APPENDIX 2: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

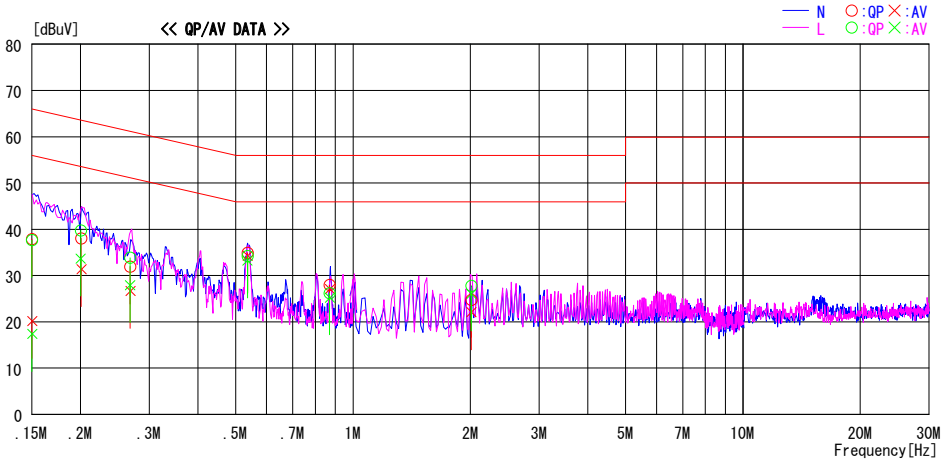
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2011/07/06

Report No. : 31IE0027-HO-01

Temp./Humi. : 25deg. C / 61% RH
Engineer : Yutaka Yoshida

Mode / Remarks : Tx 11g 2462MHz 24Mbps

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	24.8	7.1	13.1	37.9	20.2	66.0	56.0	28.1	35.8	N	
0.20086	24.8	18.1	13.3	38.1	31.4	63.6	53.6	25.5	22.2	N	
0.26816	18.6	13.4	13.3	31.9	26.7	61.2	51.2	29.3	24.5	N	
0.53591	21.6	21.0	13.3	34.9	34.3	56.0	46.0	21.1	11.7	N	
0.87095	14.7	13.8	13.3	28.0	27.1	56.0	46.0	28.0	18.9	N	
2.00965	11.3	8.7	13.4	24.7	22.1	56.0	46.0	31.3	23.9	N	
0.15000	24.6	4.3	13.1	37.7	17.4	66.0	56.0	28.3	38.6	L	
0.20005	26.5	20.4	13.3	39.8	33.7	63.6	53.6	23.8	19.9	L	
0.26790	20.6	14.6	13.3	33.9	27.9	61.2	51.2	27.3	23.3	L	
0.53526	21.0	20.0	13.3	34.3	33.3	56.0	46.0	21.7	12.7	L	
0.87109	12.9	12.0	13.3	26.2	25.3	56.0	46.0	29.8	20.7	L	
2.00967	14.4	12.7	13.4	27.8	26.1	56.0	46.0	28.2	19.9	L	

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

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Conducted Emission

DATA OF CONDUCTED EMISSION TEST

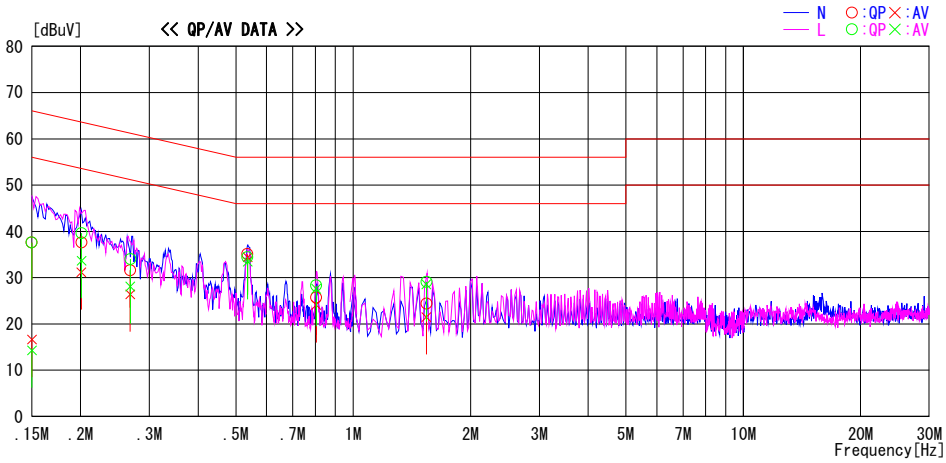
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2011/07/06

Report No. : 31IE0027-HO-01

Temp./Humi. : 25deg. C / 61% RH
Engineer : Yutaka Yoshida

Mode / Remarks : Tx 11n40 5755MHz MCS 5

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	24.5	3.5	13.1	37.6	16.6	66.0	56.0	28.4	39.4	N	
0.20100	24.3	17.9	13.3	37.6	31.2	63.6	53.6	26.0	22.4	N	
0.26821	18.3	13.1	13.3	31.6	26.4	61.2	51.2	29.6	24.8	N	
0.53592	21.8	21.1	13.3	35.1	34.4	56.0	46.0	20.9	11.6	N	
0.80380	12.4	10.8	13.3	25.7	24.1	56.0	46.0	30.3	21.9	N	
1.54151	11.0	8.1	13.4	24.4	21.5	56.0	46.0	31.6	24.5	N	
0.15000	24.5	1.2	13.1	37.6	14.3	66.0	56.0	28.4	41.7	L	
0.20112	26.3	20.4	13.3	39.6	33.7	63.6	53.6	24.0	19.9	L	
0.26827	20.7	14.8	13.3	34.0	28.1	61.2	51.2	27.2	23.1	L	
0.53595	21.1	20.1	13.3	34.4	33.4	56.0	46.0	21.6	12.6	L	
0.80395	15.0	14.3	13.3	28.3	27.6	56.0	46.0	27.7	18.4	L	
1.54077	15.7	15.2	13.4	29.1	28.6	56.0	46.0	26.9	17.4	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 and No.6 Measurement Room	
Report No.	31IE0027-HO-01	
Date	06/23/2011	07/06/2011
Temperature/ Humidity	24deg. C / 58% RH	25deg. C / 63% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
Mode	Tx	

11b

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	9.929	>500
2437	9.933	>500
2462	9.917	>500

11g

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	16.468	>500
2437	16.464	>500
2462	16.476	>500

11n-20 (2.4GHz)

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	17.811	>500
2437	17.818	>500
2462	17.786	>500

11n-40 (2.4GHz)

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2422	36.525	>500
2437	36.536	>500
2452	36.544	>500

11a

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
5745	16.570	>500
5785	16.540	>500
5825	16.542	>500

11n-20 (5GHz)

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
5745	17.798	>500
5785	17.812	>500
5825	17.815	>500

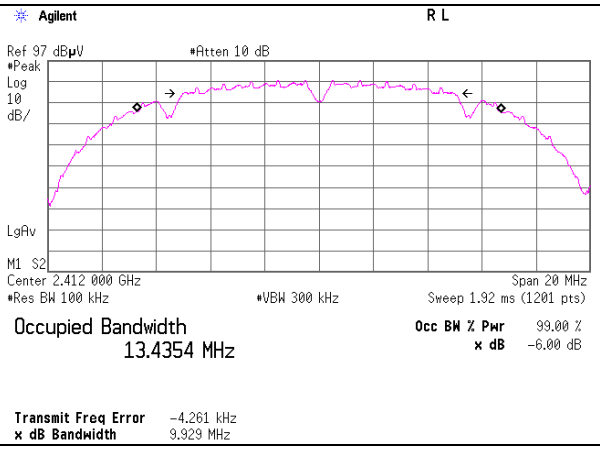
11n-40 (5GHz)

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
5755	36.530	>500
5795	36.499	>500

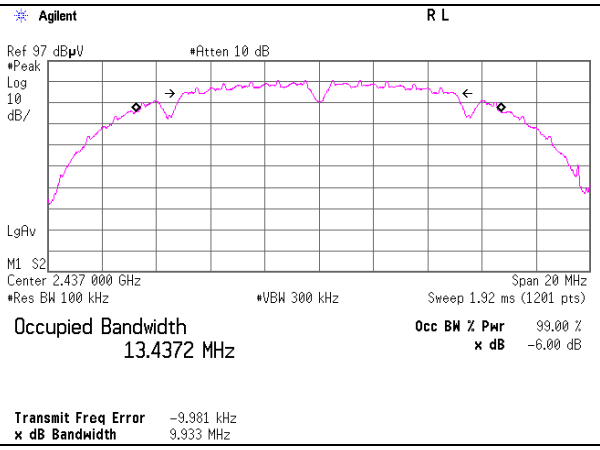
6dB Bandwidth

11b

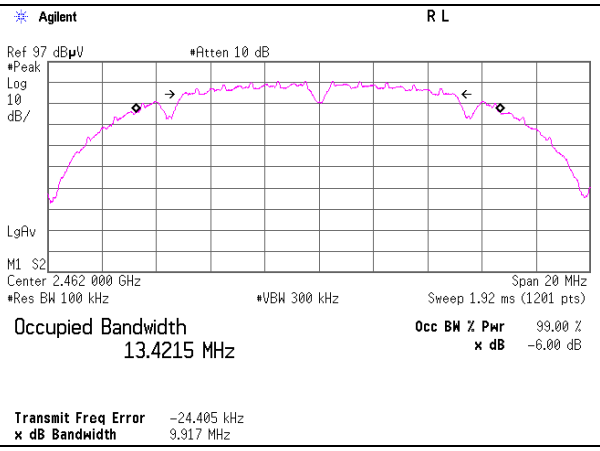
2412MHz



2437MHz

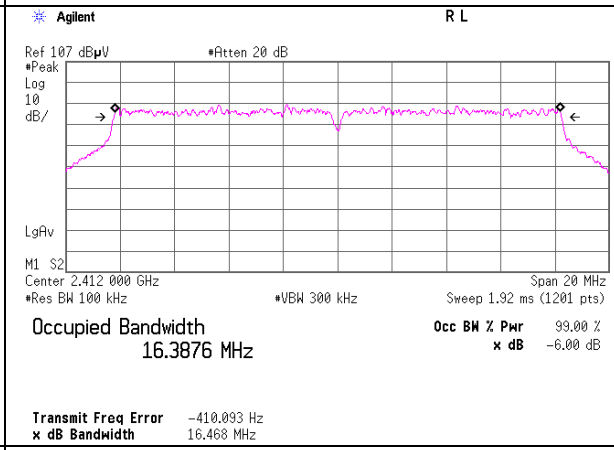


2462MHz

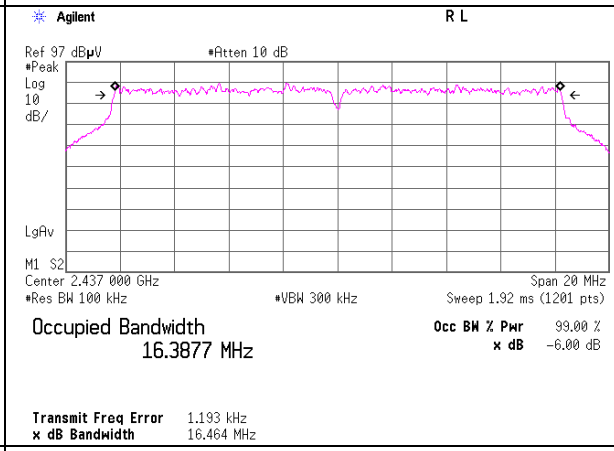


11g

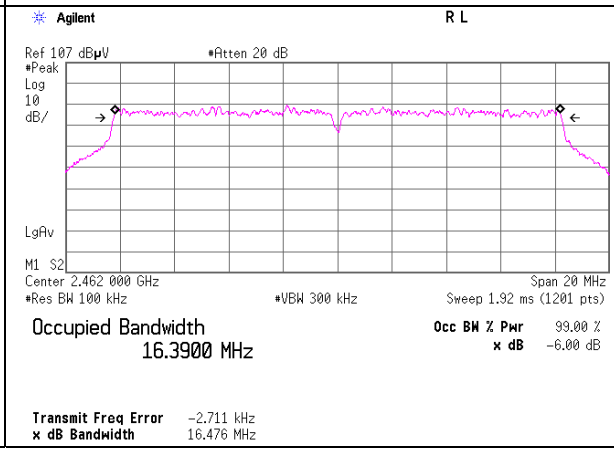
2412MHz



2437MHz



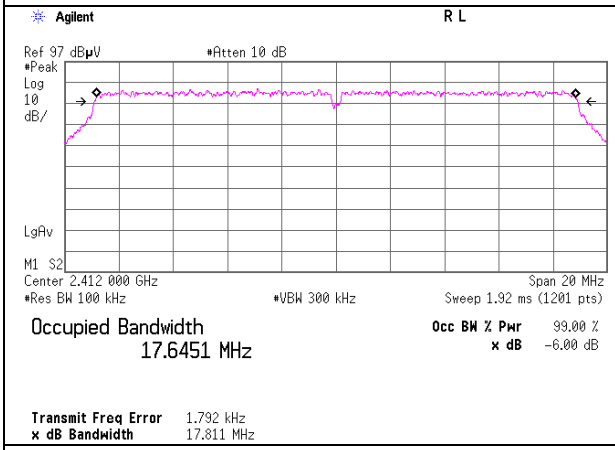
2462MHz



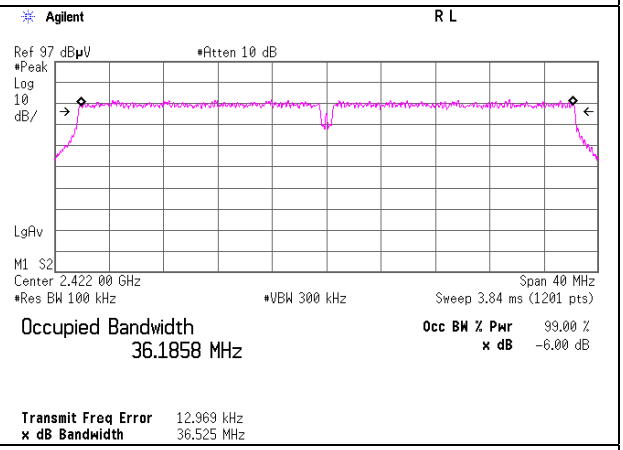
6dB Bandwidth

11n-20 (2.4GHz)

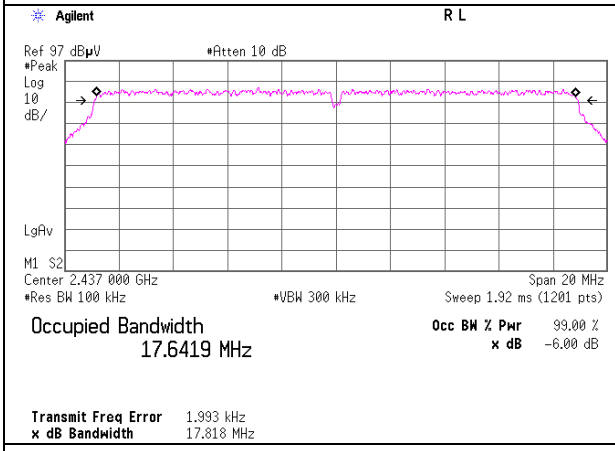
2412MHz



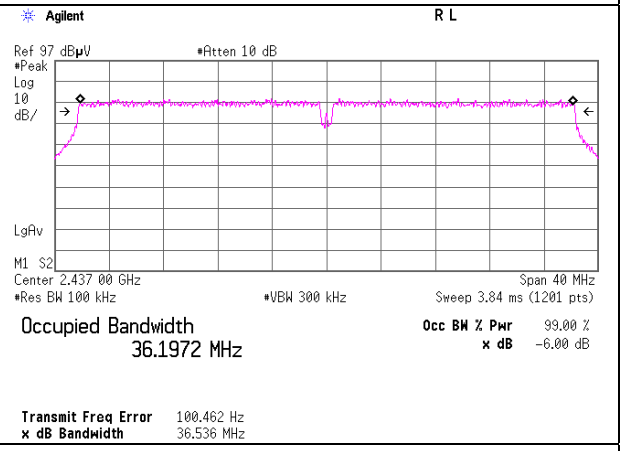
2422MHz



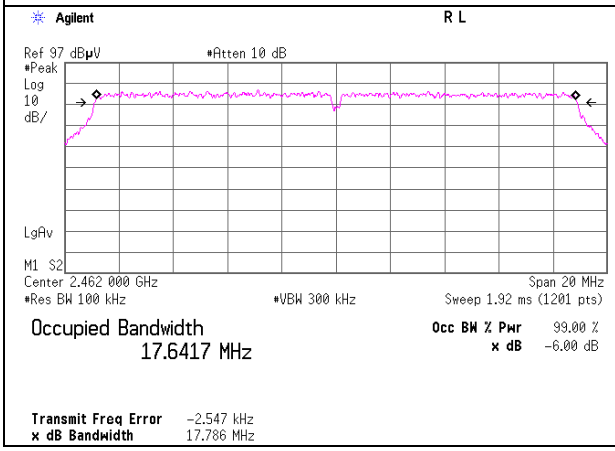
2437MHz



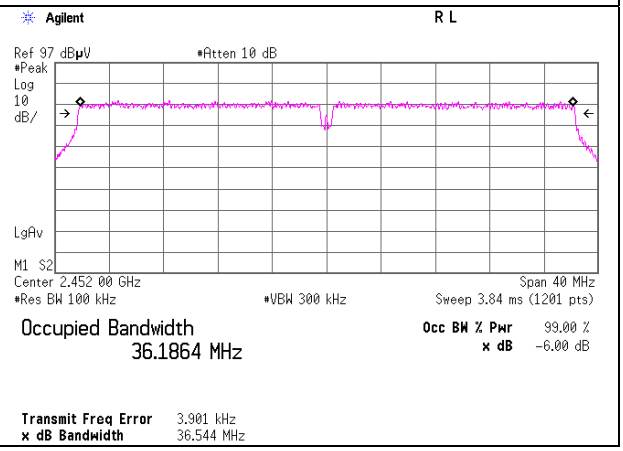
2437MHz



2462MHz



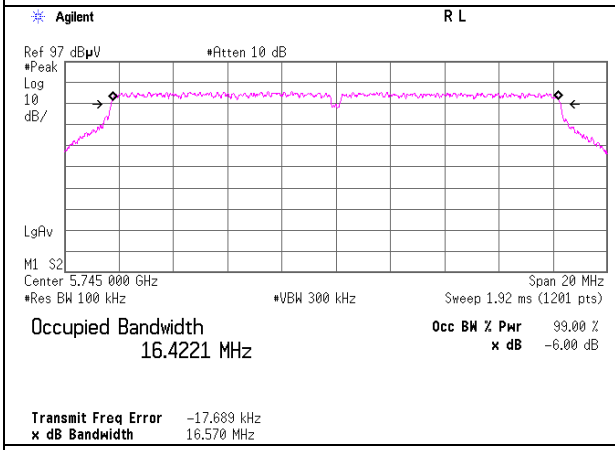
2452MHz



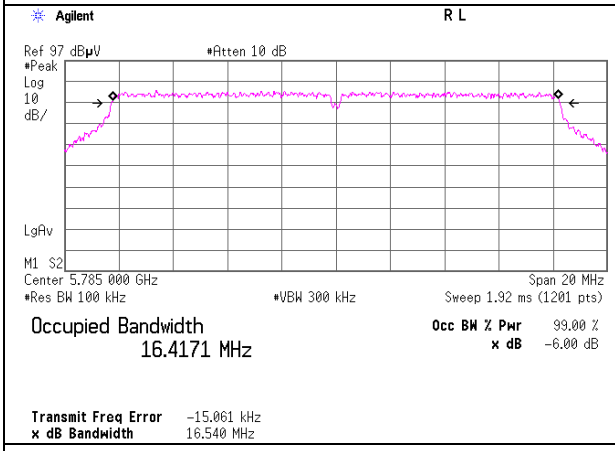
6dB Bandwidth

11a

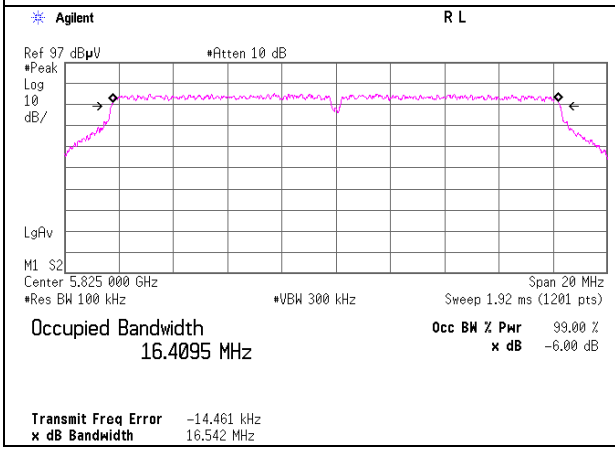
5745MHz



5785MHz

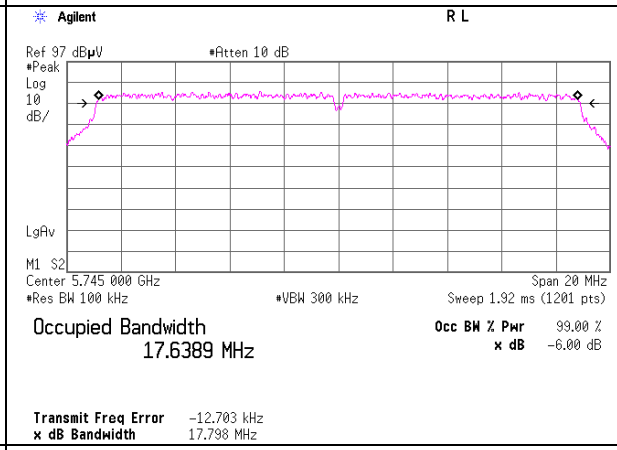


5825MHz

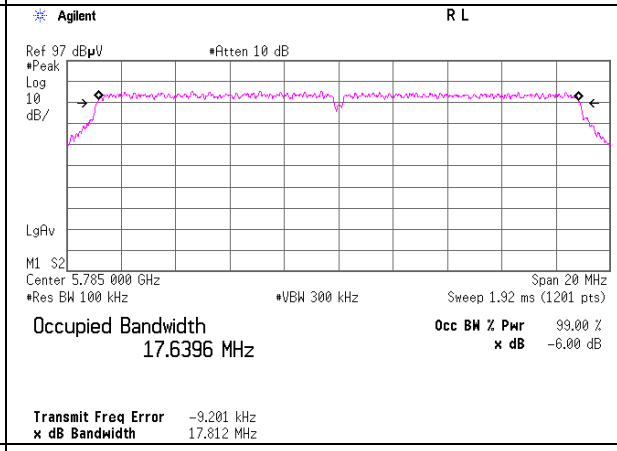


11n-20

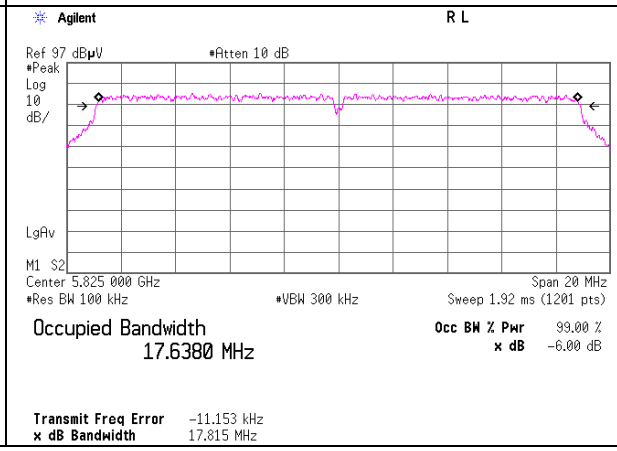
5745MHz



5785MHz



5825MHz



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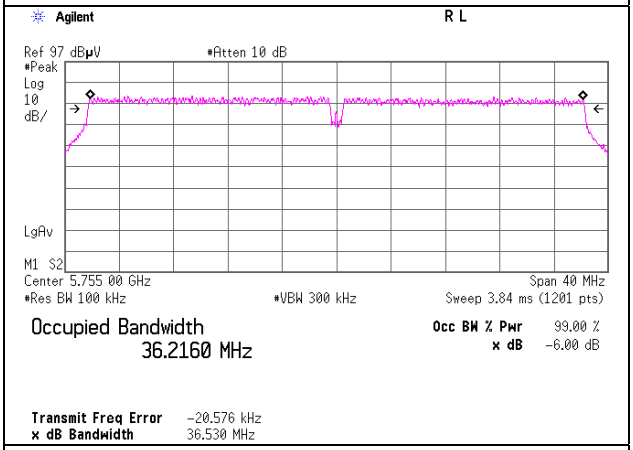
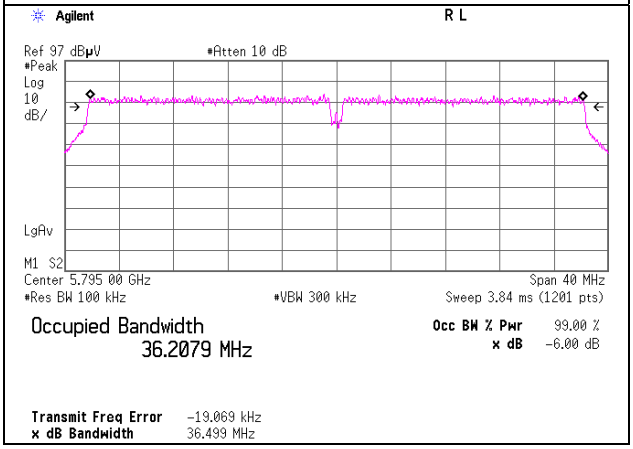
6dB Bandwidth

11n-40

5755MHz



5795MHz



Maximum Peak Output Power

Test place	Head Office EMC Lab. No.6 Measurement Room	
Report No.	31IE0027-HO-01	
Date	05/23/2011	05/24/2011
Temperature/ Humidity	25deg. C / 67% RH	23deg. C / 66% RH
Engineer	Satofumi Matsuyama	Satofumi Matsuyama
Mode	11b Tx	

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	4.21	0.99	9.99	15.19	33.04	30.00	1000	14.81
2437	4.05	0.99	9.99	15.03	31.84	30.00	1000	14.97
2462	4.09	1.00	9.99	15.08	32.21	30.00	1000	14.92

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

2437MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
1	4.05	*
2	4.02	
5.5	3.95	
11	3.97	

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

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.6 Measurement Room	
Report No.	31IE0027-HO-01	
Date	05/23/2011	05/24/2011
Temperature/ Humidity	25deg. C / 67% RH	23deg. C / 66% RH
Engineer	Satofumi Matsuyama	Satofumi Matsuyama
Mode	11g Tx	

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	11.04	0.99	9.99	22.02	159.22	30.00	1000	7.98
2437	11.03	0.99	9.99	22.01	158.85	30.00	1000	7.99
2462	11.08	1.00	9.99	22.07	161.06	30.00	1000	7.93

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

2437MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
6	10.95	
9	10.30	
12	10.69	
18	10.21	
24	11.03	*
36	10.69	
48	10.37	
54	10.64	

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

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.6 Measurement Room	
Report No.	31IE0027-HO-01	
Date	05/23/2011	05/24/2011
Temperature/ Humidity	25deg. C / 67% RH	23deg. C / 66% RH
Engineer	Satofumi Matsuyama	Satofumi Matsuyama
Mode	11n-20(2.4GHz) Tx	

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	10.27	0.99	9.99	21.25	133.35	30.00	1000	8.75
2437	10.24	0.99	9.99	21.22	132.43	30.00	1000	8.78
2462	10.36	1.00	9.99	21.35	136.46	30.00	1000	8.65

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

2437MHz

MCS Number	Reading [dBm]	Remark
0	10.19	
1	10.14	
2	10.20	
3	10.22	
4	10.24	*
5	10.14	
6	10.19	
7	10.17	

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

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	31IE0027-HO-01
Date	07/06/2011
Temperature/ Humidity	25deg. C / 63% RH
Engineer	Takayuki Shimada
Mode	11n-40(2.4GHz) Tx

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2422	8.16	0.99	9.99	19.14	82.04	30.00	1000	10.86
2437	8.02	0.99	9.99	19.00	79.43	30.00	1000	11.00
2452	8.21	1.00	9.99	19.20	83.18	30.00	1000	10.80

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

2437MHz

MCS Number	Reading [dBm]	Remark
0	7.34	
1	7.22	
2	7.59	
3	8.02	*
4	7.64	
5	7.93	
6	7.52	
7	7.33	

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

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	31IE0027-HO-01
Date	05/24/2011
Temperature/ Humidity	23deg. C / 66% RH
Engineer	Satofumi Matsuyama
Mode	11a Tx

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5745	9.57	1.53	10.03	21.13	129.72	30.00	1000	8.87
5785	9.59	1.53	10.03	21.15	130.32	30.00	1000	8.85
5825	9.55	1.54	10.04	21.13	129.72	30.00	1000	8.87

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

5785MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
6	9.59	*
9	9.27	
12	9.45	
18	8.82	
24	9.58	
36	9.51	
48	9.20	
54	9.45	

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

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	31IE0027-HO-01
Date	05/24/2011
Temperature/ Humidity	23deg. C / 66% RH
Engineer	Satofumi Matsuyama
Mode	11n-20(5GHz) Tx

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5745	8.91	1.53	10.03	20.47	111.43	30.00	1000	9.53
5785	8.92	1.53	10.03	20.48	111.69	30.00	1000	9.52
5825	8.83	1.54	10.04	20.41	109.90	30.00	1000	9.59

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

5785MHz

MCS Number	Reading [dBm]	Remark
MCS0	8.92	*
MCS1	8.89	
MCS2	8.85	
MCS3	8.87	
MCS4	8.88	
MCS5	8.89	
MCS6	8.88	
MCS7	8.90	

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

Maximum Peak Output Power

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	31IE0027-HO-01
Date	05/24/2011
Temperature/ Humidity	23deg. C / 66% RH
Engineer	Satofumi Matsuyama
Mode	11n-40(5GHz) Tx

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
5755	9.91	1.53	10.03	21.47	140.28	30.00	1000	8.53
5795	9.87	1.54	10.04	21.45	139.64	30.00	1000	8.55

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

5755MHz

MCS Number	Reading [dBm]	Remark
MCS0	9.45	
MCS1	9.20	
MCS2	9.65	
MCS3	9.87	
MCS4	9.73	
MCS5	9.91	*
MCS6	9.71	
MCS7	9.47	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 and No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/24/2011	07/04/2011
Temperature/ Humidity	25deg. C / 58% RH	23deg. C / 66% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
	(1-10GHz)	(10-26.5GHz)
Mode	11b Tx 2412MHz	

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	49.8	27.2	2.5	32.2	47.3	73.9	26.6	
Hori	2397.333	PK	61.5	27.2	2.5	32.2	59.0	-	-	See 20dBc Data Sheet
Hori	2400.000	PK	58.9	27.2	2.5	32.2	56.4	73.9	17.5	
Hori	4824.000	PK	45.5	30.9	4.3	31.4	49.3	73.9	24.6	
Hori	7236.000	PK	42.0	35.7	5.1	32.4	50.4	73.9	23.5	NS
Hori	9648.000	PK	43.0	37.8	5.9	33.2	53.5	73.9	20.4	NS
Hori	24120.000	PK	47.5	38.6	-0.9	31.6	53.6	73.9	20.3	NS
Hori	2390.000	AV	37.7	27.2	2.5	32.2	35.2	53.9	18.7	
Hori	2397.333	AV	57.2	27.2	2.5	32.2	54.7	-	-	See 20dBc Data Sheet
Hori	2400.000	AV	47.0	27.2	2.5	32.2	44.5	53.9	9.4	
Hori	4824.000	AV	39.4	30.9	4.3	31.4	43.2	53.9	10.7	
Hori	7236.000	AV	29.8	35.7	5.1	32.4	38.2	53.9	15.7	NS
Hori	9648.000	AV	30.0	37.8	5.9	33.2	40.5	53.9	13.4	NS
Hori	24120.000	AV	34.9	38.6	-0.9	31.6	41.0	53.9	12.9	NS
Vert	2390.000	PK	46.7	27.2	2.5	32.2	44.2	73.9	29.7	
Vert	2397.333	PK	56.1	27.2	2.5	32.2	53.6	-	-	See 20dBc Data Sheet
Vert	2400.000	PK	53.1	27.2	2.5	32.2	50.6	73.9	23.3	
Vert	4824.000	PK	46.8	30.9	4.3	31.4	50.6	73.9	23.3	
Vert	7236.000	PK	41.7	35.7	5.1	32.4	50.1	73.9	23.8	NS
Vert	9648.000	PK	42.8	37.8	5.9	33.2	53.3	73.9	20.6	NS
Vert	24120.000	PK	46.5	38.6	-0.9	31.6	52.6	73.9	21.3	NS
Vert	2390.000	AV	34.2	27.2	2.5	32.2	31.7	53.9	22.2	
Vert	2397.333	AV	50.0	27.2	2.5	32.2	47.5	-	-	See 20dBc Data Sheet
Vert	2400.000	AV	41.0	27.2	2.5	32.2	38.5	53.9	15.4	
Vert	4824.000	AV	42.0	30.9	4.3	31.4	45.8	53.9	8.1	
Vert	7236.000	AV	29.8	35.7	5.1	32.4	38.2	53.9	15.7	NS
Vert	9648.000	AV	30.0	37.8	5.9	33.2	40.5	53.9	13.4	NS
Vert	24120.000	AV	34.8	38.6	-0.9	31.6	40.9	53.9	13.0	NS

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

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

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

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

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

*NS: No signal detected

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	106.1	27.2	2.5	32.2	103.6	-	-	Carrier
Hori	2397.333	PK	56.4	27.2	2.5	32.2	53.9	83.6	29.7	
Vert	2412.000	PK	99.8	27.2	2.5	32.2	97.3	-	-	Carrier
Vert	2397.333	PK	49.5	27.2	2.5	32.2	47.0	77.3	30.3	

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 and No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/24/2011	07/04/2011
Temperature/ Humidity	25deg. C / 58% RH	23deg. C / 66% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
	(1-10GHz)	(10-26.5GHz)
Mode	11b Tx 2437MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	4874.000	PK	46.3	31.0	4.3	31.4	50.2	73.9	23.7	
Hori	7311.000	PK	42.3	35.9	5.2	32.5	50.9	73.9	23.0	NS
Hori	9748.000	PK	42.4	38.0	6.0	33.2	53.2	73.9	20.7	NS
Hori	24370.000	PK	46.5	38.8	-0.9	31.4	53.0	73.9	20.9	NS
Hori	4874.000	AV	40.5	31.0	4.3	31.4	44.4	53.9	9.5	
Hori	7311.000	AV	30.0	35.9	5.2	32.5	38.6	53.9	15.3	NS
Hori	9748.000	AV	29.8	38.0	6.0	33.2	40.6	53.9	13.3	NS
Hori	24370.000	AV	34.0	38.8	-0.9	31.4	40.5	53.9	13.4	NS
Vert	4874.000	PK	47.0	31.0	4.3	31.4	50.9	73.9	23.0	
Vert	7311.000	PK	42.5	35.9	5.2	32.5	51.1	73.9	22.8	NS
Vert	9748.000	PK	42.2	38.0	6.0	33.2	53.0	73.9	20.9	NS
Vert	24370.000	PK	45.7	38.8	-0.9	31.4	52.2	73.9	21.7	NS
Vert	4874.000	AV	42.4	31.0	4.3	31.4	46.3	53.9	7.6	
Vert	7311.000	AV	30.0	35.9	5.2	32.5	38.6	53.9	15.3	NS
Vert	9748.000	AV	29.8	38.0	6.0	33.2	40.6	53.9	13.3	NS
Vert	24370.000	AV	33.9	38.8	-0.9	31.4	40.4	53.9	13.5	NS

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

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

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

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

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

*NS: No signal detected

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Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 and No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/24/2011	07/04/2011
Temperature/ Humidity	25deg. C / 58% RH	23deg. C / 66% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
	(1-10GHz)	(10-26.5GHz)
Mode	11b Tx 2462MHz	

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	52.2	27.2	2.6	32.2	49.8	73.9	24.1	
Hori	4924.000	PK	46.8	31.2	4.3	31.4	50.9	73.9	23.0	
Hori	7386.000	PK	42.5	36.0	5.2	32.5	51.2	73.9	22.7	NS
Hori	9848.000	PK	42.4	38.1	6.0	33.3	53.2	73.9	20.7	NS
Hori	24620.000	PK	47.4	38.9	-0.9	31.3	54.1	73.9	19.8	NS
Hori	2483.500	AV	39.9	27.2	2.6	32.2	37.5	53.9	16.4	
Hori	4924.000	AV	40.7	31.2	4.3	31.4	44.8	53.9	9.1	
Hori	7386.000	AV	30.1	36.0	5.2	32.5	38.8	53.9	15.1	NS
Hori	9848.000	AV	30.3	38.1	6.0	33.3	41.1	53.9	12.8	NS
Hori	24620.000	AV	34.9	38.9	-0.9	31.3	41.6	53.9	12.3	NS
Vert	2483.500	PK	45.9	27.2	2.6	32.2	43.5	73.9	30.4	
Vert	4924.000	PK	48.7	31.2	4.3	31.4	52.8	73.9	21.1	
Vert	7386.000	PK	42.5	36.0	5.2	32.5	51.2	73.9	22.7	NS
Vert	9848.000	PK	42.7	38.1	6.0	33.3	53.5	73.9	20.4	NS
Vert	24620.000	PK	46.1	38.9	-0.9	31.3	52.8	73.9	21.1	NS
Vert	2483.500	AV	34.1	27.2	2.6	32.2	31.7	53.9	22.2	
Vert	4924.000	AV	44.0	31.2	4.3	31.4	48.1	53.9	5.8	
Vert	7386.000	AV	30.1	36.0	5.2	32.5	38.8	53.9	15.1	NS
Vert	9848.000	AV	30.3	38.1	6.0	33.3	41.1	53.9	12.8	NS
Vert	24620.000	AV	34.9	38.9	-0.9	31.3	41.6	53.9	12.3	NS

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

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 and No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/24/2011	07/04/2011
Temperature/ Humidity	25deg. C / 58% RH	23deg. C / 66% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
	(1-10GHz)	(10-26.5GHz)
Mode	11g Tx 2412MHz	

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	68.8	27.2	2.5	32.2	66.3	73.9	7.6	
Hori	2399.260	PK	81.4	27.2	2.5	32.2	78.9	-	-	See 20dBc Data Sheet
Hori	2400.000	PK	82.1	27.2	2.5	32.2	79.6	-	-	See 20dBc Data Sheet
Hori	4824.000	PK	43.1	30.9	4.3	31.4	46.9	73.9	27.0	
Hori	7236.000	PK	41.9	35.7	5.1	32.4	50.3	73.9	23.6	NS
Hori	9648.000	PK	43.1	37.8	5.9	33.2	53.6	73.9	20.3	NS
Hori	2390.000	AV	53.0	27.2	2.5	32.2	50.5	53.9	3.4	
Hori	2399.260	AV	67.3	27.2	2.5	32.2	64.8	-	-	See 20dBc Data Sheet
Hori	2400.000	AV	68.1	27.2	2.5	32.2	65.6	-	-	See 20dBc Data Sheet
Hori	4824.000	AV	30.3	30.9	4.3	31.4	34.1	53.9	19.8	
Hori	7236.000	AV	29.8	35.7	5.1	32.4	38.2	53.9	15.7	NS
Hori	9648.000	AV	30.0	37.8	5.9	33.2	40.5	53.9	13.4	NS
Vert	2390.000	PK	58.3	27.2	2.5	32.2	55.8	73.9	18.1	
Vert	2399.260	PK	71.4	27.2	2.5	32.2	68.9	-	-	See 20dBc Data Sheet
Vert	2400.000	PK	72.3	27.2	2.5	32.2	69.8	-	-	See 20dBc Data Sheet
Vert	4824.000	PK	44.6	30.9	4.3	31.4	48.4	73.9	25.5	
Vert	7236.000	PK	41.8	35.7	5.1	32.4	50.2	73.9	23.7	NS
Vert	9648.000	PK	43.0	37.8	5.9	33.2	53.5	73.9	20.4	NS
Vert	2390.000	AV	43.6	27.2	2.5	32.2	41.1	53.9	12.8	
Vert	2399.260	AV	57.7	27.2	2.5	32.2	55.2	-	-	See 20dBc Data Sheet
Vert	2400.000	AV	58.2	27.2	2.5	32.2	55.7	-	-	See 20dBc Data Sheet
Vert	4824.000	AV	31.5	30.9	4.3	31.4	35.3	53.9	18.6	
Vert	7236.000	AV	29.8	35.7	5.1	32.4	38.2	53.9	15.7	NS
Vert	9648.000	AV	30.0	37.8	5.9	33.2	40.5	53.9	13.4	NS

