APPENDIX 2: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

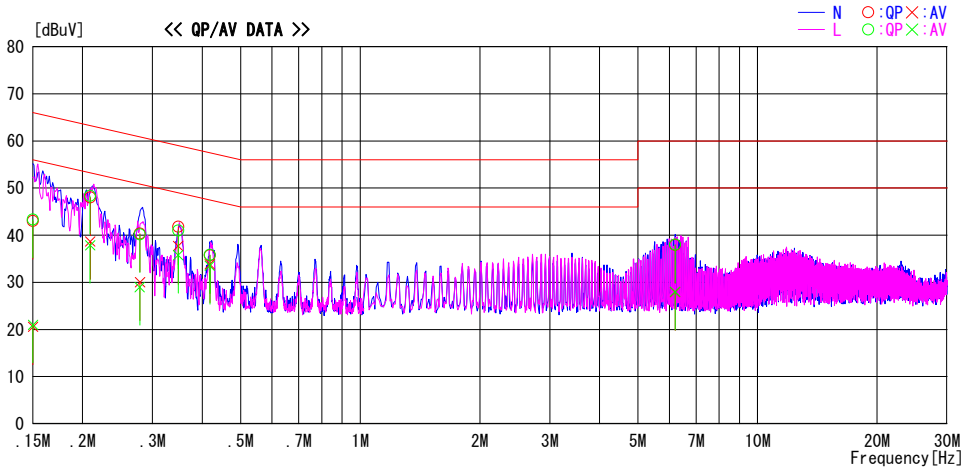
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2011/05/20

Report No. : 31HE0183-HO-01

Temp./Humi. : 23deg. C / 46% RH
Engineer : Takayuki Shimada

Mode / Remarks : Tx 11g 6Mbps 2462MHz, Antenna 1

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase	Comment
	QP	AV	Factor	QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.15000	29.9	7.5	13.1	43.0	20.6	66.0	56.0	23.0	35.4	N	
0.20910	34.7	25.4	13.3	48.0	38.7	63.2	53.2	15.2	14.5	N	
0.27884	27.0	16.7	13.3	40.3	30.0	60.9	50.9	20.6	20.9	N	
0.34838	28.5	24.4	13.3	41.8	37.7	59.0	49.0	17.2	11.3	N	
0.41809	22.4	20.5	13.3	35.7	33.8	57.5	47.5	21.8	13.7	N	
6.20137	24.1	14.1	13.8	37.9	27.9	60.0	50.0	22.1	22.1	N	
0.15000	30.2	7.9	13.1	43.3	21.0	66.0	56.0	22.7	35.0	L	
0.20897	35.0	24.6	13.3	48.3	37.9	63.2	53.2	14.9	15.3	L	
0.27872	26.9	15.7	13.3	40.2	29.0	60.9	50.9	20.7	21.9	L	
0.34835	27.7	22.5	13.3	41.0	35.8	59.0	49.0	18.0	13.2	L	
0.41803	22.5	20.2	13.3	35.8	33.5	57.5	47.5	21.7	14.0	L	
6.20125	24.2	14.2	13.8	38.0	28.0	60.0	50.0	22.0	22.0	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

DATA OF CONDUCTED EMISSION TEST

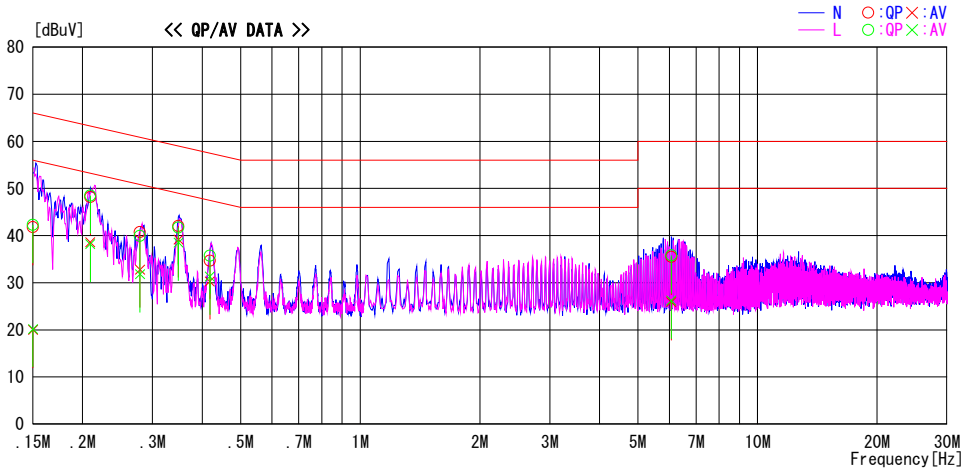
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2011/05/20

Report No. : 31HE0183-HO-01

Temp./Humi. : 23deg. C / 46% RH
Engineer : Takayuki Shimada

Mode / Remarks : Tx 11a 6Mbps 5785MHz, Antenna 0

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase	Comment
	QP	AV	Factor	QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.15000	28.7	6.9	13.1	41.8	20.0	66.0	56.0	24.2	36.0	N	
0.20910	34.9	25.3	13.3	48.2	38.6	63.2	53.2	15.0	14.6	N	
0.27892	27.4	19.5	13.3	40.7	32.8	60.8	50.8	20.1	18.0	N	
0.34863	28.7	25.9	13.3	42.0	39.2	59.0	49.0	17.0	9.8	N	
0.41831	21.4	17.0	13.3	34.7	30.3	57.5	47.5	22.8	17.2	N	
6.06504	21.7	12.1	13.8	35.5	25.9	60.0	50.0	24.5	24.1	N	
0.15000	29.2	7.1	13.1	42.3	20.2	66.0	56.0	23.7	35.8	L	
0.20922	35.2	24.9	13.3	48.5	38.2	63.2	53.2	14.7	15.0	L	
0.27890	26.6	18.5	13.3	39.9	31.8	60.8	50.8	20.9	19.0	L	
0.34851	28.4	25.2	13.3	41.7	38.5	59.0	49.0	17.3	10.5	L	
0.41827	22.4	18.0	13.3	35.7	31.3	57.5	47.5	21.8	16.2	L	
6.06504	22.0	12.4	13.8	35.8	26.2	60.0	50.0	24.2	23.8	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.

6dB Bandwidth

Test place	Head Office EMC Lab. No.11 Measurement Room	
Report No.	31HE0183-HO-01	
Date	04/27/2011	05/19/2011
Temperature/ Humidity	26deg. C / 48% RH	22deg. C / 58% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
Mode	Tx	

11b

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	8.076	>500
2437	8.091	>500
2462	8.082	>500

11g

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	15.197	>500
2437	14.732	>500
2462	15.067	>500

11n-20 (2.4GHz)

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	14.994	>500
2437	15.100	>500
2462	15.060	>500

11n-40 (2.4GHz)

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2422	35.736	>500
2437	35.751	>500
2452	35.744	>500

11a

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
5745	14.813	>500
5785	15.697	>500
5825	15.649	>500

11n-20 (5GHz)

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
5745	17.460	>500
5785	15.456	>500
5825	15.105	>500

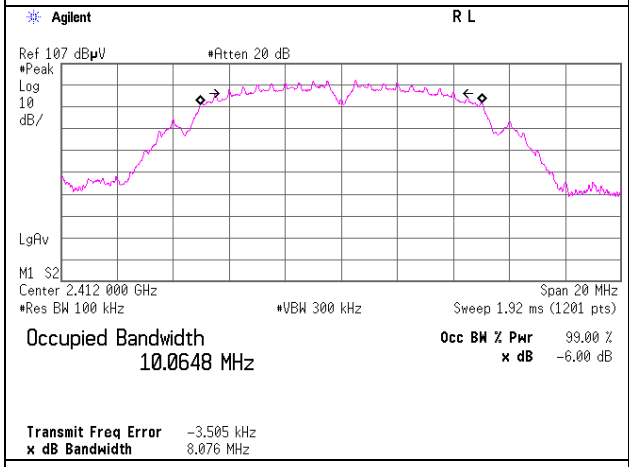
11n-40 (5GHz)

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
5755	35.146	>500
5795	36.094	>500

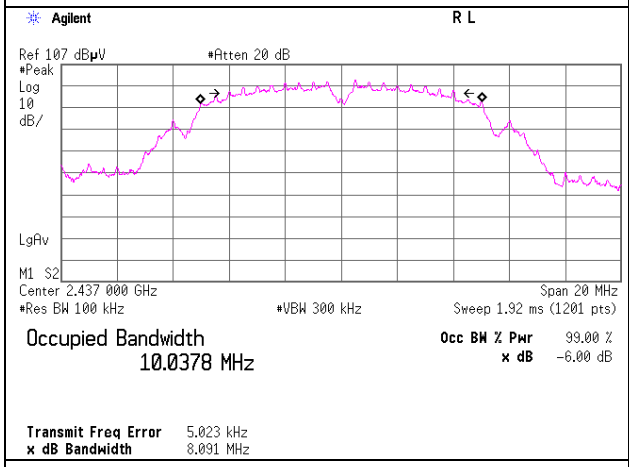
6dB Bandwidth

11b

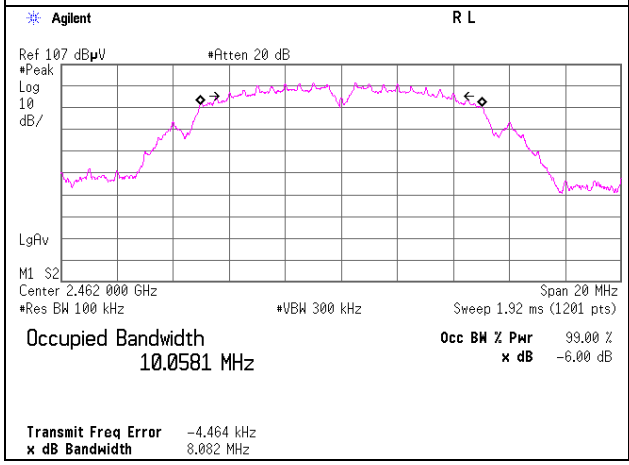
2412MHz



2437MHz

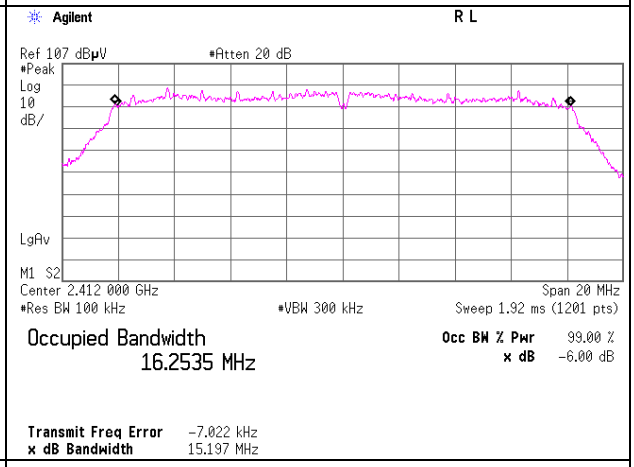


2462MHz

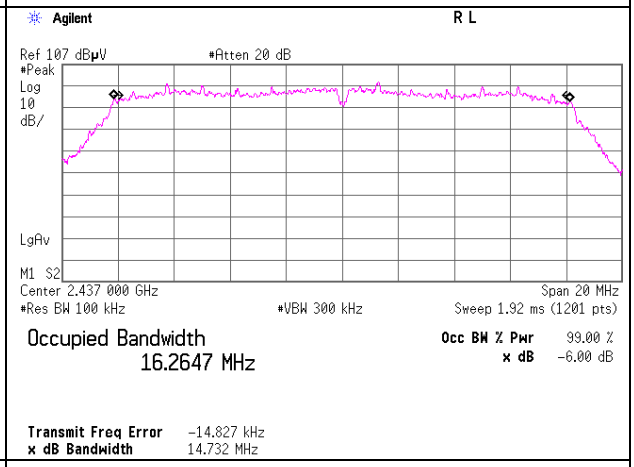


11g

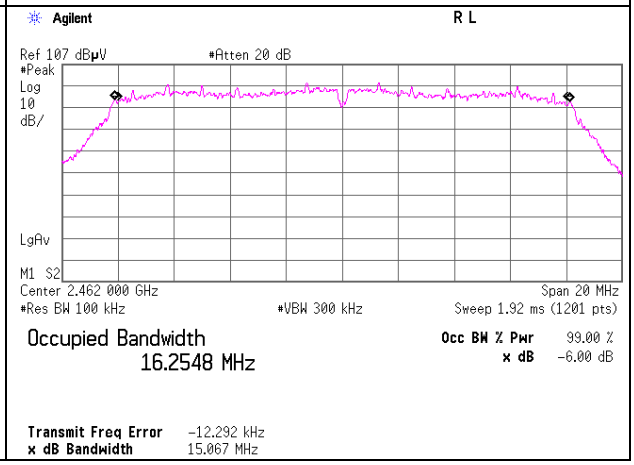
2412MHz



2437MHz



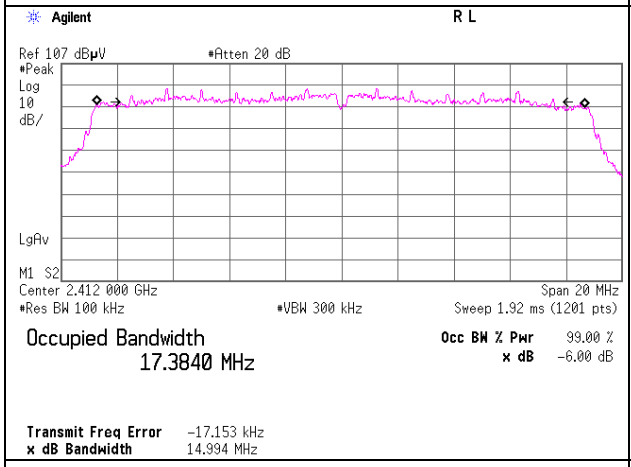
2462MHz



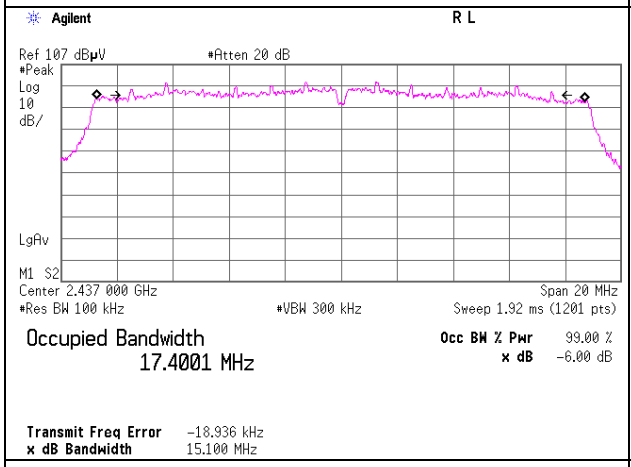
6dB Bandwidth

11n-20 (2.4GHz)

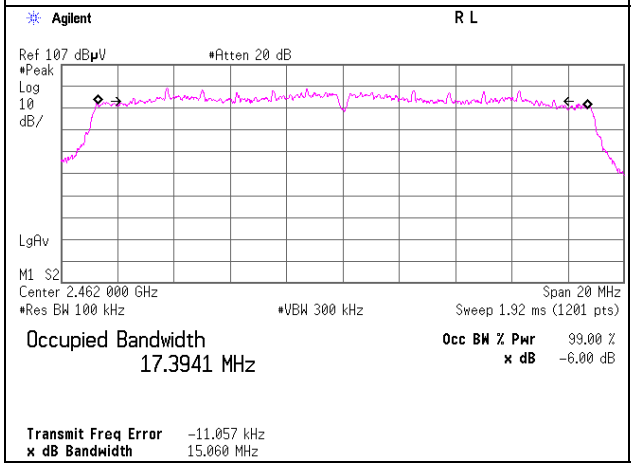
2412MHz



2437MHz

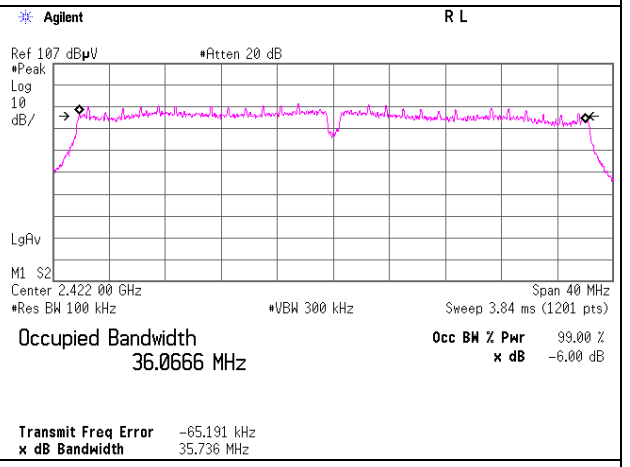


2462MHz

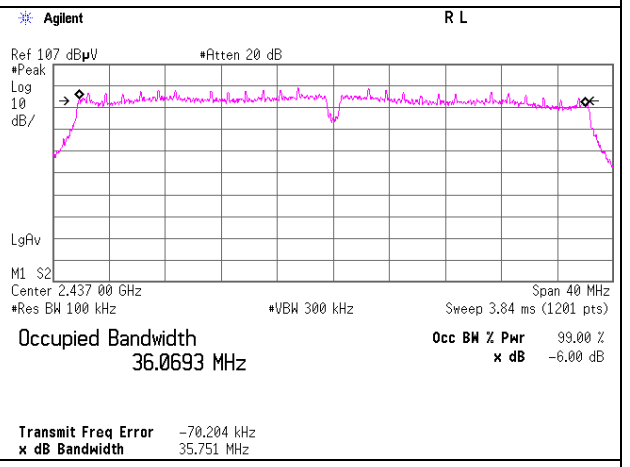


11n-40 (2.4GHz)

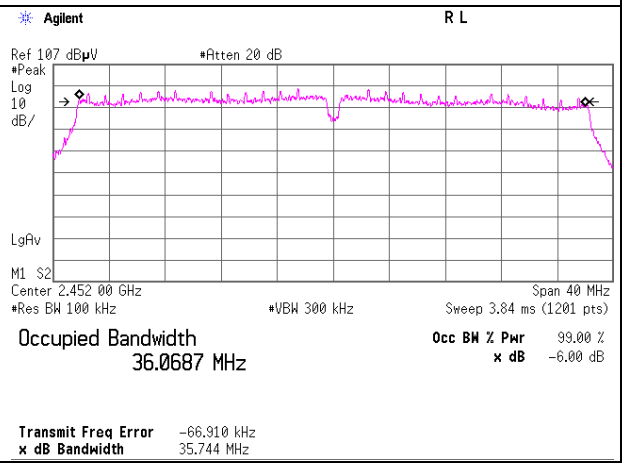
2422MHz



2437MHz



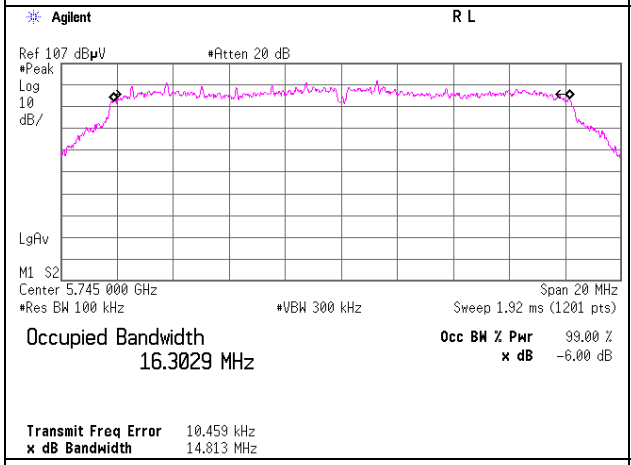
2452MHz



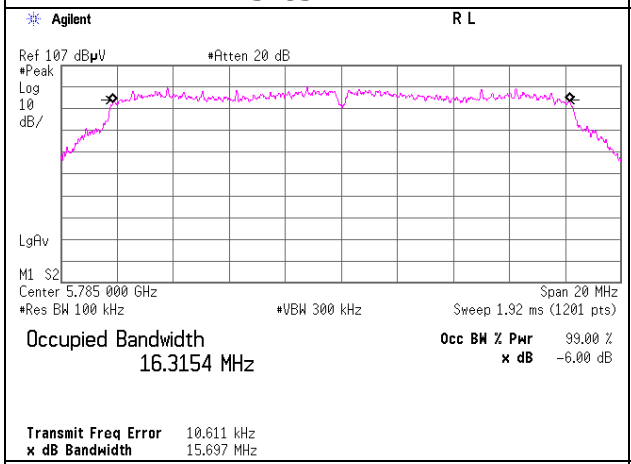
6dB Bandwidth

11a

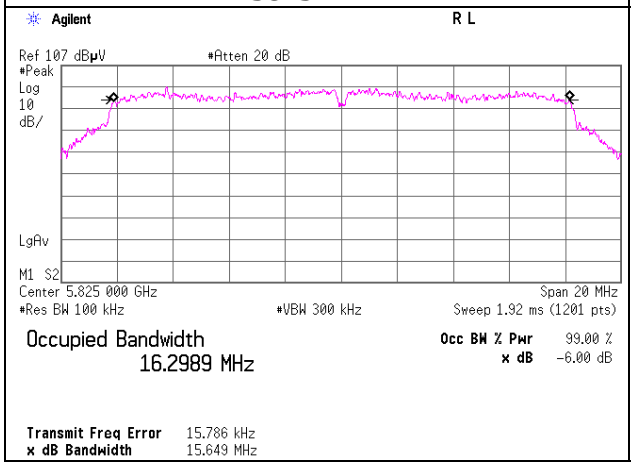
5745MHz



5785MHz

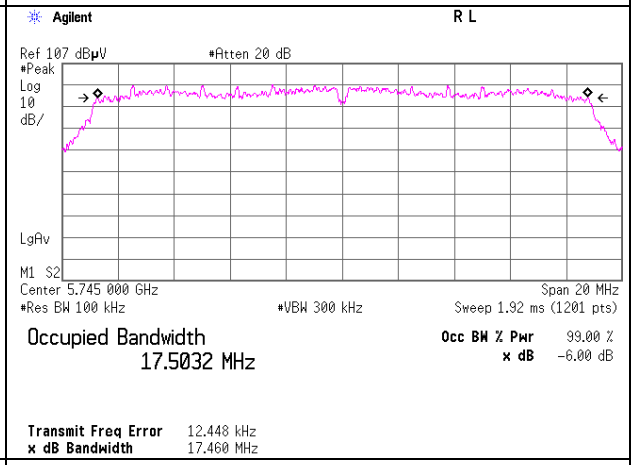


5825MHz

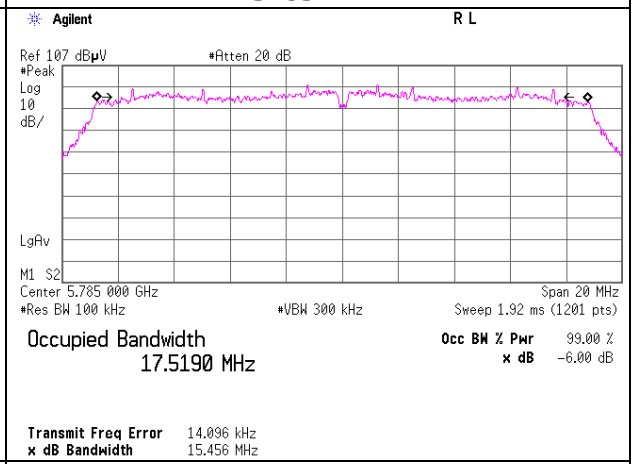


11n-20 (5GHz)

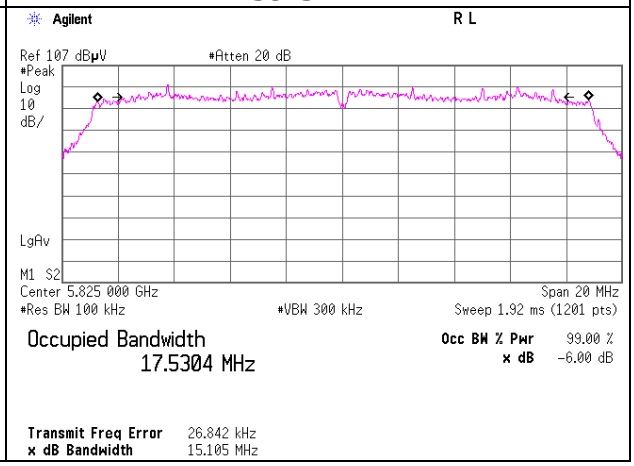
5745MHz



5785MHz



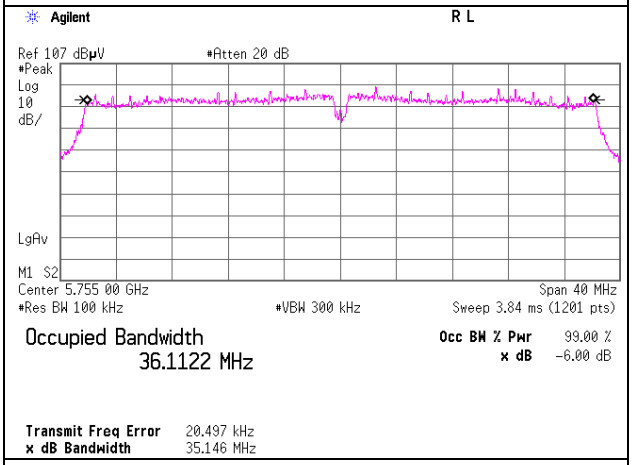
5825MHz



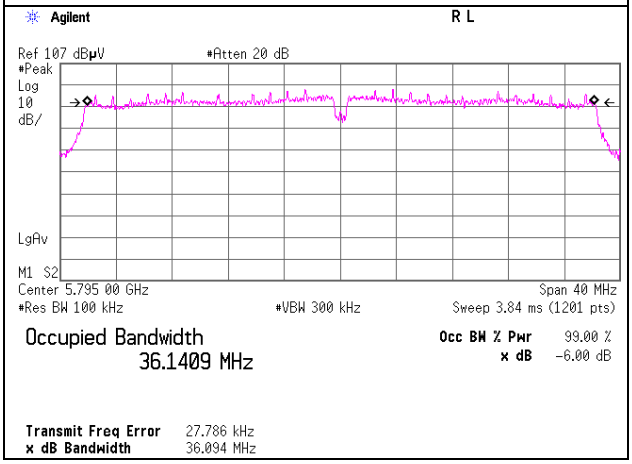
6dB Bandwidth

11n-40 (5GHz)

5755MHz



5795MHz



Maximum Peak Output Power

Test place	Head Office EMC Lab. No.11 Measurement Room
Report No.	31HE0183-HO-01
Date	04/26/2011
Temperature/ Humidity	24deg. C / 32% RH
Engineer	Takayuki Shimada
Mode	11b Tx

Antenna 0

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	3.78	1.61	10.07	15.46	35.16	30.00	1000	14.54
2437	3.66	1.62	10.07	15.35	34.28	30.00	1000	14.65
2462	3.73	1.62	10.07	15.42	34.83	30.00	1000	14.58

Antenna 1

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	3.99	1.61	10.07	15.67	36.90	30.00	1000	14.33
2437	3.93	1.62	10.07	15.62	36.48	30.00	1000	14.38
2462	4.02	1.62	10.07	15.71	37.24	30.00	1000	14.29

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

Antenna 1, 2437MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
1	3.93	*
2	3.83	
5.5	3.85	
11	3.80	

*: Worst Rate
All comparizon were carried out on same frequency and measurement factors.

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.11 Measurement Room	
Report No.	31HE0183-HO-01	
Date	04/26/2011	05/19/2011
Temperature/ Humidity	24deg.C / 32% RH	22deg. C / 58% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
Mode	11g Tx	

Antenna 0

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	12.66	1.57	9.99	24.22	264.24	30.00	1000	5.78
2437	12.97	1.62	10.07	24.66	292.42	30.00	1000	5.34
2462	13.00	1.62	10.07	24.69	294.44	30.00	1000	5.31

Antenna 1

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	12.08	1.57	9.99	23.64	231.21	30.00	1000	6.36
2437	13.07	1.62	10.07	24.76	299.23	30.00	1000	5.24
2462	13.17	1.62	10.07	24.86	306.20	30.00	1000	5.14

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

Antenna 1, 2437MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
6	13.07	*
9	12.97	
12	12.64	
18	12.35	
24	12.31	
36	12.85	
48	12.45	
54	11.96	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.11 Measurement Room	
Report No.	31HE0183-HO-01	
Date	04/26/2011	05/19/2011
Temperature/ Humidity	24 deg.C / 32% RH	22deg. C / 58% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
Mode	11n-20(2.4GHz) Tx	

Antenna 0

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
2412	11.61	1.57	9.99	23.17	207.49	30.00	1000	6.83
2437	12.89	1.62	10.07	24.58	287.08	30.00	1000	5.42
2462	12.40	1.58	9.99	23.97	249.46	30.00	1000	6.03

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
2412	11.49	1.57	9.99	23.05	201.84	30.00	1000	6.95
2437	12.99	1.62	10.07	24.68	293.76	30.00	1000	5.32
2462	12.01	1.58	9.99	23.58	228.03	30.00	1000	6.42

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

Antenna 1, 2437MHz

MCS Number	Reading [dBm]	Remark
0	12.99	*
1	12.53	
2	12.64	
3	12.53	
4	12.46	
5	12.17	
6	12.15	
7	12.34	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.11 Measurement Room	
Report No.	31HE0183-HO-01	
Date	04/26/2011	05/19/2011
Temperature/ Humidity	24deg. C / 32% RH	22deg. C / 58% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
Mode	11n-40(2.4GHz) Tx	

Antenna 0

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
2422	7.02	1.57	9.99	18.58	72.11	30.00	1000	11.42
2437	12.53	1.62	10.07	24.22	264.24	30.00	1000	5.78
2452	12.66	1.62	10.07	24.35	272.27	30.00	1000	5.65

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
2422	7.31	1.57	9.99	18.87	77.09	30.00	1000	11.13
2437	12.66	1.62	10.07	24.35	272.27	30.00	1000	5.65
2452	12.73	1.62	10.07	24.42	276.69	30.00	1000	5.58

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

Antenna 1, 2437MHz

MCS Number	Reading [dBm]	Remark
0	12.66	*
1	12.44	
2	12.20	
3	12.19	
4	12.34	
5	12.16	
6	12.06	
7	11.96	

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.11 Measurement Room
Report No.	31HE0183-HO-01
Date	04/26/2011
Temperature/ Humidity	24 deg.C / 32% RH
Engineer	Takayuki Shimada
Mode	11a Tx

Antenna 0

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5745	8.74	2.52	10.16	21.42	138.68	30.00	1000	8.58
5785	8.76	2.52	10.16	21.44	139.32	30.00	1000	8.56
5825	8.74	2.53	10.16	21.43	139.00	30.00	1000	8.57

Antenna 1

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5745	7.72	2.52	10.16	20.40	109.65	30.00	1000	9.60
5785	7.59	2.52	10.16	20.27	106.41	30.00	1000	9.73
5825	7.14	2.53	10.16	19.83	96.16	30.00	1000	10.17

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

Antenna 0, 5785MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
6	8.76	*
9	8.73	
12	8.52	
18	8.48	
24	8.54	
36	8.52	
48	8.54	
54	8.57	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.11 Measurement Room
Report No.	31HE0183-HO-01
Date	04/26/2011
Temperature/ Humidity	24 deg.C / 32% RH
Engineer	Takayuki Shimada
Mode	11n-20(5GHz) Tx

Antenna 0

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5745	8.71	2.52	10.16	21.39	137.72	30.00	1000	8.61
5785	8.51	2.52	10.16	21.19	131.52	30.00	1000	8.81
5825	8.57	2.53	10.16	21.26	133.66	30.00	1000	8.74

Antenna 1

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5745	7.72	2.52	10.16	20.40	109.65	30.00	1000	9.60
5785	7.45	2.52	10.16	20.13	103.04	30.00	1000	9.87
5825	7.13	2.53	10.16	19.82	95.94	30.00	1000	10.18

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

Antenna 0, 5785MHz

MCS Number	Reading [dBm]	Remark
0	8.51	*
1	8.39	
2	8.41	
3	8.35	
4	8.40	
5	8.39	
6	8.41	
7	8.42	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.11 Measurement Room
Report No.	31HE0183-HO-01
Date	04/26/2011
Temperature/ Humidity	24 deg.C / 32% RH
Engineer	Takayuki Shimada
Mode	11n-40(5GHz) Tx

Antenna 0

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5755	8.41	2.52	10.16	21.09	128.53	30.00	1000	8.91
5795	8.41	2.52	10.16	21.09	128.53	30.00	1000	8.91

Antenna 1

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5755	7.53	2.52	10.16	20.21	104.95	30.00	1000	9.79
5795	7.07	2.52	10.16	19.75	94.41	30.00	1000	10.25

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

Antenna 0, 5755MHz

MCS Number	Reading [dBm]	Remark
0	8.41	*
1	8.34	
2	8.34	
3	8.37	
4	8.30	
5	8.33	
6	8.33	
7	8.32	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11b Tx 2412MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	59.4	27.2	2.5	32.2	56.9	73.9	17.0	
Hori	2400.000	PK	70.3	27.2	2.5	32.2	67.8	-	-	See 20dBc Data Sheet
Hori	3215.965	PK	49.3	28.6	2.9	31.9	48.9	73.9	25.0	
Hori	4824.000	PK	51.7	30.9	5.2	31.4	56.4	73.9	17.5	
Hori	7236.000	PK	44.9	35.7	6.2	32.4	54.4	73.9	19.6	
Hori	9648.000	PK	42.6	37.8	7.0	33.2	54.2	73.9	19.7	
Hori	24120.000	PK	46.0	37.9	-0.9	31.6	51.4	73.9	22.5	
Hori	2390.000	AV	46.8	27.2	2.5	32.2	44.3	53.9	9.6	
Hori	2400.000	AV	60.0	27.2	2.5	32.2	57.5	-	-	See 20dBc Data Sheet
Hori	3215.965	AV	44.2	28.6	2.9	31.9	43.8	53.9	10.1	
Hori	4824.000	AV	46.4	30.9	5.2	31.4	51.1	53.9	2.8	
Hori	7236.000	AV	35.3	35.7	6.2	32.4	44.8	53.9	9.1	
Hori	9648.000	AV	31.0	37.8	7.0	33.2	42.6	53.9	11.3	
Hori	24120.000	AV	34.0	37.9	-0.9	31.6	39.4	53.9	14.5	
Vert	2390.000	PK	48.7	27.2	2.5	32.2	46.2	73.9	27.7	
Vert	2400.000	PK	61.7	27.2	2.5	32.2	59.2	-	-	See 20dBc Data Sheet
Vert	3215.983	PK	48.4	28.6	2.9	31.9	48.0	73.9	25.9	
Vert	4824.000	PK	42.7	30.9	5.2	31.4	47.4	73.9	26.5	
Vert	7236.000	PK	42.6	35.7	6.2	32.4	52.1	73.9	21.8	
Vert	9648.000	PK	43.9	37.8	7.0	33.2	55.5	73.9	18.4	
Vert	24120.000	PK	45.7	37.9	-0.9	31.6	51.1	73.9	22.8	
Vert	2390.000	AV	36.9	27.2	2.5	32.2	34.4	53.9	19.5	
Vert	2400.000	AV	51.4	27.2	2.5	32.2	48.9	-	-	See 20dBc Data Sheet
Vert	3215.983	AV	42.9	28.6	2.9	31.9	42.5	53.9	11.4	
Vert	4824.000	AV	29.6	30.9	5.2	31.4	34.3	53.9	19.6	
Vert	7236.000	AV	30.8	35.7	6.2	32.4	40.3	53.9	13.6	
Vert	9648.000	AV	31.0	37.8	7.0	33.2	42.6	53.9	11.3	
Vert	24120.000	AV	34.0	37.9	-0.9	31.6	39.4	53.9	14.5	

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

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	2412.000	PK	104.5	27.2	2.5	32.2	102.0	-	-	Carrier
Hori	2400.000	PK	64.3	27.2	2.5	32.2	61.8	82.0	20.2	
Vert	2412.000	PK	98.8	27.2	2.5	32.2	96.3	-	-	Carrier
Vert	2400.000	PK	56.6	27.2	2.5	32.2	54.1	76.3	22.2	

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

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Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11b Tx 2437MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	3249.331	PK	50.0	28.7	3.0	31.9	49.8	73.9	24.1	
Hori	4874.000	PK	47.9	31.0	5.1	31.4	52.6	73.9	21.3	
Hori	7311.000	PK	46.6	35.9	6.3	32.5	56.3	73.9	17.6	
Hori	9748.000	PK	42.7	38.0	7.2	33.2	54.7	73.9	19.2	
Hori	24370.000	PK	46.3	37.9	-0.9	31.6	51.7	73.9	22.2	
Hori	3249.331	AV	45.6	28.7	3.0	31.9	45.4	53.9	8.5	
Hori	4874.000	AV	44.0	31.0	5.1	31.4	48.7	53.9	5.2	
Hori	7311.000	AV	37.5	35.9	6.3	32.5	47.2	53.9	6.7	
Hori	9748.000	AV	30.0	38.0	7.2	33.2	42.0	53.9	11.9	
Hori	24370.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	
Vert	3249.331	PK	49.3	28.7	3.0	31.9	49.1	73.9	24.8	
Vert	4874.000	PK	41.9	31.0	5.1	31.4	46.6	73.9	27.3	
Vert	7311.000	PK	46.0	35.9	6.3	32.5	55.7	73.9	18.2	
Vert	9748.000	PK	43.0	38.0	7.2	33.2	55.0	73.9	18.9	
Vert	24370.000	PK	46.1	37.9	-0.9	31.6	51.5	73.9	22.4	
Vert	3249.331	AV	43.9	28.7	3.0	31.9	43.7	53.9	10.2	
Vert	4874.000	AV	30.7	31.0	5.1	31.4	35.4	53.9	18.5	
Vert	7311.000	AV	36.3	35.9	6.3	32.5	46.0	53.9	7.9	
Vert	9748.000	AV	30.0	38.0	7.2	33.2	42.0	53.9	11.9	
Vert	24370.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11b Tx 2462MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	60.6	27.2	2.6	32.2	58.2	73.9	15.7	
Hori	3282.658	PK	52.1	28.8	3.0	31.9	52.0	73.9	21.9	
Hori	4924.000	PK	50.9	31.2	5.1	31.4	55.8	73.9	18.1	
Hori	7386.000	PK	47.6	36.0	6.3	32.5	57.4	73.9	16.5	
Hori	9848.000	PK	43.1	38.1	7.2	33.3	55.1	73.9	18.8	
Hori	24620.000	PK	47.2	37.9	-0.9	31.6	52.6	73.9	21.3	
Hori	2483.500	AV	50.4	27.2	2.6	32.2	48.0	53.9	5.9	
Hori	3282.658	AV	47.7	28.8	3.0	31.9	47.6	53.9	6.3	
Hori	4924.000	AV	47.8	31.2	5.1	31.4	52.7	53.9	1.2	
Hori	7386.000	AV	40.4	36.0	6.3	32.5	50.2	53.9	3.7	
Hori	9848.000	AV	30.3	38.1	7.2	33.3	42.3	53.9	11.6	
Hori	24620.000	AV	34.3	37.9	-0.9	31.6	39.7	53.9	14.2	
Vert	2483.500	PK	54.4	27.2	2.6	32.2	52.0	73.9	21.9	
Vert	3282.658	PK	50.9	28.8	3.0	31.9	50.8	73.9	23.1	
Vert	4924.000	PK	44.8	31.2	5.1	31.4	49.7	73.9	24.2	
Vert	7386.000	PK	47.9	36.0	6.3	32.5	57.7	73.9	16.2	
Vert	9848.000	PK	43.0	38.1	7.2	33.3	55.0	73.9	18.9	
Vert	24620.000	PK	47.0	37.9	-0.9	31.6	52.4	73.9	21.5	
Vert	2483.500	AV	44.5	27.2	2.6	32.2	42.1	53.9	11.8	
Vert	3282.658	AV	46.3	28.8	3.0	31.9	46.2	53.9	7.7	
Vert	4924.000	AV	35.7	31.2	5.1	31.4	40.6	53.9	13.3	
Vert	7386.000	AV	40.6	36.0	6.3	32.5	50.4	53.9	3.5	
Vert	9848.000	AV	30.3	38.1	7.2	33.3	42.3	53.9	11.6	
Vert	24620.000	AV	34.3	37.9	-0.9	31.6	39.7	53.9	14.2	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11g Tx 2412MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	74.6	27.2	2.5	32.2	72.1	73.9	1.8	
Hori	2400.000	PK	78.3	27.2	2.5	32.2	75.8	-	-	See 20dBc Data Sheet
Hori	3216.000	PK	48.8	28.6	2.9	31.9	48.4	73.9	25.5	
Hori	4824.000	PK	42.8	30.9	5.2	31.4	47.5	73.9	26.4	
Hori	7236.000	PK	43.1	35.7	6.2	32.4	52.6	73.9	21.3	
Hori	9648.000	PK	43.2	37.8	7.0	33.2	54.8	73.9	19.1	
Hori	24120.000	PK	45.9	37.9	-0.9	31.6	51.3	73.9	22.6	
Hori	2390.000	AV	55.7	27.2	2.5	32.2	53.2	53.9	0.7	
Hori	2400.000	AV	57.5	27.2	2.5	32.2	55.0	-	-	See 20dBc Data Sheet
Hori	3216.000	AV	43.5	28.6	2.9	31.9	43.1	53.9	10.8	
Hori	4824.000	AV	31.9	30.9	5.2	31.4	36.6	53.9	17.3	
Hori	7236.000	AV	30.3	35.7	6.2	32.4	39.8	53.9	14.1	
Hori	9648.000	AV	30.8	37.8	7.0	33.2	42.4	53.9	11.5	
Hori	24120.000	AV	34.0	37.9	-0.9	31.6	39.4	53.9	14.5	
Vert	2390.000	PK	65.3	27.2	2.5	32.2	62.8	73.9	11.1	
Vert	2400.000	PK	74.3	27.2	2.5	32.2	71.8	-	-	See 20dBc Data Sheet
Vert	3216.000	PK	48.4	28.6	2.9	31.9	48.0	73.9	25.9	
Vert	4824.000	PK	40.4	30.9	5.2	31.4	45.1	73.9	28.8	
Vert	7236.000	PK	42.8	35.7	6.2	32.4	52.3	73.9	21.6	
Vert	9648.000	PK	43.6	37.8	7.0	33.2	55.2	73.9	18.7	
Vert	24120.000	PK	46.0	37.9	-0.9	31.6	51.4	73.9	22.5	
Vert	2390.000	AV	47.2	27.2	2.5	32.2	44.7	53.9	9.2	
Vert	2400.000	AV	52.2	27.2	2.5	32.2	49.7	-	-	See 20dBc Data Sheet
Vert	3216.000	AV	43.0	28.6	2.9	31.9	42.6	53.9	11.3	
Vert	4824.000	AV	28.5	30.9	5.2	31.4	33.2	53.9	20.7	
Vert	7236.000	AV	30.3	35.7	6.2	32.4	39.8	53.9	14.1	
Vert	9648.000	AV	30.8	37.8	7.0	33.2	42.4	53.9	11.5	
Vert	24120.000	AV	34.0	37.9	-0.9	31.6	39.4	53.9	14.5	

