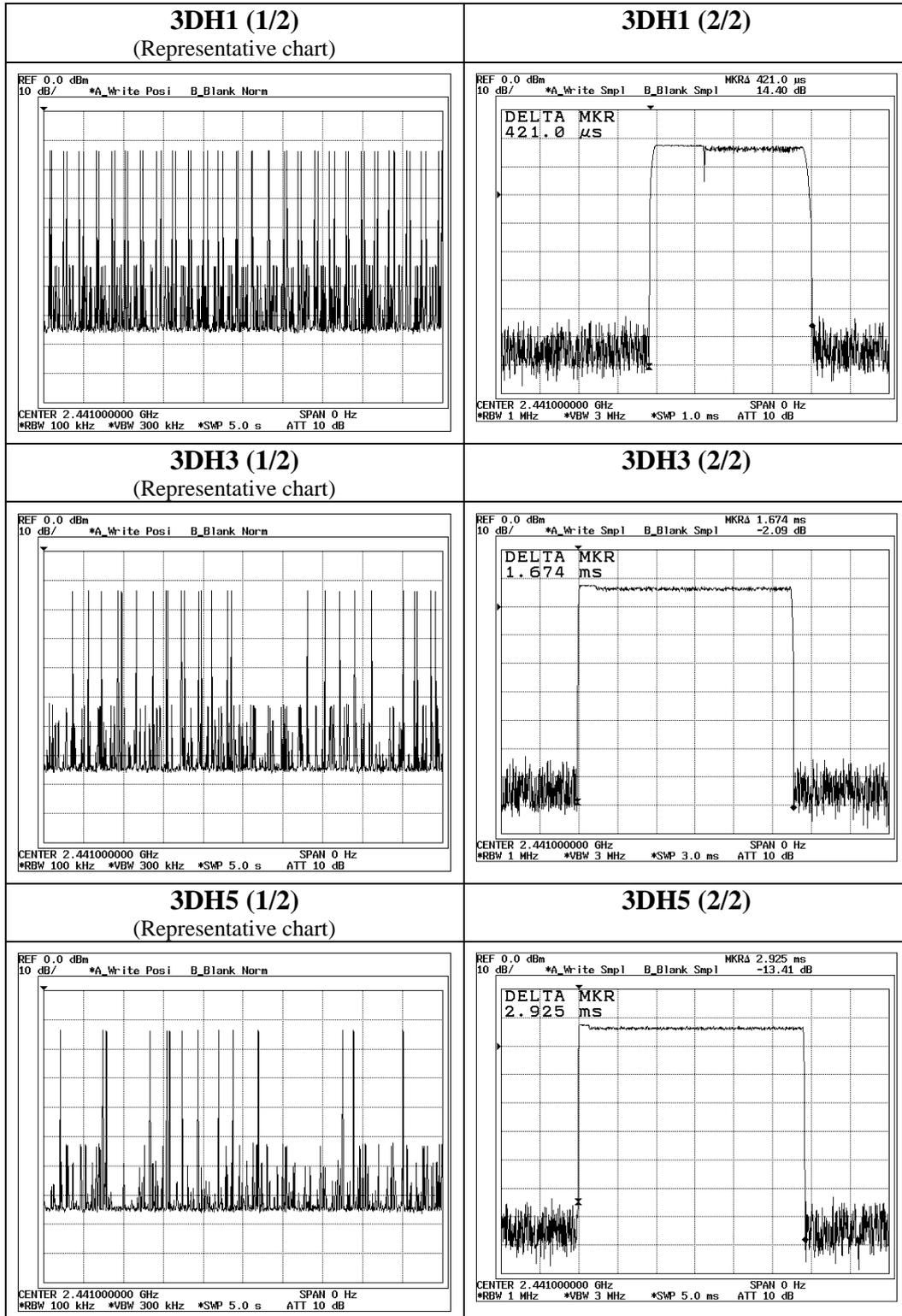
Average= Summation(Sampling 1 to 5) / 5



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	-9.43	0.80	10.08	1.45	1.40	20.97	125	19.52
DH5	2441.0	-9.61	0.80	10.08	1.27	1.34	20.97	125	19.70
DH5	2480.0	-10.26	0.80	10.08	0.62	1.15	20.97	125	20.35
2DH5	2402.0	-9.05	0.80	10.08	1.83	1.52	20.97	125	19.14
2DH5	2441.0	-9.24	0.80	10.08	1.64	1.46	20.97	125	19.33
2DH5	2480.0	-9.87	0.80	10.08	1.01	1.26	20.97	125	19.96
3DH5	2402.0	-8.99	0.80	10.08	1.89	1.55	20.97	125	19.08
3DH5	2441.0	-9.15	0.80	10.08	1.73	1.49	20.97	125	19.24
3DH5	2480.0	-9.74	0.80	10.08	1.14	1.30	20.97	125	19.83
Inquiry	2441.0	-9.29	0.80	10.08	1.59	1.44	20.97	125	19.38

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: SONY)

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31HE0085-HO-01
Date 03/14/2011 03/15/2011 03/16/2011
Temperature/ Humidity 20 deg.C / 49% RH 22 deg.C / 47% RH 20 deg.C / 33% RH
Engineer Takumi Shimada Takumi Shimada Takumi Shimada
(1-10GHz) (10-26.5GHz) (30-1000MHz)
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	31.810	QP	23.7	17.4	7.0	32.1	16.0	40.0	24.0	
Hori	72.005	QP	43.9	6.7	7.6	32.0	26.2	40.0	13.8	
Hori	108.006	QP	41.1	11.5	8.0	32.0	28.6	43.5	14.9	
Hori	302.350	QP	40.3	15.8	9.7	31.9	33.9	46.0	12.1	
Hori	576.012	QP	37.0	19.8	11.3	32.1	36.0	46.0	10.0	
Hori	797.123	QP	30.3	23.0	12.5	31.8	34.0	46.0	12.0	
Hori	2390.000	PK	43.8	27.7	2.3	32.6	41.2	73.9	32.7	
Hori	2400.000	PK	57.6	27.7	2.4	32.6	55.1	-	-	See 20dBc Data Sheet
Hori	3197.433	PK	54.1	29.4	2.8	32.2	54.1	73.9	19.8	
Hori	4804.000	PK	41.0	31.6	4.9	31.9	45.6	73.9	28.3	
Hori	7206.000	PK	42.4	36.2	6.0	32.4	52.2	73.9	21.7	
Hori	9608.000	PK	42.0	38.0	6.8	32.9	53.9	73.9	20.0	
Hori	24020.000	PK	45.8	37.8	-1.4	31.6	50.6	73.9	23.3	
Hori	2390.000	AV	31.3	27.7	2.3	32.6	28.7	53.9	25.2	
Hori	2400.000	AV	52.3	27.7	2.4	32.6	49.8	-	-	See 20dBc Data Sheet
Hori	3197.433	AV	35.1	29.4	2.8	32.2	35.1	53.9	18.8	
Hori	4804.000	AV	29.3	31.6	4.9	31.9	33.9	53.9	20.0	
Hori	7206.000	AV	30.4	36.2	6.0	32.4	40.2	53.9	13.7	
Hori	9608.000	AV	30.1	38.0	6.8	32.9	42.0	53.9	11.9	
Hori	24020.000	AV	34.0	37.8	-1.4	31.6	38.8	53.9	15.1	
Vert	32.132	QP	35.6	17.3	7.0	32.1	27.8	40.0	12.2	
Vert	72.000	QP	41.4	6.7	7.6	32.0	23.7	40.0	16.3	
Vert	108.012	QP	47.0	11.5	8.0	32.0	34.5	43.5	9.0	
Vert	303.476	QP	43.6	15.8	9.7	31.9	37.2	46.0	8.8	
Vert	576.002	QP	33.8	19.8	11.3	32.1	32.8	46.0	13.2	
Vert	797.122	QP	29.3	23.0	12.5	31.8	33.0	46.0	13.0	
Vert	2390.000	PK	49.3	27.7	2.3	32.6	46.7	73.9	27.2	
Vert	2400.000	PK	61.7	27.7	2.4	32.6	59.2	-	-	See 20dBc Data Sheet
Vert	3197.433	PK	59.8	29.4	2.8	32.2	59.8	73.9	14.1	
Vert	4804.000	PK	41.4	31.6	4.9	31.9	46.0	73.9	27.9	
Vert	7206.000	PK	42.3	36.2	6.0	32.4	52.1	73.9	21.8	
Vert	9608.000	PK	41.3	38.0	6.8	32.9	53.2	73.9	20.7	
Vert	24020.000	PK	45.8	37.8	-1.4	31.6	50.6	73.9	23.3	
Vert	2390.000	AV	34.4	27.7	2.3	32.6	31.8	53.9	22.1	
Vert	2400.000	AV	56.2	27.7	2.4	32.6	53.7	-	-	See 20dBc Data Sheet
Vert	3197.433	AV	39.1	29.4	2.8	32.2	39.1	53.9	14.8	
Vert	4804.000	AV	29.3	31.6	4.9	31.9	33.9	53.9	20.0	
Vert	7206.000	AV	30.4	36.2	6.0	32.4	40.2	53.9	13.8	
Vert	9608.000	AV	30.0	38.0	6.8	32.9	41.9	53.9	12.1	
Vert	24020.000	AV	33.9	37.8	-1.4	31.6	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.