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
*The 10th harmonic was not seen so the result was its base noise level.
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB
*NS: No signal detected

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	104.4	27.2	2.5	32.2	101.9	-	-	Carrier
Hori	2399.260	PK	72.8	27.2	2.5	32.2	70.3	81.9	11.6	
Hori	2400.000	PK	71.4	27.2	2.5	32.2	68.9	81.9	13.0	
Vert	2412.000	PK	97.2	27.2	2.5	32.2	94.7	-	-	Carrier
Vert	2399.260	PK	62.9	27.2	2.5	32.2	60.4	74.7	14.3	
Vert	2400.000	PK	60.1	27.2	2.5	32.2	57.6	74.7	17.1	

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 and No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/24/2011	07/04/2011
Temperature/ Humidity	25deg. C / 58% RH	23deg. C / 66% RH
Engineer	Takayuki Shimada	Yutaka Yoshida
	(1-10GHz)	(10-26.5GHz)
Mode	11g Tx 2437MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	4874.000	PK	43.4	31.0	4.3	31.4	47.3	73.9	26.6	
Hori	7311.000	PK	42.5	35.9	5.2	32.5	51.1	73.9	22.8	NS
Hori	9748.000	PK	42.3	38.0	6.0	33.2	53.1	73.9	20.8	NS
Hori	24370.000	PK	46.5	38.8	-0.9	31.4	53.0	73.9	20.9	NS
Hori	4874.000	AV	30.8	31.0	4.3	31.4	34.7	53.9	19.2	
Hori	7311.000	AV	30.0	35.9	5.2	32.5	38.6	53.9	15.3	NS
Hori	9748.000	AV	29.8	38.0	6.0	33.2	40.6	53.9	13.3	NS
Hori	24370.000	AV	34.0	38.8	-0.9	31.4	40.5	53.9	13.4	NS
Vert	4874.000	PK	45.1	31.0	4.3	31.4	49.0	73.9	24.9	
Vert	7311.000	PK	42.5	35.9	5.2	32.5	51.1	73.9	22.8	NS
Vert	9748.000	PK	42.2	38.0	6.0	33.2	53.0	73.9	20.9	NS
Vert	24370.000	PK	46.0	38.8	-0.9	31.4	52.5	73.9	21.4	NS
Vert	4874.000	AV	32.3	31.0	4.3	31.4	36.2	53.9	17.7	
Vert	7311.000	AV	30.0	35.9	5.2	32.5	38.6	53.9	15.3	NS
Vert	9748.000	AV	29.8	38.0	6.0	33.2	40.6	53.9	13.3	NS
Vert	24370.000	AV	34.0	38.8	-0.9	31.4	40.5	53.9	13.4	NS

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

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.4 and No.3 Semi Anechoic Chamber		
Report No.	31IE0027-HO-01		
Date	06/24/2011	07/04/2011	07/05/2011
Temperature/ Humidity	25deg. C / 58% RH	23deg. C / 66% RH	26deg. C / 56% RH
Engineer	Takayuki Shimada (1-10GHz)	Yutaka Yoshida (10-26.5GHz)	Yutaka Yoshida (30-1000MHz)
Mode	11g Tx 2462MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	41.564	QP	29.4	15.0	7.3	32.2	19.5	40.0	20.5	
Hori	48.000	QP	28.7	12.4	7.4	32.2	16.3	40.0	23.7	
Hori	94.110	QP	26.1	9.0	8.1	32.1	11.1	43.5	32.4	
Hori	143.992	QP	36.6	14.6	8.6	32.1	27.7	43.5	15.8	
Hori	196.324	QP	23.9	16.5	9.1	32.0	17.5	43.5	26.0	
Hori	207.812	QP	31.1	16.8	9.2	32.0	25.1	43.5	18.4	
Hori	290.937	QP	34.9	19.1	9.8	32.0	31.8	46.0	14.2	
Hori	332.506	QP	33.7	16.0	10.1	32.0	27.8	46.0	18.2	
Hori	374.063	QP	37.8	16.9	10.4	32.0	33.1	46.0	12.9	
Hori	457.499	QP	33.2	17.8	10.9	32.0	29.9	46.0	16.1	
Hori	479.973	QP	31.9	18.0	11.1	32.0	29.0	46.0	17.0	
Hori	2483.500	PK	70.4	27.2	2.6	32.2	68.0	73.9	5.9	
Hori	4924.000	PK	43.8	31.2	4.3	31.4	47.9	73.9	26.0	
Hori	7386.000	PK	42.5	36.0	5.2	32.5	51.2	73.9	22.7	NS
Hori	9848.000	PK	42.5	38.1	6.0	33.3	53.3	73.9	20.6	NS
Hori	24620.000	PK	46.5	38.9	-0.9	31.3	53.2	73.9	20.7	NS
Hori	2483.500	AV	54.2	27.2	2.6	32.2	51.8	53.9	2.1	
Hori	4924.000	AV	31.2	31.2	4.3	31.4	35.3	53.9	18.6	
Hori	7386.000	AV	30.1	36.0	5.2	32.5	38.8	53.9	15.1	NS
Hori	9848.000	AV	30.3	38.1	6.0	33.3	41.1	53.9	12.8	NS
Hori	24620.000	AV	34.9	38.9	-0.9	31.3	41.6	53.9	12.3	NS
Vert	41.564	QP	42.8	15.0	7.3	32.2	32.9	40.0	7.1	
Vert	48.000	QP	44.4	12.4	7.4	32.2	32.0	40.0	8.0	
Vert	94.110	QP	41.9	9.0	8.1	32.1	26.9	43.5	16.6	
Vert	143.992	QP	40.0	14.6	8.6	32.1	31.1	43.5	12.4	
Vert	196.324	QP	35.5	16.5	9.1	32.0	29.1	43.5	14.4	
Vert	207.812	QP	38.4	16.8	9.2	32.0	32.4	43.5	11.1	
Vert	290.937	QP	36.7	19.1	9.8	32.0	33.6	46.0	12.4	
Vert	332.506	QP	33.2	16.0	10.1	32.0	27.3	46.0	18.7	
Vert	374.063	QP	38.1	16.9	10.4	32.0	33.4	46.0	12.6	
Vert	457.499	QP	34.5	17.8	10.9	32.0	31.2	46.0	14.8	
Vert	479.973	QP	34.0	18.0	11.1	32.0	31.1	46.0	14.9	
Vert	2483.500	PK	61.7	27.2	2.6	32.2	59.3	73.9	14.6	
Vert	4924.000	PK	45.4	31.2	4.3	31.4	49.5	73.9	24.4	
Vert	7386.000	PK	42.6	36.0	5.2	32.5	51.3	73.9	22.6	NS
Vert	9848.000	PK	42.6	38.1	6.0	33.3	53.4	73.9	20.5	NS
Vert	24620.000	PK	46.0	38.9	-0.9	31.3	52.7	73.9	21.2	NS
Vert	2483.500	AV	45.4	27.2	2.6	32.2	43.0	53.9	10.9	
Vert	4924.000	AV	32.6	31.2	4.3	31.4	36.7	53.9	17.2	
Vert	7386.000	AV	30.1	36.0	5.2	32.5	38.8	53.9	15.1	NS
Vert	9848.000	AV	30.3	38.1	6.0	33.3	41.1	53.9	12.8	NS
Vert	24620.000	AV	34.9	38.9	-0.9	31.3	41.6	53.9	12.3	NS

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/27/2011	07/04/2011
Temperature/ Humidity	25deg. C / 66% RH	23deg. C / 66% RH
Engineer	Yutaka Yoshida	Yutaka Yoshida
	(1-10GHz)	(10-26.5GHz)
Mode	11n-20 Tx 2412MHz	

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	74.5	26.4	2.5	32.6	70.8	73.9	3.1	
Hori	2399.000	PK	81.4	26.4	2.5	32.6	77.7	-	-	See 20dBc Data Sheet
Hori	2400.000	PK	81.7	26.4	2.5	32.6	78.0	-	-	See 20dBc Data Sheet
Hori	4824.000	PK	41.6	30.4	5.2	31.9	45.3	73.9	28.6	
Hori	7236.000	PK	42.9	35.2	6.2	32.4	51.9	73.9	22.0	NS
Hori	9648.000	PK	42.8	38.1	6.8	32.9	54.8	73.9	19.1	NS
Hori	24120.000	PK	46.1	38.6	-0.9	31.6	52.2	73.9	21.7	NS
Hori	2390.000	AV	54.0	26.4	2.5	32.6	50.3	53.9	3.6	
Hori	2399.000	AV	65.1	26.4	2.5	32.6	61.4	-	-	See 20dBc Data Sheet
Hori	2400.000	AV	65.4	26.4	2.5	32.6	61.7	-	-	See 20dBc Data Sheet
Hori	4824.000	AV	29.7	30.4	5.2	31.9	33.4	53.9	20.5	
Hori	7236.000	AV	30.6	35.2	6.2	32.4	39.6	53.9	14.3	NS
Hori	9648.000	AV	31.9	38.1	6.8	32.9	43.9	53.9	10.0	NS
Hori	24120.000	AV	34.9	38.6	-0.9	31.6	41.0	53.9	12.9	NS
Vert	2390.000	PK	67.5	26.4	2.5	32.6	63.8	73.9	10.1	
Vert	2399.000	PK	73.0	26.4	2.5	32.6	69.3	-	-	See 20dBc Data Sheet
Vert	2400.000	PK	75.1	26.4	2.5	32.6	71.4	-	-	See 20dBc Data Sheet
Vert	4824.000	PK	43.2	30.4	5.2	31.9	46.9	73.9	27.0	
Vert	7236.000	PK	41.0	35.2	6.2	32.4	50.0	73.9	24.0	NS
Vert	9648.000	PK	43.2	38.1	6.8	32.9	55.2	73.9	18.7	NS
Vert	24120.000	PK	46.6	38.6	-0.9	31.6	52.7	73.9	21.2	NS
Vert	2390.000	AV	47.0	26.4	2.5	32.6	43.3	53.9	10.6	
Vert	2399.000	AV	56.5	26.4	2.5	32.6	52.8	-	-	See 20dBc Data Sheet
Vert	2400.000	AV	58.8	26.4	2.5	32.6	55.1	-	-	See 20dBc Data Sheet
Vert	4824.000	AV	30.6	30.4	5.2	31.9	34.3	53.9	19.6	
Vert	7236.000	AV	30.8	35.2	6.2	32.4	39.8	53.9	14.1	NS
Vert	9648.000	AV	31.8	38.1	6.8	32.9	43.8	53.9	10.1	NS
Vert	24120.000	AV	34.8	38.6	-0.9	31.6	40.9	53.9	13.0	NS

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

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

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

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

*NS: No signal detected

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	101.8	26.4	2.5	32.6	98.1	-	-	Carrier
Hori	2399.000	PK	69.0	26.4	2.5	32.6	65.3	78.1	12.8	
Hori	2400.000	PK	69.3	26.4	2.5	32.6	65.6	78.1	12.5	
Vert	2412.000	PK	97.2	26.4	2.5	32.6	93.5	-	-	Carrier
Vert	2399.000	PK	60.6	26.4	2.5	32.6	56.9	73.5	16.6	
Vert	2400.000	PK	62.7	26.4	2.5	32.6	59.0	73.5	14.5	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/27/2011	07/04/2011
Temperature/ Humidity	25deg. C / 66% RH	23deg. C / 66% RH
Engineer	Yutaka Yoshida	Yutaka Yoshida
	(1-10GHz)	(10-26.5GHz)
Mode	11n-20 Tx 2437MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	4874.000	PK	41.8	30.5	5.2	31.9	45.6	73.9	28.3	
Hori	7311.000	PK	41.7	35.2	6.3	32.4	50.8	73.9	23.1	NS
Hori	9748.000	PK	42.9	38.3	6.9	32.9	55.2	73.9	18.7	NS
Hori	24370.000	PK	46.1	38.8	-0.9	31.4	52.6	73.9	21.3	NS
Hori	4874.000	AV	30.2	30.5	5.2	31.9	34.0	53.9	19.9	
Hori	7311.000	AV	30.8	35.2	6.3	32.4	39.9	53.9	14.0	NS
Hori	9748.000	AV	31.5	38.3	6.9	32.9	43.8	53.9	10.1	NS
Hori	24370.000	AV	34.0	38.8	-0.9	31.4	40.5	53.9	13.4	NS
Vert	4874.000	PK	44.3	30.5	5.2	31.9	48.1	73.9	25.8	
Vert	7311.000	PK	42.3	35.2	6.3	32.4	51.4	73.9	22.5	NS
Vert	9748.000	PK	42.6	38.3	6.9	32.9	54.9	73.9	19.0	NS
Vert	24370.000	PK	45.1	38.8	-0.9	31.4	51.6	73.9	22.3	NS
Vert	4874.000	AV	31.4	30.5	5.2	31.9	35.2	53.9	18.7	
Vert	7311.000	AV	30.7	35.2	6.3	32.4	39.8	53.9	14.1	NS
Vert	9748.000	AV	31.3	38.3	6.9	32.9	43.6	53.9	10.3	NS
Vert	24370.000	AV	34.0	38.8	-0.9	31.4	40.5	53.9	13.4	NS

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

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/27/2011	07/04/2011
Temperature/ Humidity	25deg. C / 66% RH	23deg. C / 66% RH
Engineer	Yutaka Yoshida	Yutaka Yoshida
	(1-10GHz)	(10-26.5GHz)
Mode	11n-20 Tx 2462MHz	

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	26.5	2.6	32.6	69.5	73.9	4.5	
Hori	4924.000	PK	43.0	30.5	5.1	31.9	46.7	73.9	27.2	
Hori	7386.000	PK	41.6	35.2	6.3	32.4	50.7	73.9	23.2	NS
Hori	9848.000	PK	42.6	38.5	6.9	32.9	55.1	73.9	18.8	NS
Hori	24620.000	PK	47.2	38.9	-0.9	31.3	53.9	73.9	20.0	NS
Hori	2483.500	AV	55.8	26.5	2.6	32.6	52.3	53.9	1.6	
Hori	4924.000	AV	30.7	30.5	5.1	31.9	34.4	53.9	19.5	
Hori	7386.000	AV	29.9	35.2	6.3	32.4	39.0	53.9	14.9	NS
Hori	9848.000	AV	31.8	38.5	6.9	32.9	44.3	53.9	9.6	NS
Hori	24620.000	AV	34.9	38.9	-0.9	31.3	41.6	53.9	12.3	NS
Vert	2483.500	PK	70.1	26.5	2.6	32.6	66.6	73.9	7.3	
Vert	4924.000	PK	43.6	30.5	5.1	31.9	47.3	73.9	26.6	
Vert	7386.000	PK	40.5	35.2	6.3	32.4	49.6	73.9	24.3	NS
Vert	9848.000	PK	42.5	38.5	6.9	32.9	55.0	73.9	18.9	NS
Vert	24620.000	PK	46.8	38.9	-0.9	31.3	53.5	73.9	20.4	NS
Vert	2483.500	AV	50.8	26.5	2.6	32.6	47.3	53.9	6.6	
Vert	4924.000	AV	31.7	30.5	5.1	31.9	35.4	53.9	18.5	
Vert	7386.000	AV	30.1	35.2	6.3	32.4	39.2	53.9	14.7	NS
Vert	9848.000	AV	31.8	38.5	6.9	32.9	44.3	53.9	9.6	NS
Vert	24620.000	AV	34.9	38.9	-0.9	31.3	41.6	53.9	12.3	NS

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

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	07/05/2011	07/06/2011
Temperature/ Humidity	26deg. C / 56% RH	25deg. C / 61% RH
Engineer	Yutaka Yoshida	Yutaka Yoshida
	(10-26.5GHz)	(1-10GHz)
Mode	11n-40 Tx 2422MHz	

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	71.5	26.4	2.5	32.6	67.8	73.9	6.1	
Hori	2399.320	PK	77.3	26.4	2.5	32.6	73.6	-	-	See 20dBc Data Sheet
Hori	2400.000	PK	80.8	26.4	2.5	32.6	77.1	-	-	See 20dBc Data Sheet
Hori	4844.000	PK	42.9	30.4	5.2	31.9	46.6	73.9	27.3	
Hori	7266.000	PK	43.1	35.2	6.3	32.4	52.2	73.9	21.7	NS
Hori	9688.000	PK	43.9	38.2	6.9	32.9	56.1	73.9	17.8	NS
Hori	24220.000	PK	44.8	38.7	-0.9	31.5	51.1	73.9	22.8	NS
Hori	2390.000	AV	54.1	26.4	2.5	32.6	50.4	53.9	3.5	
Hori	2399.320	AV	57.3	26.4	2.5	32.6	53.6	-	-	See 20dBc Data Sheet
Hori	2400.000	AV	57.6	26.4	2.5	32.6	53.9	-	-	See 20dBc Data Sheet
Hori	4844.000	AV	30.7	30.4	5.2	31.9	34.4	53.9	19.5	
Hori	7266.000	AV	29.7	35.2	6.3	32.4	38.8	53.9	15.1	NS
Hori	9688.000	AV	30.0	38.2	6.9	32.9	42.2	53.9	11.7	NS
Hori	24220.000	AV	34.4	38.7	-0.9	31.5	40.7	53.9	13.2	NS
Vert	2390.000	PK	70.0	26.4	2.5	32.6	66.3	73.9	7.6	
Vert	2399.320	PK	73.3	26.4	2.5	32.6	69.6	-	-	See 20dBc Data Sheet
Vert	2400.000	PK	72.7	26.4	2.5	32.6	69.0	-	-	See 20dBc Data Sheet
Vert	4844.000	PK	40.7	30.4	5.2	31.9	44.4	73.9	29.5	
Vert	7266.000	PK	40.9	35.2	6.3	32.4	50.0	73.9	23.9	NS
Vert	9688.000	PK	41.1	38.2	6.9	32.9	53.3	73.9	20.6	NS
Vert	24220.000	PK	46.0	38.7	-0.9	31.5	52.3	73.9	21.6	NS
Vert	2390.000	AV	49.8	26.4	2.5	32.6	46.1	53.9	7.8	
Vert	2399.320	AV	52.8	26.4	2.5	32.6	49.1	-	-	See 20dBc Data Sheet
Vert	2400.000	AV	53.3	26.4	2.5	32.6	49.6	-	-	See 20dBc Data Sheet
Vert	4844.000	AV	29.7	30.4	5.2	31.9	33.4	53.9	20.5	
Vert	7266.000	AV	29.7	35.2	6.3	32.4	38.8	53.9	15.1	NS
Vert	9688.000	AV	30.0	38.2	6.9	32.9	42.2	53.9	11.7	NS
Vert	24220.000	AV	34.4	38.7	-0.9	31.5	40.7	53.9	13.2	NS

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

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

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

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

*NS: No signal detected

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	2422.000	PK	99.6	26.4	2.5	32.6	95.9	-	-	Carrier
Hori	2399.320	PK	61.3	26.4	2.5	32.6	57.6	75.9	18.3	
Hori	2400.000	PK	63.8	26.4	2.5	32.6	60.1	75.9	15.8	
Vert	2422.000	PK	96.0	26.4	2.5	32.6	92.3	-	-	Carrier
Vert	2399.320	PK	61.8	26.4	2.5	32.6	58.1	72.3	14.2	
Vert	2400.000	PK	59.4	26.4	2.5	32.6	55.7	72.3	16.6	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	07/05/2011	07/06/2011
Temperature/ Humidity	26deg. C / 56% RH	25deg. C / 61% RH
Engineer	Yutaka Yoshida	Yutaka Yoshida
	(10-26.5GHz)	(1-10GHz)
Mode	11n-40 Tx 2437MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	4874.000	PK	41.2	30.5	5.2	31.9	45.0	73.9	28.9	
Hori	7311.000	PK	41.2	35.2	6.3	32.4	50.3	73.9	23.6	NS
Hori	9748.000	PK	41.2	38.3	6.9	32.9	53.5	73.9	20.4	NS
Hori	24370.000	PK	46.4	38.8	-0.9	31.4	52.9	73.9	21.0	NS
Hori	4874.000	AV	30.3	30.5	5.2	31.9	34.1	53.9	19.8	
Hori	7311.000	AV	32.9	35.2	6.3	32.4	42.0	53.9	12.0	NS
Hori	9748.000	AV	31.8	38.3	6.9	32.9	44.1	53.9	9.8	NS
Hori	24370.000	AV	33.8	38.8	-0.9	31.4	40.3	53.9	13.6	NS
Vert	4874.000	PK	42.2	30.5	5.2	31.9	46.0	73.9	27.9	
Vert	7311.000	PK	41.2	35.2	6.3	32.4	50.3	73.9	23.6	NS
Vert	9748.000	PK	41.6	38.3	6.9	32.9	53.9	73.9	20.0	NS
Vert	24370.000	PK	46.4	38.8	-0.9	31.4	52.9	73.9	21.0	NS
Vert	4874.000	AV	31.6	30.5	5.2	31.9	35.4	53.9	18.5	
Vert	7311.000	AV	33.0	35.2	6.3	32.4	42.1	53.9	11.9	NS
Vert	9748.000	AV	32.0	38.3	6.9	32.9	44.3	53.9	9.7	NS
Vert	24370.000	AV	33.8	38.8	-0.9	31.4	40.3	53.9	13.6	NS

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

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	07/05/2011	07/06/2011
Temperature/ Humidity	26deg. C / 56% RH	25deg. C / 61% RH
Engineer	Yutaka Yoshida (10-26.5GHz)	Yutaka Yoshida (1-10GHz)
Mode	11n-40 Tx 2452MHz	

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	71.5	26.5	2.6	32.6	68.0	73.9	5.9	
Hori	4904.000	PK	40.8	30.5	5.1	31.9	44.5	73.9	29.4	
Hori	7356.000	PK	41.6	35.2	6.3	32.4	50.7	73.9	23.2	NS
Hori	9808.000	PK	42.2	38.4	6.9	32.9	54.6	73.9	19.3	NS
Hori	24520.000	PK	45.8	38.9	-0.9	31.3	52.5	73.9	21.4	NS
Hori	2483.500	AV	54.1	26.5	2.6	32.6	50.6	53.9	3.3	
Hori	4904.000	AV	29.6	30.5	5.1	31.9	33.3	53.9	20.6	
Hori	7356.000	AV	30.4	35.2	6.3	32.4	39.5	53.9	14.4	NS
Hori	9808.000	AV	30.5	38.4	6.9	32.9	42.9	53.9	11.0	NS
Hori	24520.000	AV	33.9	38.9	-0.9	31.3	40.6	53.9	13.3	NS
Vert	2483.500	PK	63.8	26.5	2.6	32.6	60.3	73.9	13.6	
Vert	4904.000	PK	29.9	30.5	5.1	31.9	33.6	73.9	40.3	
Vert	7356.000	PK	41.4	35.2	6.3	32.4	50.5	73.9	23.4	NS
Vert	9808.000	PK	41.6	38.4	6.9	32.9	54.0	73.9	19.9	NS
Vert	24520.000	PK	45.8	38.9	-0.9	31.3	52.5	73.9	21.4	NS
Vert	2483.500	AV	47.1	26.5	2.6	32.6	43.6	53.9	10.3	
Vert	4904.000	AV	42.0	30.5	5.1	31.9	45.7	53.9	8.2	
Vert	7356.000	AV	30.5	35.2	6.3	32.4	39.6	53.9	14.3	NS
Vert	9808.000	AV	30.4	38.4	6.9	32.9	42.8	53.9	11.1	NS
Vert	24520.000	AV	33.9	38.9	-0.9	31.3	40.6	53.9	13.3	NS

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.2 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/28/2011	07/01/2011
Temperature/ Humidity	24deg. C / 63% RH	20deg. C / 66% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11a Tx 5745MHz	

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	57.0	31.5	4.1	32.0	60.6	73.9	13.3	
Hori	7660.191	PK	46.4	35.6	4.8	32.5	54.3	73.9	19.6	
Hori	11490.000	PK	55.1	37.8	-1.6	32.9	58.4	73.9	15.5	
Hori	17235.000	PK	43.7	42.1	-0.1	32.5	53.2	73.9	20.7	NS
Hori	5725.000	AV	41.0	31.5	4.1	32.0	44.6	53.9	9.3	
Hori	7660.191	AV	39.2	35.6	7.4	32.5	49.7	53.9	4.2	
Hori	11490.000	AV	43.4	37.8	-1.6	32.9	46.7	53.9	7.2	
Hori	17235.000	AV	32.1	42.1	-0.1	32.5	41.6	53.9	12.3	NS
Vert	5725.000	PK	59.1	31.5	4.1	32.0	62.7	73.9	11.2	
Vert	7660.191	PK	47.2	35.6	7.4	32.5	57.7	73.9	16.2	
Vert	11490.000	PK	51.3	37.8	-1.6	32.9	54.6	73.9	19.3	
Vert	17235.000	PK	43.9	42.1	-0.1	32.5	53.4	73.9	20.5	NS
Vert	5725.000	AV	43.1	31.5	4.1	32.0	46.7	53.9	7.2	
Vert	7660.191	AV	40.7	35.6	7.4	32.5	51.2	53.9	2.7	
Vert	11490.000	AV	39.7	37.8	-1.6	32.9	43.0	53.9	10.9	
Vert	17235.000	AV	32.1	42.1	-0.1	32.5	41.6	53.9	12.3	NS

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

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

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

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

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

*NS: No signal detected

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Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.2 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/28/2011	07/01/2011
Temperature/ Humidity	24deg. C / 63% RH	20deg. C / 66% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11a Tx 5785MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	7713.562	PK	45.4	35.8	7.3	32.5	56.0	73.9	17.9	
Hori	11570.000	PK	54.9	37.8	-1.5	32.9	58.3	73.9	15.6	
Hori	17355.000	PK	43.0	42.9	-0.1	32.5	53.3	73.9	20.6	NS
Hori	7713.562	AV	36.6	35.8	7.3	32.5	47.2	53.9	6.7	
Hori	11570.000	AV	43.1	37.8	-1.5	32.9	46.5	53.9	7.4	
Hori	17355.000	AV	32.2	42.9	-0.1	32.5	42.5	53.9	11.4	NS
Vert	7713.562	PK	47.5	35.8	7.3	32.5	58.1	73.9	15.8	
Vert	11570.000	PK	50.3	37.8	-1.5	32.9	53.7	73.9	20.2	
Vert	17355.000	PK	42.1	42.9	-0.1	32.5	52.4	73.9	21.5	NS
Vert	7713.562	AV	40.6	35.8	7.3	32.5	51.2	53.9	2.7	
Vert	11570.000	AV	39.5	37.8	-1.5	32.9	42.9	53.9	11.0	
Vert	17355.000	AV	32.1	42.9	-0.1	32.5	42.4	53.9	11.5	NS

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

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.2 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/28/2011	07/01/2011
Temperature/ Humidity	24deg. C / 63% RH	20deg. C / 66% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
	(1-18GHz)	(18-40GHz)
Mode	11a Tx 5825MHz	

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	61.4	31.7	4.1	32.0	65.2	73.9	8.7	
Hori	7766.877	PK	46.8	36.0	7.3	32.5	57.6	73.9	16.3	
Hori	11650.000	PK	54.9	37.7	-1.5	32.9	58.2	73.9	15.7	
Hori	17475.000	PK	42.9	43.6	-0.1	32.4	54.0	73.9	19.9	NS
Hori	5850.000	AV	30.0	31.7	4.1	32.0	33.8	53.9	20.1	
Hori	7766.877	AV	40.5	36.0	7.3	32.5	51.3	53.9	2.6	
Hori	11650.000	AV	42.9	37.7	-1.5	32.9	46.2	53.9	7.7	
Hori	17475.000	AV	31.7	43.6	-0.1	32.4	42.8	53.9	11.1	NS
Vert	5850.000	PK	60.9	31.7	4.1	32.0	64.7	73.9	9.2	
Vert	7766.877	PK	46.9	36.0	7.3	32.5	57.7	73.9	16.2	
Vert	11650.000	PK	52.0	37.7	-1.5	32.9	55.3	73.9	18.6	
Vert	17475.000	PK	42.9	43.6	-0.1	32.4	54.0	73.9	20.0	NS
Vert	5850.000	AV	30.0	31.7	4.1	32.0	33.8	53.9	20.1	
Vert	7766.877	AV	39.7	36.0	7.3	32.5	50.5	53.9	3.4	
Vert	11650.000	AV	40.5	37.7	-1.5	32.9	43.8	53.9	10.1	
Vert	17475.000	AV	31.8	43.6	-0.1	32.4	42.9	53.9	11.0	NS

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

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.2 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/28/2011	07/01/2011
Temperature/ Humidity	24deg. C / 63% RH	20deg. C / 66% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
	(1-10GHz)	(10-40GHz)
Mode	11n-20 Tx 5745MHz	

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	66.7	31.5	4.1	32.0	70.3	-	-	See 20dBc Data Sheet
Hori	7660.182	PK	47.8	35.6	7.4	32.5	58.3	73.9	15.6	
Hori	11490.000	PK	49.8	39.2	-1.8	31.0	56.2	73.9	17.7	
Hori	17235.000	PK	43.2	41.7	-0.5	30.7	53.7	73.9	20.2	NS
Hori	5725.000	AV	44.3	31.5	4.1	32.0	47.9	-	-	See 20dBc Data Sheet
Hori	7660.182	AV	41.6	35.6	7.4	32.5	52.1	53.9	1.8	
Hori	11490.000	AV	36.5	39.2	-1.8	31.0	42.9	53.9	11.0	
Hori	17235.000	AV	31.1	41.7	-0.5	30.7	41.6	53.9	12.3	NS
Vert	5725.000	PK	68.9	31.5	4.1	32.0	72.5	-	-	See 20dBc Data Sheet
Vert	7660.182	PK	46.3	35.6	7.4	32.5	56.8	73.9	17.1	
Vert	11490.000	PK	50.0	39.2	-1.8	31.0	56.4	73.9	17.5	
Vert	17235.000	PK	43.4	41.7	-0.5	30.7	53.9	73.9	20.0	NS
Vert	5725.000	AV	46.3	31.5	4.1	32.0	49.9	-	-	See 20dBc Data Sheet
Vert	7660.182	AV	40.4	35.6	7.4	32.5	50.9	53.9	3.0	
Vert	11490.000	AV	36.5	39.2	-1.8	31.0	42.9	53.9	11.0	
Vert	17235.000	AV	31.1	41.7	-0.5	30.7	41.6	53.9	12.3	NS

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
*The 10th harmonic was not seen so the result was its base noise level.
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB
*NS: No signal detected

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	83.1	31.6	4.1	32.0	86.8	-	-	Carrier
Hori	5725.000	PK	45.9	31.5	4.1	32.0	49.5	66.8	17.3	
Vert	5745.000	PK	84.7	31.6	4.1	32.0	88.4	-	-	Carrier
Vert	5725.000	PK	48.1	31.5	4.1	32.0	51.7	68.4	16.7	

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

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.2 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/28/2011	07/01/2011
Temperature/ Humidity	24deg. C / 63% RH	20deg. C / 66% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
	(1-10GHz)	(10-40GHz)
Mode	11n-20 Tx 5785MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	7713.562	PK	45.7	35.8	7.3	32.5	56.3	73.9	17.6	
Hori	11570.000	PK	50.1	39.1	-1.6	31.0	56.6	73.9	17.3	
Hori	17355.000	PK	43.2	42.7	-0.5	30.7	54.7	73.9	19.2	NS
Hori	7713.562	AV	36.5	35.8	7.3	32.5	47.1	53.9	6.8	
Hori	11570.000	AV	36.3	39.1	-1.6	31.0	42.8	53.9	11.1	
Hori	17355.000	AV	31.2	42.7	-0.5	30.7	42.7	53.9	11.2	NS
Vert	7713.562	PK	46.4	35.8	7.3	32.5	57.0	73.9	16.9	
Vert	11570.000	PK	50.6	39.1	-1.6	31.0	57.1	73.9	16.8	
Vert	17355.000	PK	43.3	42.7	-0.5	30.7	54.8	73.9	19.1	NS
Vert	7713.562	AV	39.1	35.8	7.3	32.5	49.7	53.9	4.2	
Vert	11570.000	AV	36.6	39.1	-1.6	31.0	43.1	53.9	10.8	
Vert	17355.000	AV	31.2	42.7	-0.5	30.7	42.7	53.9	11.2	NS

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

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.2 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/28/2011	07/01/2011
Temperature/ Humidity	24deg. C / 63% RH	20deg. C / 66% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
	(1-10GHz)	(10-40GHz)
Mode	11n-20 Tx 5825MHz	

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	61.7	31.7	4.1	32.0	65.5	73.9	8.4	
Hori	7766.877	PK	47.5	36.0	7.3	32.5	58.3	73.9	15.6	
Hori	11650.000	PK	49.9	39.2	-1.6	30.9	56.6	73.9	17.3	
Hori	17475.000	PK	43.3	43.6	-0.6	30.6	55.7	73.9	18.2	NS
Hori	5850.000	AV	35.4	31.7	4.1	32.0	39.2	53.9	14.7	
Hori	7766.877	AV	40.6	36.0	7.3	32.5	51.4	53.9	2.5	
Hori	11650.000	AV	36.8	39.2	-1.6	30.9	43.5	53.9	10.4	
Hori	17475.000	AV	31.0	43.6	-0.6	30.6	43.4	53.9	10.5	NS
Vert	5850.000	PK	58.2	31.7	4.1	32.0	62.0	73.9	11.9	
Vert	7766.834	PK	45.6	36.0	7.3	32.5	56.4	73.9	17.5	
Vert	11650.000	PK	50.6	39.2	-1.6	30.9	57.3	73.9	16.6	
Vert	17475.000	PK	43.3	43.6	-0.6	30.6	55.7	73.9	18.2	NS
Vert	5850.000	AV	31.9	31.7	4.1	32.0	35.7	53.9	18.2	
Vert	7766.834	AV	38.2	36.0	7.3	32.5	49.0	53.9	4.9	
Vert	11650.000	AV	37.2	39.2	-1.6	30.9	43.9	53.9	10.0	
Vert	17475.000	AV	31.0	43.6	-0.6	30.6	43.4	53.9	10.5	NS

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

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

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

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

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

*NS: No signal detected

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Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.2 Semi Anechoic Chamber		
Report No.	31IE0027-HO-01		
Date	06/28/2011	07/01/2011	07/05/2011
Temperature/ Humidity	24deg. C / 63% RH	20deg. C / 66% RH	26deg. C / 56% RH
Engineer	Yutaka Yoshida (1-10GHz)	Takayuki Shimada (10-40GHz)	Yutaka Yoshida (30-1000MHz)
Mode	11n-40 Tx 5755MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	41.564	QP	29.6	15.0	7.3	32.2	19.7	40.0	20.3	
Hori	48.000	QP	28.7	12.4	7.4	32.2	16.3	40.0	23.7	
Hori	94.110	QP	25.6	9.0	8.1	32.1	10.6	43.5	32.9	
Hori	143.992	QP	33.0	14.6	8.6	32.1	24.1	43.5	19.4	
Hori	196.324	QP	25.9	16.5	9.1	32.0	19.5	43.5	24.0	
Hori	207.812	QP	31.1	16.8	9.2	32.0	25.1	43.5	18.4	
Hori	290.937	QP	32.0	19.1	9.8	32.0	28.9	46.0	17.1	
Hori	332.506	QP	33.7	16.0	10.1	32.0	27.8	46.0	18.2	
Hori	374.063	QP	37.8	16.9	10.4	32.0	33.1	46.0	12.9	
Hori	457.499	QP	33.2	17.8	10.9	32.0	29.9	46.0	16.1	
Hori	479.973	QP	31.9	18.0	11.1	32.0	29.0	46.0	17.0	
Hori	5725.000	PK	58.8	31.5	4.1	32.0	62.4	73.9	11.5	
Hori	7673.519	PK	45.8	35.7	7.4	32.5	56.4	73.9	17.5	
Hori	11510.000	PK	47.4	39.1	-1.8	31.0	53.7	73.9	20.2	
Hori	17265.000	PK	43.3	42.0	-0.5	30.7	54.1	73.9	19.8	NS
Hori	5725.000	AV	43.6	31.5	4.1	32.0	47.2	53.9	6.7	
Hori	7673.519	AV	37.5	35.7	7.4	32.5	48.1	53.9	5.8	
Hori	11510.000	AV	35.3	39.1	-1.8	31.0	41.6	53.9	12.3	
Hori	17265.000	AV	31.5	42.0	-0.5	30.7	42.3	53.9	11.6	NS
Vert	41.564	QP	44.0	15.0	7.3	32.2	34.1	40.0	5.9	
Vert	48.000	QP	44.4	12.4	7.4	32.2	32.0	40.0	8.0	
Vert	94.110	QP	38.5	9.0	8.1	32.1	23.5	43.5	20.0	
Vert	143.992	QP	42.5	14.6	8.6	32.1	33.6	43.5	9.9	
Vert	196.324	QP	32.0	16.5	9.1	32.0	25.6	43.5	17.9	
Vert	207.812	QP	38.4	16.8	9.2	32.0	32.4	43.5	11.1	
Vert	290.937	QP	37.0	19.1	9.8	32.0	33.9	46.0	12.1	
Vert	332.506	QP	33.2	16.0	10.1	32.0	27.3	46.0	18.7	
Vert	374.063	QP	38.1	16.9	10.4	32.0	33.4	46.0	12.6	
Vert	457.499	QP	34.5	17.8	10.9	32.0	31.2	46.0	14.8	
Vert	479.973	QP	34.0	18.0	11.1	32.0	31.1	46.0	14.9	
Vert	5725.000	PK	61.1	31.5	4.1	32.0	64.7	73.9	9.2	
Vert	7677.279	PK	46.8	35.7	7.4	32.5	57.4	73.9	16.5	
Vert	11510.000	PK	47.2	39.1	-1.8	31.0	53.5	73.9	20.4	
Vert	17265.000	PK	43.4	42.0	-0.5	30.7	54.2	73.9	19.7	NS
Vert	5725.000	AV	46.4	31.5	4.1	32.0	50.0	53.9	3.9	
Vert	7677.279	AV	40.1	35.7	7.4	32.5	50.7	53.9	3.2	
Vert	11510.000	AV	34.8	39.1	-1.8	31.0	41.1	53.9	12.8	
Vert	17265.000	AV	31.5	42.0	-0.5	30.7	42.3	53.9	11.6	NS

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

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

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

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.2 Semi Anechoic Chamber	
Report No.	31IE0027-HO-01	
Date	06/28/2011	07/01/2011
Temperature/ Humidity	24deg. C / 63% RH	20deg. C / 66% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
	(1-10GHz)	(10-40GHz)
Mode	11n-40 Tx 5795MHz	

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	55.3	31.7	4.1	32.0	59.1	73.9	14.8	
Hori	7726.861	PK	47.3	35.8	7.3	32.5	57.9	73.9	16.0	
Hori	11590.000	PK	46.8	39.2	-1.6	31.0	53.4	73.9	20.5	
Hori	17385.000	PK	43.4	42.9	-0.6	30.7	55.0	73.9	18.9	NS
Hori	5850.000	AV	31.4	31.7	4.1	32.0	35.2	53.9	18.7	
Hori	7726.861	AV	41.2	35.8	7.3	32.5	51.8	53.9	2.1	
Hori	11590.000	AV	34.3	39.2	-1.6	31.0	40.9	53.9	13.0	
Hori	17385.000	AV	31.1	42.9	-0.6	30.7	42.7	53.9	11.2	NS
Vert	5850.000	PK	57.3	31.7	4.1	32.0	61.1	73.9	12.8	
Vert	7726.861	PK	47.0	35.8	7.3	32.5	57.6	73.9	16.3	
Vert	11590.000	PK	47.2	39.2	-1.6	31.0	53.8	73.9	20.1	
Vert	17385.000	PK	43.4	42.9	-0.6	30.7	55.0	73.9	18.9	NS
Vert	5850.000	AV	33.4	31.7	4.1	32.0	37.2	53.9	16.7	
Vert	7726.861	AV	40.0	35.8	7.3	32.5	50.6	53.9	3.3	
Vert	11590.000	AV	34.9	39.2	-1.6	31.0	41.5	53.9	12.4	
Vert	17385.000	AV	31.1	42.9	-0.6	30.7	42.7	53.9	11.2	NS