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

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	2412.000	PK	103.5	27.2	2.5	32.2	101.0	-	-	Carrier
Hori	2400.000	PK	63.5	27.2	2.5	32.2	61.0	81.0	20.0	
Vert	2412.000	PK	98.0	27.2	2.5	32.2	95.5	-	-	Carrier
Vert	2400.000	PK	59.2	27.2	2.5	32.2	56.7	75.5	18.8	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11g Tx 2437MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	3249.331	PK	51.1	28.7	3.0	31.9	50.9	73.9	23.0	
Hori	4874.000	PK	52.2	31.0	5.1	31.4	56.9	73.9	17.0	
Hori	7311.000	PK	50.6	35.9	6.3	32.5	60.3	73.9	13.6	
Hori	9748.000	PK	43.0	38.0	7.2	33.2	55.0	73.9	18.9	
Hori	24370.000	PK	46.0	37.9	-0.9	31.6	51.4	73.9	22.5	
Hori	3249.331	AV	46.6	28.7	3.0	31.9	46.4	53.9	7.5	
Hori	4874.000	AV	37.4	31.0	5.1	31.4	42.1	53.9	11.8	
Hori	7311.000	AV	35.5	35.9	6.3	32.5	45.2	53.9	8.7	
Hori	9748.000	AV	30.0	38.0	7.2	33.2	42.0	53.9	11.9	
Hori	24370.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	
Vert	3249.331	PK	49.7	28.7	3.0	31.9	49.5	73.9	24.4	
Vert	4874.000	PK	41.4	31.0	5.1	31.4	46.1	73.9	27.8	
Vert	7311.000	PK	45.5	35.9	6.3	32.5	55.2	73.9	18.7	
Vert	9748.000	PK	43.1	38.0	7.2	33.2	55.1	73.9	18.8	
Vert	24370.000	PK	46.2	37.9	-0.9	31.6	51.6	73.9	22.3	
Vert	3249.331	AV	44.0	28.7	3.0	31.9	43.8	53.9	10.1	
Vert	4874.000	AV	28.5	31.0	5.1	31.4	33.2	53.9	20.7	
Vert	7311.000	AV	32.5	35.9	6.3	32.5	42.2	53.9	11.7	
Vert	9748.000	AV	30.0	38.0	7.2	33.2	42.0	53.9	11.9	
Vert	24370.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber		
Report No.	31HE0183-HO-01		
Date	05/17/2011	05/18/2011	05/19/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada (1-10GHz)	Takayuki Shimada (10-26.5GHz)	Takayuki Shimada (30M-1GHz)
Mode	11g Tx 2462MHz Antenna 1		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	206.651	QP	43.3	16.8	9.0	32.0	37.1	43.5	6.4	
Hori	215.998	QP	43.5	16.9	9.1	32.0	37.5	43.5	6.0	
Hori	235.426	QP	43.8	17.2	9.2	32.1	38.1	46.0	7.9	
Hori	300.174	QP	38.0	15.7	9.7	32.1	31.3	46.0	14.7	
Hori	308.260	QP	36.6	15.9	9.8	32.1	30.2	46.0	15.8	
Hori	719.995	QP	36.5	22.3	12.3	32.2	38.9	46.0	7.1	
Hori	2483.500	PK	73.7	27.2	2.6	32.2	71.3	73.9	2.6	
Hori	3282.658	PK	52.5	28.8	3.0	31.9	52.4	73.9	21.5	
Hori	4924.000	PK	52.7	31.2	5.1	31.4	57.6	73.9	16.3	
Hori	7386.000	PK	48.2	36.0	6.3	32.5	58.0	73.9	15.9	
Hori	9848.000	PK	43.2	38.1	7.2	33.3	55.2	73.9	18.7	
Hori	24620.000	PK	47.3	37.9	-0.9	31.6	52.7	73.9	21.2	
Hori	2483.500	AV	55.5	27.2	2.6	32.2	53.1	53.9	0.8	
Hori	3282.658	AV	47.0	28.8	3.0	31.9	46.9	53.9	7.0	
Hori	4924.000	AV	37.8	31.2	5.1	31.4	42.7	53.9	11.2	
Hori	7386.000	AV	34.5	36.0	6.3	32.5	44.3	53.9	9.6	
Hori	9848.000	AV	30.3	38.1	7.2	33.3	42.3	53.9	11.6	
Hori	24620.000	AV	34.3	37.9	-0.9	31.6	39.7	53.9	14.2	
Vert	206.651	QP	30.9	16.8	9.0	32.0	24.7	43.5	18.8	
Vert	215.998	QP	33.3	16.9	9.1	32.0	27.3	43.5	16.2	
Vert	235.426	QP	33.7	17.2	9.2	32.1	28.0	46.0	18.0	
Vert	300.174	QP	28.1	15.7	9.7	32.1	21.4	46.0	24.6	
Vert	308.260	QP	26.9	15.9	9.8	32.1	20.5	46.0	25.5	
Vert	719.995	QP	33.2	22.3	12.3	32.2	35.6	46.0	10.4	
Vert	2483.500	PK	63.3	27.2	2.6	32.2	60.9	73.9	13.0	
Vert	3282.658	PK	50.9	28.8	3.0	31.9	50.8	73.9	23.1	
Vert	4924.000	PK	40.5	31.2	5.1	31.4	45.4	73.9	28.5	
Vert	7386.000	PK	48.6	36.0	6.3	32.5	58.4	73.9	15.5	
Vert	9848.000	PK	43.0	38.1	7.2	33.3	55.0	73.9	18.9	
Vert	24620.000	PK	47.1	37.9	-0.9	31.6	52.5	73.9	21.4	
Vert	2483.500	AV	48.5	27.2	2.6	32.2	46.1	53.9	7.8	
Vert	3282.658	AV	45.6	28.8	3.0	31.9	45.5	53.9	8.4	
Vert	4924.000	AV	28.0	31.2	5.1	31.4	32.9	53.9	21.0	
Vert	7386.000	AV	34.6	36.0	6.3	32.5	44.4	53.9	9.5	
Vert	9848.000	AV	30.3	38.1	7.2	33.3	42.3	53.9	11.6	
Vert	24620.000	AV	34.3	37.9	-0.9	31.6	39.7	53.9	14.2	

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11n-20 Tx 2412MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	69.9	27.2	2.5	32.2	67.4	73.9	6.5	
Hori	2400.000	PK	74.6	27.2	2.5	32.2	72.1	-	-	See 20dBc Data Sheet
Hori	3216.000	PK	49.3	28.6	2.9	31.9	48.9	73.9	25.0	
Hori	4824.000	PK	44.7	30.9	5.2	31.4	49.4	73.9	24.5	
Hori	7236.000	PK	43.5	35.7	6.2	32.4	53.0	73.9	20.9	
Hori	9648.000	PK	43.2	37.8	7.0	33.2	54.8	73.9	19.1	
Hori	24120.000	PK	45.7	37.9	-0.9	31.6	51.1	73.9	22.8	
Hori	2390.000	AV	54.5	27.2	2.5	32.2	52.0	53.9	1.9	
Hori	2400.000	AV	59.3	27.2	2.5	32.2	56.8	-	-	See 20dBc Data Sheet
Hori	3216.000	AV	43.4	28.6	2.9	31.9	43.0	53.9	10.9	
Hori	4824.000	AV	33.2	30.9	5.2	31.4	37.9	53.9	16.0	
Hori	7236.000	AV	30.3	35.7	6.2	32.4	39.8	53.9	14.1	
Hori	9648.000	AV	30.8	37.8	7.0	33.2	42.4	53.9	11.5	
Hori	24120.000	AV	34.0	37.9	-0.9	31.6	39.4	53.9	14.5	
Vert	2390.000	PK	64.0	27.2	2.5	32.2	61.5	73.9	12.4	
Vert	2400.000	PK	67.3	27.2	2.5	32.2	64.8	-	-	See 20dBc Data Sheet
Vert	3216.000	PK	49.9	28.6	2.9	31.9	49.5	73.9	24.4	
Vert	4824.000	PK	41.1	30.9	5.2	31.4	45.8	73.9	28.1	
Vert	7236.000	PK	43.5	35.7	6.2	32.4	53.0	73.9	20.9	
Vert	9648.000	PK	43.3	37.8	7.0	33.2	54.9	73.9	19.0	
Vert	24120.000	PK	45.9	37.9	-0.9	31.6	51.3	73.9	22.6	
Vert	2390.000	AV	45.3	27.2	2.5	32.2	42.8	53.9	11.1	
Vert	2400.000	AV	52.5	27.2	2.5	32.2	50.0	-	-	See 20dBc Data Sheet
Vert	3216.000	AV	42.5	28.6	2.9	31.9	42.1	53.9	11.8	
Vert	4824.000	AV	28.9	30.9	5.2	31.4	33.6	53.9	20.3	
Vert	7236.000	AV	30.3	35.7	6.2	32.4	39.8	53.9	14.1	
Vert	9648.000	AV	30.8	37.8	7.0	33.2	42.4	53.9	11.5	
Vert	24120.000	AV	34.0	37.9	-0.9	31.6	39.4	53.9	14.5	

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

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	2412.000	PK	103.0	27.2	2.5	32.2	100.5	-	-	Carrier
Hori	2400.000	PK	63.3	27.2	2.5	32.2	60.8	80.5	19.7	
Vert	2412.000	PK	97.1	27.2	2.5	32.2	94.6	-	-	Carrier
Vert	2400.000	PK	55.9	27.2	2.5	32.2	53.4	74.6	21.2	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11n-20 Tx 2437MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	3249.331	PK	50.1	28.7	3.0	31.9	49.9	73.9	24.0	
Hori	4874.000	PK	47.0	31.0	5.1	31.4	51.7	73.9	22.2	
Hori	7311.000	PK	47.0	35.9	6.3	32.5	56.7	73.9	17.2	
Hori	9748.000	PK	43.1	38.0	7.2	33.2	55.1	73.9	18.8	
Hori	24370.000	PK	46.3	37.9	-0.9	31.6	51.7	73.9	22.2	
Hori	3249.331	AV	45.1	28.7	3.0	31.9	44.9	53.9	9.0	
Hori	4874.000	AV	33.7	31.0	5.1	31.4	38.4	53.9	15.5	
Hori	7311.000	AV	33.0	35.9	6.3	32.5	42.7	53.9	11.2	
Hori	9748.000	AV	30.0	38.0	7.2	33.2	42.0	53.9	11.9	
Hori	24370.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	
Vert	3249.331	PK	49.3	28.7	3.0	31.9	49.1	73.9	24.8	
Vert	4874.000	PK	41.4	31.0	5.1	31.4	46.1	73.9	27.8	
Vert	7311.000	PK	45.5	35.9	6.3	32.5	55.2	73.9	18.7	
Vert	9748.000	PK	43.2	38.0	7.2	33.2	55.2	73.9	18.7	
Vert	24370.000	PK	46.1	37.9	-0.9	31.6	51.5	73.9	22.4	
Vert	3249.331	AV	44.0	28.7	3.0	31.9	43.8	53.9	10.1	
Vert	4874.000	AV	28.7	31.0	5.1	31.4	33.4	53.9	20.5	
Vert	7311.000	AV	32.1	35.9	6.3	32.5	41.8	53.9	12.1	
Vert	9748.000	AV	30.0	38.0	7.2	33.2	42.0	53.9	11.9	
Vert	24370.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11n-20 Tx 2462MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	74.0	27.2	2.6	32.2	71.6	73.9	2.3	
Hori	3282.658	PK	51.5	28.8	3.0	31.9	51.4	73.9	22.5	
Hori	4924.000	PK	49.1	31.2	5.1	31.4	54.0	73.9	19.9	
Hori	7386.000	PK	47.0	36.0	6.3	32.5	56.8	73.9	17.1	
Hori	9848.000	PK	42.9	38.1	7.2	33.3	54.9	73.9	19.0	
Hori	24620.000	PK	46.8	37.9	-0.9	31.6	52.2	73.9	21.7	
Hori	2483.500	AV	54.2	27.2	2.6	32.2	51.8	53.9	2.1	
Hori	3282.658	AV	46.8	28.8	3.0	31.9	46.7	53.9	7.2	
Hori	4924.000	AV	33.7	31.2	5.1	31.4	38.6	53.9	15.3	
Hori	7386.000	AV	33.0	36.0	6.3	32.5	42.8	53.9	11.1	
Hori	9848.000	AV	30.0	38.1	7.2	33.3	42.0	53.9	11.9	
Hori	24620.000	AV	34.3	37.9	-0.9	31.6	39.7	53.9	14.2	
Vert	2483.500	PK	66.3	27.2	2.6	32.2	63.9	73.9	10.0	
Vert	3282.658	PK	50.1	28.8	3.0	31.9	50.0	73.9	23.9	
Vert	4924.000	PK	42.4	31.2	5.1	31.4	47.3	73.9	26.6	
Vert	7386.000	PK	47.9	36.0	6.3	32.5	57.7	73.9	16.2	
Vert	9848.000	PK	43.1	38.1	7.2	33.3	55.1	73.9	18.8	
Vert	24620.000	PK	47.1	37.9	-0.9	31.6	52.5	73.9	21.4	
Vert	2483.500	AV	48.5	27.2	2.6	32.2	46.1	53.9	7.8	
Vert	3282.658	AV	45.2	28.8	3.0	31.9	45.1	53.9	8.8	
Vert	4924.000	AV	28.5	31.2	5.1	31.4	33.4	53.9	20.5	
Vert	7386.000	AV	33.4	36.0	6.3	32.5	43.2	53.9	10.7	
Vert	9848.000	AV	30.0	38.1	7.2	33.3	42.0	53.9	11.9	
Vert	24620.000	AV	34.3	37.9	-0.9	31.6	39.7	53.9	14.2	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11n-40 Tx 2422MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	68.5	27.2	2.5	32.2	66.0	73.9	7.9	
Hori	2400.000	PK	73.6	27.2	2.5	32.2	71.1	-	-	See 20dBc Data Sheet
Hori	3229.328	PK	48.3	28.6	3.0	31.9	48.0	73.9	25.9	
Hori	4844.000	PK	42.7	30.9	5.2	31.4	47.4	73.9	26.5	
Hori	7266.000	PK	42.9	35.8	6.3	32.5	52.5	73.9	21.4	
Hori	9688.000	PK	43.3	37.9	7.1	33.2	55.1	73.9	18.8	
Hori	24220.000	PK	46.4	37.9	-0.9	31.6	51.8	73.9	22.1	
Hori	2390.000	AV	54.4	27.2	2.5	32.2	51.9	53.9	2.0	
Hori	2400.000	AV	62.5	27.2	2.5	32.2	60.0	-	-	See 20dBc Data Sheet
Hori	3229.328	AV	42.1	28.6	3.0	31.9	41.8	53.9	12.1	
Hori	4844.000	AV	32.4	30.9	5.2	31.4	37.1	53.9	16.8	
Hori	7266.000	AV	30.3	35.8	6.3	32.5	39.9	53.9	14.0	
Hori	9688.000	AV	30.6	37.9	7.1	33.2	42.4	53.9	11.5	
Hori	24220.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	
Vert	2390.000	PK	60.0	27.2	2.5	32.2	57.5	73.9	16.4	
Vert	2400.000	PK	68.0	27.2	2.5	32.2	65.5	-	-	See 20dBc Data Sheet
Vert	3229.328	PK	47.9	28.6	3.0	31.9	47.6	73.9	26.3	
Vert	4844.000	PK	41.8	30.9	5.2	31.4	46.5	73.9	27.4	
Vert	7266.000	PK	43.1	35.8	6.3	32.5	52.7	73.9	21.2	
Vert	9688.000	PK	43.0	37.9	7.1	33.2	54.8	73.9	19.1	
Vert	24220.000	PK	46.6	37.9	-0.9	31.6	52.0	73.9	21.9	
Vert	2390.000	AV	44.9	27.2	2.5	32.2	42.4	53.9	11.5	
Vert	2400.000	AV	56.7	27.2	2.5	32.2	54.2	-	-	See 20dBc Data Sheet
Vert	3229.328	AV	41.6	28.6	3.0	31.9	41.3	53.9	12.6	
Vert	4844.000	AV	28.6	30.9	5.2	31.4	33.3	53.9	20.6	
Vert	7266.000	AV	30.3	35.8	6.3	32.5	39.9	53.9	14.0	
Vert	9688.000	AV	30.6	37.9	7.1	33.2	42.4	53.9	11.5	
Vert	24220.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	

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

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	2412.000	PK	96.0	27.2	2.5	32.2	93.5	-	-	Carrier
Hori	2400.000	PK	64.4	27.2	2.5	32.2	61.9	73.5	11.6	
Vert	2412.000	PK	89.4	27.2	2.5	32.2	86.9	-	-	Carrier
Vert	2400.000	PK	58.3	27.2	2.5	32.2	55.8	66.9	11.1	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11n-40 Tx 2437MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	3249.331	PK	50.0	28.7	3.0	31.9	49.8	73.9	24.1	
Hori	4874.000	PK	43.4	31.0	5.1	31.4	48.1	73.9	25.8	
Hori	7311.000	PK	44.2	35.9	6.3	32.5	53.9	73.9	20.0	
Hori	9748.000	PK	43.2	38.0	7.2	33.2	55.2	73.9	18.7	
Hori	24370.000	PK	46.2	37.9	-0.9	31.6	51.6	73.9	22.3	
Hori	3249.331	AV	44.4	28.7	3.0	31.9	44.2	53.9	9.7	
Hori	4874.000	AV	32.1	31.0	5.1	31.4	36.8	53.9	17.1	
Hori	7311.000	AV	31.5	35.9	6.3	32.5	41.2	53.9	12.7	
Hori	9748.000	AV	30.0	38.0	7.2	33.2	42.0	53.9	11.9	
Hori	24370.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	
Vert	3249.331	PK	48.7	28.7	3.0	31.9	48.5	73.9	25.4	
Vert	4874.000	PK	41.5	31.0	5.1	31.4	46.2	73.9	27.7	
Vert	7311.000	PK	44.3	35.9	6.3	32.5	54.0	73.9	19.9	
Vert	9748.000	PK	43.1	38.0	7.2	33.2	55.1	73.9	18.8	
Vert	24370.000	PK	46.3	37.9	-0.9	31.6	51.7	73.9	22.2	
Vert	3249.331	AV	43.1	28.7	3.0	31.9	42.9	53.9	11.0	
Vert	4874.000	AV	28.7	31.0	5.1	31.4	33.4	53.9	20.5	
Vert	7311.000	AV	31.4	35.9	6.3	32.5	41.1	53.9	12.8	
Vert	9748.000	AV	30.0	38.0	7.2	33.2	42.0	53.9	11.9	
Vert	24370.000	AV	34.4	37.9	-0.9	31.6	39.8	53.9	14.1	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/17/2011	05/18/2011
Temperature/ Humidity	25 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takayuki Shimada	Takayuki Shimada
	(1-10GHz)	(10-26.5GHz)
Mode	11n-40 Tx 2452MHz Antenna 1	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	73.0	27.2	2.6	32.2	70.6	73.9	3.3	
Hori	3269.328	PK	49.7	28.8	3.0	31.9	49.6	73.9	24.3	
Hori	4904.000	PK	45.9	31.1	5.1	31.4	50.7	73.9	23.2	
Hori	7356.000	PK	44.6	35.9	6.3	32.5	54.3	73.9	19.6	
Hori	9808.000	PK	43.1	38.1	7.2	33.2	55.2	73.9	18.7	
Hori	24520.000	PK	46.8	37.9	-0.9	31.6	52.2	73.9	21.7	
Hori	2483.500	AV	55.0	27.2	2.6	32.2	52.6	53.9	1.3	
Hori	3269.328	AV	44.7	28.8	3.0	31.9	44.6	53.9	9.3	
Hori	4904.000	AV	32.3	31.1	5.1	31.4	37.1	53.9	16.8	
Hori	7356.000	AV	31.5	35.9	6.3	32.5	41.2	53.9	12.7	
Hori	9808.000	AV	30.7	38.1	7.2	33.2	42.8	53.9	11.1	
Hori	24520.000	AV	34.2	37.9	-0.9	31.6	39.6	53.9	14.3	
Vert	2483.500	PK	67.2	27.2	2.6	32.2	64.8	73.9	9.1	
Vert	3269.328	PK	48.8	28.8	3.0	31.9	48.7	73.9	25.2	
Vert	4904.000	PK	40.9	31.1	5.1	31.4	45.7	73.9	28.2	
Vert	7356.000	PK	44.9	35.9	6.3	32.5	54.6	73.9	19.3	
Vert	9808.000	PK	43.3	38.1	7.2	33.2	55.4	73.9	18.5	
Vert	24520.000	PK	47.0	37.9	-0.9	31.6	52.4	73.9	21.5	
Vert	2483.500	AV	50.4	27.2	2.6	32.2	48.0	53.9	5.9	
Vert	3269.328	AV	43.1	28.8	3.0	31.9	43.0	53.9	10.9	
Vert	4904.000	AV	28.7	31.1	5.1	31.4	33.5	53.9	20.4	
Vert	7356.000	AV	31.4	35.9	6.3	32.5	41.1	53.9	12.8	
Vert	9808.000	AV	30.7	38.1	7.2	33.2	42.8	53.9	11.1	
Vert	24520.000	AV	34.2	37.9	-0.9	31.6	39.6	53.9	14.3	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/18/2011	05/18/2011
Temperature/ Humidity	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11a Tx 5745MHz Antenna 0	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	77.9	32.4	4.1	31.6	82.8	-	-	See 20dBc Data Sheet
Hori	11490.000	PK	50.7	39.7	-1.8	33.3	55.3	73.9	18.7	
Hori	17235.000	PK	46.0	40.9	-0.3	32.6	54.0	73.9	19.9	
Hori	5725.000	AV	58.9	32.4	4.1	31.6	63.8	-	-	See 20dBc Data Sheet
Hori	11490.000	AV	37.2	39.7	-1.8	33.3	41.8	53.9	12.1	
Hori	17235.000	AV	34.0	40.9	-0.3	32.6	42.0	53.9	11.9	
Vert	5725.000	PK	75.6	32.4	4.1	31.6	80.5	-	-	See 20dBc Data Sheet
Vert	11490.000	PK	54.2	39.7	-1.8	33.3	58.8	73.9	15.1	
Vert	17235.000	PK	49.1	40.9	-0.3	32.6	57.1	73.9	16.8	
Vert	5725.000	AV	56.4	32.4	4.1	31.6	61.3	-	-	See 20dBc Data Sheet
Vert	11490.000	AV	40.2	39.7	-1.8	33.3	44.8	53.9	9.1	
Vert	17235.000	AV	36.3	40.9	-0.3	32.6	44.3	53.9	9.6	

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

*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

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	5745.000	PK	96.4	32.4	4.1	31.6	101.3	-	-	Carrier
Hori	5725.000	PK	64.5	32.4	4.1	31.6	69.4	81.3	11.9	
Vert	5745.000	PK	93.9	32.4	4.1	31.6	98.8	-	-	Carrier
Vert	5725.000	PK	62.2	32.4	4.1	31.6	67.1	78.8	11.7	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber		
Report No.	31HE0183-HO-01		
Date	05/18/2011	05/18/2011	05/19/2011
Temperature/ Humidity	23 deg.C / 46% RH	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada (1-18GHz)	Takayuki Shimada (18-40GHz)	Takayuki Shimada (30M-1GHz)
Mode	11a Tx 5785MHz Antenna 0		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	206.651	QP	43.4	16.8	9.0	32.0	37.2	43.5	6.3	
Hori	215.998	QP	43.7	16.9	9.1	32.0	37.7	43.5	5.8	
Hori	235.426	QP	43.9	17.2	9.2	32.1	38.2	46.0	7.8	
Hori	300.174	QP	38.1	15.7	9.7	32.1	31.4	46.0	14.6	
Hori	308.260	QP	37.0	15.9	9.8	32.1	30.6	46.0	15.4	
Hori	719.995	QP	36.9	22.3	12.3	32.2	39.3	46.0	6.7	
Hori	11570.000	PK	51.2	39.6	-1.8	33.3	55.7	73.9	18.2	
Hori	17355.000	PK	46.6	41.7	-0.3	32.5	55.5	73.9	18.4	
Hori	11570.000	AV	38.1	39.6	-1.8	33.3	42.6	53.9	11.3	
Hori	17355.000	AV	34.1	41.7	-0.3	32.5	43.0	53.9	10.9	
Vert	206.651	QP	31.3	16.8	9.0	32.0	25.1	43.5	18.4	
Vert	215.998	QP	33.4	16.9	9.1	32.0	27.4	43.5	16.1	
Vert	235.426	QP	33.8	17.2	9.2	32.1	28.1	46.0	17.9	
Vert	300.174	QP	27.7	15.7	9.7	32.1	21.0	46.0	25.0	
Vert	308.260	QP	26.5	15.9	9.8	32.1	20.1	46.0	25.9	
Vert	719.995	QP	33.6	22.3	12.3	32.2	36.0	46.0	10.0	
Vert	11570.000	PK	58.5	39.6	-1.8	33.3	63.0	73.9	10.9	
Vert	17355.000	PK	48.9	41.7	-0.3	32.5	57.8	73.9	16.1	
Vert	11570.000	AV	44.6	39.6	-1.8	33.3	49.1	53.9	4.8	
Vert	17355.000	AV	35.8	41.7	-0.3	32.5	44.7	53.9	9.2	

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

*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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/18/2011	05/18/2011
Temperature/ Humidity	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11a Tx 5825MHz Antenna 0	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	67.9	32.6	4.1	31.6	73.0	-	-	See 20dBc Data Sheet
Hori	11650.000	PK	55.2	39.6	-1.8	33.3	59.7	73.9	14.2	
Hori	17475.000	PK	47.3	42.5	-0.3	32.5	57.0	73.9	16.9	
Hori	5850.000	AV	50.3	32.6	4.1	31.6	55.4	-	-	See 20dBc Data Sheet
Hori	11650.000	AV	41.4	39.6	-1.8	33.3	45.9	53.9	8.0	
Hori	17475.000	AV	35.2	42.5	-0.3	32.5	44.9	53.9	9.0	
Vert	5850.000	PK	70.0	32.6	4.1	31.6	75.1	-	-	See 20dBc Data Sheet
Vert	11650.000	PK	60.1	39.6	-1.8	33.3	64.6	73.9	9.3	
Vert	17475.000	PK	48.9	42.5	-0.3	32.5	58.6	73.9	15.3	
Vert	5850.000	AV	51.8	32.6	4.1	31.6	56.9	-	-	See 20dBc Data Sheet
Vert	11650.000	AV	46.7	39.6	-1.8	33.3	51.2	53.9	2.7	
Vert	17475.000	AV	36.6	42.5	-0.3	32.5	46.3	53.9	7.6	

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

*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

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	5825.000	PK	94.4	32.5	4.1	31.6	99.4	-	-	Carrier
Hori	5850.000	PK	55.9	32.6	4.1	31.6	61.0	79.4	18.4	
Vert	5825.000	PK	94.3	32.5	4.1	31.6	99.3	-	-	Carrier
Vert	5850.000	PK	57.3	32.6	4.1	31.6	62.4	79.3	16.9	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/18/2011	05/18/2011
Temperature/ Humidity	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11n-20 Tx 5745MHz Antenna 0	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	80.0	32.4	4.1	31.6	84.9	-	-	See 20dBc Data Sheet
Hori	11490.000	PK	53.8	39.7	-1.8	33.3	58.4	73.9	15.5	
Hori	17235.000	PK	48.3	40.9	-0.3	32.6	56.3	73.9	17.6	
Hori	5725.000	AV	58.4	32.4	4.1	31.6	63.3	-	-	See 20dBc Data Sheet
Hori	11490.000	AV	39.8	39.7	-1.8	33.3	44.4	53.9	9.5	
Hori	17235.000	AV	35.5	40.9	-0.3	32.6	43.5	53.9	10.4	
Vert	5725.000	PK	77.2	32.4	4.1	31.6	82.1	-	-	See 20dBc Data Sheet
Vert	11490.000	PK	55.9	39.7	-1.8	33.3	60.5	73.9	13.4	
Vert	17235.000	PK	49.2	40.9	-0.3	32.6	57.2	73.9	16.7	
Vert	5725.000	AV	55.9	32.4	4.1	31.6	60.8	-	-	See 20dBc Data Sheet
Vert	11490.000	AV	42.5	39.7	-1.8	33.3	47.1	53.9	6.8	
Vert	17235.000	AV	36.7	40.9	-0.3	32.6	44.7	53.9	9.2	

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

*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

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	5745.000	PK	97.4	32.4	4.1	31.6	102.3	-	-	Carrier
Hori	5725.000	PK	64.7	32.4	4.1	31.6	69.6	82.3	12.7	
Vert	5745.000	PK	94.6	32.4	4.1	31.6	99.5	-	-	Carrier
Vert	5725.000	PK	62.6	32.4	4.1	31.6	67.5	79.5	12.0	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/18/2011	05/18/2011
Temperature/ Humidity	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11n-20 Tx 5785MHz Antenna 0	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	11570.000	PK	51.9	39.6	-1.8	33.3	56.4	73.9	17.5	
Hori	17355.000	PK	47.3	41.7	-0.3	32.5	56.2	73.9	17.8	
Hori	11570.000	AV	38.3	39.6	-1.8	33.3	42.8	53.9	11.1	
Hori	17355.000	AV	34.5	41.7	-0.3	32.5	43.4	53.9	10.5	
Vert	11570.000	PK	57.2	39.6	-1.8	33.3	61.7	73.9	12.2	
Vert	17355.000	PK	47.5	41.7	-0.3	32.5	56.4	73.9	17.5	
Vert	11570.000	AV	43.8	39.6	-1.8	33.3	48.3	53.9	5.6	
Vert	17355.000	AV	35.2	41.7	-0.3	32.5	44.1	53.9	9.8	

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

*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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/18/2011	05/18/2011
Temperature/ Humidity	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11n-20 Tx 5825MHz Antenna 0	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	68.9	32.6	4.1	31.6	74.0	-	-	See 20dBc Data Sheet
Hori	11650.000	PK	48.7	39.6	-1.8	33.3	53.2	73.9	20.7	
Hori	17475.000	PK	46.8	42.5	-0.3	32.5	56.5	73.9	17.5	
Hori	5850.000	AV	50.9	32.6	4.1	31.6	56.0	-	-	See 20dBc Data Sheet
Hori	11650.000	AV	35.5	39.6	-1.8	33.3	40.0	53.9	13.9	
Hori	17475.000	AV	34.0	42.5	-0.3	32.5	43.7	53.9	10.2	
Vert	5850.000	PK	72.3	32.6	4.1	31.6	77.4	-	-	See 20dBc Data Sheet
Vert	11650.000	PK	59.4	39.6	-1.8	33.3	63.9	73.9	10.0	
Vert	17475.000	PK	50.1	42.5	-0.3	32.5	59.8	73.9	14.1	
Vert	5850.000	AV	52.8	32.6	4.1	31.6	57.9	-	-	See 20dBc Data Sheet
Vert	11650.000	AV	45.8	39.6	-1.8	33.3	50.3	53.9	3.6	
Vert	17475.000	AV	36.2	42.5	-0.3	32.5	45.9	53.9	8.0	

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

*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

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	5825.000	PK	95.1	32.5	4.1	31.6	100.1	-	-	Carrier
Hori	5850.000	PK	56.2	32.6	4.1	31.6	61.3	80.1	18.8	
Vert	5825.000	PK	96.3	32.5	4.1	31.6	101.3	-	-	Carrier
Vert	5850.000	PK	59.3	32.6	4.1	31.6	64.4	81.3	16.9	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/18/2011	05/18/2011
Temperature/ Humidity	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11n-40 Tx 5755MHz Antenna 0	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5718.683	PK	79.3	32.4	4.1	31.6	84.2	-	-	See 20dBc Data Sheet
Hori	5725.000	PK	79.6	32.4	4.1	31.6	84.5	-	-	See 20dBc Data Sheet
Hori	11510.000	PK	48.6	39.7	-1.8	33.3	53.2	73.9	20.7	
Hori	17265.000	PK	46.1	41.1	-0.3	32.6	54.3	73.9	19.6	
Hori	5718.683	AV	63.4	32.4	4.1	31.6	68.3	-	-	See 20dBc Data Sheet
Hori	5725.000	AV	62.6	32.4	4.1	31.6	67.5	-	-	See 20dBc Data Sheet
Hori	11510.000	AV	34.8	39.7	-1.8	33.3	39.4	53.9	14.5	
Hori	17265.000	AV	33.1	41.1	-0.3	32.6	41.3	53.9	12.6	
Vert	5718.720	PK	78.0	32.4	4.1	31.6	82.9	-	-	See 20dBc Data Sheet
Vert	5725.000	PK	78.5	32.4	4.1	31.6	83.4	-	-	See 20dBc Data Sheet
Vert	11510.000	PK	54.5	39.7	-1.8	33.3	59.1	73.9	14.8	
Vert	17265.000	PK	45.9	41.1	-0.3	32.6	54.1	73.9	19.8	
Vert	5718.720	AV	63.3	32.4	4.1	31.6	68.2	-	-	See 20dBc Data Sheet
Vert	5725.000	AV	61.9	32.4	4.1	31.6	66.8	-	-	See 20dBc Data Sheet
Vert	11510.000	AV	39.6	39.7	-1.8	33.3	44.2	53.9	9.7	
Vert	17265.000	AV	33.6	41.1	-0.3	32.6	41.8	53.9	12.1	

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

*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

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	5755.000	PK	93.8	32.4	4.1	31.6	98.7	-	-	Carrier
Hori	5718.683	PK	68.5	32.4	4.1	31.6	73.4	78.7	5.3	
Hori	5725.000	PK	68.2	32.4	4.1	31.6	73.1	78.7	5.6	
Vert	5755.000	PK	92.9	32.4	4.1	31.6	97.8	-	-	Carrier
Vert	5718.720	PK	66.7	32.4	4.1	31.6	71.6	77.8	6.2	
Vert	5725.000	PK	66.4	32.4	4.1	31.6	71.3	77.8	6.5	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	31HE0183-HO-01	
Date	05/18/2011	05/18/2011
Temperature/ Humidity	23 deg.C / 46% RH	23 deg.C / 46% RH
Engineer	Takumi Shimada	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11n-40 Tx 5795MHz Antenna 0	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	61.2	32.6	4.1	31.6	66.3	73.9	7.6	
Hori	11590.000	PK	49.4	39.6	-1.8	33.3	53.9	73.9	20.0	
Hori	17385.000	PK	45.6	41.9	-0.3	32.5	54.7	73.9	19.2	
Hori	5850.000	AV	42.8	32.6	4.1	31.6	47.9	53.9	6.0	
Hori	11590.000	AV	36.3	39.6	-1.8	33.3	40.8	53.9	13.1	
Hori	17385.000	AV	33.5	41.9	-0.3	32.5	42.6	53.9	11.3	
Vert	5850.000	PK	63.2	32.6	4.1	31.6	68.3	73.9	5.6	
Vert	11590.000	PK	55.0	39.6	-1.8	33.3	59.5	73.9	14.4	
Vert	17385.000	PK	44.3	41.9	-0.3	32.5	53.4	73.9	20.5	
Vert	5850.000	AV	44.3	32.6	4.1	31.6	49.4	53.9	4.6	
Vert	11590.000	AV	40.1	39.6	-1.8	33.3	44.6	53.9	9.3	
Vert	17385.000	AV	34.1	41.9	-0.3	32.5	43.2	53.9	10.7	

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

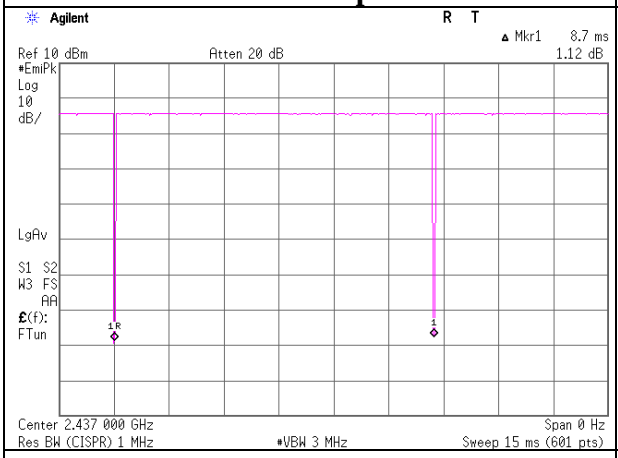
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

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

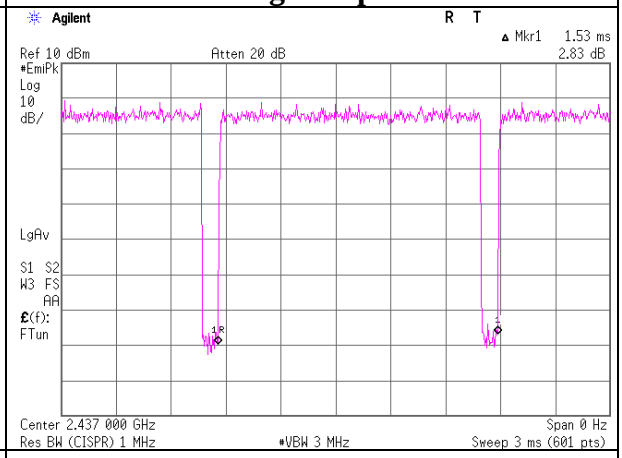
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

The tested burst timing

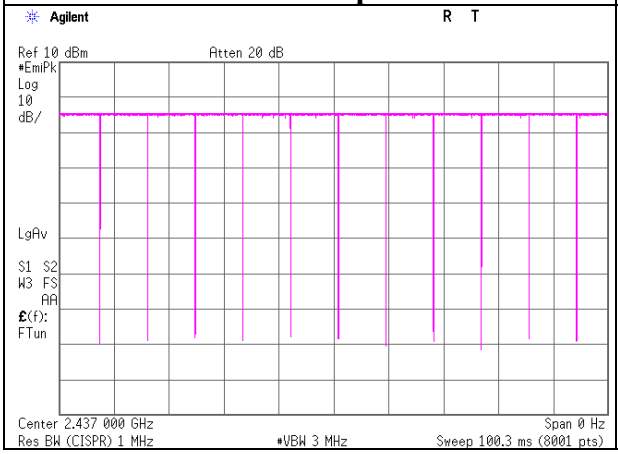
11b 1Mbps



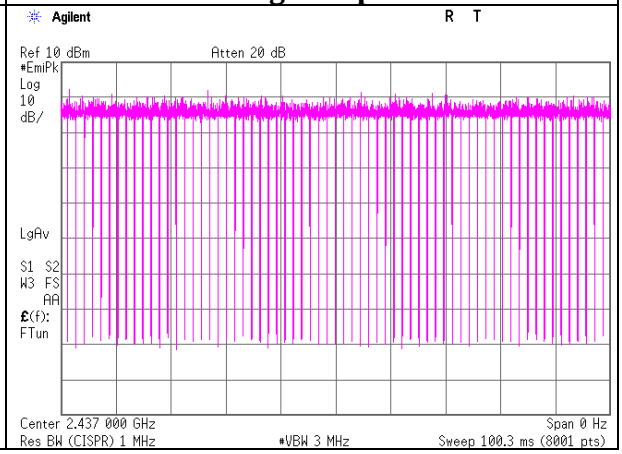
11g 6Mbps



11b 1Mbps



11g 6Mbps



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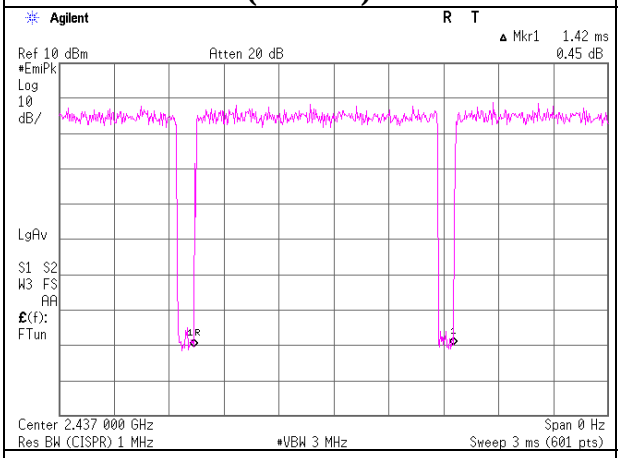
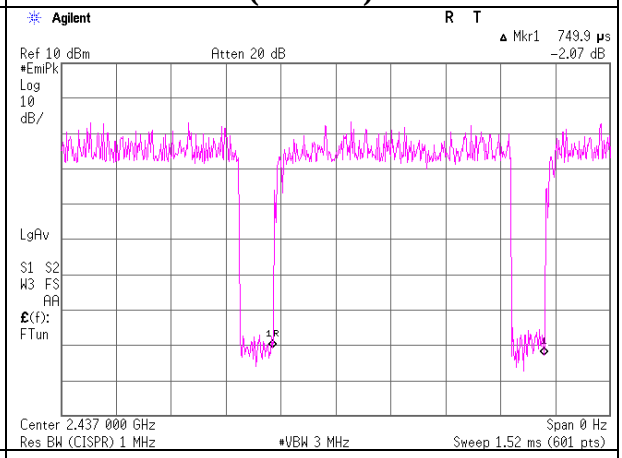
Facsimile : +81 596 24 8124