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	97.9	27.7	2.4	32.6	95.4	-	-	Carrier
Hori	2400.000	PK	43.3	27.7	2.4	32.6	40.8	75.4	34.6	
Vert	2402.000	PK	101.6	27.7	2.4	32.6	99.1	-	-	Carrier
Vert	2400.000	PK	46.0	27.7	2.4	32.6	43.5	79.1	35.6	

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

Radiated Spurious Emission
Reference Data
(Power Supply: DELTA)

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31HE0085-HO-01
Date 03/16/2011 03/15/2011 03/17/2011
Temperature/ Humidity 20 deg.C / 33% RH 22 deg.C / 47% RH 20 deg.C / 24% RH
Engineer Yutaka Yoshida Takumi Shimada Yutaka Yoshida
(1-10GHz) (10-26.5GHz) (30-1000MHz)
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	30.070	QP	26.5	17.9	7.0	32.1	19.3	40.0	20.7	
Hori	108.789	QP	41.3	11.6	8.1	32.0	29.0	43.5	14.5	
Hori	134.990	QP	35.4	14.2	8.3	31.9	26.0	43.5	17.5	
Hori	315.615	QP	40.4	16.0	9.8	31.9	34.3	46.0	11.7	
Hori	404.997	QP	39.9	17.6	10.4	31.9	36.0	46.0	10.0	
Hori	576.009	QP	38.1	19.8	11.3	32.1	37.1	46.0	8.9	
Hori	3191.883	PK	56.6	28.5	2.9	31.9	56.1	73.9	17.8	
Hori	4882.000	PK	43.1	31.0	5.1	31.4	47.8	73.9	26.1	
Hori	7323.000	PK	43.9	35.9	6.3	32.5	53.6	73.9	20.3	
Hori	9764.000	PK	44.2	38.0	7.2	33.2	56.2	73.9	17.7	
Hori	24410.000	PK	45.7	37.9	-1.3	31.4	50.9	73.9	23.0	
Hori	3191.883	AV	36.2	28.5	2.9	31.9	35.7	53.9	18.2	
Hori	4882.000	AV	29.3	31.0	5.1	31.4	34.0	53.9	19.9	
Hori	7323.000	AV	30.5	35.9	6.3	32.5	40.2	53.9	13.7	
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	31.531	QP	36.2	17.5	7.0	32.1	28.6	40.0	11.4	
Vert	105.008	QP	49.1	11.0	8.0	32.0	36.1	43.5	7.4	
Vert	134.999	QP	39.8	14.2	8.3	31.9	30.4	43.5	13.1	
Vert	302.751	QP	42.8	15.8	9.7	31.9	36.4	46.0	9.6	
Vert	405.009	QP	37.8	17.6	10.4	31.9	33.9	46.0	12.1	
Vert	576.002	QP	34.2	19.8	11.3	32.1	33.2	46.0	12.8	
Vert	3191.883	PK	60.2	28.5	2.9	31.9	59.7	73.9	14.2	
Vert	4882.000	PK	43.1	31.0	5.1	31.4	47.8	73.9	26.1	
Vert	7323.000	PK	43.3	35.9	6.3	32.5	53.0	73.9	20.9	
Vert	9764.000	PK	43.3	38.0	7.2	33.2	55.3	73.9	18.6	
Vert	24410.000	PK	45.6	37.9	-1.3	31.4	50.8	73.9	23.1	
Vert	3191.883	AV	37.6	28.5	2.9	31.9	37.1	53.9	16.8	
Vert	4882.000	AV	29.3	31.0	5.1	31.4	34.0	53.9	19.9	
Vert	7323.000	AV	30.5	35.9	6.3	32.5	40.2	53.9	13.7	
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.

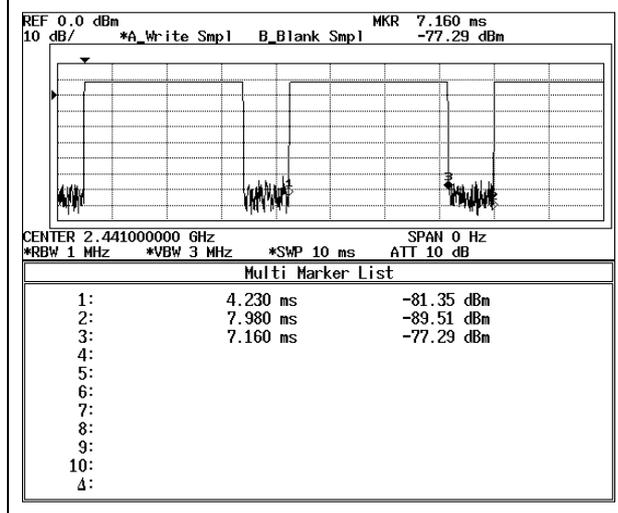
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

