Elliott

EMC Test Data

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		-
Emissions Standard(s):	FCC	Class:	-
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Intel Corporation

Model

533AN-MMW(MMC)

Date of Last Test: 4/24/2008

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11b Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 19 °C
Rel. Humidity: 43 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11b Chain A	1 2412MHz	25. 0	16. 8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	49.4 dBuV/m @ 2389.3 MHz (-4.6dB)
1b	802.11b Chain A	11 2462MHz	25 .5	16. 8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	48.7 dBuV/m @ 2484.7 MHz (-5.3dB)
2a	802.11b Chain B	1 2412MHz	25. 0	17. 4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	49.7 dBuV/m @ 2389.2 MHz (-4.3dB)
2b	802.11b Chain B	11 2462MHz	26. 0	17. 7	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.5 dBuV/m @ 2488.2 MHz (-2.5dB)
3a	802.11b Chain C	1 2412MHz	23. 0	16. 5	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.9 dBuV/m @ 2386.2 MHz (-2.1dB)
3b	802.11b Chain C	11 2462MHz	24. 5	16. 9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.1 dBuV/m @ 2488.2 MHz (-2.9dB)

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11b - Chain A

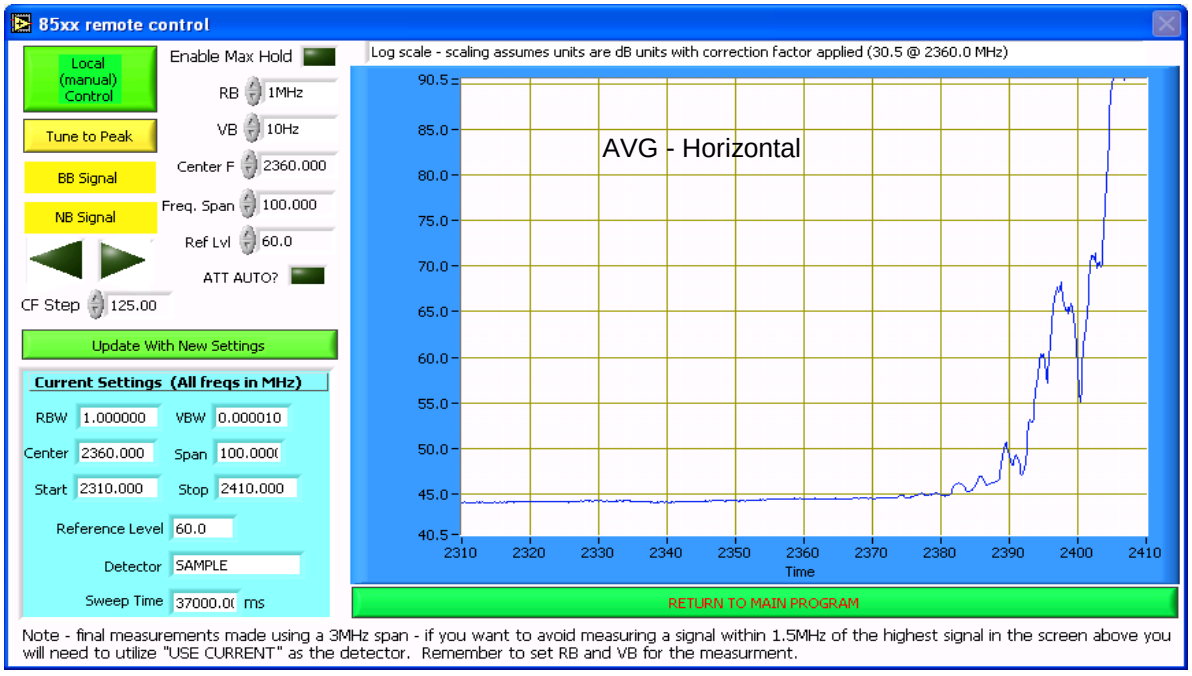
Date of Test: 3/27/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #5

Run #1a: Low Channel @ 2412 MHz

Power Setting: 25.0 Average power: 16.8 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2410.590	101.4	V	-	-	AVG	202	1.0	RB = 1MHz, VB = 10Hz
2410.590	104.4	V	-	-	PK	202	1.0	RB = VB = 1MHz
2412.650	106.3	H	-	-	AVG	253	1.0	RB = 1MHz, VB = 10Hz
2412.650	109.3	H	-	-	PK	253	1.0	RB = VB = 1MHz



Plot of band edge, average measurement ... for reference only

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.000	59.4	H	74.0	-14.6	PK	251	1.0	GC: 25.0 , AP : 16.8
2389.250	49.4	H	54.0	-4.6	AVG	251	1.0	GC: 25.0 , AP : 16.8
2389.270	54.5	H	54.0	0.5	AVG	251	1.0	GC: 25.5
2389.370	58.8	H	74.0	-15.2	PK	251	1.0	GC: 24.5,
2389.160	46.4	H	54.0	-7.6	AVG	251	1.0	GC: 24.5,