The tested burst timing

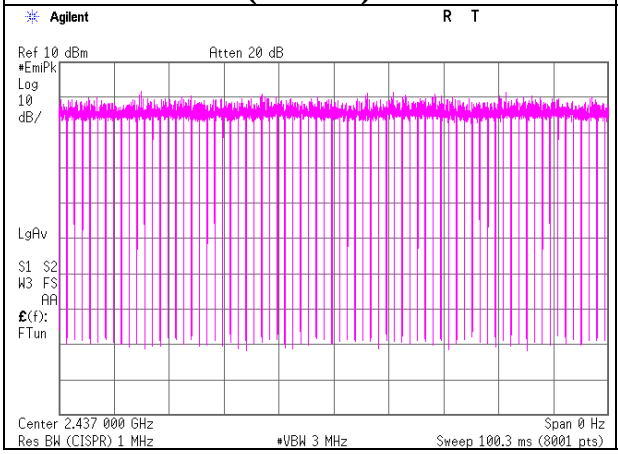
11n-20(2.4GHz) MCS0



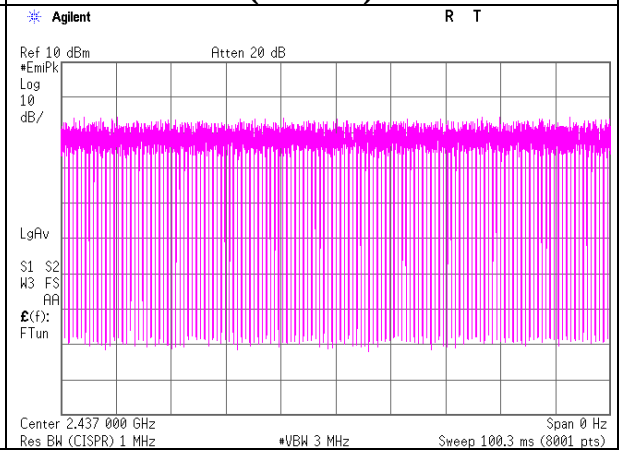
11n-40(2.4GHz) MCS0



11n-20(2.4GHz) MCS0



11n-40(2.4GHz) MCS0



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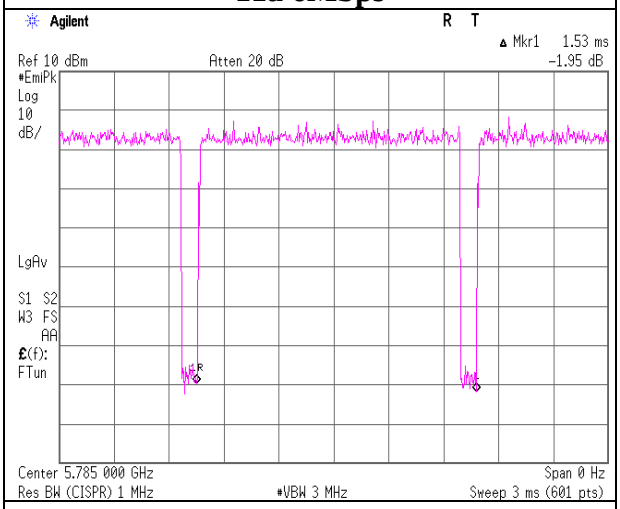
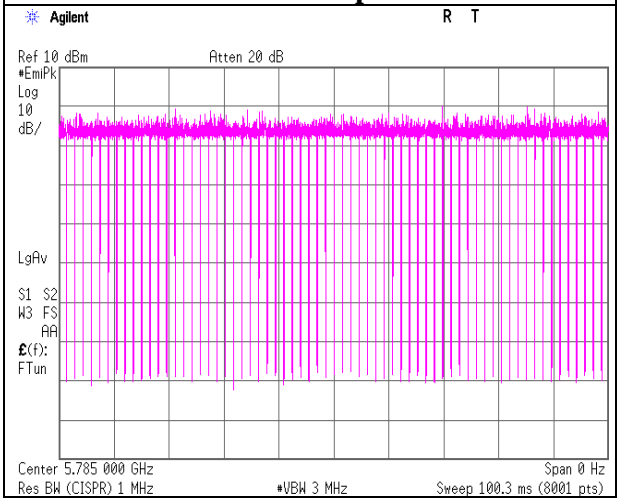
The tested burst timing

11a 6Mbps



11a 6Mbps



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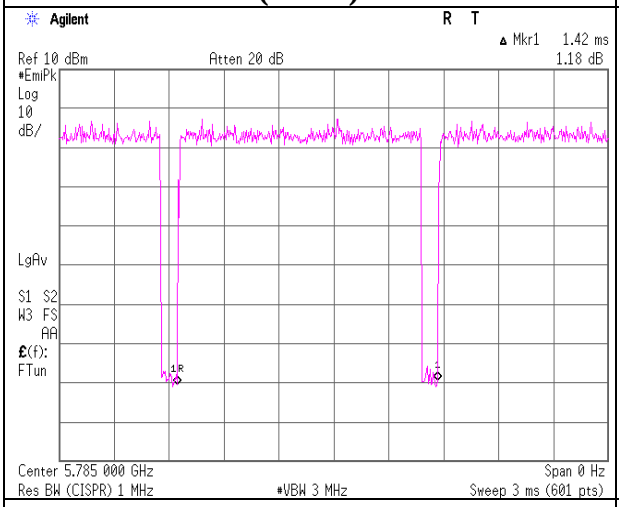
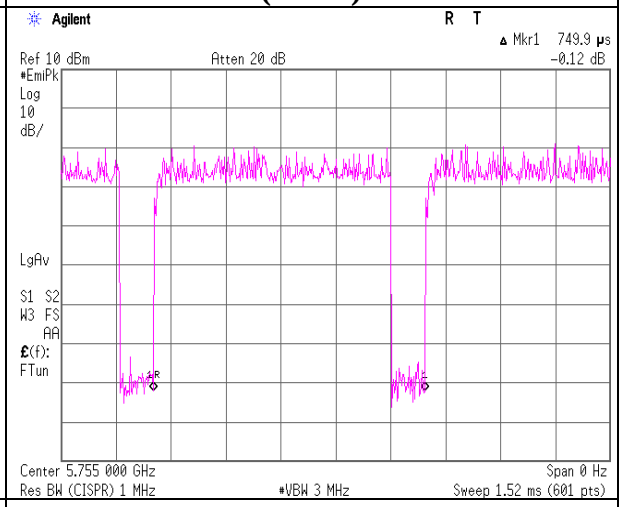
The tested burst timing

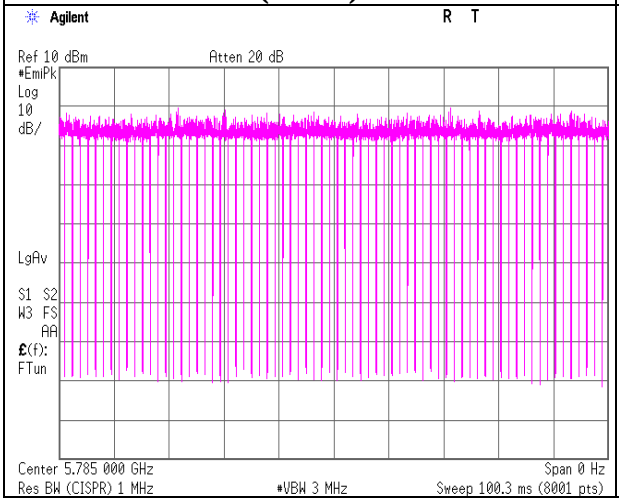
11n-20(5GHz) MCS0



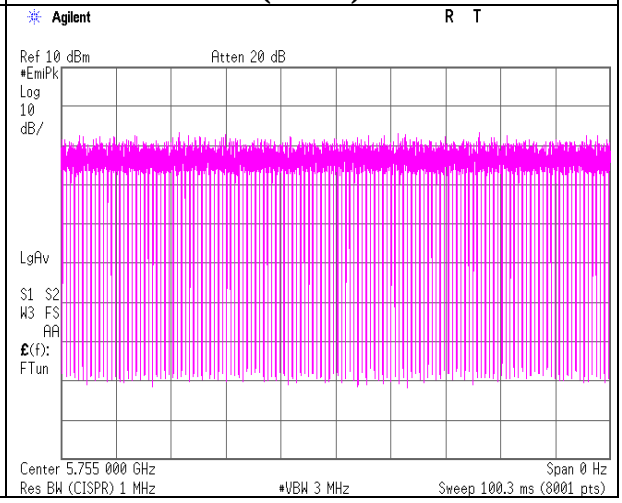
11n-40(5GHz) MCS0



11n-20(5GHz) MCS0



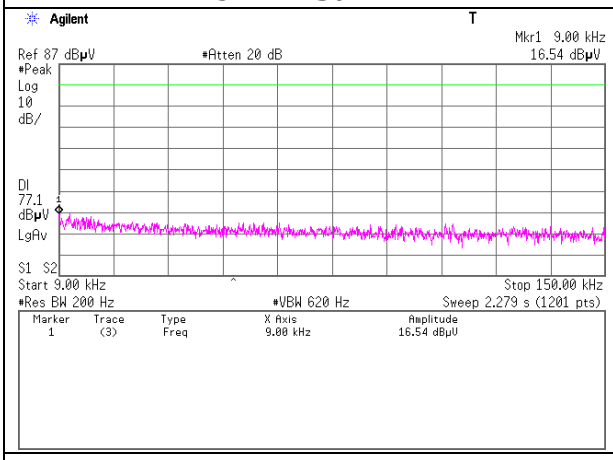
11n-40(5GHz) MCS0



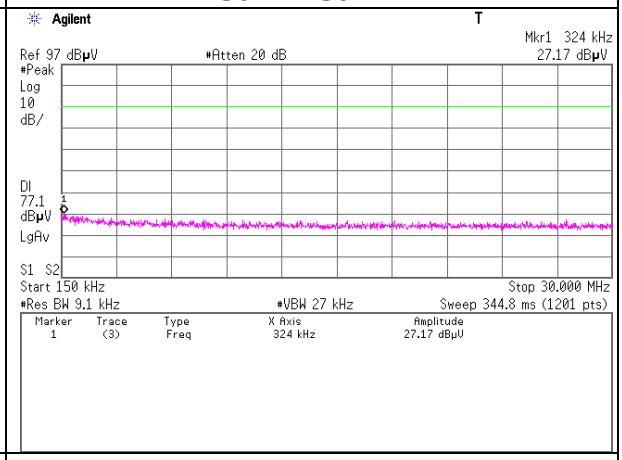
Conducted Spurious Emission

11b Tx 2412MHz

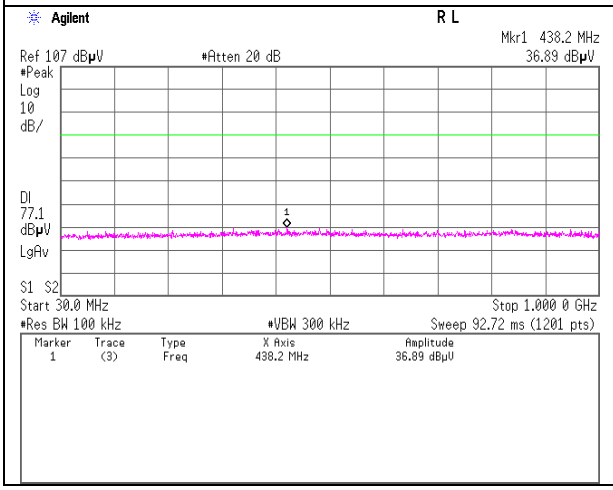
9kHz-150kHz



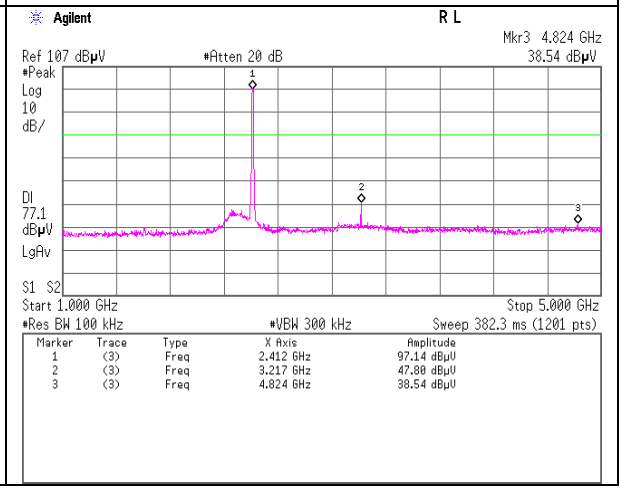
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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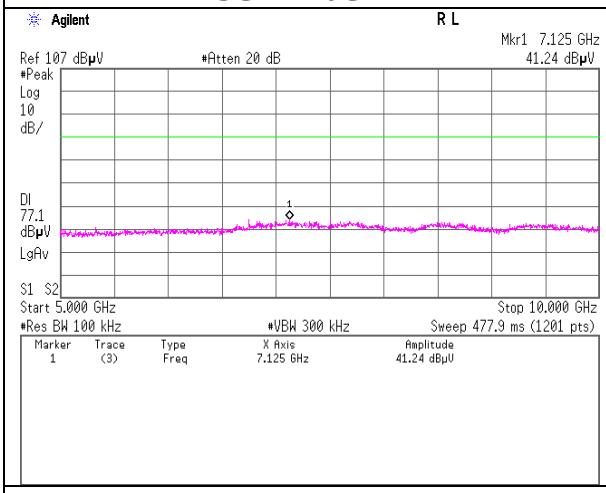
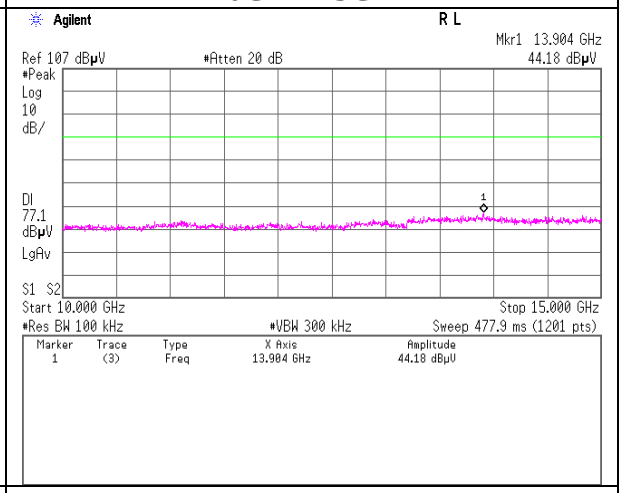
Conducted Spurious Emission