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

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

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

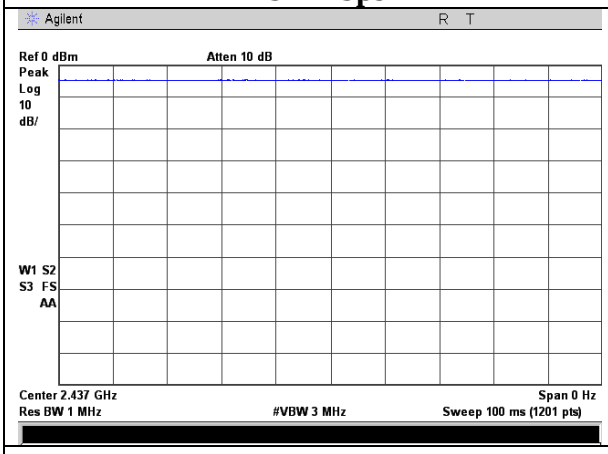
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

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

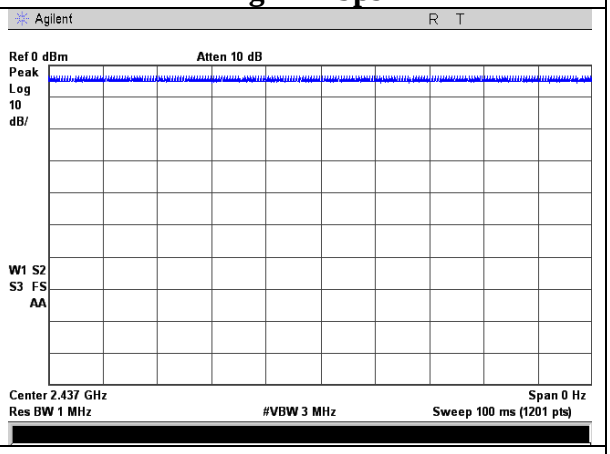
*NS: No signal detected

The tested burst timing

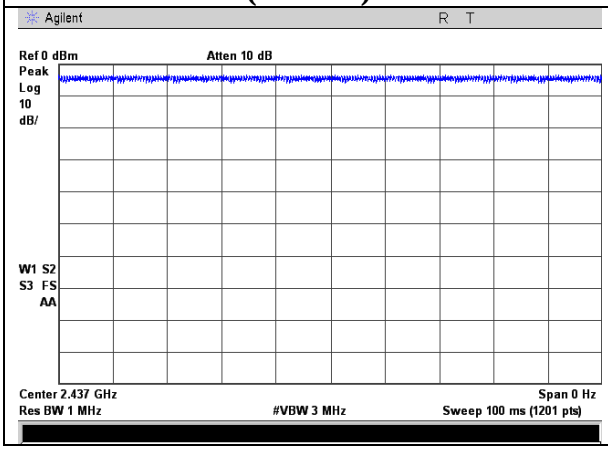
11b 1Mbps



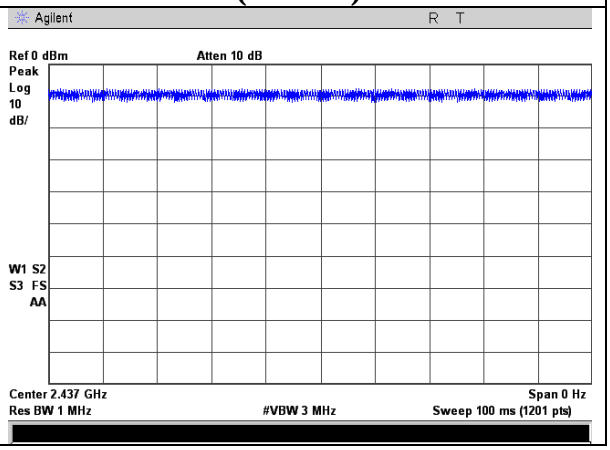
11g 24Mbps



11n-20(2.4GHz) MCS4

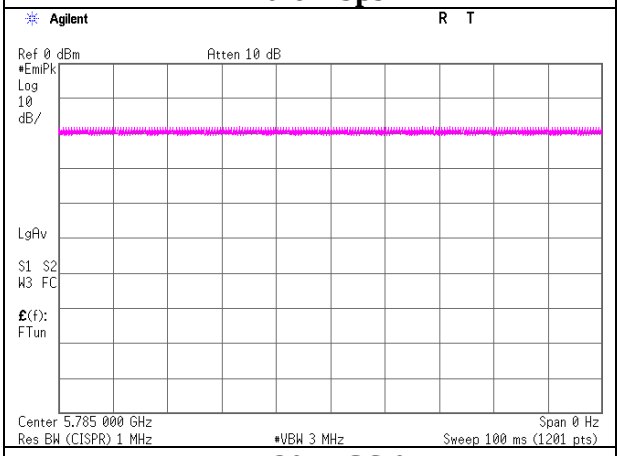


11n-40(2.4GHz) MCS3

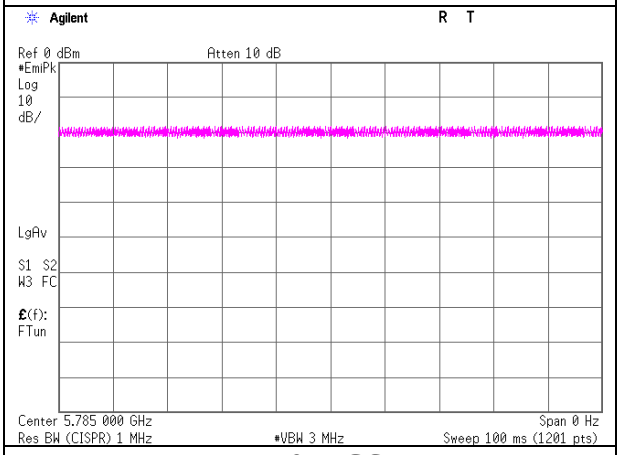


The tested burst timing

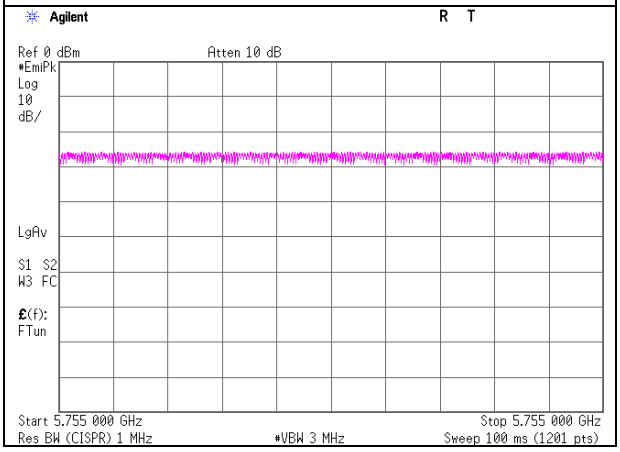
11a 6Mbps



11n-20 MCS 0



11n-40 MCS 5



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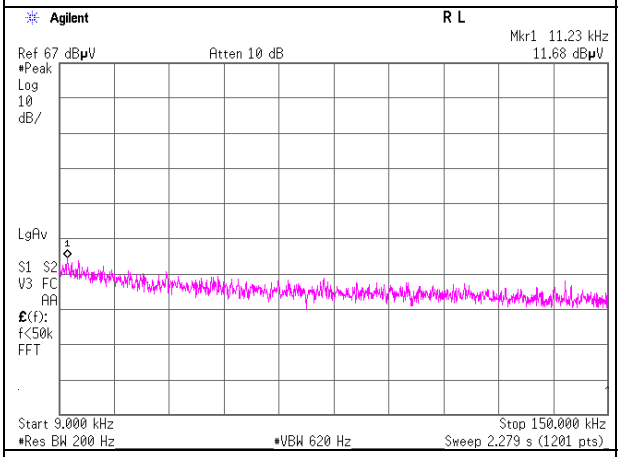
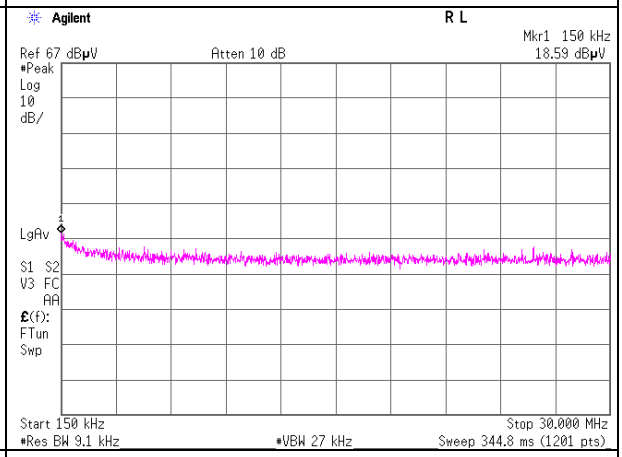
Conducted Spurious Emission

11b Tx 2412MHz, 1Mbps

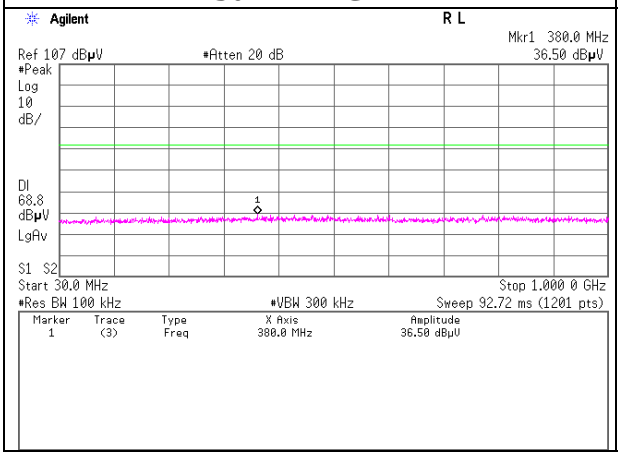
9k-150kHz



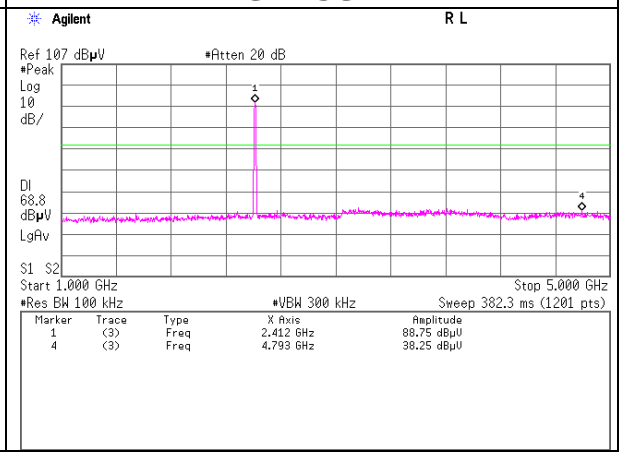
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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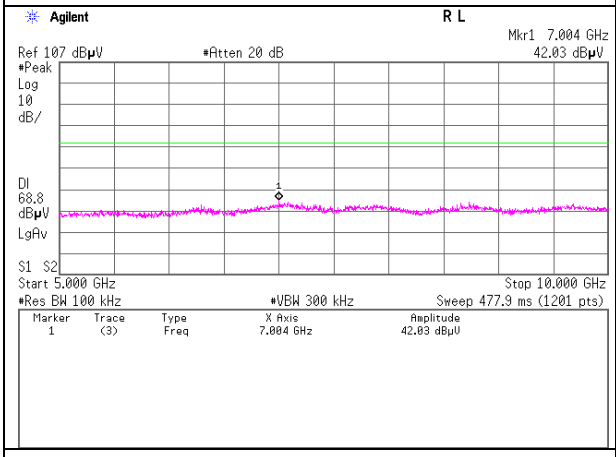
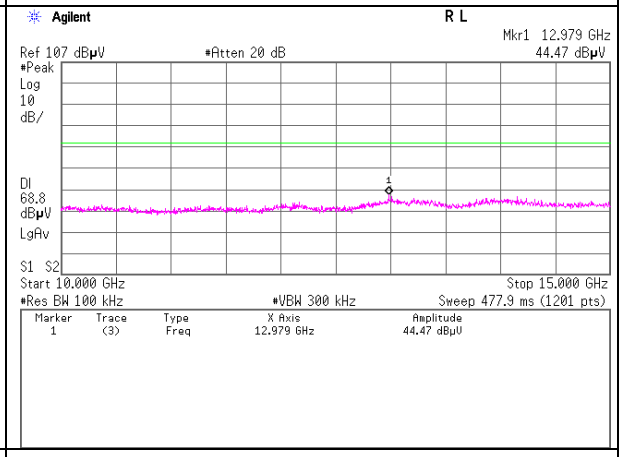
Conducted Spurious Emission

11b Tx 2412MHz, 1Mbps

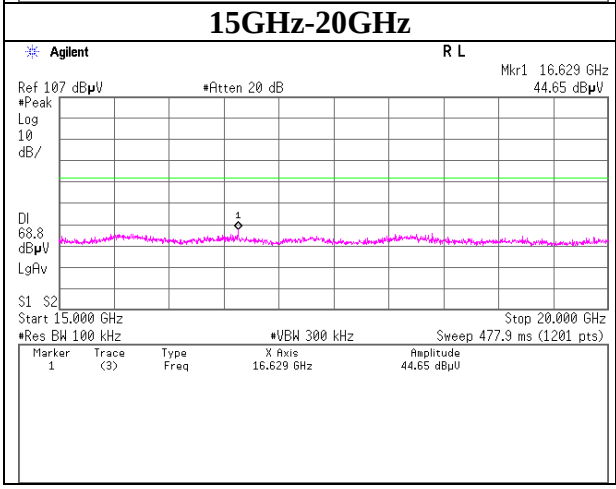
5GHz-10GHz



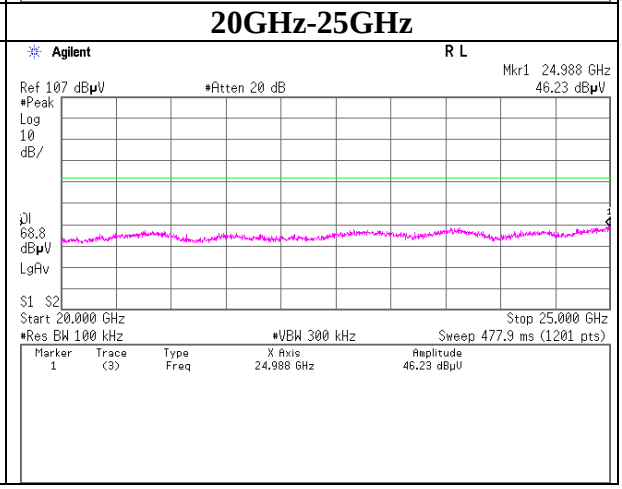
10GHz-15GHz



15GHz-20GHz



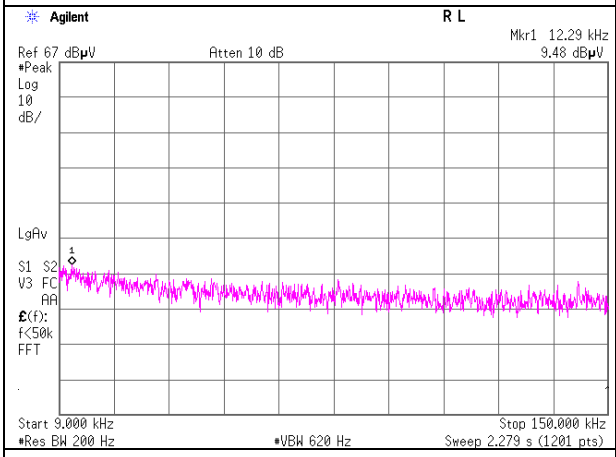
20GHz-25GHz



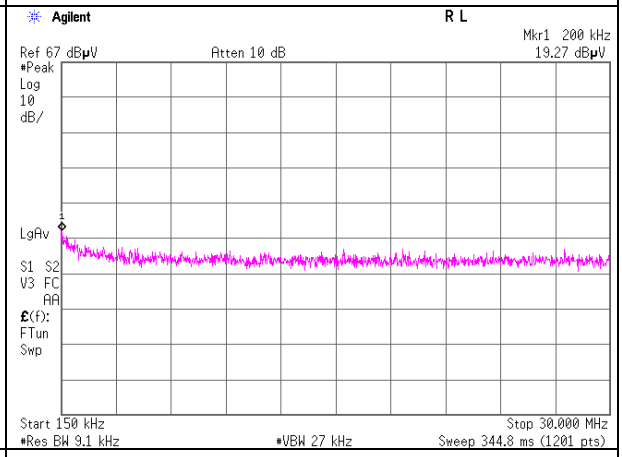
Conducted Spurious Emission

11b Tx 2437MHz, 1Mbps

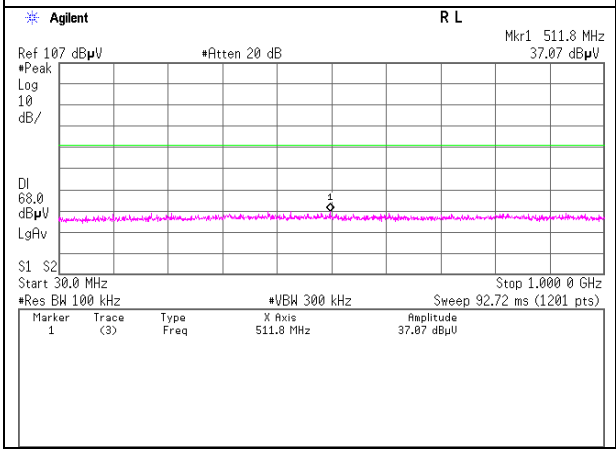
9k-150kHz



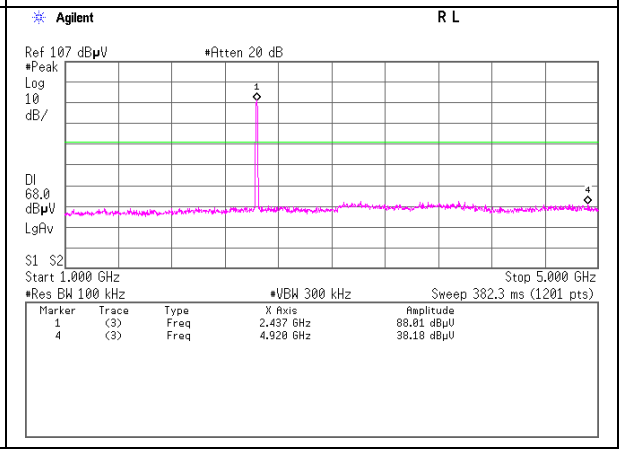
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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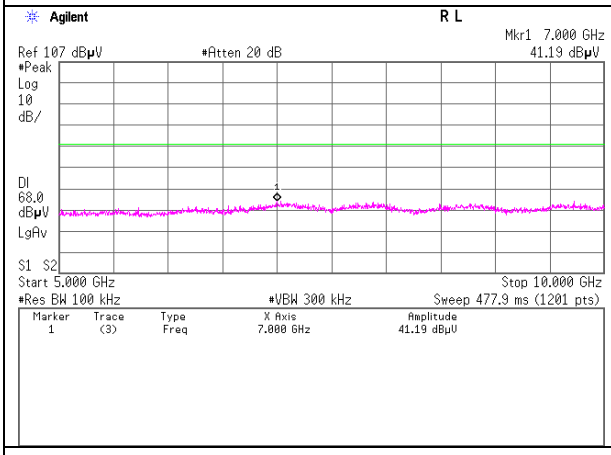
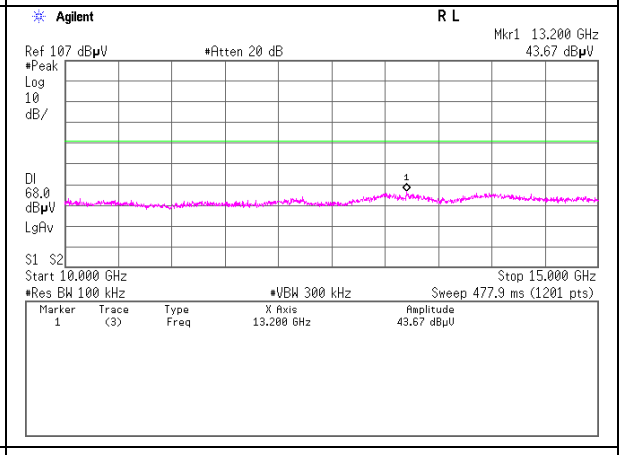
Conducted Spurious Emission

