

**APPENDIX 2: Data of EMI test**

**Conducted Emission**

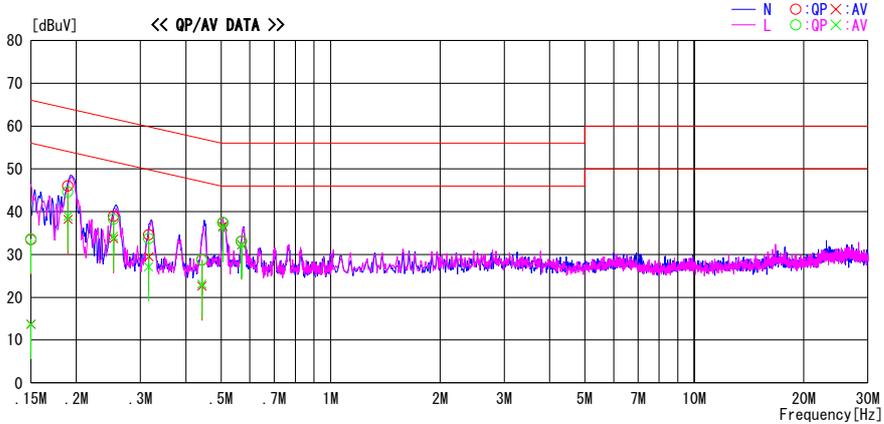
**DATA OF CONDUCTED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2010/03/25

Report No. : 30GE0005-HO-01  
Temp./Humi. : 21deg. C / 46%  
Engineer : Takumi Shimada

Mode / Remarks : BT Tx 2402MHz DH5

LIMIT : FCC15.207 QP  
FCC15.207 AV

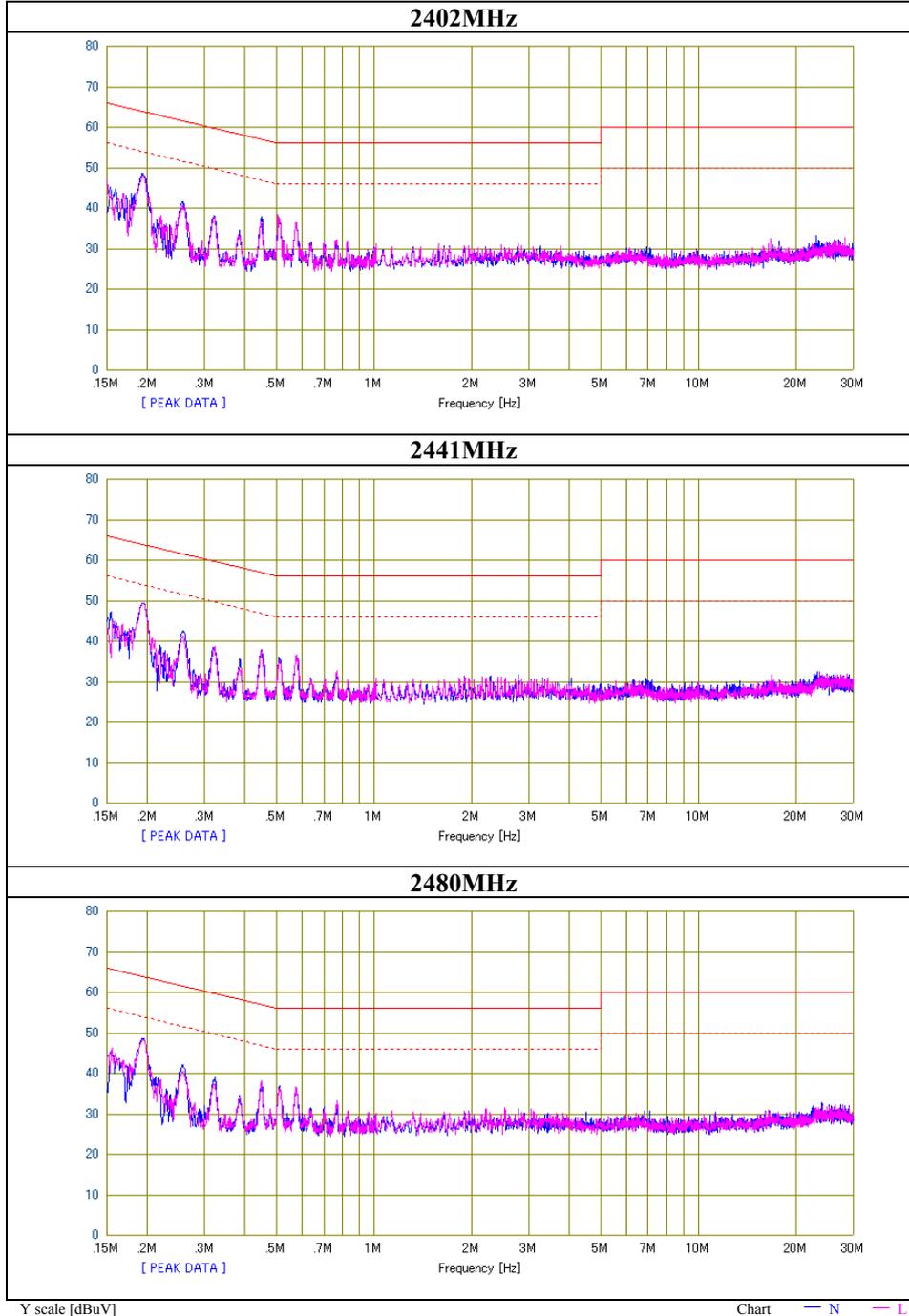


Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	20.2	0.4	13.3	33.5	13.7	66.0	56.0	32.5	42.3	N	
0.18962	32.7	24.9	13.3	46.0	38.2	64.1	54.1	18.1	15.9	N	
0.25305	25.6	20.4	13.3	38.9	33.7	61.7	51.7	22.8	18.0	N	
0.31617	21.3	16.2	13.3	34.6	29.5	59.8	49.8	25.2	20.3	N	
0.44264	15.4	9.3	13.3	28.7	22.6	57.0	47.0	28.3	24.4	N	
0.50580	24.1	23.3	13.3	37.4	36.6	56.0	46.0	18.6	9.4	N	
0.56923	19.8	19.0	13.3	33.1	32.3	56.0	46.0	22.9	13.7	N	
0.15000	20.3	0.4	13.3	33.6	13.7	66.0	56.0	32.4	42.3	L	
0.18964	31.3	25.6	13.3	44.6	38.9	64.1	54.1	19.5	15.2	L	
0.25294	24.9	20.9	13.3	38.2	34.2	61.7	51.7	23.5	17.5	L	
0.31613	20.4	13.8	13.3	33.7	27.1	59.8	49.8	26.1	22.7	L	
0.44285	15.5	9.8	13.3	28.8	23.1	57.0	47.0	28.2	23.9	L	
0.50568	24.1	23.0	13.3	37.4	36.3	56.0	46.0	18.6	9.7	L	
0.56906	19.8	18.9	13.3	33.1	32.2	56.0	46.0	22.9	13.8	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

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30GE0005-HO-01
Date	March 25, 2010
Temperature/ Humidity	23 deg.C/ 46%
Engineer	Takumi Shimada
Mode	Tx DH5



Y scale [dBuV]

Chart — N — L

## Conducted Emission

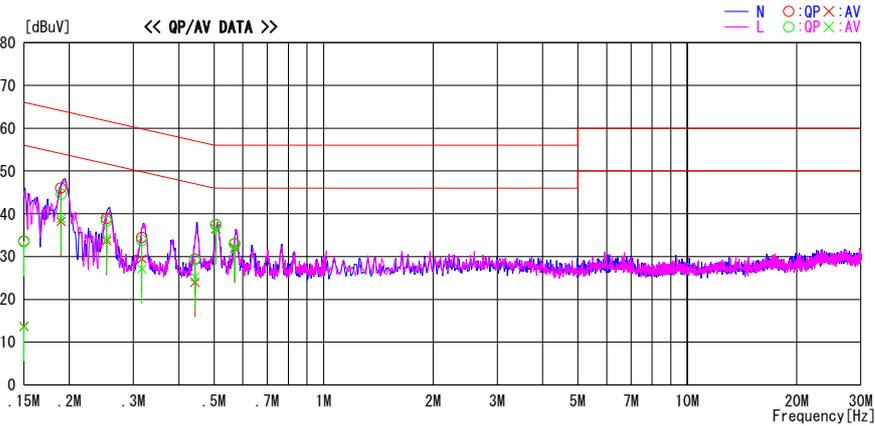
### DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber  
 Date : 2010/03/25

Report No. : 30GE0005-HO-01  
 Temp./Humi. : 21deg. C / 46%  
 Engineer : Takumi Shimada

Mode / Remarks : BT Tx 2402MHz 3DH5

LIMIT : FCC15.207 QP  
 FCC15.207 AV

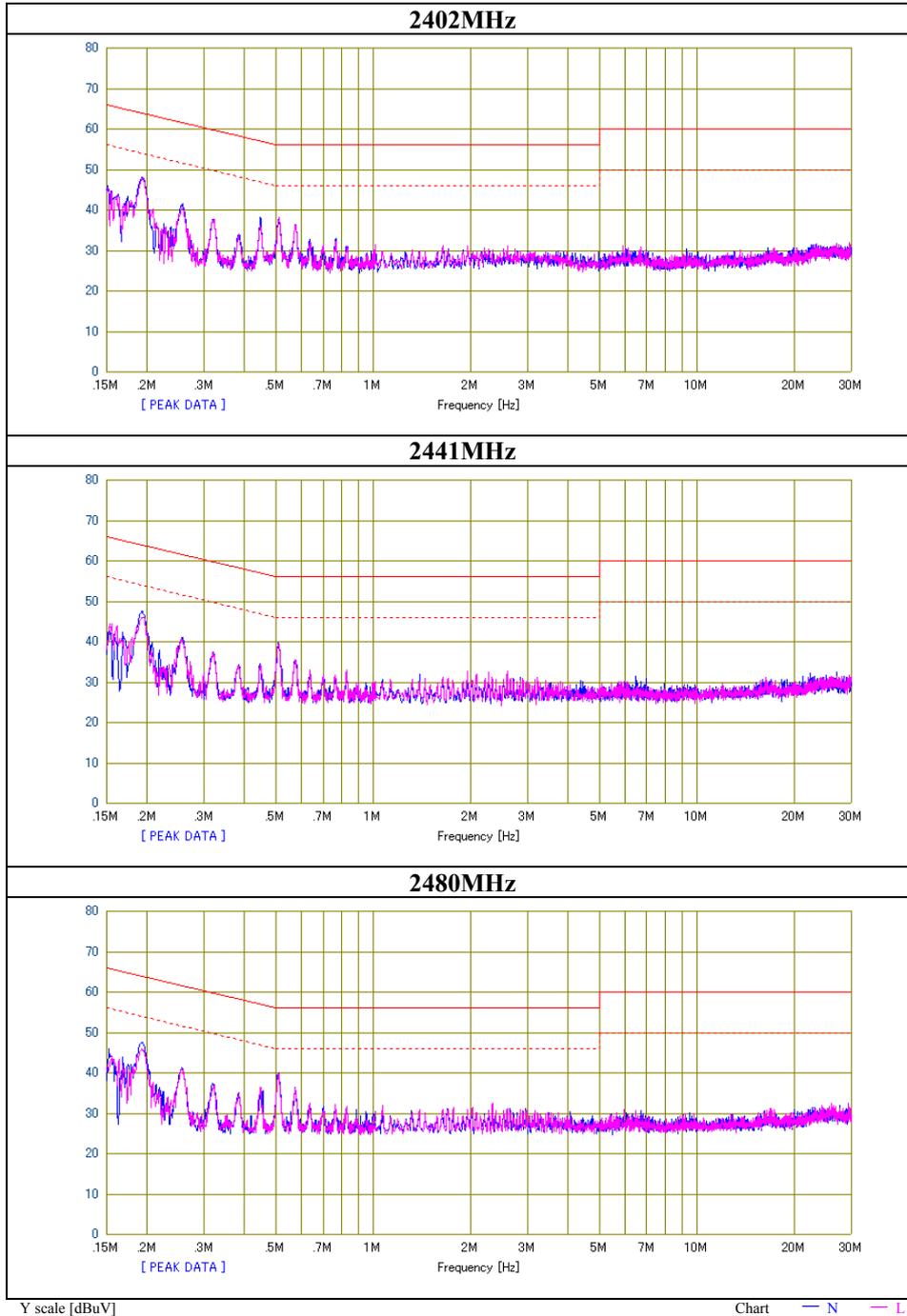


Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	20.3	0.4	13.3	33.6	13.7	66.0	56.0	32.4	42.3	N	
0.18967	32.7	24.9	13.3	46.0	38.2	64.1	54.1	18.1	15.9	N	
0.25301	25.6	20.4	13.3	38.9	33.7	61.7	51.7	22.8	18.0	N	
0.31629	21.1	16.2	13.3	34.4	29.5	59.8	49.8	25.4	20.3	N	
0.44274	16.1	10.7	13.3	29.4	24.0	57.0	47.0	27.6	23.0	N	
0.50585	24.1	23.2	13.3	37.4	36.5	56.0	46.0	18.6	9.5	N	
0.56927	19.7	18.6	13.3	33.0	31.9	56.0	46.0	23.0	14.1	N	
0.15000	20.2	0.3	13.3	33.5	13.6	66.0	56.0	32.5	42.4	L	
0.18976	31.2	25.5	13.3	44.5	38.8	64.0	54.0	19.5	15.2	L	
0.25309	24.9	20.9	13.3	38.2	34.2	61.7	51.7	23.5	17.5	L	
0.31634	20.5	13.8	13.3	33.8	27.1	59.8	49.8	26.0	22.7	L	
0.44267	16.0	12.0	13.3	29.3	25.3	57.0	47.0	27.7	21.7	L	
0.50589	24.1	23.0	13.3	37.4	36.3	56.0	46.0	18.6	9.7	L	
0.56903	19.7	18.9	13.3	33.0	32.2	56.0	46.0	23.0	13.8	L	

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

## Conducted Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30GE0005-HO-01
Date	March 25, 2010
Temperature/ Humidity	23 deg.C/ 46%
Engineer	Takumi Shimada
Mode	Tx 3DH5