*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

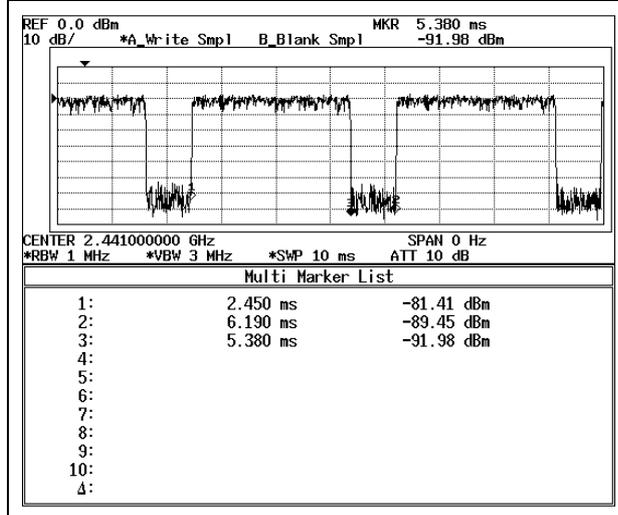
DH5

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



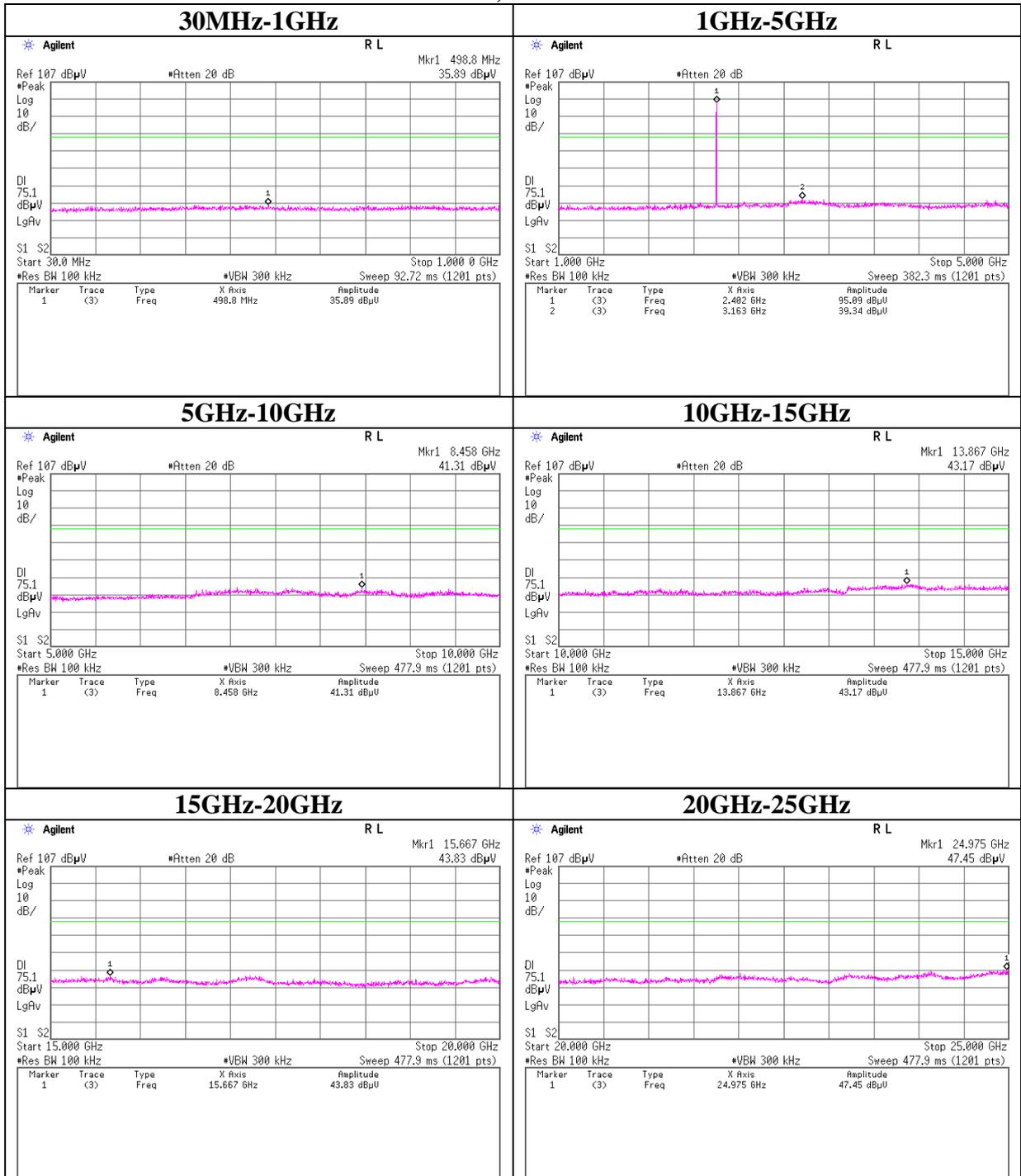
3DH5