Run #1b: High Channel @ 2462 MHz

Power Setting: 25.5 Average power: 16.8 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2464.770	102.6	V	54.0	48.6	AVG	241	1.3	RB = 1MHz, VB = 10Hz
2464.770	105.6	V	74.0	31.6	PK	241	1.3	RB = VB = 100kHz
2462.940	105.2	H	54.0	51.2	AVG	241	1.5	RB = 1MHz, VB = 10Hz
2462.940	108.1	H	74.0	34.1	PK	241	1.5	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.320	59.4	V	74.0	-14.6	PK	241	1.3	GC: 25.5 , AP : 16.8
2484.680	46.8	V	54.0	-7.2	AVG	241	1.3	GC: 25.5 , AP : 16.8
2484.690	48.7	H	54.0	-5.3	AVG	241	1.5	GC: 25.5 , AP : 16.8
2485.260	59.6	H	74.0	-14.4	PK	241	1.5	GC: 25.5 , AP : 16.8
2485.120	62.4	H	74.0	-11.6	PK	241	1.5	GC: 26
2484.740	54.9	H	54.0	0.9	AVG	241	1.5	GC: 26
2485.410	57.7	H	74.0	-16.3	PK	241	1.0	GC: 25.0,
2484.520	45.5	H	54.0	-8.5	AVG	241	1.0	GC: 25.0,

Note 2:	Results for information only - used to determine highest power level at which devices complies.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11b - Chain B

Date of Test: 3/28/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 5

Run #2a: Low Channel @ 2412 MHz

Power Setting: 24.5 Average power: 16.7 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2410.900	107.6	H	-	-	AVG	157	1.0	RB = 1MHz, VB = 10Hz
2410.900	110.7	H	-	-	PK	157	1.0	RB = VB = 1MHz
2412.660	101.9	V	-	-	AVG	78	1.0	RB = 1MHz, VB = 10Hz
2412.660	104.8	V	-	-	PK	78	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.340	60.5	H	74.0	-13.5	PK	156	1.0	GC: 25 , AP : 17.4
2389.160	49.7	H	54.0	-4.3	AVG	156	1.0	GC: 25 , AP : 17.4
2389.880	57.5	H	74.0	-16.5	PK	172	1.0	GC: 24.5 , AP : 16.7
2389.700	46.9	H	54.0	-7.1	AVG	162	1.0	GC: 24.5 , AP : 16.7
2389.380	63.1	H	74.0	-10.9	PK	158	1.0	GC: 25.5 , AP : 18.1
2389.190	55.1	H	54.0	1.1	AVG	158	1.0	GC: 25.5 , AP : 18.1

Run #2b: High Channel @ 2462 MHz

Power Setting: 25 Average power: 16.5 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.010	101.1	V	-	-	AVG	85	1.0	RB = 1MHz, VB = 10Hz
2463.010	104.0	V	-	-	PK	85	1.0	RB = VB = 1MHz
2462.950	107.2	H	-	-	AVG	103	1.0	RB = 1MHz, VB = 10Hz
2462.950	110.0	H	-	-	PK	103	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2488.090	61.9	H	74.0	-12.1	PK	113	1.0	GC: 26 , AP : 17.7
2488.150	51.5	H	54.0	-2.5	AVG	115	1.0	GC: 26 , AP : 17.7
2487.820	45.4	V	54.0	-8.6	AVG	88	1.0	GC: 25 , AP : 16.5
2488.060	47.8	H	54.0	-6.2	AVG	115	1.0	GC: 25 , AP : 16.5

Note 2: Results for information only - used to determine highest power level at which devices complies.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11b - Chain C

Date of Test: 3/28/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 5

Run #3a: Low Channel @ 2412 MHz

Power Setting: 23 Average power: 16.5 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2412.880	99.1	V	-	-	AVG	178	1.0	RB = 1MHz, VB = 10Hz
2412.880	102.1	V	-	-	PK	178	1.0	RB = VB = 1MHz
2411.060	110.5	H	-	-	AVG	120	1.0	RB = 1MHz, VB = 10Hz
2411.060	113.3	H	-	-	PK	120	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2386.020	62.6	H	74.0	-11.4	PK	119	1.0	GC: 23 , AP : 16.5
2386.160	51.9	H	54.0	-2.1	AVG	118	1.0	GC: 23 , AP : 16.5