## Conducted Emission

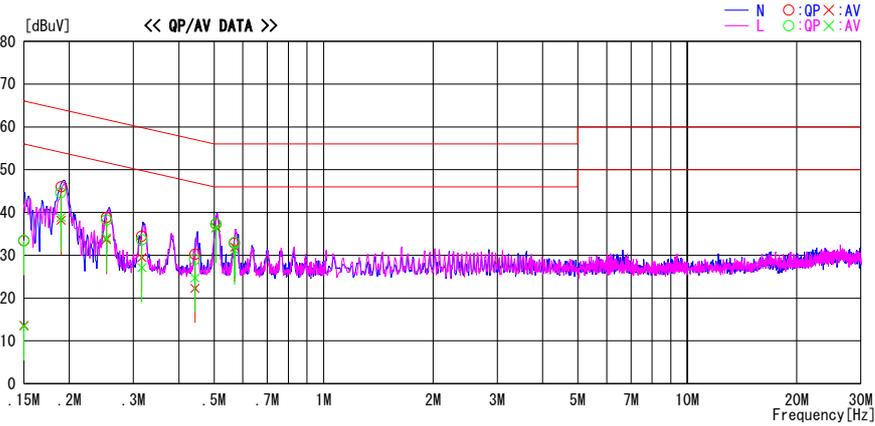
### DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
 Date : 2010/03/25

Report No. : 30GE0005-HO-01  
 Temp./Humi. : 21deg. C / 46%  
 Engineer : Takumi Shimada

Mode / Remarks : BT Rx 2441MHz

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	20.1	0.3	13.3	33.4	13.6	66.0	56.0	32.6	42.4	N	
0.18984	32.7	24.9	13.3	46.0	38.2	64.0	54.0	18.0	15.8	N	
0.25281	25.5	20.4	13.3	38.8	33.7	61.7	51.7	22.9	18.0	N	
0.31623	21.1	16.2	13.3	34.4	29.5	59.8	49.8	25.4	20.3	N	
0.44276	16.9	9.0	13.3	30.2	22.3	57.0	47.0	26.8	24.7	N	
0.50588	24.0	23.2	13.3	37.3	36.5	56.0	46.0	18.7	9.5	N	
0.56908	19.5	18.6	13.3	32.8	31.9	56.0	46.0	23.2	14.1	N	
0.15000	20.2	0.2	13.3	33.5	13.5	66.0	56.0	32.5	42.5	L	
0.18966	31.3	25.5	13.3	44.6	38.8	64.1	54.1	19.5	15.3	L	
0.25291	24.9	20.8	13.3	38.2	34.1	61.7	51.7	23.5	17.6	L	
0.31616	20.3	13.8	13.3	33.6	27.1	59.8	49.8	26.2	22.7	L	
0.44258	15.7	11.4	13.3	29.0	24.7	57.0	47.0	28.0	22.3	L	
0.50581	24.0	23.0	13.3	37.3	36.3	56.0	46.0	18.7	9.7	L	
0.56915	19.7	17.9	13.3	33.0	31.2	56.0	46.0	23.0	14.8	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.

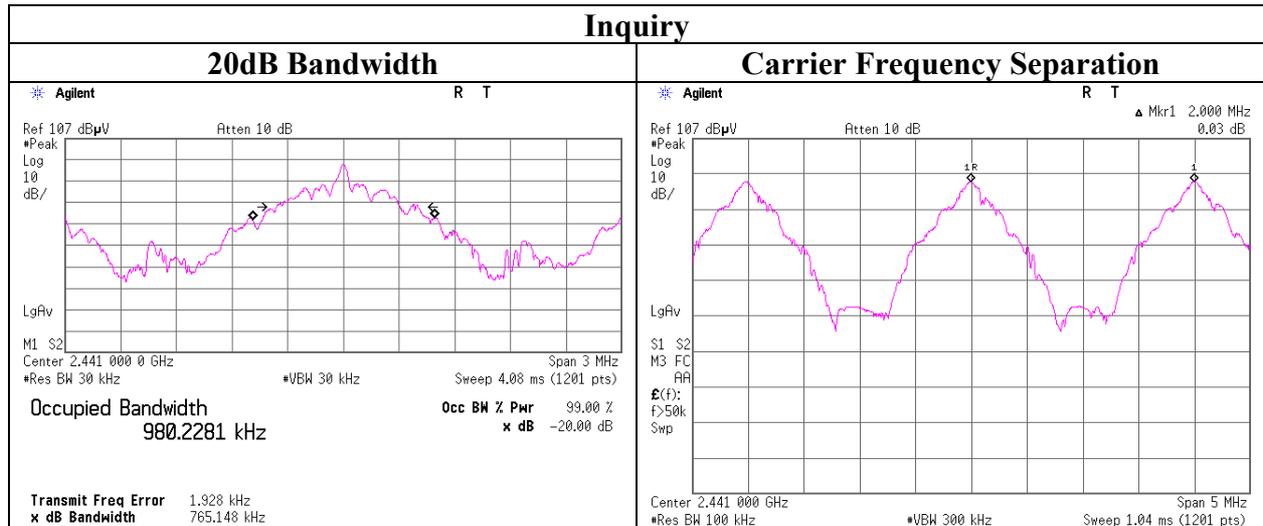
## 20dB Bandwidth and Carrier Frequency Separation

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	30GE0005-HO-01
Date	March 02, 2010
Temperature/ Humidity	23 deg.C./ 43%
Engineer	Hiroyuki Furutaka
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

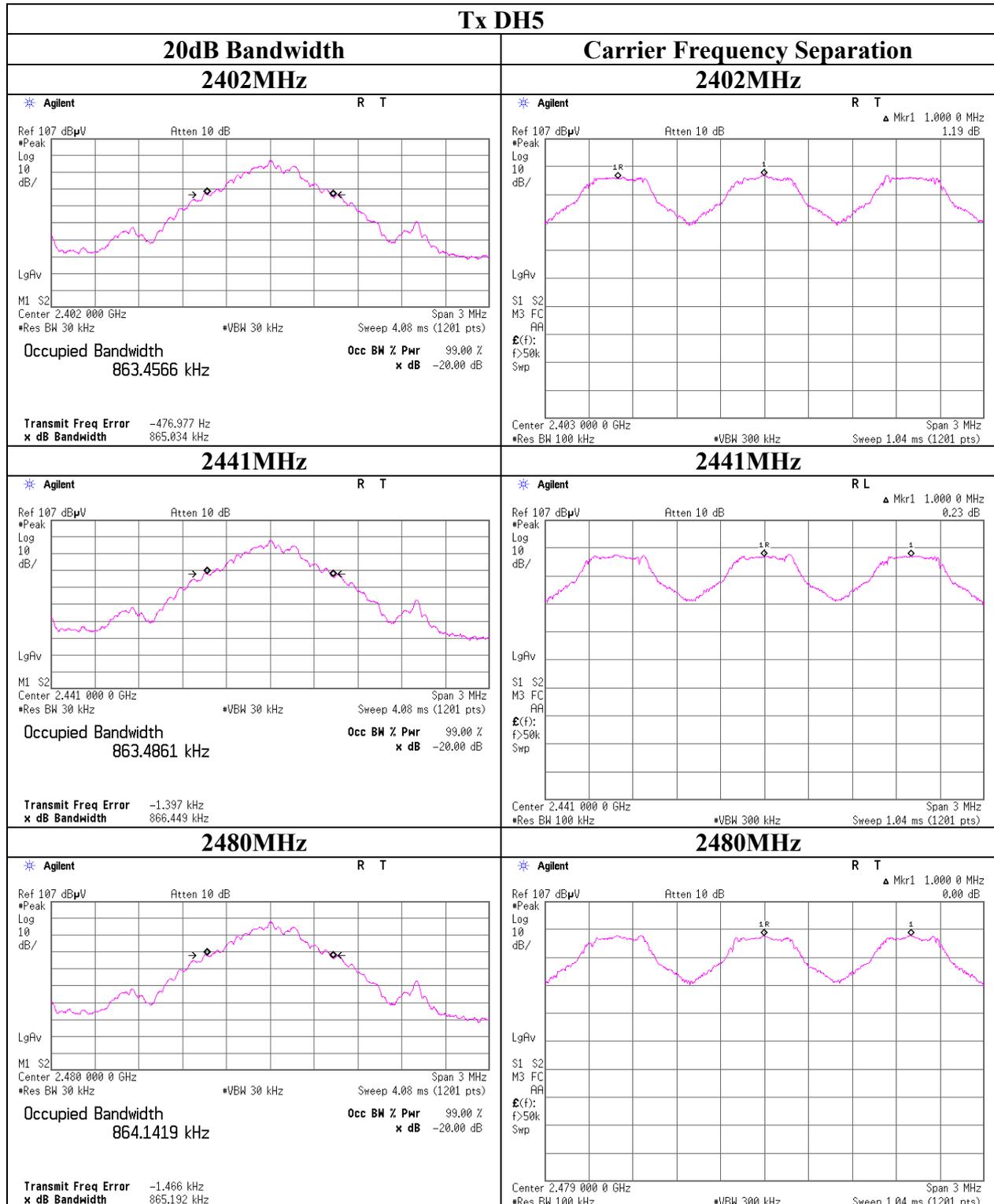
Mode	Freq. [MHz]	20dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.865	1.000	$\geq 0.577$
DH5	2441.0	0.866	1.000	$\geq 0.578$
DH5	2480.0	0.865	1.000	$\geq 0.577$
3DH5	2402.0	1.257	1.000	$\geq 0.838$
3DH5	2441.0	1.256	1.000	$\geq 0.837$
3DH5	2480.0	1.257	1.000	$\geq 0.838$
Inquiry	2441.0	0.765	2.000	$\geq 0.510$

Limit: Two-thirds of 20dB Bandwidth or 25kHz (whichever is greater).

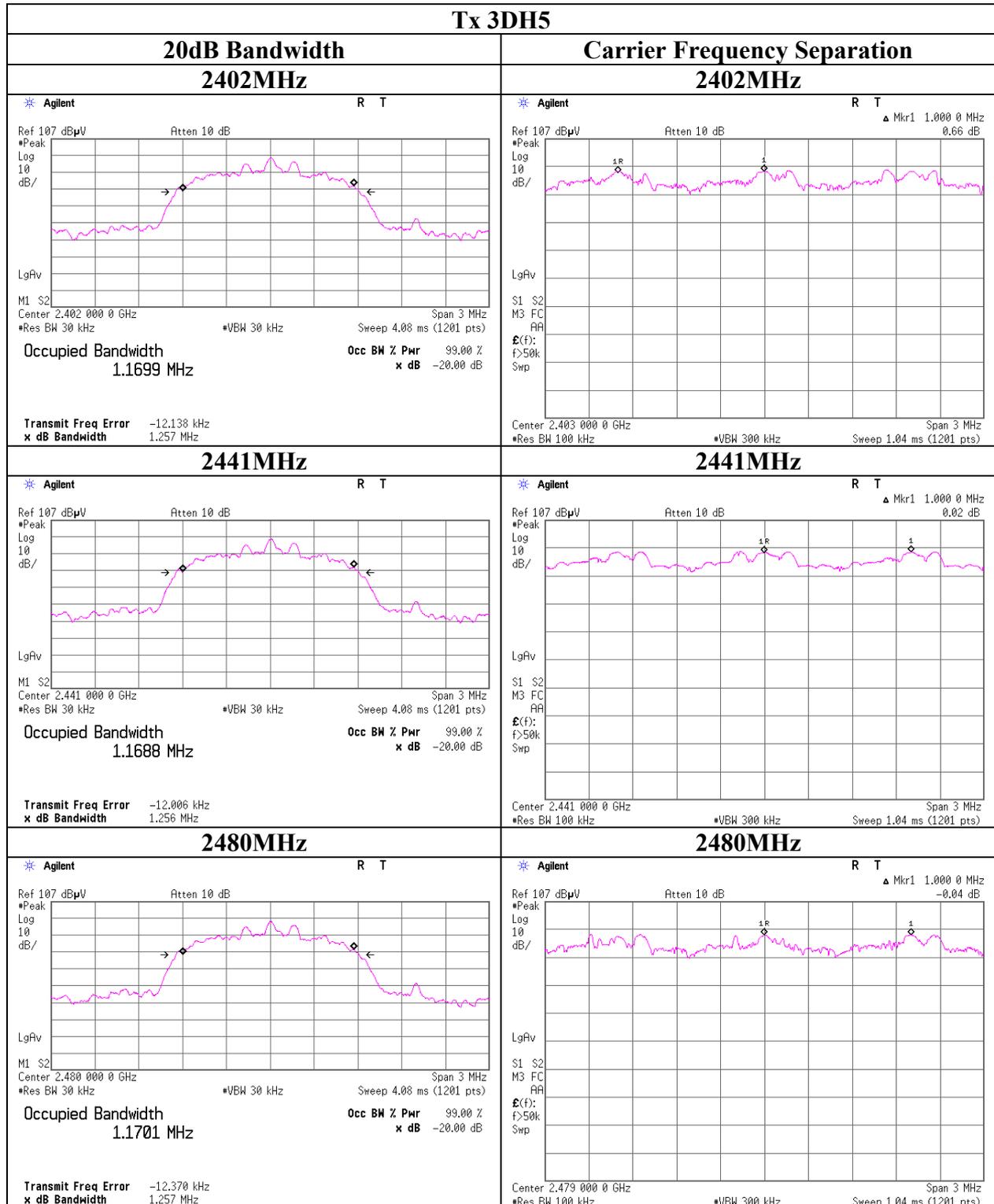
No limit applies to 20dB Bandwidth.