VBW: $1/x = 267\text{Hz} < 270\text{Hz}$
x: (Tx on+Tx off) = 3.74ms



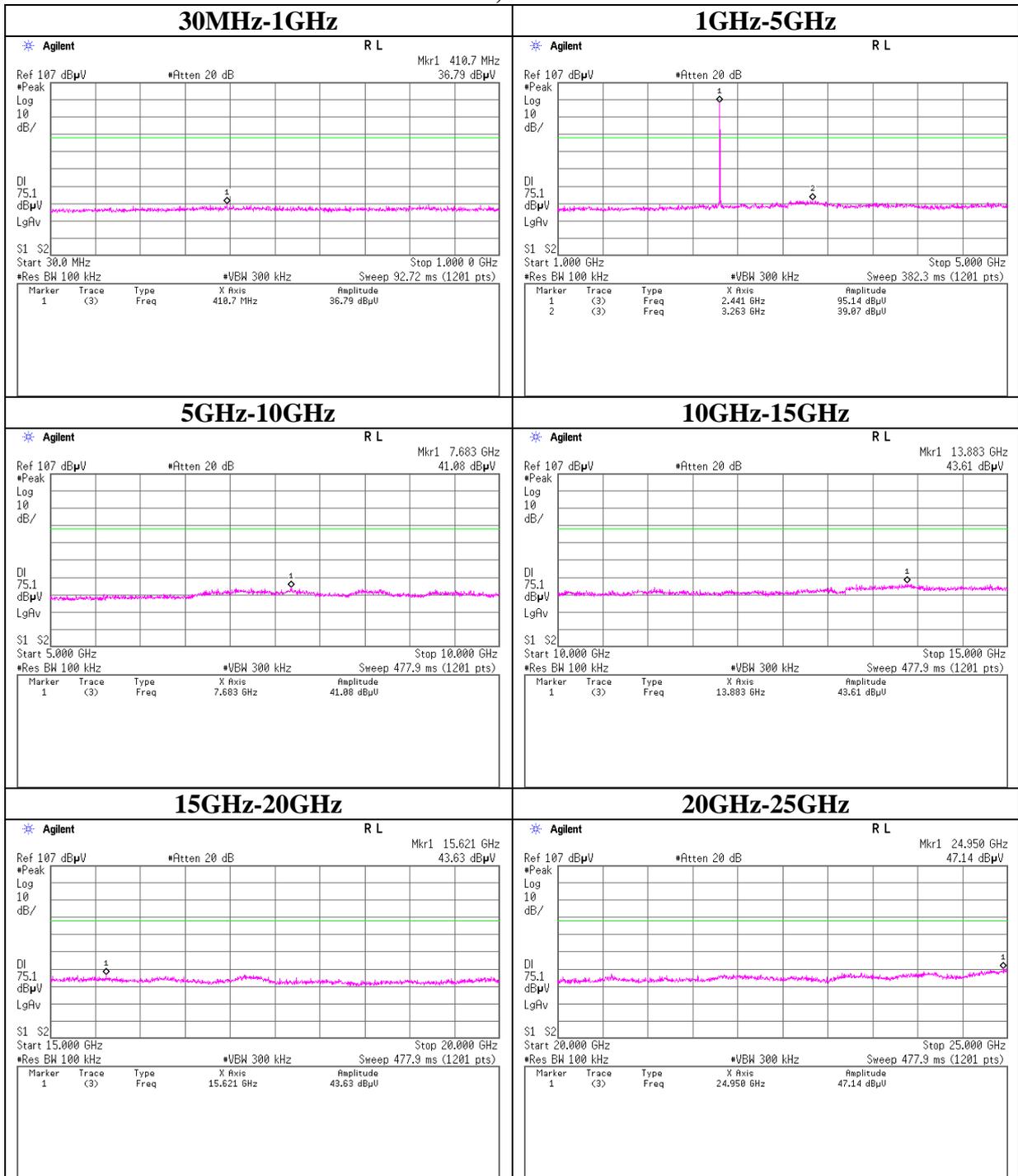
Conducted Spurious Emission

Tx DH5, 2402MHz



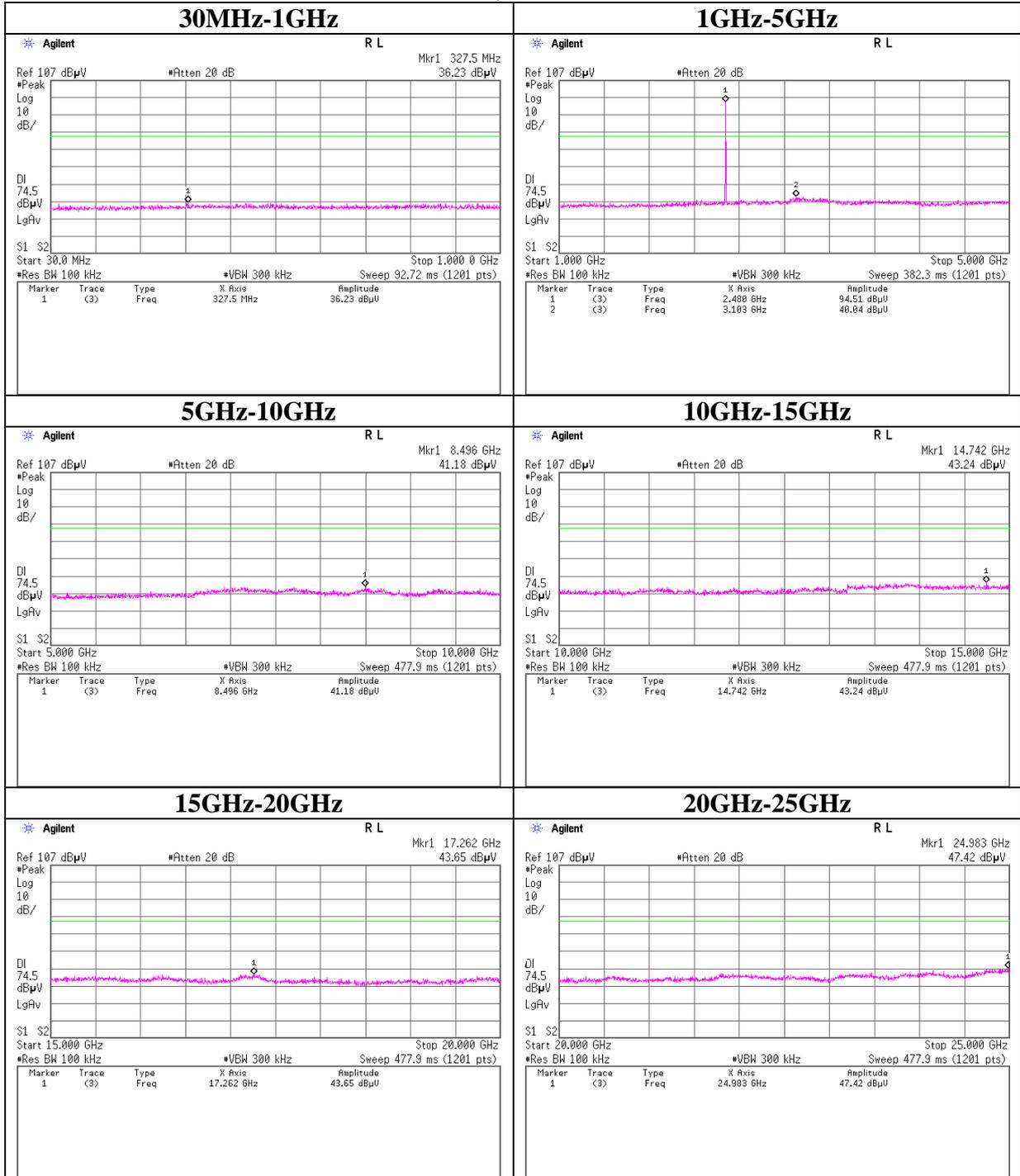
Conducted Spurious Emission

Tx DH5, 2441MHz