11b Tx 2412MHz

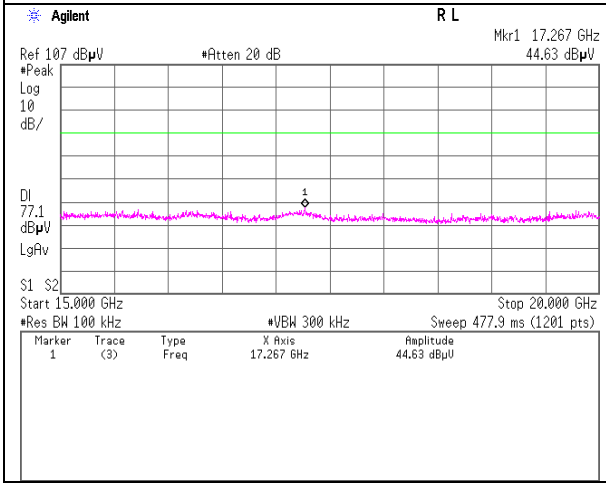
5GHz-10GHz



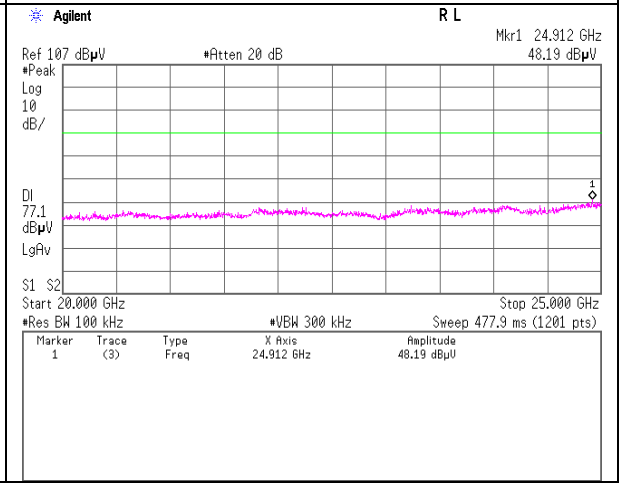
10GHz-15GHz



15GHz-20GHz



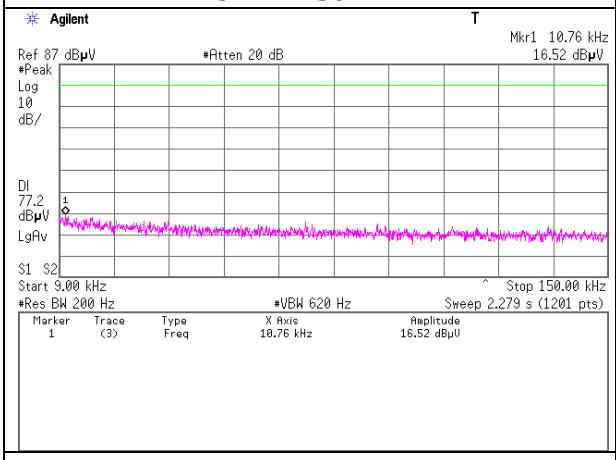
20GHz-25GHz



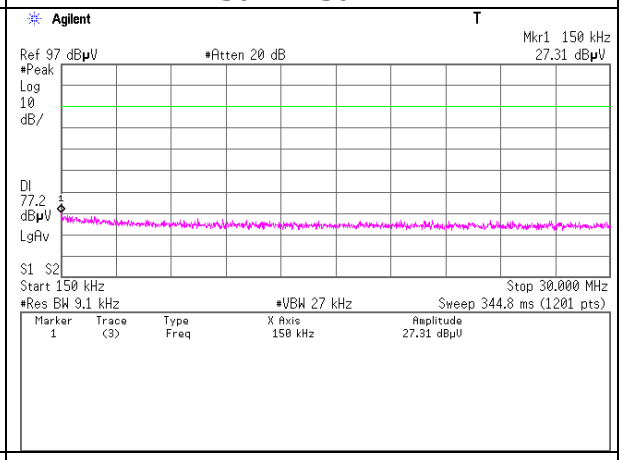
Conducted Spurious Emission

11b Tx 2437MHz

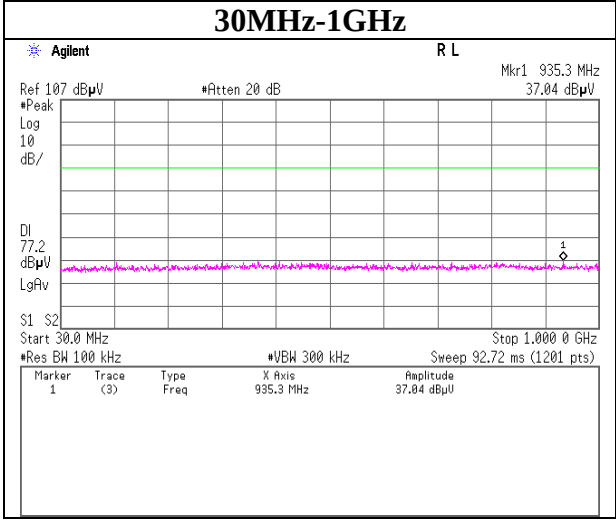
9kHz-150kHz



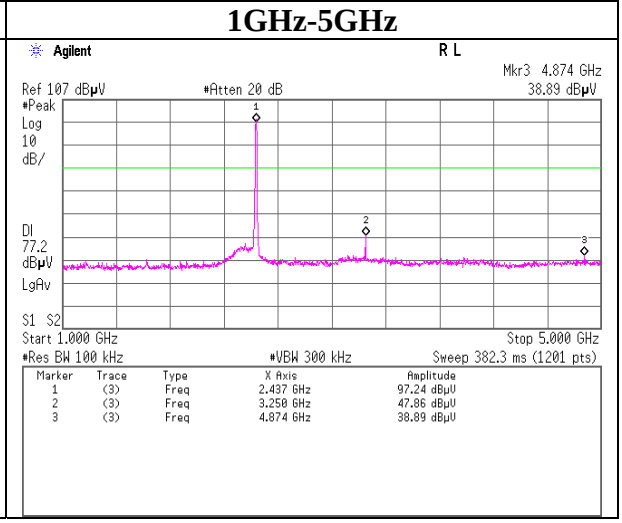
150kHz-30MHz



30MHz-1GHz



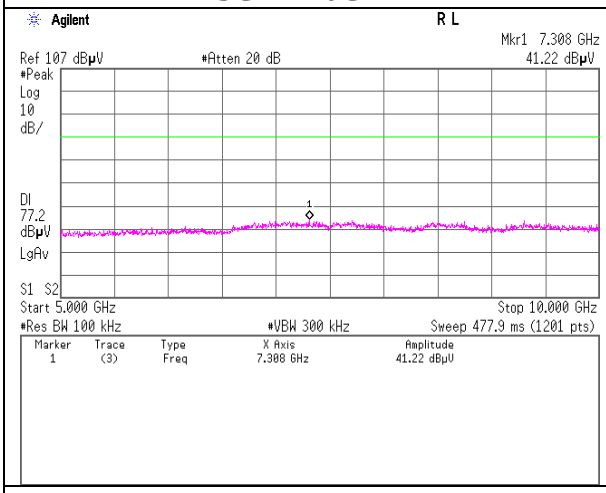
1GHz-5GHz



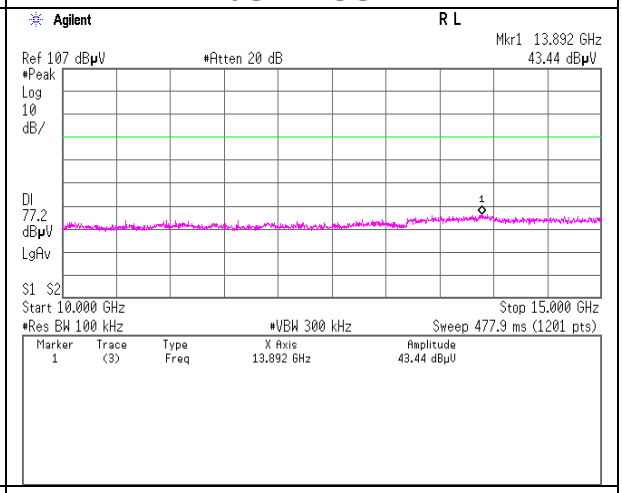
Conducted Spurious Emission

11b Tx 2437MHz

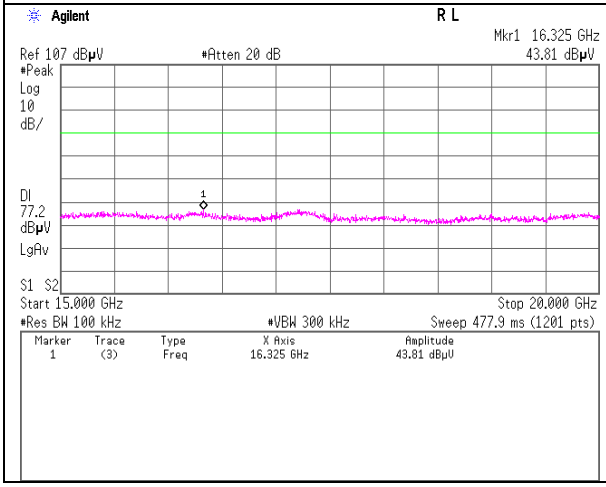
5GHz-10GHz



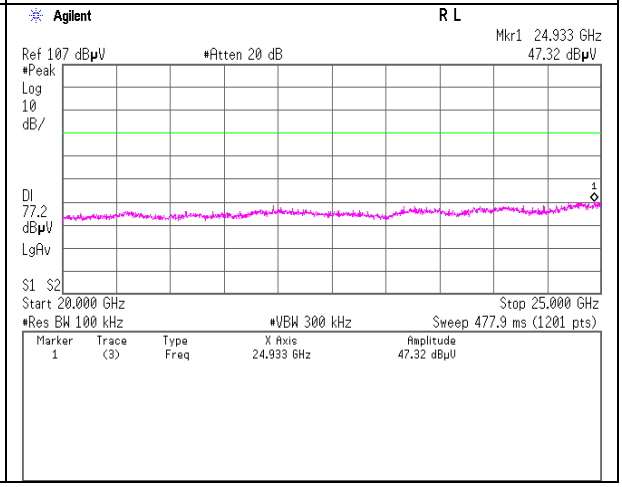
10GHz-15GHz



15GHz-20GHz



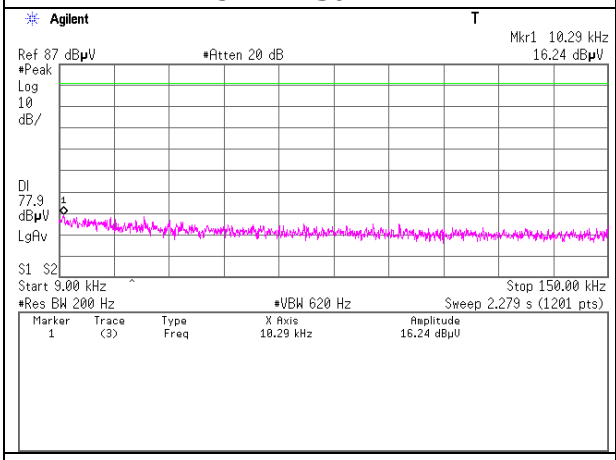
20GHz-25GHz



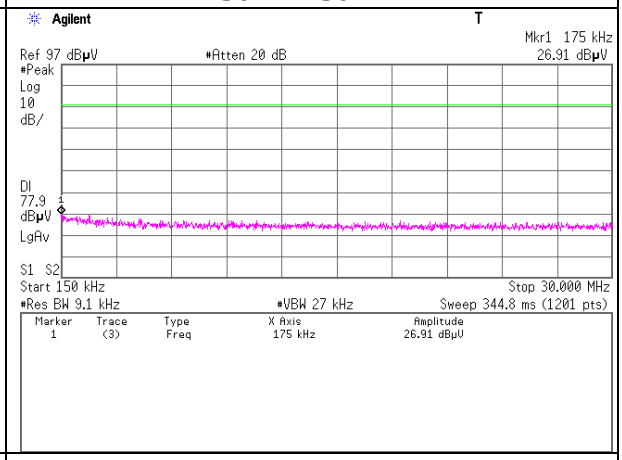
Conducted Spurious Emission

11b Tx 2462MHz

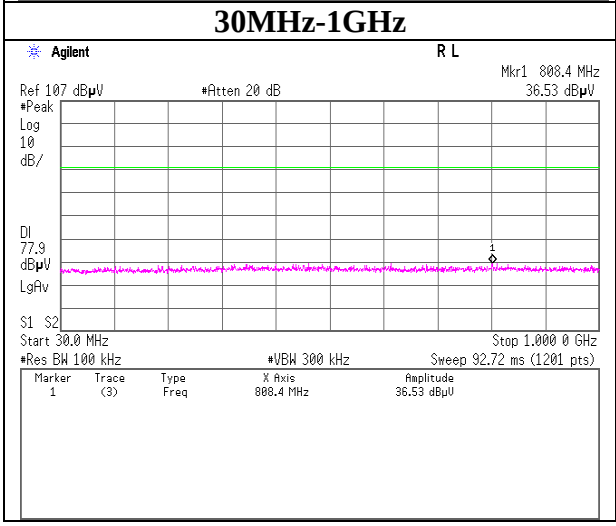
9kHz-150kHz



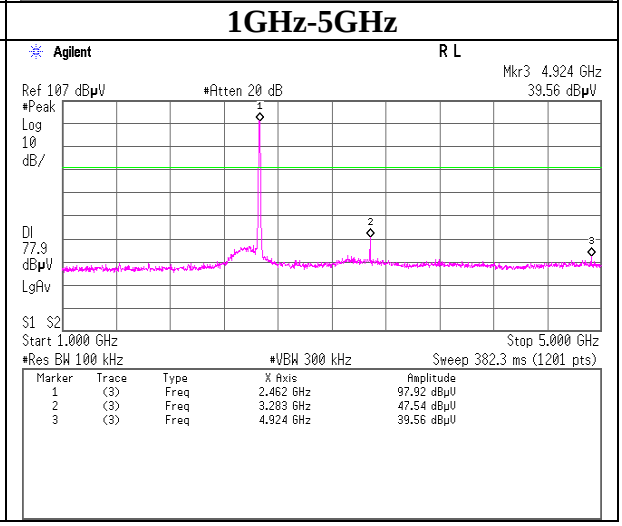
150kHz-30MHz



30MHz-1GHz



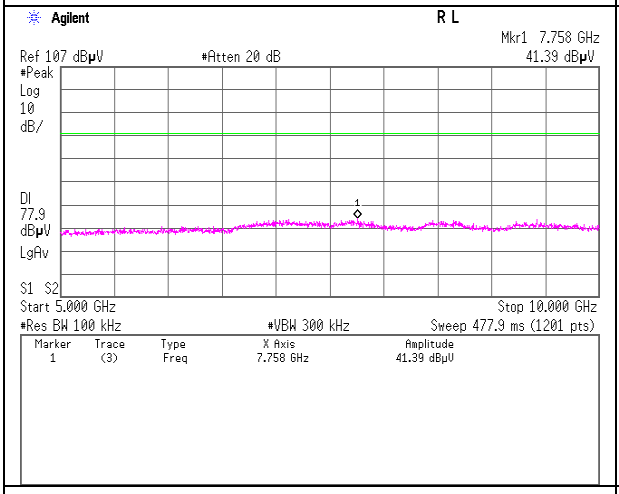
1GHz-5GHz



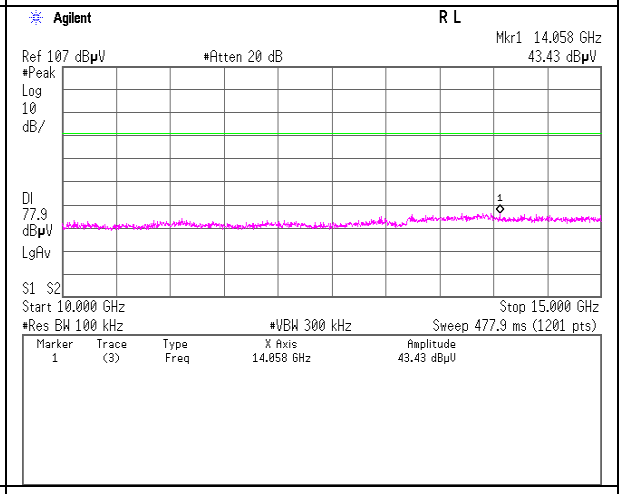
Conducted Spurious Emission

11b Tx 2462MHz

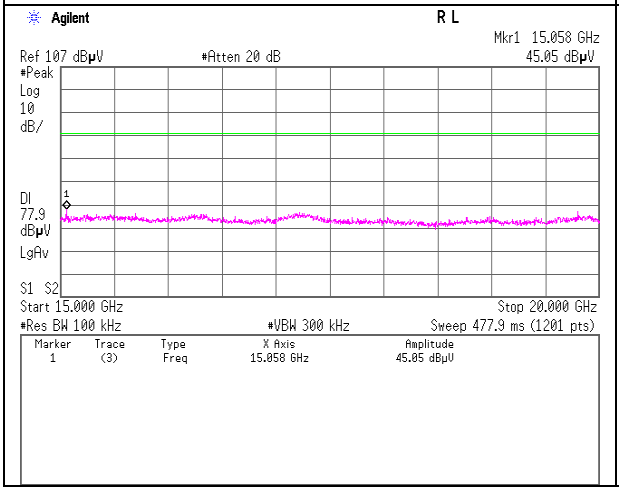
5GHz-10GHz



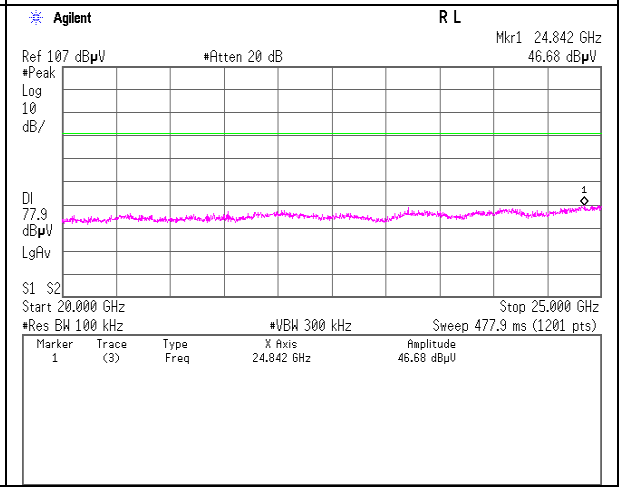
10GHz-15GHz



15GHz-20GHz



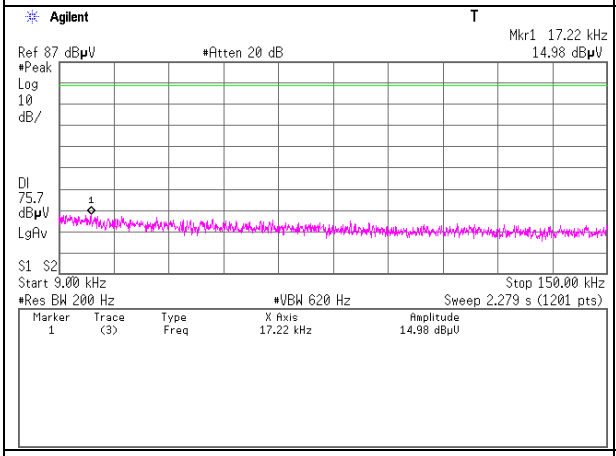
20GHz-25GHz



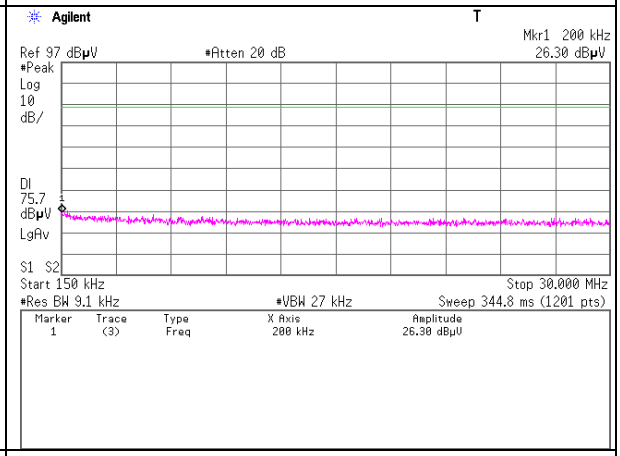
Conducted Spurious Emission

11g Tx 2412MHz

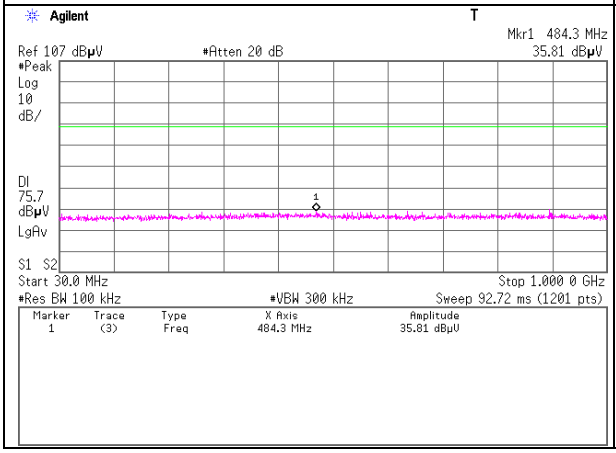
9kHz-150kHz



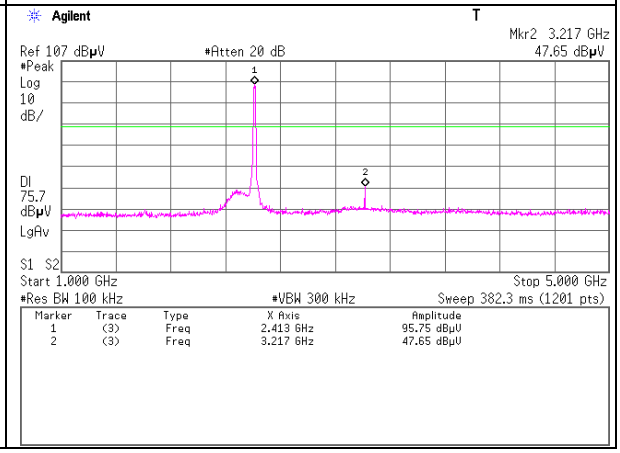
150kHz-30MHz



30MHz-1GHz



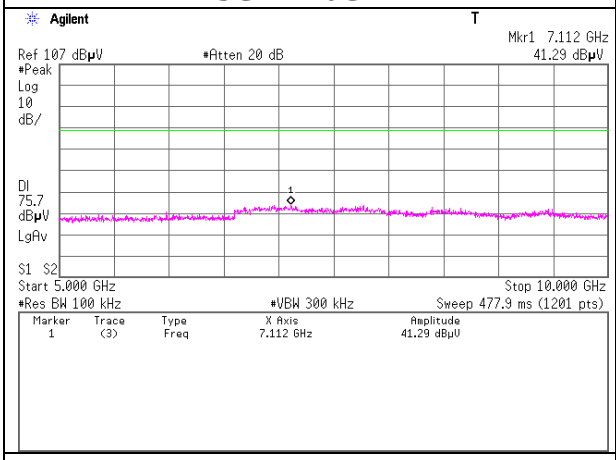
1GHz-5GHz



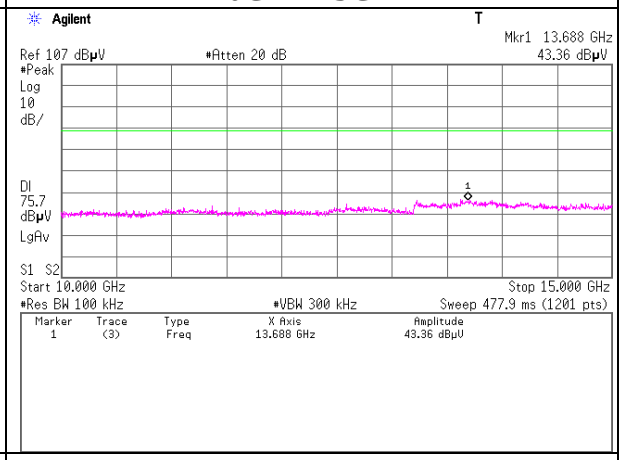
Conducted Spurious Emission

11g Tx 2412MHz

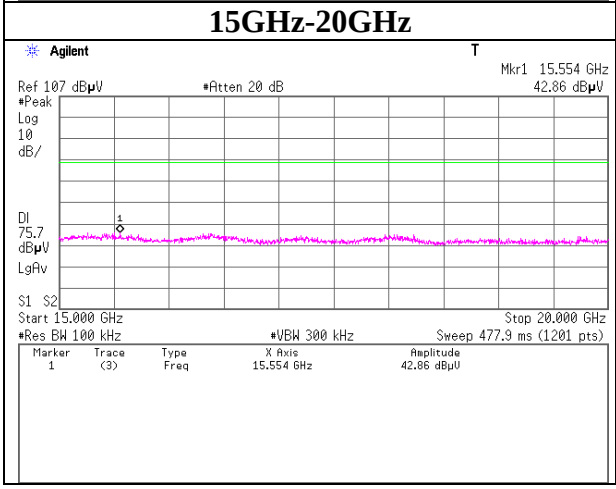
5GHz-10GHz



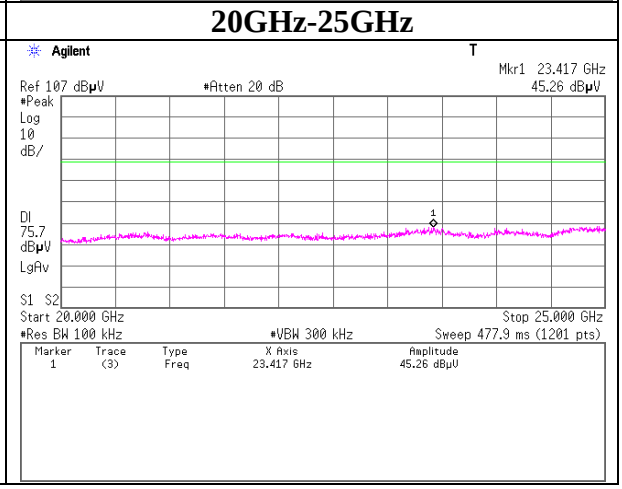
10GHz-15GHz



15GHz-20GHz



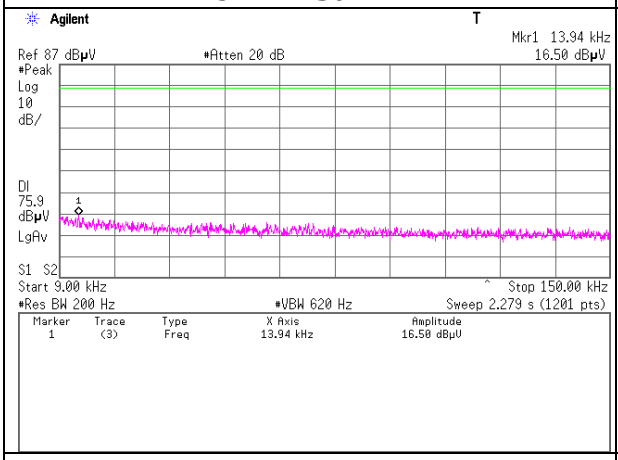
20GHz-25GHz



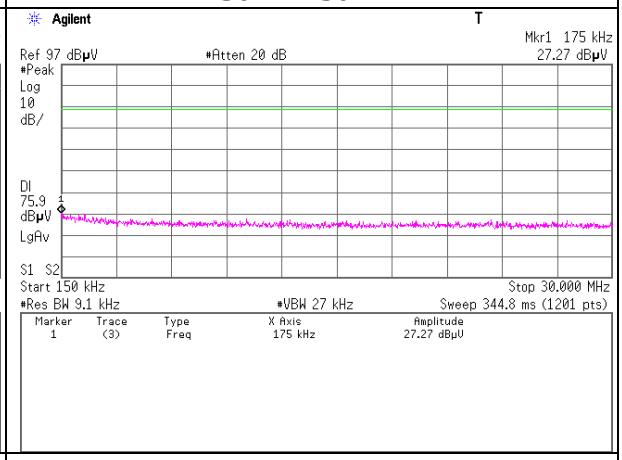
Conducted Spurious Emission

11g Tx 2437MHz

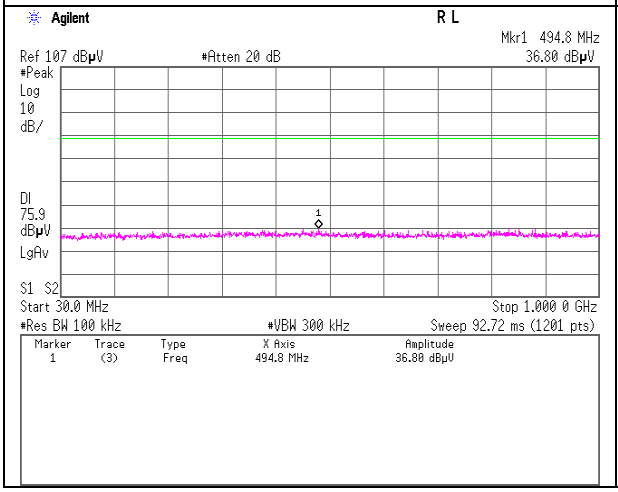
9kHz-150kHz



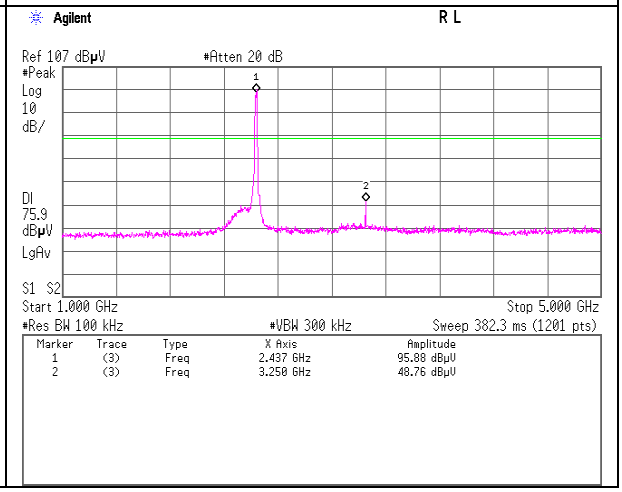
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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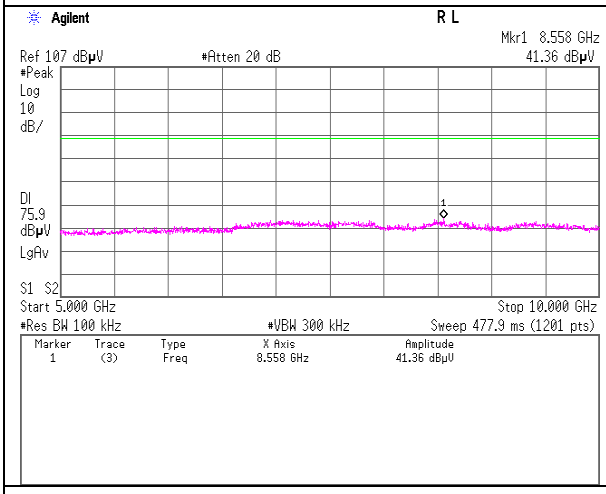
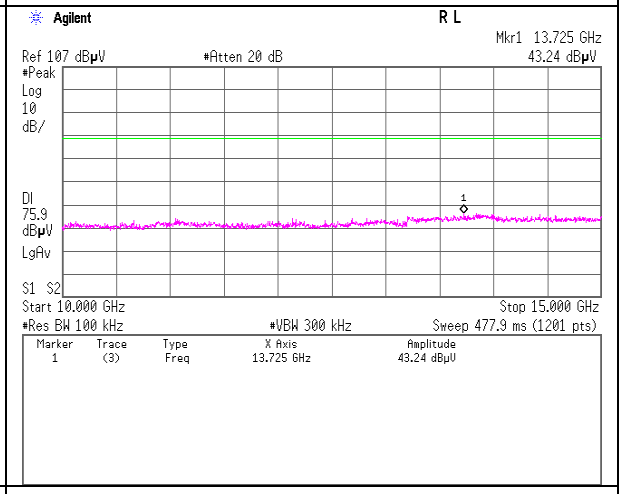
Conducted Spurious Emission

11g Tx 2437MHz

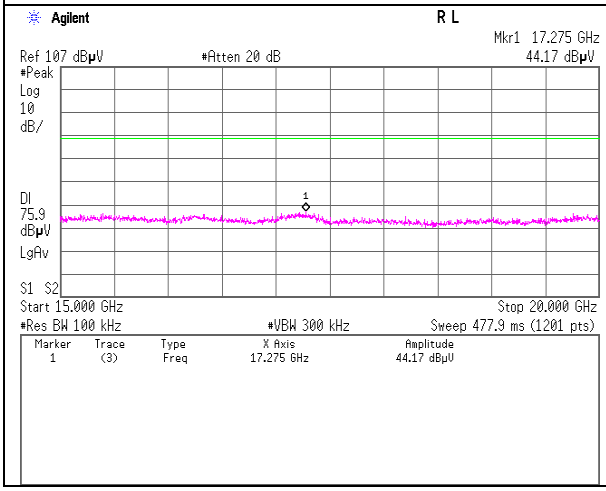
5GHz-10GHz



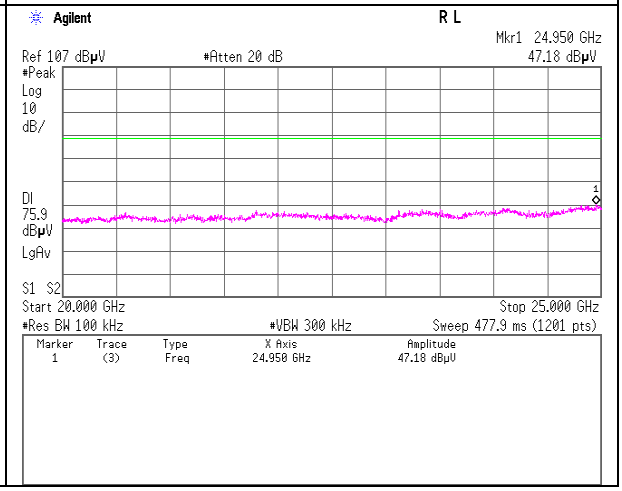
10GHz-15GHz



15GHz-20GHz



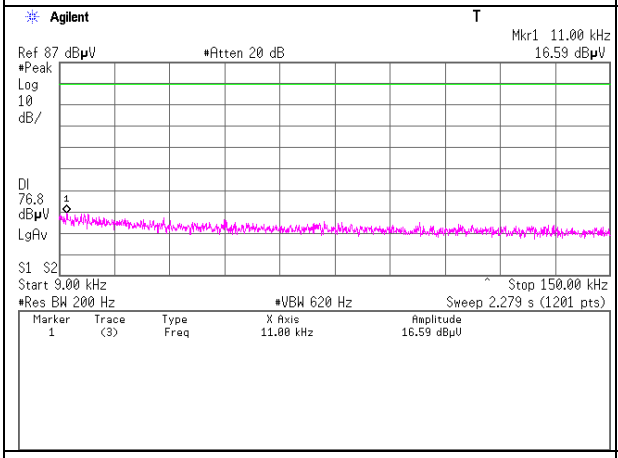
20GHz-25GHz



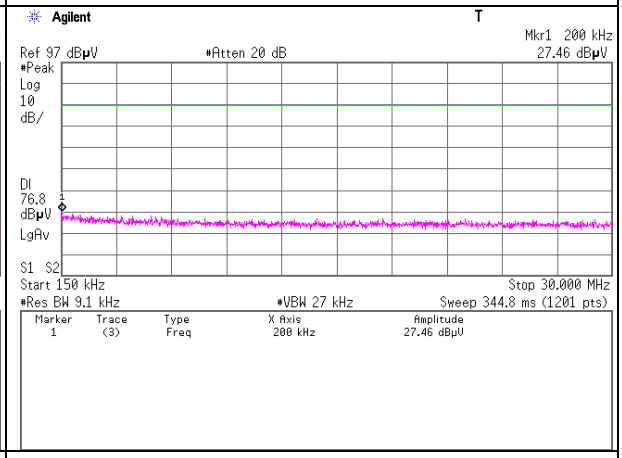
Conducted Spurious Emission

11g Tx 2462MHz

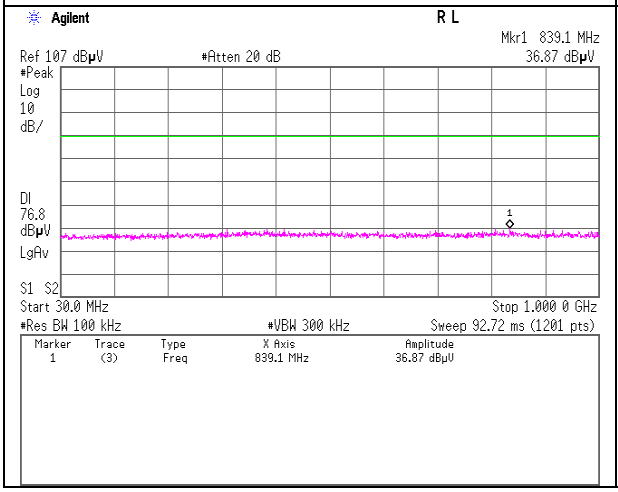
9kHz-150kHz



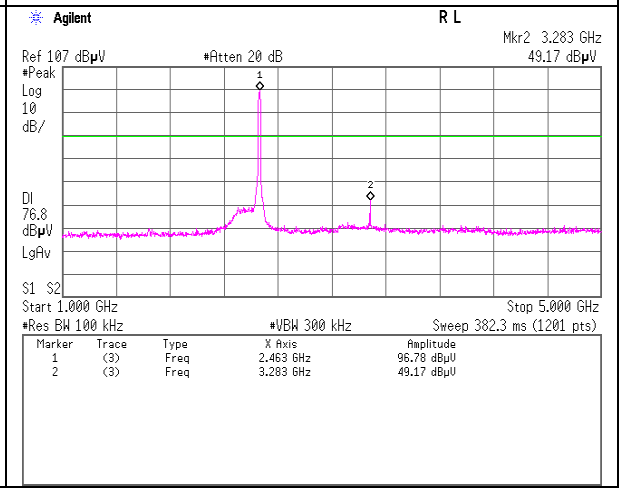
150kHz-30MHz



30MHz-1GHz



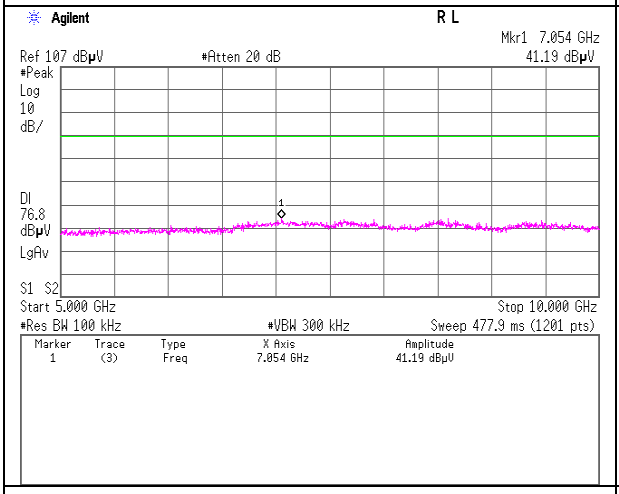
1GHz-5GHz



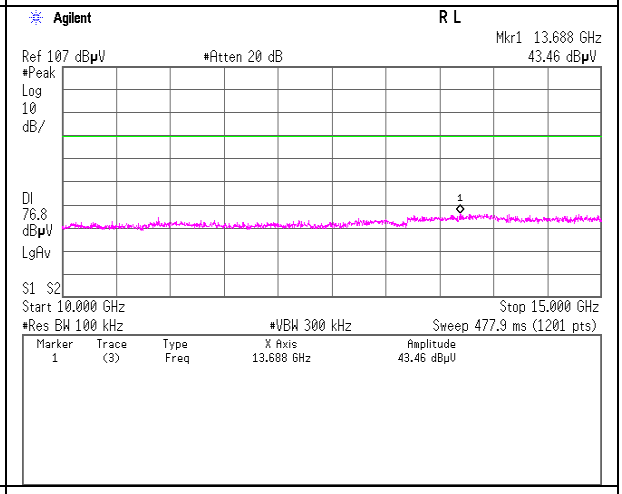
Conducted Spurious Emission

11g Tx 2462MHz

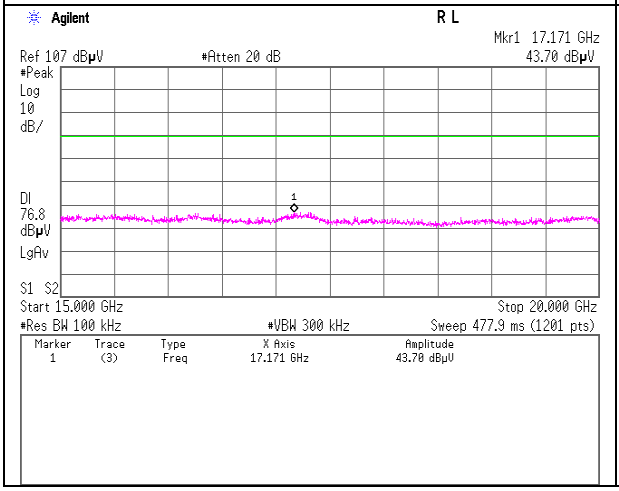
5GHz-10GHz



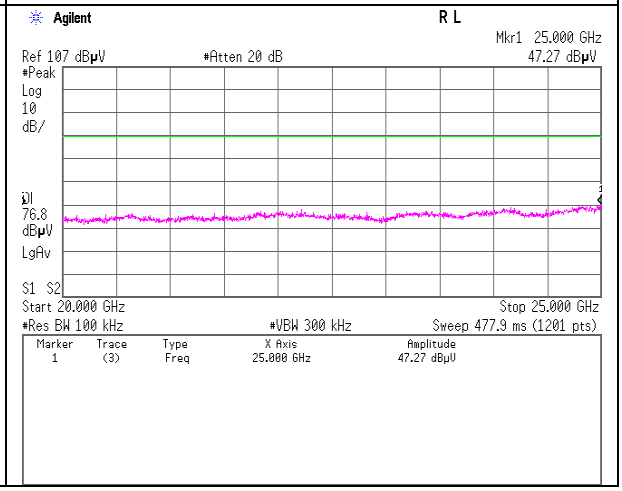
10GHz-15GHz



15GHz-20GHz



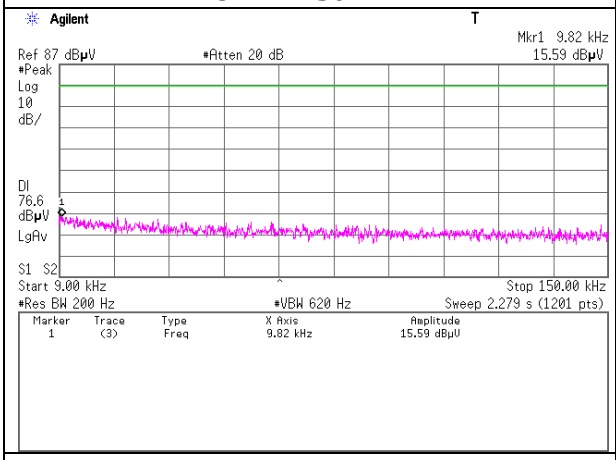
20GHz-25GHz



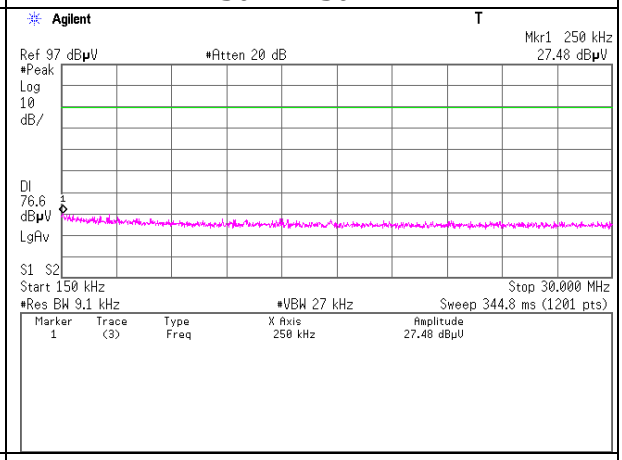
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2412MHz

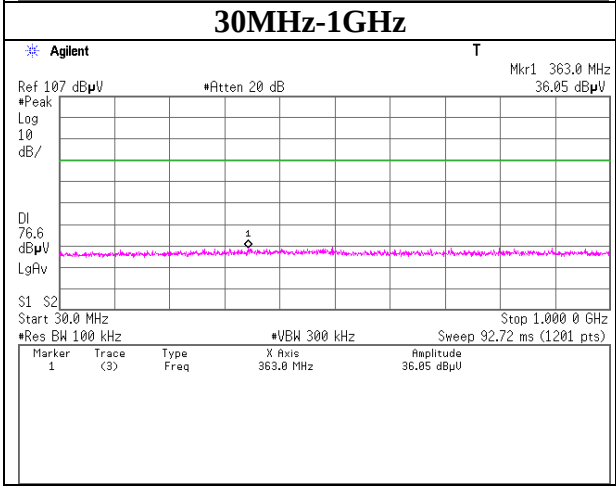
9kHz-150kHz



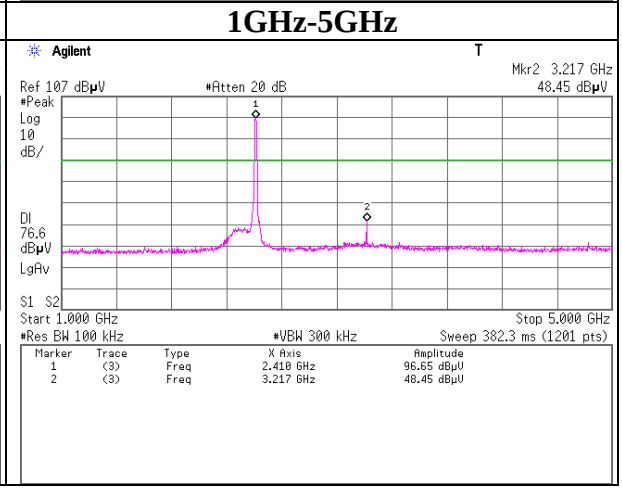
150kHz-30MHz



30MHz-1GHz



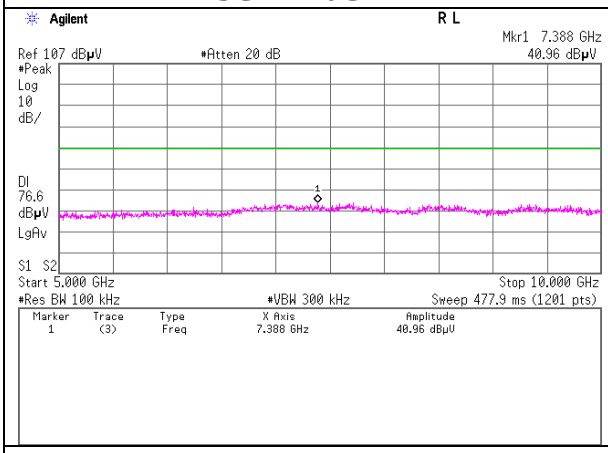
1GHz-5GHz



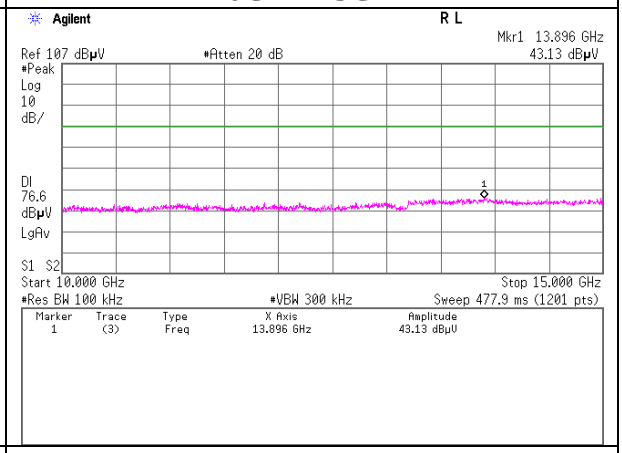
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2412MHz

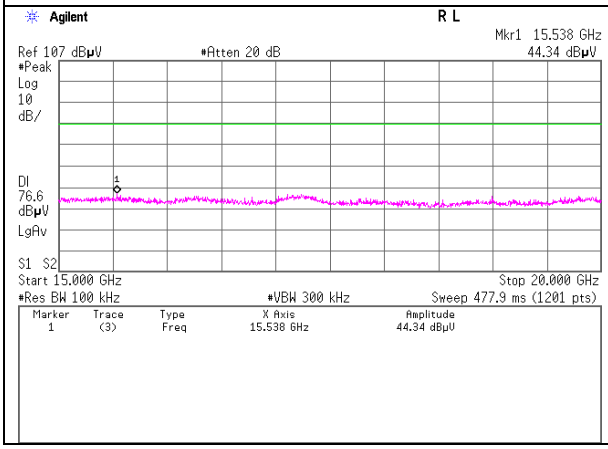
5GHz-10GHz



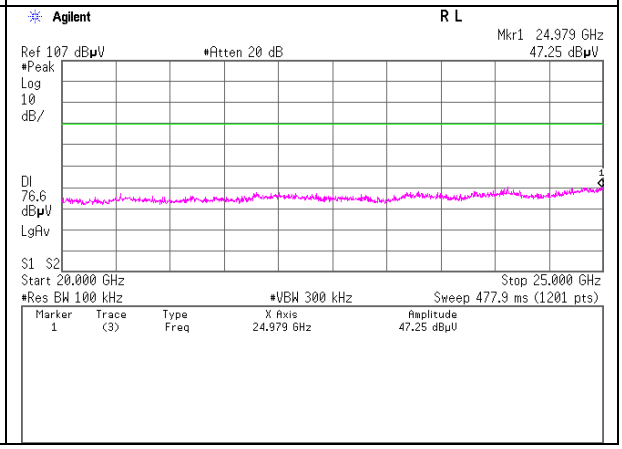
10GHz-15GHz



15GHz-20GHz



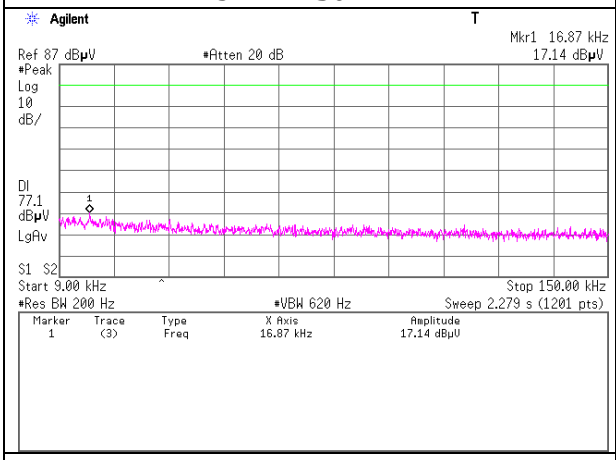
20GHz-25GHz



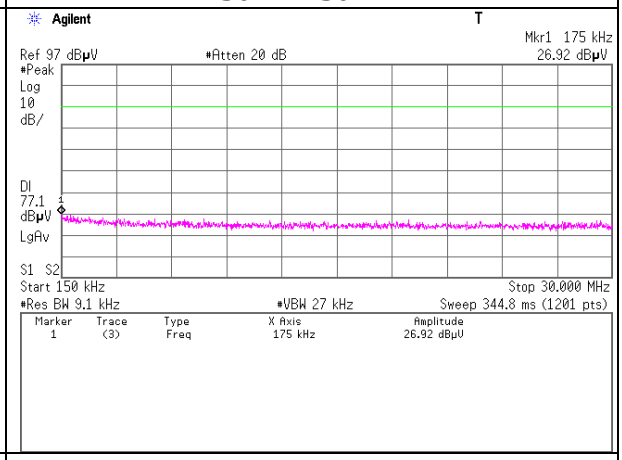
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2437MHz

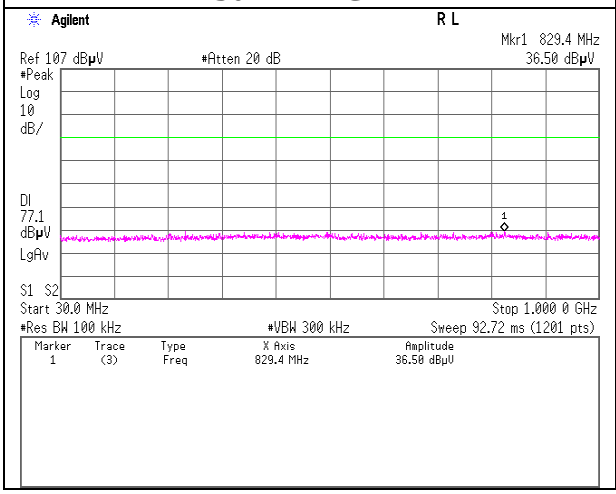
9kHz-150kHz



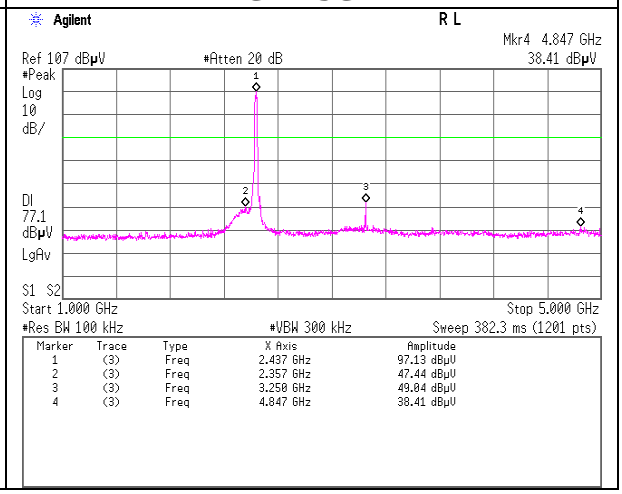
150kHz-30MHz



30MHz-1GHz



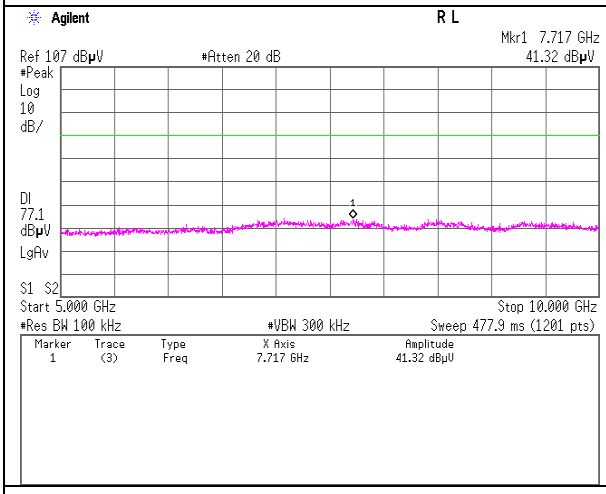
1GHz-5GHz



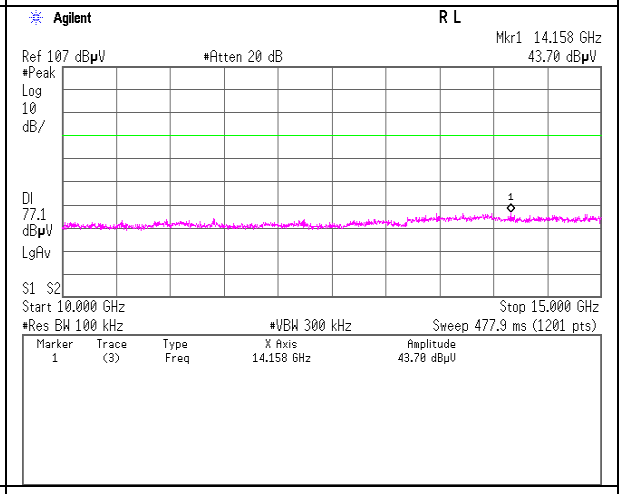
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2437MHz

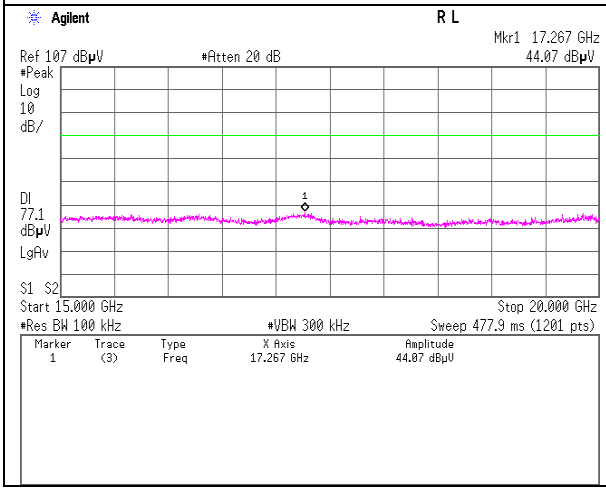
5GHz-10GHz



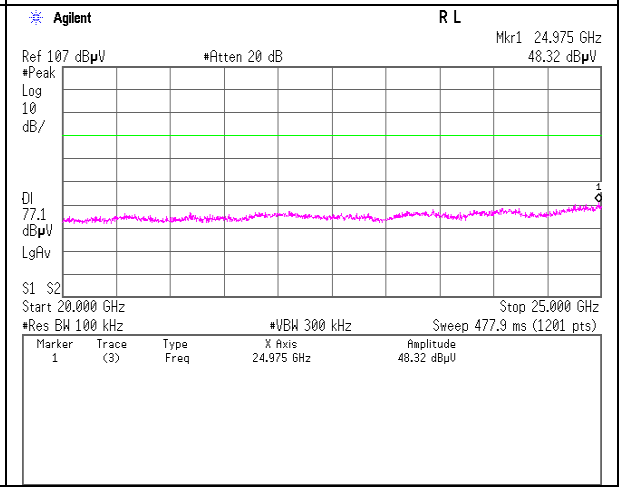
10GHz-15GHz



15GHz-20GHz



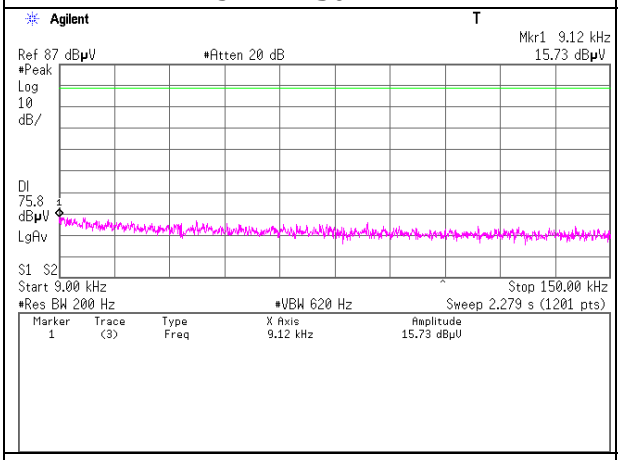
20GHz-25GHz



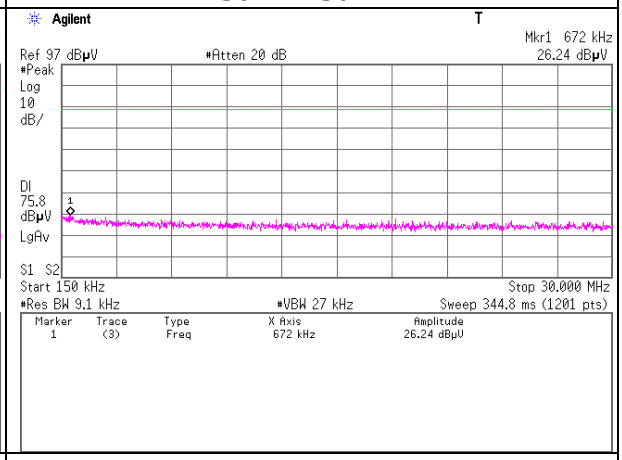
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2462MHz

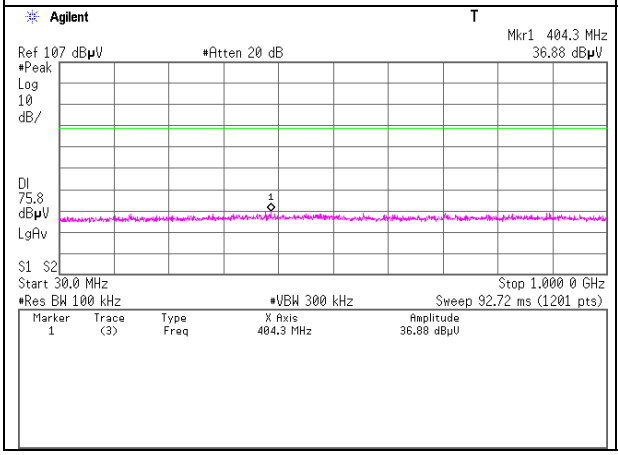
9kHz-150kHz



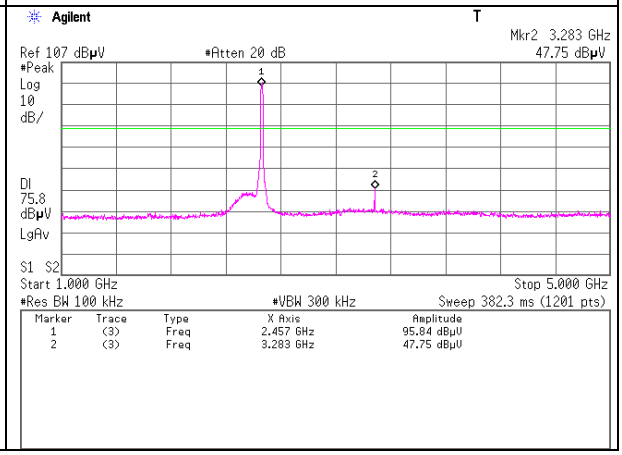
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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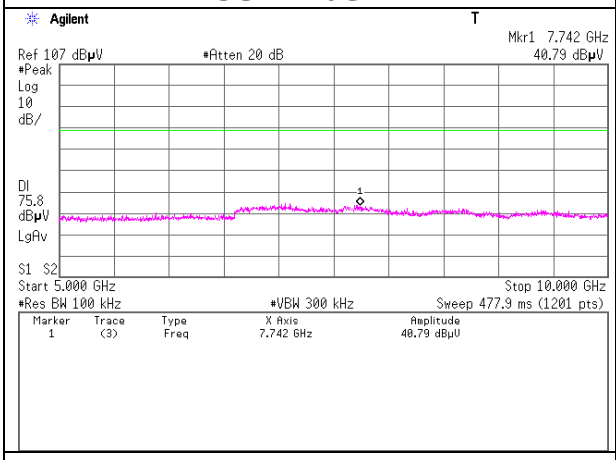
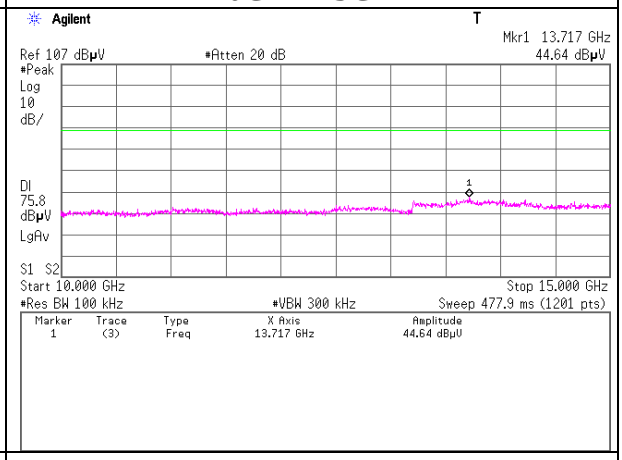
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2462MHz

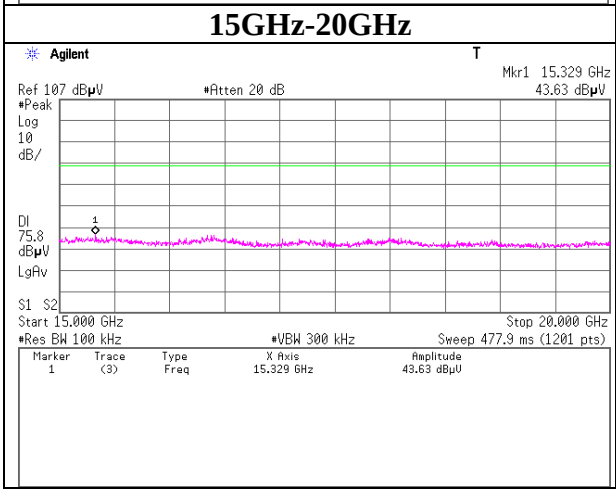
5GHz-10GHz



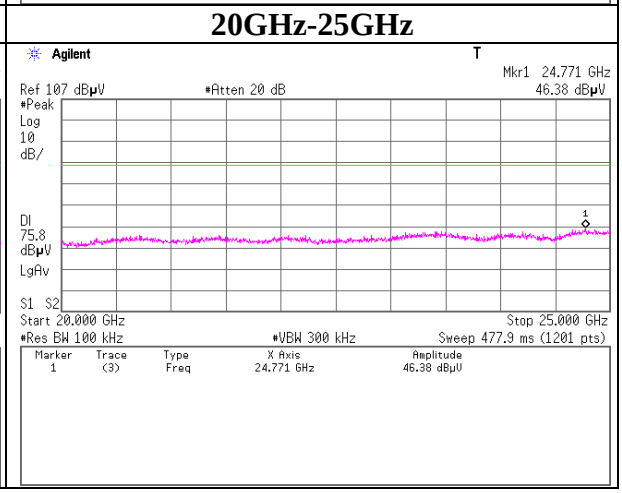
10GHz-15GHz



15GHz-20GHz



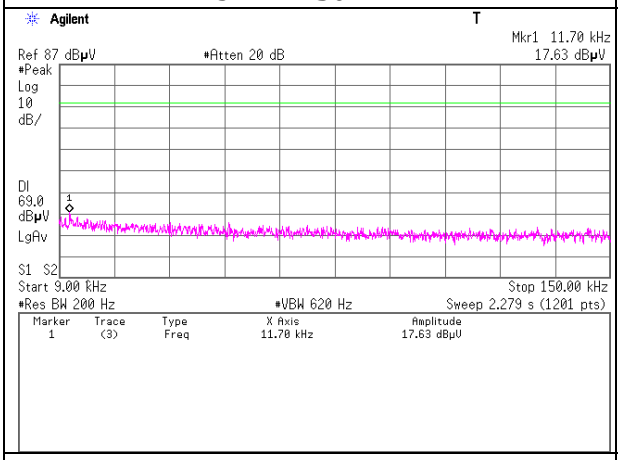
20GHz-25GHz



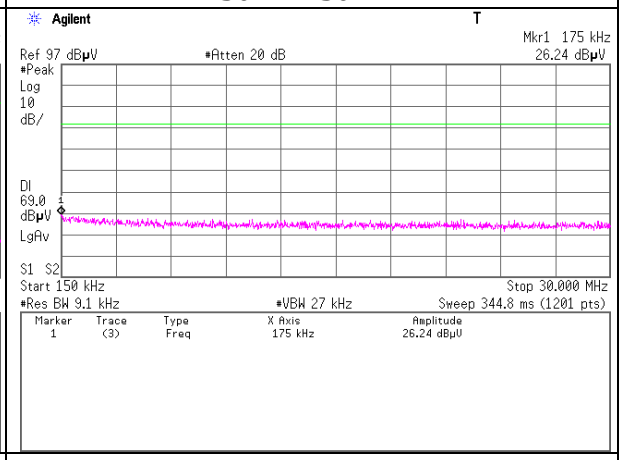
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2422MHz