## 20dB Bandwidth and Carrier Frequency Separation



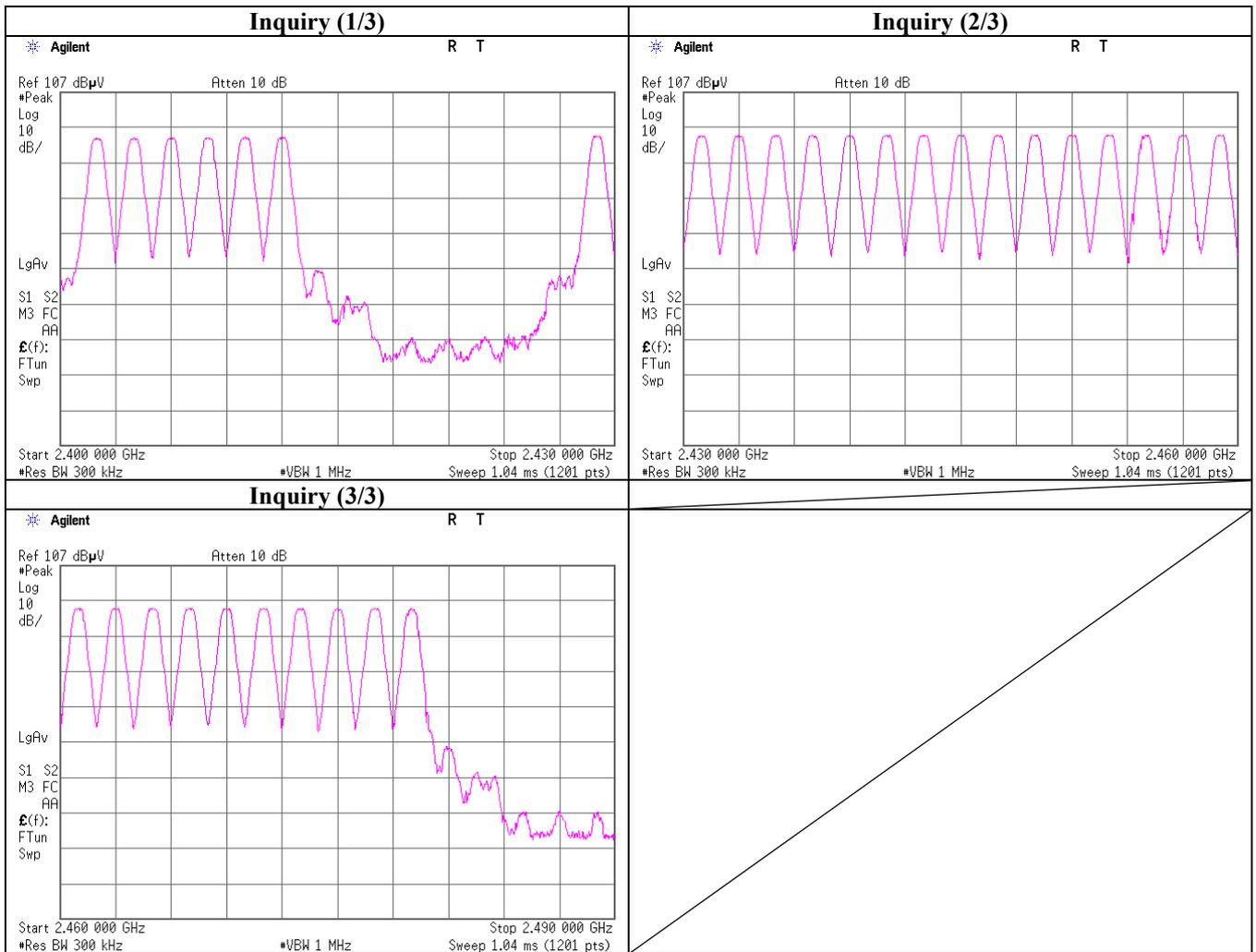
## 20dB Bandwidth and Carrier Frequency Separation



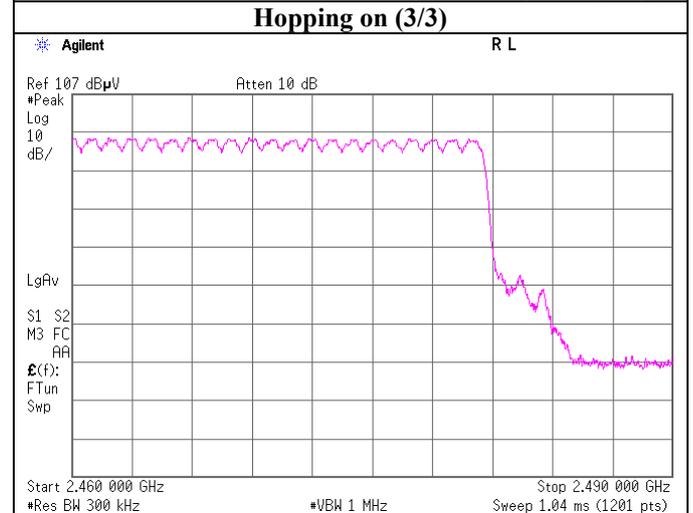
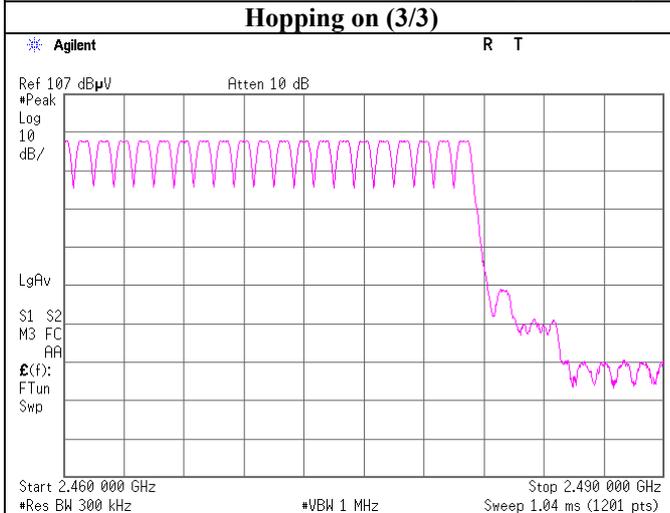
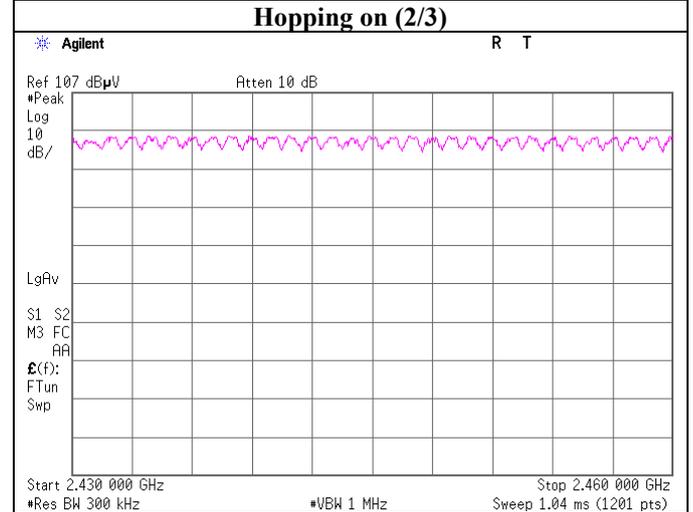
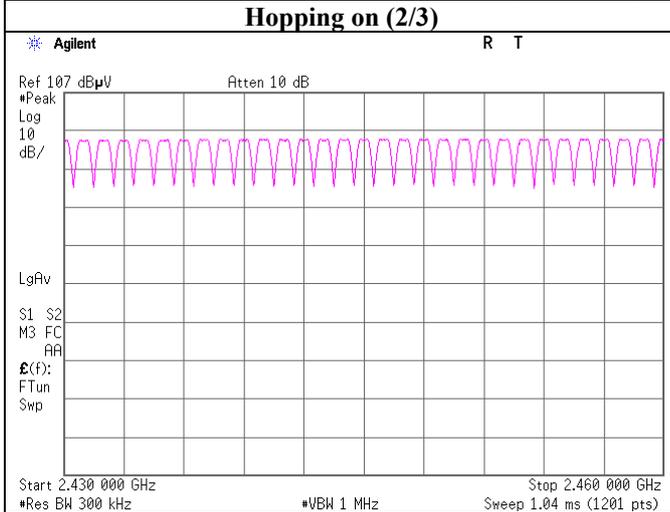
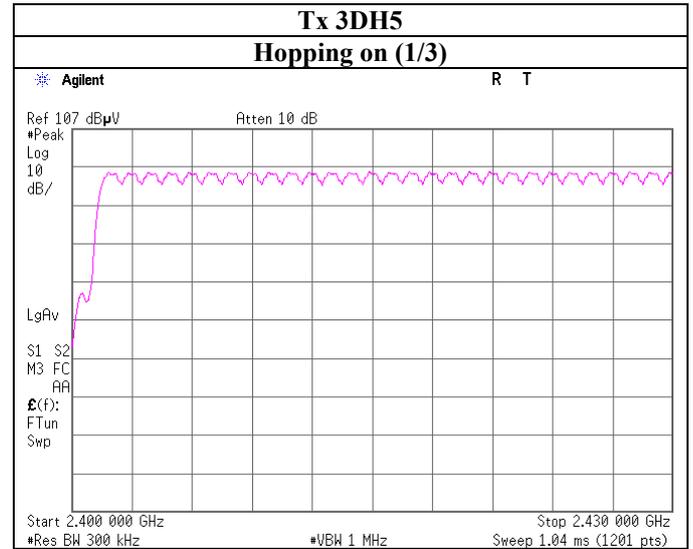
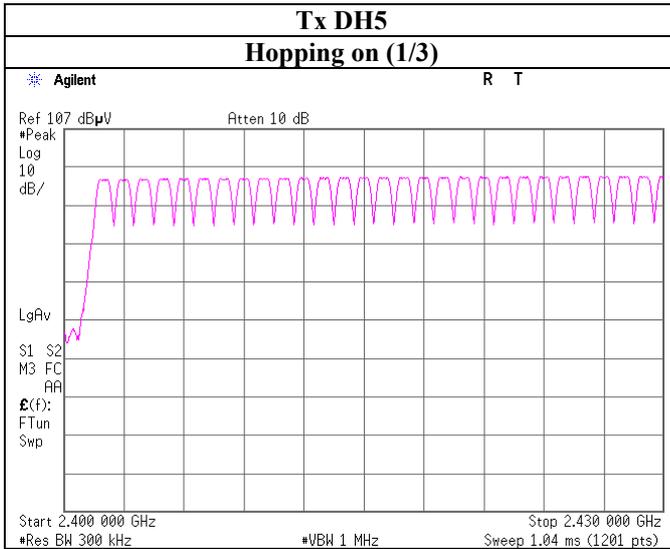
## Number of Hopping Frequency

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	30GE0005-HO-01
Date	March 02, 2010
Temperature/ Humidity	23 deg.C/ 43%
Engineer	Hiroyuki Furutaka
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.	30GE0005-HO-01
Date	March 02, 2010
Temperature/ Humidity	23 deg.C/ 43%
Engineer	Hiroyuki Furutaka
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	50.2 times / 5 sec. x 31.6 sec. = 318 times	0.540	172	400
DH3	25.2 times / 5 sec. x 31.6 sec. = 160 times	1.806	289	400
DH5	17.0 times / 5 sec. x 31.6 sec. = 108 times	3.070	332	400
3DH1	50.0 times / 5 sec. x 31.6 sec. = 316 times	0.562	177	400
3DH3	25.6 times / 5 sec. x 31.6 sec. = 162 times	1.821	295	400
3DH5	16.8 times / 5 sec. x 31.6 sec. = 107 times	3.091	331	400
Inquiry	100.0 times / 1 sec. x 12.8 sec. = 1280 times	0.242	309	400

Sample Calculation

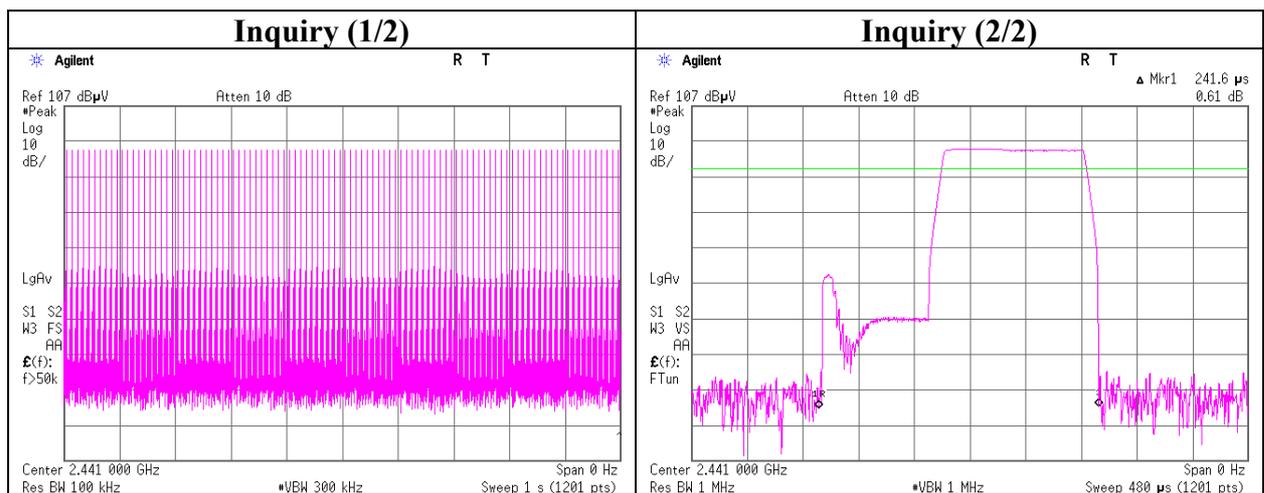
Result = Number of transmission x Length of transmission time

\*Average data of 5 tests.(except Inquiry)

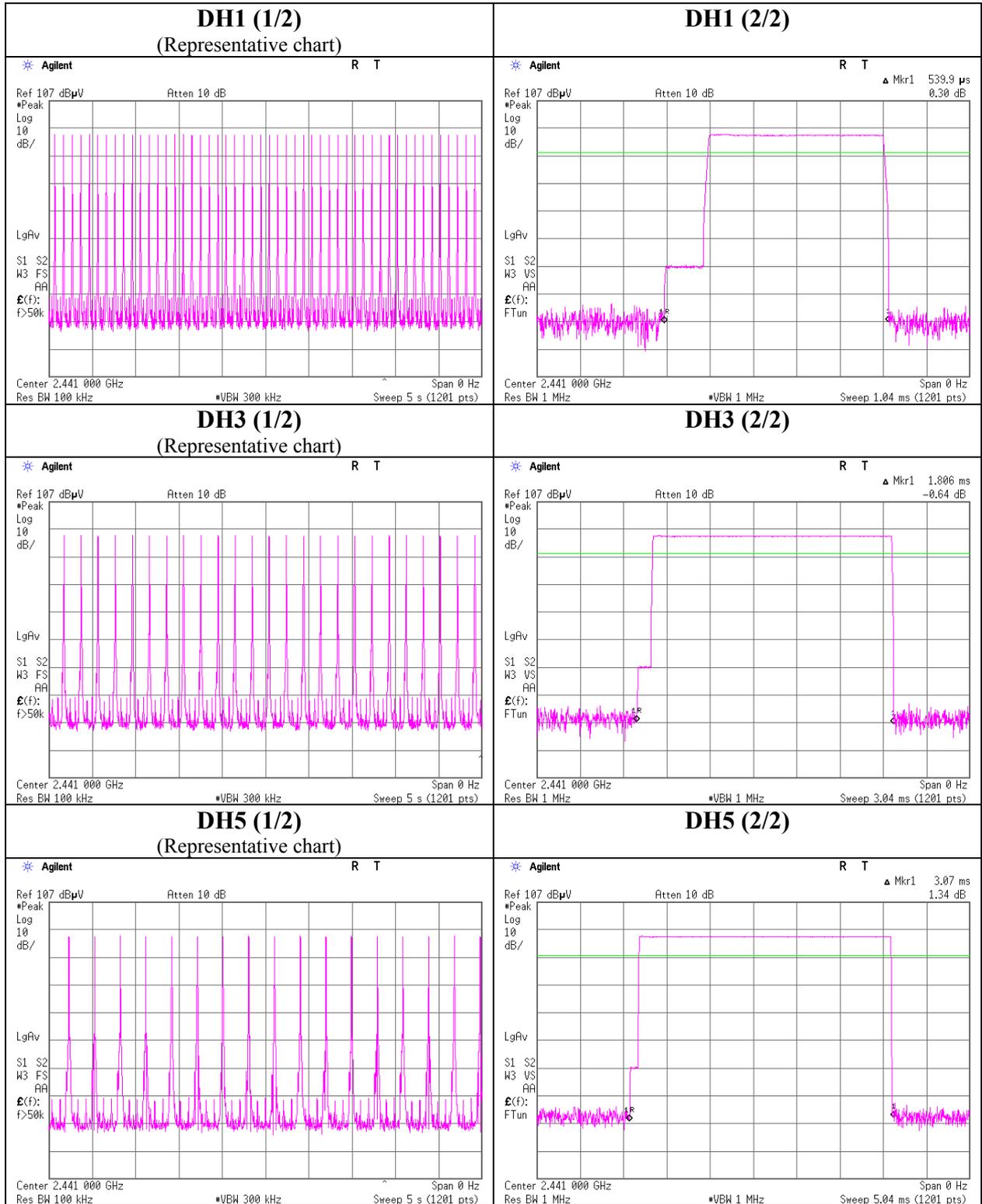
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	50	50	50	50	51	50.2
DH3	25	25	25	26	25	25.2
DH5	17	17	17	17	17	17
3DH1	50	50	50	50	50	50
3DH3	25	26	26	25	26	25.6
3DH5	16	17	17	17	17	16.8