11b Tx 2437MHz, 1Mbps

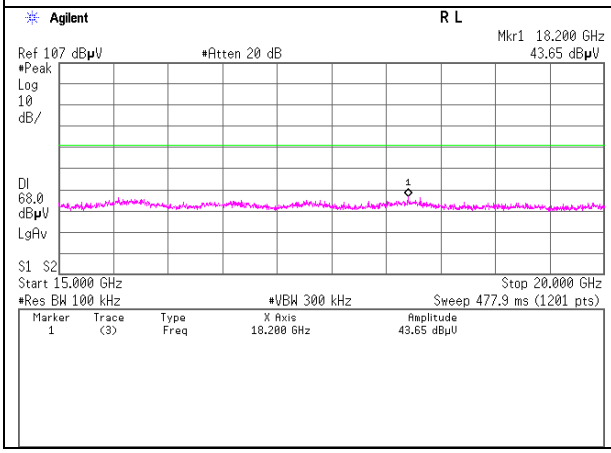
5GHz-10GHz



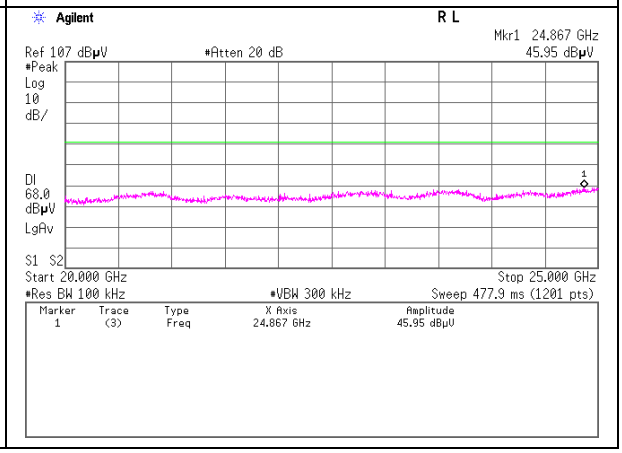
10GHz-15GHz



15GHz-20GHz



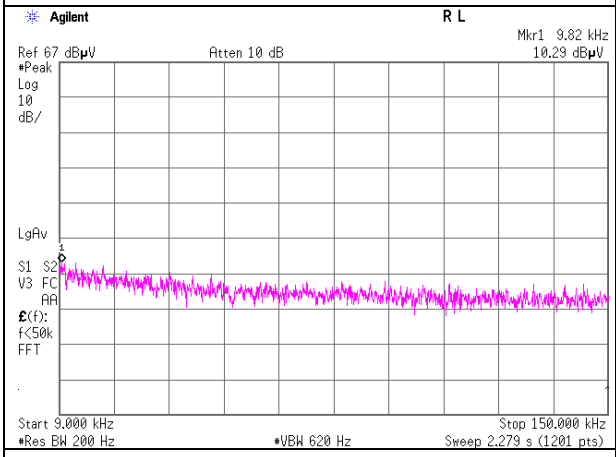
20GHz-25GHz



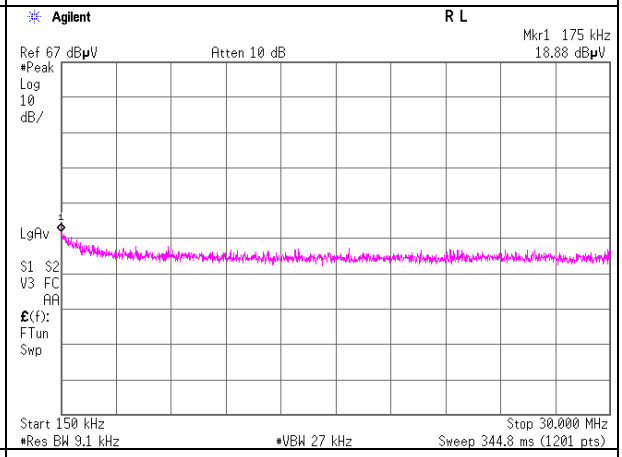
Conducted Spurious Emission

11b Tx 2462MHz, 1Mbps

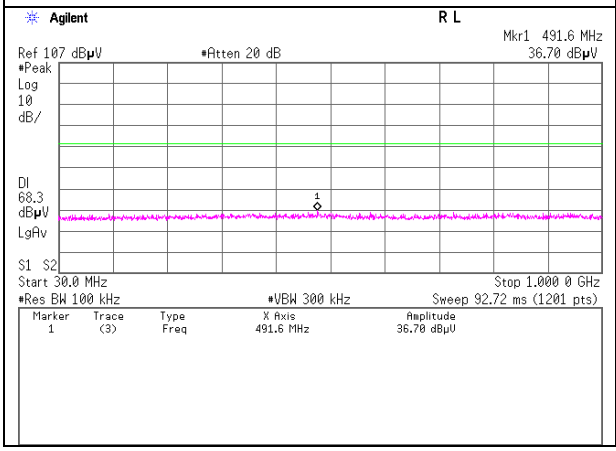
9k-150kHz



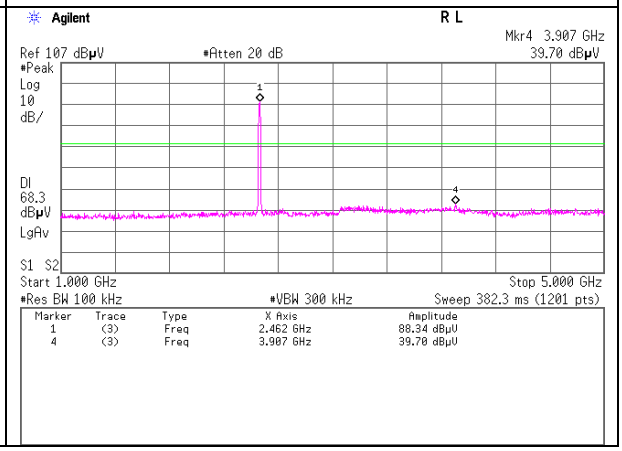
150kHz-30MHz



30MHz-1GHz



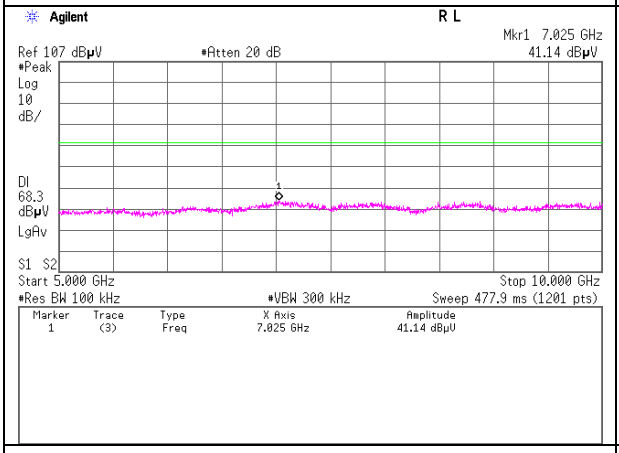
1GHz-5GHz



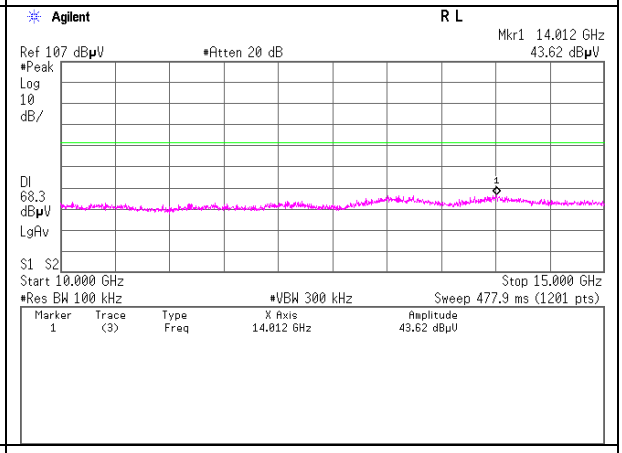
Conducted Spurious Emission

11b Tx 2462MHz, 1Mbps

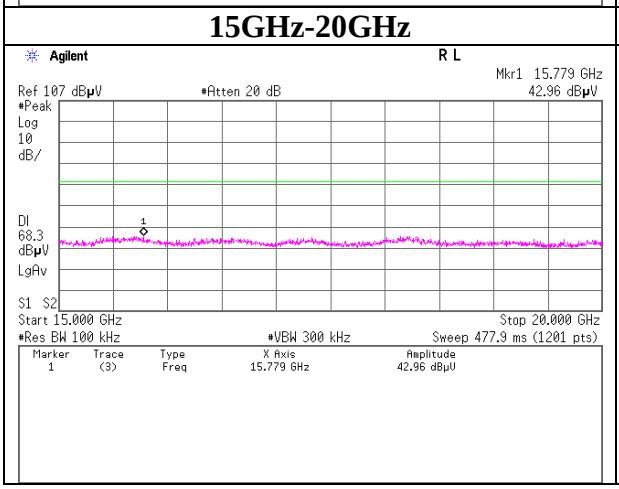
5GHz-10GHz



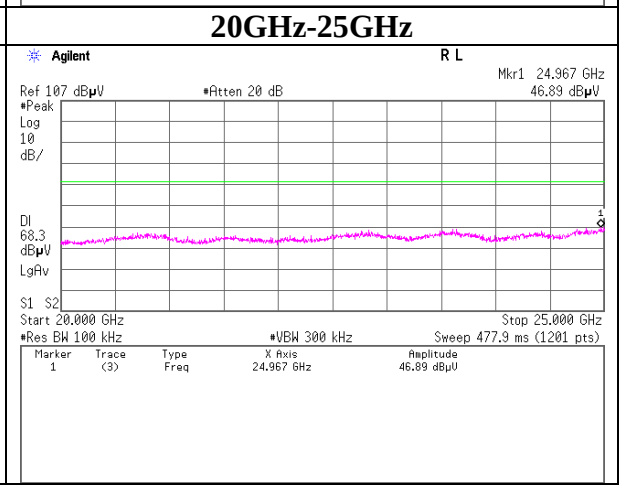
10GHz-15GHz



15GHz-20GHz



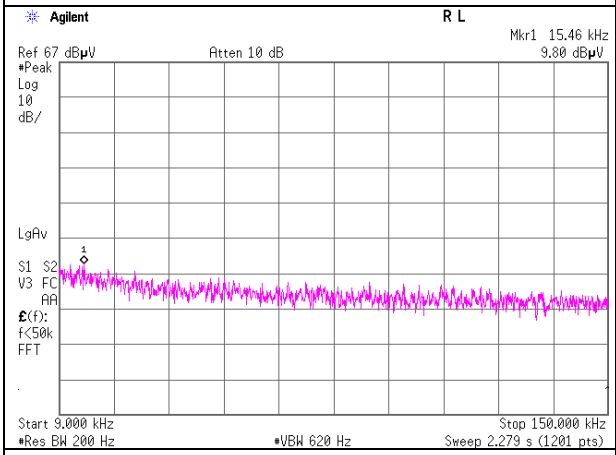
20GHz-25GHz



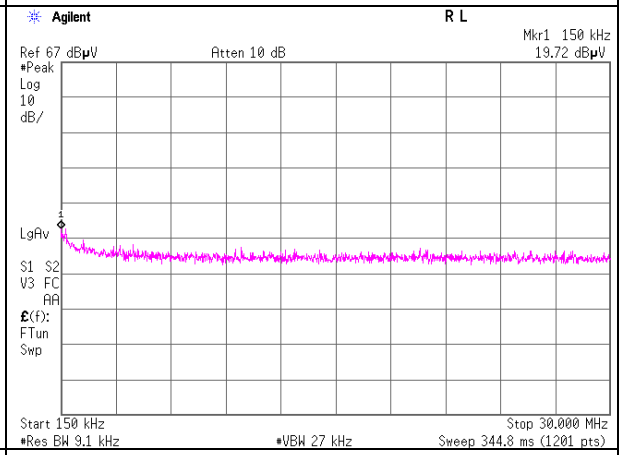
Conducted Spurious Emission

11g Tx 2412MHz, 24Mbps

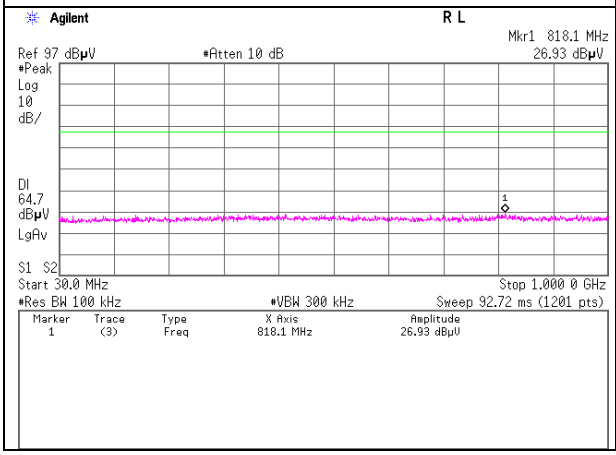
9kHz-150kHz



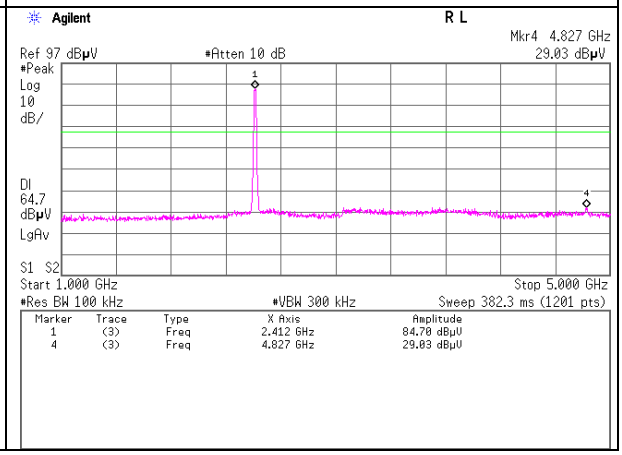
150kHz-30MHz



30MHz-1GHz



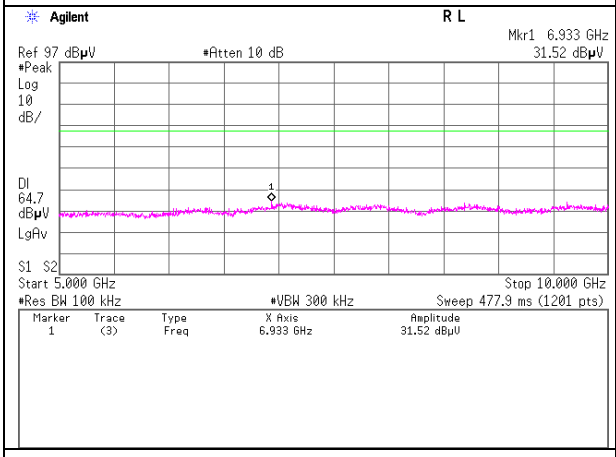
1GHz-5GHz



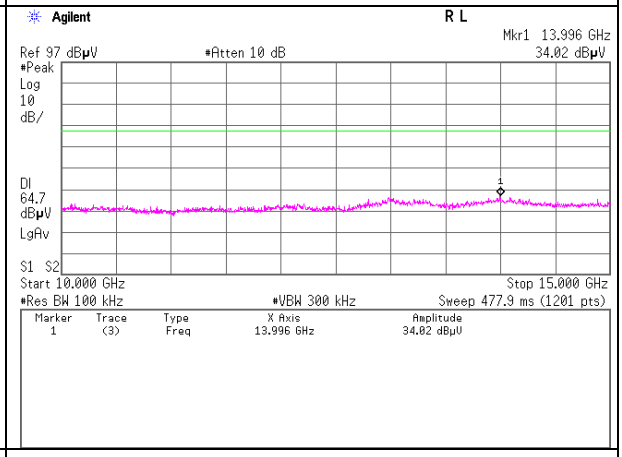
Conducted Spurious Emission

11g Tx 2412MHz, 24Mbps

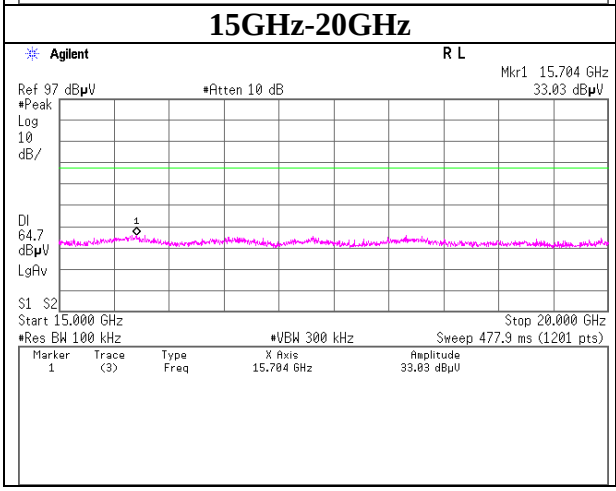
5GHz-10GHz



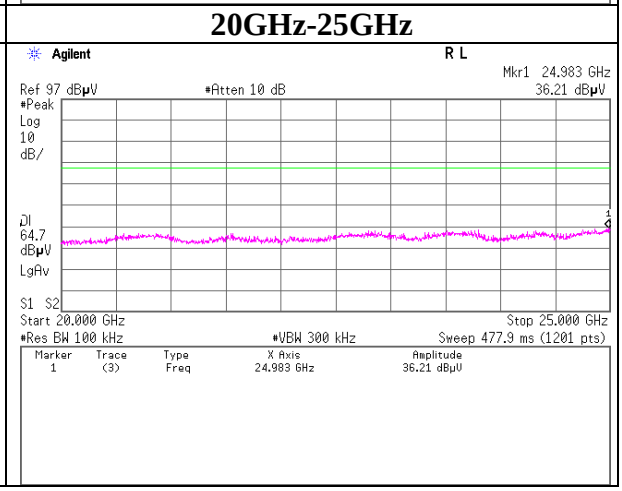
10GHz-15GHz



15GHz-20GHz



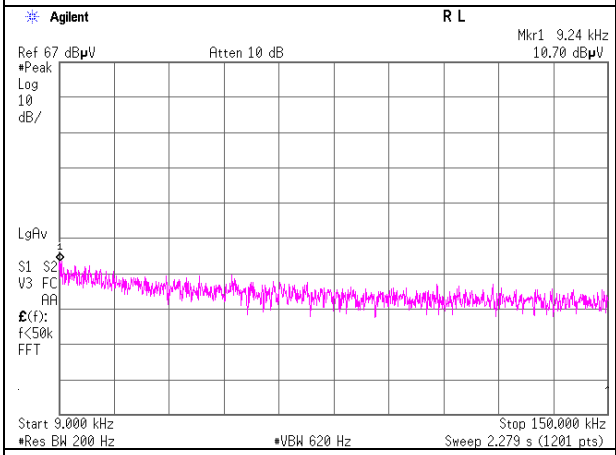
20GHz-25GHz



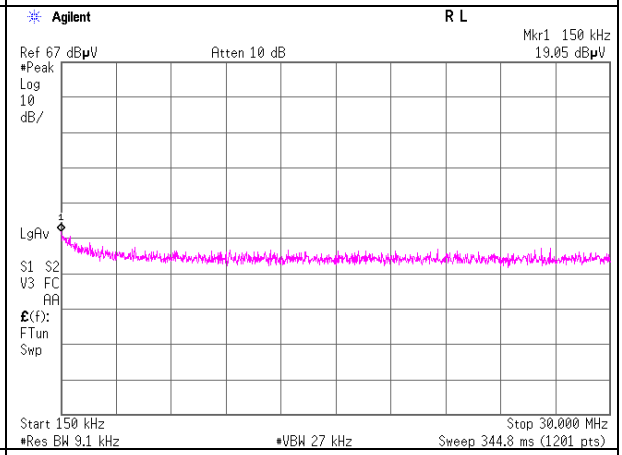
Conducted Spurious Emission

11g Tx 2437MHz, 24Mbps

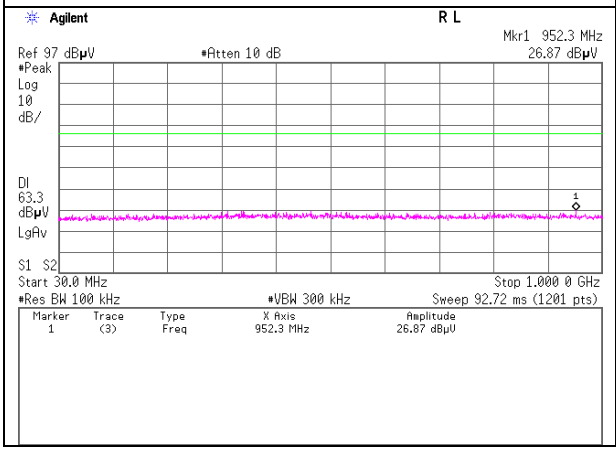
9kHz-150kHz



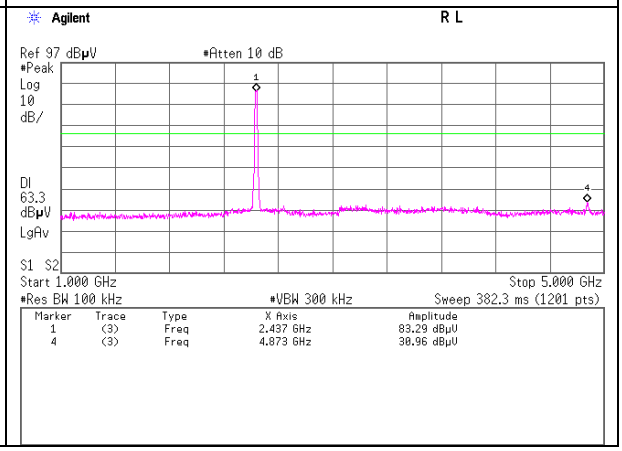
150kHz-30MHz



30MHz-1GHz



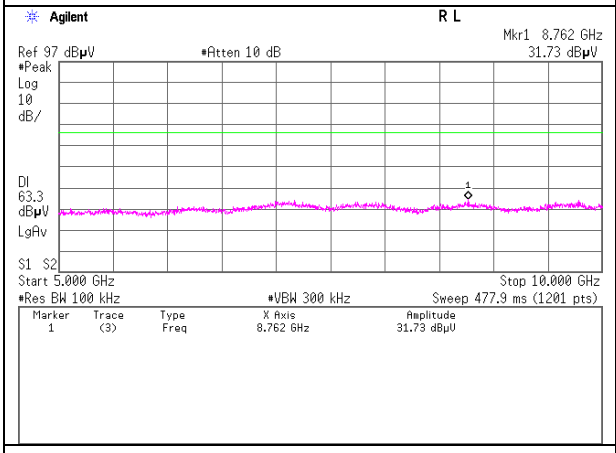
1GHz-5GHz



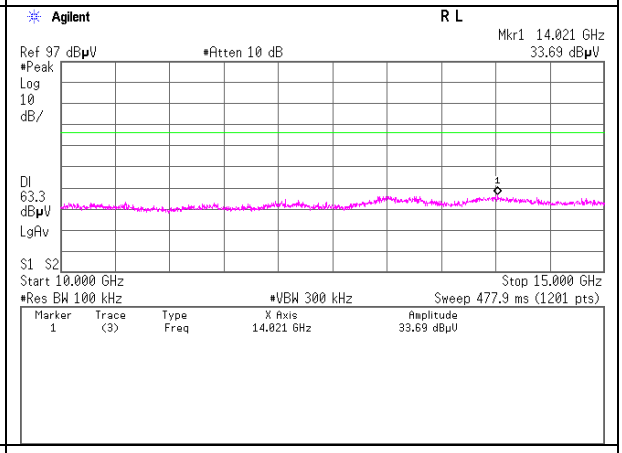
Conducted Spurious Emission

11g Tx 2437MHz, 24Mbps

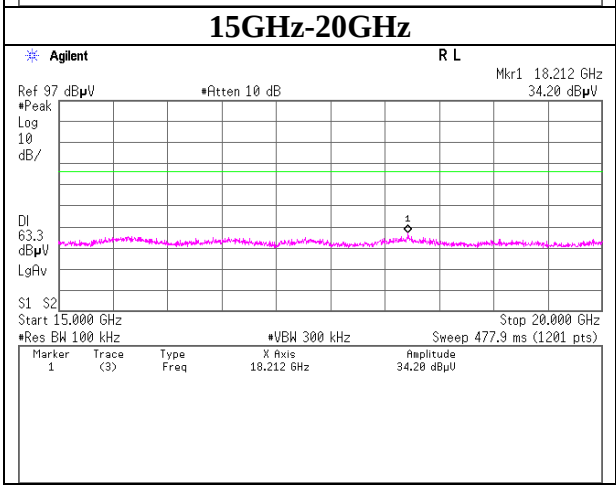
5GHz-10GHz



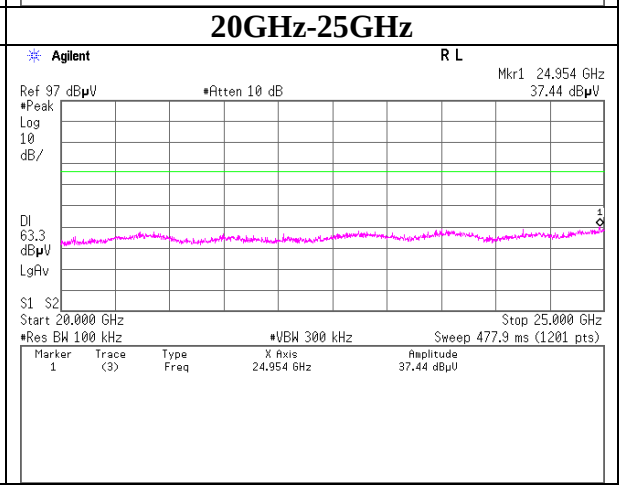
10GHz-15GHz



15GHz-20GHz



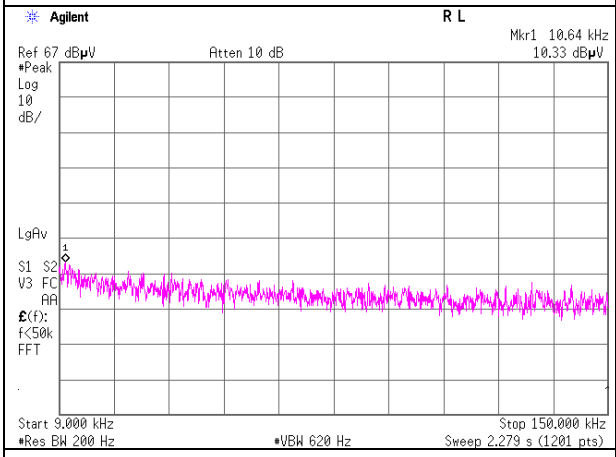
20GHz-25GHz



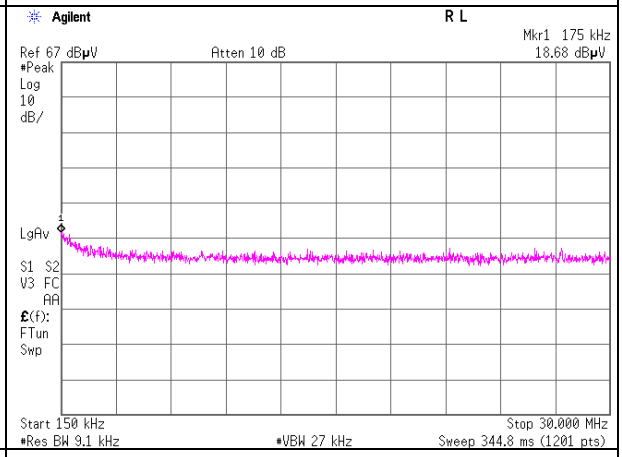
Conducted Spurious Emission

11g Tx 2462MHz, 24Mbps

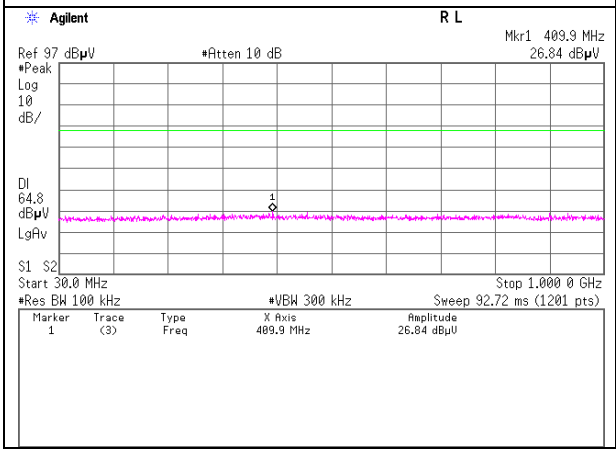
9kHz-150kHz



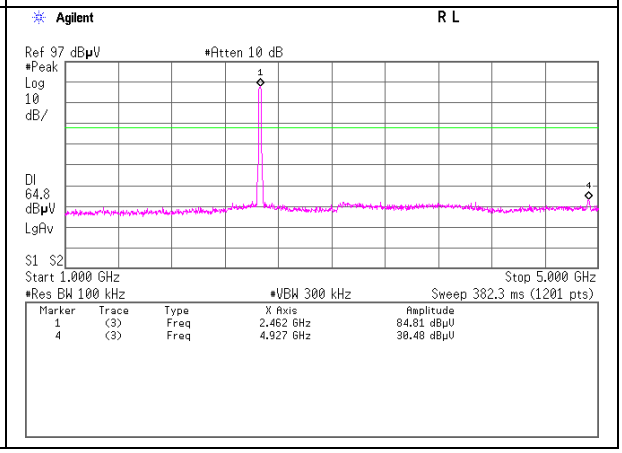
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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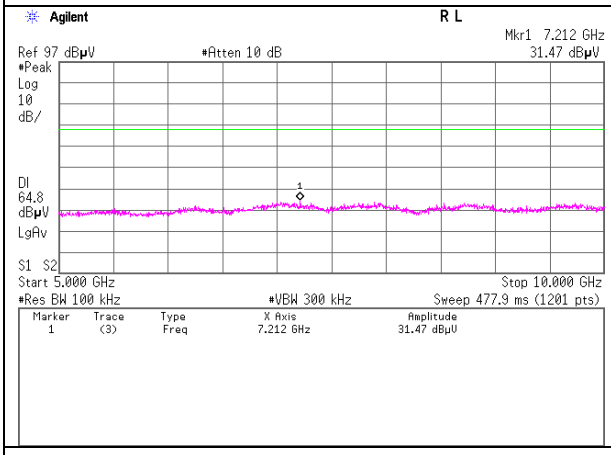
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

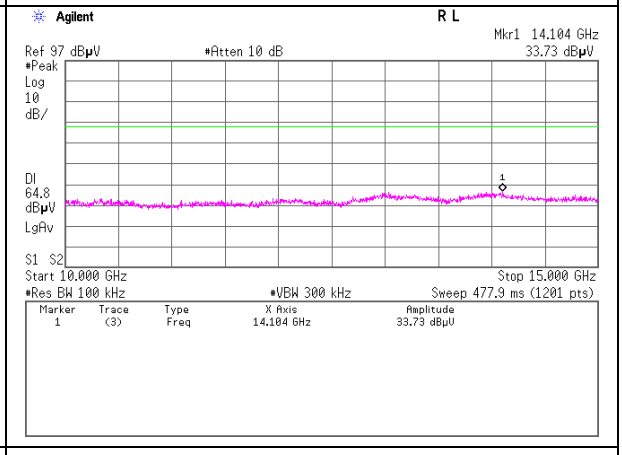
Conducted Spurious Emission

11g Tx 2462MHz, 24Mbps

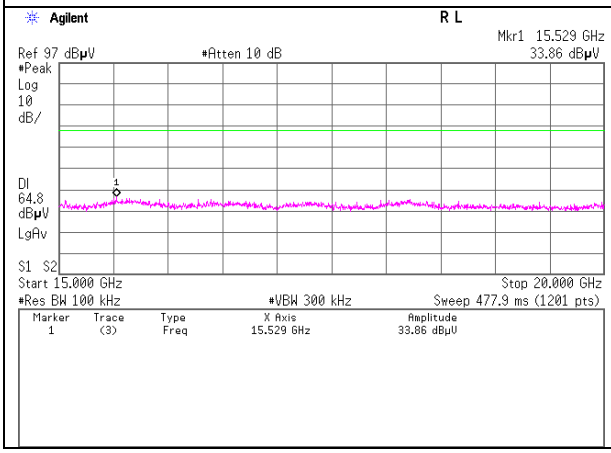
5GHz-10GHz



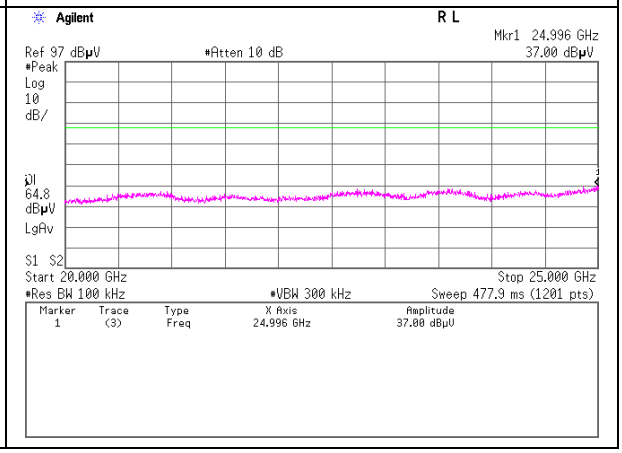
10GHz-15GHz



15GHz-20GHz



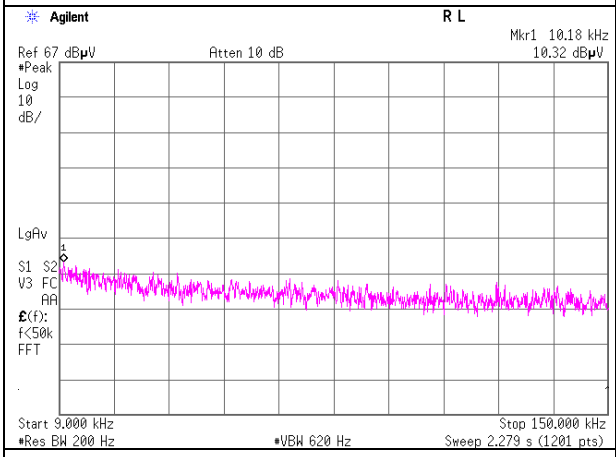
20GHz-25GHz



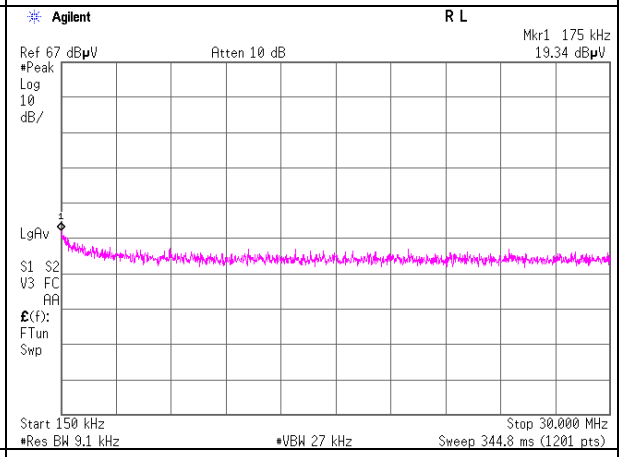
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2412MHz, MCS 4

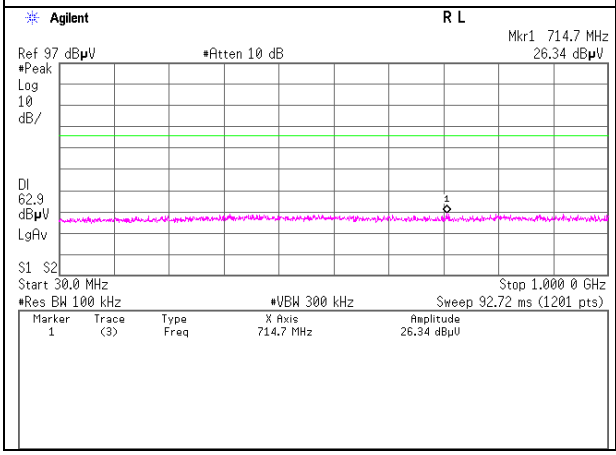
9kHz-150kHz



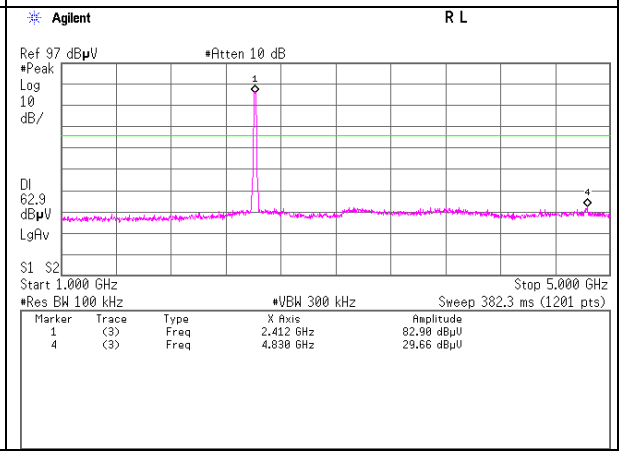
150kHz-30MHz



30MHz-1GHz



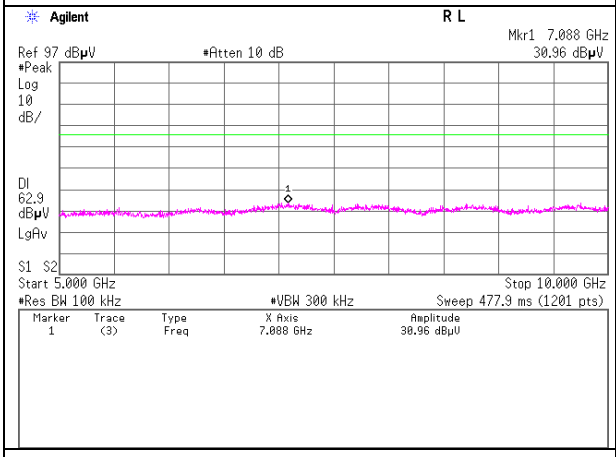
1GHz-5GHz



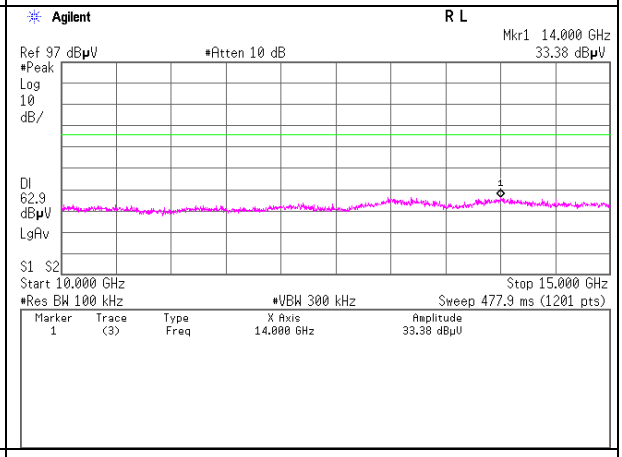
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2412MHz, MCS 4

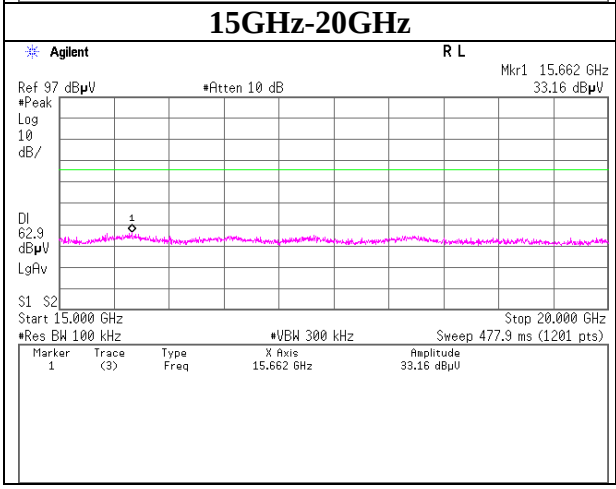
5GHz-10GHz



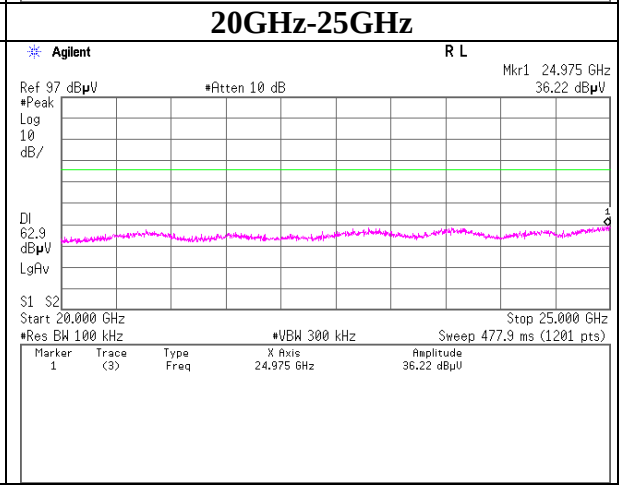
10GHz-15GHz



15GHz-20GHz



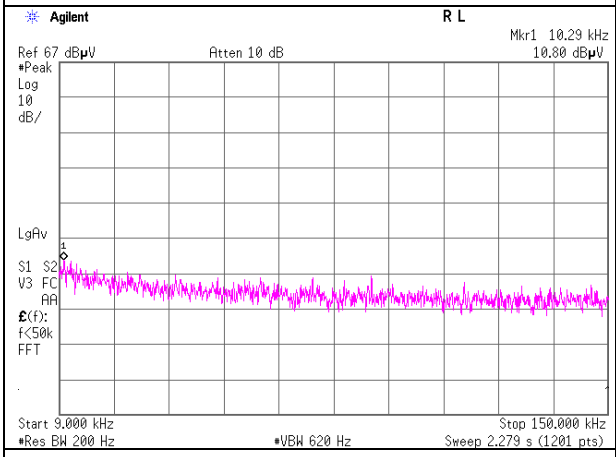
20GHz-25GHz



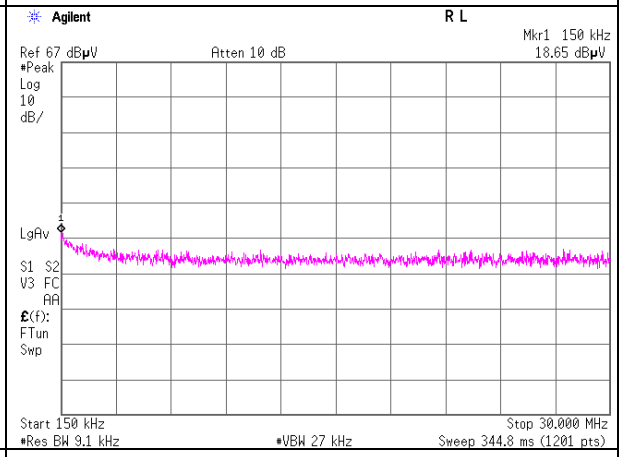
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2437MHz, MCS 4

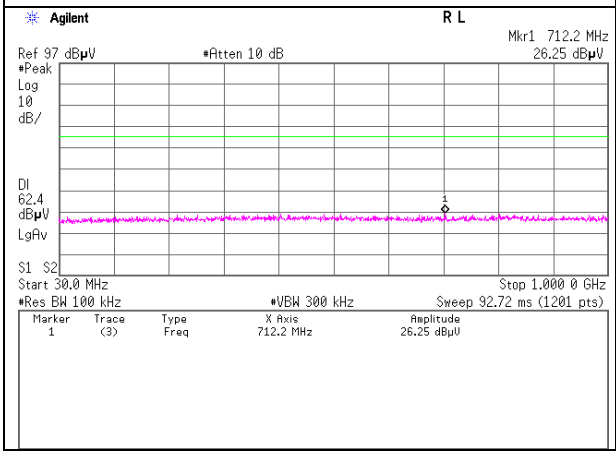
9kHz-150kHz



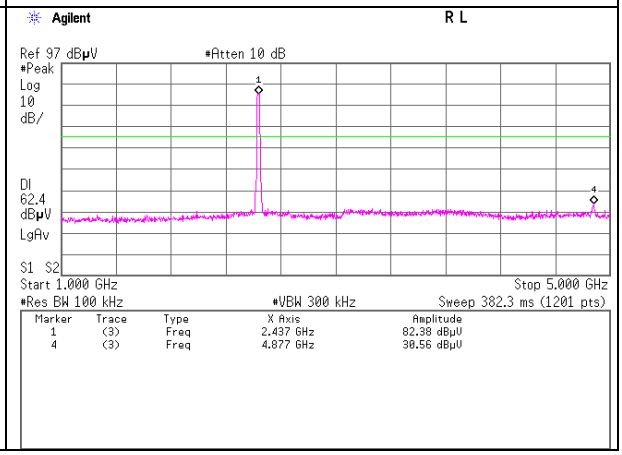
150kHz-30MHz



30MHz-1GHz



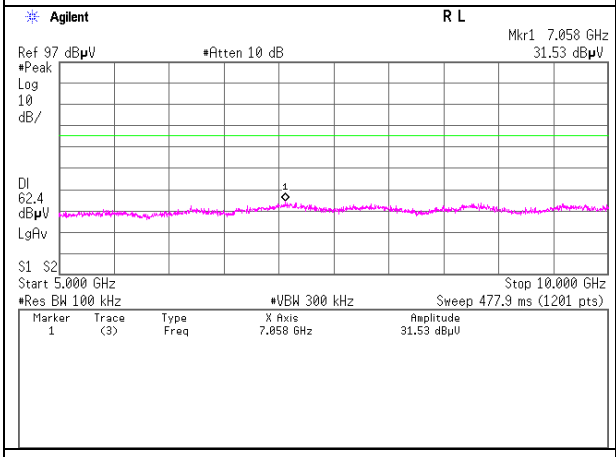
1GHz-5GHz



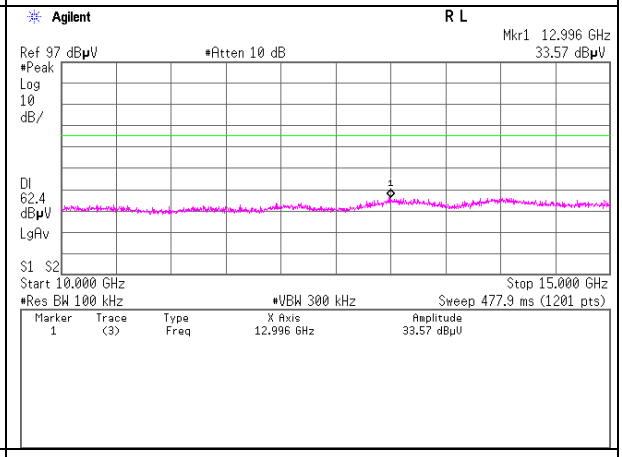
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2437MHz, MCS 4

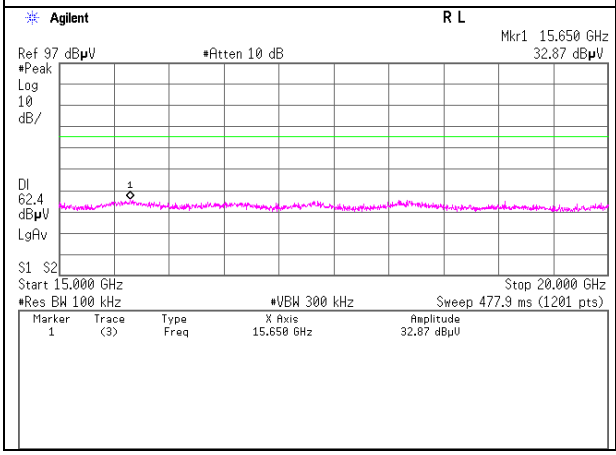
5GHz-10GHz



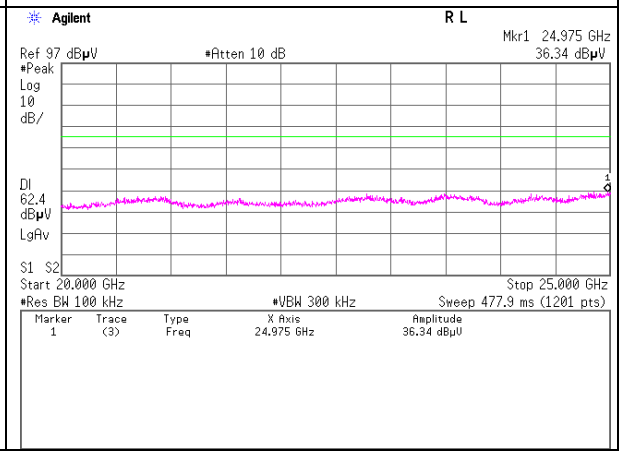
10GHz-15GHz



15GHz-20GHz



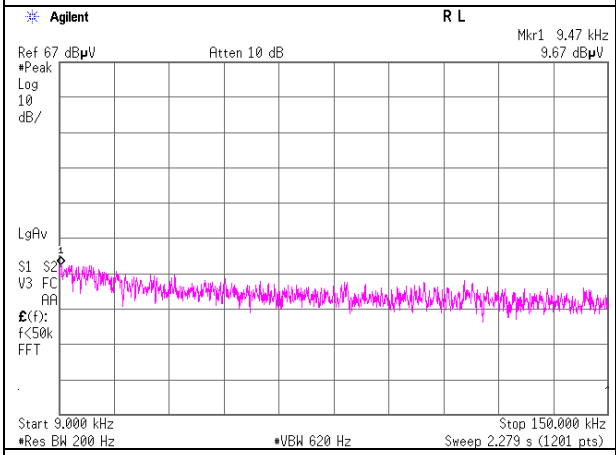
20GHz-25GHz



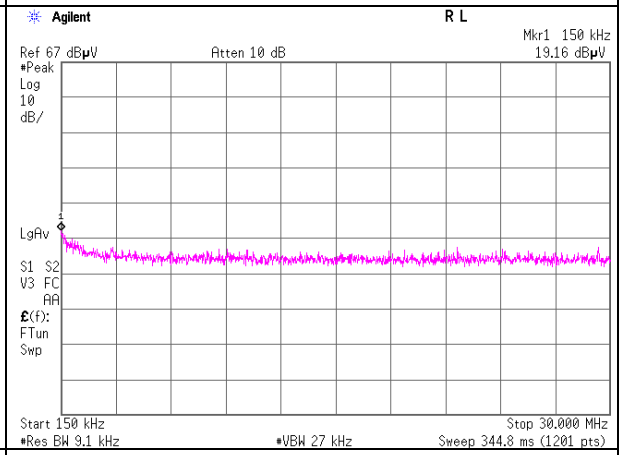
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2462MHz, MCS 4

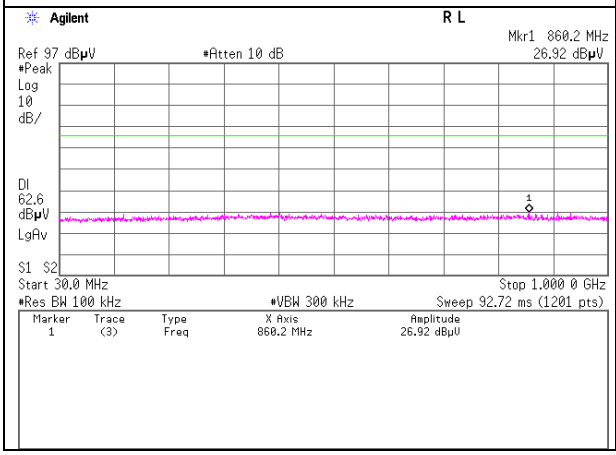
9kHz-150kHz



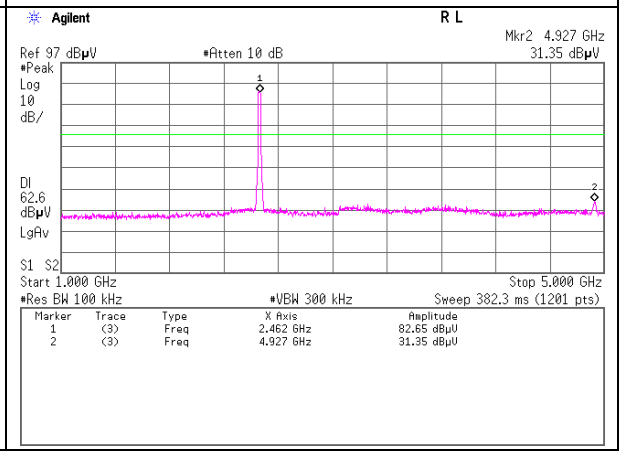
150kHz-30MHz



30MHz-1GHz



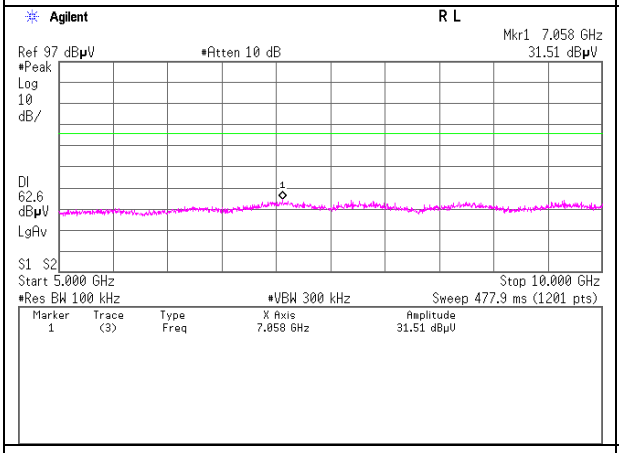
1GHz-5GHz



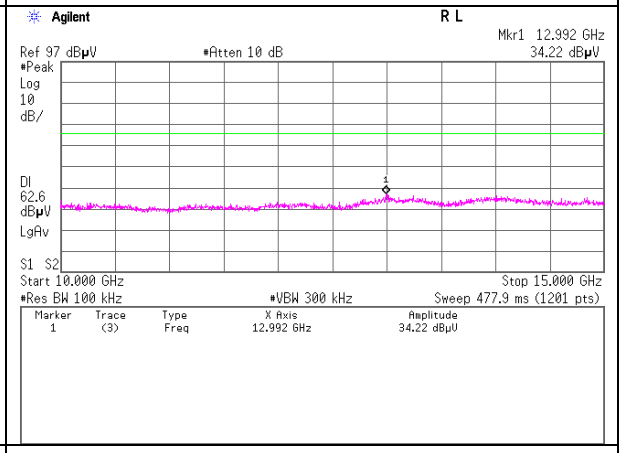
Conducted Spurious Emission

11n-20 (2.4GHz) Tx 2462MHz, MCS 4

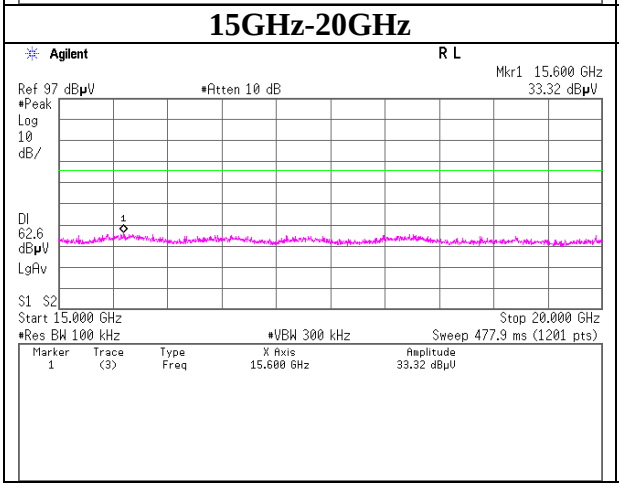
5GHz-10GHz



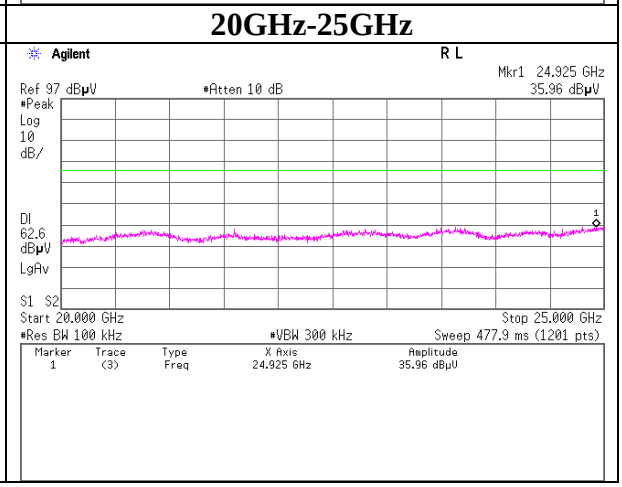
10GHz-15GHz



15GHz-20GHz



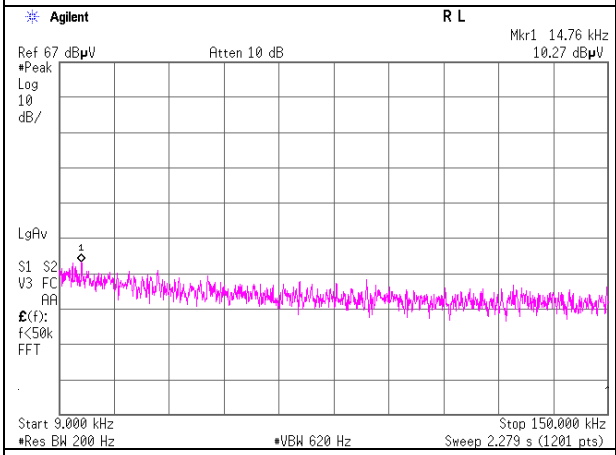
20GHz-25GHz



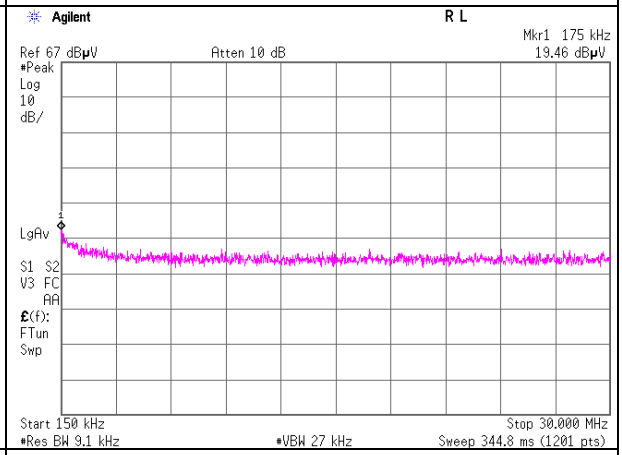
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2422MHz, MCS 3

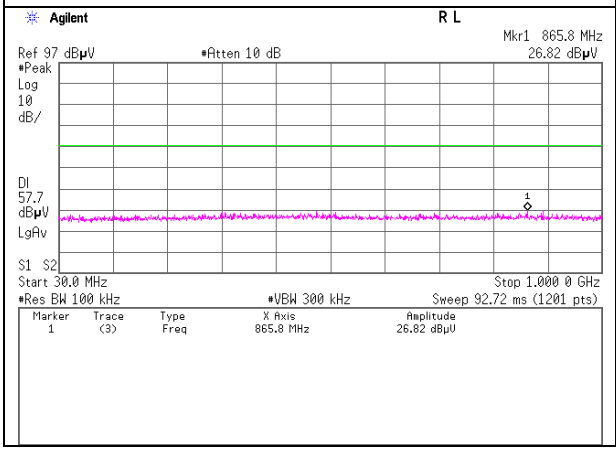
9kHz-150kHz



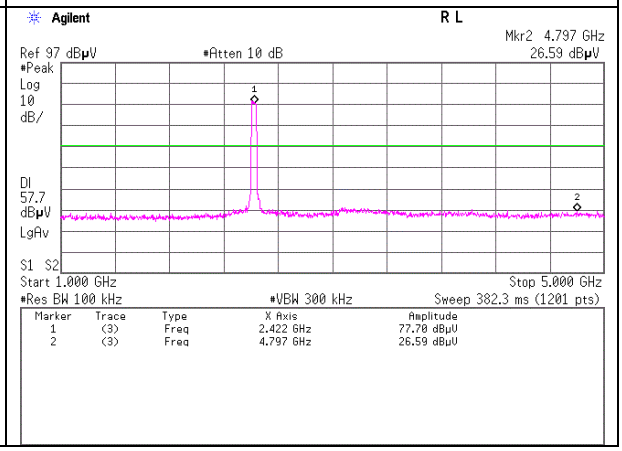
150kHz-30MHz



30MHz-1GHz



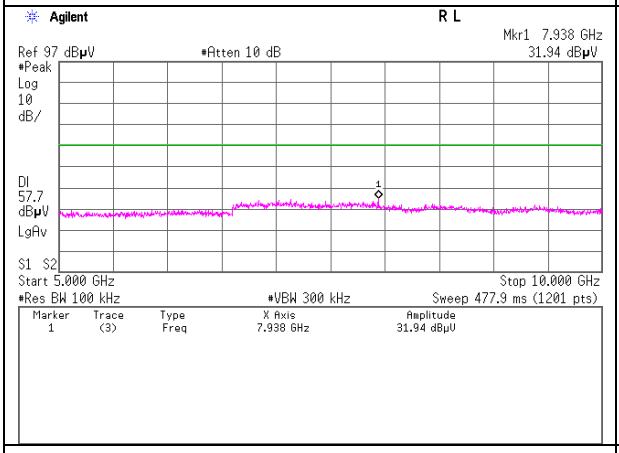
1GHz-5GHz



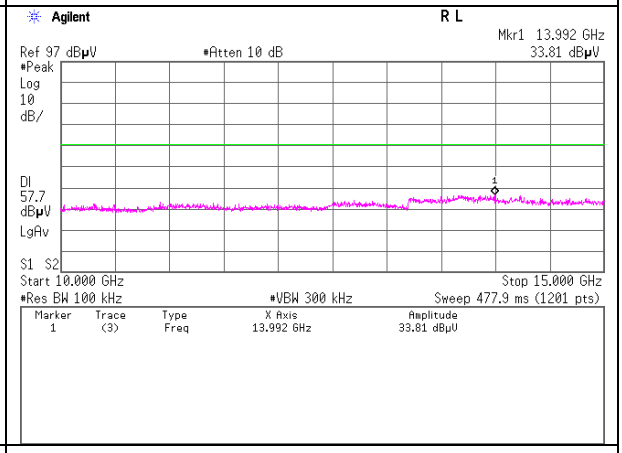
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2422MHz, MCS 3