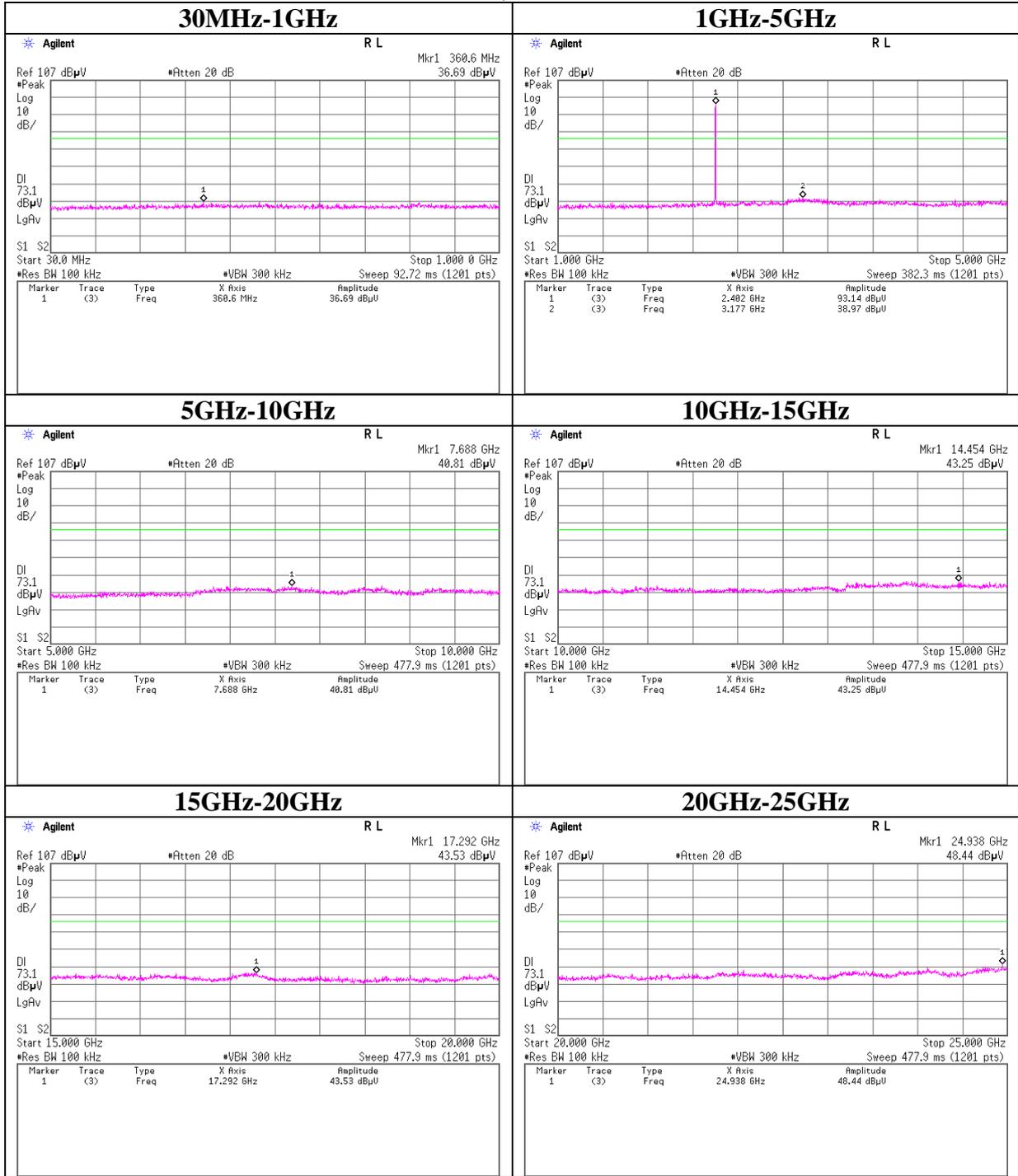
Conducted Spurious Emission

Tx DH5, 2480MHz



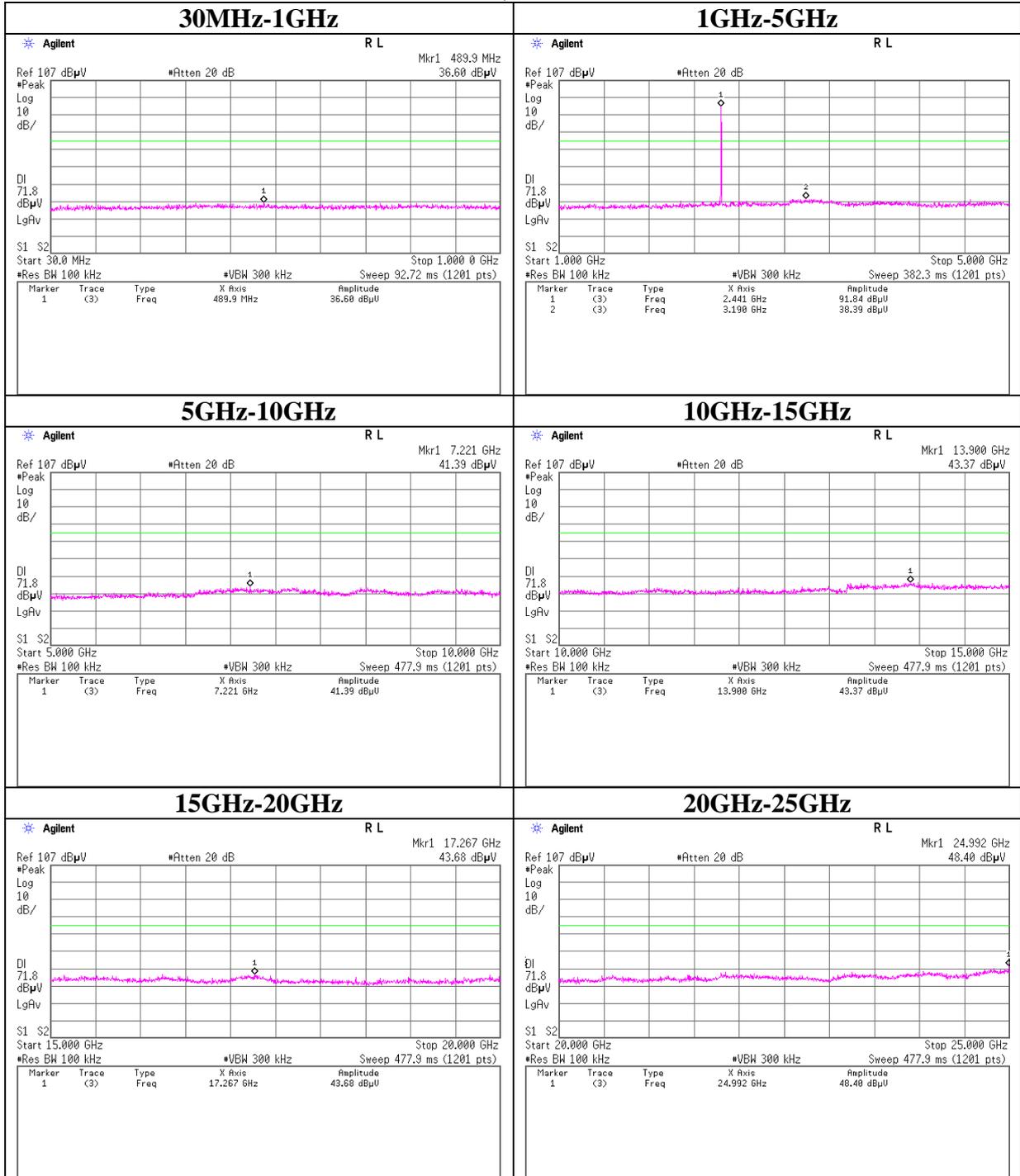
Conducted Spurious Emission

Tx 3DH5, 2402MHz



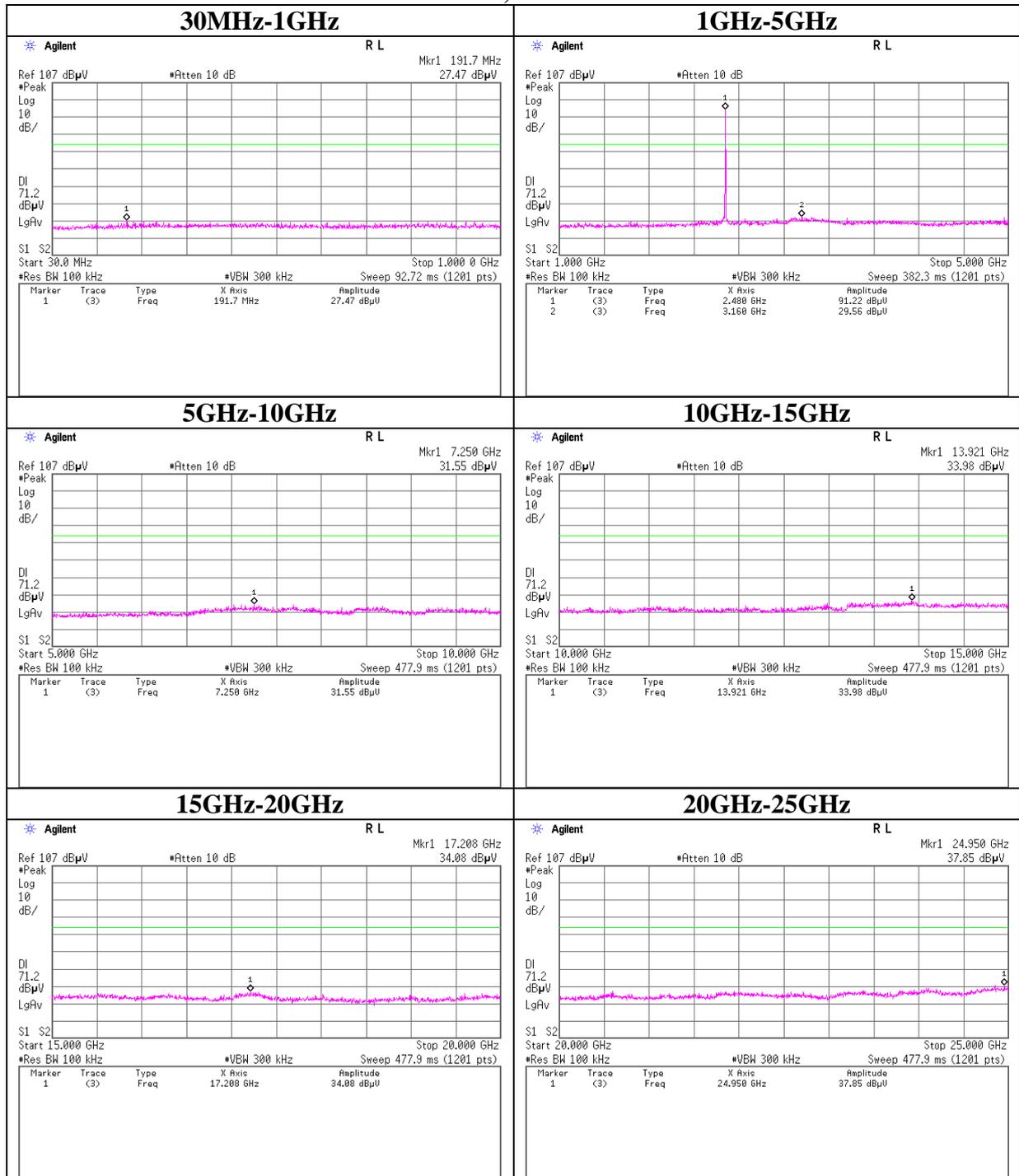