Sample Calculation

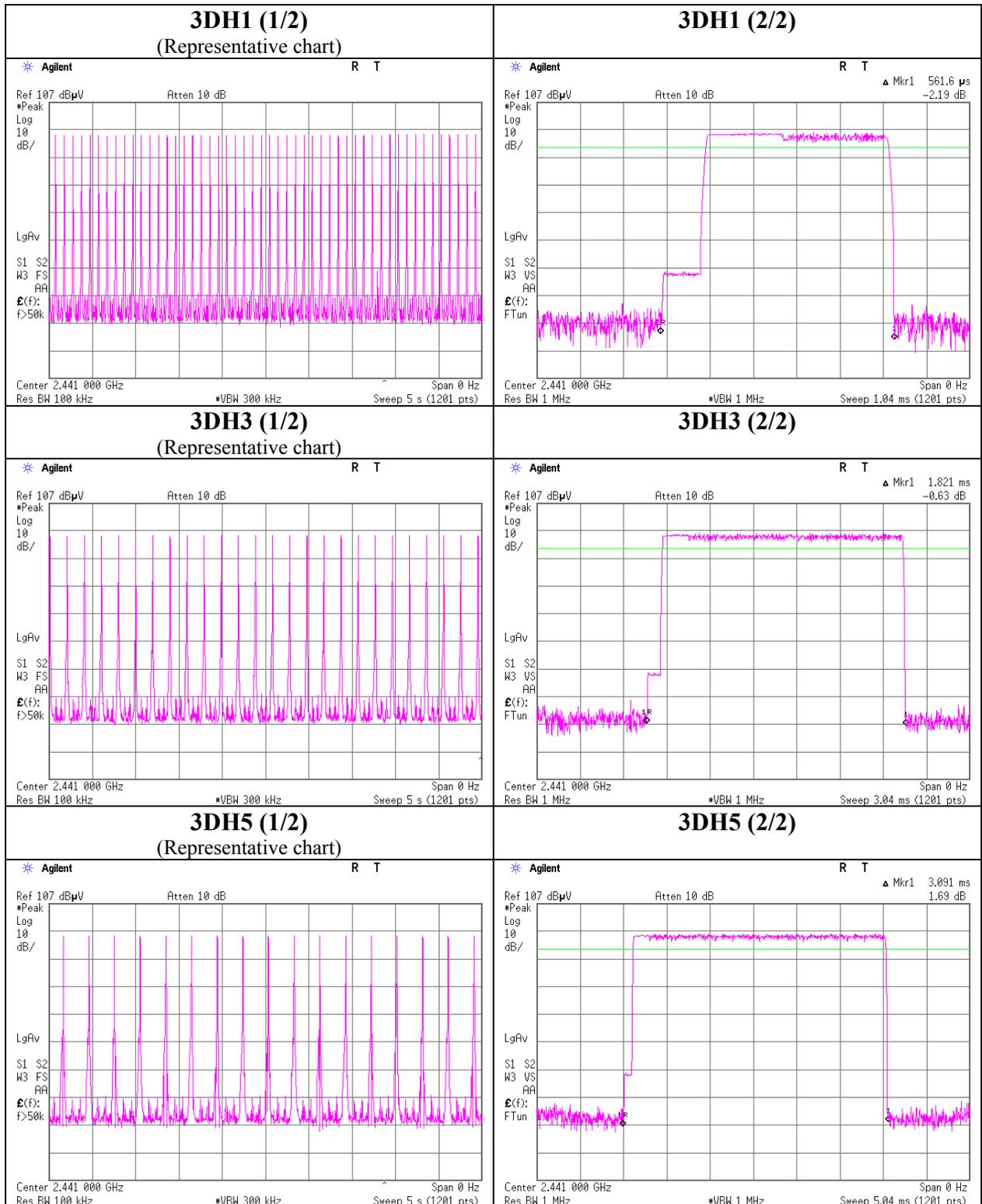
Average= Summation(Sampling 1 to 5) / 5



**Dwell time**



**Dwell time**



### Maximum Peak Output Power

Test place : Head Office EMC Lab. No.3 Measurement Room  
 Report No. : 30GE0005-HO-01  
 Date : March 24, 2010  
 Temperature/ Humidity : 22 deg.C/ 39%  
 Engineer : Takeshi Choda  
 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	-12.44	0.50	10.08	-1.86	0.65	20.97	125	22.83
DH5	2441.0	-11.41	0.50	10.08	-0.83	0.83	20.97	125	21.80
DH5	2480.0	-11.42	0.50	10.08	-0.84	0.82	20.97	125	21.81
2DH5	2402.0	-9.66	0.50	10.08	0.92	1.24	20.97	125	20.05
2DH5	2441.0	-9.43	0.50	10.08	1.15	1.30	20.97	125	19.82
2DH5	2480.0	-9.74	0.50	10.08	0.84	1.21	20.97	125	20.13
3DH5	2402.0	-9.51	0.50	10.08	1.07	1.28	20.97	125	19.90
3DH5	2441.0	-9.34	0.50	10.08	1.24	1.33	20.97	125	19.73
3DH5	2480.0	-9.67	0.50	10.08	0.91	1.23	20.97	125	20.06
Inquiry	2441.0	-11.35	0.50	10.08	-0.77	0.84	20.97	125	21.74

Sample Calculation:

Result = Reading + Cable Loss (supplied by customer)+ Attenuator

## Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Report No. 30GE0005-HO-01  
Date March 24, 2010 March 24, 2010  
Temperature/ Humidity 21deg.C./ 43% 22deg.C./ 44%  
Engineer Takumi Shimada Hiroyuki Furutaka  
(Above 1GHz) (Below 1GHz)  
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	52.000	QP	22.4	10.1	7.5	32.2	7.8	40.0	32.2	NS
Hori	78.000	QP	22.6	6.4	7.9	32.1	4.8	40.0	35.2	NS
Hori	104.000	QP	22.5	10.8	8.2	32.1	9.4	43.5	34.1	NS
Hori	130.000	QP	22.4	13.7	8.5	32.1	12.5	43.5	31.0	NS
Hori	156.000	QP	22.3	15.1	8.7	32.1	14.0	43.5	29.5	NS
Hori	312.000	QP	22.0	14.7	10.1	31.8	15.0	46.0	31.0	NS
Hori	2390.000	PK	44.5	27.2	2.6	32.5	41.8	73.9	32.1	
Hori	2400.000	PK	60.5	27.2	2.6	32.5	57.8	73.9	16.1	
Hori	4804.000	PK	41.5	31.7	5.1	31.8	46.5	73.9	27.4	
Hori	7206.000	PK	42.3	35.9	6.1	32.4	51.9	73.9	22.0	NS
Hori	9608.000	PK	43.1	38.4	6.8	32.9	55.4	73.9	18.5	NS
Hori	24020.000	PK	47.9	38.0	-1.3	31.0	53.6	73.9	20.3	NS
Hori	2390.000	AV	32.1	27.2	2.6	32.5	29.4	53.9	24.5	
Hori	2400.000	AV	49.6	27.2	2.6	32.5	46.9	53.9	7.0	
Hori	4804.000	AV	29.3	31.7	5.1	31.8	34.3	53.9	19.6	
Hori	7206.000	AV	30.1	35.9	6.1	32.4	39.7	53.9	14.2	NS
Hori	9608.000	AV	30.6	38.4	6.8	32.9	42.9	53.9	11.0	NS
Hori	24020.000	AV	35.4	38.0	-1.3	31.0	41.1	53.9	12.8	NS
Vert	52.000	QP	22.4	10.1	7.5	32.2	7.8	40.0	32.2	NS
Vert	78.000	QP	22.6	6.4	7.9	32.1	4.8	40.0	35.2	NS
Vert	104.000	QP	22.5	10.8	8.2	32.1	9.4	43.5	34.1	NS
Vert	130.000	QP	22.4	13.7	8.5	32.1	12.5	43.5	31.0	NS
Vert	156.000	QP	22.3	15.1	8.7	32.1	14.0	43.5	29.5	NS
Vert	312.000	QP	22.1	14.7	10.1	31.8	15.1	46.0	30.9	NS
Vert	2390.000	PK	43.5	27.2	2.6	32.5	40.8	73.9	33.1	
Vert	2400.000	PK	58.3	27.2	2.6	32.5	55.6	73.9	18.3	
Vert	4804.000	PK	41.7	31.7	5.1	31.8	46.7	73.9	27.2	
Vert	7206.000	PK	41.7	35.9	6.1	32.4	51.3	73.9	22.6	NS
Vert	9608.000	PK	42.3	38.4	6.8	32.9	54.6	73.9	19.3	NS
Vert	24020.000	PK	47.9	38.0	-1.3	31.0	53.6	73.9	20.3	NS
Vert	2390.000	AV	31.3	27.2	2.6	32.5	28.6	53.9	25.3	
Vert	2400.000	AV	47.3	27.2	2.6	32.5	44.6	53.9	9.4	
Vert	4804.000	AV	30.5	31.7	5.1	31.8	35.5	53.9	18.4	
Vert	7206.000	AV	30.1	35.9	6.1	32.4	39.7	53.9	14.2	NS
Vert	9608.000	AV	30.7	38.4	6.8	32.9	43.0	53.9	10.9	NS
Vert	24020.000	AV	35.5	38.0	-1.3	31.0	41.2	53.9	12.7	NS

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  
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

NS:Non Signal



### Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Report No. 30GE0005-HO-01  
Date March 24, 2010 March 24, 2010  
Temperature/ Humidity 21deg.C./ 43% 22deg.C./ 44%  
Engineer Takumi Shimada Hiroyuki Furutaka  
(Above 1GHz) (Below 1GHz)  
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	52.000	QP	22.3	10.1	7.5	32.2	7.7	40.0	32.3	NS
Hori	78.000	QP	22.6	6.4	7.9	32.1	4.8	40.0	35.2	NS
Hori	104.000	QP	22.5	10.8	8.2	32.1	9.4	43.5	34.1	NS
Hori	130.000	QP	22.3	13.7	8.5	32.1	12.4	43.5	31.1	NS
Hori	156.000	QP	22.4	15.1	8.7	32.1	14.1	43.5	29.4	NS
Hori	312.000	QP	22.0	14.7	10.1	31.8	15.0	46.0	31.0	NS
Hori	2483.500	PK	59.8	27.3	2.7	32.4	57.4	73.9	16.5	
Hori	4960.000	PK	40.9	31.9	5.3	31.8	46.3	73.9	27.6	
Hori	7440.000	PK	41.7	36.3	6.1	32.5	51.6	73.9	22.3	NS
Hori	9920.000	PK	42.1	38.9	6.9	33.0	54.9	73.9	19.0	NS
Hori	24800.000	PK	47.8	39.1	-1.1	30.5	55.3	73.9	18.6	NS
Hori	2483.500	AV	48.0	27.3	2.7	32.4	45.6	53.9	8.3	
Hori	4960.000	AV	29.4	31.9	5.3	31.8	34.8	53.9	19.1	
Hori	7440.000	AV	30.0	36.3	6.1	32.5	39.9	53.9	14.0	NS
Hori	9920.000	AV	30.6	38.9	6.9	33.0	43.4	53.9	10.5	NS
Hori	24800.000	AV	35.9	39.1	-1.1	30.5	43.4	53.9	10.5	NS
Vert	52.000	QP	22.4	10.1	7.5	32.2	7.8	40.0	32.2	NS
Vert	78.000	QP	22.6	6.4	7.9	32.1	4.8	40.0	35.2	NS
Vert	104.000	QP	22.6	10.8	8.2	32.1	9.5	43.5	34.0	NS
Vert	130.000	QP	22.4	13.7	8.5	32.1	12.5	43.5	31.0	NS
Vert	156.000	QP	22.3	15.1	8.7	32.1	14.0	43.5	29.5	NS
Vert	312.000	QP	22.0	14.7	10.1	31.8	15.0	46.0	31.0	NS
Vert	2483.500	PK	56.8	27.3	2.7	32.4	54.4	73.9	19.5	
Vert	4960.000	PK	41.6	31.9	5.3	31.8	47.0	73.9	26.9	
Vert	7440.000	PK	41.7	36.3	6.1	32.5	51.6	73.9	22.3	NS
Vert	9920.000	PK	43.0	38.9	6.9	33.0	55.8	73.9	18.1	NS
Vert	24800.000	PK	47.5	39.1	-1.1	30.5	55.0	73.9	18.9	NS
Vert	2483.500	AV	44.4	27.3	2.7	32.4	42.0	53.9	11.9	
Vert	4960.000	AV	29.9	31.9	5.3	31.8	35.3	53.9	18.6	
Vert	7440.000	AV	30.0	36.3	6.1	32.5	39.9	53.9	14.0	NS
Vert	9920.000	AV	30.5	38.9	6.9	33.0	43.3	53.9	10.6	NS
Vert	24800.000	AV	36.0	39.1	-1.1	30.5	43.5	53.9	10.4	NS