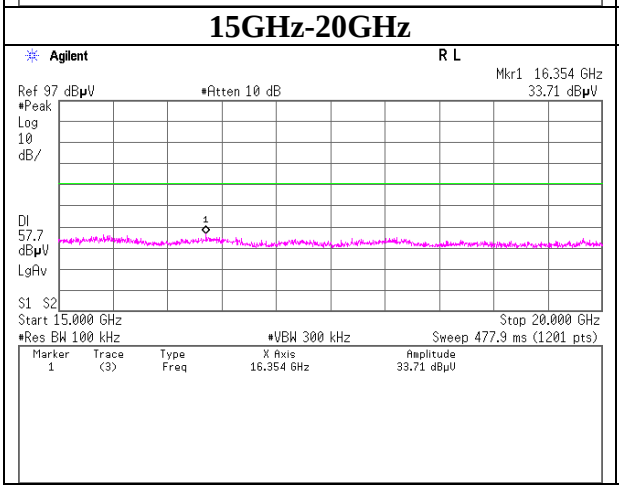
5GHz-10GHz



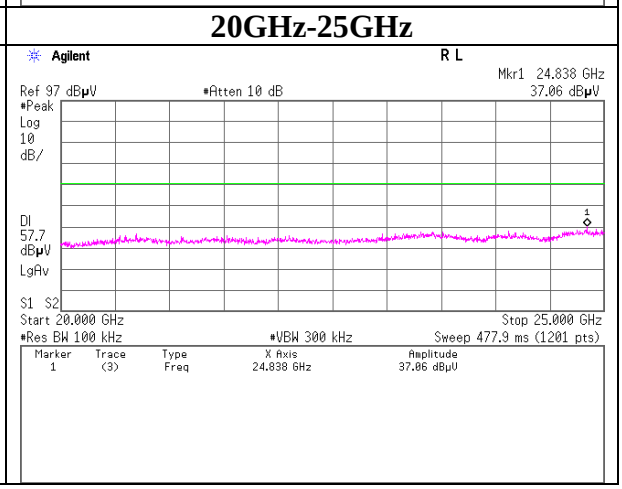
10GHz-15GHz



15GHz-20GHz



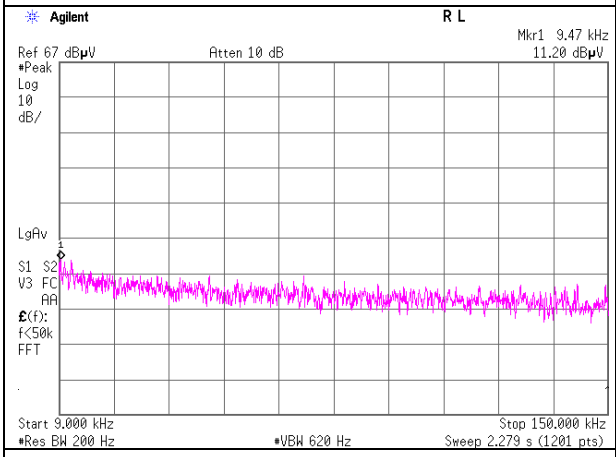
20GHz-25GHz



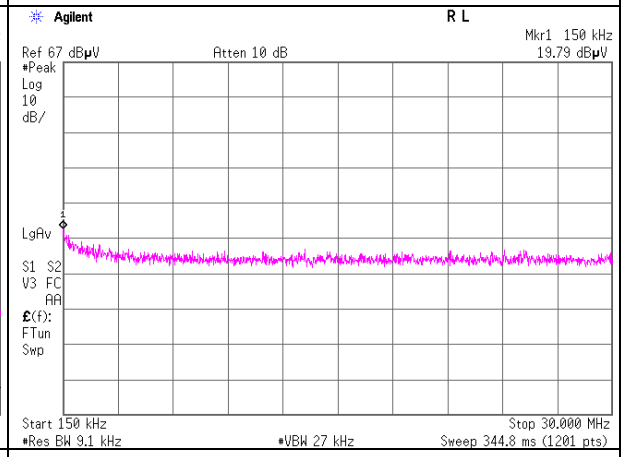
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2437MHz, MCS 3

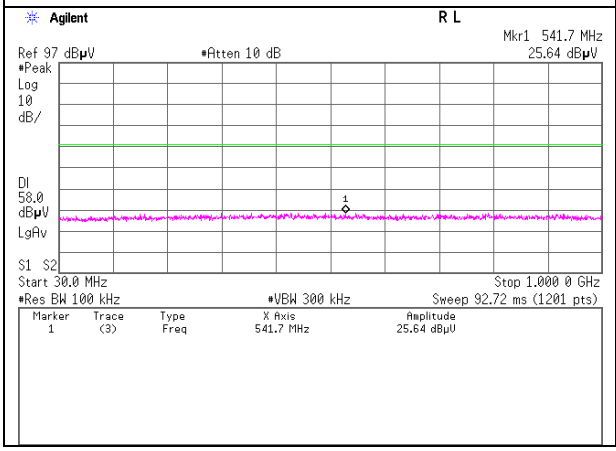
9kHz-150kHz



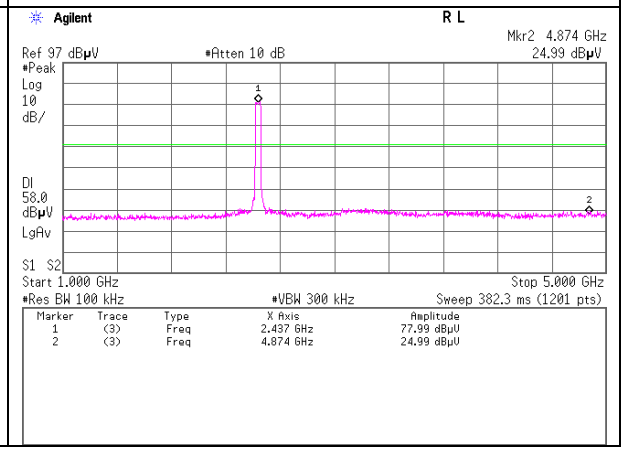
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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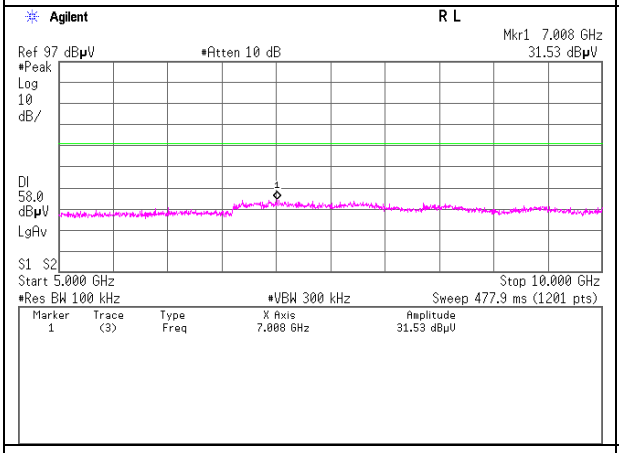
Facsimile : +81 596 24 8124

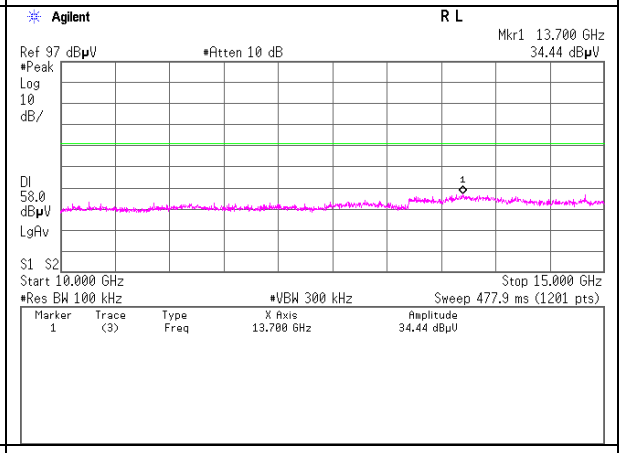
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2437MHz, MCS 3

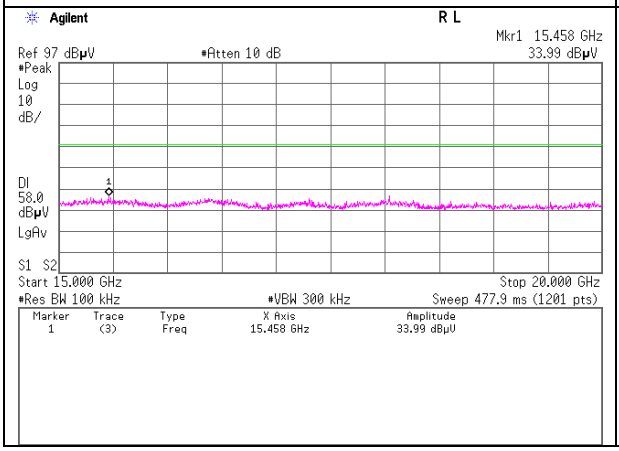
5GHz-10GHz



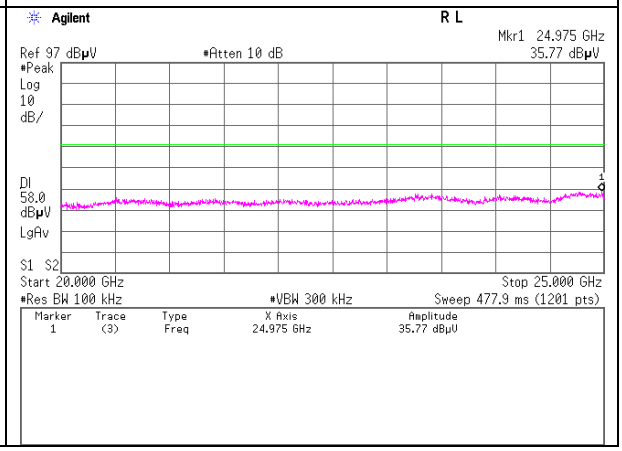
10GHz-15GHz



15GHz-20GHz



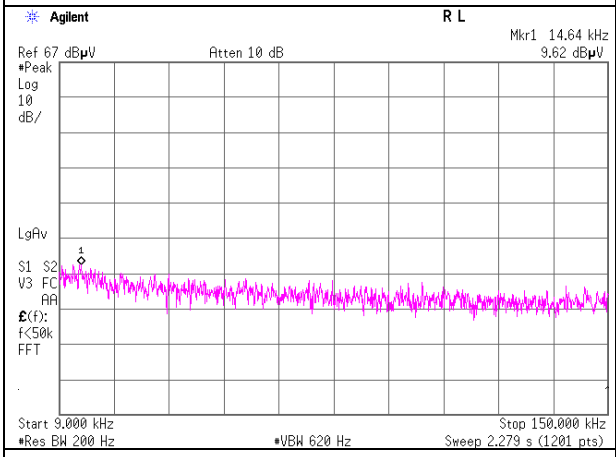
20GHz-25GHz



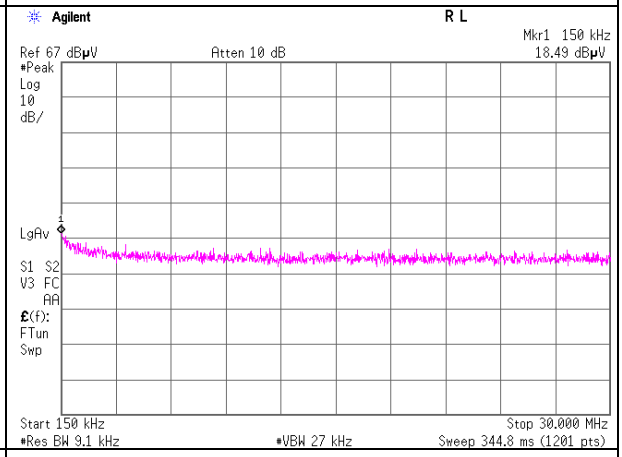
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2452MHz, MCS 3

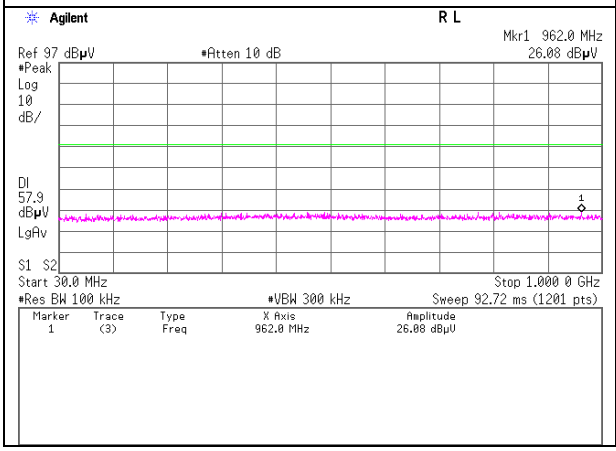
9kHz-150kHz



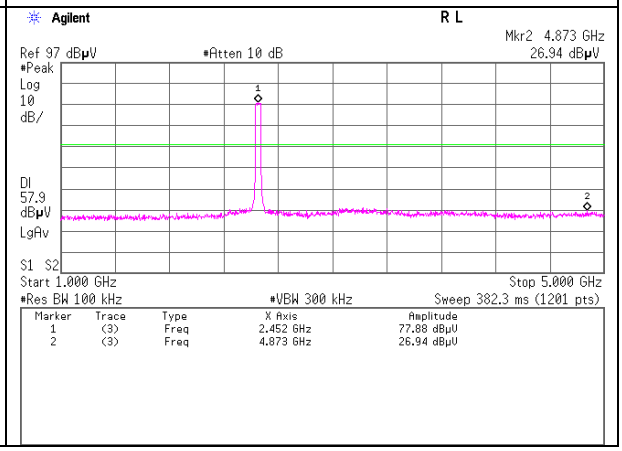
150kHz-30MHz



30MHz-1GHz



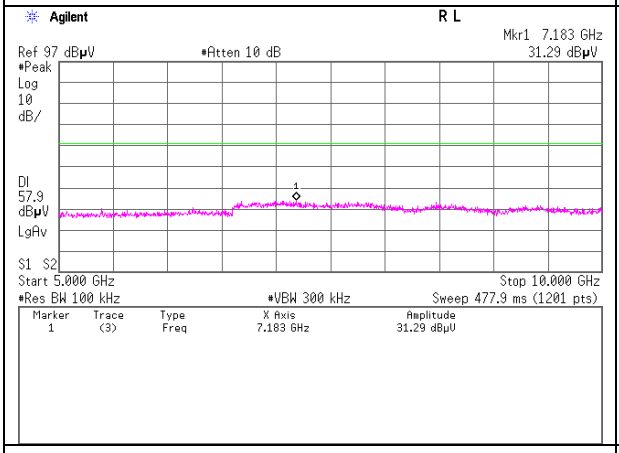
1GHz-5GHz



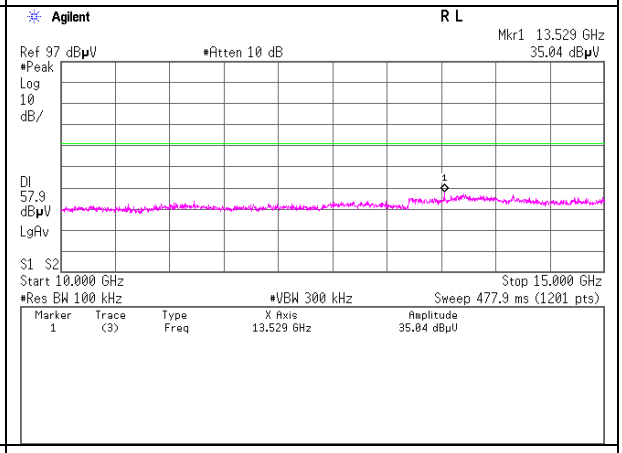
Conducted Spurious Emission

11n-40 (2.4GHz) Tx 2452MHz, MCS 3

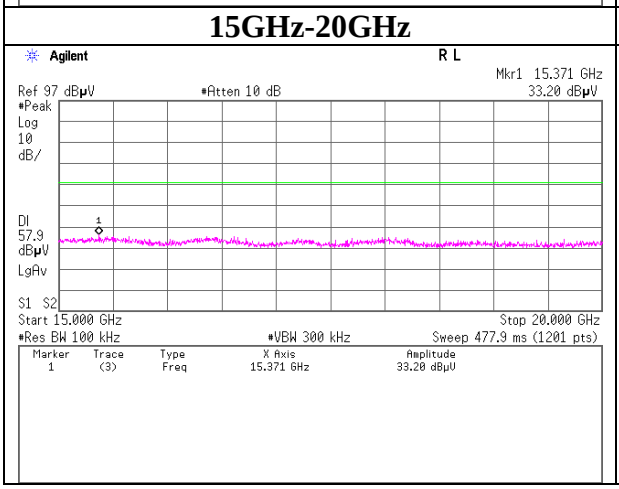
5GHz-10GHz



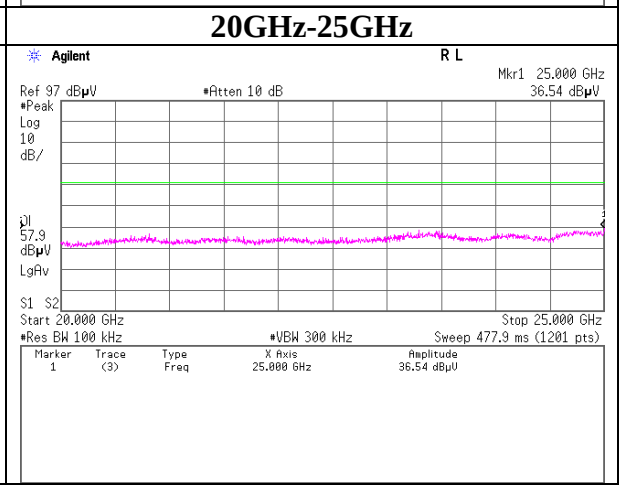
10GHz-15GHz



15GHz-20GHz



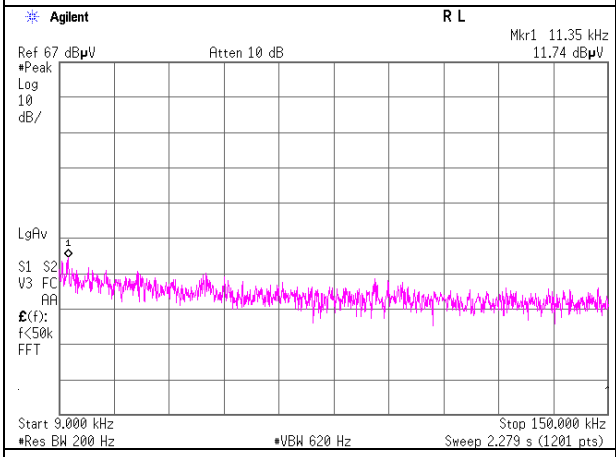
20GHz-25GHz



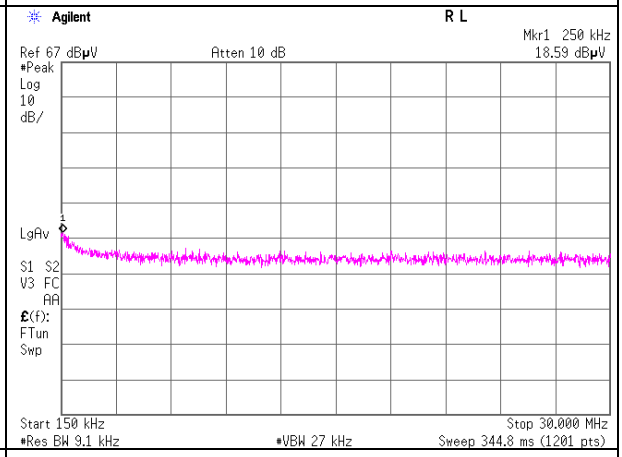
Conducted Spurious Emission

11a Tx 5745MHz, 6Mbps

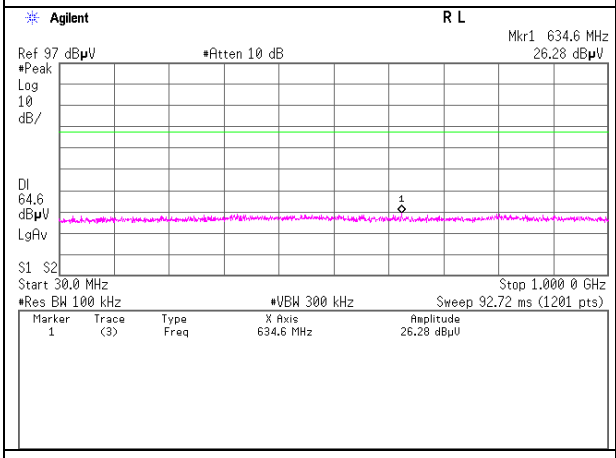
9kHz-150kHz



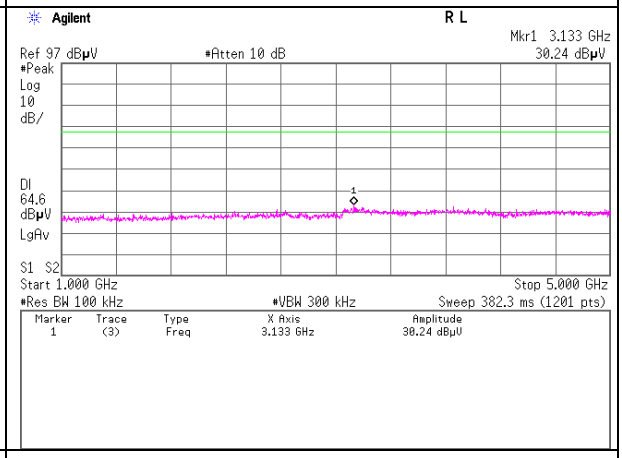
150kHz-30MHz



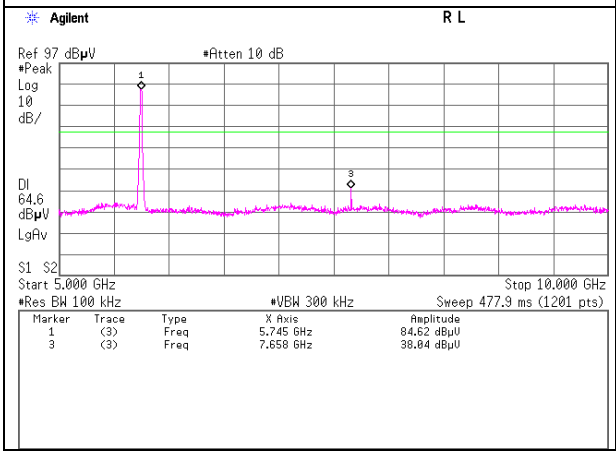
30MHz-1GHz



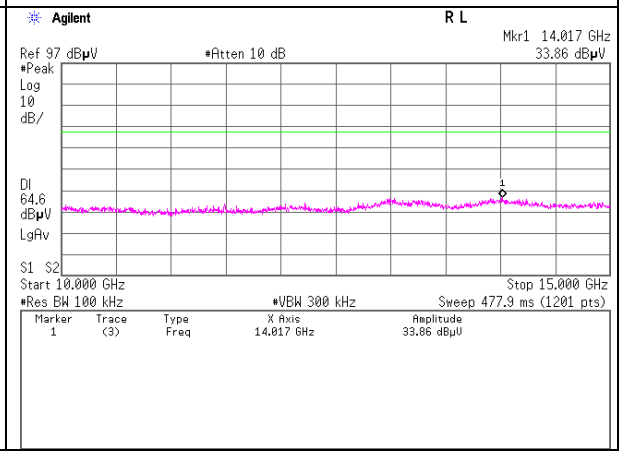
1GHz-5GHz



5GHz-10GHz



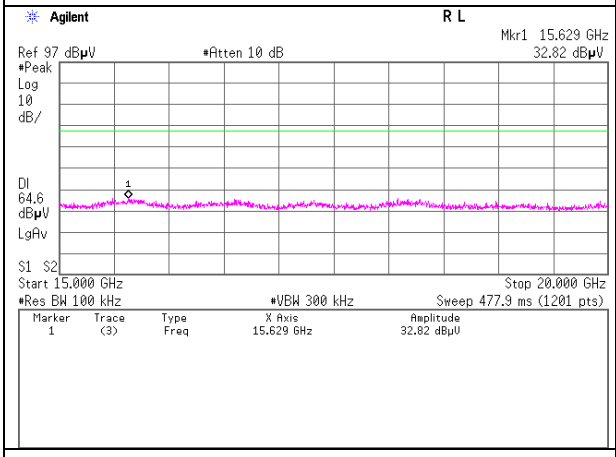
10GHz-15GHz



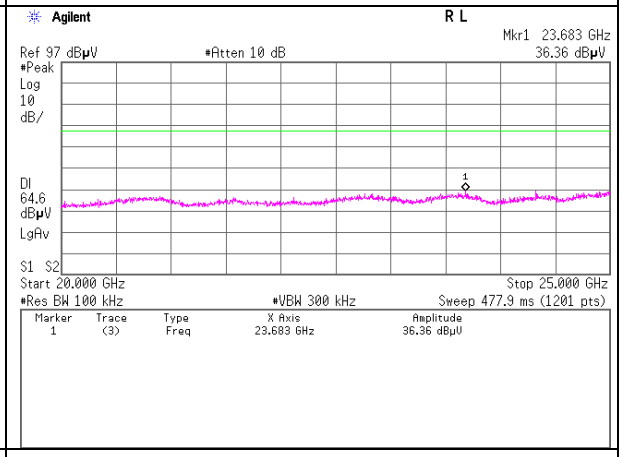
Conducted Spurious Emission

11a Tx 5745MHz, 6Mbps

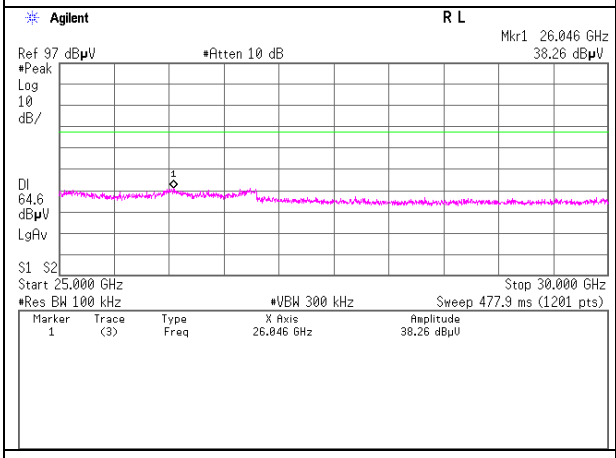
15GHz-20GHz



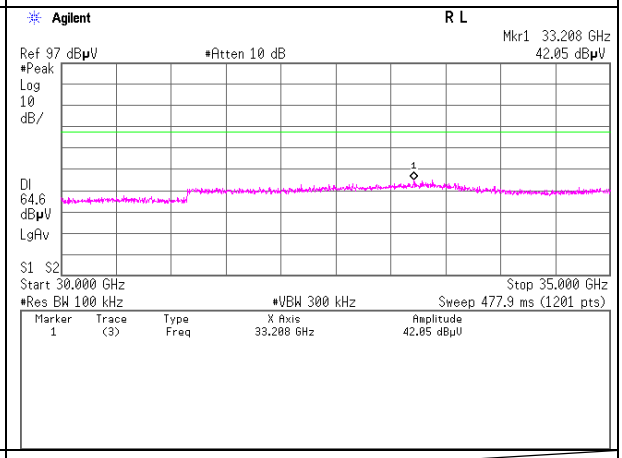
20GHz-25GHz



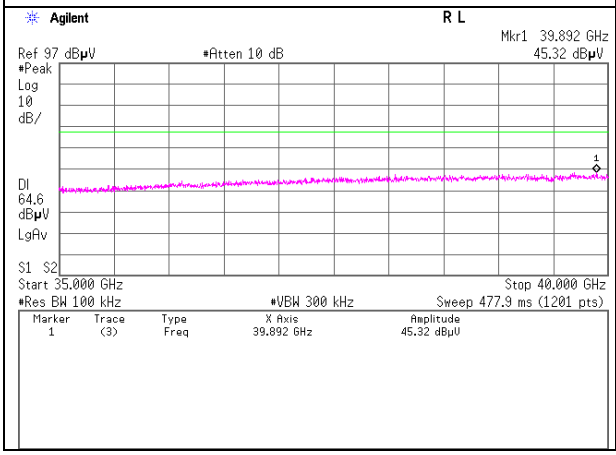
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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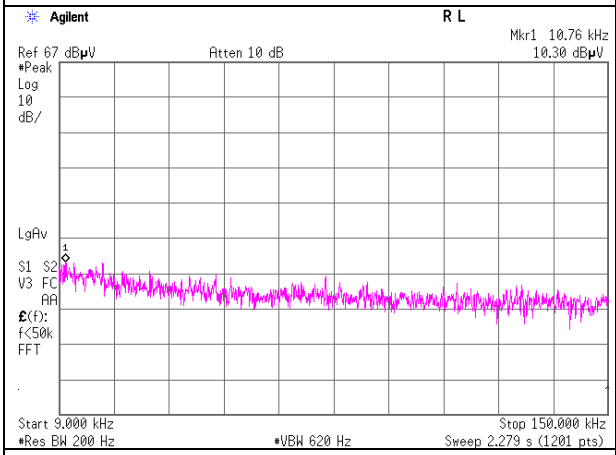
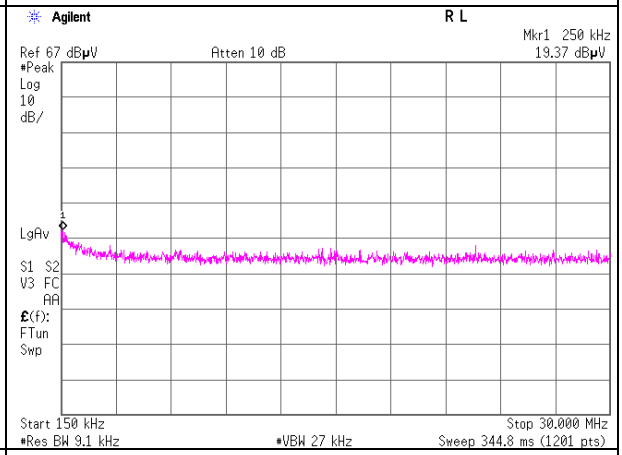
Conducted Spurious Emission

11a Tx 5785MHz, 6Mbps

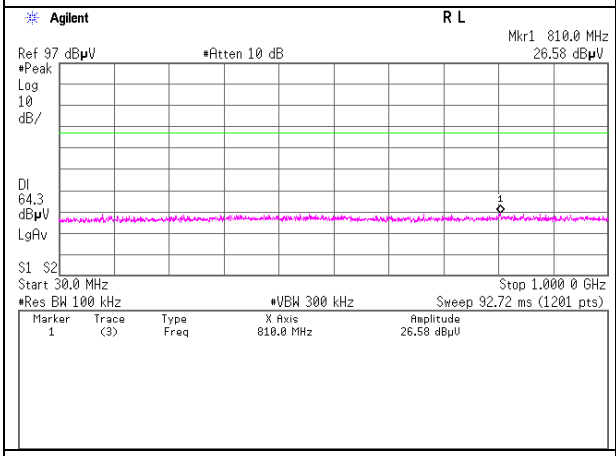
9kHz-150kHz



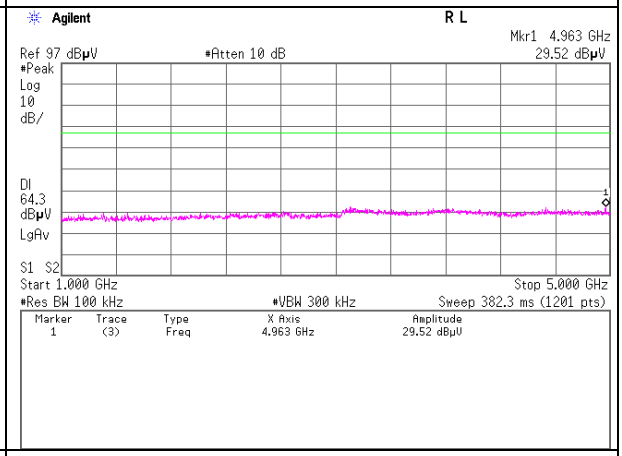
150kHz-30MHz



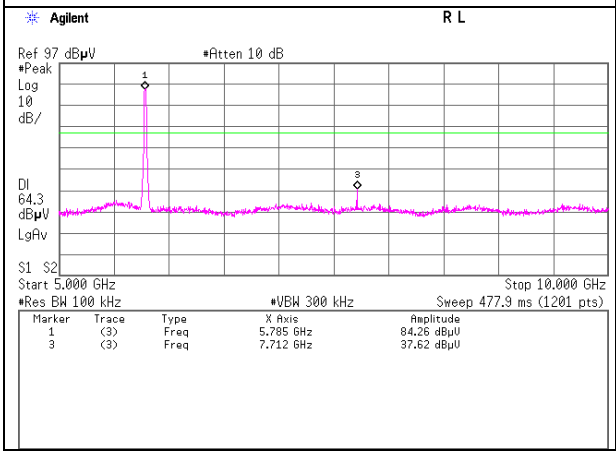
30MHz-1GHz



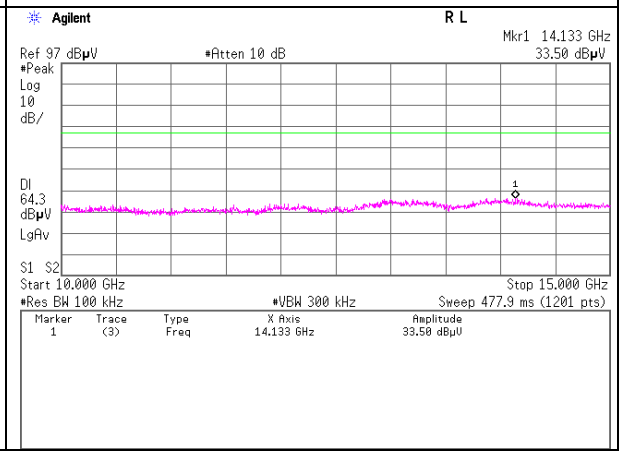
1GHz-5GHz



5GHz-10GHz



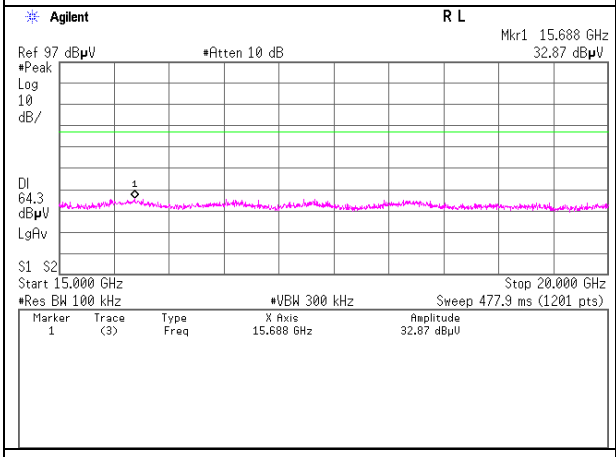
10GHz-15GHz



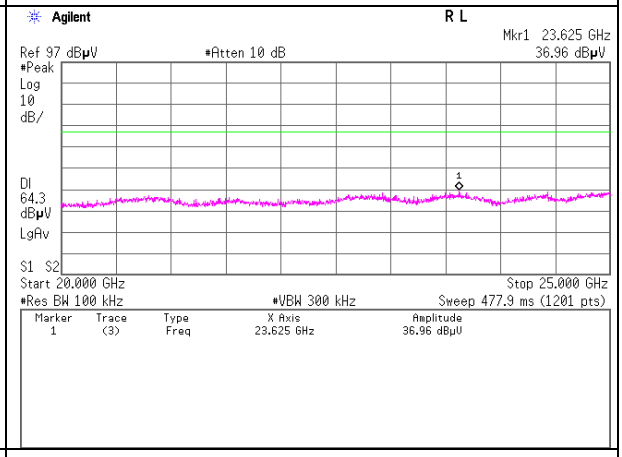
Conducted Spurious Emission

11a Tx 5785MHz, 6Mbps

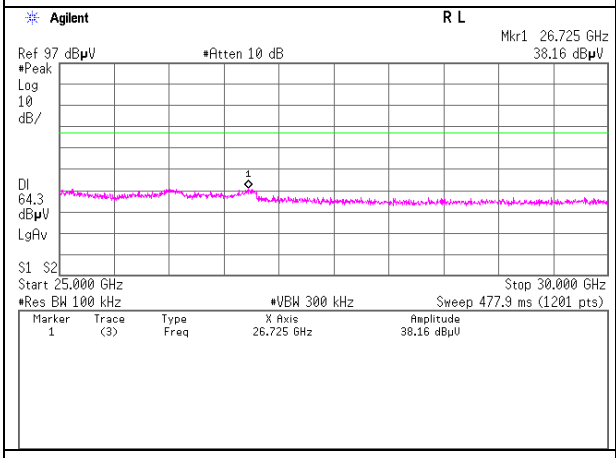
15GHz-20GHz



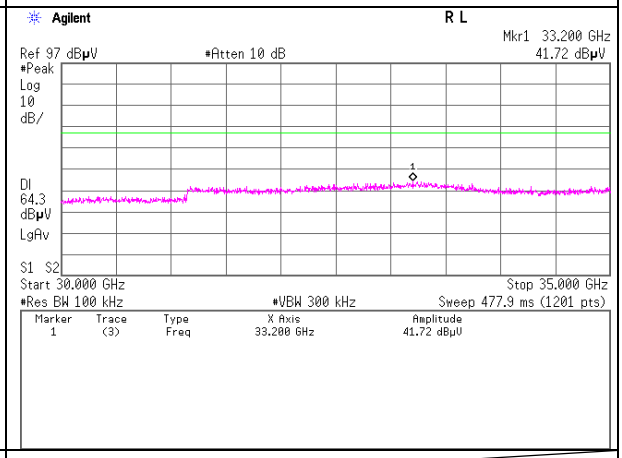
20GHz-25GHz



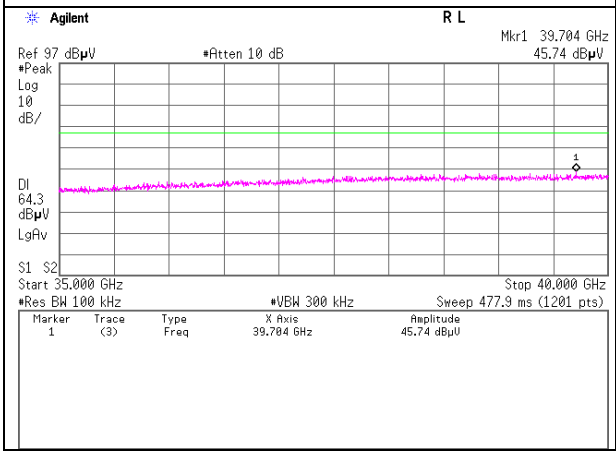
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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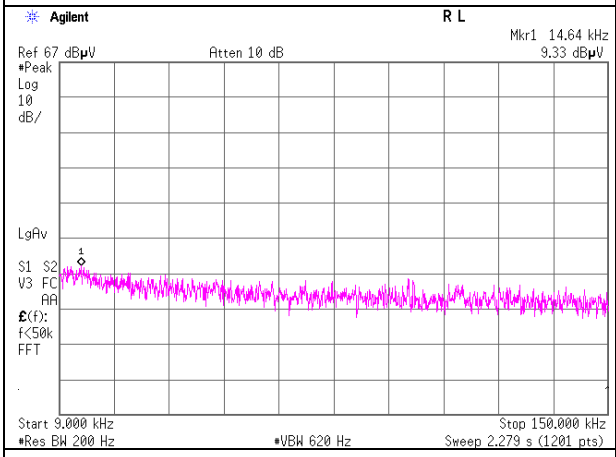
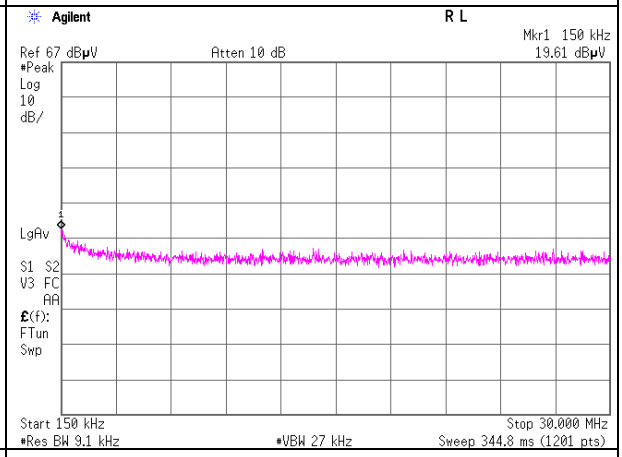
Conducted Spurious Emission