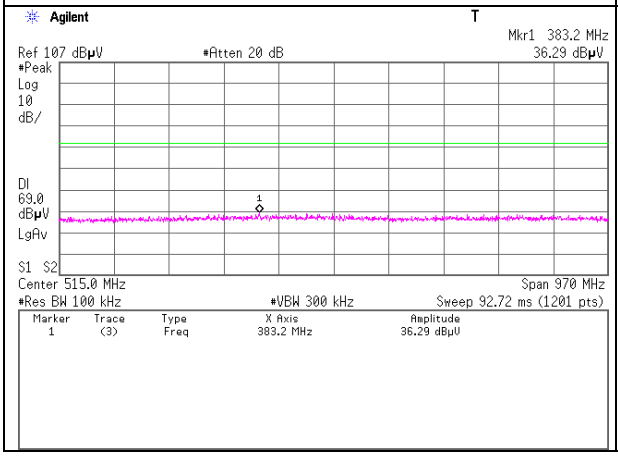
9kHz-150kHz



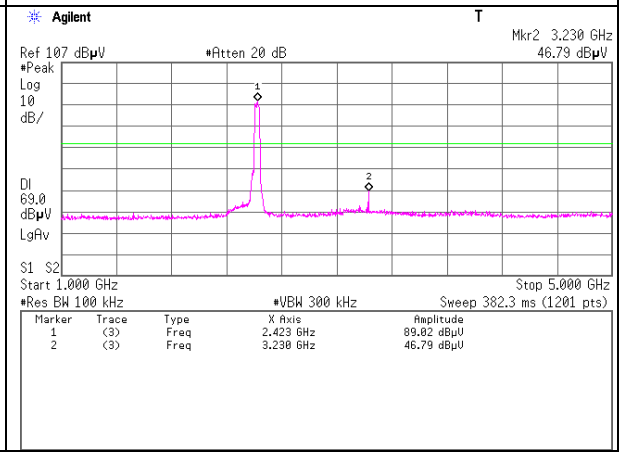
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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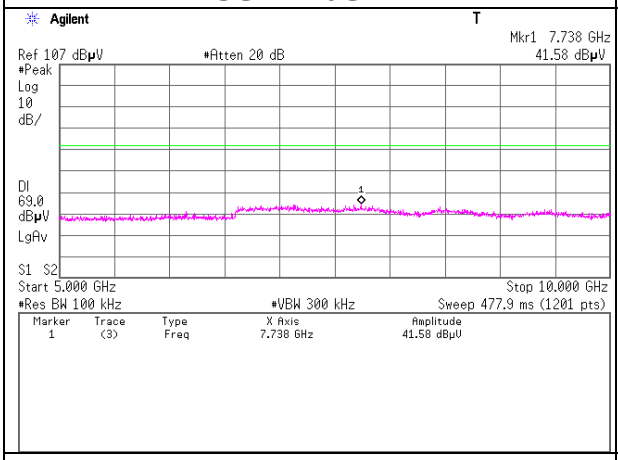
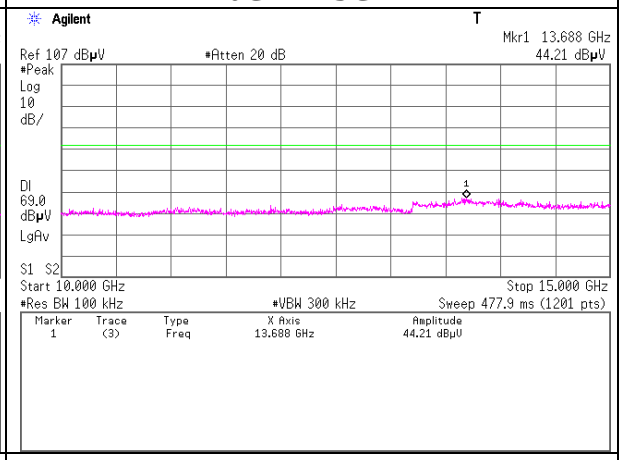
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2422MHz

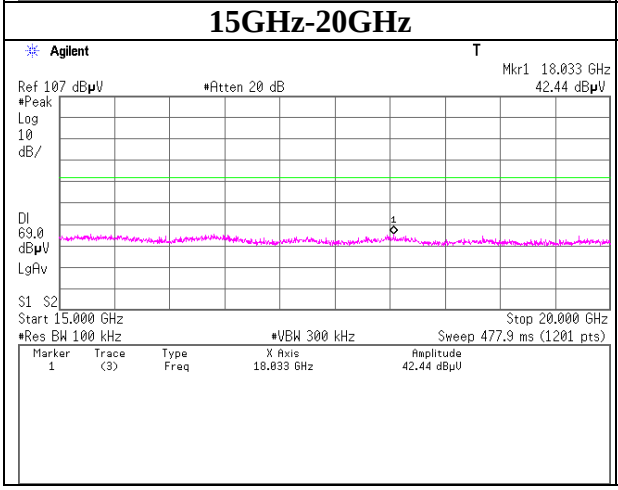
5GHz-10GHz



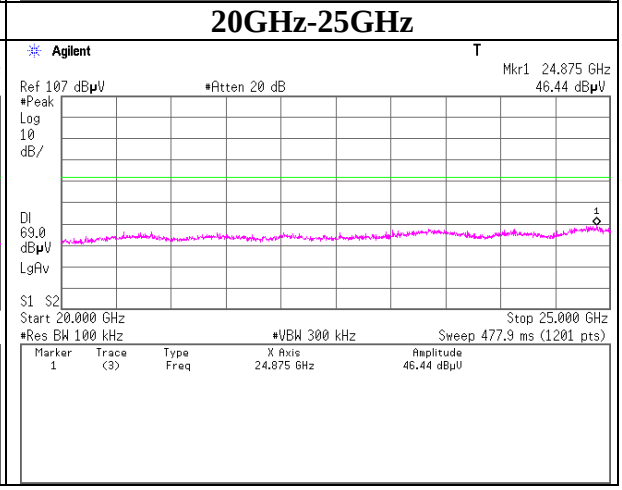
10GHz-15GHz



15GHz-20GHz



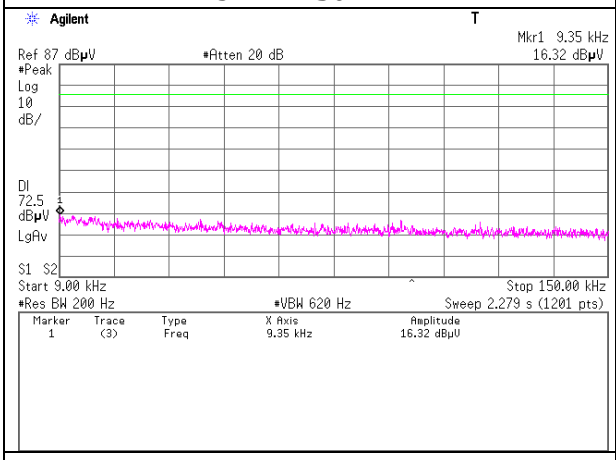
20GHz-25GHz



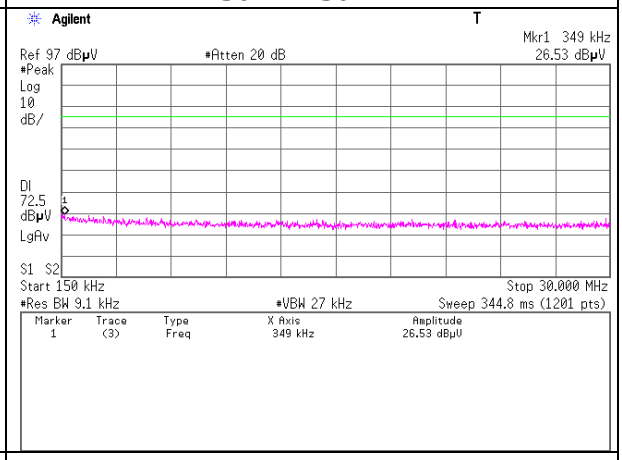
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2437MHz

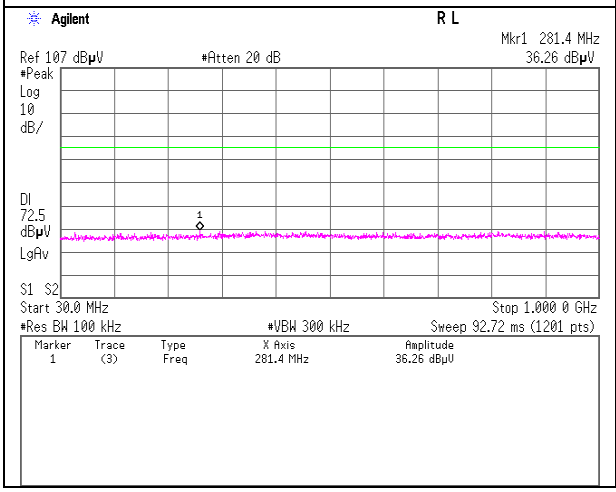
9kHz-150kHz



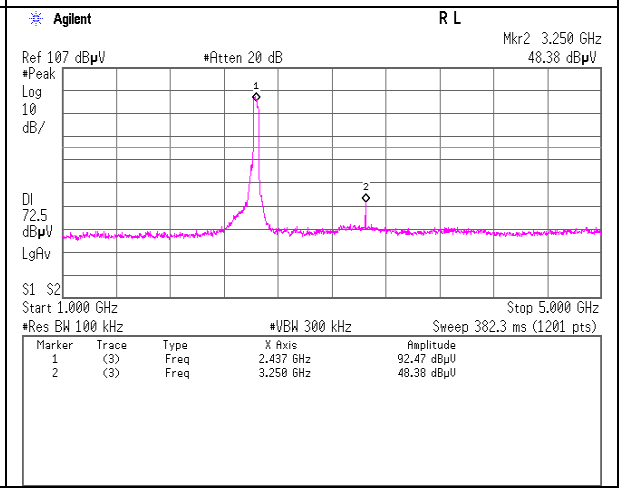
150kHz-30MHz



30MHz-1GHz



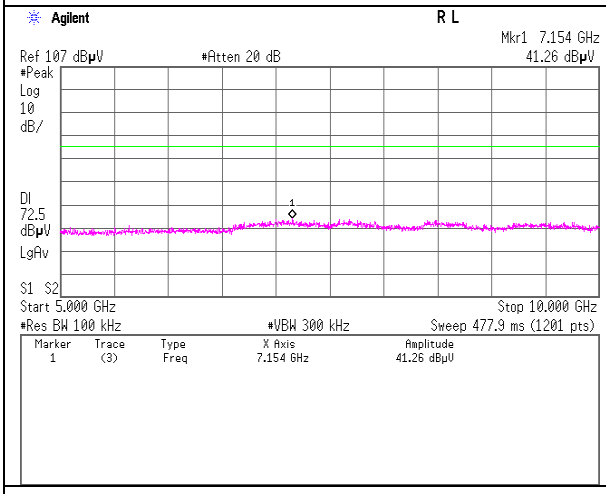
1GHz-5GHz



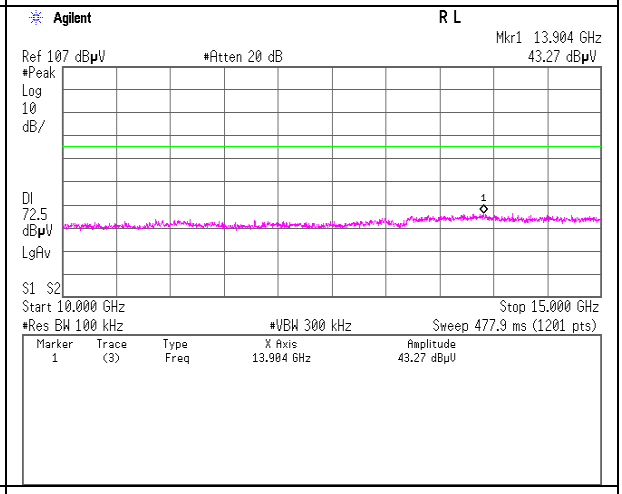
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2437MHz

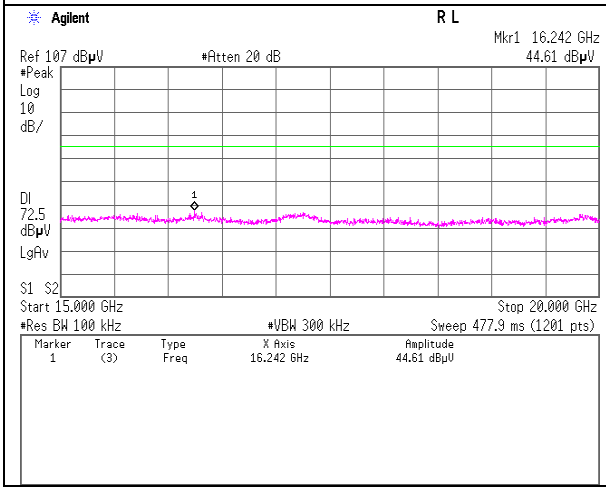
5GHz-10GHz



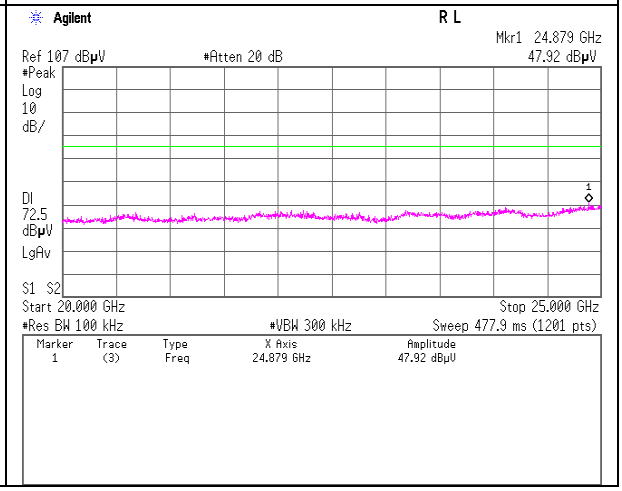
10GHz-15GHz



15GHz-20GHz



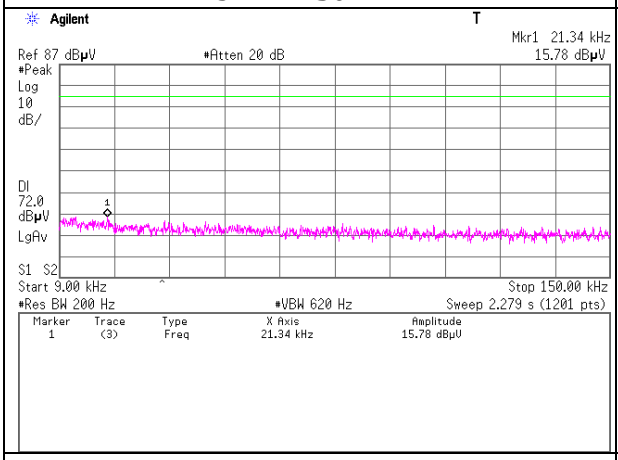
20GHz-25GHz



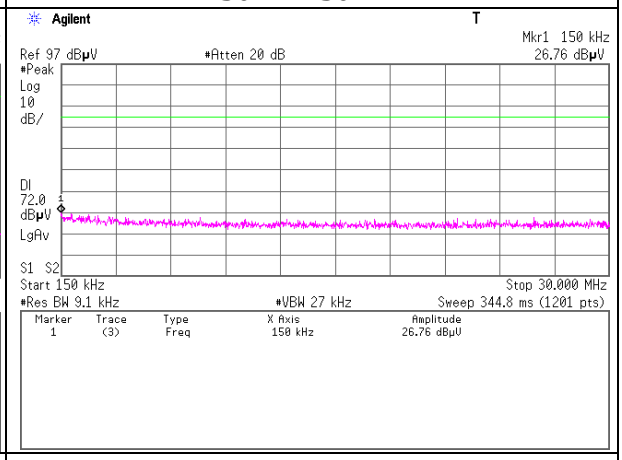
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2452MHz

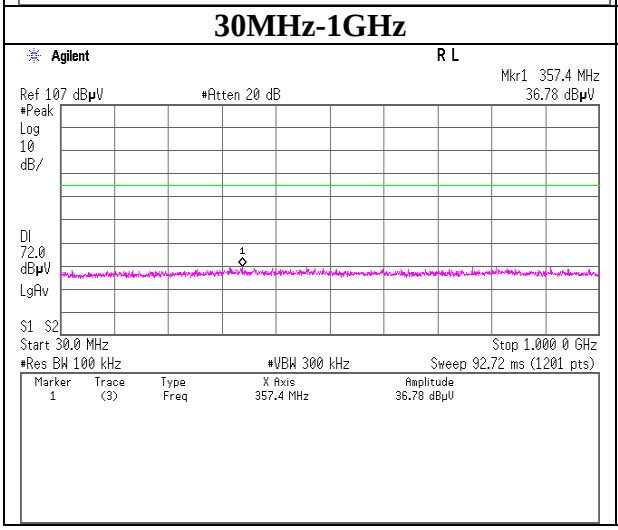
9kHz-150kHz



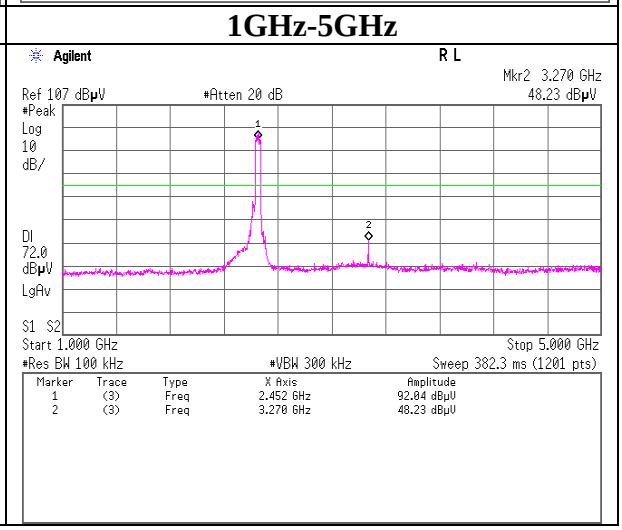
150kHz-30MHz



30MHz-1GHz



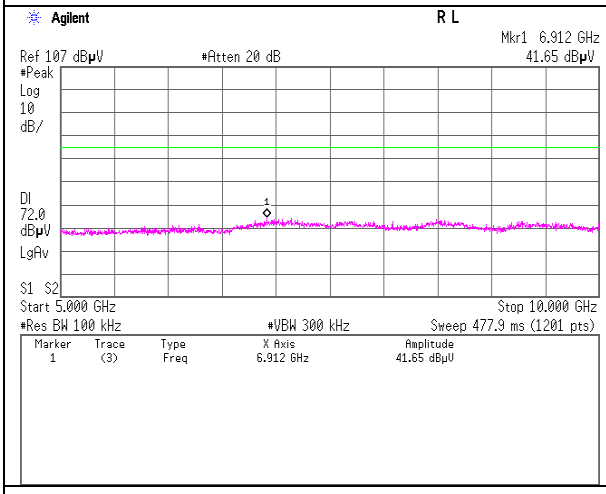
1GHz-5GHz



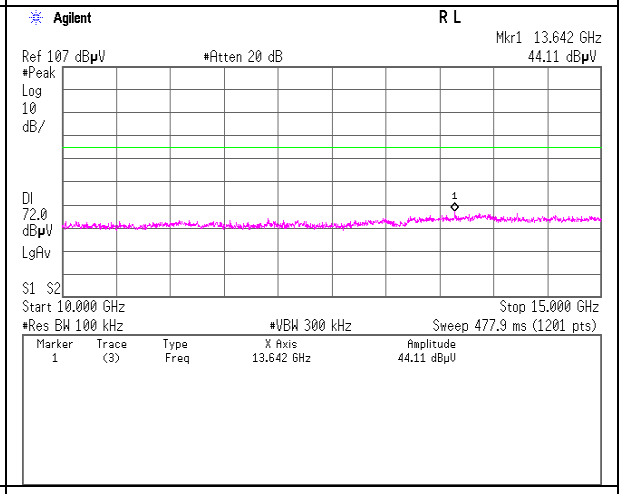
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2452MHz

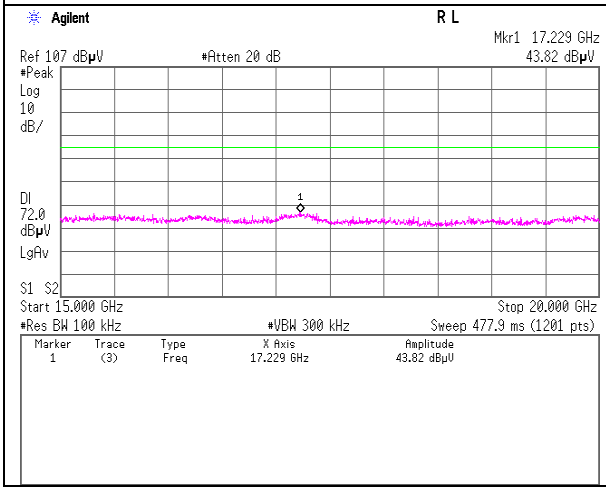
5GHz-10GHz



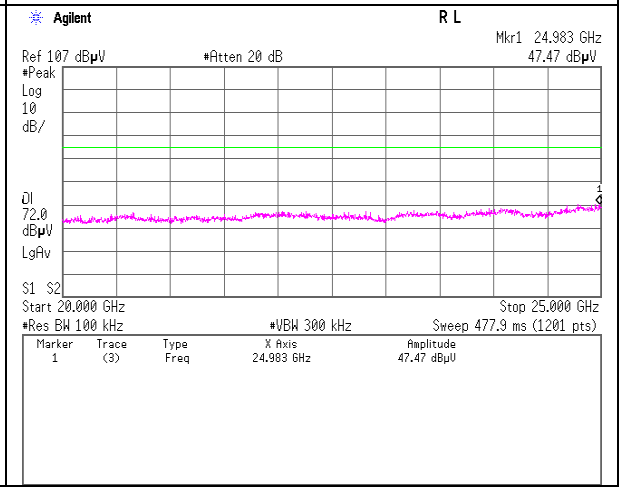
10GHz-15GHz



15GHz-20GHz



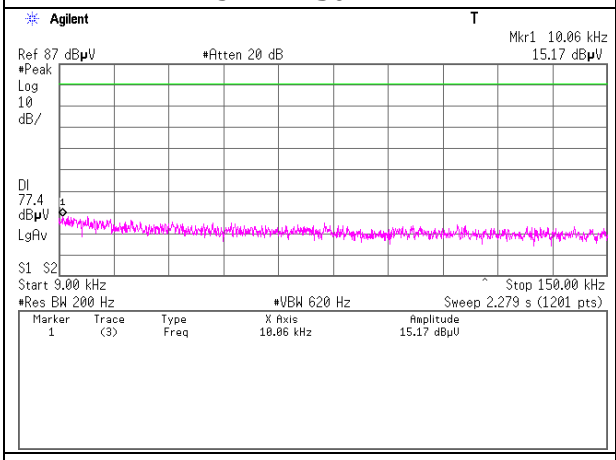
20GHz-25GHz



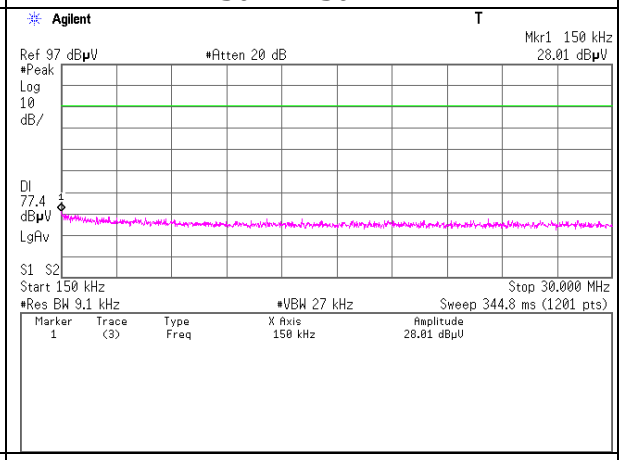
Conducted Spurious Emission

11a Tx 5745MHz

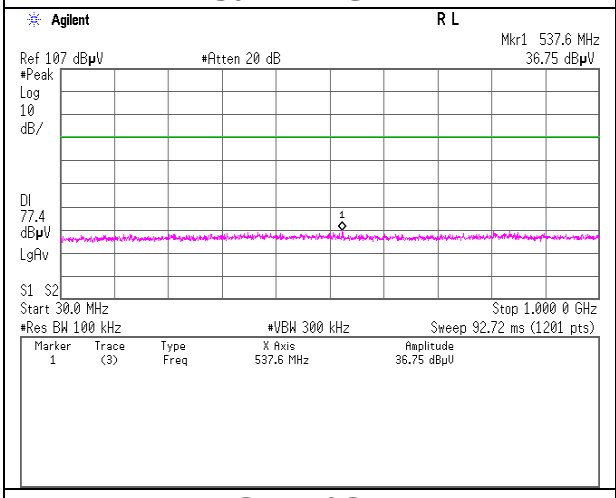
9kHz-150kHz



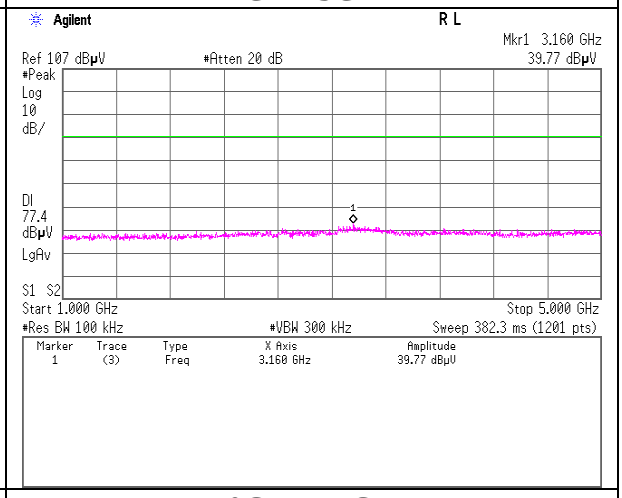
150kHz-30MHz



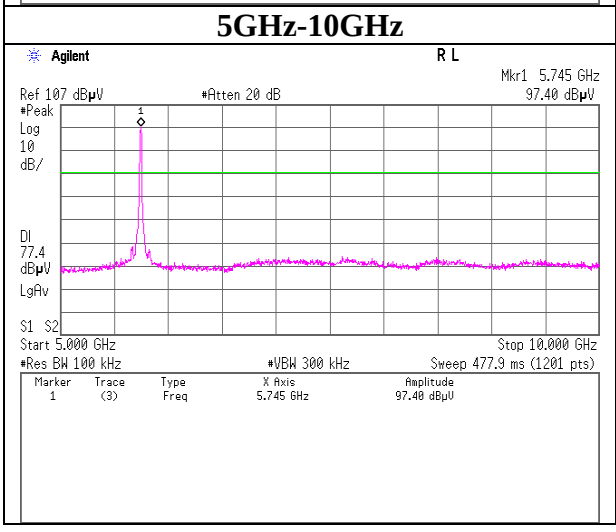
30MHz-1GHz



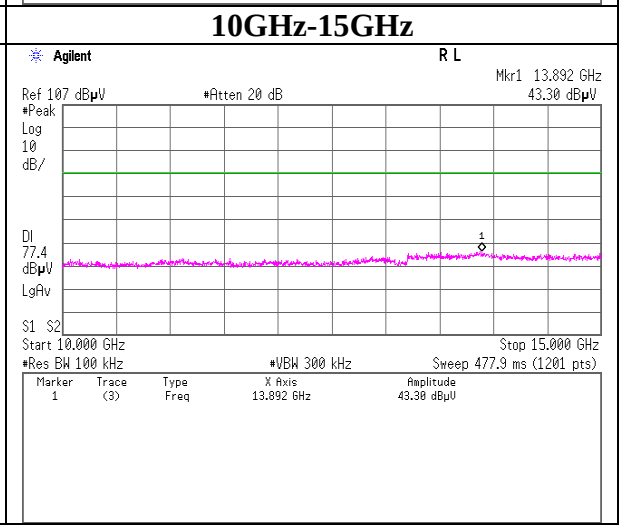
1GHz-5GHz



5GHz-10GHz



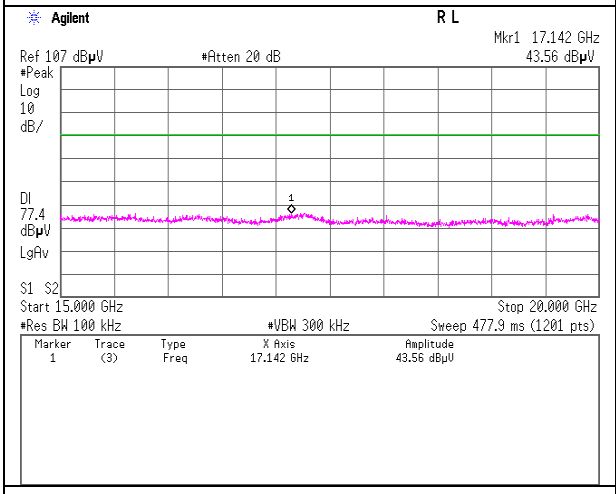
10GHz-15GHz



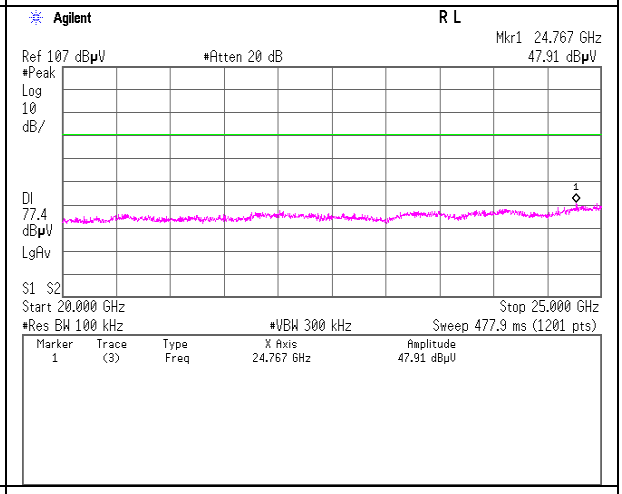
Conducted Spurious Emission

11a Tx 5745MHz

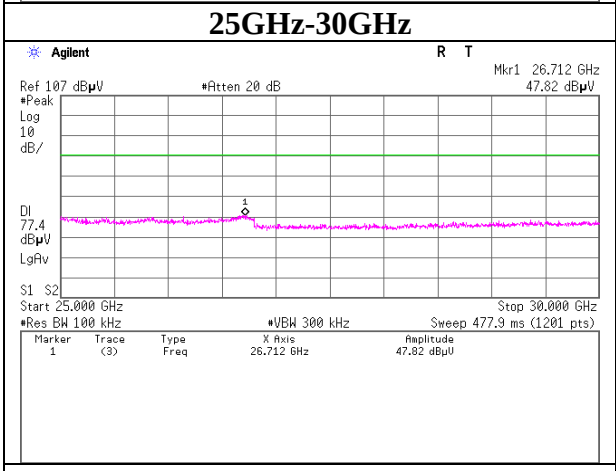
15GHz-20GHz



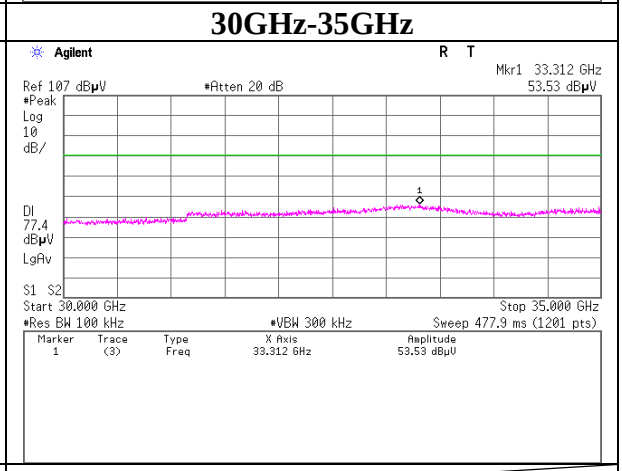
20GHz-25GHz



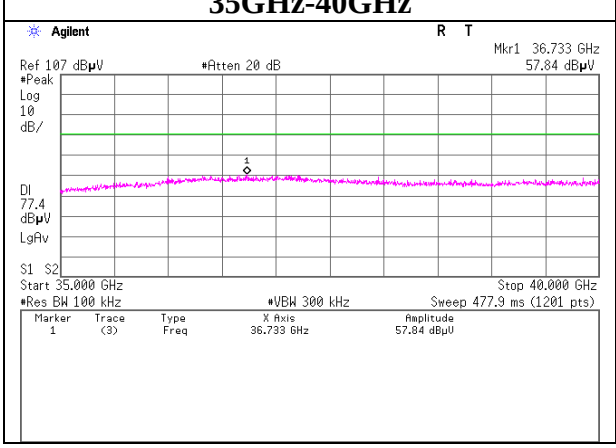
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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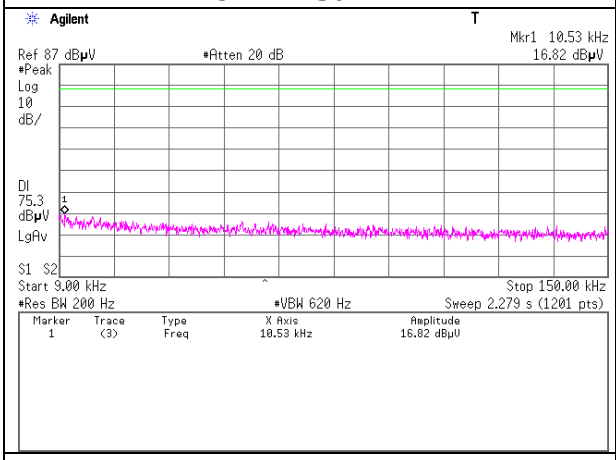
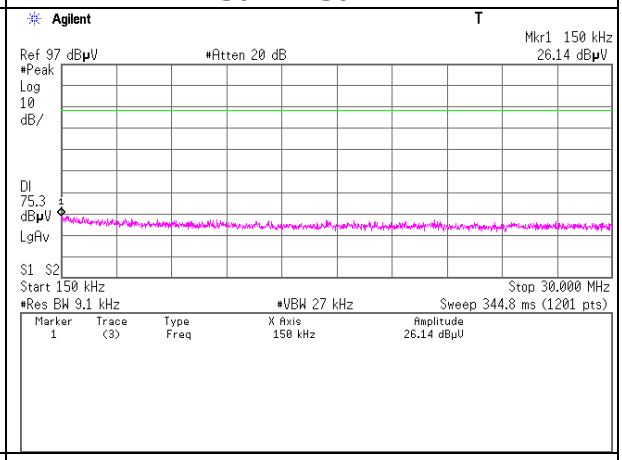
Conducted Spurious Emission

11a Tx 5785MHz

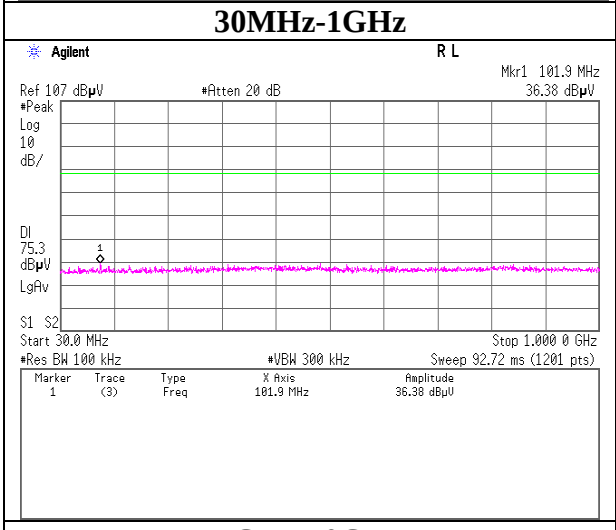
9kHz-150kHz



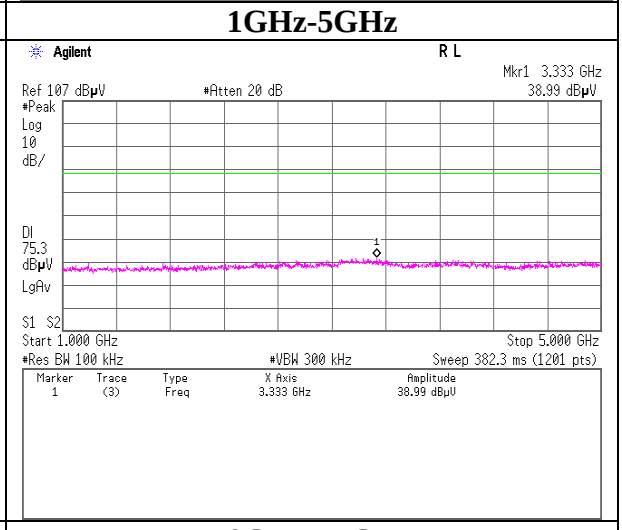
150kHz-30MHz



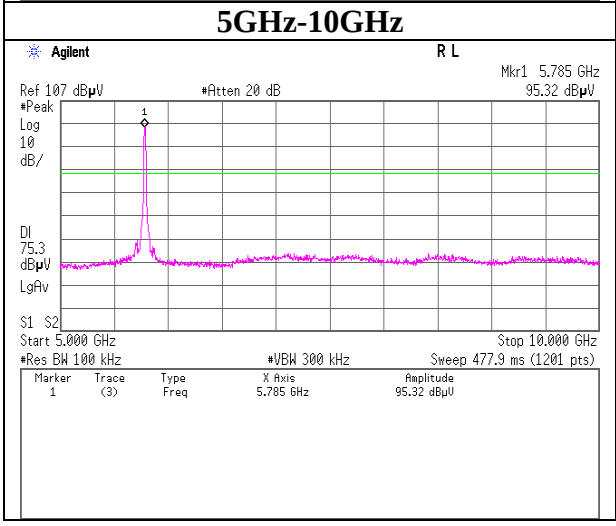
30MHz-1GHz



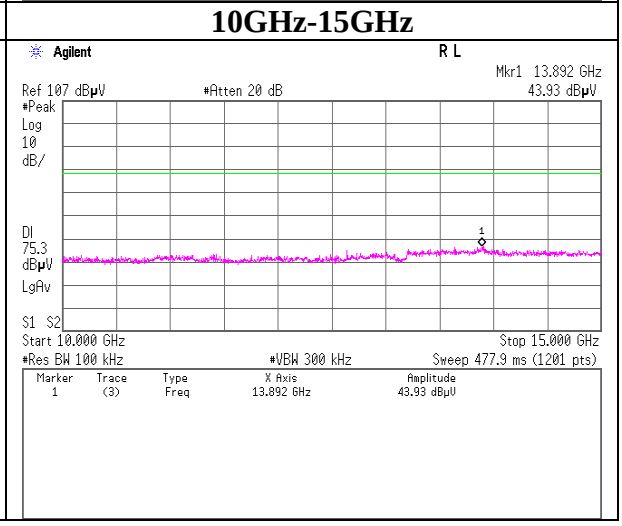
1GHz-5GHz



5GHz-10GHz



10GHz-15GHz



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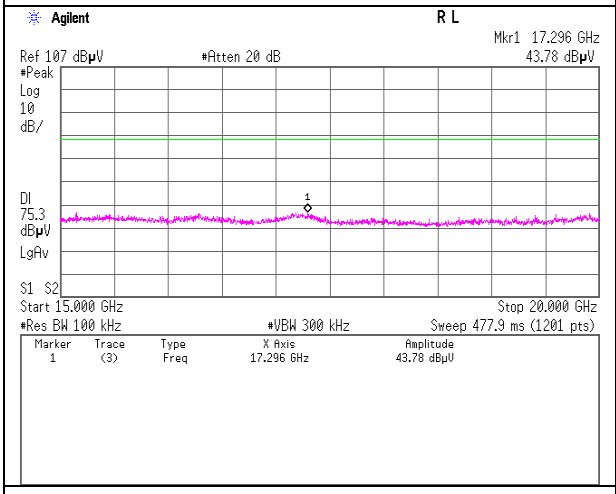
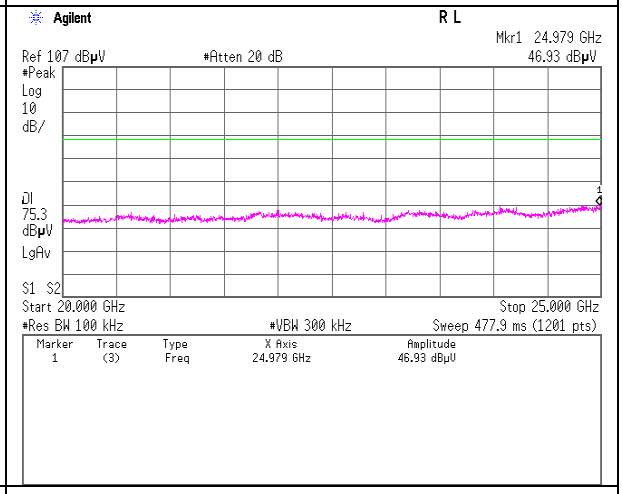
Conducted Spurious Emission