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

26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

NS: Non Signal

## Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Report No. 30GE0005-HO-01  
Date March 24, 2010 March 24, 2010  
Temperature/ Humidity 21deg.C./ 43% 22deg.C./ 44%  
Engineer Takumi Shimada Hiroyuki Furutaka  
(Above 1GHz) (Below 1GHz)  
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	52.000	QP	22.4	10.1	7.5	32.2	7.8	40.0	32.2	NS
Hori	78.000	QP	22.7	6.4	7.9	32.1	4.9	40.0	35.1	NS
Hori	104.000	QP	22.5	10.8	8.2	32.1	9.4	43.5	34.1	NS
Hori	130.000	QP	22.4	13.7	8.5	32.1	12.5	43.5	31.0	NS
Hori	156.000	QP	22.5	15.1	8.7	32.1	14.2	43.5	29.3	NS
Hori	312.000	QP	22.1	14.7	10.1	31.8	15.1	46.0	30.9	NS
Hori	2390.000	PK	45.6	27.2	2.6	32.5	42.9	73.9	31.0	
Hori	2400.000	PK	66.6	27.2	2.6	32.5	63.9	73.9	10.0	
Hori	4804.000	PK	40.6	31.7	5.1	31.8	45.6	73.9	28.3	NS
Hori	7206.000	PK	43.1	35.9	6.1	32.4	52.7	73.9	21.2	NS
Hori	9608.000	PK	42.4	38.4	6.8	32.9	54.7	73.9	19.2	NS
Hori	24020.000	PK	47.8	38.0	-1.3	31.0	53.5	73.9	20.4	NS
Hori	2390.000	AV	32.7	27.2	2.6	32.5	30.0	53.9	23.9	
Hori	2400.000	AV	51.4	27.2	2.6	32.5	48.7	53.9	5.2	
Hori	4804.000	AV	28.4	31.7	5.1	31.8	33.4	53.9	20.5	NS
Hori	7206.000	AV	30.1	35.9	6.1	32.4	39.7	53.9	14.2	NS
Hori	9608.000	AV	30.5	38.4	6.8	32.9	42.8	53.9	11.1	NS
Hori	24020.000	AV	35.5	38.0	-1.3	31.0	41.2	53.9	12.7	NS
Vert	52.000	QP	22.5	10.1	7.5	32.2	7.9	40.0	32.1	NS
Vert	78.000	QP	22.5	6.4	7.9	32.1	4.7	40.0	35.3	NS
Vert	104.000	QP	22.7	10.8	8.2	32.1	9.6	43.5	33.9	NS
Vert	130.000	QP	22.5	13.7	8.5	32.1	12.6	43.5	30.9	NS
Vert	156.000	QP	22.4	15.1	8.7	32.1	14.1	43.5	29.4	NS
Vert	312.000	QP	22.1	14.7	10.1	31.8	15.1	46.0	30.9	NS
Vert	2390.000	PK	44.2	27.2	2.6	32.5	41.5	73.9	32.4	
Vert	2400.000	PK	65.2	27.2	2.6	32.5	62.5	73.9	11.4	
Vert	4804.000	PK	41.2	31.7	5.1	31.8	46.2	73.9	27.7	NS
Vert	7206.000	PK	42.2	35.9	6.1	32.4	51.8	73.9	22.1	NS
Vert	9608.000	PK	42.6	38.4	6.8	32.9	54.9	73.9	19.0	NS
Vert	24020.000	PK	48.0	38.0	-1.3	31.0	53.7	73.9	20.2	NS
Vert	2390.000	AV	32.5	27.2	2.6	32.5	29.8	53.9	24.1	
Vert	2400.000	AV	49.8	27.2	2.6	32.5	47.1	53.9	6.8	
Vert	4804.000	AV	28.5	31.7	5.1	31.8	33.5	53.9	20.4	NS
Vert	7206.000	AV	30.1	35.9	6.1	32.4	39.7	53.9	14.2	NS
Vert	9608.000	AV	30.5	38.4	6.8	32.9	42.8	53.9	11.1	NS
Vert	24020.000	AV	35.4	38.0	-1.3	31.0	41.1	53.9	12.8	NS

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  
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

NS:Non Signal





**Radiated Spurious Emission**  
(Marker Delta Method Sheet)

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	30GE0005-HO-01	
Date	March 24, 2010	March 24, 2010
Temperature/ Humidity	22deg.C./ 44%	22deg.C./ 44%
Engineer	Hiroyuki Furutaka (Above 1GHz)	Hiroyuki Furutaka (Below 1GHz)
Mode	Tx, 3DH5 2480MHz	

Marker Delta Method(Test distance 3meters)

		Polarity	Hor[dBμV/m]		Ver[dBμV/m]	
		Detector	PK	AV	PK	AV
		RBW \ VBW	3MHz	10Hz	3MHz	10Hz
Step1	Fundamental(2480.0MHz)	1MHz	101.4	96.3	98.5	93.2
Step2	Fundamental(2480.0MHz)	30kHz	101.1	-	98.2	-
	Band-edge(2483.5MHz)	30kHz	52.8	-	49.3	-
	Amplitude delta*1	-	48.3	48.3	48.9	48.9
Step3	Field strength of band-edge*2	-	53.1	48.0	49.6	44.3
	Limit	-	73.9	53.9	73.9	53.9
	Margin	-	20.8	5.9	24.3	9.6

\*1 Amplitude delta = Fundamental(RBW:30kHz,VBW:3MHz) - Band-edge(RBW:30kHz,VBW:3MHz)

\*2Field strength of band-edge = Fundamental(RBW:1MHz) - Amplitude delta

**Radiated Spurious Emission**

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Report No. 30GE0005-HO-01  
Date March 24, 2010 March 24, 2010  
Temperature/ Humidity 22deg.C./ 44% 22deg.C./ 44%  
Engineer Hiroyuki Furutaka Hiroyuki Furutaka  
(Above 1GHz) (Below 1GHz)  
Mode Rx, 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	52.000	QP	22.4	10.1	7.5	32.2	7.8	40.0	32.2	NS
Hori	78.000	QP	22.6	6.4	7.9	32.1	4.8	40.0	35.2	NS
Hori	104.000	QP	22.6	10.8	8.2	32.1	9.5	43.5	34.0	NS
Hori	130.000	QP	22.4	13.7	8.5	32.1	12.5	43.5	31.0	NS
Hori	156.000	QP	22.2	15.1	8.7	32.1	13.9	43.5	29.6	NS
Hori	312.000	QP	22.0	14.7	10.1	31.8	15.0	46.0	31.0	NS
Hori	2439.500	PK	43.1	27.2	2.7	32.4	40.6	73.9	33.3	
Hori	2441.000	PK	42.4	27.2	2.7	32.4	39.9	73.9	34.0	NS
Hori	4879.000	PK	40.7	31.8	3.9	31.8	44.6	73.9	29.3	NS
Hori	7318.500	PK	41.5	36.1	4.7	32.4	49.9	73.9	24.0	NS
Hori	2439.500	AV	31.2	27.2	2.7	32.4	28.7	53.9	25.2	
Hori	2441.000	AV	30.2	27.2	2.7	32.4	27.7	53.9	26.2	NS
Hori	4879.000	AV	28.6	31.8	3.9	31.8	32.5	53.9	21.4	NS
Hori	7318.500	AV	30.1	36.1	4.7	32.4	38.5	53.9	15.4	NS
Vert	52.000	QP	22.4	10.1	7.5	32.2	7.8	40.0	32.2	NS
Vert	78.000	QP	22.6	6.4	7.9	32.1	4.8	40.0	35.2	NS
Vert	104.000	QP	22.6	10.8	8.2	32.1	9.5	43.5	34.0	NS
Vert	130.000	QP	22.4	13.7	8.5	32.1	12.5	43.5	31.0	NS
Vert	156.000	QP	22.3	15.1	8.7	32.1	14.0	43.5	29.5	NS
Vert	312.000	QP	22.0	14.7	10.1	31.8	15.0	46.0	31.0	NS
Vert	2439.500	PK	44.3	27.2	2.7	32.4	41.8	73.9	32.1	
Vert	2441.000	PK	42.4	27.2	2.7	32.4	39.9	73.9	34.0	NS
Vert	4879.000	PK	41.0	31.8	3.9	31.8	44.9	73.9	29.0	NS
Vert	7318.500	PK	42.0	36.1	4.7	32.4	50.4	73.9	23.5	NS
Vert	2439.500	AV	33.1	27.2	2.7	32.4	30.6	53.9	23.3	
Vert	2441.000	AV	28.8	27.2	2.7	32.4	26.3	53.9	27.6	NS
Vert	4879.000	AV	28.6	31.8	3.9	31.8	32.5	53.9	21.4	NS
Vert	7318.500	AV	30.1	36.1	4.7	32.4	38.5	53.9	15.4	NS

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

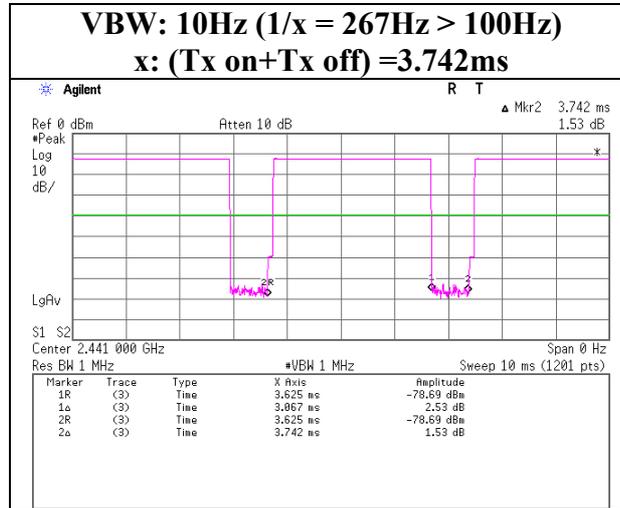
\*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB  
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