11a Tx 5825MHz, 6Mbps

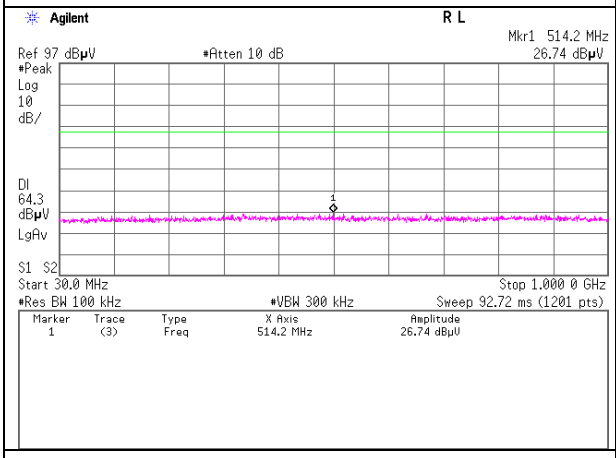
9kHz-150kHz



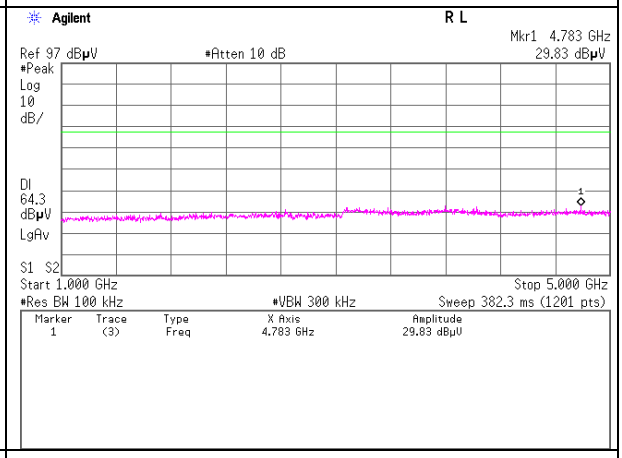
150kHz-30MHz



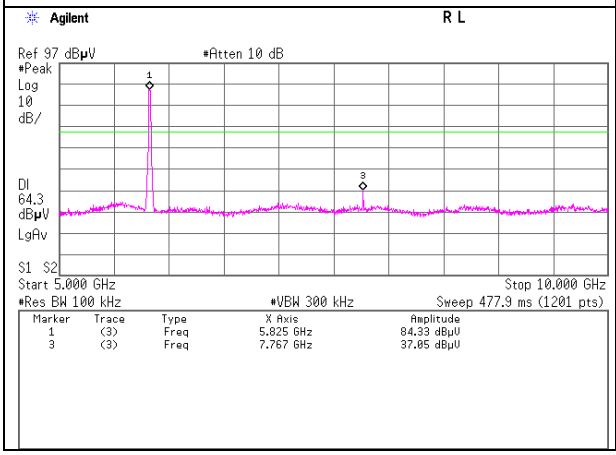
30MHz-1GHz



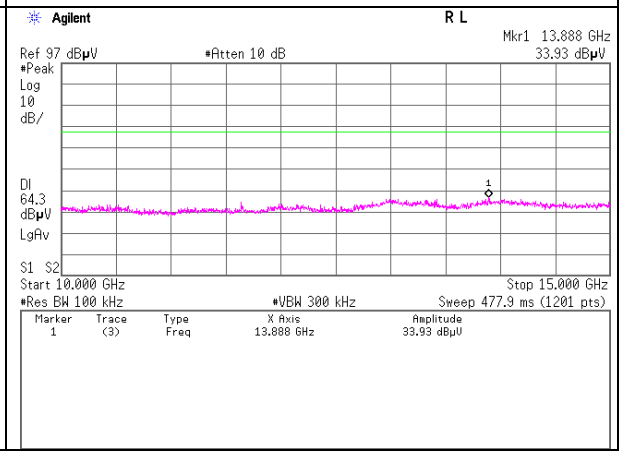
1GHz-5GHz



5GHz-10GHz



10GHz-15GHz



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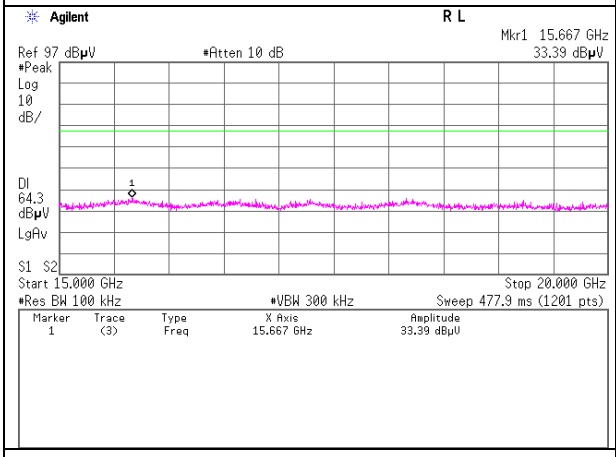
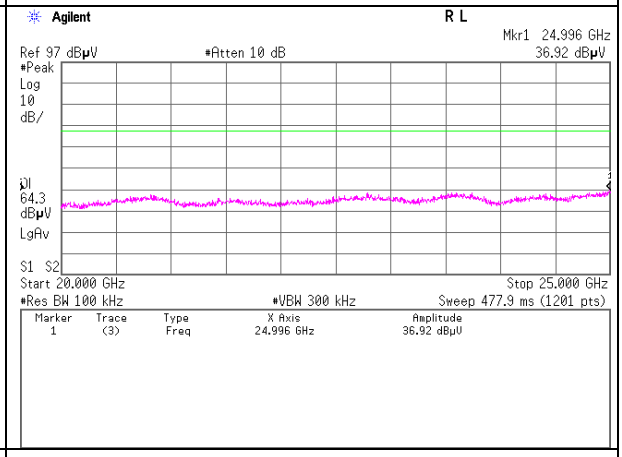
Conducted Spurious Emission

11a Tx 5825MHz, 6Mbps

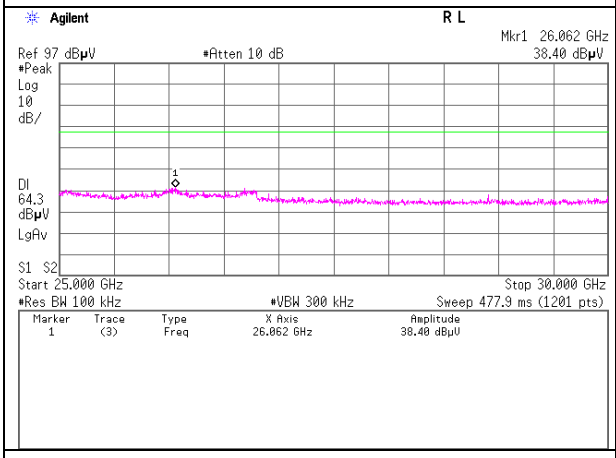
15GHz-20GHz



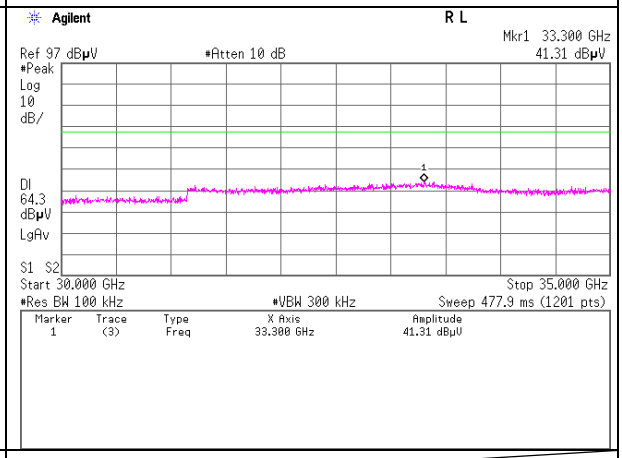
20GHz-25GHz



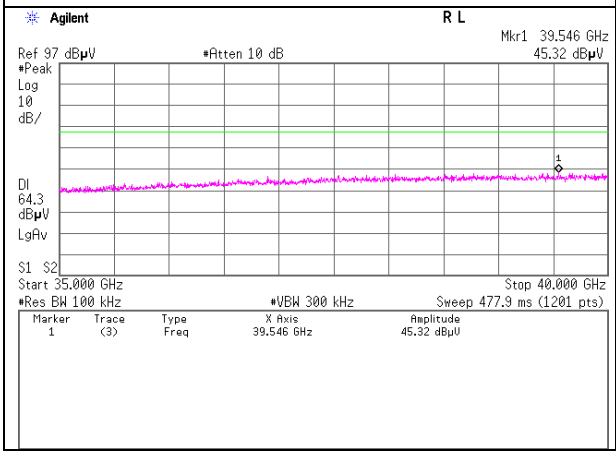
25GHz-30GHz



30GHz-35GHz



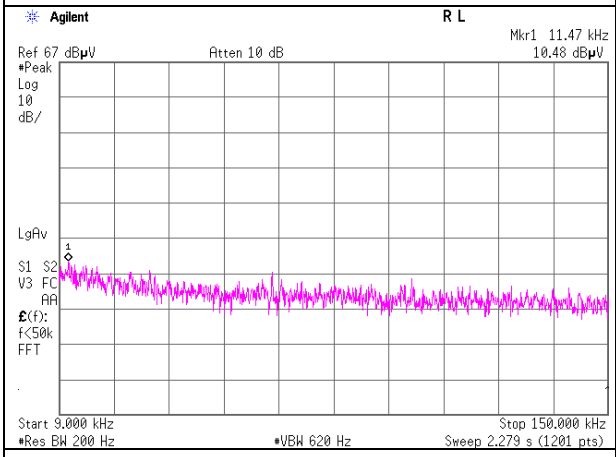
35GHz-40GHz



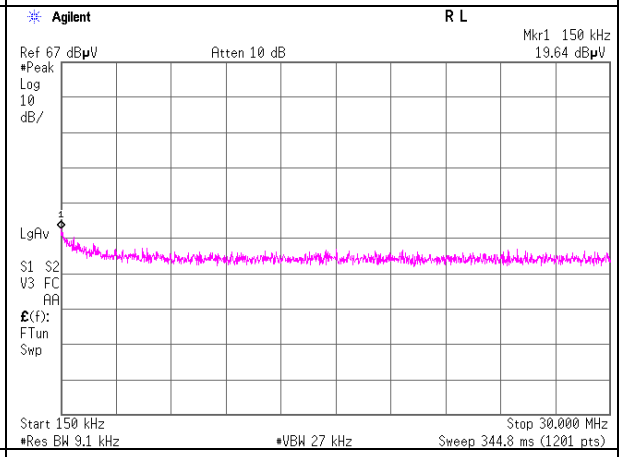
Conducted Spurious Emission

11n-20(5GHz) Tx 5745MHz, MCS 0

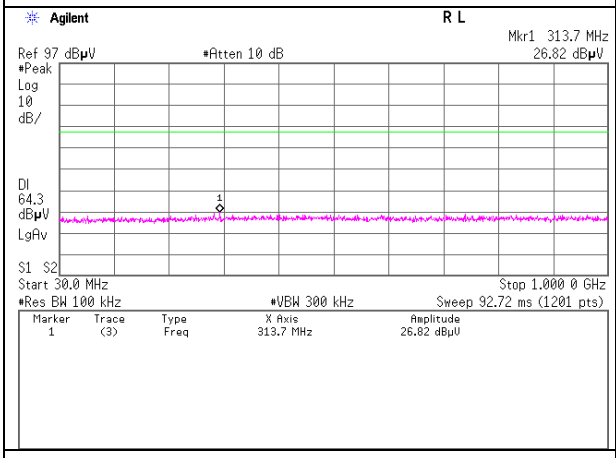
9kHz-150kHz



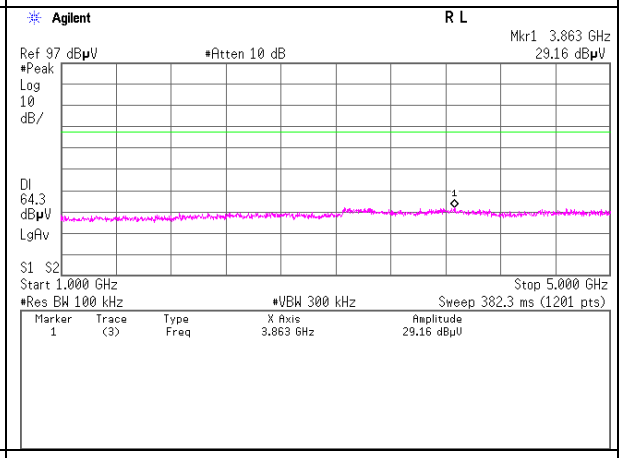
150kHz-30MHz



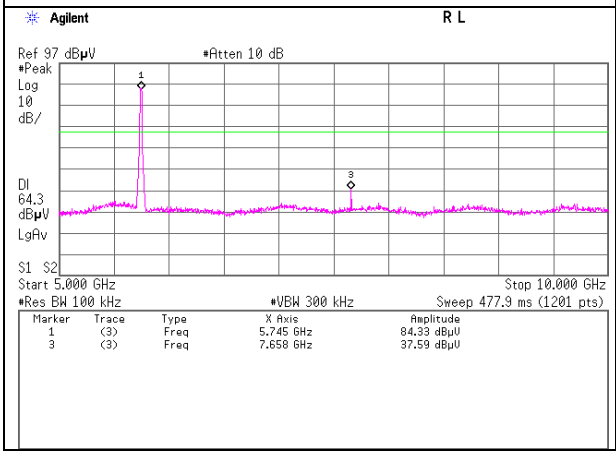
30MHz-1GHz



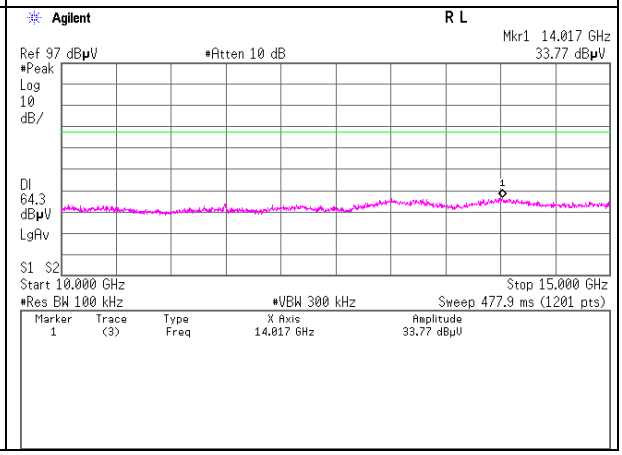
1GHz-5GHz



5GHz-10GHz



10GHz-15GHz



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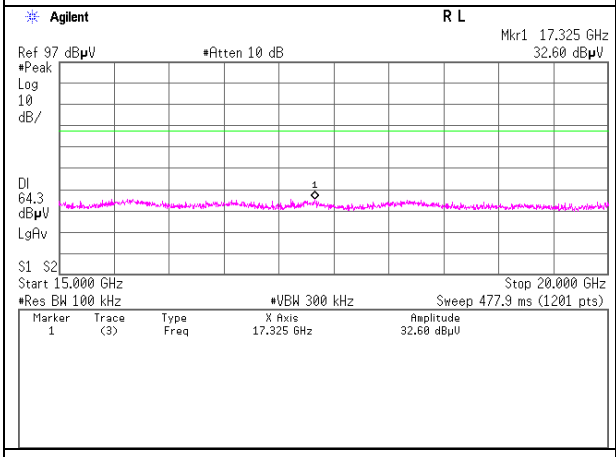
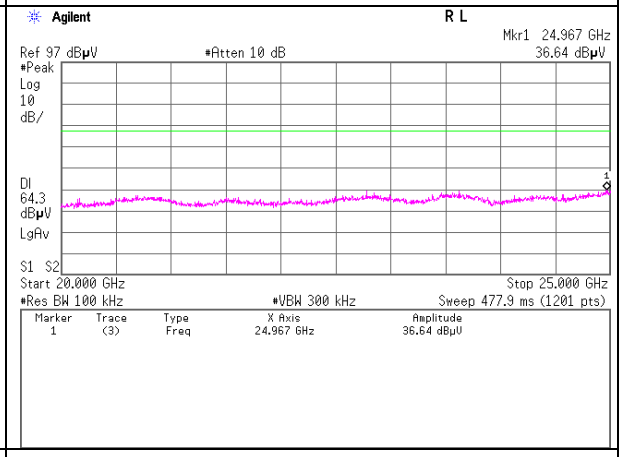
Conducted Spurious Emission

11n-20(5GHz) Tx 5745MHz, MCS 0

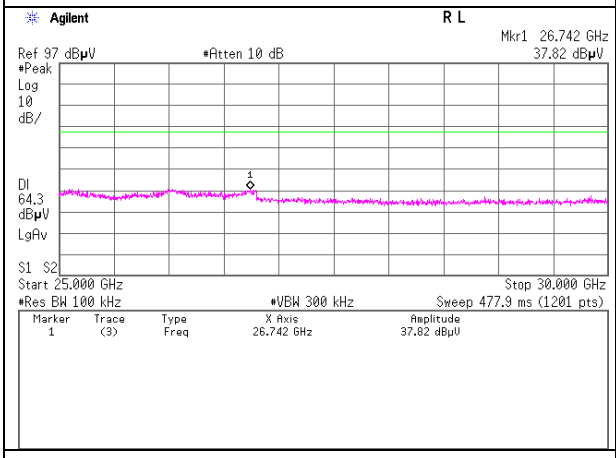
15GHz-20GHz



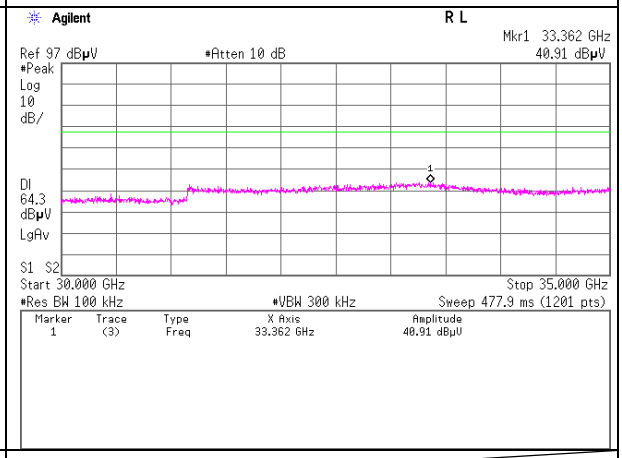
20GHz-25GHz



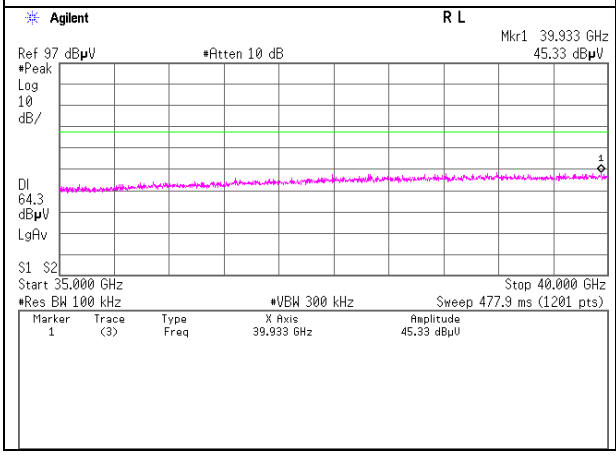
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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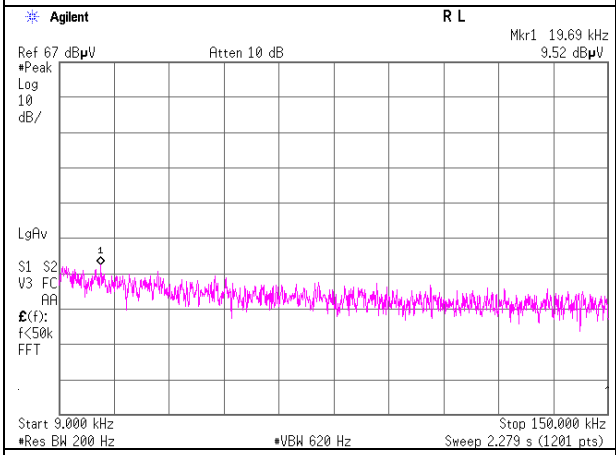
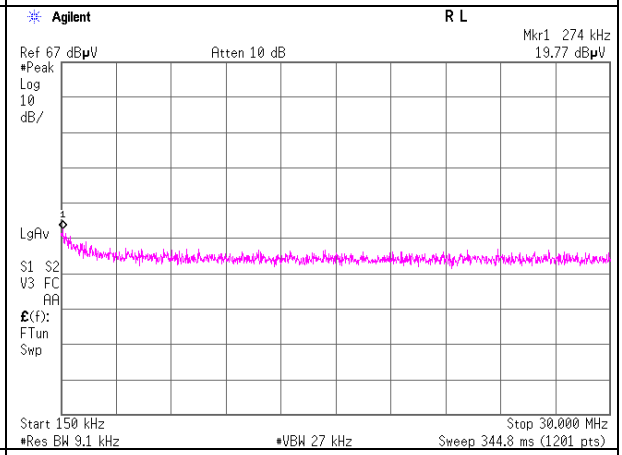
Conducted Spurious Emission

11n-20 (5GHz) Tx 5785MHz, MCS 0

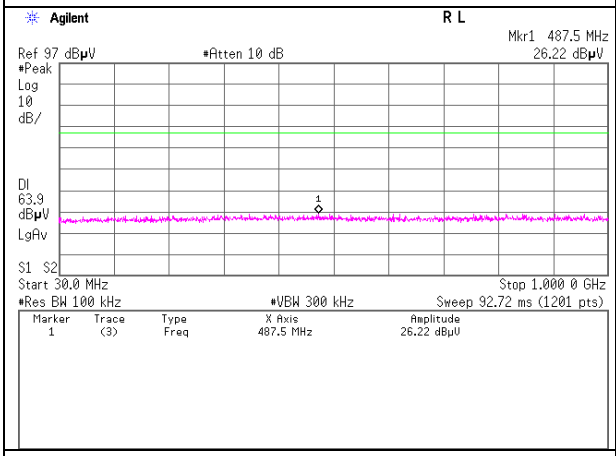
9kHz-150kHz



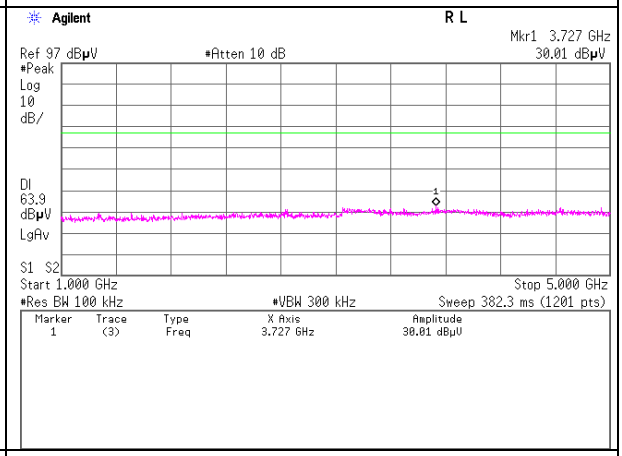
150kHz-30MHz



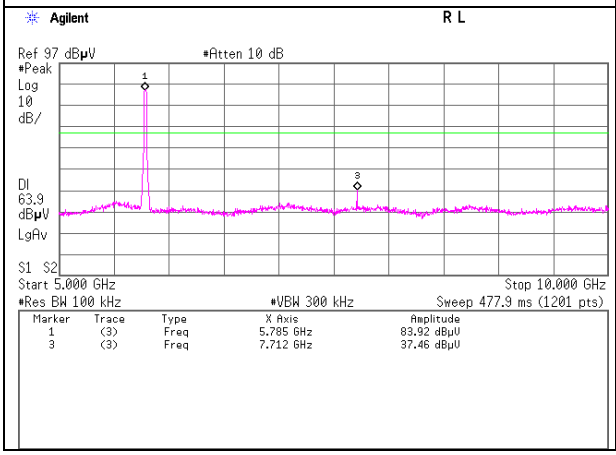
30MHz-1GHz



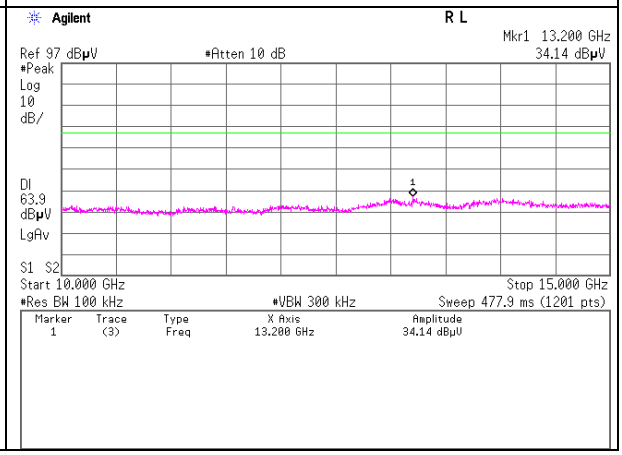
1GHz-5GHz



5GHz-10GHz



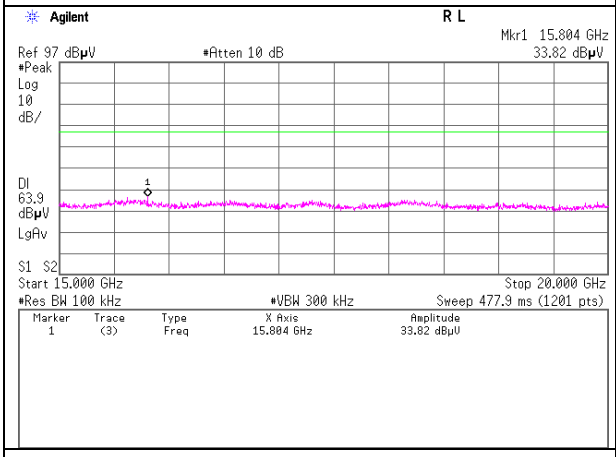
10GHz-15GHz



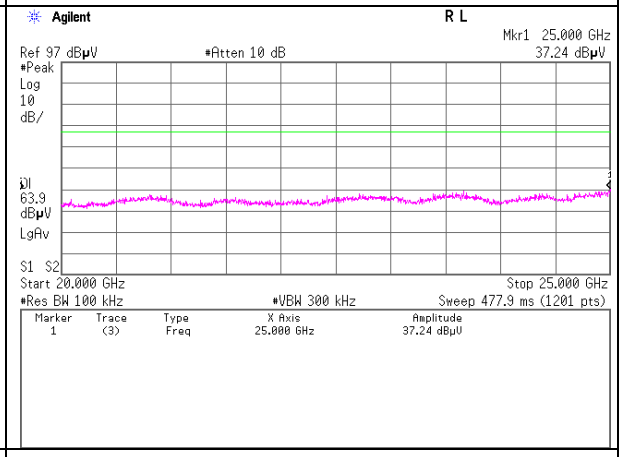
Conducted Spurious Emission

11n-20(5GHz) Tx 5785MHz, MCS 0

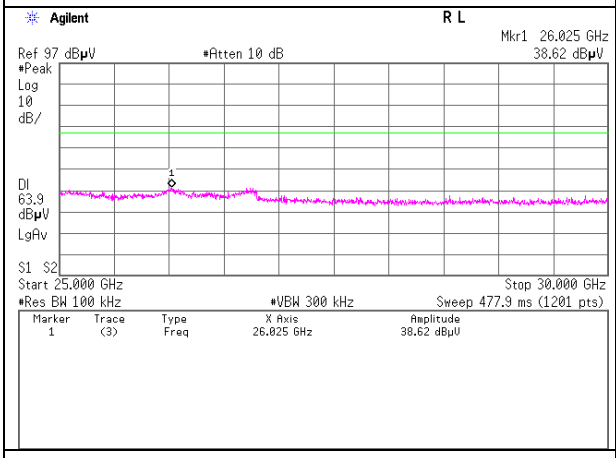
15GHz-20GHz



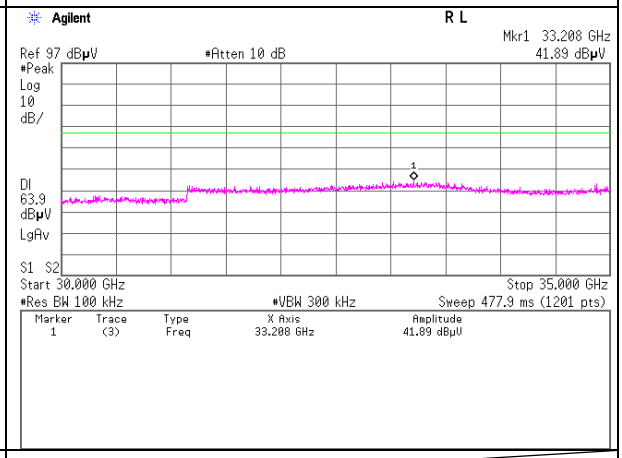
20GHz-25GHz



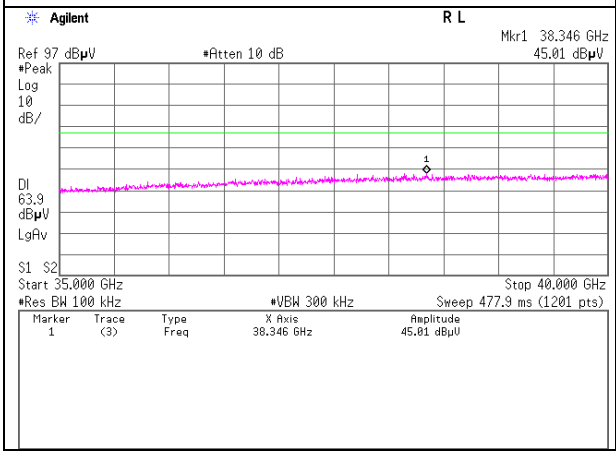
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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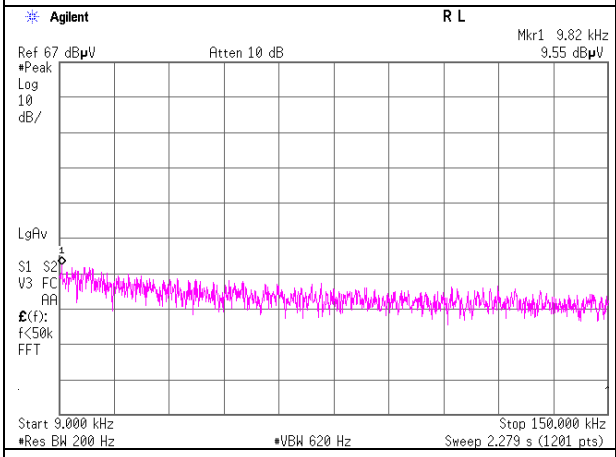
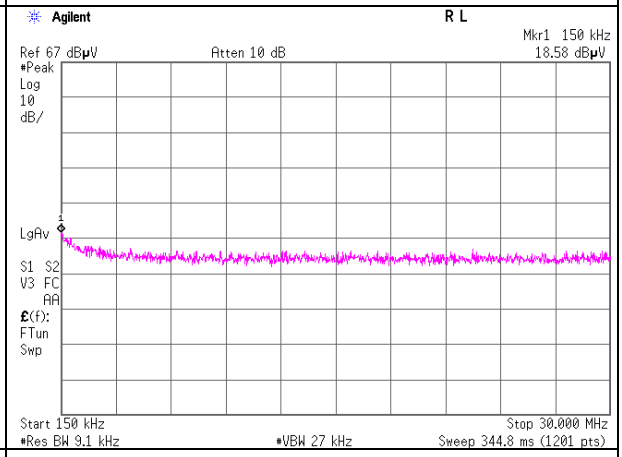
Conducted Spurious Emission

11n-20 (5GHz) Tx 5825MHz, MCS 0

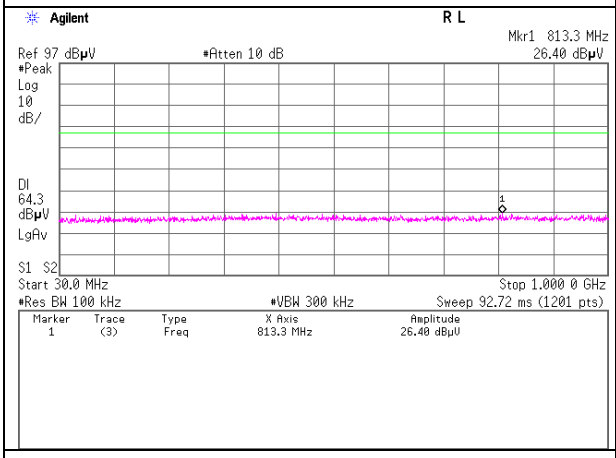
9kHz-150kHz



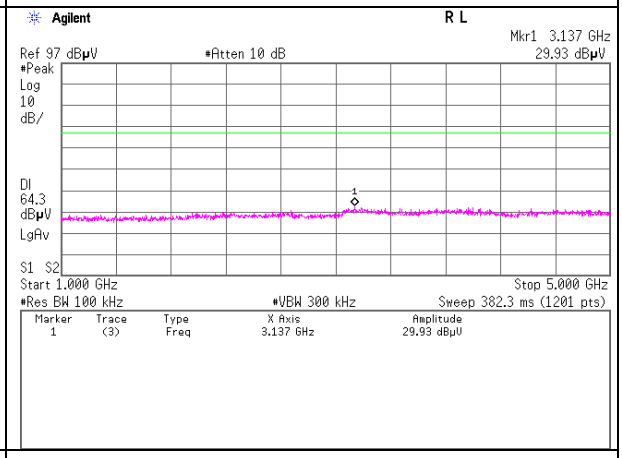
150kHz-30MHz



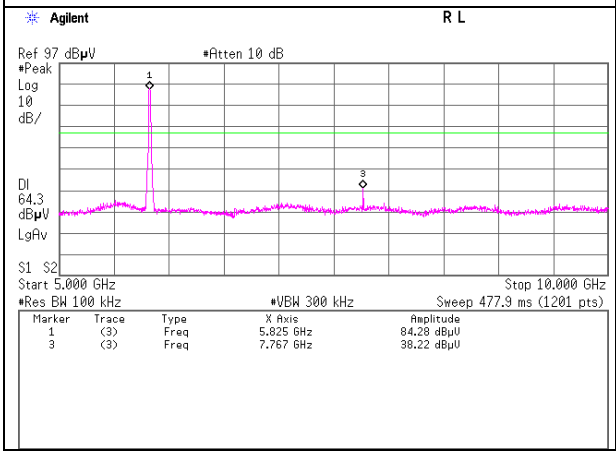
30MHz-1GHz



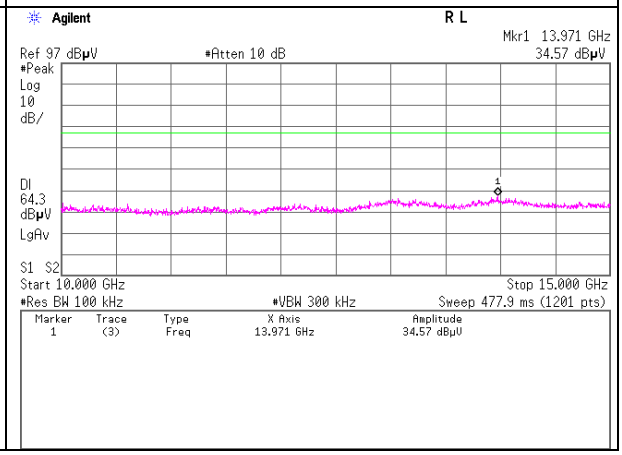
1GHz-5GHz



5GHz-10GHz



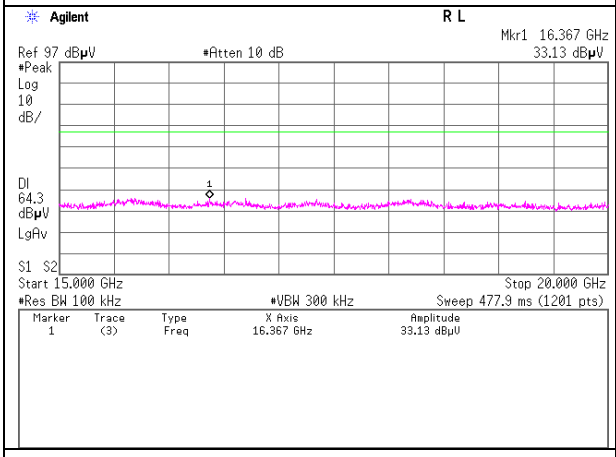
10GHz-15GHz



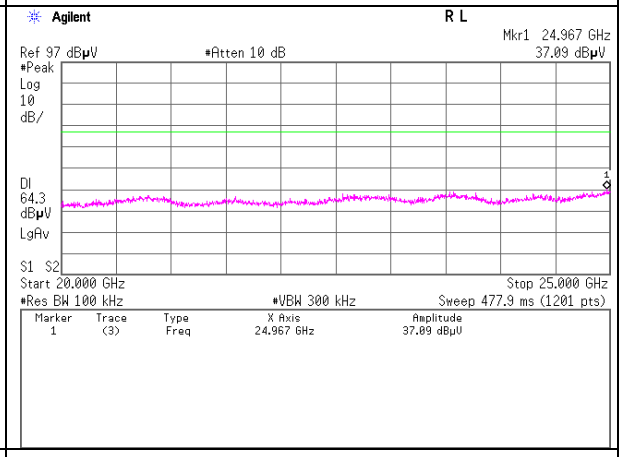
Conducted Spurious Emission

11n-20(5GHz) Tx 5825MHz, MCS 0

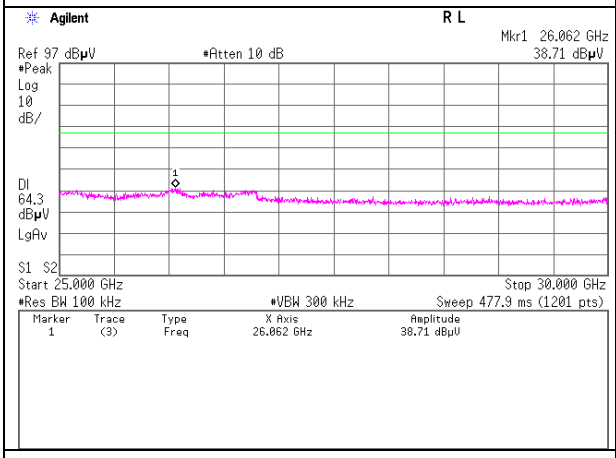
15GHz-20GHz



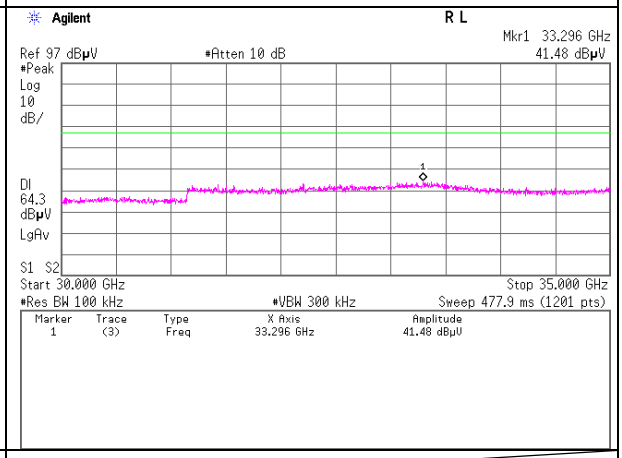
20GHz-25GHz



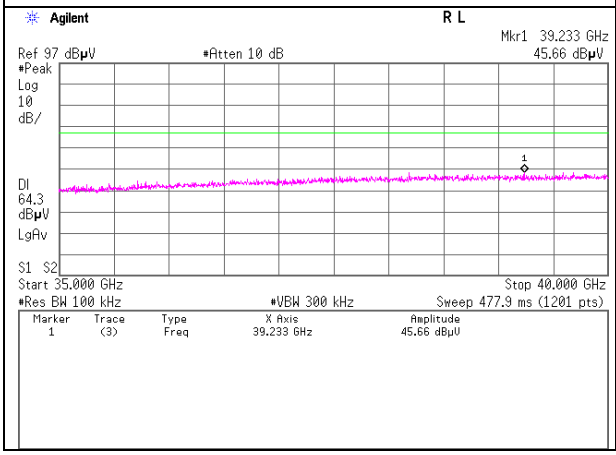
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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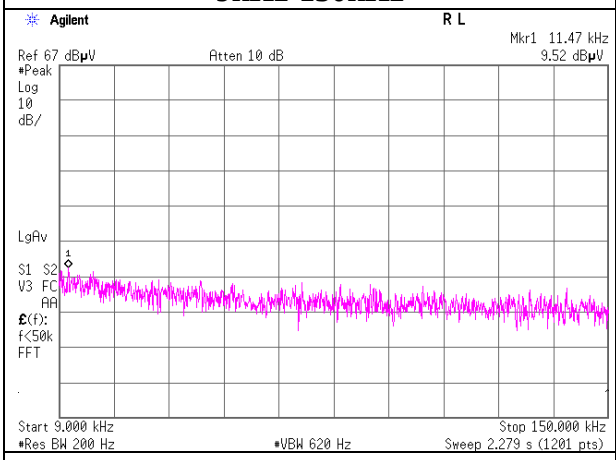
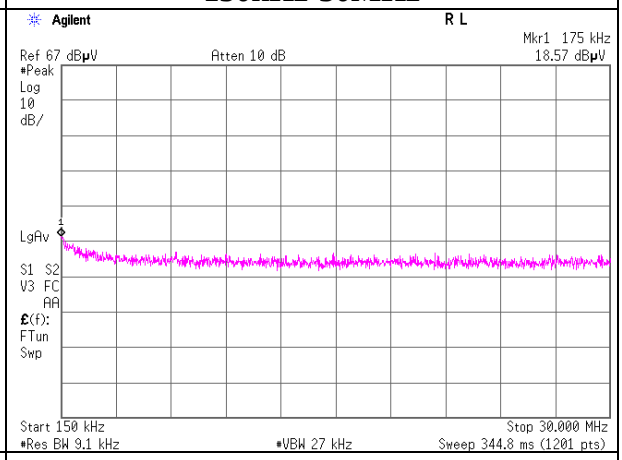
Conducted Spurious Emission