11a Tx 5785MHz

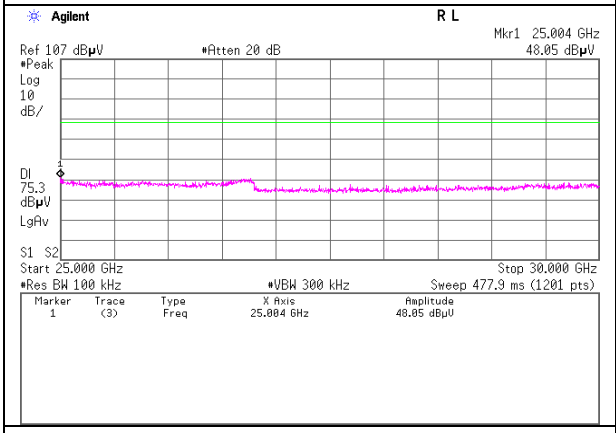
15GHz-20GHz



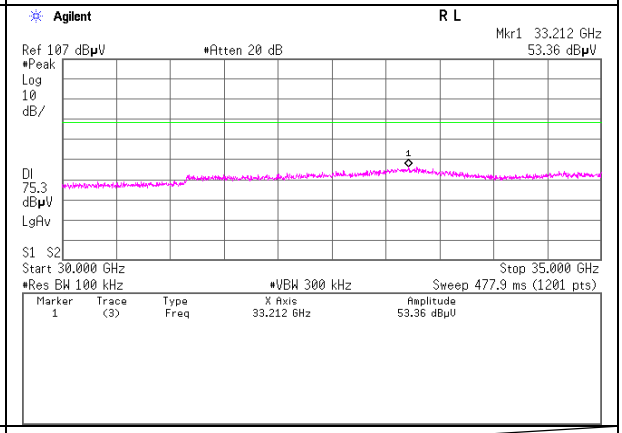
20GHz-25GHz



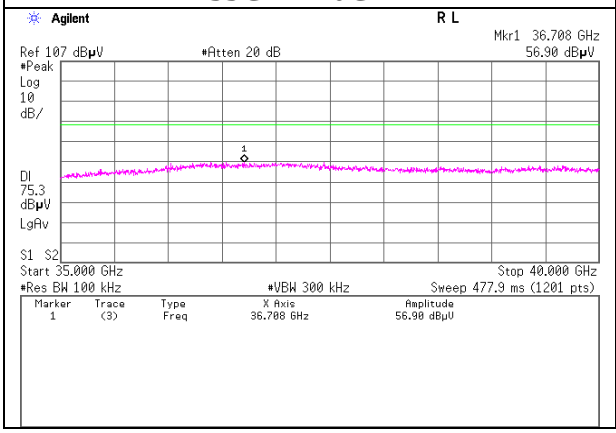
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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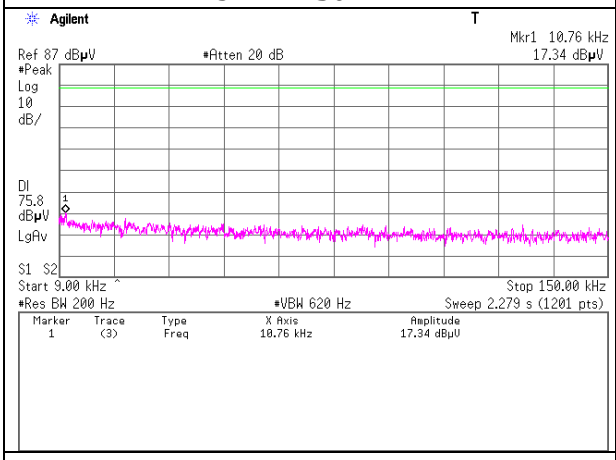
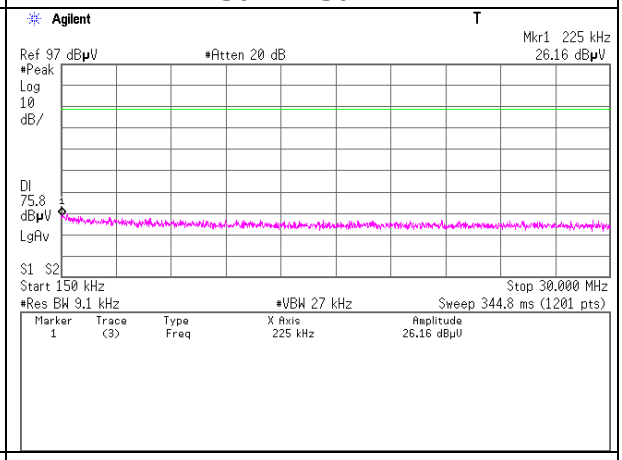
Conducted Spurious Emission

11a Tx 5825MHz

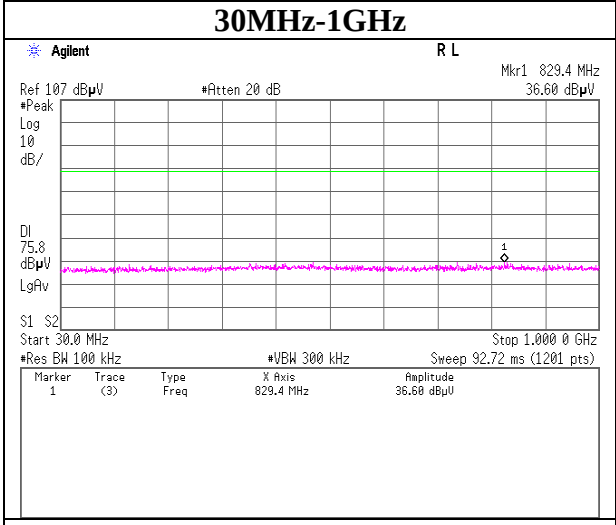
9kHz-150kHz



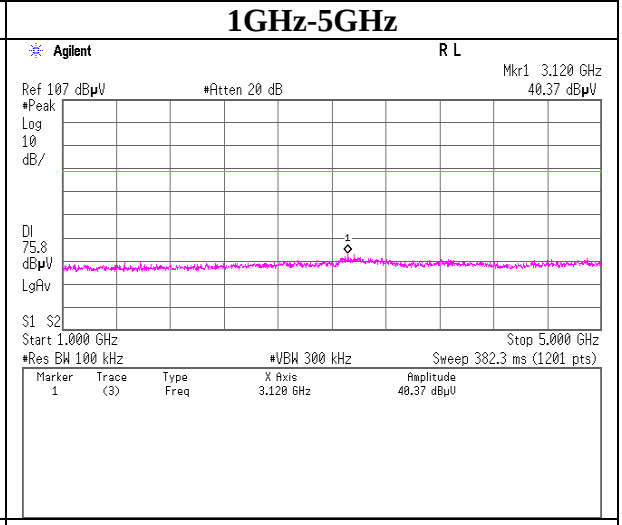
150kHz-30MHz



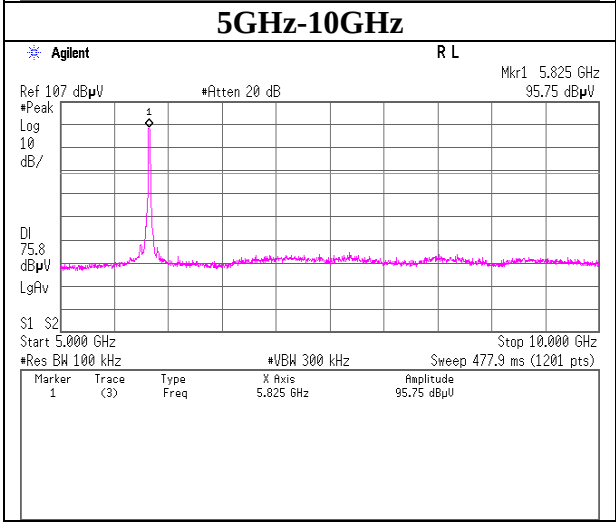
30MHz-1GHz



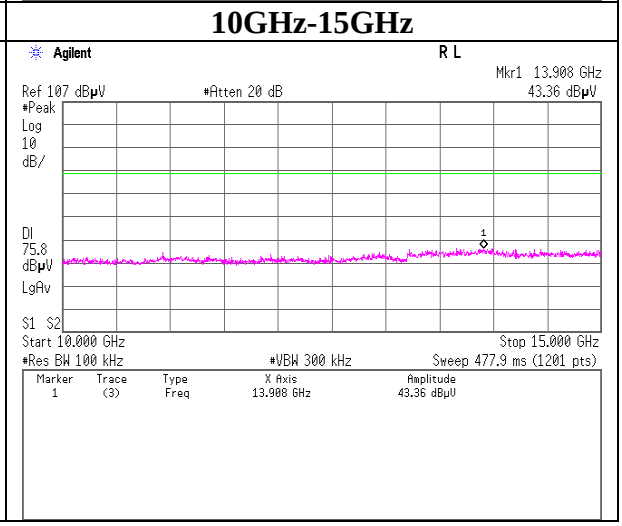
1GHz-5GHz



5GHz-10GHz



10GHz-15GHz



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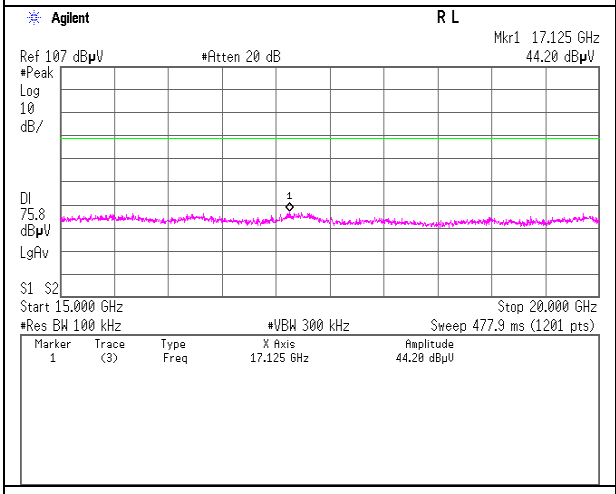
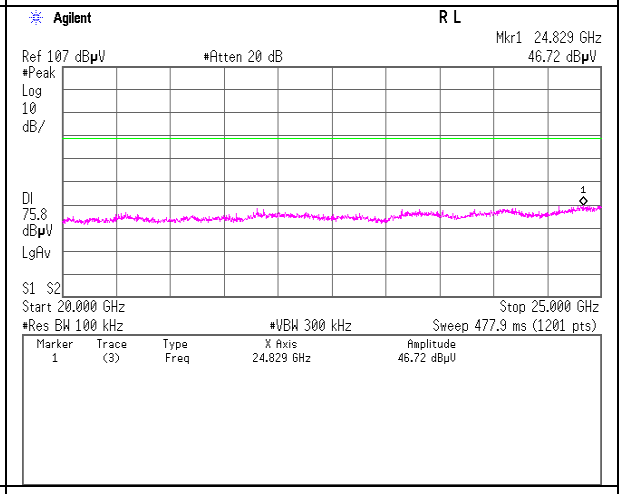
Conducted Spurious Emission

11a Tx 5825MHz

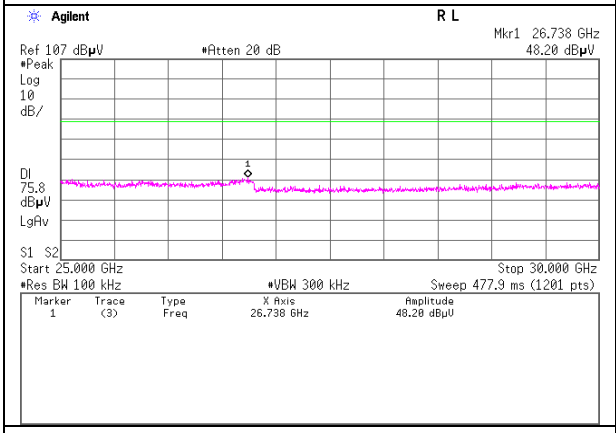
15GHz-20GHz



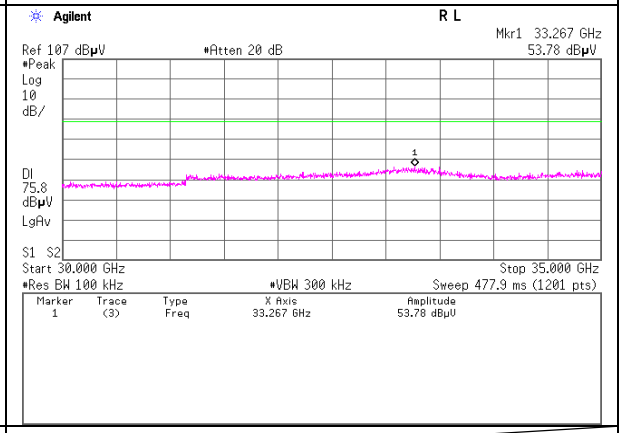
20GHz-25GHz



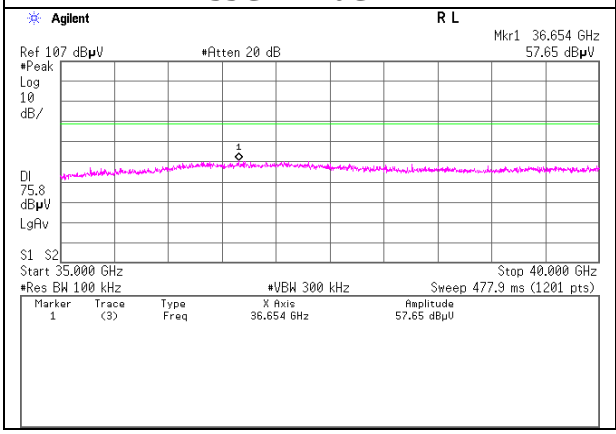
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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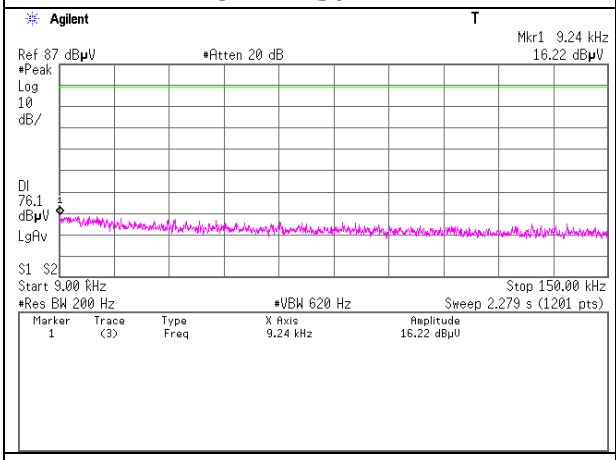
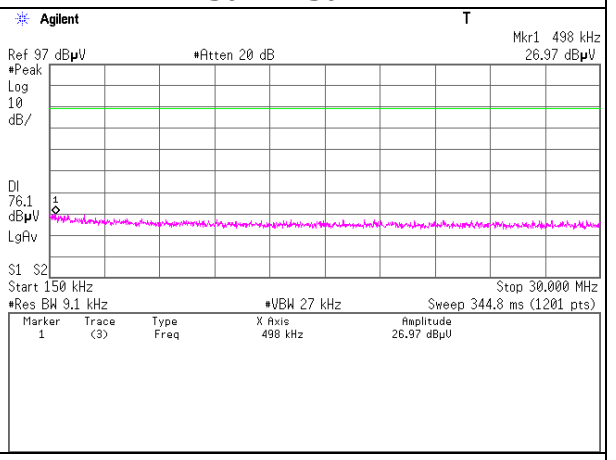
Conducted Spurious Emission

11n-20 (5GHz) Tx 5745MHz

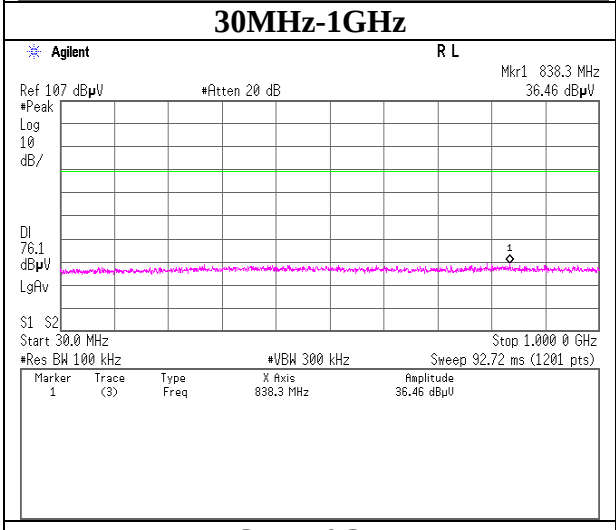
9kHz-150kHz



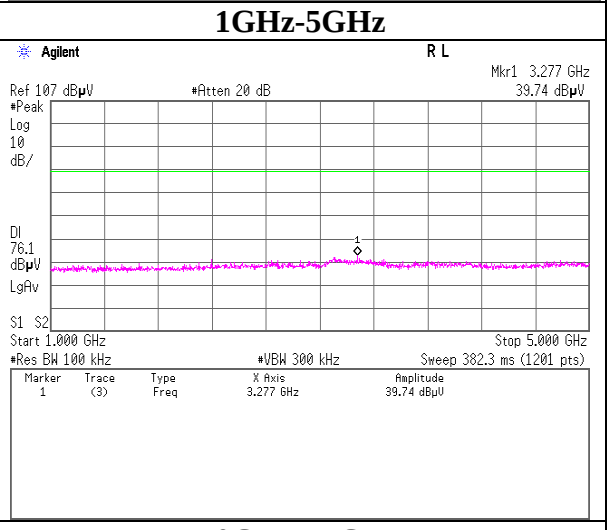
150kHz-30MHz



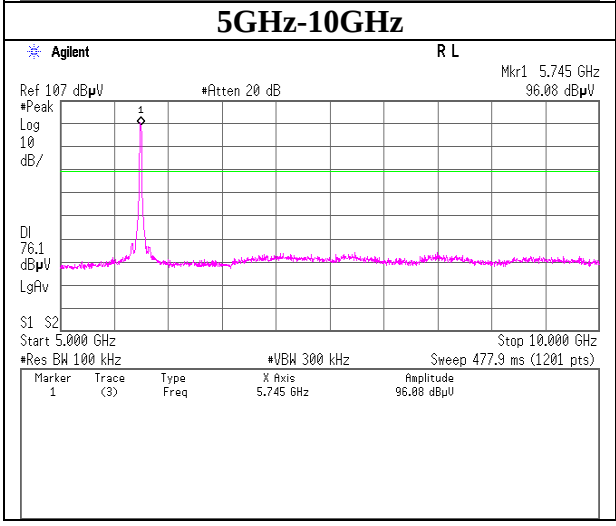
30MHz-1GHz



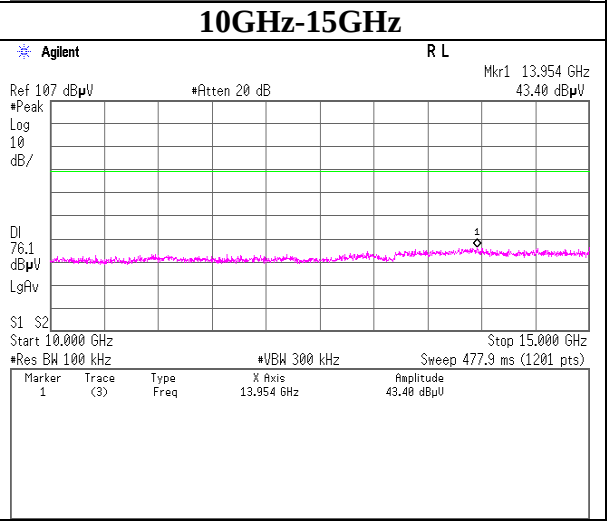
1GHz-5GHz



5GHz-10GHz



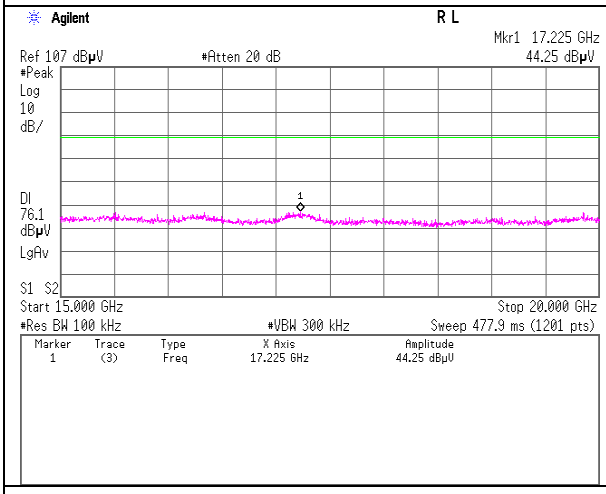
10GHz-15GHz



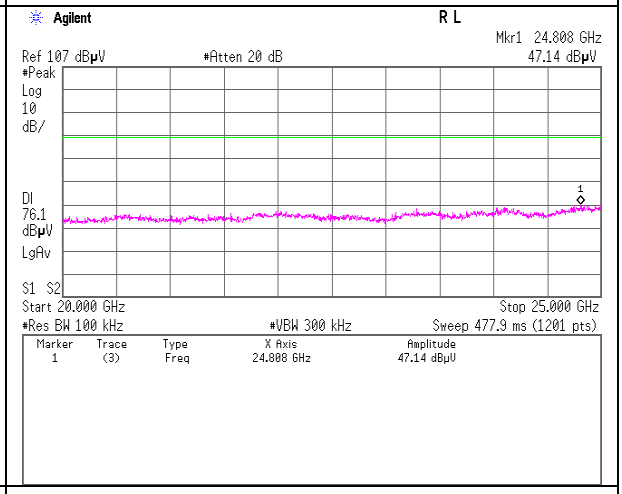
Conducted Spurious Emission

11n-20 (5GHz) Tx 5745MHz

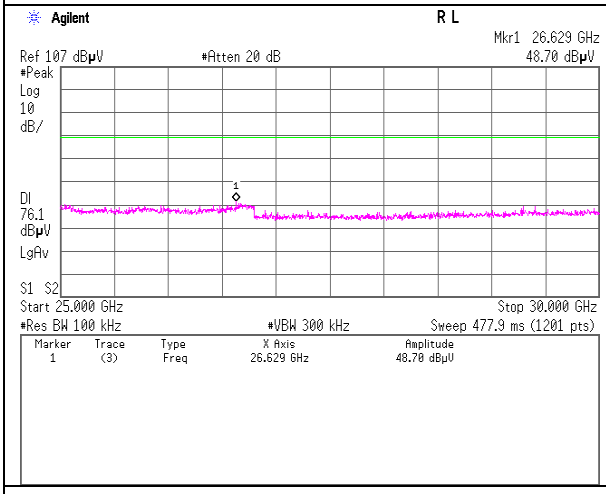
15GHz-20GHz



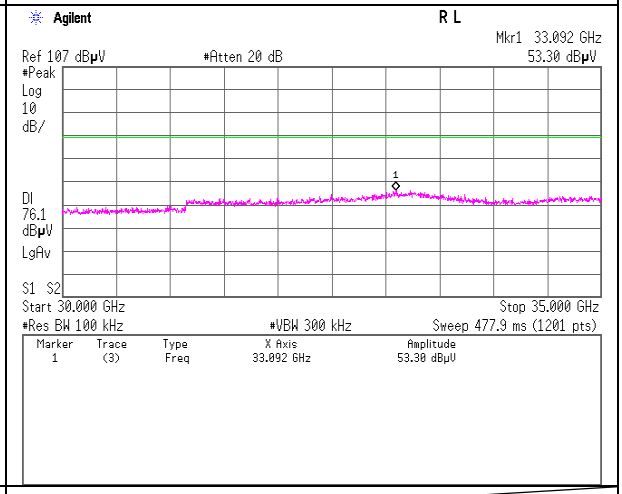
20GHz-25GHz



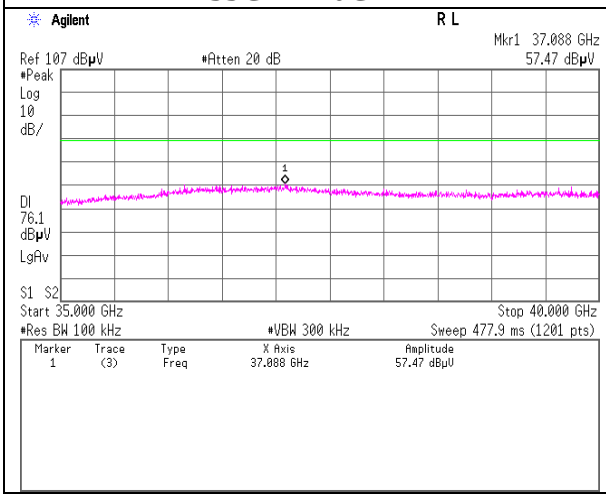
25GHz-30GHz



30GHz-35GHz



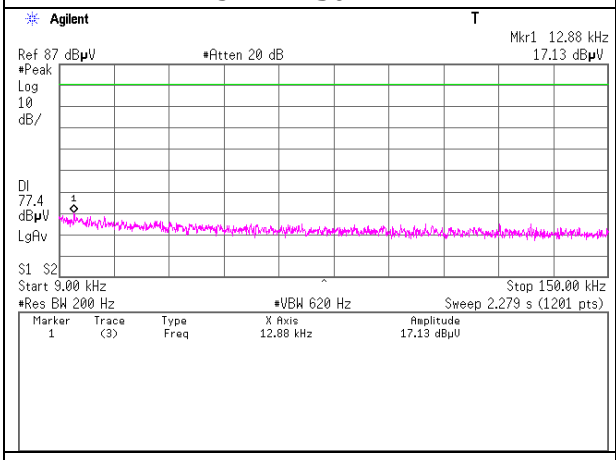
35GHz-40GHz



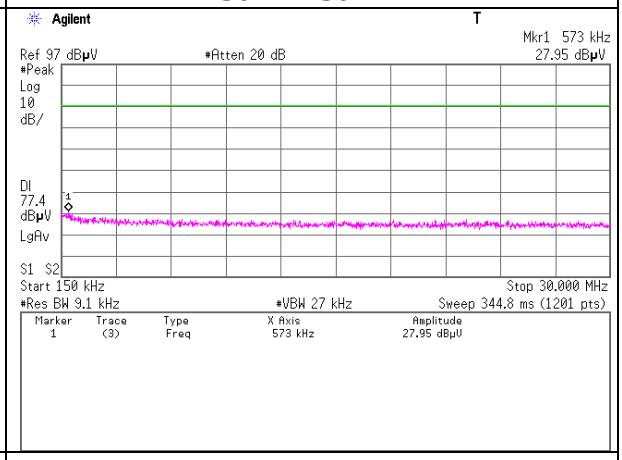
Conducted Spurious Emission

11n-20 (5GHz) Tx 5785MHz

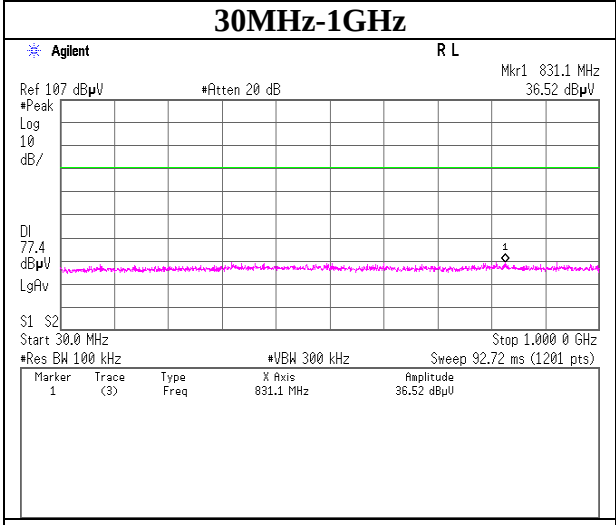
9kHz-150kHz



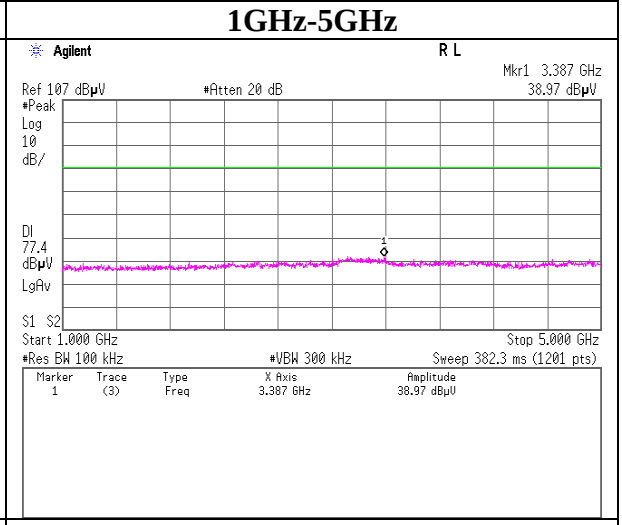
150kHz-30MHz



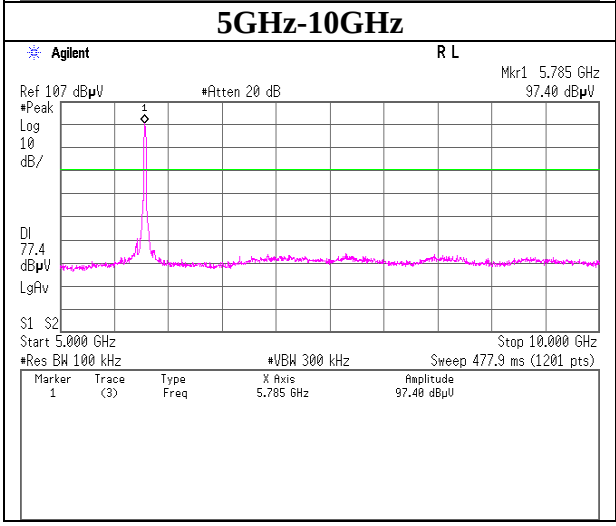
30MHz-1GHz



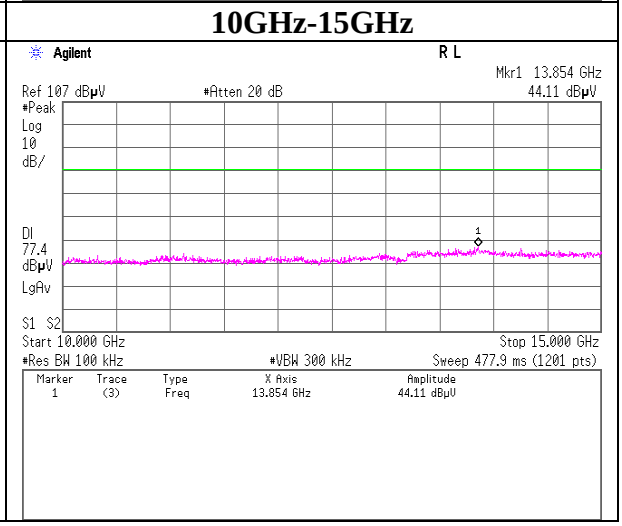
1GHz-5GHz



5GHz-10GHz



10GHz-15GHz



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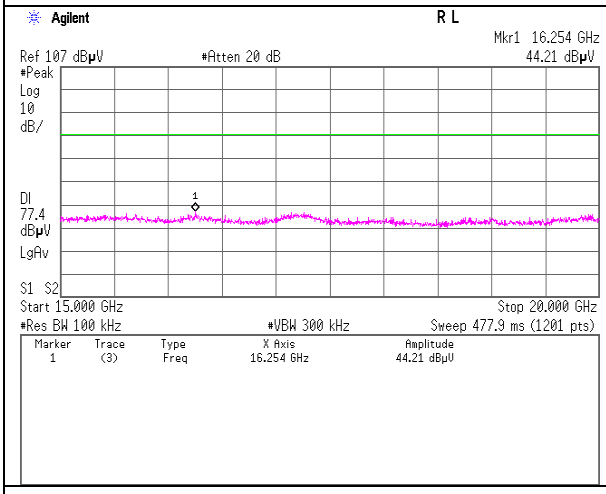
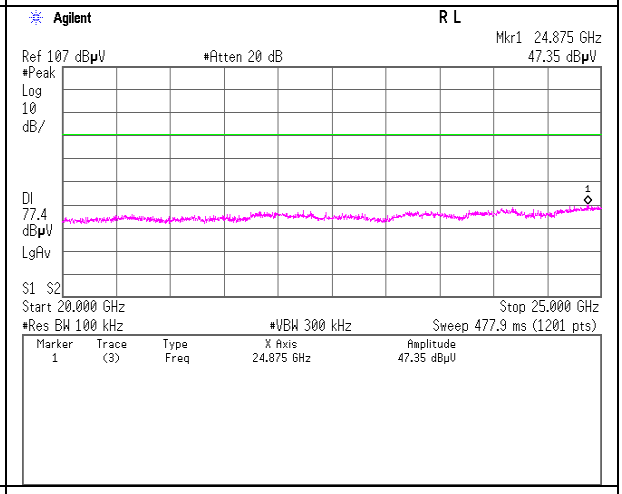
Conducted Spurious Emission