Conducted Spurious Emission

Tx 3DH5, 2441MHz



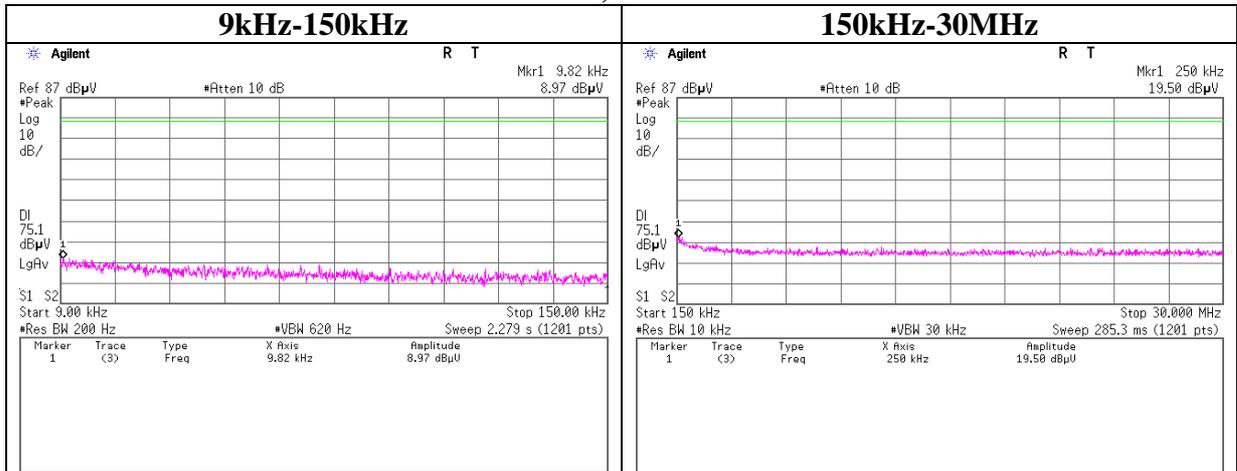
Conducted Spurious Emission

Tx 3DH5, 2480MHz

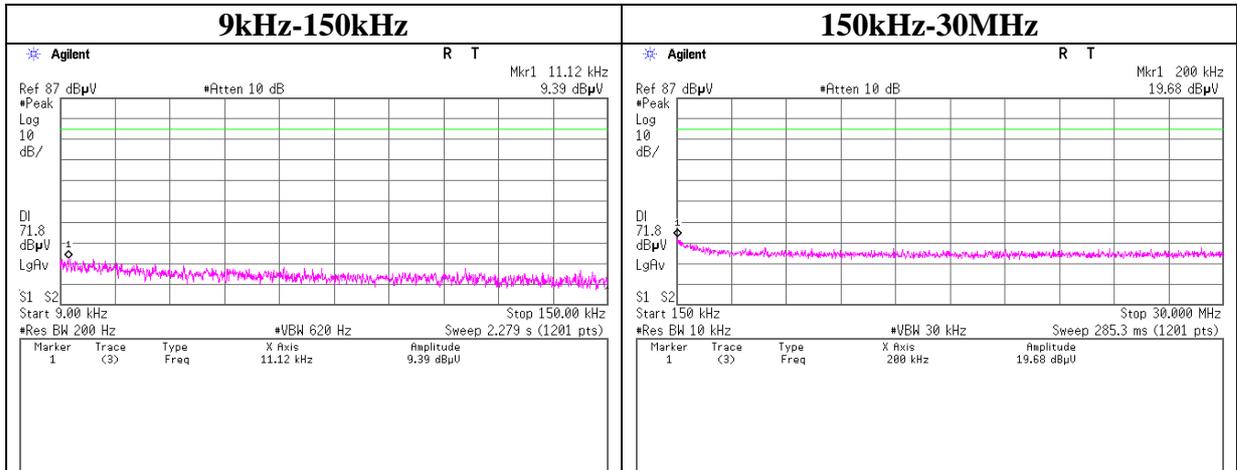


Conducted Spurious Emission(below 30MHz)