11n-40 (5GHz) Tx 5755MHz, MCS 5

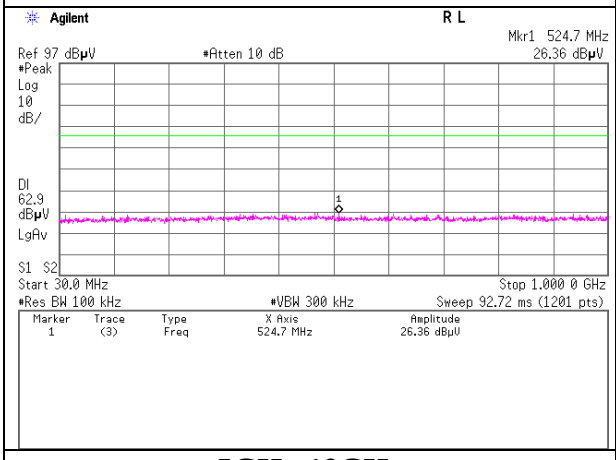
9kHz-150kHz



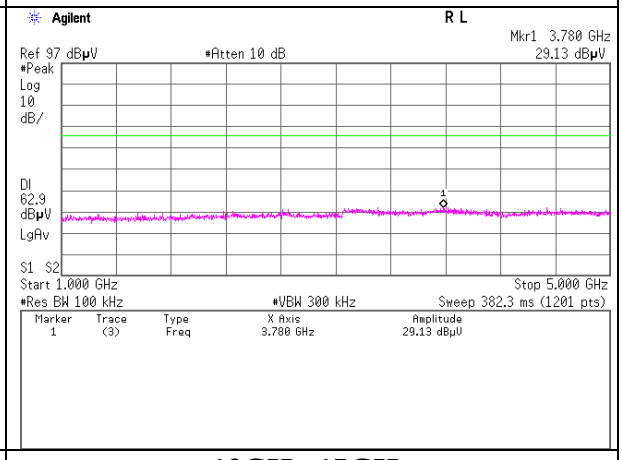
150kHz-30MHz



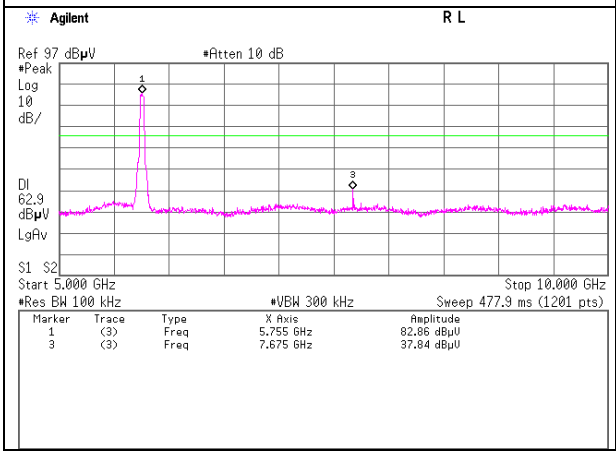
30MHz-1GHz



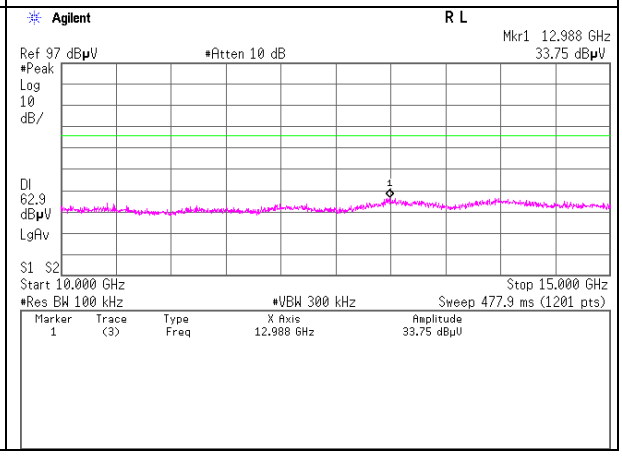
1GHz-5GHz



5GHz-10GHz



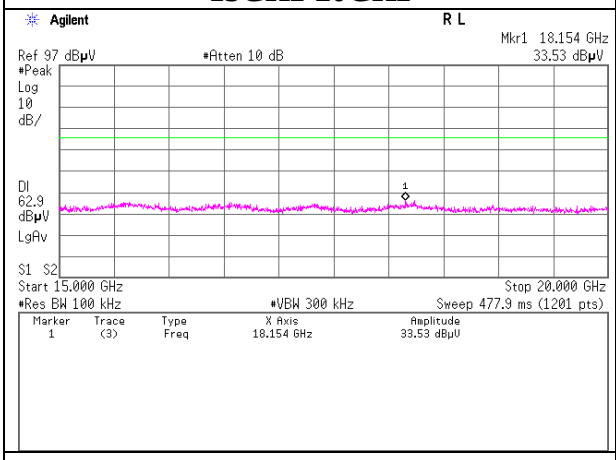
10GHz-15GHz



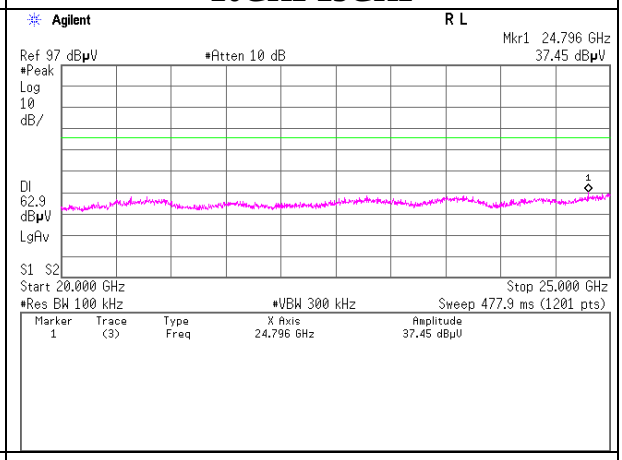
Conducted Spurious Emission

11n-40(5GHz) Tx 5755MHz, MCS 5

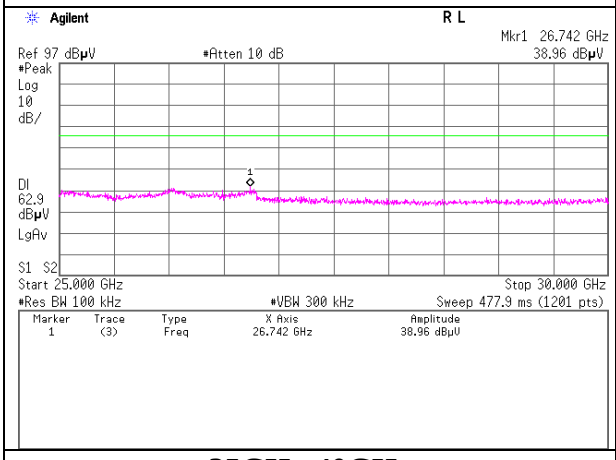
15GHz-20GHz



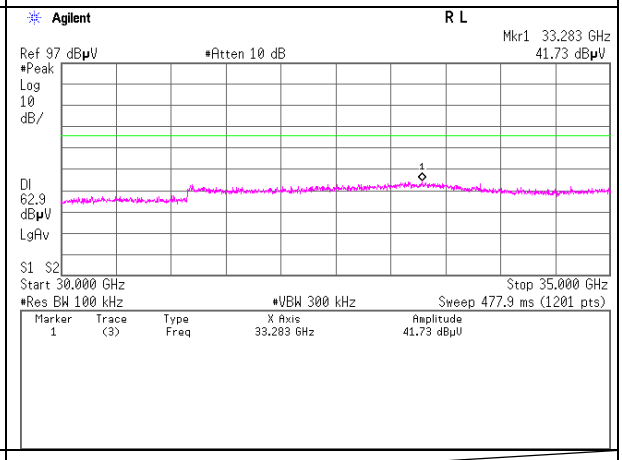
20GHz-25GHz



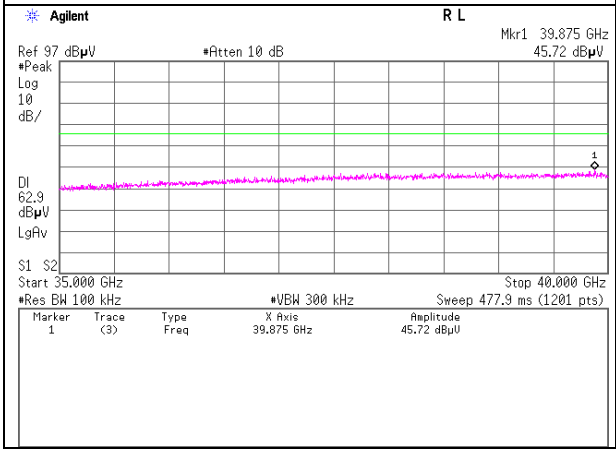
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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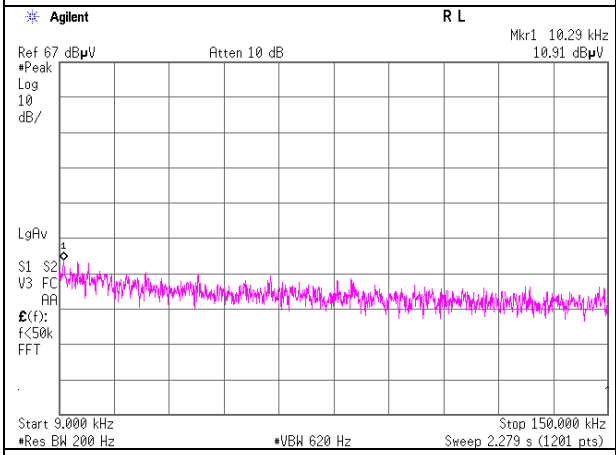
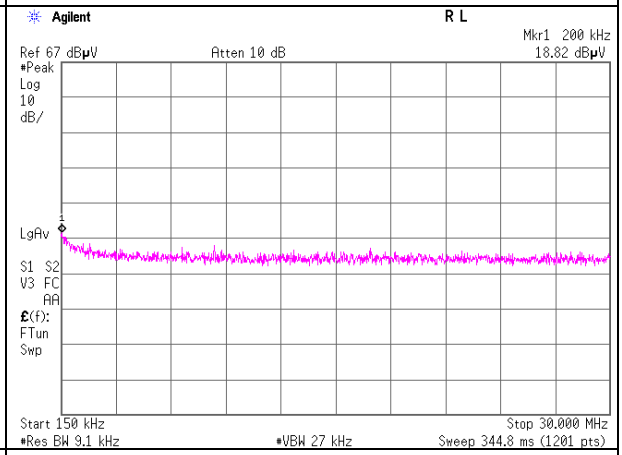
Conducted Spurious Emission

11n-40 (5GHz) Tx 5795MHz, MCS 5

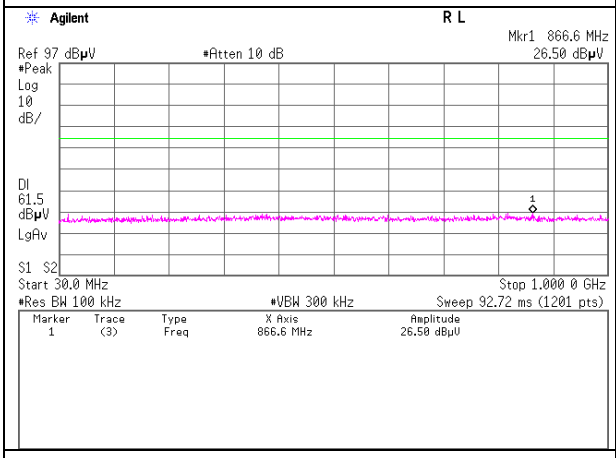
9kHz-150kHz



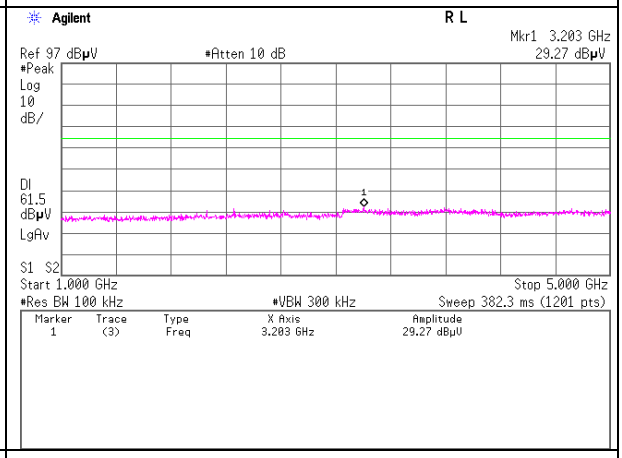
150kHz-30MHz



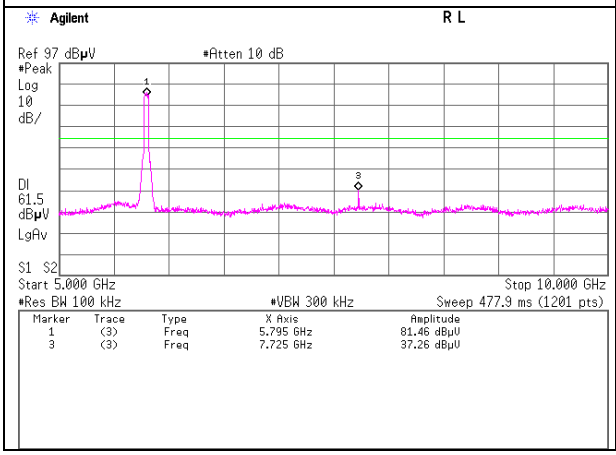
30MHz-1GHz



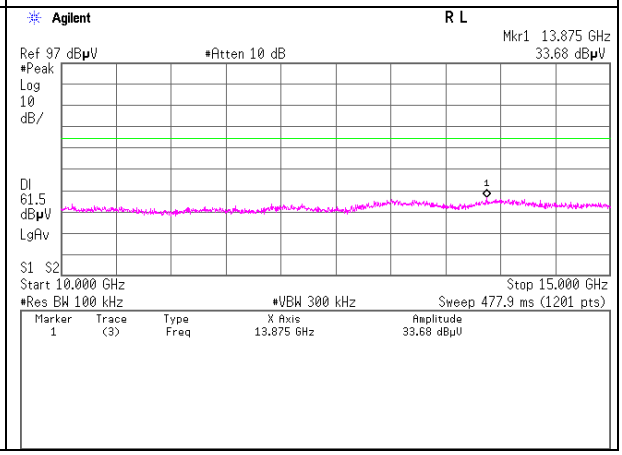
1GHz-5GHz



5GHz-10GHz



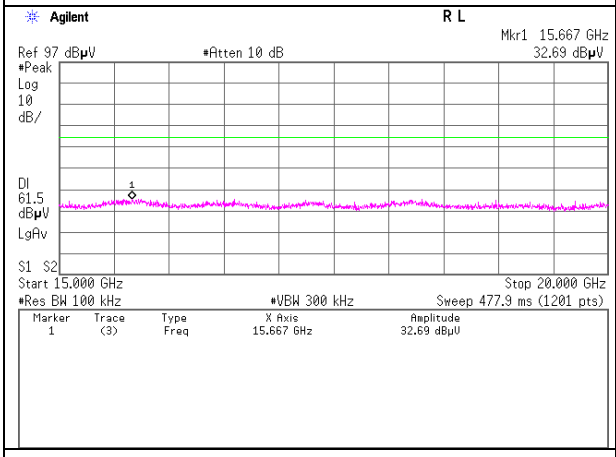
10GHz-15GHz



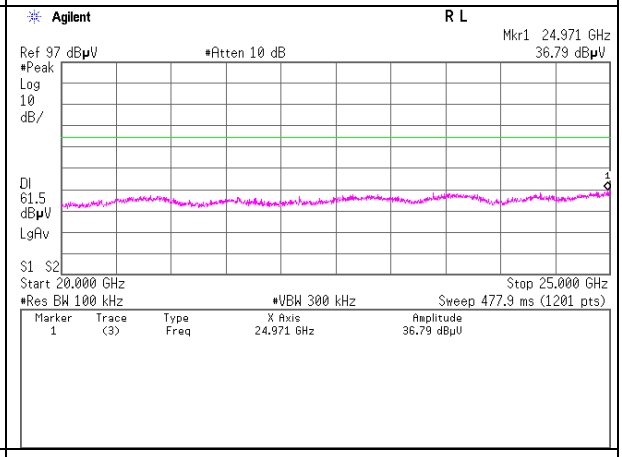
Conducted Spurious Emission

11n-40(5GHz) Tx 5795MHz, MCS 5

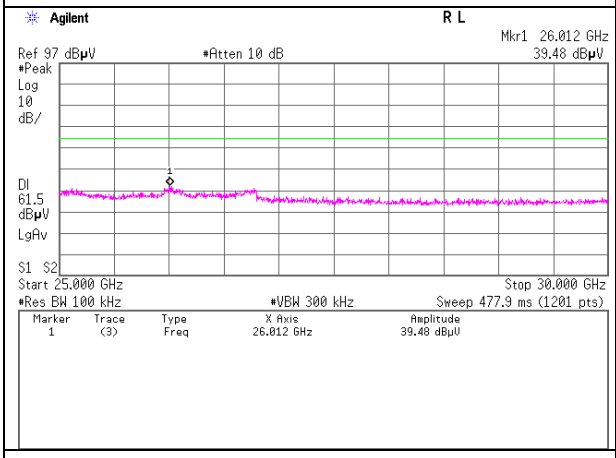
15GHz-20GHz



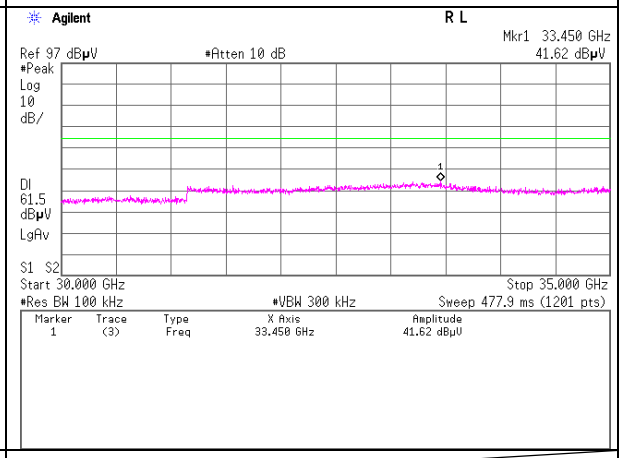
20GHz-25GHz



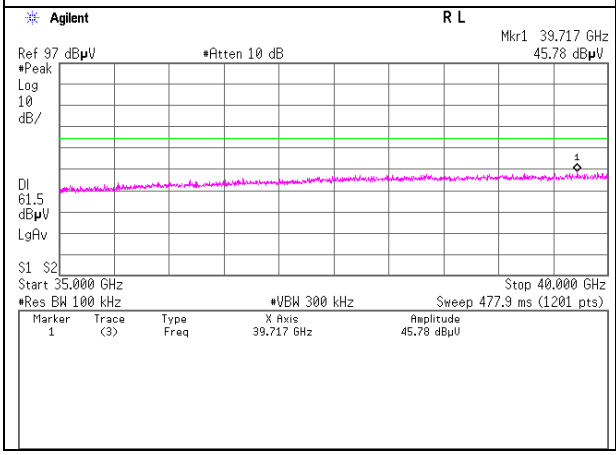
25GHz-30GHz



30GHz-35GHz



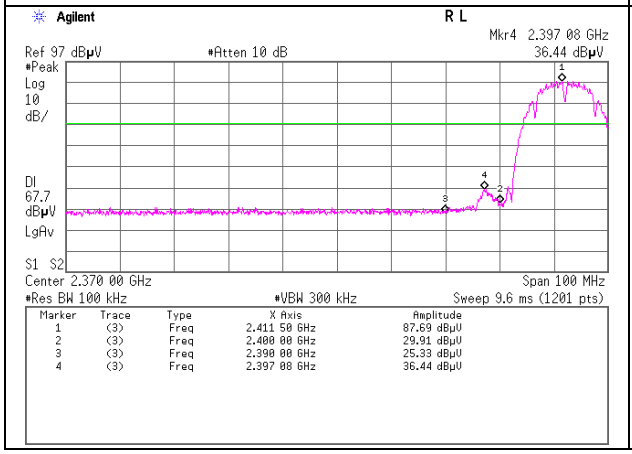
35GHz-40GHz



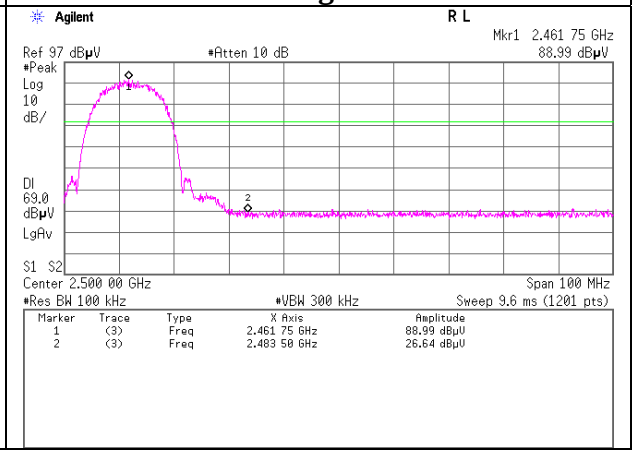
Conducted Emission Band Edge compliance

11b Tx, 1Mbps

Low

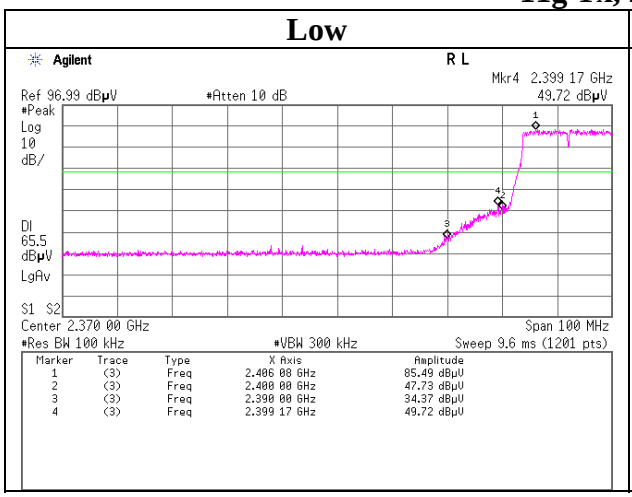


High

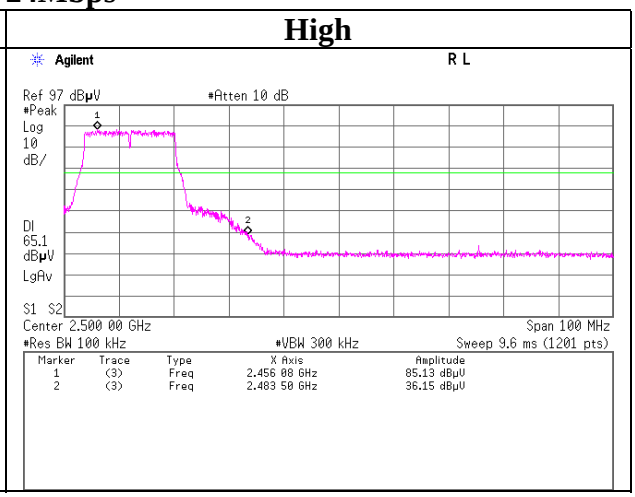


11g Tx, 24Mbps

Low



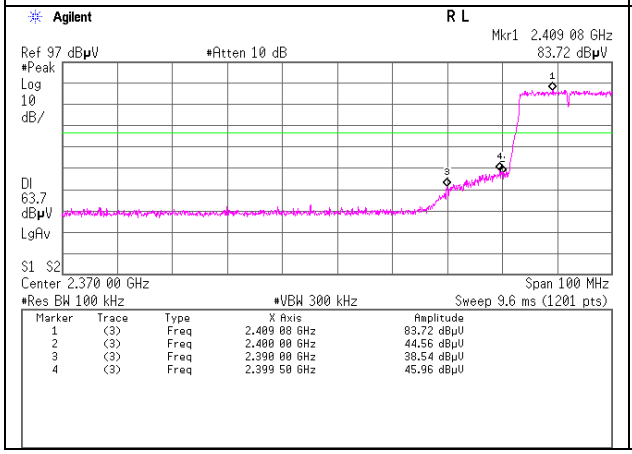
High



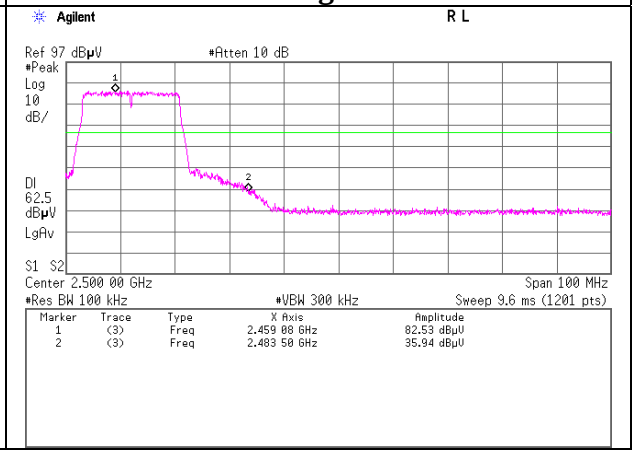
Conducted Emission Band Edge compliance

11n-20 (2.4GHz) Tx, MCS 4

Low

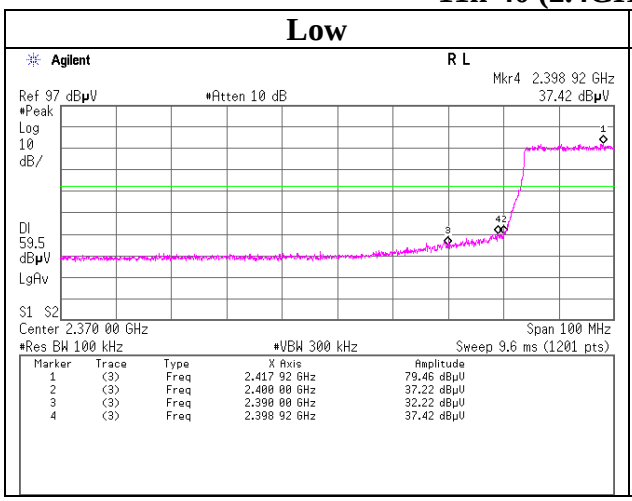


High

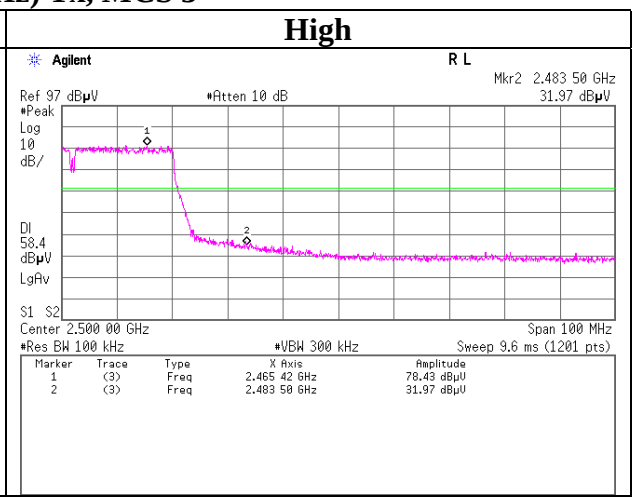


11n-40 (2.4GHz) Tx, MCS 3

Low



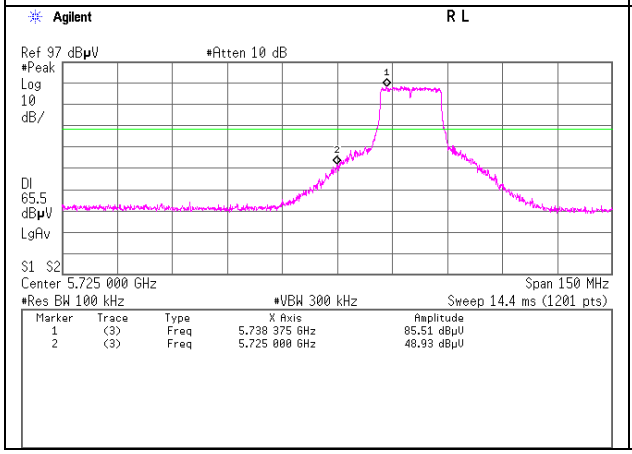
High



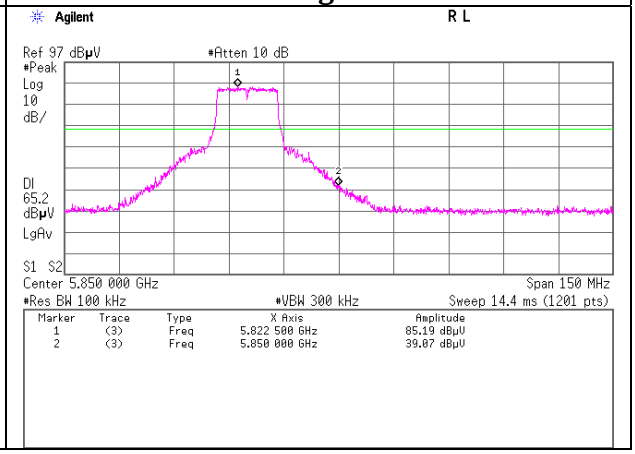
Conducted Emission Band Edge compliance

11a Tx

Low

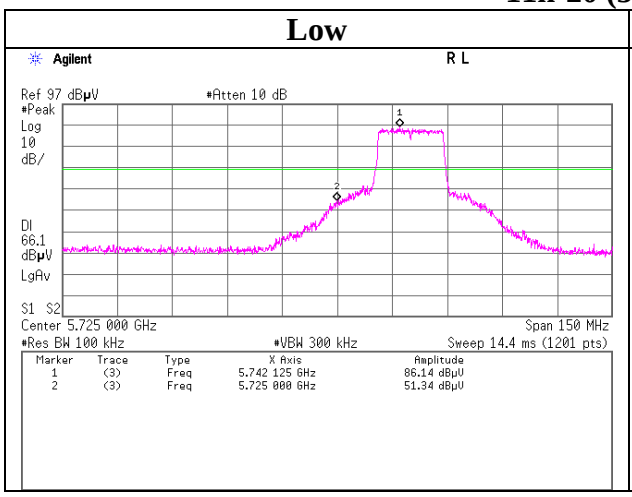


High

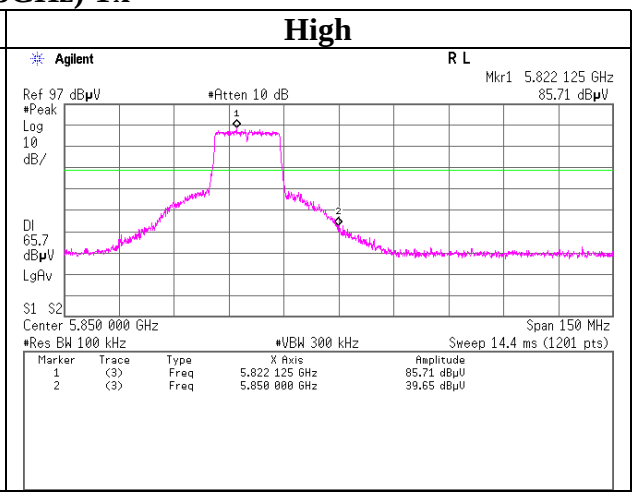


11n-20 (5GHz) Tx

Low

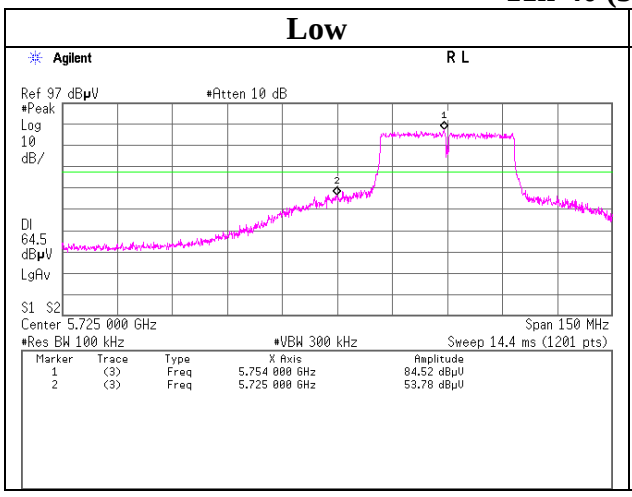


High

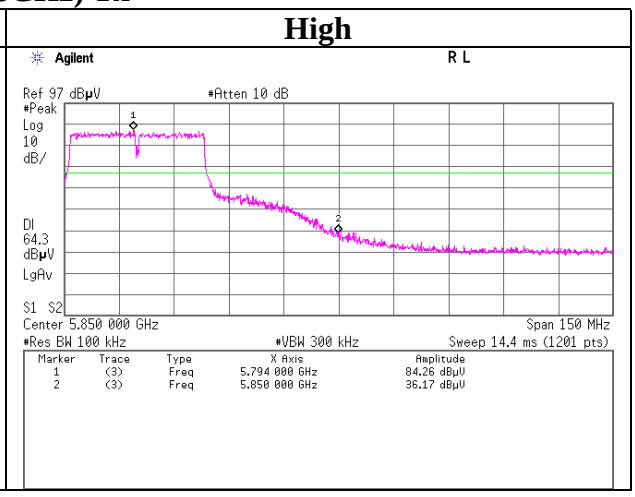


11n-40 (5GHz) Tx

Low



High



Power Density

Test place	Head Office EMC Lab. No.11 and No.6 Measurement Room	
Report No.	31IE0027-HO-01	
Date	06/23/2011	07/06/2011
Temperature/ Humidity	24deg. C / 58% RH	25deg. C / 65% RH
Engineer	Yutaka Yoshida	Takayuki Shimada
Mode	Tx	

11b, 1Mbps

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.00	-25.48	0.99	19.97	-4.52	8.00	12.52
2437.00	-25.07	0.99	19.97	-4.11	8.00	12.11
2462.00	-25.17	1.00	19.97	-4.20	8.00	12.20

11g, 24Mbps

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.00	-25.38	0.99	19.97	-4.42	8.00	12.42
2437.00	-25.39	0.99	19.97	-4.43	8.00	12.43
2462.00	-25.64	1.00	19.97	-4.67	8.00	12.67

11n-20 (2.4GHz), MCS 4

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.00	-25.92	0.99	19.97	-4.96	8.00	12.96
2437.00	-26.12	0.99	19.97	-5.16	8.00	13.16
2462.00	-26.42	1.00	19.97	-5.45	8.00	13.45

11n-40 (2.4GHz), MCS 3

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2422.00	-31.28	0.99	19.97	-10.32	8.00	18.32
2437.00	-31.18	0.99	19.97	-10.22	8.00	18.22
2452.00	-31.75	1.00	19.97	-10.78	8.00	18.78

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

Power Density

Test place	Head Office EMC Lab. No.11 Measurement Room
Report No.	31IE0027-HO-01
Date	06/23/2011
Temperature/ Humidity	24deg. C / 58% RH
Engineer	Yutaka Yoshida
Mode	Tx

11a, 6Mbps

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
5745.00	-27.22	1.53	20.01	-5.68	8.00	13.68
5785.00	-27.17	1.53	20.01	-5.63	8.00	13.63
5825.00	-27.32	1.54	20.02	-5.76	8.00	13.76

11n-20 (5GHz), MCS 0

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
5745.00	-26.98	1.53	20.01	-5.44	8.00	13.44
5785.00	-27.39	1.53	20.01	-5.85	8.00	13.85
5825.00	-27.38	1.54	20.02	-5.82	8.00	13.82

11n-40 (5GHz), MCS 5

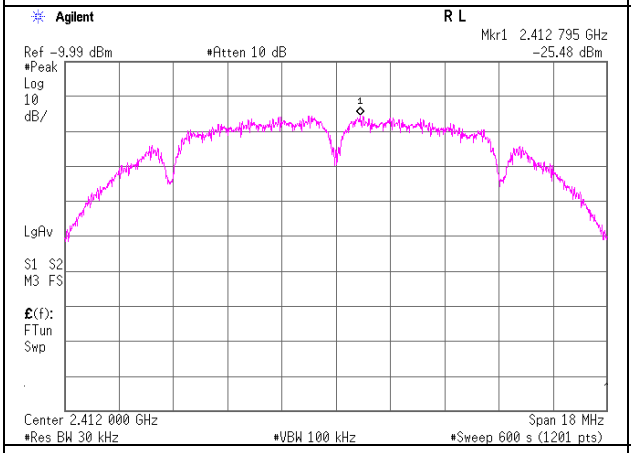
Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
5755.00	-29.27	1.53	20.01	-7.73	8.00	15.73
5795.00	-29.60	1.54	20.01	-8.05	8.00	16.05