11n-20 (5GHz) Tx 5785MHz

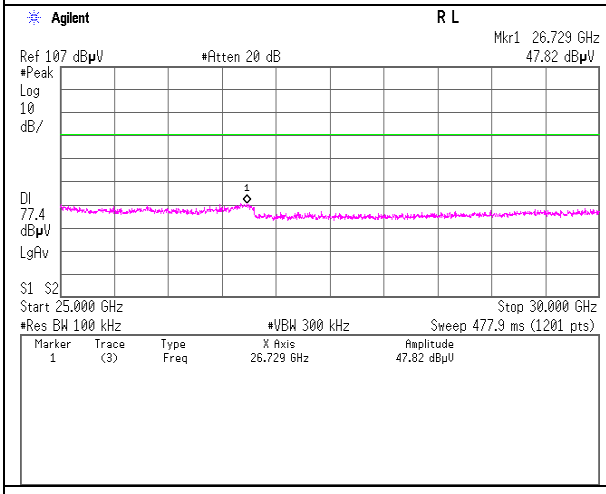
15GHz-20GHz



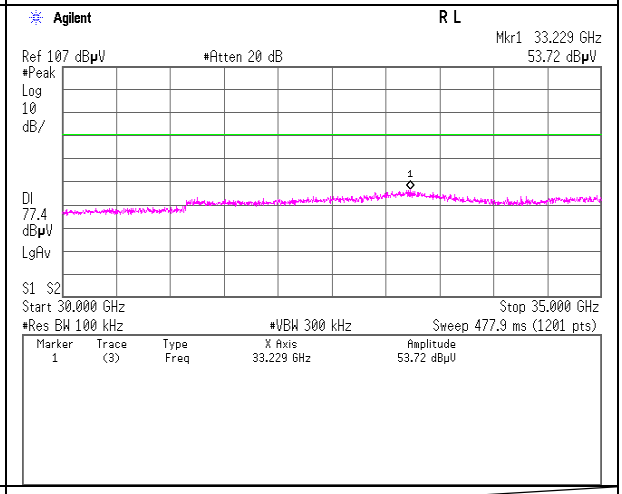
20GHz-25GHz



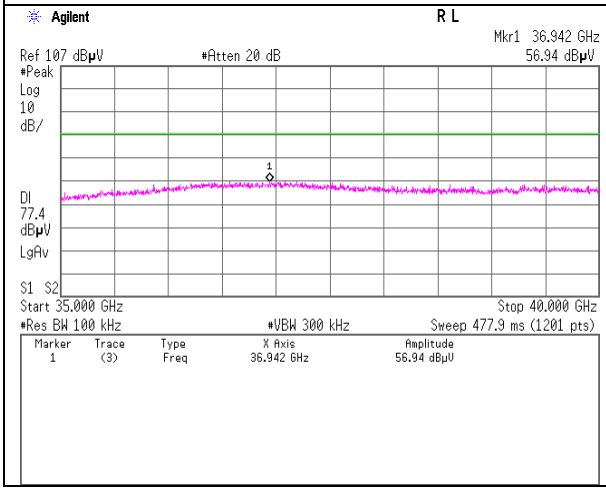
25GHz-30GHz



30GHz-35GHz



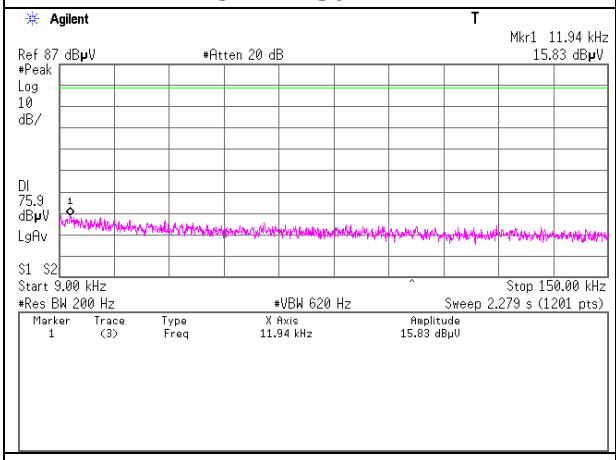
35GHz-40GHz



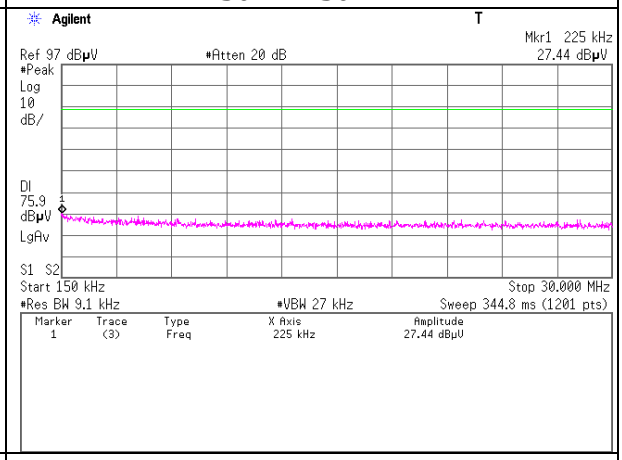
Conducted Spurious Emission

11n-20 (5GHz) Tx 5825MHz

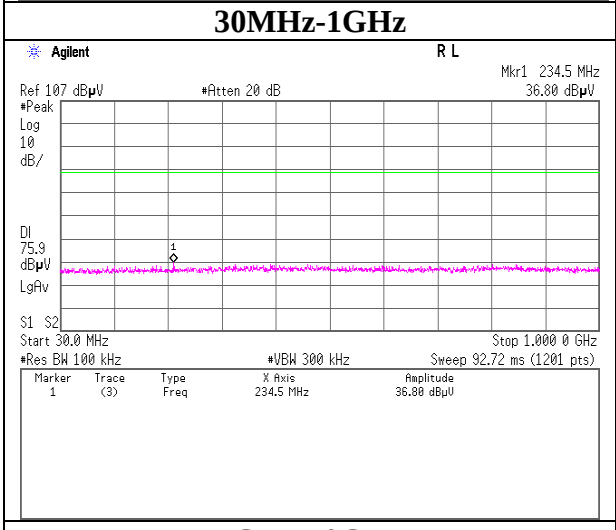
9kHz-150kHz



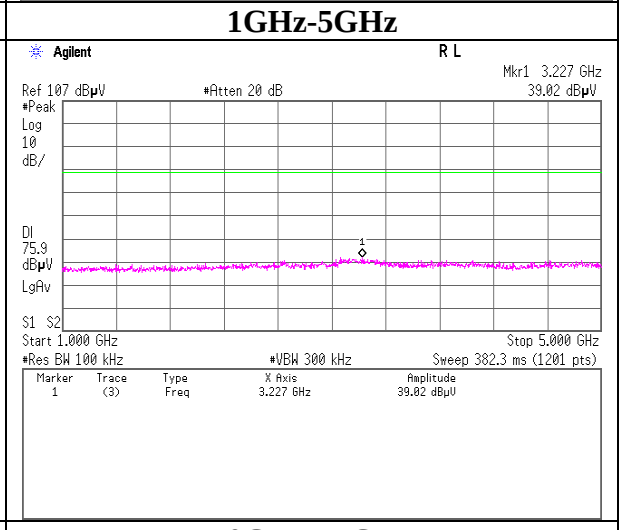
150kHz-30MHz



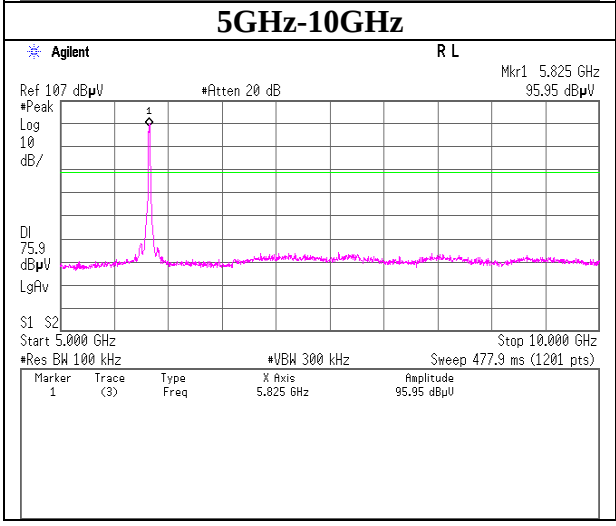
30MHz-1GHz



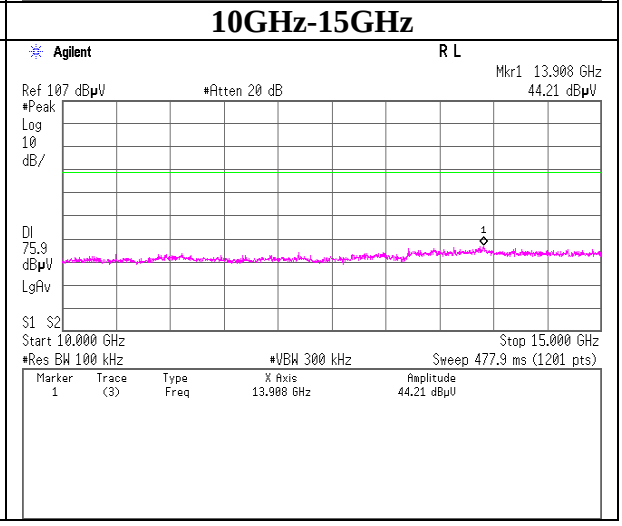
1GHz-5GHz



5GHz-10GHz



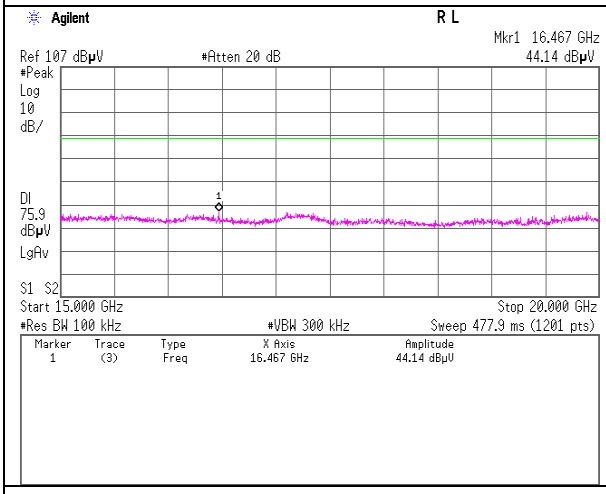
10GHz-15GHz



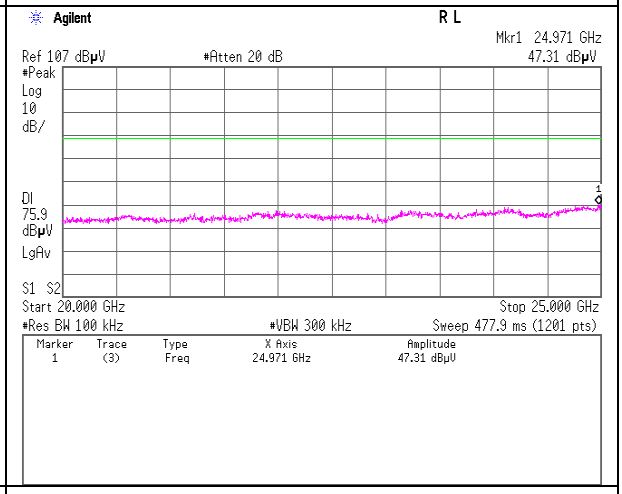
Conducted Spurious Emission

11n-20 (5GHz) Tx 5825MHz

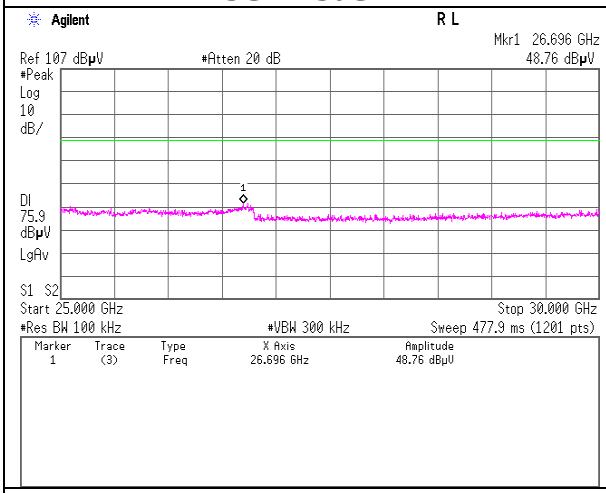
15GHz-20GHz



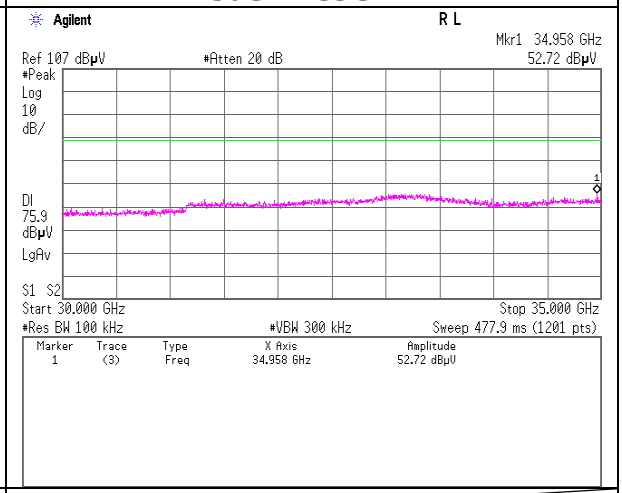
20GHz-25GHz



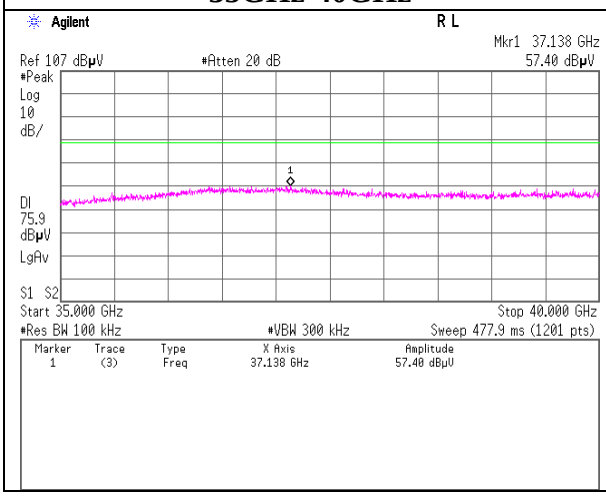
25GHz-30GHz



30GHz-35GHz



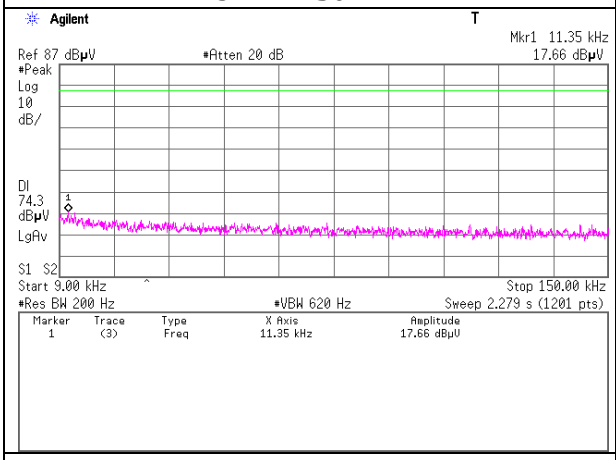
35GHz-40GHz



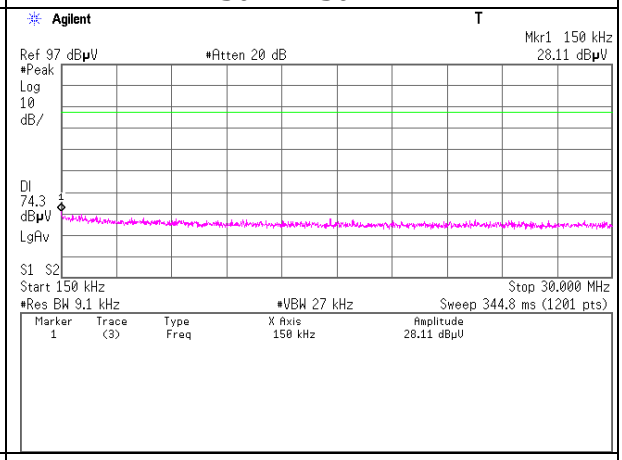
Conducted Spurious Emission

11n-40 (5GHz) Tx 5755MHz

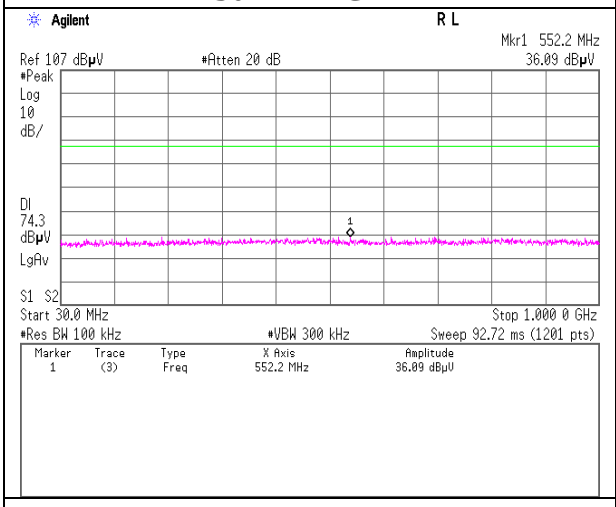
9kHz-150kHz



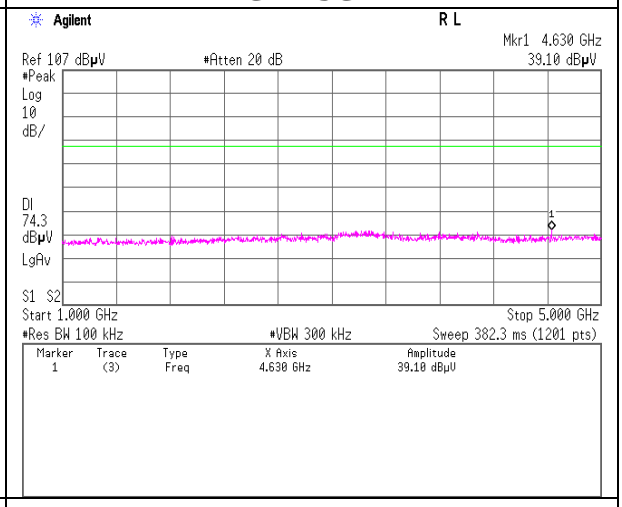
150kHz-30MHz



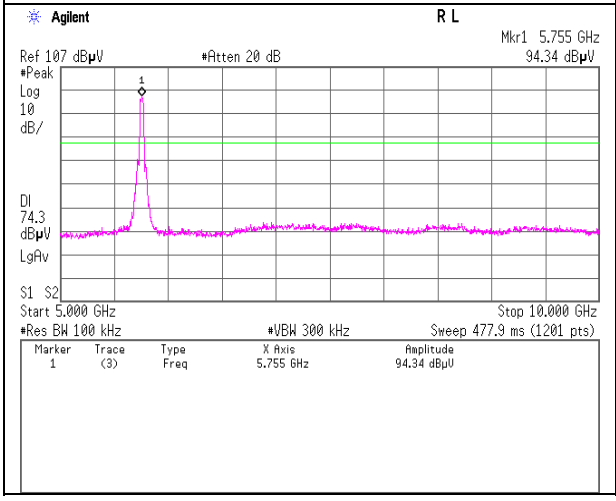
30MHz-1GHz



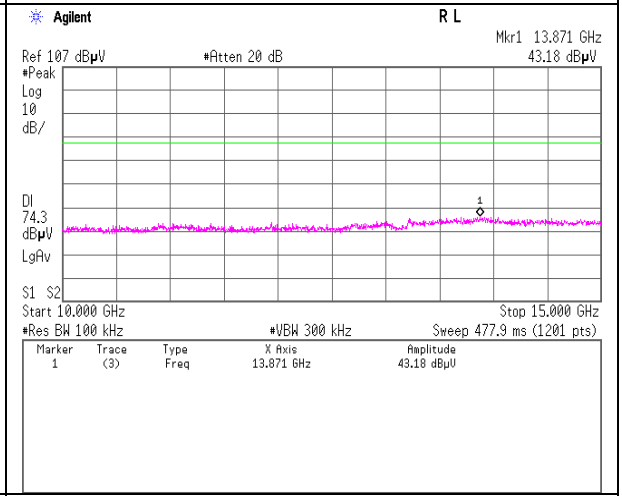
1GHz-5GHz



5GHz-10GHz



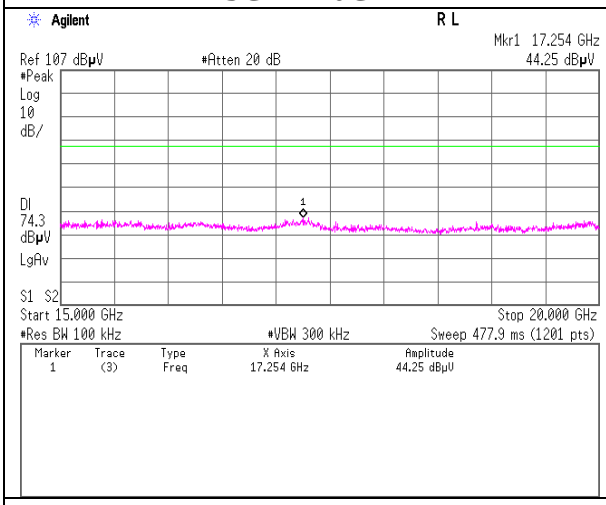
10GHz-15GHz



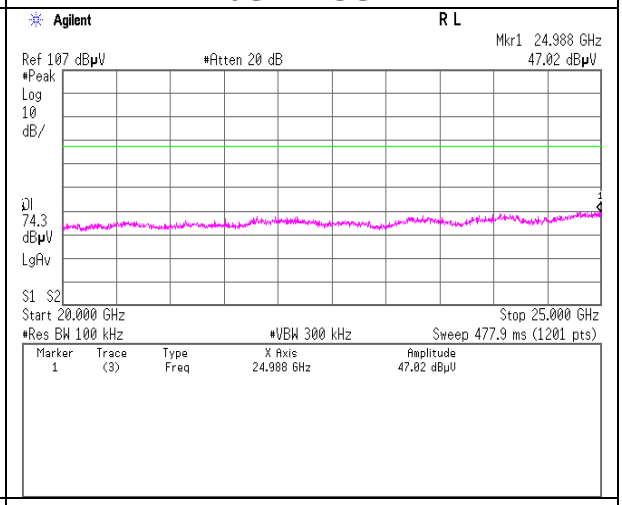
Conducted Spurious Emission

11n-40 (5GHz) Tx 5755MHz

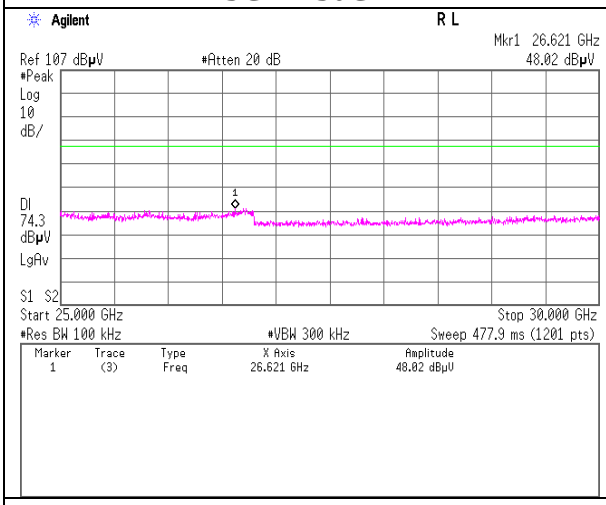
15GHz-20GHz



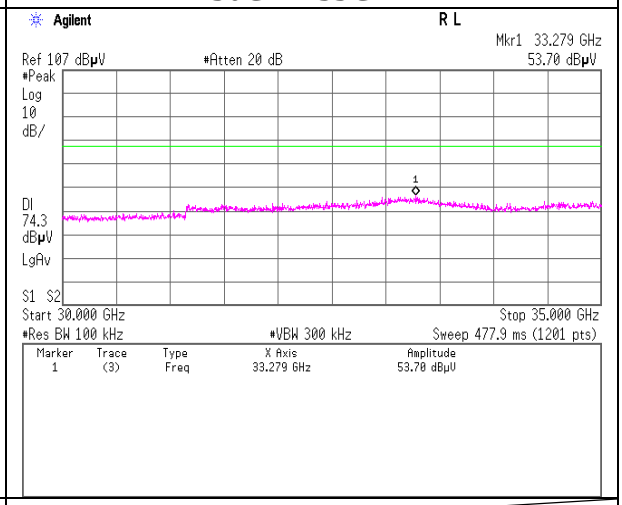
20GHz-25GHz



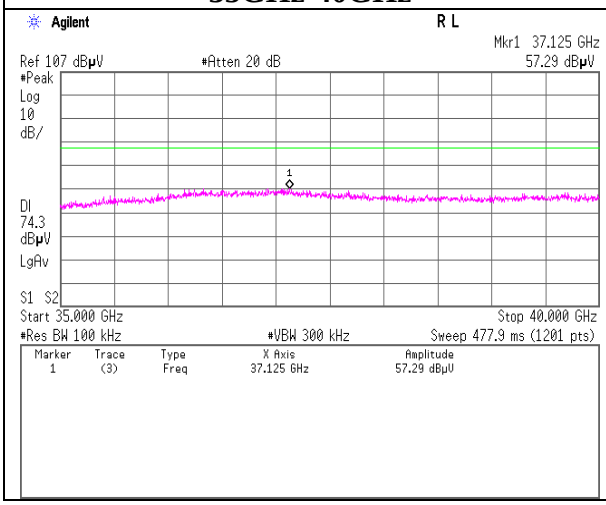
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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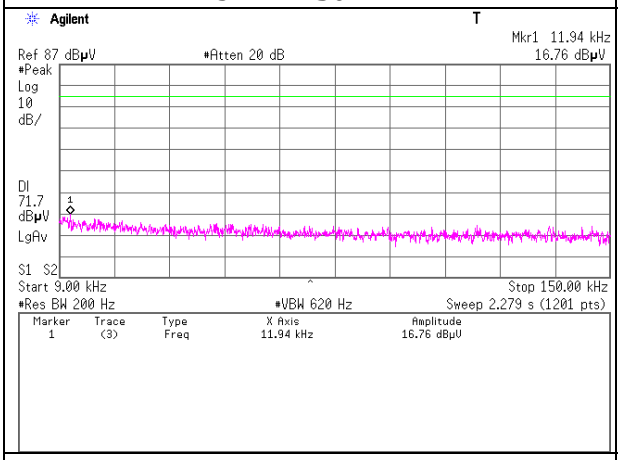
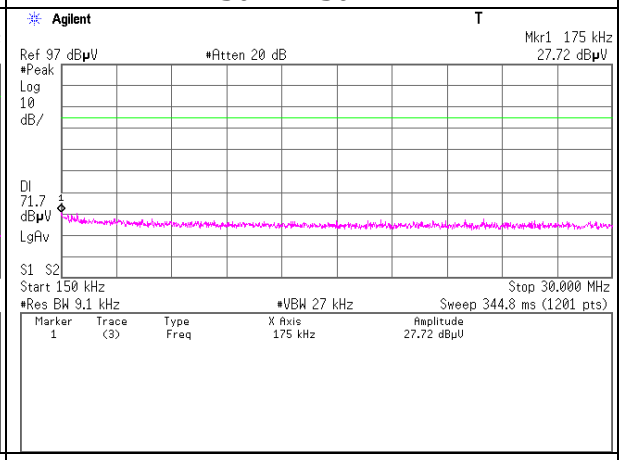
Conducted Spurious Emission

11n-40 (5GHz) Tx 5795MHz

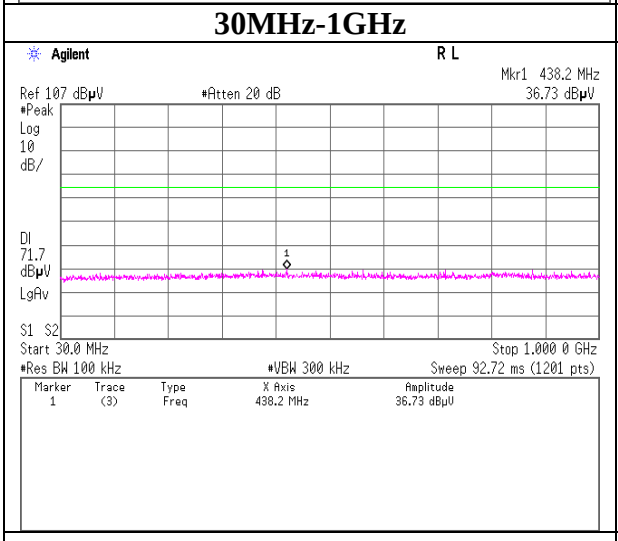
9kHz-150kHz



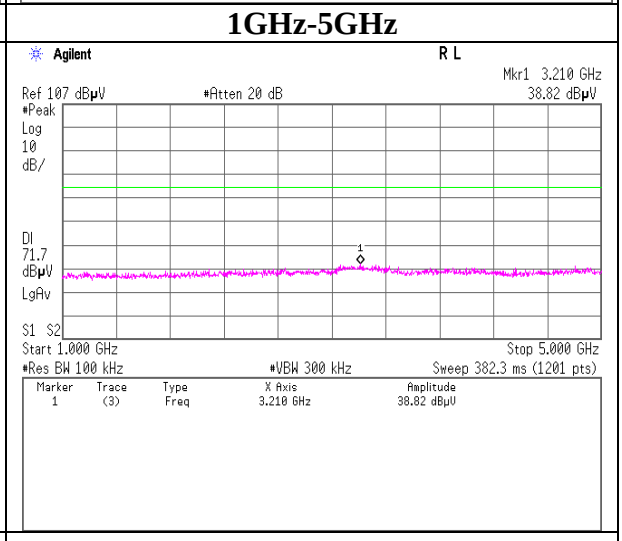
150kHz-30MHz



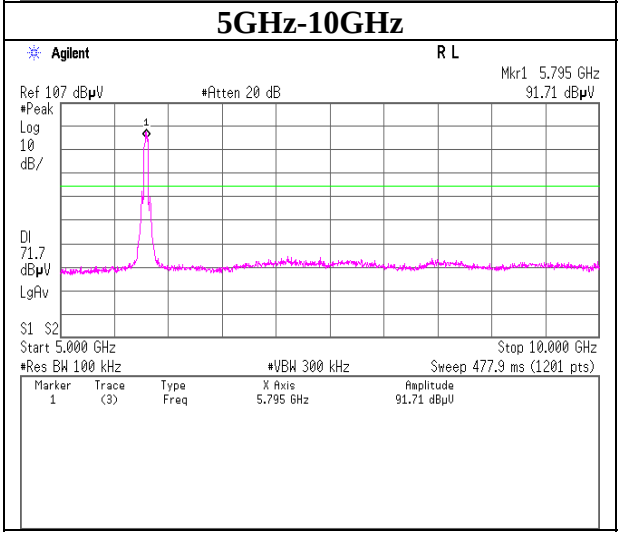
30MHz-1GHz



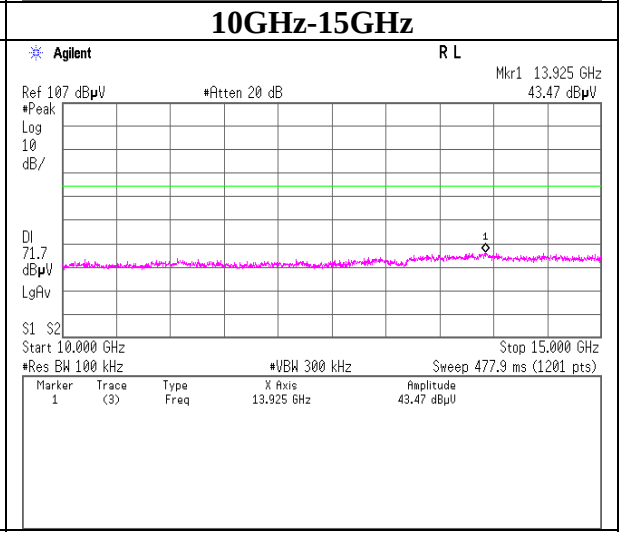
1GHz-5GHz



5GHz-10GHz



10GHz-15GHz



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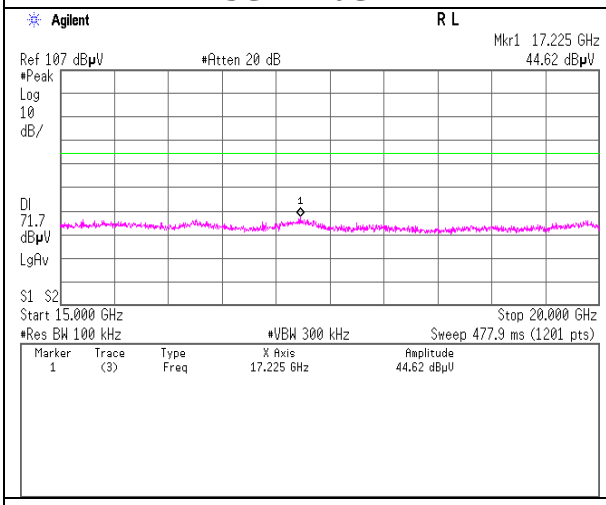
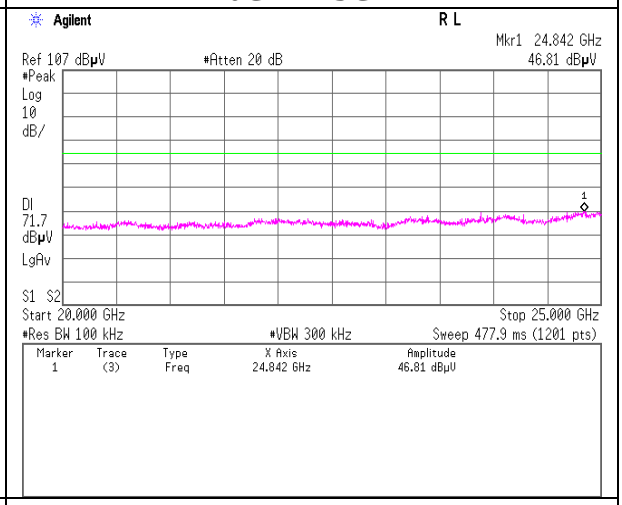
Conducted Spurious Emission

11n-40 (5GHz) Tx 5795MHz

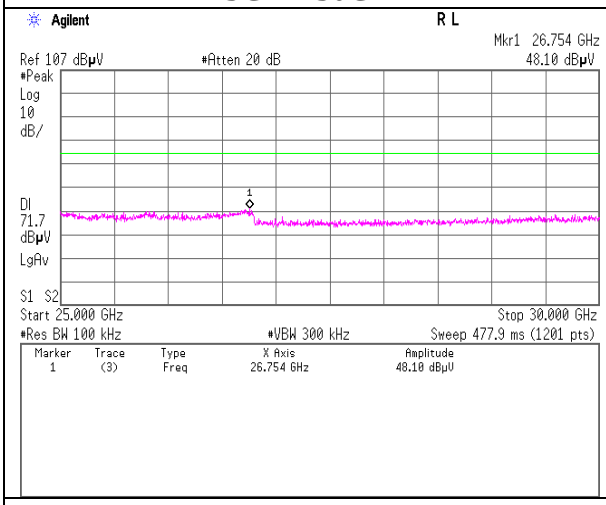
15GHz-20GHz



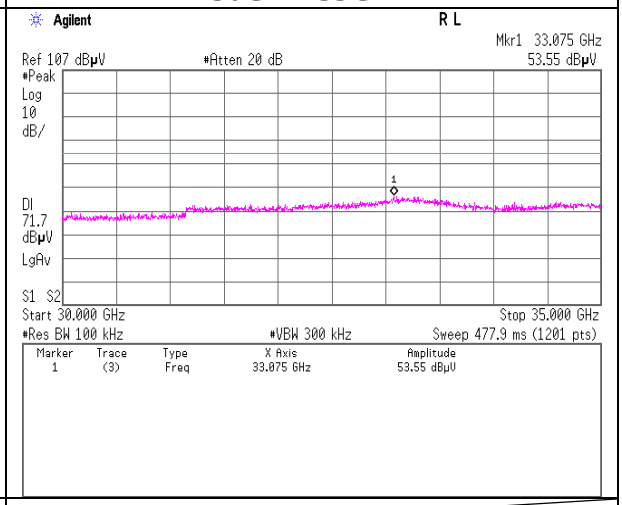
20GHz-25GHz



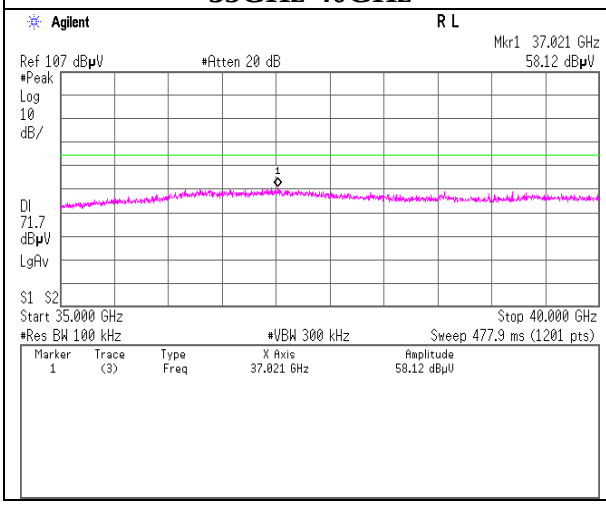
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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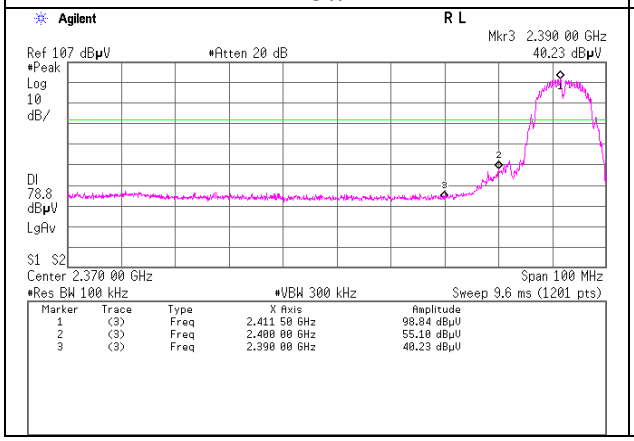
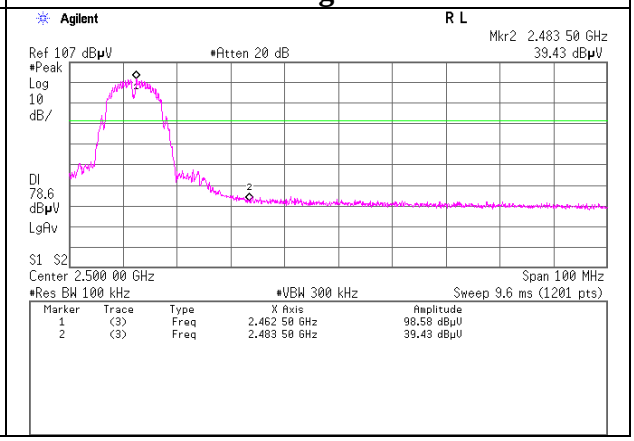
Conducted Emission Band Edge compliance

11b Tx

Low

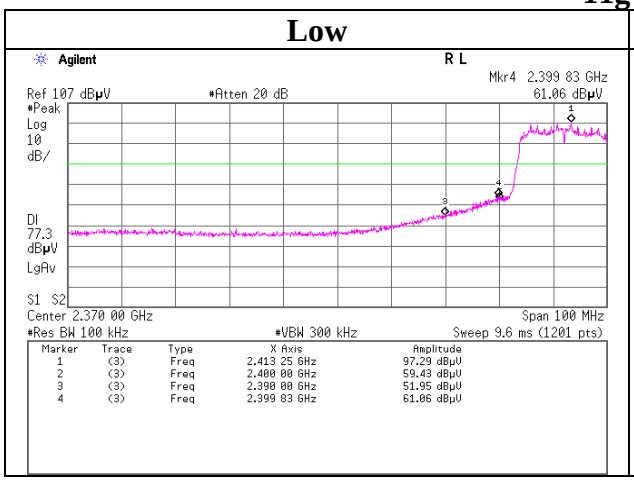


High

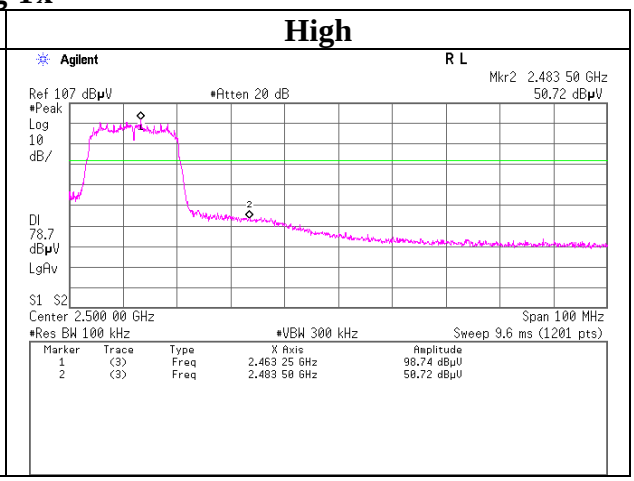


11g Tx

Low



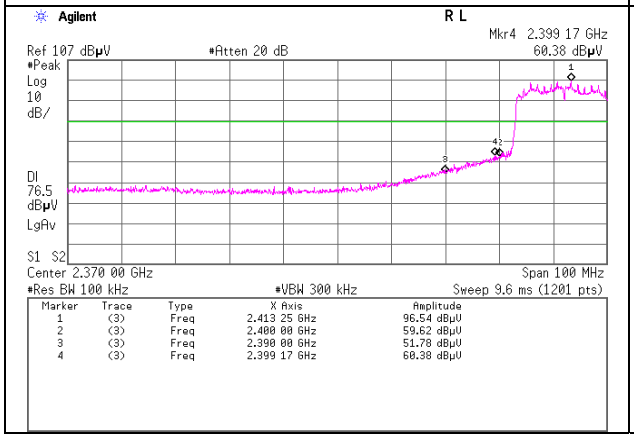
High



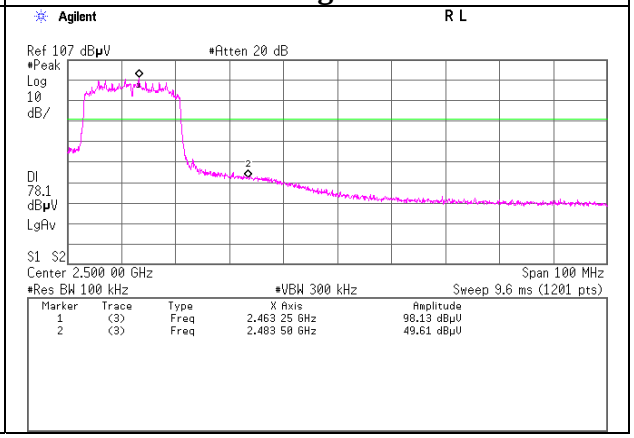
Conducted Emission Band Edge compliance

11n-20 (2.4GHz) Tx

Low

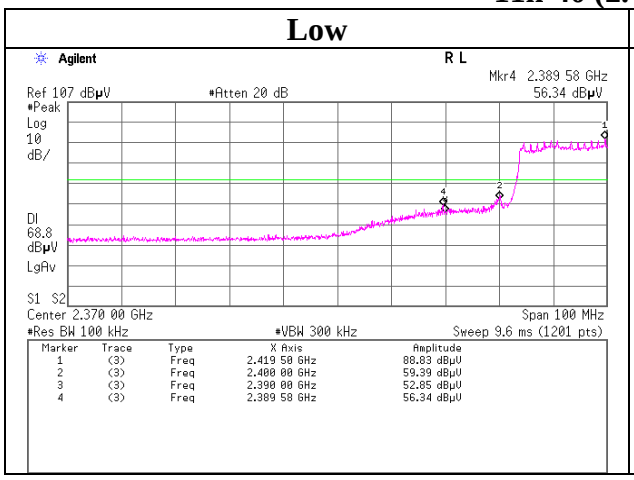


High

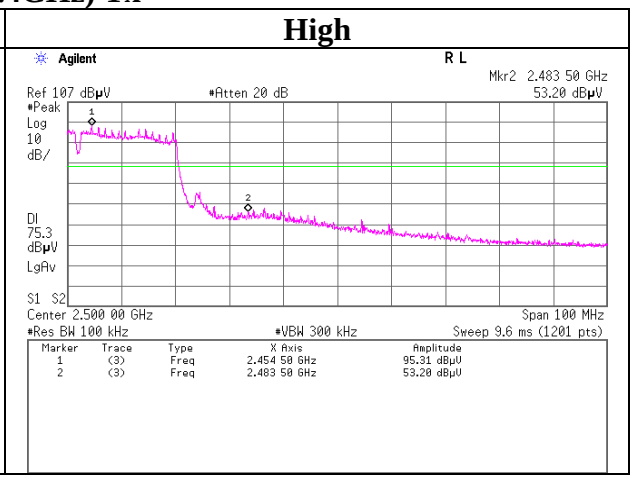


11n-40 (2.4GHz) Tx

Low



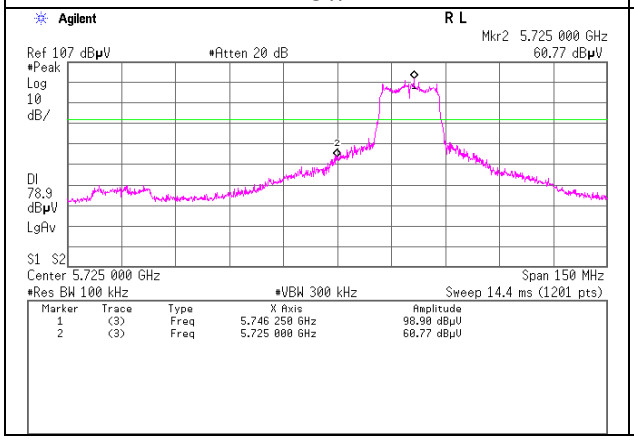
High



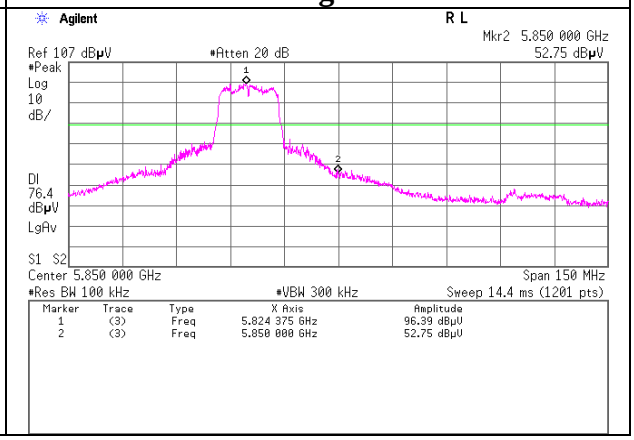
Conducted Emission Band Edge compliance

11a Tx

Low

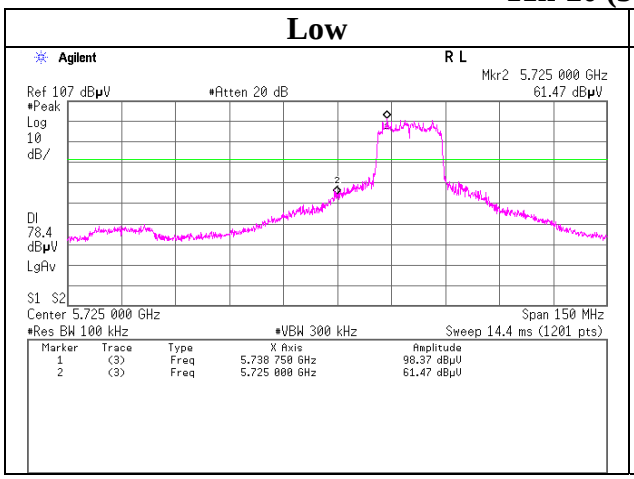


High

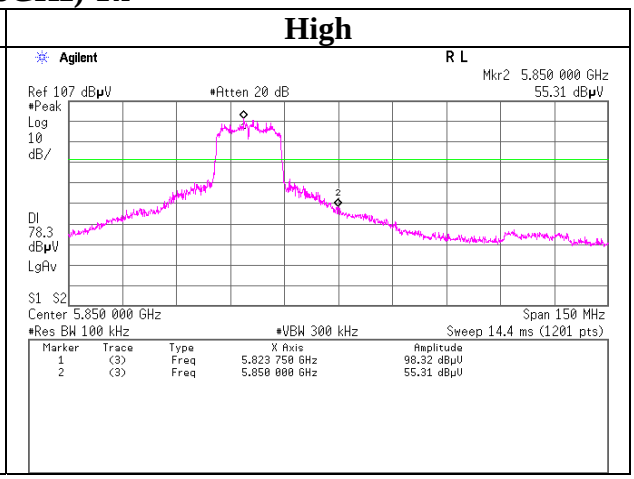


11n-20 (5GHz) Tx

Low

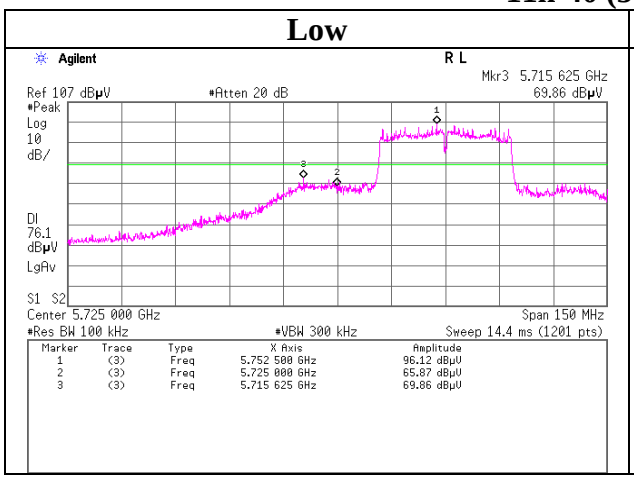


High

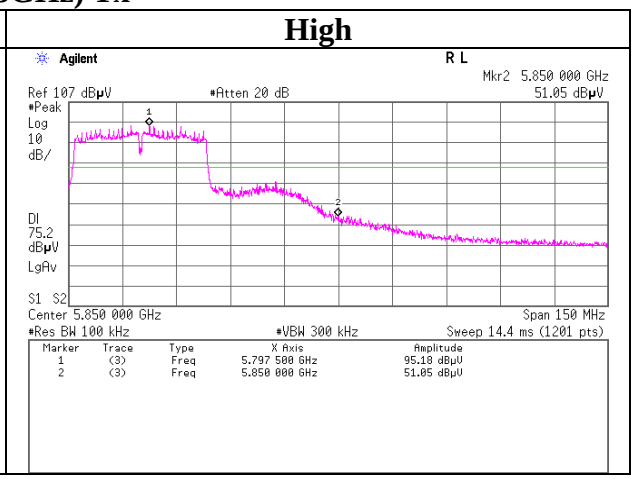


11n-40 (5GHz) Tx

Low



High



Power Density

Test place	Head Office EMC Lab. No.11 Measurement Room	
Report No.	31HE0183-HO-01	
Date	04/27/2011	05/18/2011
Temperature/ Humidity	26 deg. C / 48% RH	21 deg. C / 69% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
Mode	Tx	