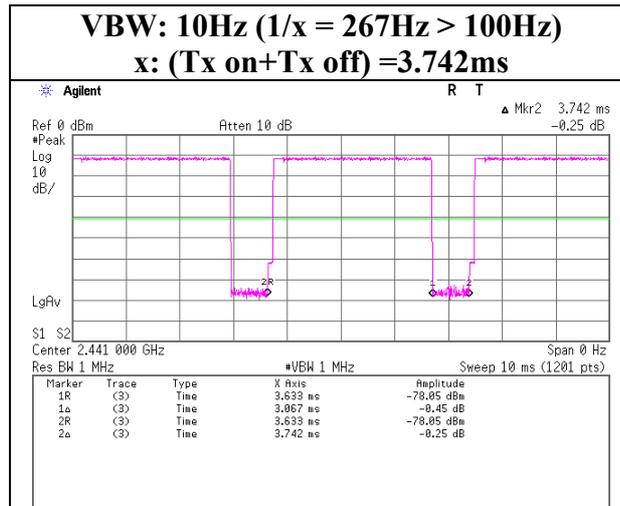
NS: Non Signal

## VBW (AV) Calculation

### Tx DH5

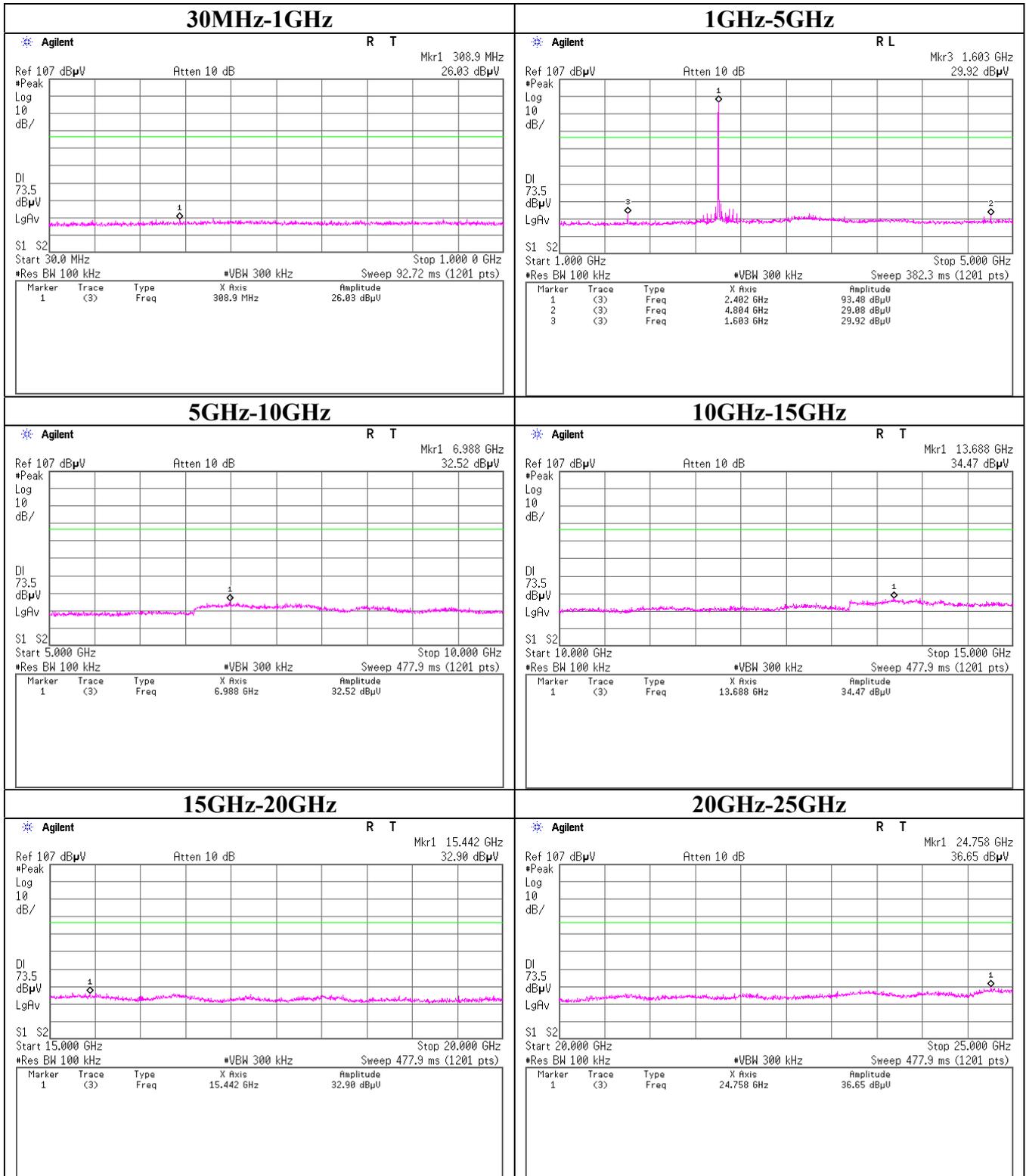


### Tx 3DH5



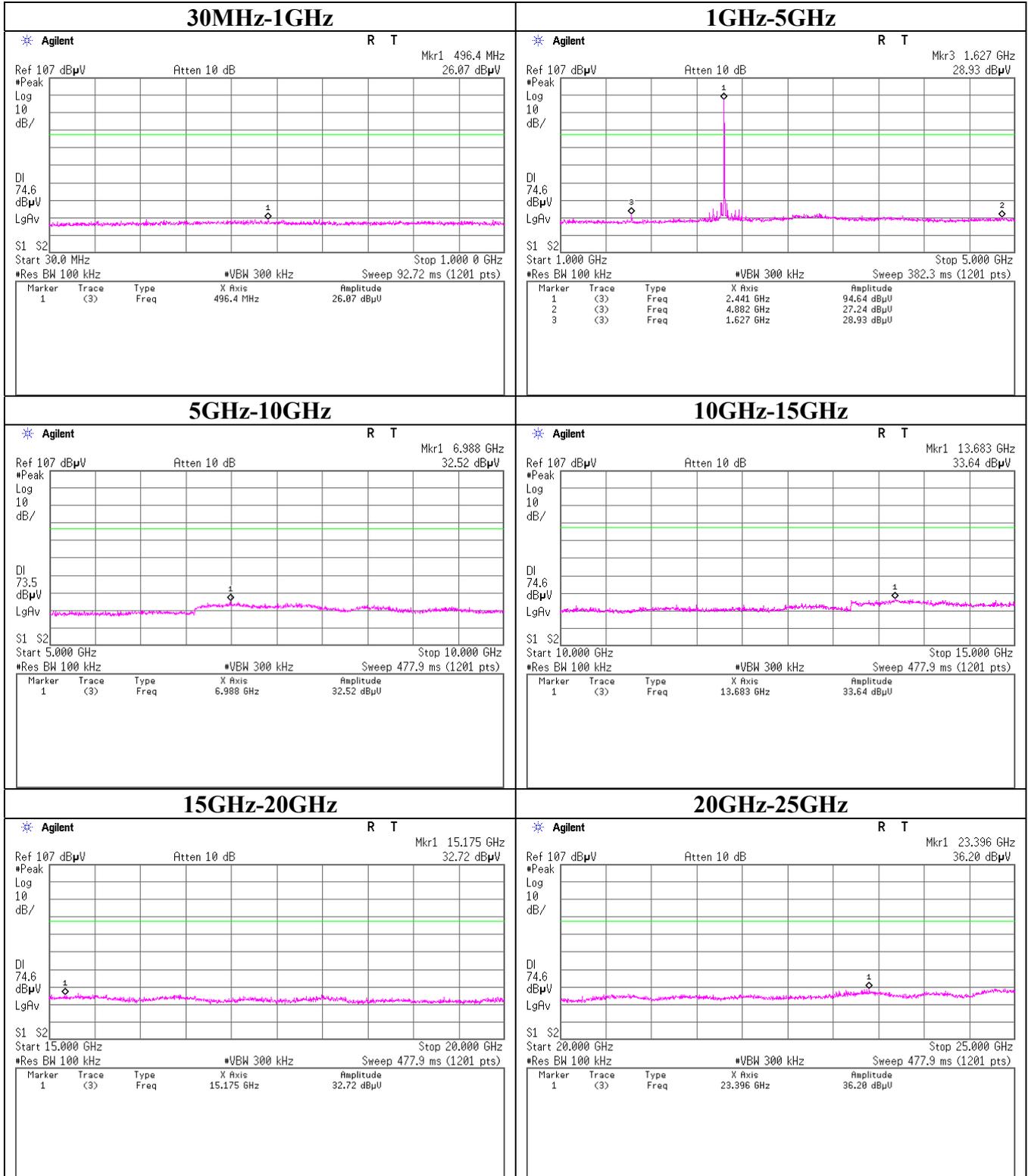
## Conducted Spurious Emission

### Tx DH5 2402MHz



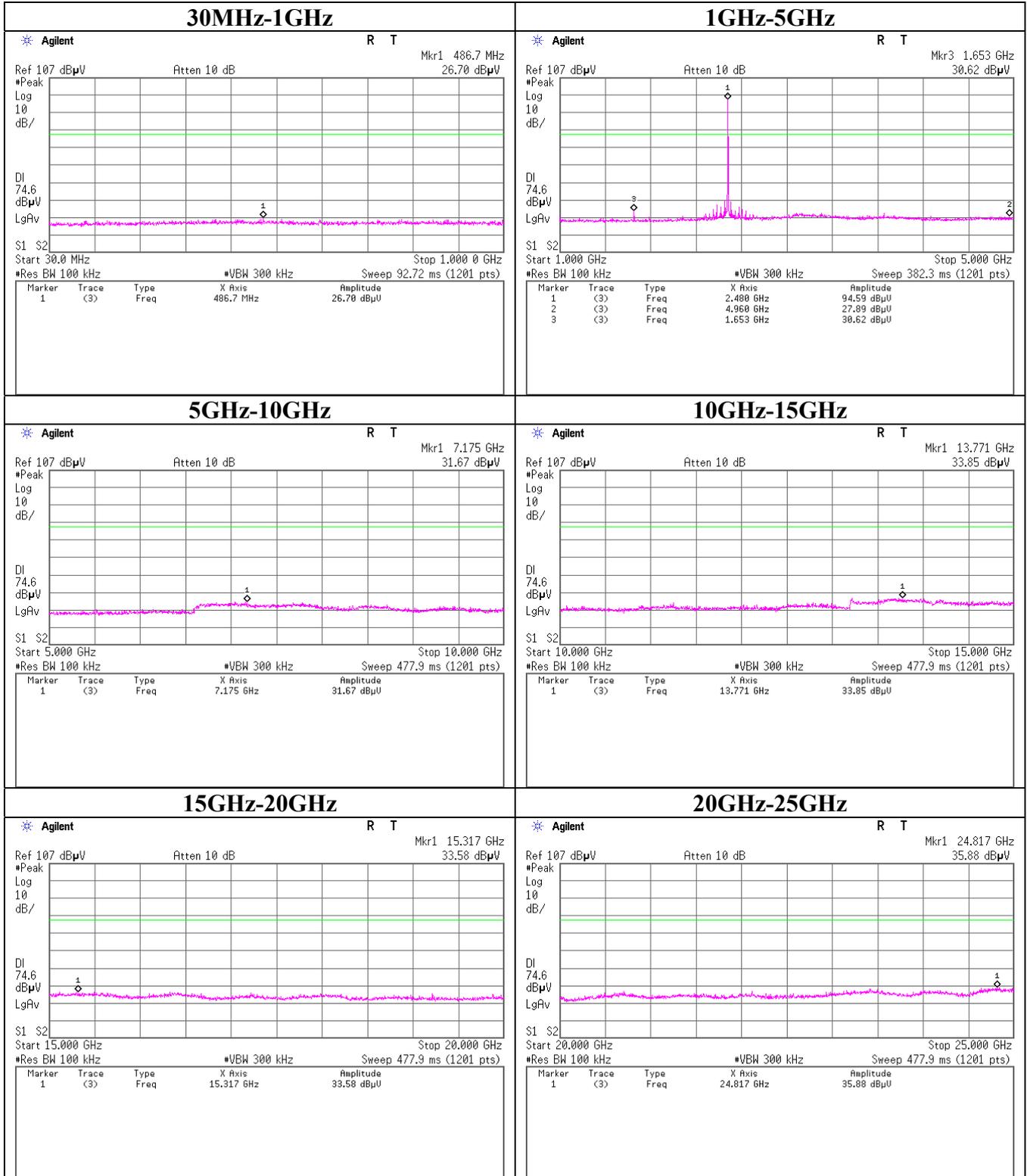
## Conducted Spurious Emission

### Tx DH5 2441MHz



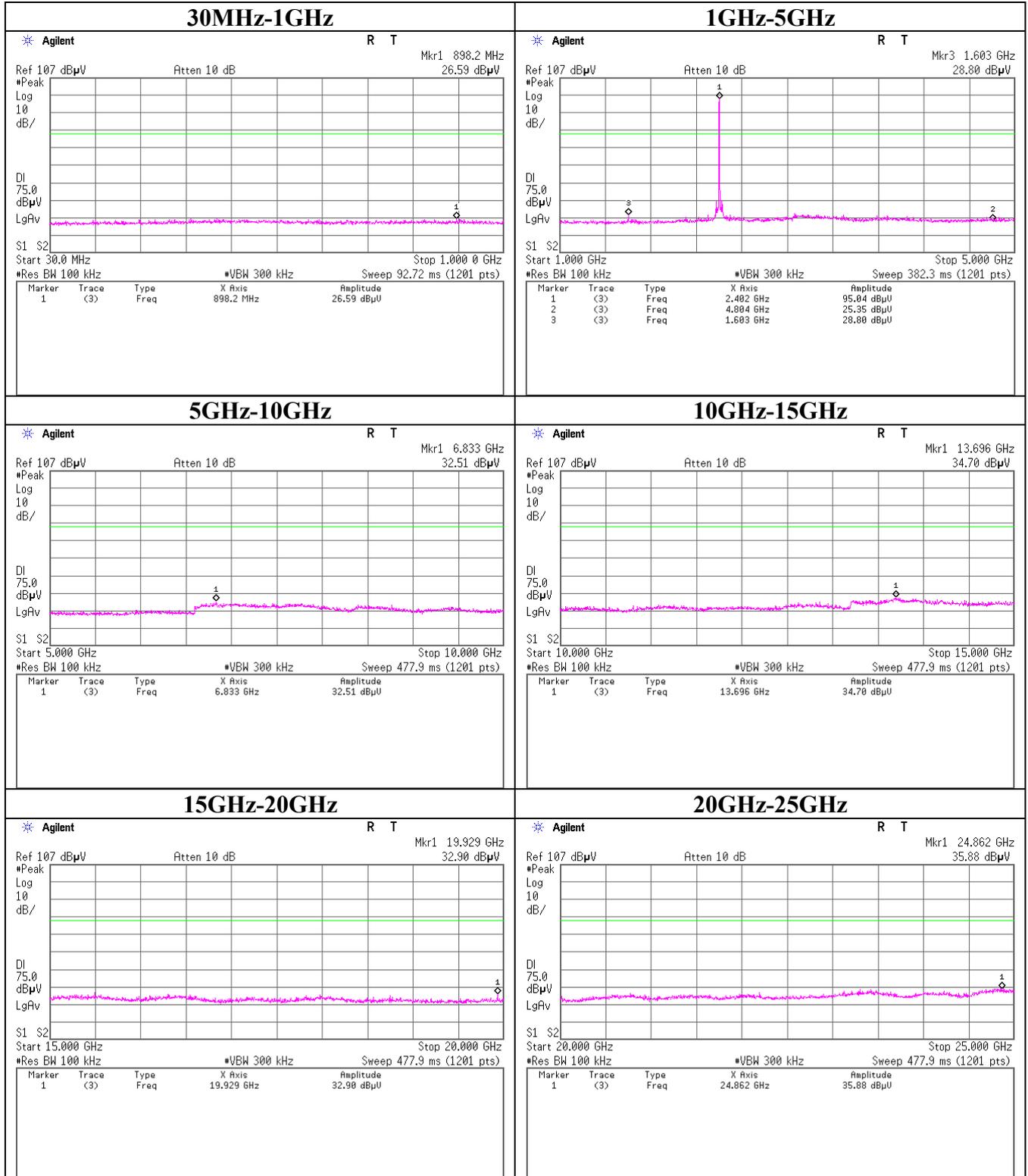
## Conducted Spurious Emission

### Tx DH5 2480MHz



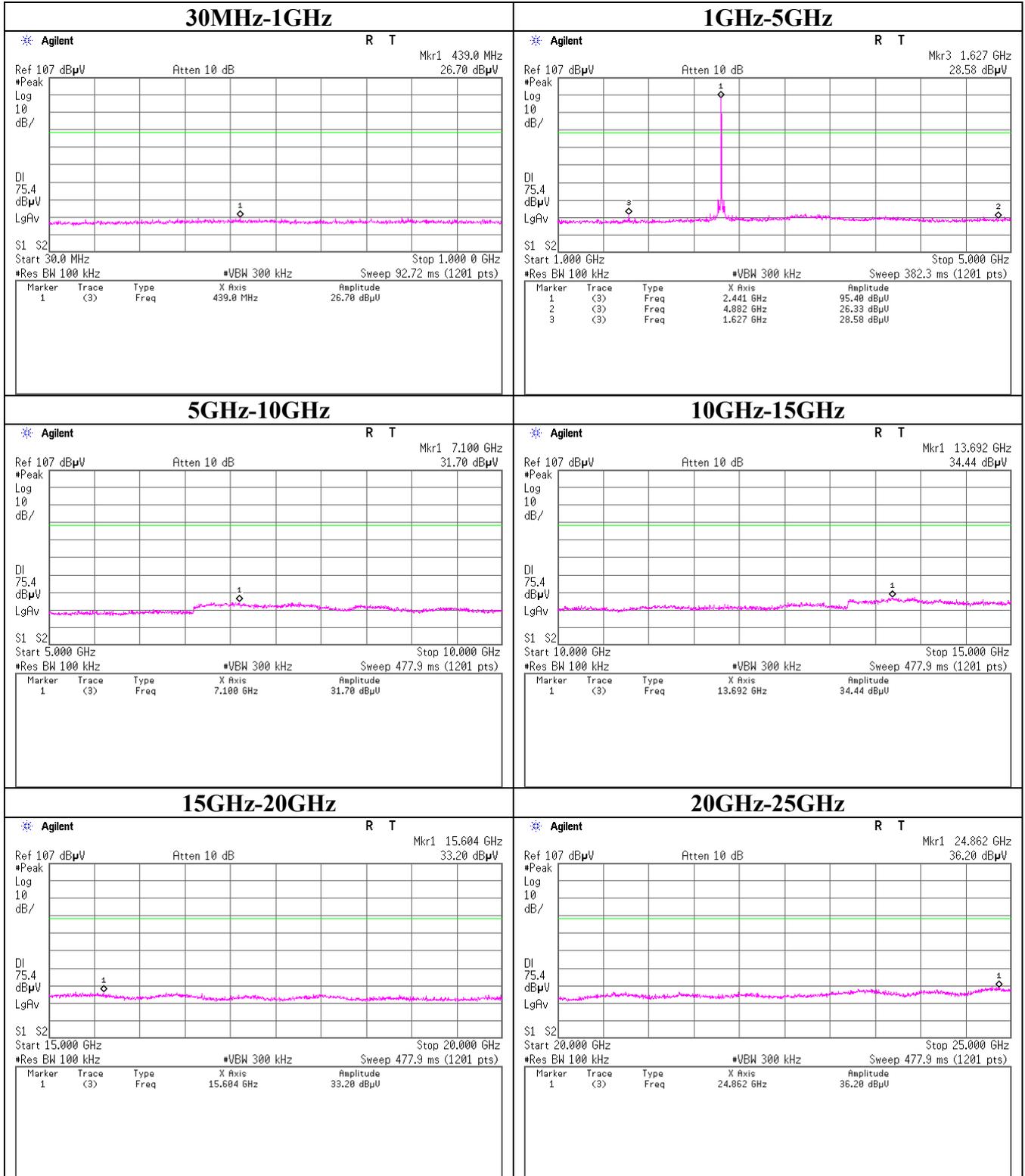
## Conducted Spurious Emission

### Tx 3DH5 2402MHz



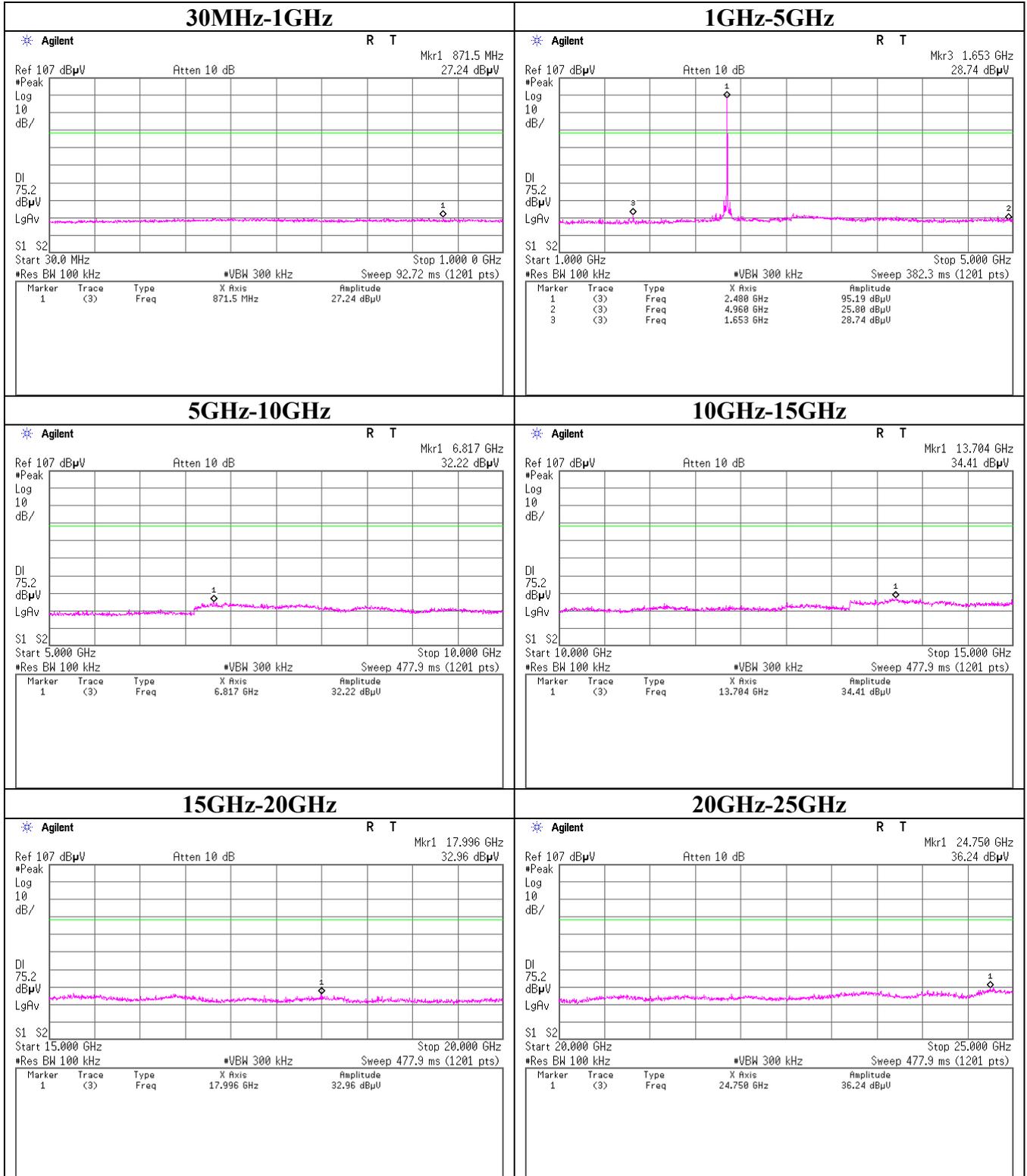
## Conducted Spurious Emission

### Tx 3DH5 2441MHz



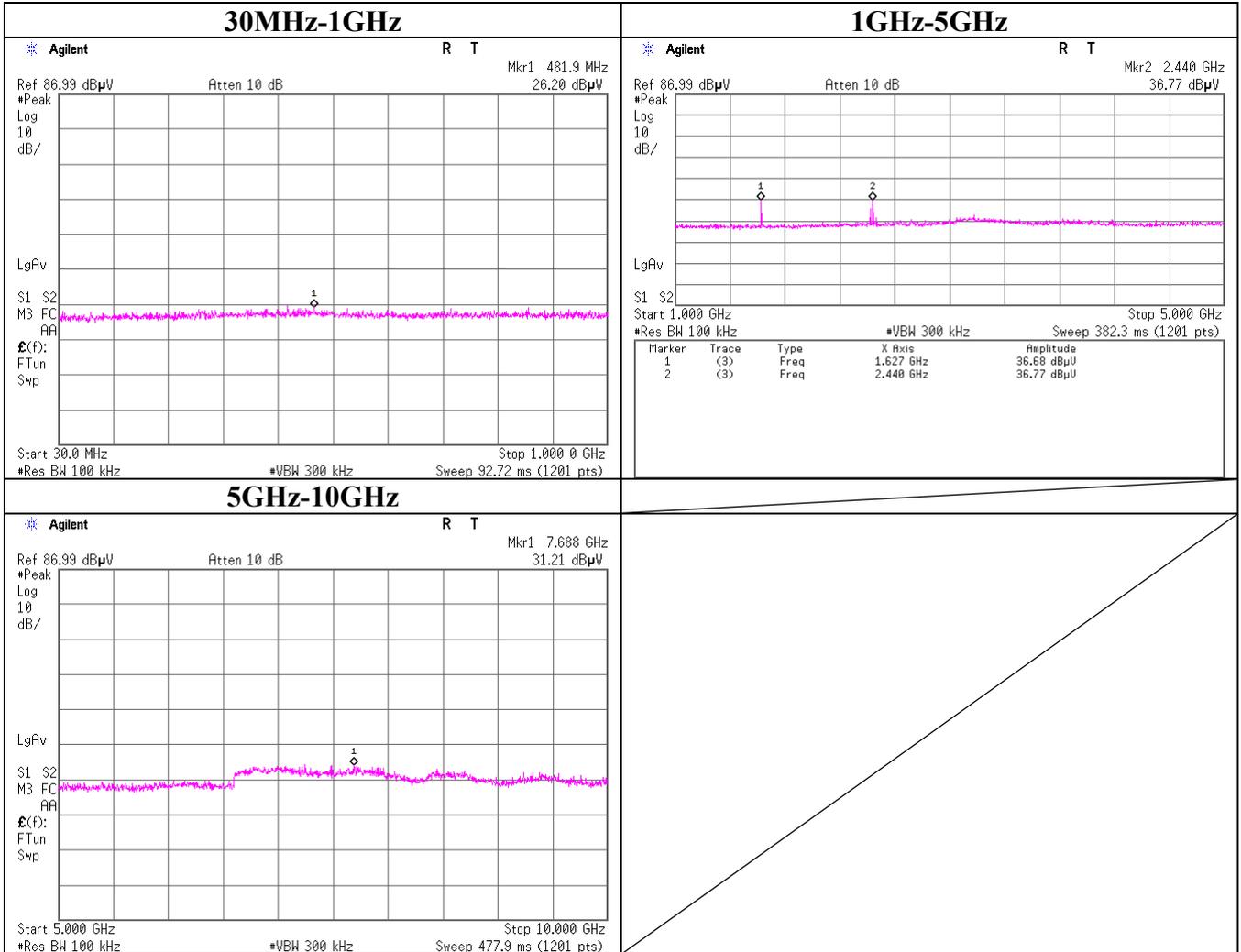
## Conducted Spurious Emission

### Tx 3DH5 2480MHz



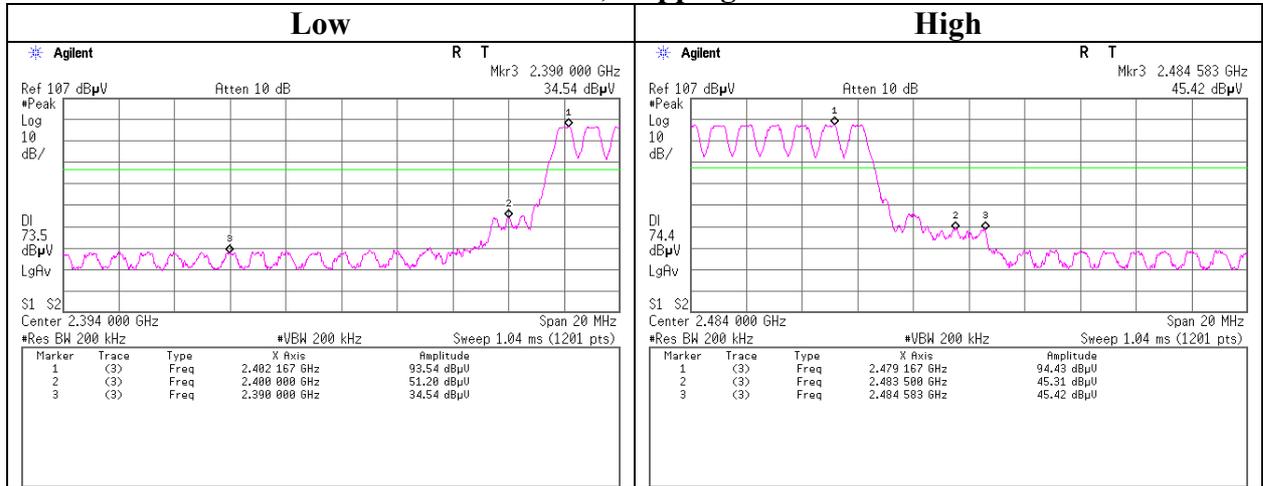
## Conducted Spurious Emission

### Rx 2441MHz

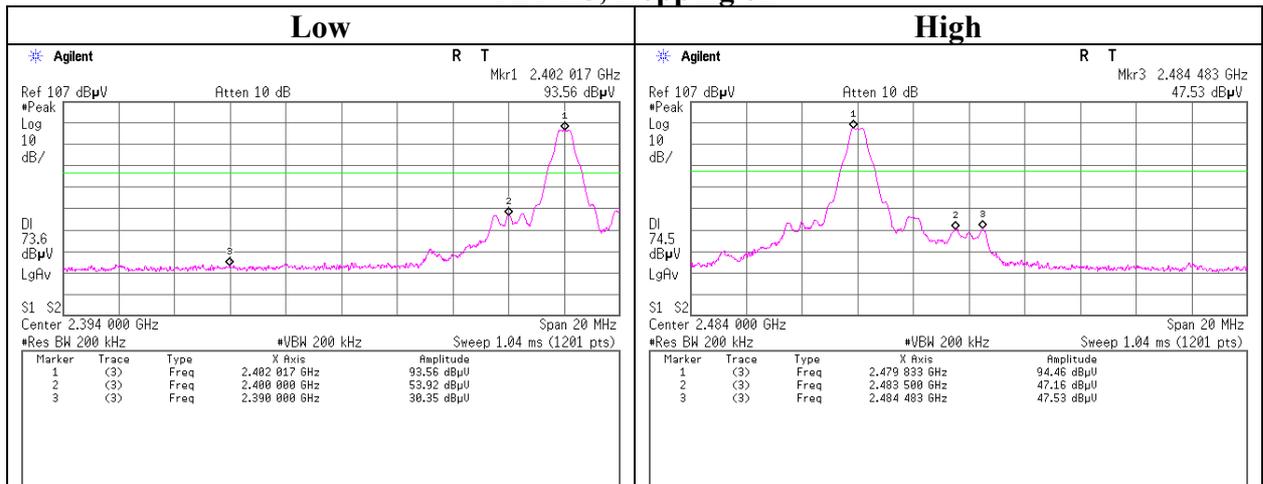


## Conducted Emission Band Edge compliance

### Tx DH5, Hopping on

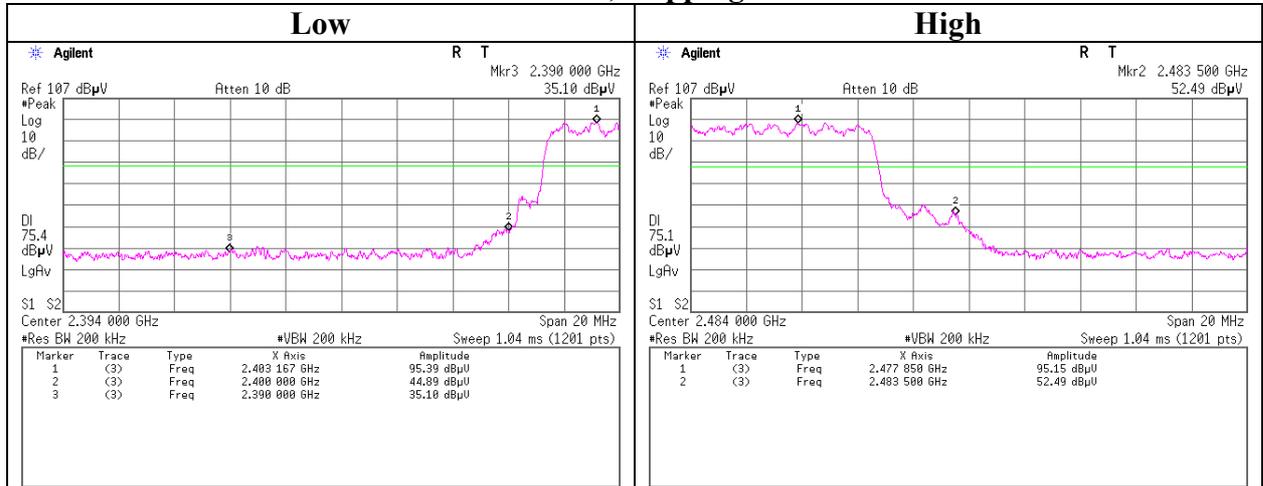


### Tx DH5, Hopping off

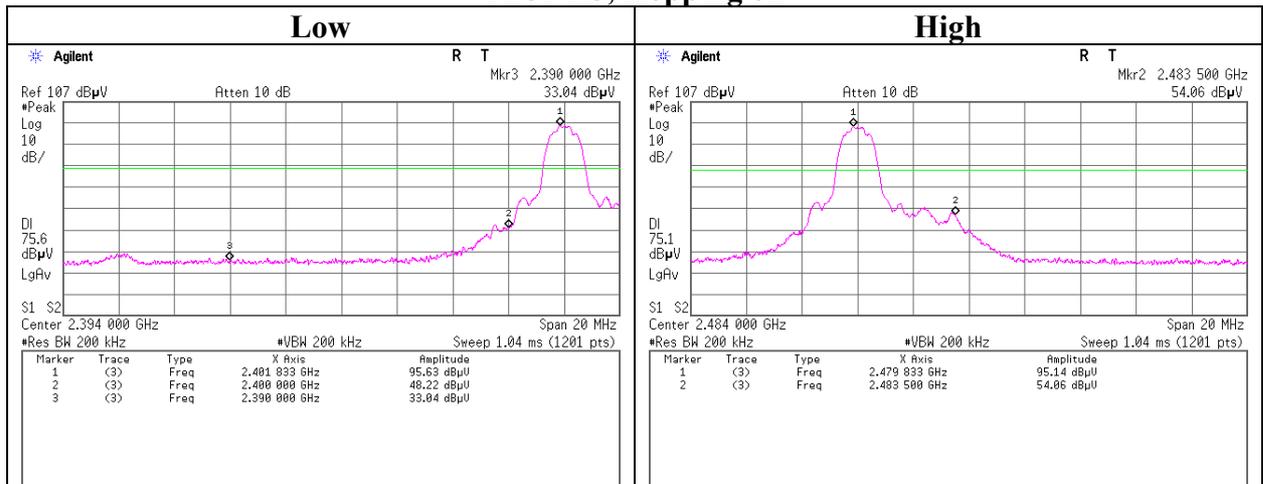


## Conducted Emission Band Edge compliance

### Tx 3DH5, Hopping on



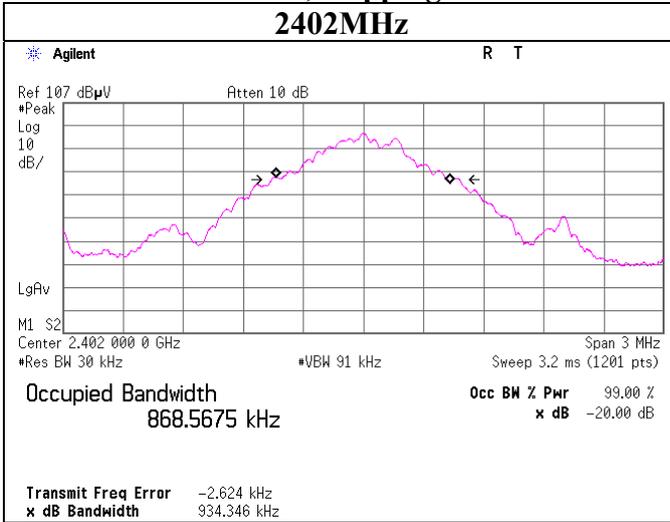
### Tx 3DH5, Hopping off



**99%Occupied Bandwidth**

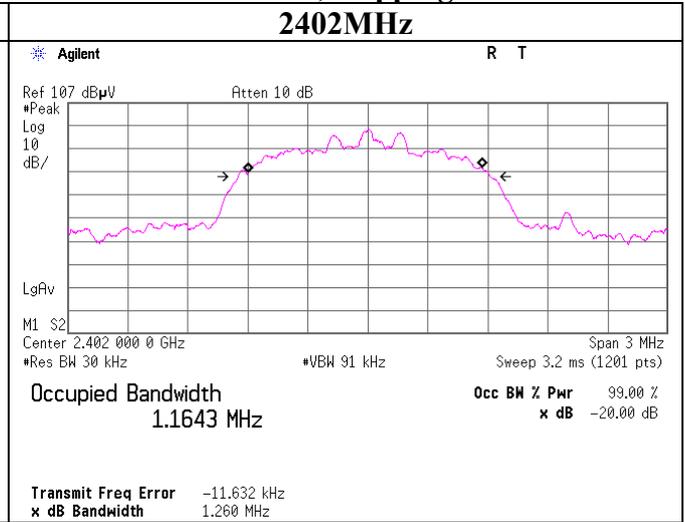
**Tx DH5, Hopping off**

**2402MHz**

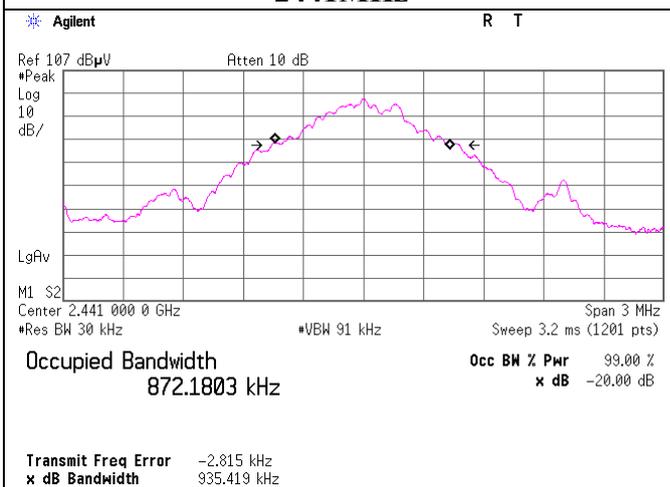