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

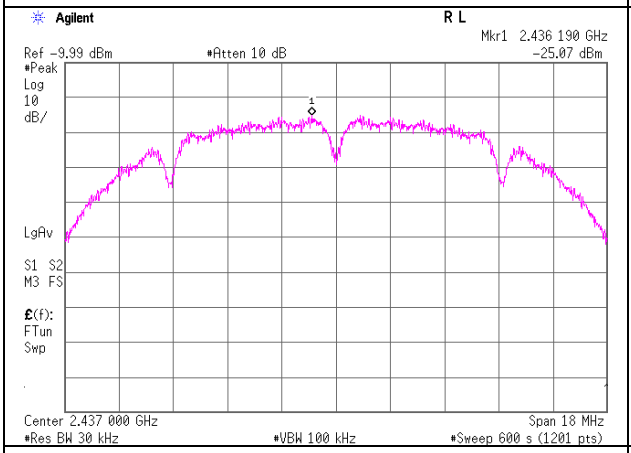
Power Density

11b, 1Mbps

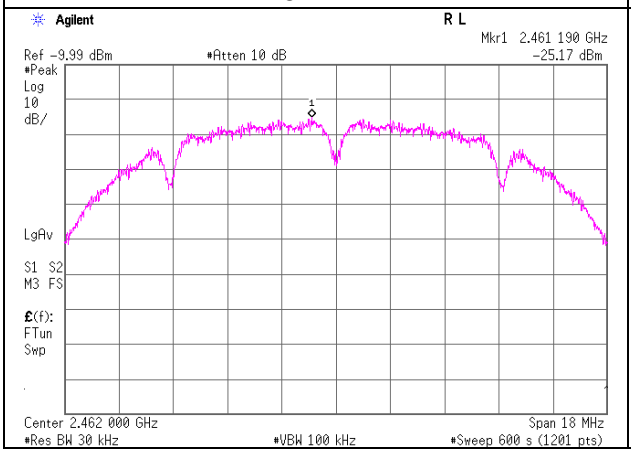
2412MHz



2437MHz

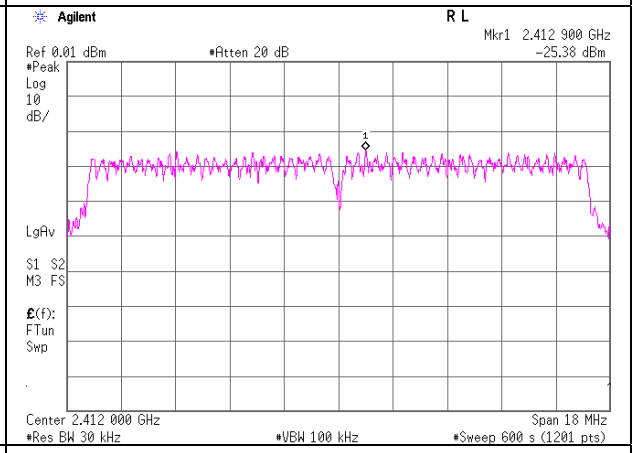


2462MHz

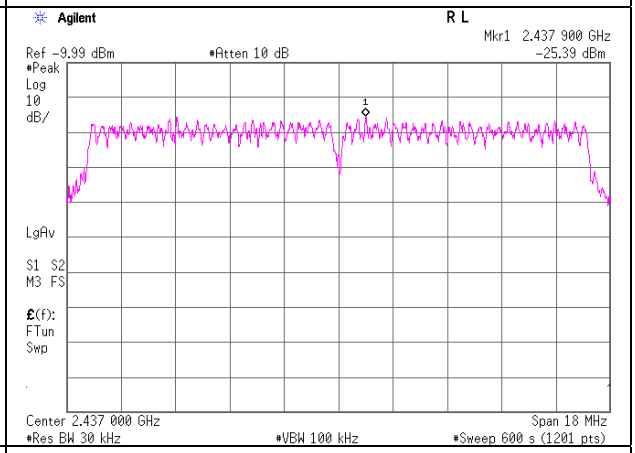


11g, 24Mbps

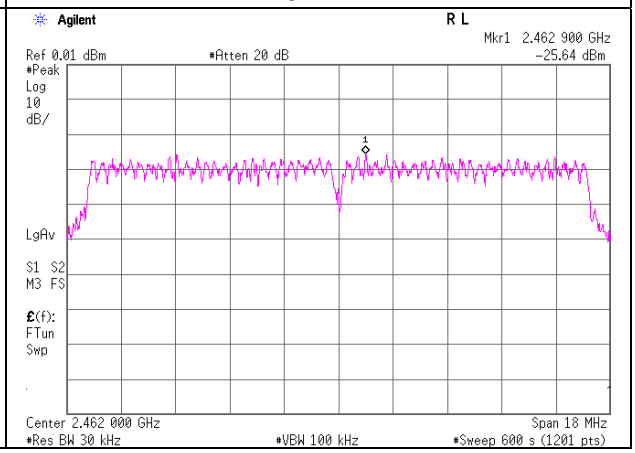
2412MHz



2437MHz



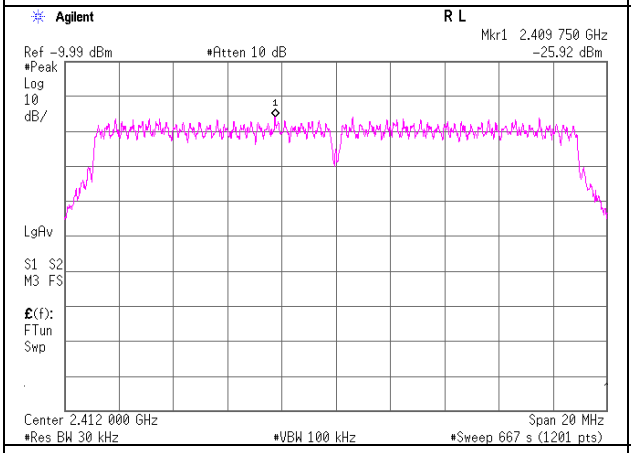
2462MHz



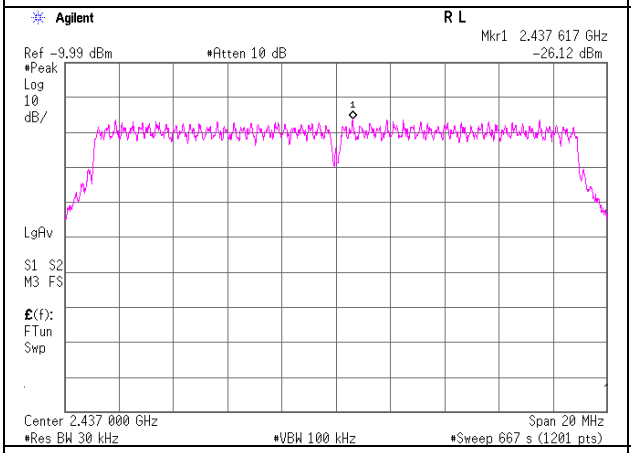
Power Density

11n-20 (2.4GHz), MCS 4

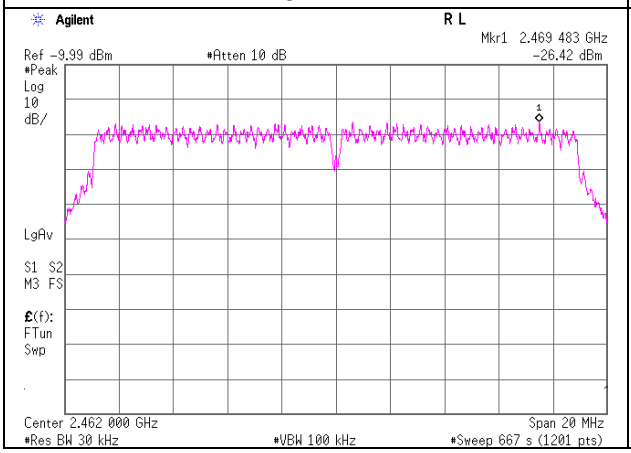
2412MHz



2437MHz

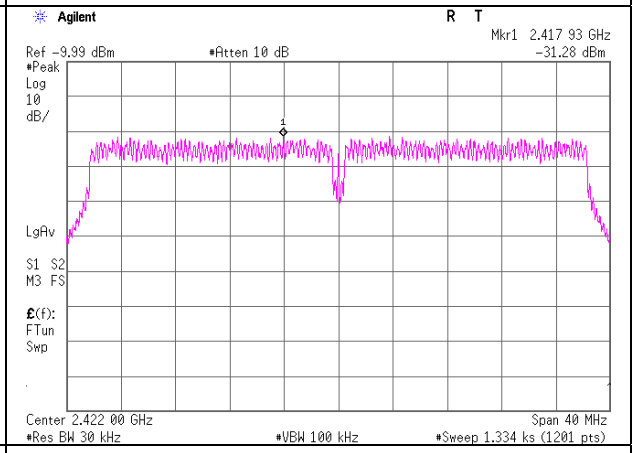


2462MHz

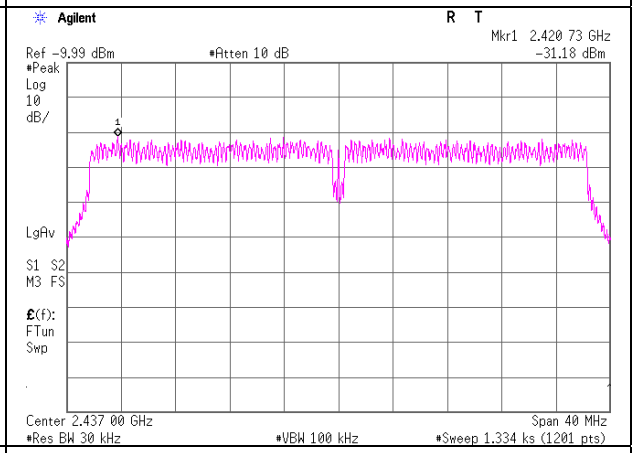


11n-40 (2.4GHz), MCS 3

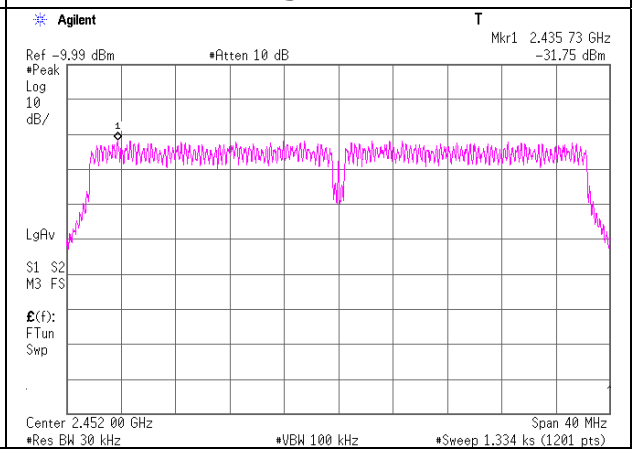
2422MHz



2437MHz



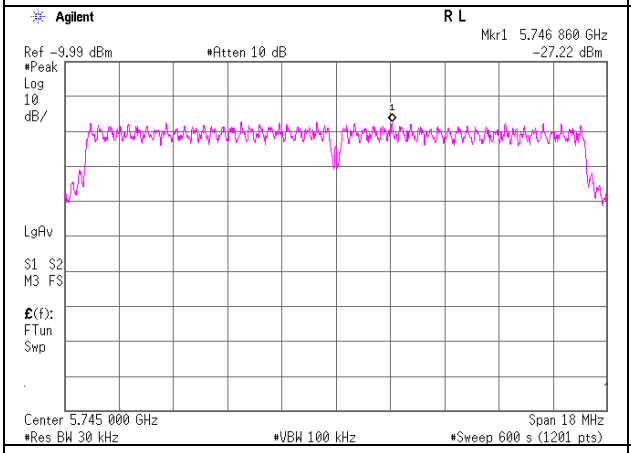
2452MHz



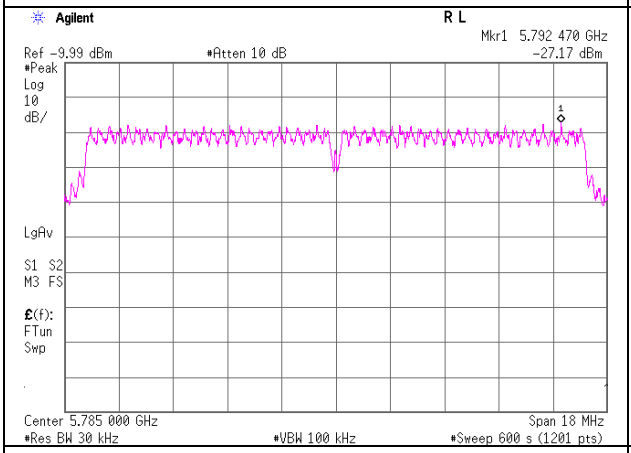
Power Density

11a, 6Mbps

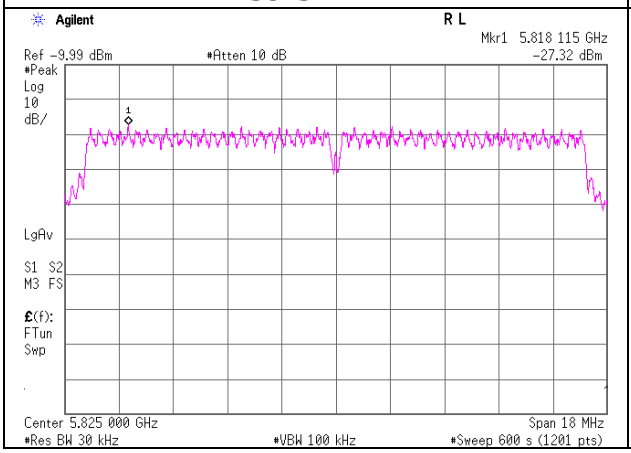
5745MHz



5785MHz

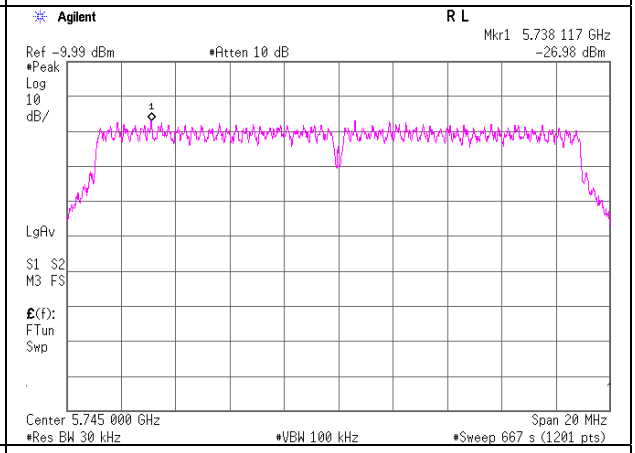


5825MHz

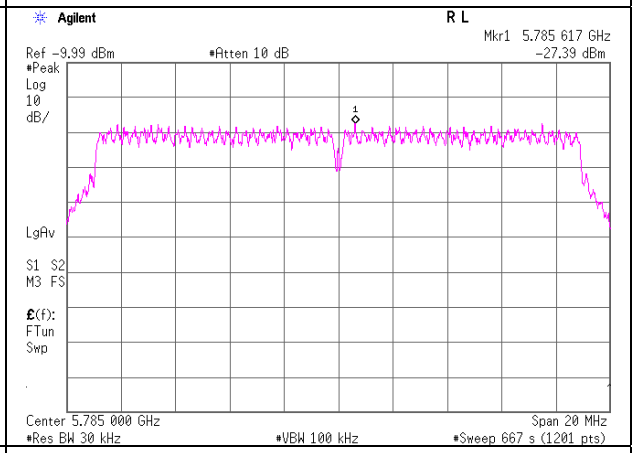


11n-20 (5GHz), MCS 0

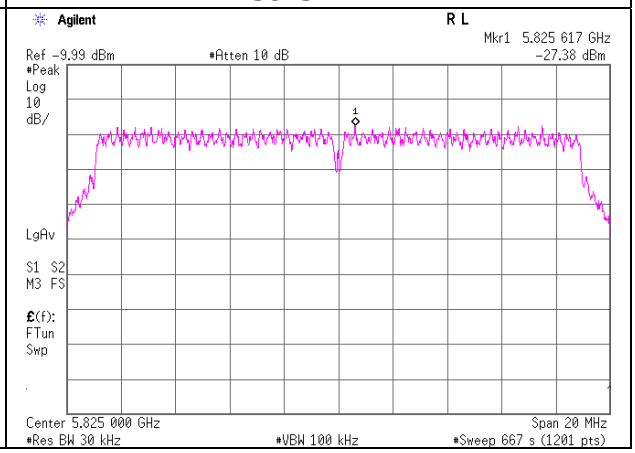
5745MHz



5785MHz



5825MHz



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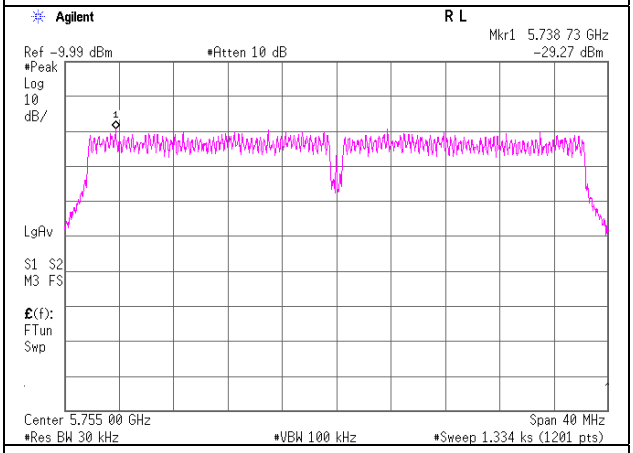
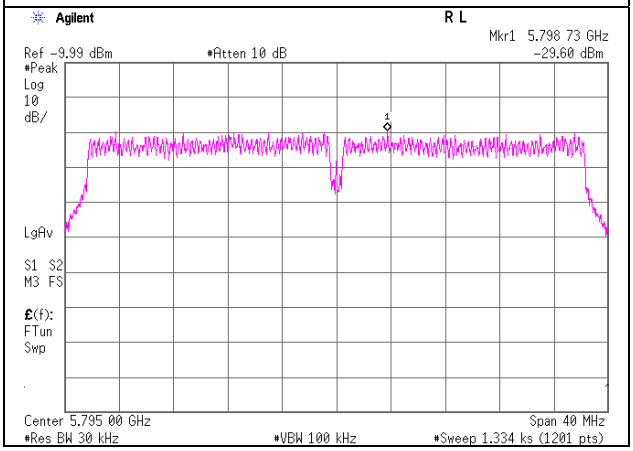
Power Density

11n-40 (5GHz), MCS 5

5755MHz



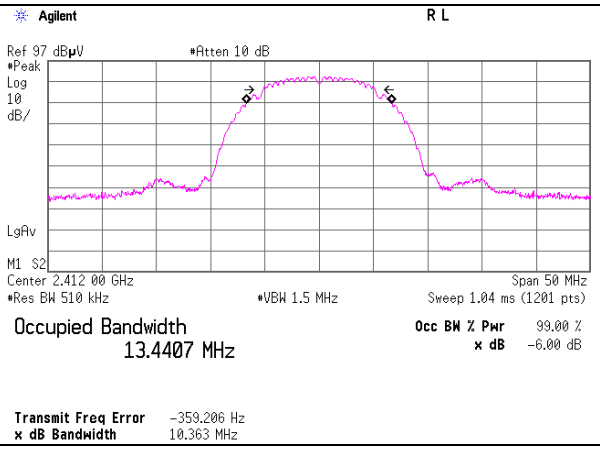
5795MHz



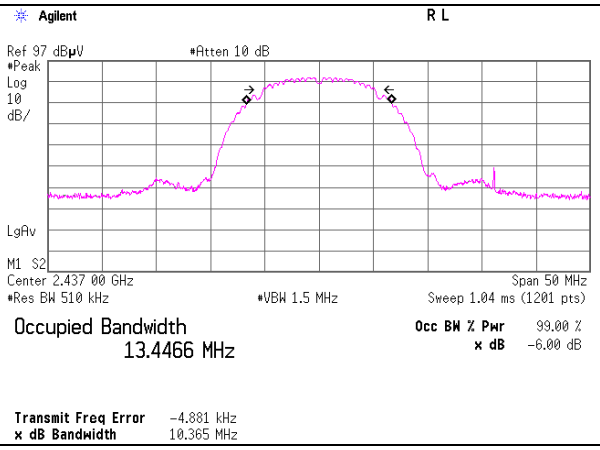
99%Occupied Bandwidth

11b, 1Mbps

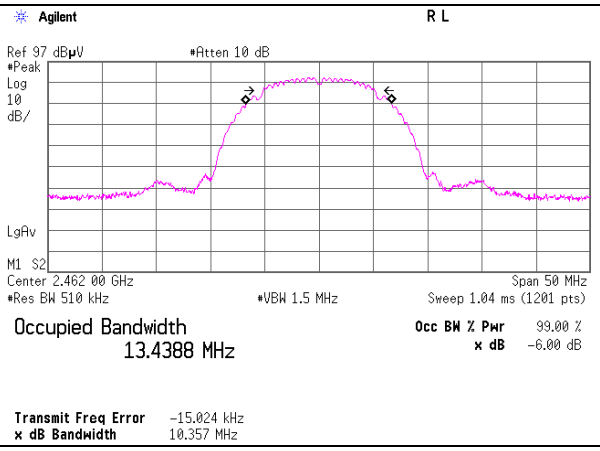
2412MHz



2437MHz

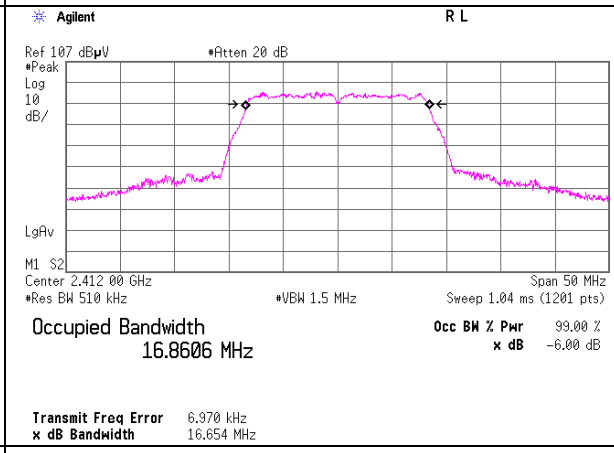


2462MHz

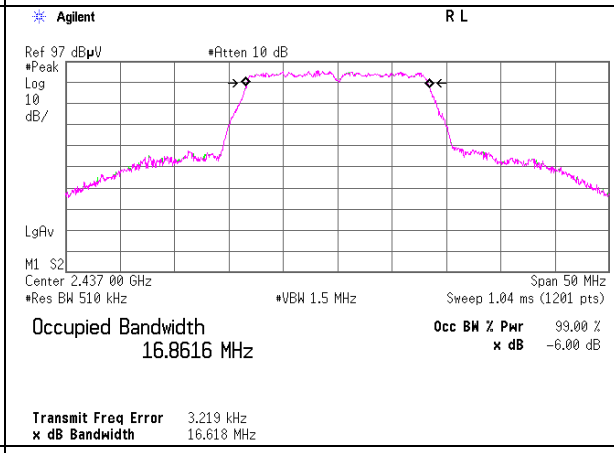


11g, 24Mbps

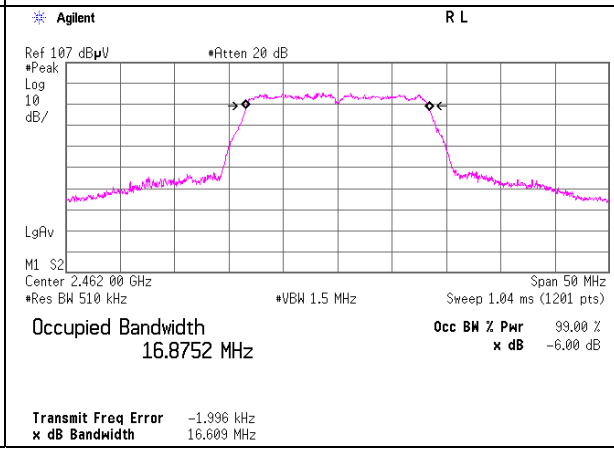
2412MHz



2437MHz



2462MHz



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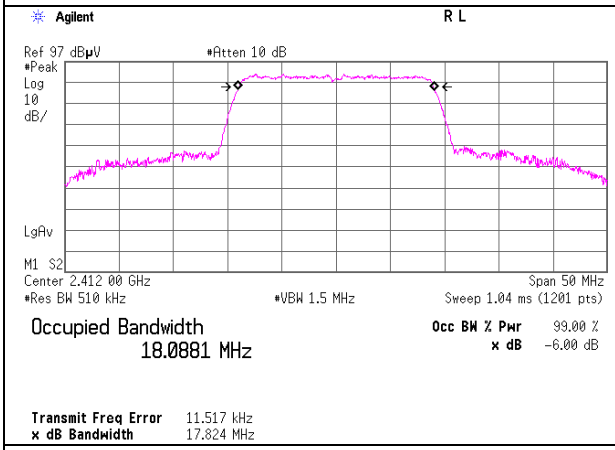
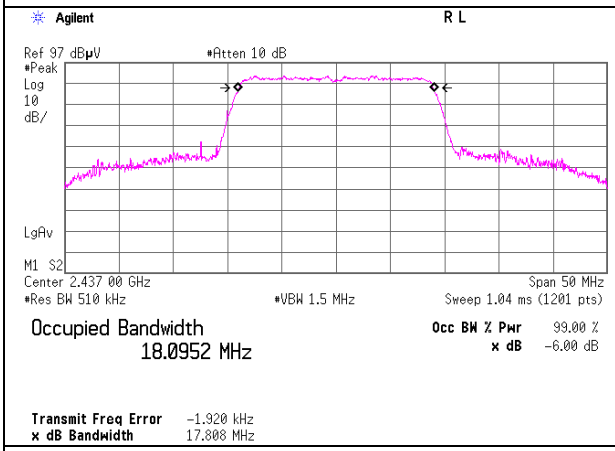
99% Occupied Bandwidth

11n-20 (2.4GHz), MCS 4

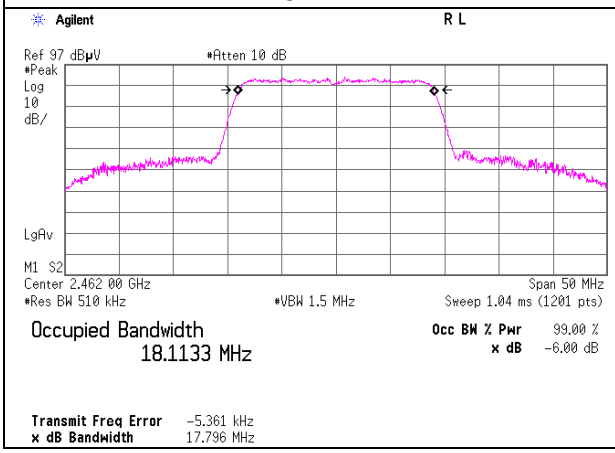
2412MHz



2437MHz

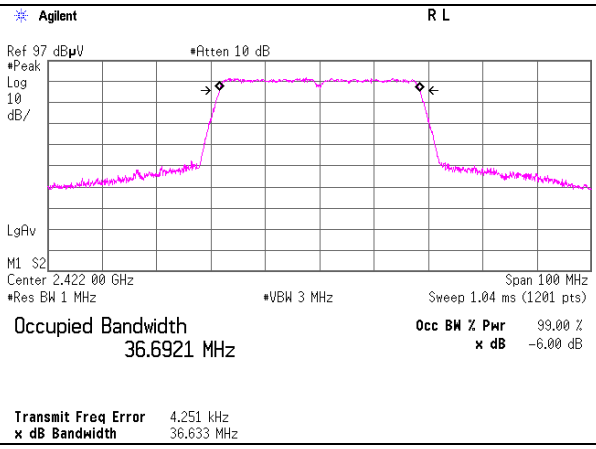


2462MHz

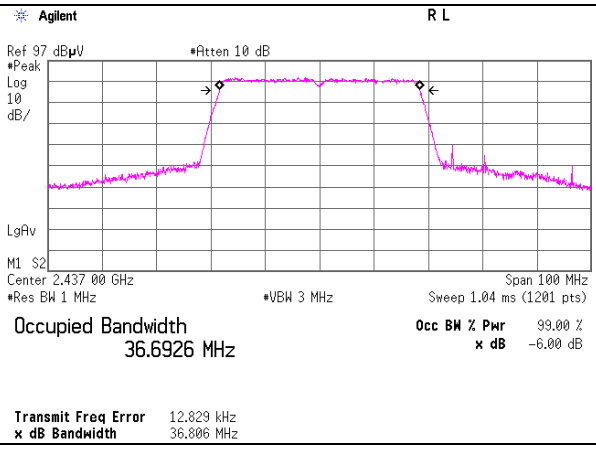


11n-40 (2.4GHz), MCS 3

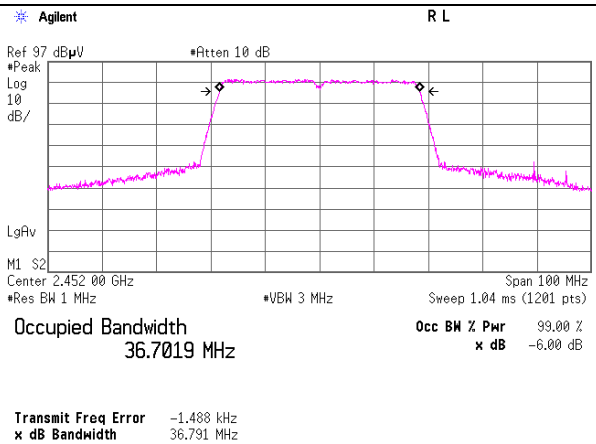
2422MHz



2437MHz



2452MHz



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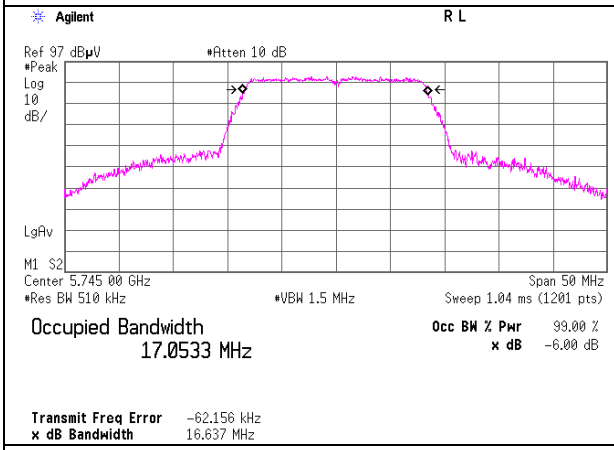
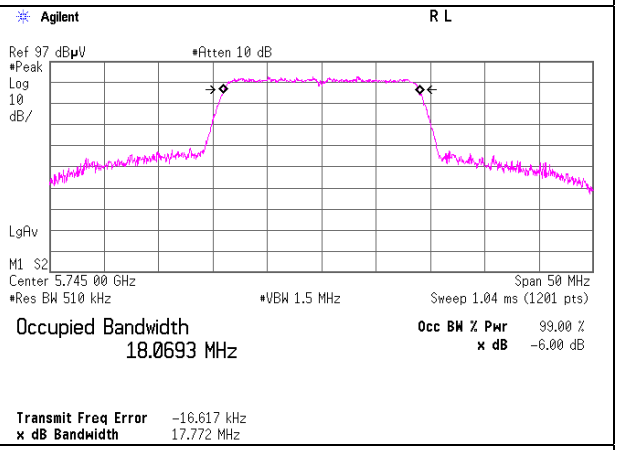
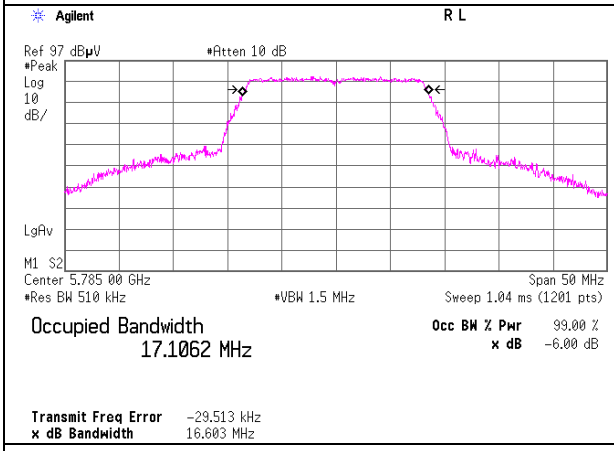
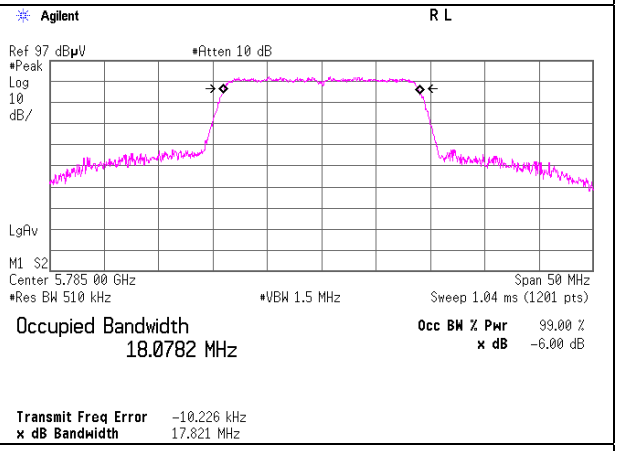
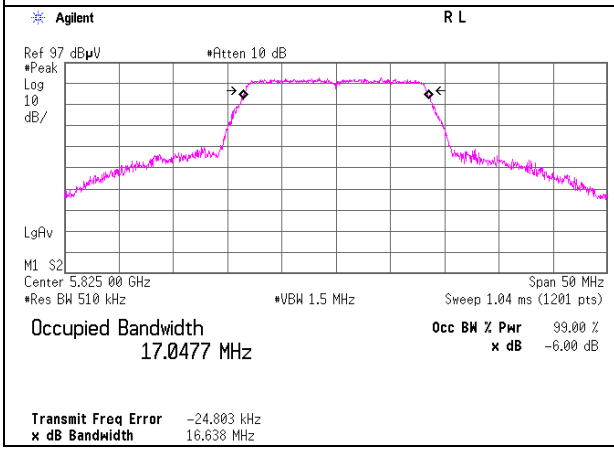
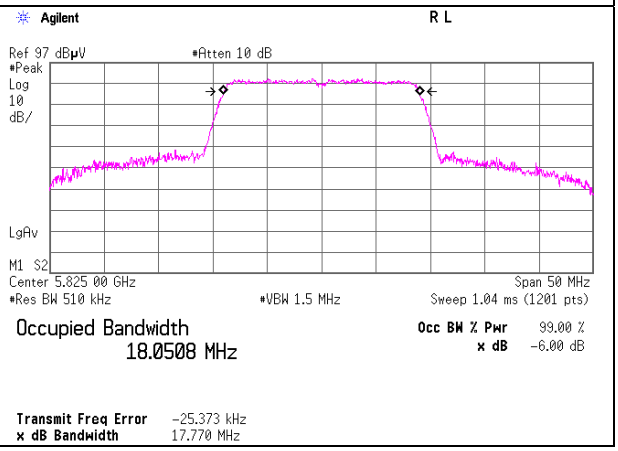
99% Occupied Bandwidth

11a, 6Mbps	11n-20 (5GHz), MCS 0
5745MHz	**5745MHz**
	
5785MHz	**5785MHz**
	
5825MHz	**5825MHz**
	

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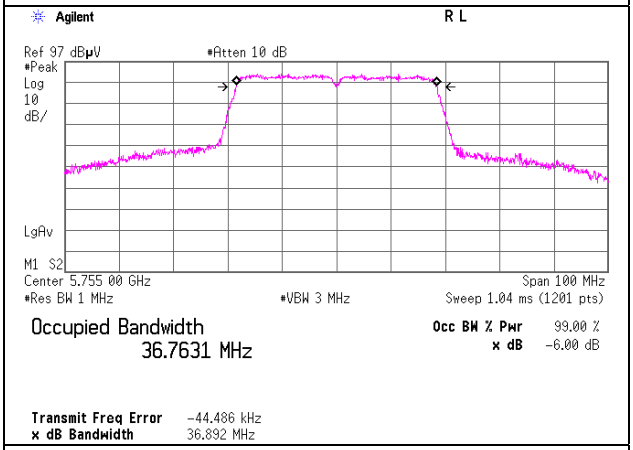
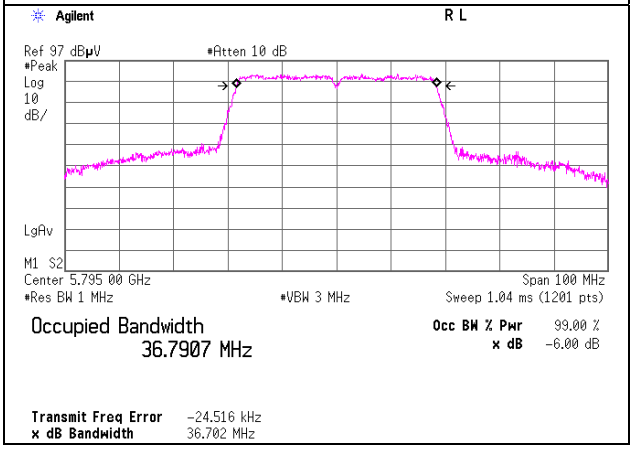
99% Occupied Bandwidth

11n-40 (5GHz), MCS 5

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)
MPM-12	Power Meter	Anritsu	ML2495A	0825002	AT	2010/08/20 * 12
MPSE-17	Power sensor	Anritsu	MA2411B	0738285	AT	2010/08/20 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2011/03/14 * 12
MCC-46	Microwave Cable	Murata	MXGS83RK3000	-	AT	2010/07/26 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-201	-	AT	2011/02/23 * 12
MSA-06	Spectrum Analyzer	Agilent	E4407B	MY45107638	AT	2011/04/15 * 12
MAT-23	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2011/03/14 * 12
MAT-24	Attenuator(10dB)(above 1GHz)	Agilent	8493C	71389	AT	2011/06/23 * 12
MCC-45	Microwave Cable	Murata	MXGS83RK3000	-	AT	2010/07/26 * 12
MOS-04	Digital Humidity Indicator	N.T	NT-1800	MOS04	AT	2011/02/23 * 12
MAT-21	Attenuator(20dB)(above 1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-120	901247	AT	2011/01/06 * 12
MOS-19	Thermo-Hygrometer	Custom	CTH-201	0001	AT	2010/12/13 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	AT/RE	2011/04/08 * 12
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2011/03/01 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	RE	2011/02/23 * 12
MJM-07	Measure	PROMART	SEN1955	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	RE	2010/11/30 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2010/08/08 * 12
MCC-56	Microwave Cable	Suhner	SUCOFLEX104	270875/4(1m) / 284655(5m)	RE	2011/03/02 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	MY39500780	RE	2011/03/10 * 12
MHF-06	High Pass Filter 3.5-24GHz	TOKIMEC	TF323DCA	601	RE	2011/05/16 * 12
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE/CE	2011/02/22 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE/CE	2011/02/23 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE/CE	
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2011/05/23 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2011/03/10 * 12
MCC-76	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278967/4	RE	2010/12/03 * 12
MHF-19	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCA	602	RE	2010/09/21 * 12
MHF-22	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCB	602	RE	2011/01/06 * 12
MAEC-02	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	RE	2010/09/01 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	RE	2011/02/23 * 12
MJM-05	Measure	PROMART	SEN1955	-	RE	
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	RE	2011/01/16 * 12

EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	RE	2010/09/30 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	148048-143(1m) / 292410(5m)	RE	2010/09/30 * 12
MHF-16	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCA	7001	RE	2010/09/21 * 12
MCC-77	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278942/4	RE	2010/12/02 * 12
MHA-02	Horn Antenna 18-26.5GHz	EMCO	3160-09	1265	RE	2011/01/16 * 12
MHA-04	Horn Antenna 26.5-40GHz	EMCO	3160-10	1140	RE	2010/09/25 * 12
MCC-54	Microwave Cable	Suhner	SUCOFLEX101	2873(1m) / 2876(5m)	RE	2011/03/02 * 12
MPA-03	Microwave System Power Amplifier	Agilent	83050A	3950M00205	RE	2011/06/15 * 12
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170306	RE	2011/05/23 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2010/10/11 * 12
MAT-09	Attenuator(6dB)	Weinschel Corp	2	BK7973	RE	2010/11/05 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2010/07/06 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2011/03/04 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2010/10/11 * 12
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	CE	2010/11/18 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE/CE	2010/08/23 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE	2011/02/22 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(3m)/sucoform141-PE(1m)/421-010(1.5m)/RFM-E321(Switcher)	-/00640	CE	2010/07/23 * 12
MAT-66	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2011/02/22 * 12

The expiration date of the calibration is the end of the expired month.
All equipment is calibrated with valid calibrations. Each measurement data 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