11b

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.00	-9.58	1.61	10.07	2.10	8.00	5.90
2437.00	-9.55	1.62	10.07	2.14	8.00	5.86
2462.00	-9.92	1.62	10.07	1.77	8.00	6.23

11g

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.00	-13.17	1.57	9.99	-1.61	8.00	9.61
2437.00	-12.13	1.62	10.07	-0.44	8.00	8.44
2462.00	-12.59	1.58	9.99	-1.02	8.00	9.02

11n-20 (2.4GHz)

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.00	-14.51	1.57	9.99	-2.95	8.00	10.95
2437.00	-12.12	1.62	10.07	-0.43	8.00	8.43
2462.00	-14.18	1.58	9.99	-2.61	8.00	10.61

11n-40 (2.4GHz)

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2422.00	-22.95	1.57	9.99	-11.39	8.00	19.39
2437.00	-17.02	1.58	9.99	-5.45	8.00	13.45
2452.00	-16.94	1.58	9.99	-5.37	8.00	13.37

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

Power Density

Test place	Head Office EMC Lab. No.11 Measurement Room
Report No.	31HE0183-HO-01
Date	05/18/2011
Temperature/ Humidity	21 deg. C / 69% RH
Engineer	Yutaka Yoshida
Mode	Tx

11a

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
5745.00	-12.73	2.51	10.03	-0.19	8.00	8.19
5785.00	-13.06	2.51	10.03	-0.52	8.00	8.52
5825.00	-13.43	2.51	10.03	-0.89	8.00	8.89

11n-20 (5GHz)

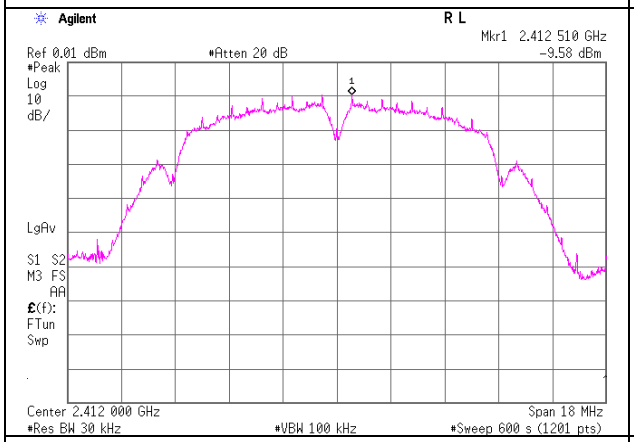
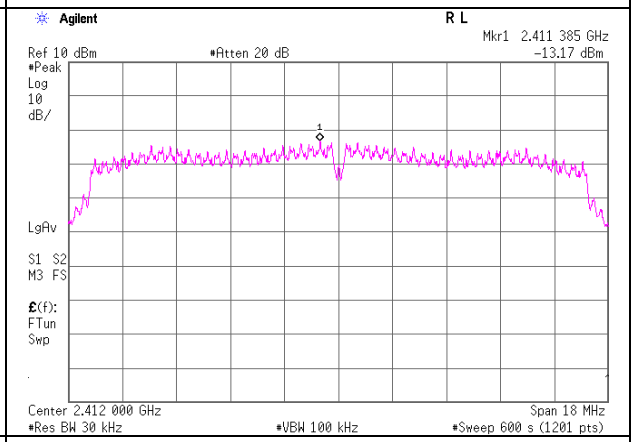
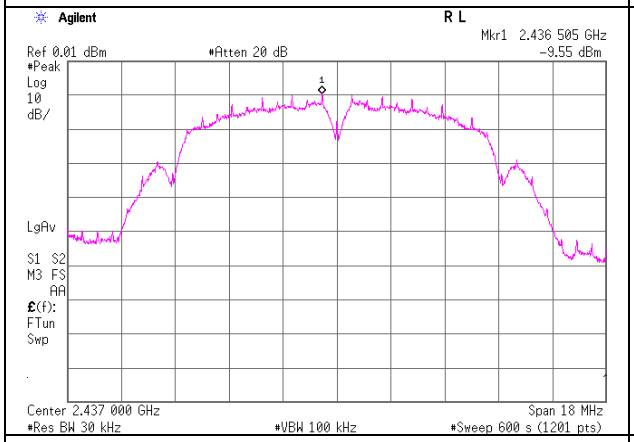
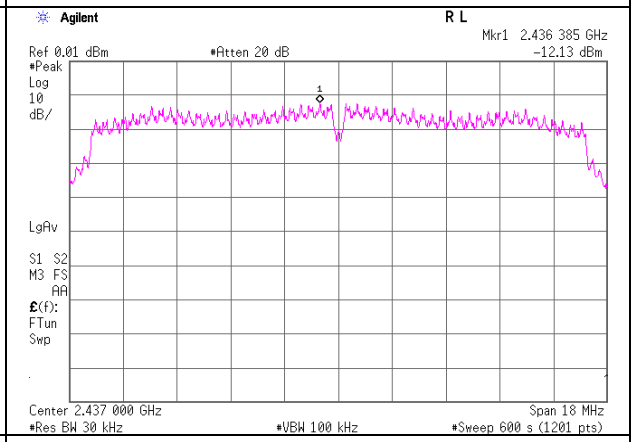
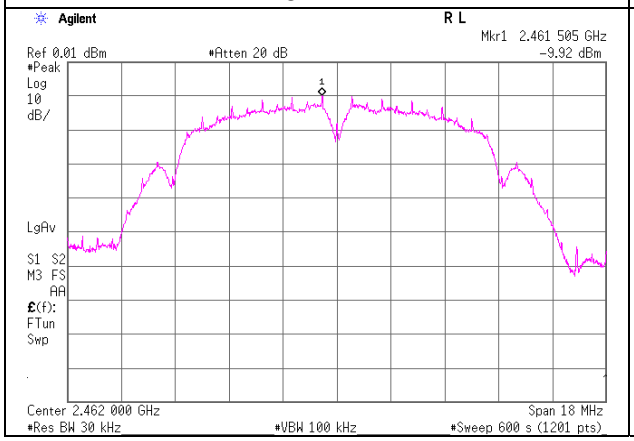
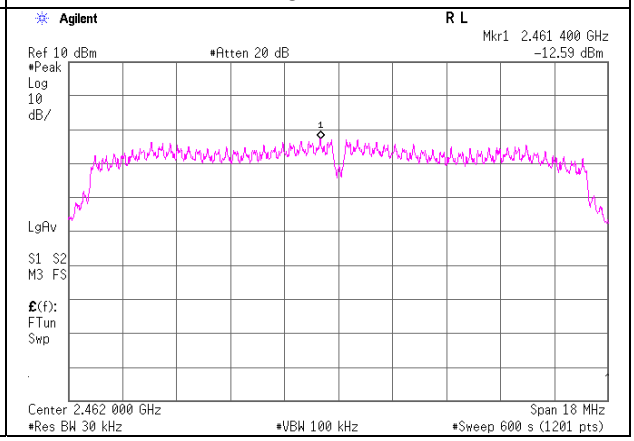
Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
5745.00	-13.29	2.51	10.03	-0.75	8.00	8.75
5785.00	-13.56	2.51	10.03	-1.02	8.00	9.02
5825.00	-13.55	2.51	10.03	-1.01	8.00	9.01

11n-40 (5GHz)

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
5755.00	-16.53	2.51	10.03	-3.99	8.00	11.99
5795.00	-16.70	2.52	10.04	-4.14	8.00	12.14

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

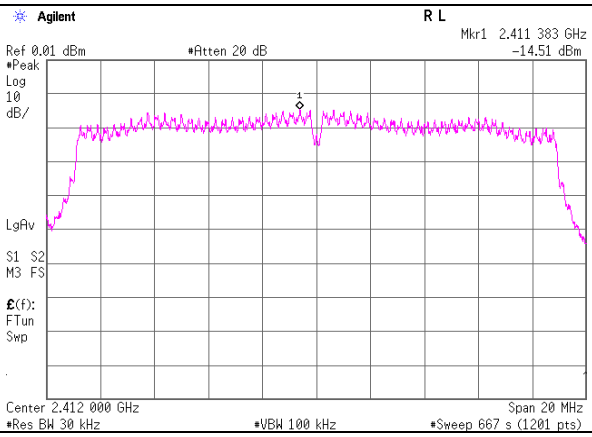
Power Density

11b	11g
2412MHz	2412MHz
	
2437MHz	2437MHz
	
2462MHz	2462MHz
	

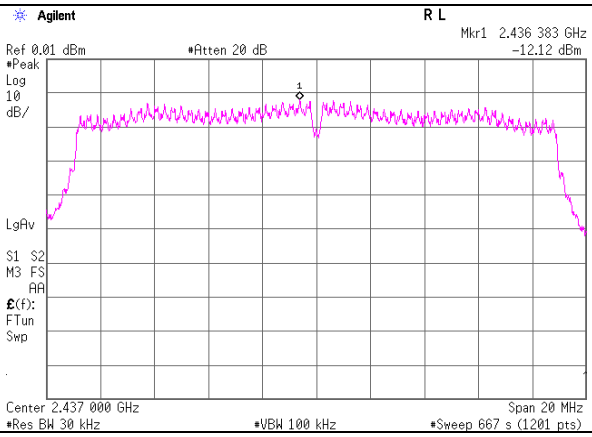
Power Density

11n-20 (2.4GHz)

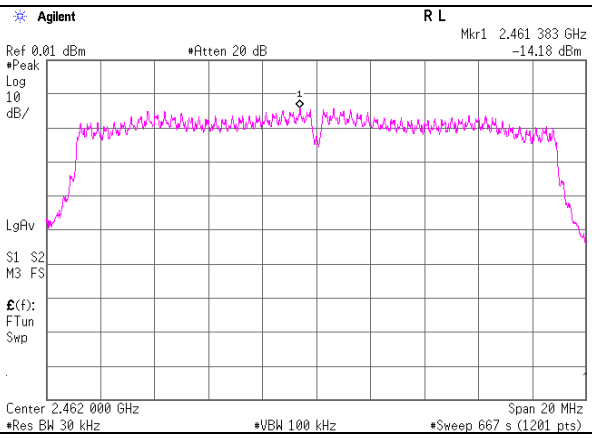
2412MHz



2437MHz

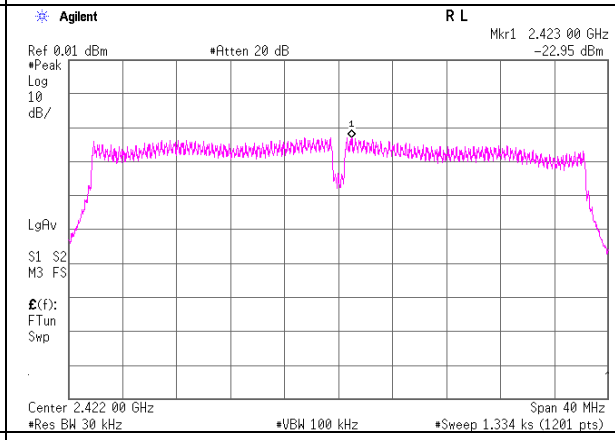


2462MHz

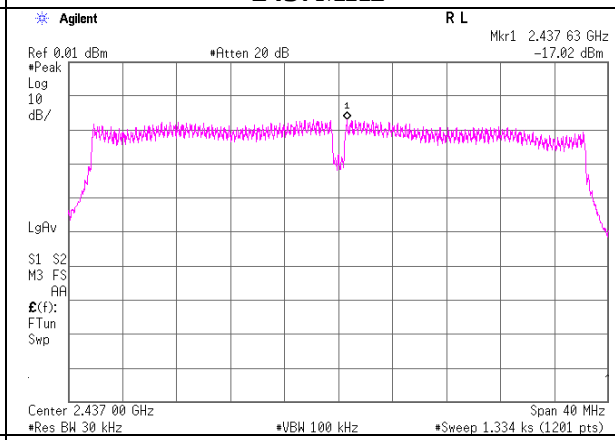


11n-40 (2.4GHz)

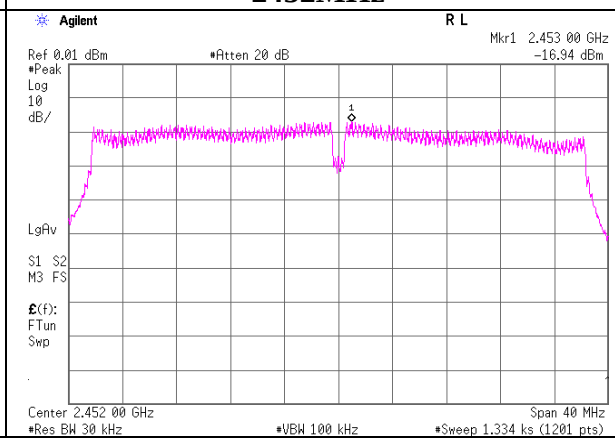
2422MHz



2437MHz



2452MHz



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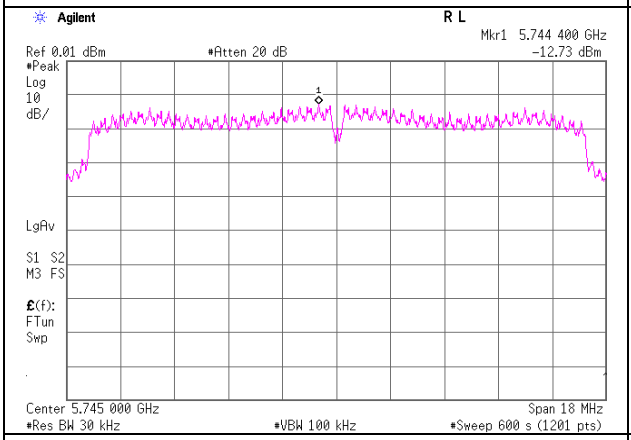
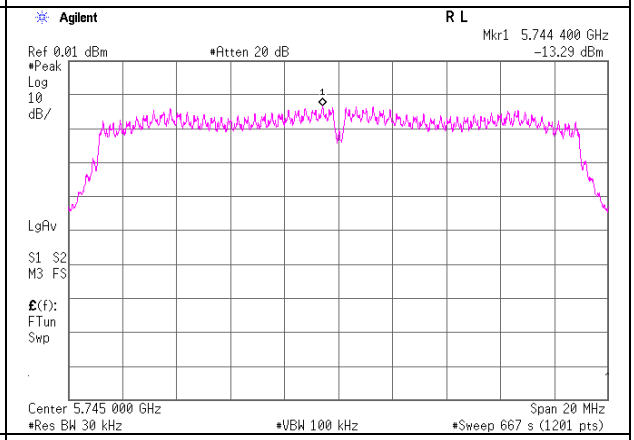
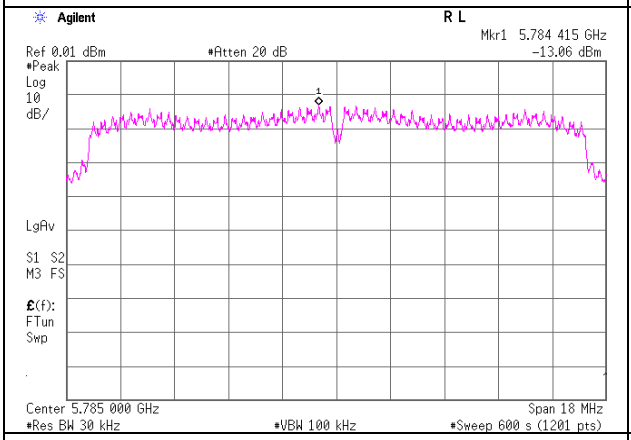
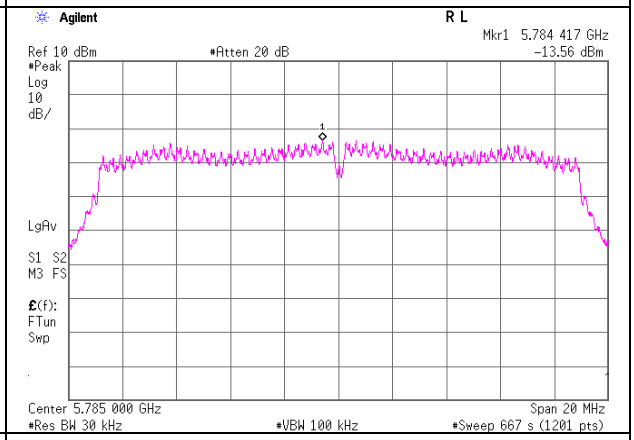
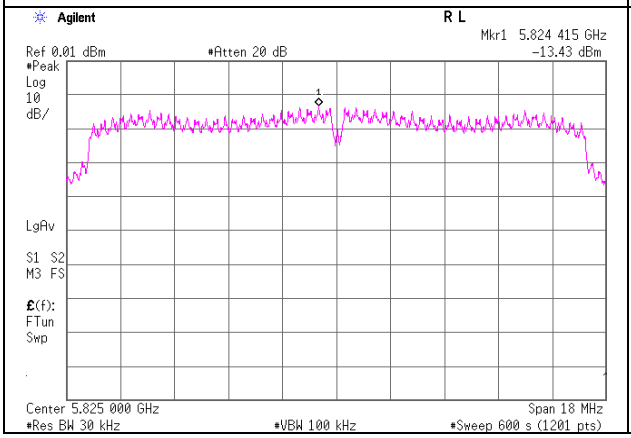
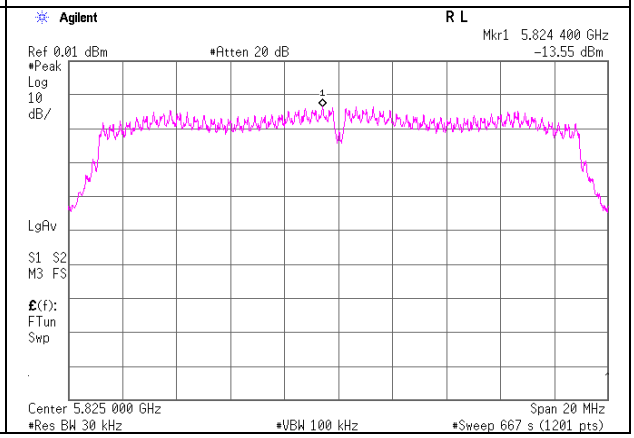
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

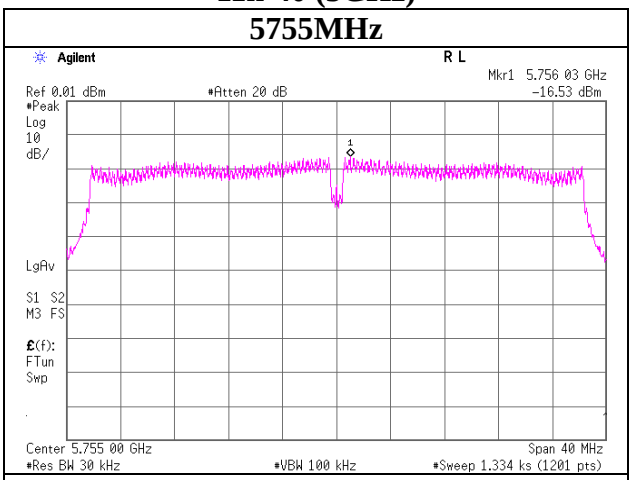
Power Density

11a	11n-20 (5GHz)
5745MHz	5745MHz
	
5785MHz	5785MHz
	
5825MHz	5825MHz
	

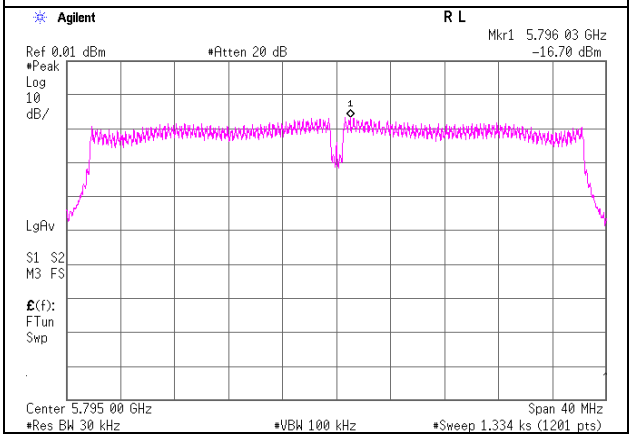
Power Density

11n-40 (5GHz)

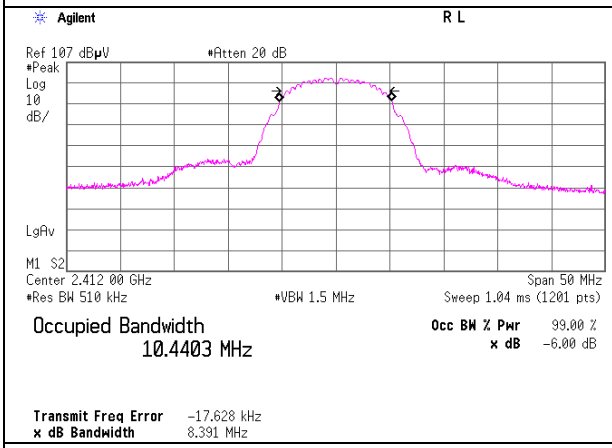
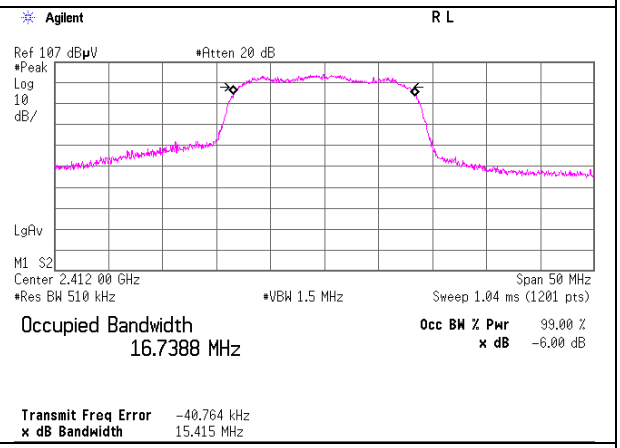
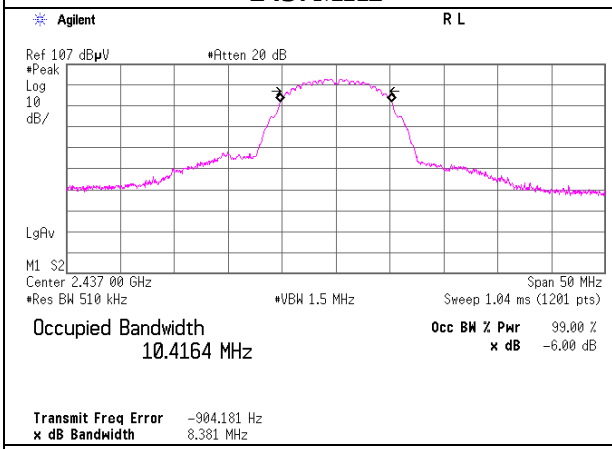
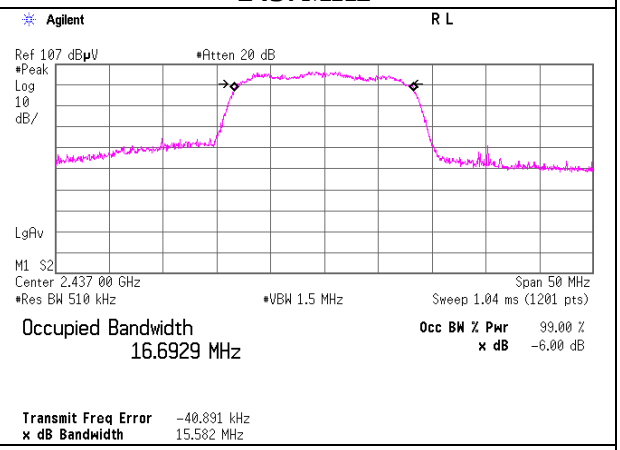
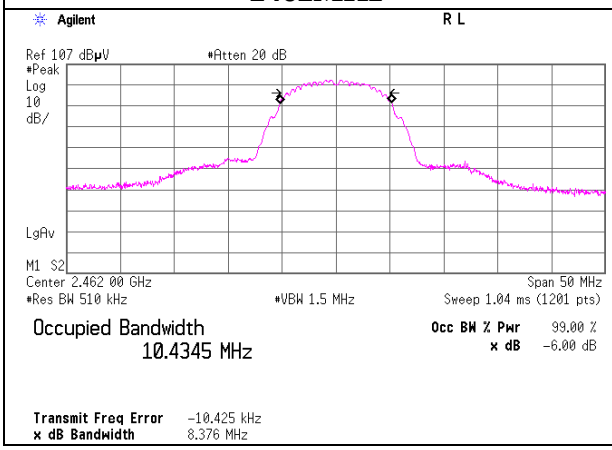
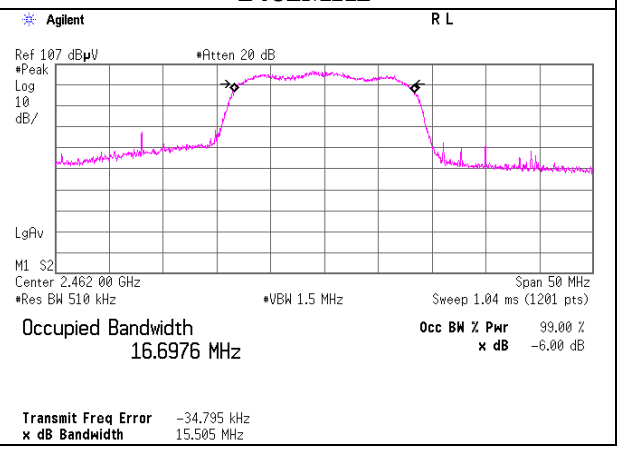
5755MHz



5795MHz



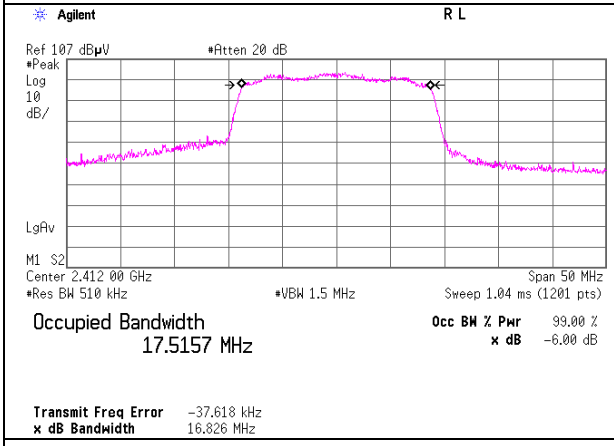
99%Occupied Bandwidth

11b	11g
2412MHz	**2412MHz**
	
2437MHz	**2437MHz**
	
2462MHz	**2462MHz**
	

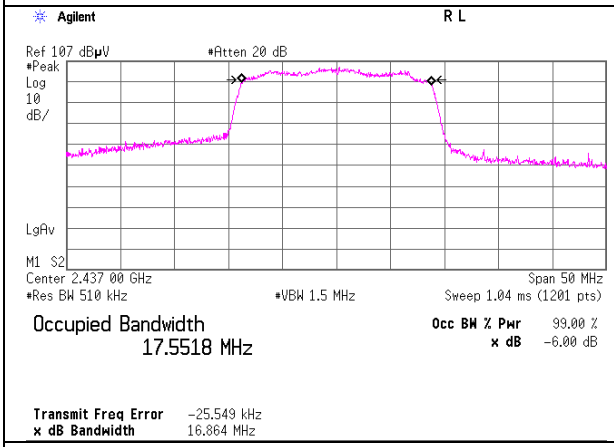
99% Occupied Bandwidth

11n-20 (2.4GHz)

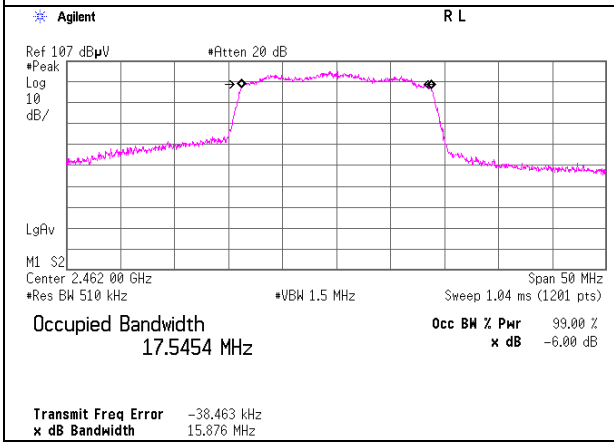
2412MHz



2437MHz

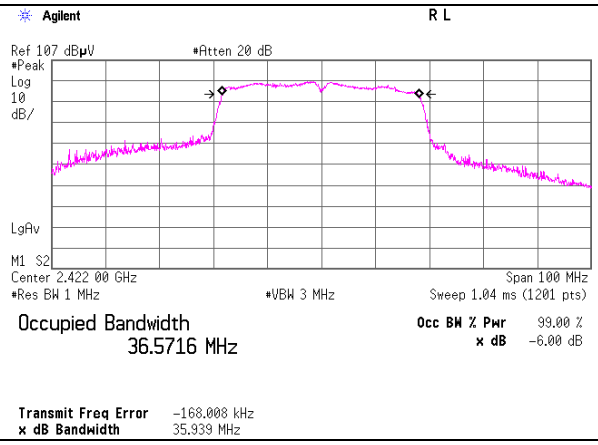


2462MHz

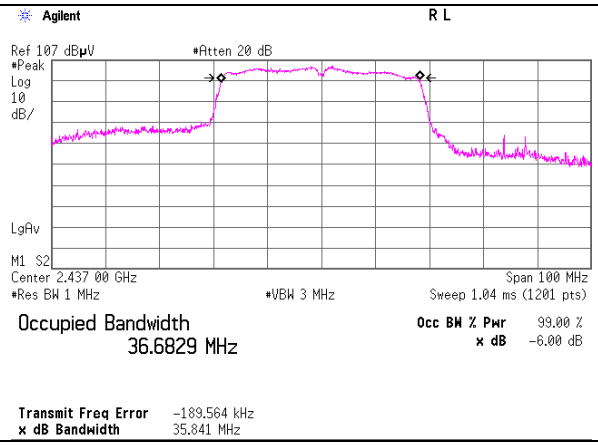


11n-40 (2.4GHz)

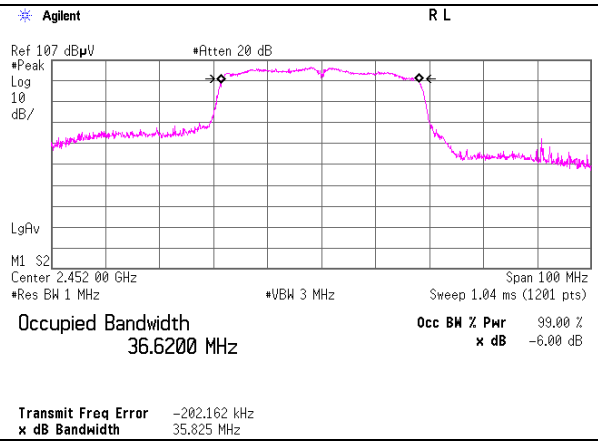
2422MHz



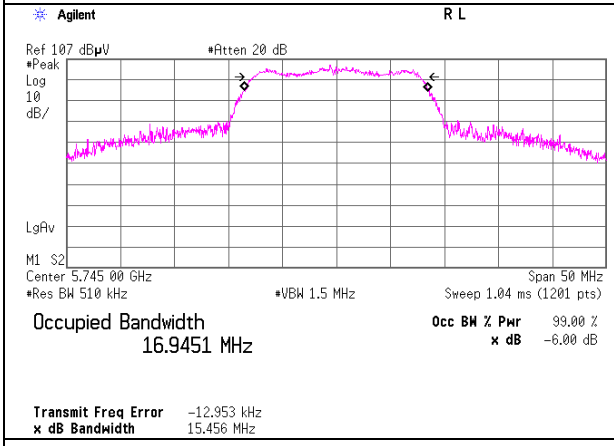
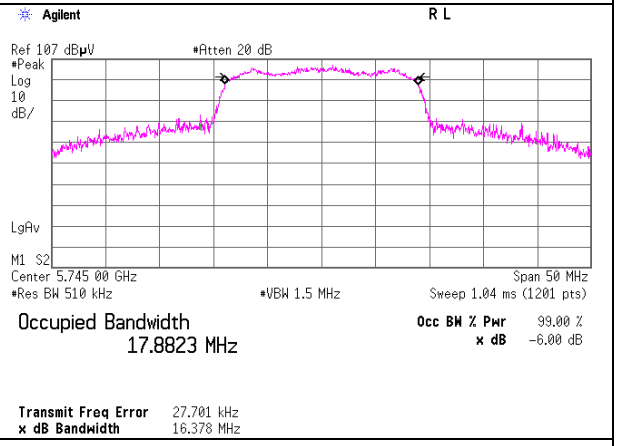
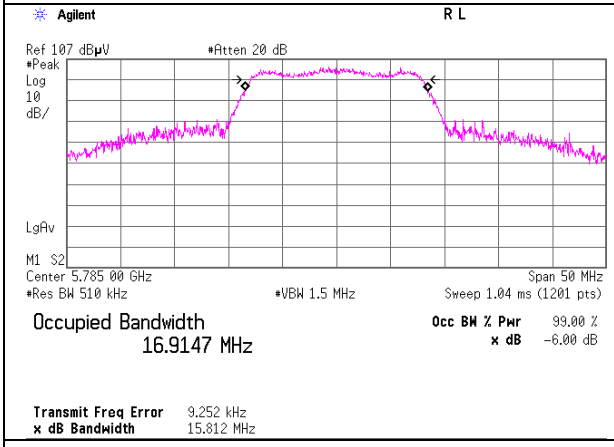
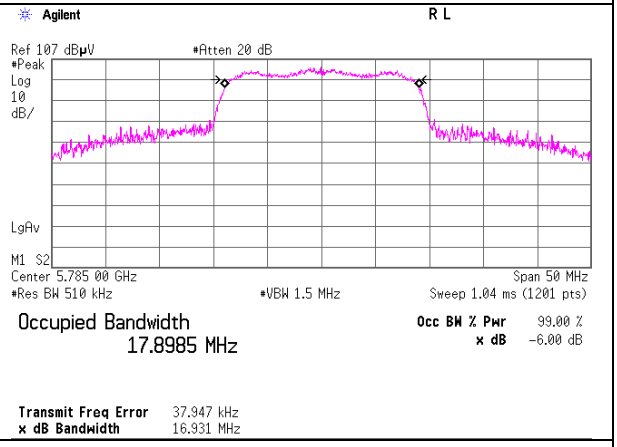
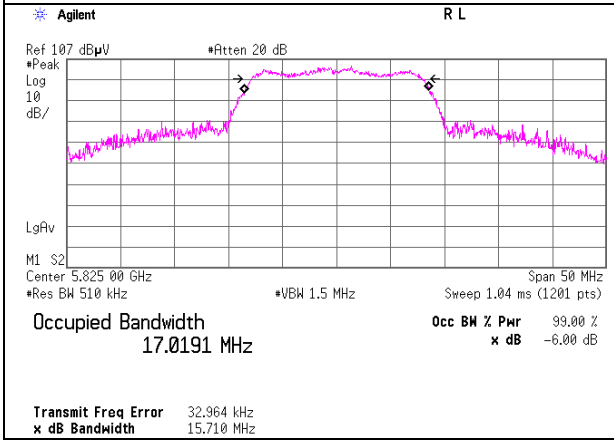
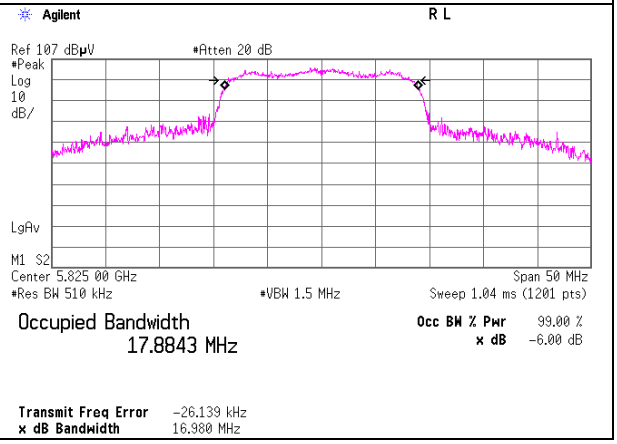
2437MHz



2452MHz



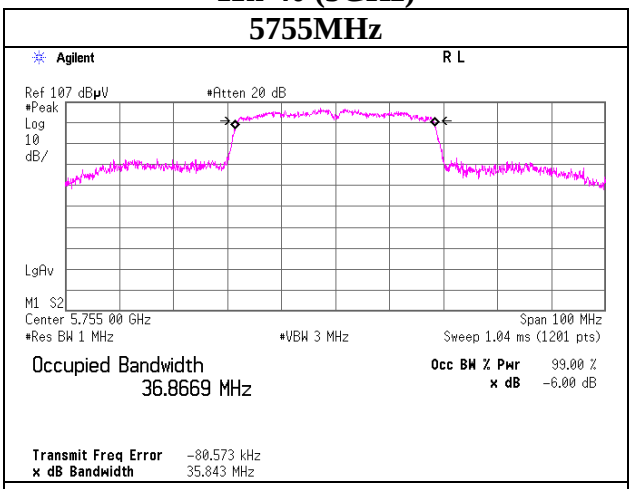
99% Occupied Bandwidth

11a	11n-20 (5GHz)
5745MHz	**5745MHz**
	
5785MHz	**5785MHz**
	
5825MHz	**5825MHz**
	

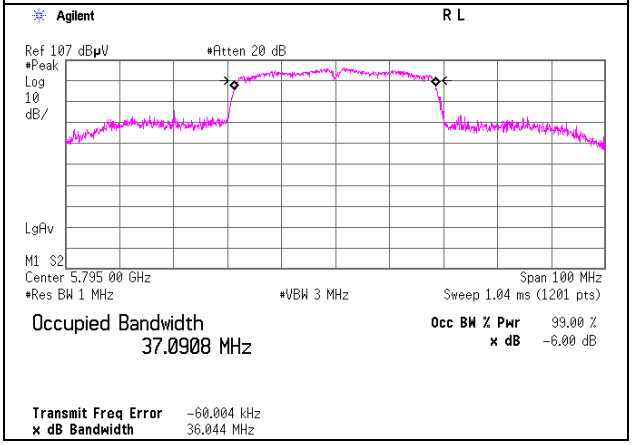
99% Occupied Bandwidth

11n-40 (5GHz)

5755MHz



5795MHz



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/CE	2011/03/01 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	RE/CE	2011/02/23 * 12
MJM-07	Measure	PROMART	SEN1955	-	RE/CE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2011/04/08 * 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
MCC-79	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278923/4	RE	2010/12/02 * 12
MHF-20	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCC	607	RE	2010/09/21 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	AT	2011/02/15 * 12
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
MTA-09	Terminator	HP	HP 909D	03745	AT	2011/02/01 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-201	-	AT	2011/02/23 * 12
MHA-17	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	RE	2010/06/29 * 12
MPA-03	Microwave System Power Amplifier	Agilent	83050A	3950M00205	RE	2010/06/11 * 12
MCC-54	Microwave Cable	Suhner	SUCOFLEX101	2873(1m) / 2876(5m)	RE	2011/03/02 * 12
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	RE/CE	2010/11/18 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	RE/CE	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	2011/03/25 * 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
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE	2011/02/22 * 12
MAT-67	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2011/02/22 * 12
MCC-113	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(5m)/421-010(1m)/sucoform141-PE(1m)/RFM-E121(Switcher)	-/04178	CE	2010/07/21 * 12

EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MOS-19	Thermo-Hygrometer	Custom	CTH-201	0001	AT	2010/12/13 * 12
MPM-08	Power Meter	Anritsu	ML2495A	6K00003338	AT	2010/09/10 * 12
MPSE-11	Power sensor	Anritsu	MA2411B	011737	AT	2010/09/10 * 12
MCC-116	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290221/4	AT	2010/08/05 * 12
MAT-20	Attenuator(10dB) (above 1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-110	-	AT	2011/01/06 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	AT	2010/11/30 * 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