**Tx 3DH5, Hopping off**

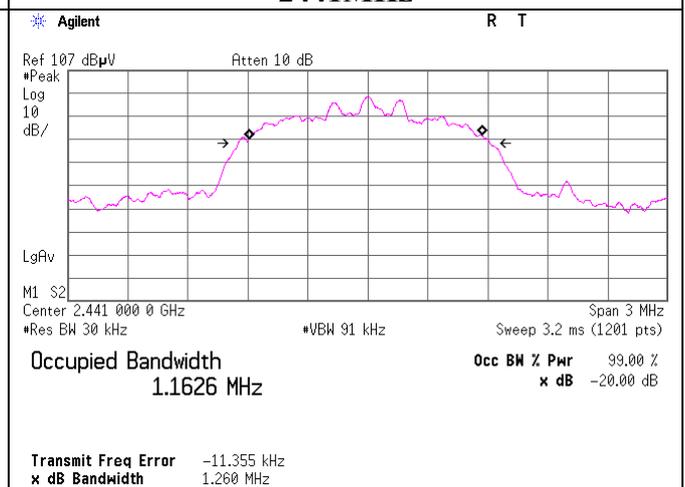
**2402MHz**



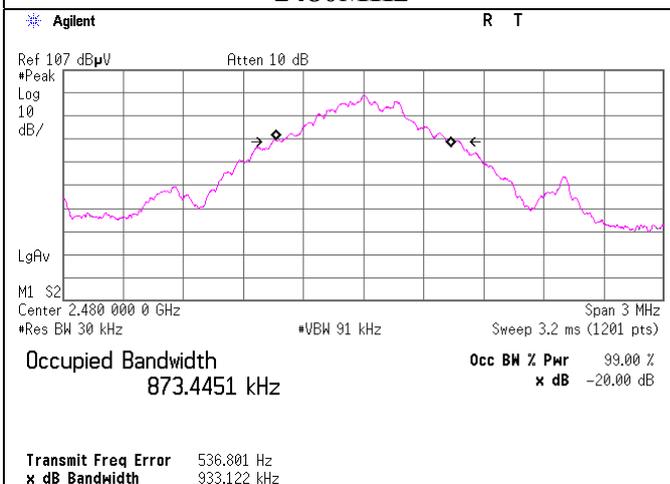
**2441MHz**



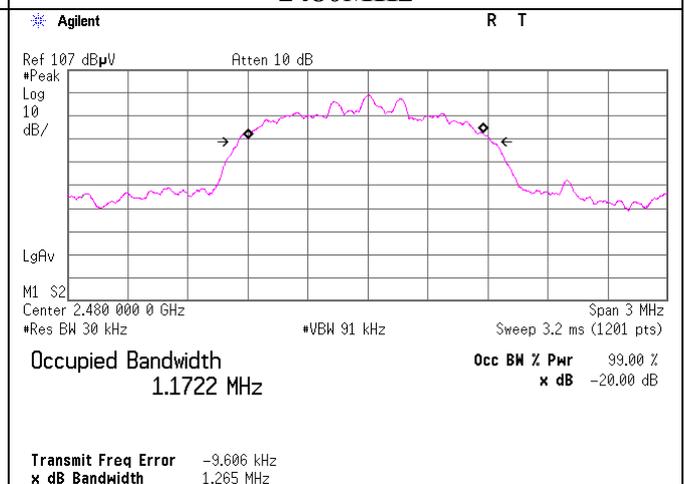
**2441MHz**



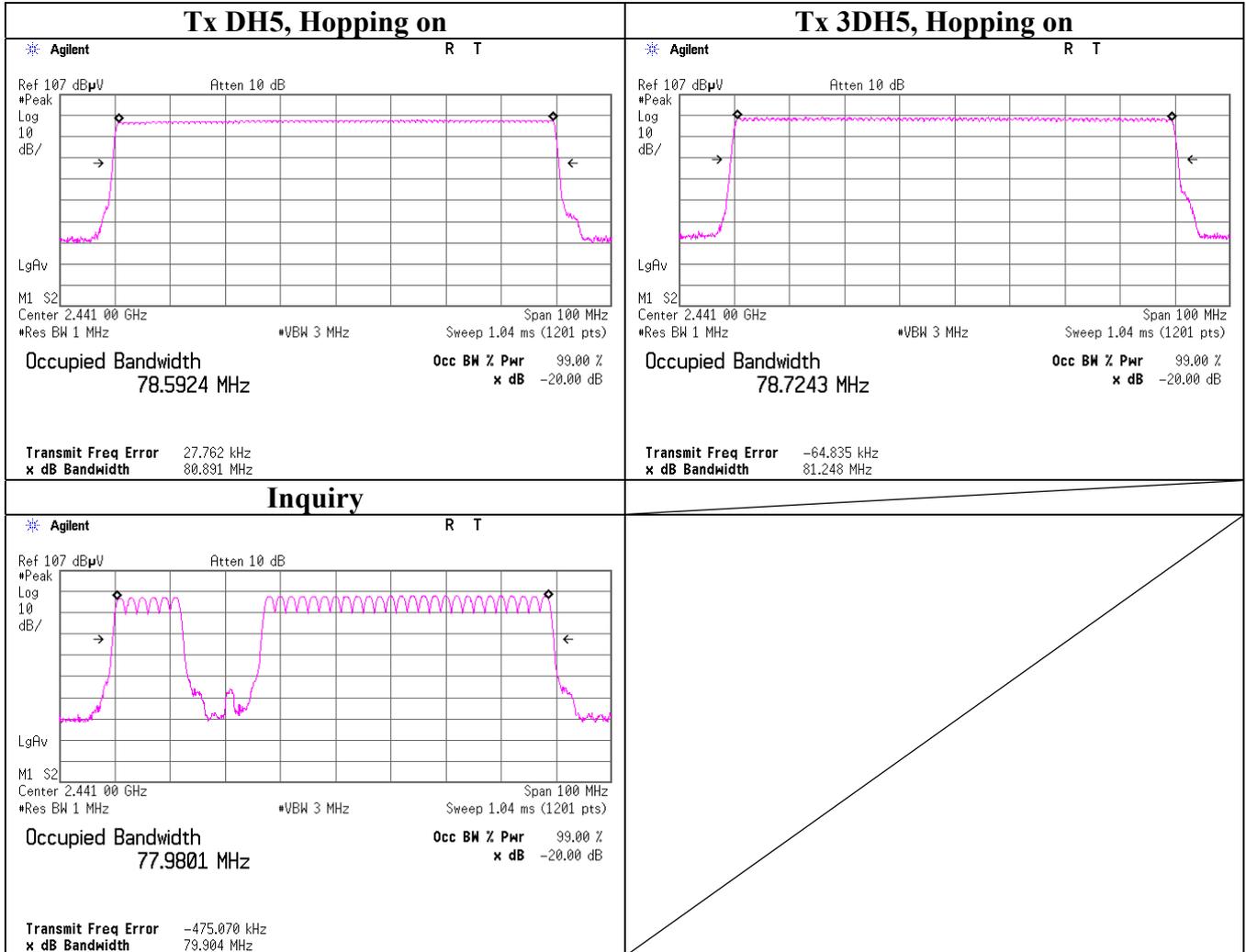
**2480MHz**



**2480MHz**



**99% Occupied Bandwidth**



### **APPENDIX 3: Test instruments**

#### **EMI test equipment**

<b>Control No.</b>	<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Serial No</b>	<b>Test Item</b>	<b>Calibration Date * Interval(month)</b>
MPM-12	Power Meter	Anritsu	ML2495A	0825002	AT	2009/08/26 * 12
MPSE-17	Power sensor	Anritsu	MA2411B	0738285	AT	2009/08/26 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	AT	2010/02/03 * 12
MCC-115	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290211/4	AT	2009/08/27 * 12
MOS-23	Thermo-Hygrometer	Custom	CTH-201	0004	AT	2009/12/22 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-180	-	AT	2010/02/09 * 12
MAT-24	Attenuator(10dB)(above 1GHz)	Agilent	8493C	71389	AT	2009/06/11 * 12
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE/CE	2010/02/01 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE/CE	2010/02/09 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE/CE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2009/08/25 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2009/04/30 * 12
MCC-56	Microwave Cable	Suhner	SUCOFLEX104	174410(1m) / 284655(5m)	RE	2010/01/25 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2010/03/03 * 12
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170306	RE	2009/04/30 * 12
MHF-19	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCA	602	RE	2009/12/19 * 12
MCC-78	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278993/4	RE	2009/12/19 * 12
MSA-09	Spectrum Analyzer	Advantest	R3273	95090115	RE/CE	2009/12/11 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE/CE	2009/06/30 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2010/01/23 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2010/01/23 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2009/07/02 * 12
MAT-09	Attenuator(6dB)	Weinschel Corp	2	BK7973	RE	2009/11/12 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2010/03/23 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE (EUT)	2010/02/04 * 12
MAT-65	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2010/02/04 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(3m)/suciform141-PE(1m)/421-010(1.5m)/RFM-E321(Switcher)	-/00640	CE	2009/07/02 * 12

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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