Tx DH5, 2441MHz

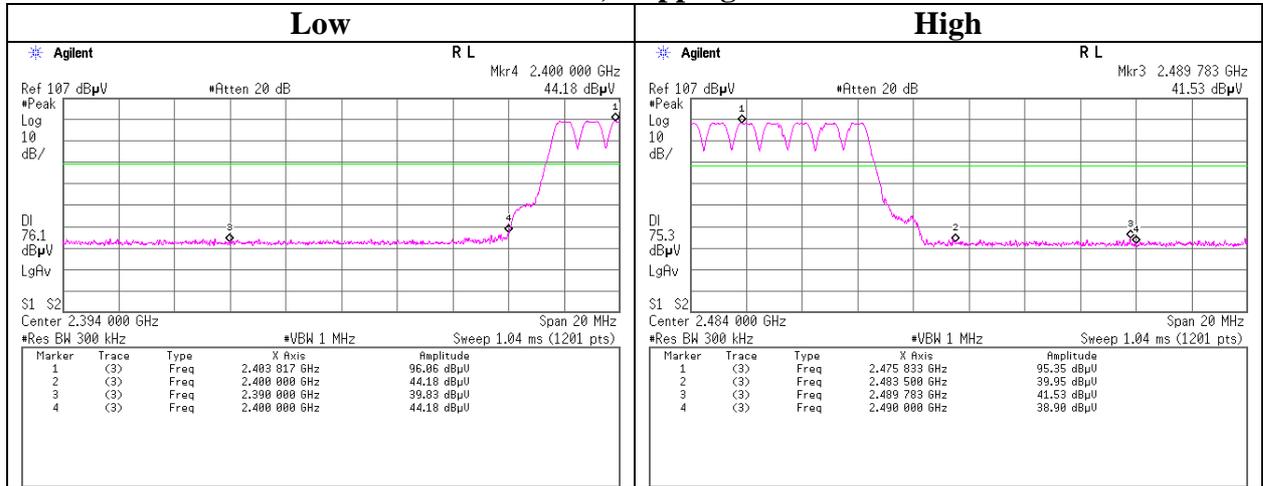


Tx 3DH5 2441MHz

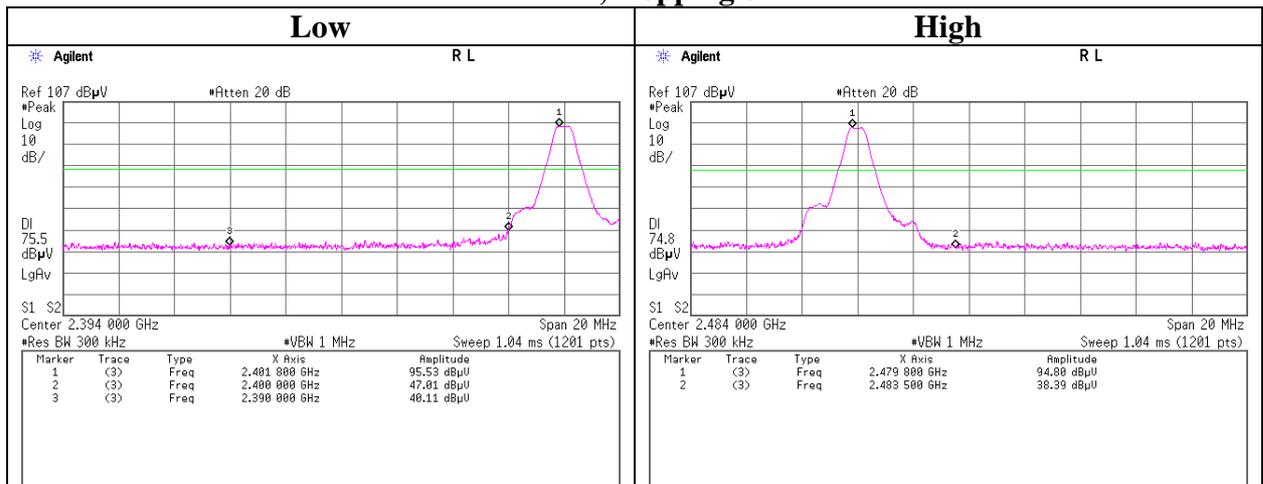


Conducted Emission Band Edge compliance

Tx DH5, Hopping on

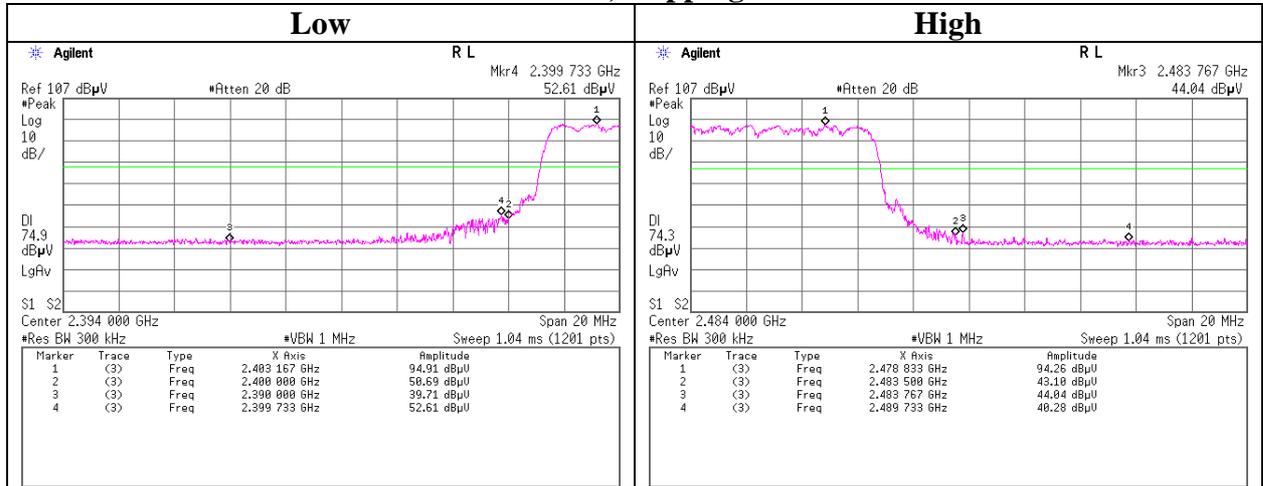


Tx DH5, Hopping off

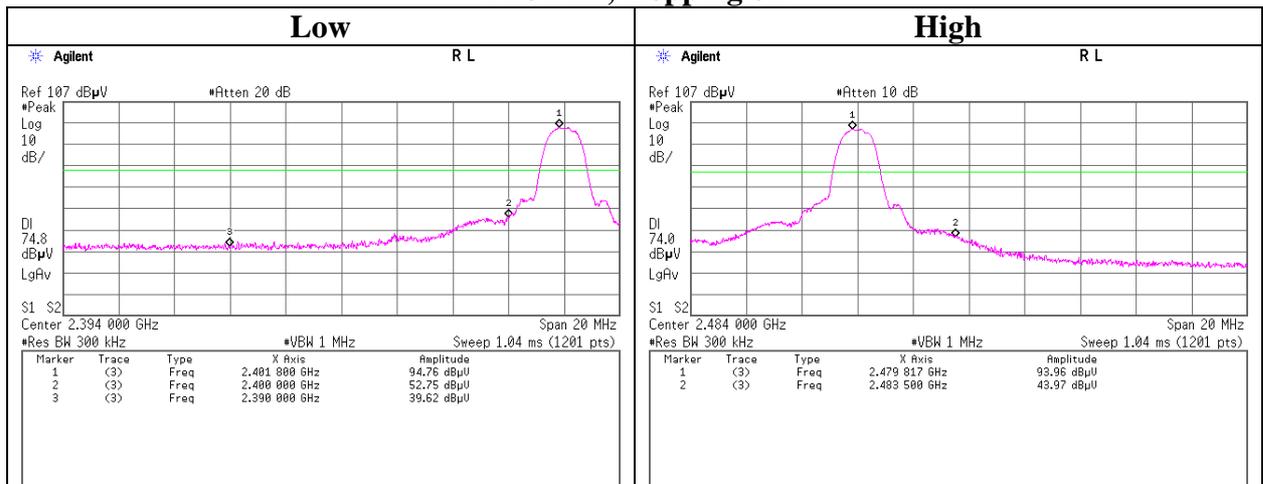


Conducted Emission Band Edge compliance

Tx 3DH5, Hopping on



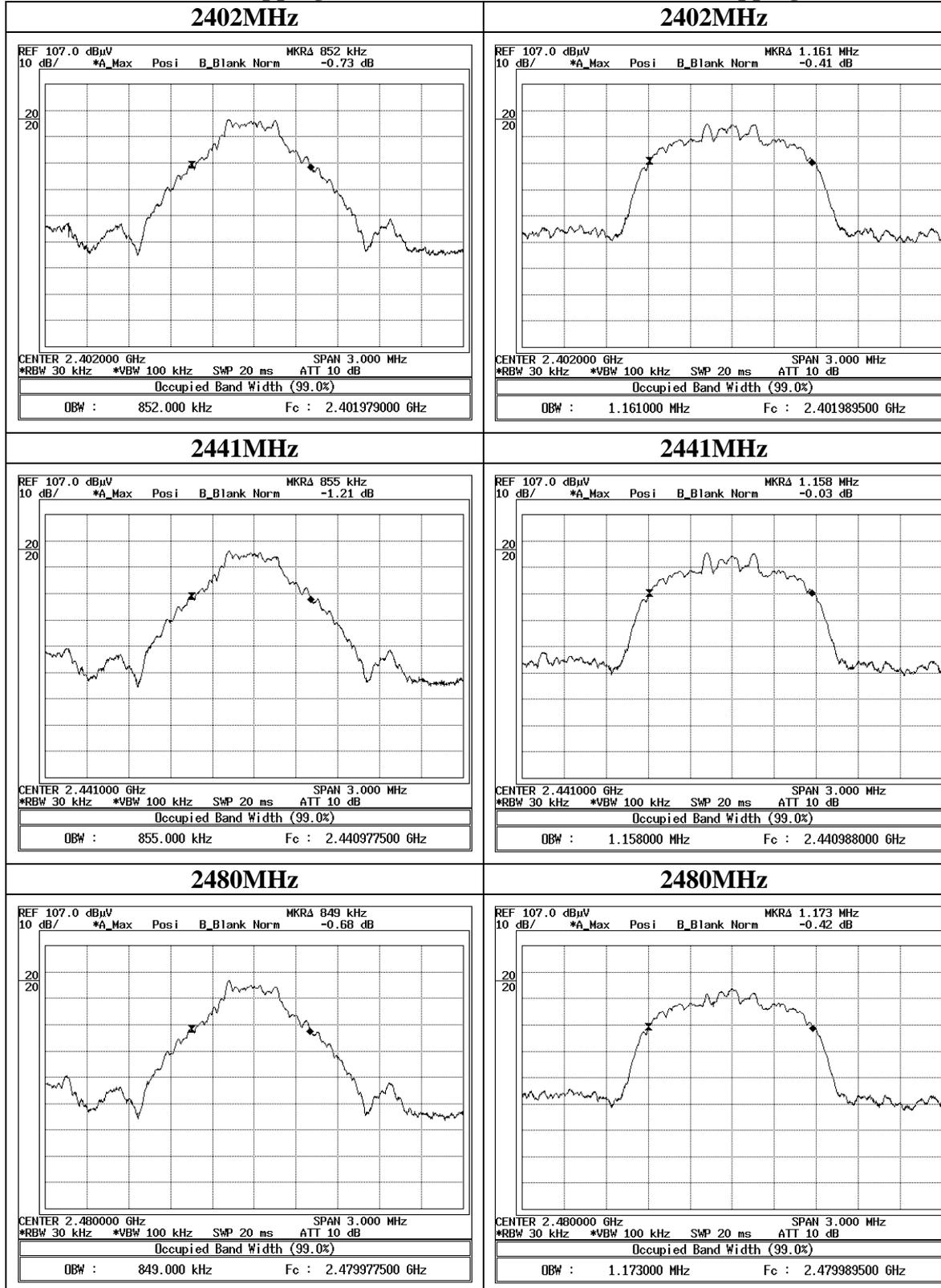
Tx 3DH5, Hopping off



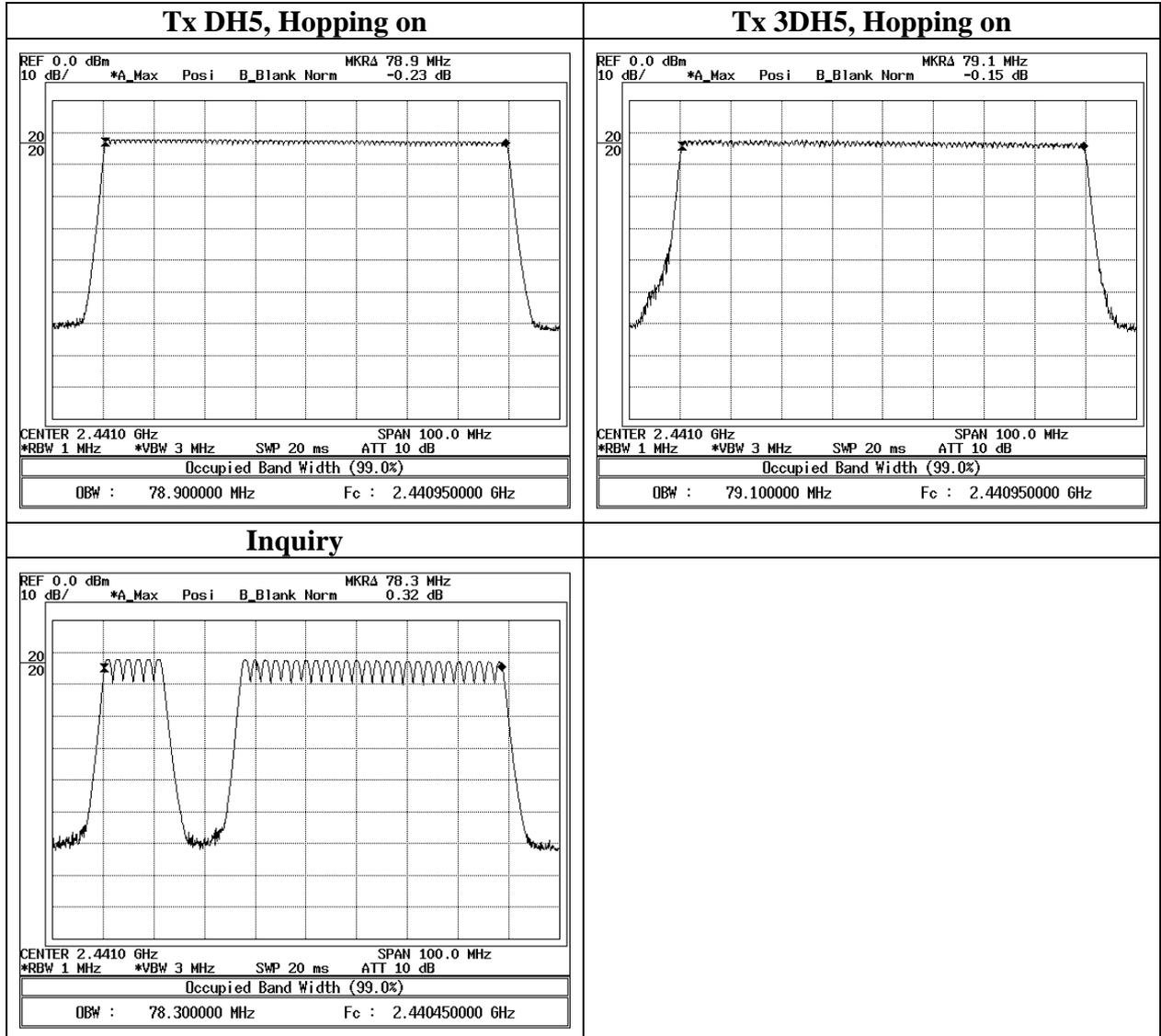
99% Occupied Bandwidth

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)
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
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
MCC-79	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278923/4	RE	2010/12/02 * 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
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	-
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	RE/CE	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
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170306	RE	2010/05/07 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	RE	2010/10/27 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	1302	RE	2010/10/11 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	N/A	RE	2010/10/11 * 12
MCC-50	Coaxial cable	UL Japan	-	-	RE	2010/03/18 * 12
MAT-51	Attenuator(6dB)	Weinschel	2	AS3557	RE	2011/01/14 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	260833	RE	2011/03/04 * 12
MCC-116	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290221/4	AT	2010/08/05 * 12

EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
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-14	Thermo-Hygrometer	Custom	CTH-201	-	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
MSA-09	Spectrum Analyzer	Advantest	R3273	95090115	AT	2010/11/18 * 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**