Run #3b: High Channel @ 2462 MHz

Power Setting: 24 Average power: 16.5 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.640	99.1	V	-	-	AVG	297	1.0	RB = 1MHz, VB = 10Hz
2460.640	102.1	V	-	-	PK	297	1.0	RB = VB = 1MHz
2460.650	108.5	H	-	-	AVG	119	1.0	RB = 1MHz, VB = 10Hz
2460.650	111.5	H	-	-	PK	119	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2488.890	60.9	H	74.0	-13.1	PK	123	1.0	GC: 24.5 , AP : 16.9
2488.240	51.1	H	54.0	-2.9	AVG	121	1.0	GC: 24.5 , AP : 16.9
2488.090	59.2	H	74.0	-14.8	PK	135	1.0	GC: 24 , AP : 16.5
2487.890	49.4	H	54.0	-4.6	AVG	123	1.0	GC: 24 , AP : 16.5

Note 2: Results for information only - used to determine highest power level at which devices complies.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11b Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 34 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11b Chain A	1 (2412)	24. 5	16. 7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	48.8dBµV/m @ 9647.9MHz (-5.2dB)
1b	802.11b Chain A	6 (2437)	24. 5	16. 6	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	49.9dBµV/m @ 4874.0MHz (-4.1dB)
1c	802.11b Chain A	11 (2462)	25. 0	16. 5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	51.6dBµV/m @ 9847.9MHz (-2.4dB)
2a	802.11b Chain B	1 (2412)	24. 0	16. 5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	57.8dBµV/m @ 9647.9MHz (-16.2dB)
2b	802.11b Chain B	6 (2437)	24. 5	16. 5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	46.9dBµV/m @ 4874.0MHz (-7.1dB)
2c	802.11b Chain B	11 (2462)	25. 0	16. 7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	47.8dBµV/m @ 4924.0MHz (-6.2dB)
3a	802.11b Chain C	1 (2412)	23. 0	16. 7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	48.6dBµV/m @ 9648.1MHz (-5.4dB)
3b	802.11b Chain C	6 (2437)	23. 0	16. 5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	48.3dBµV/m @ 9748.0MHz (-5.7dB)
3c	802.11b Chain C	11 (2462)	23. 5	16. 5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	50.9dBµV/m @ 9848.0MHz (-3.1dB)

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11b Chain A

Run # 1a : Low Channel @ 2412 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2412.520	107.5	H	-	-	Pk	206	1.0	RB = VB = 100kHz
2411.490	101.6	V	-	-	Pk	271	1.0	RB = VB = 100kHz

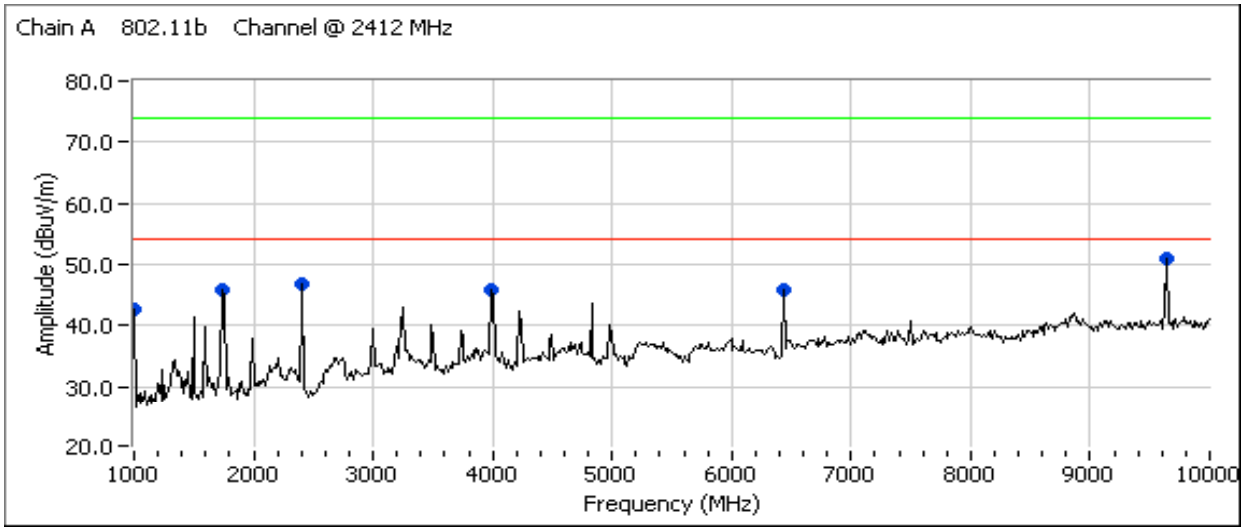
Fundamental emission level @ 3m in 100kHz RBW:	102.2	dBµV/m	
Limit for emissions outside of restricted bands:	72.2	dBµV/m	Limit is -30dBc (UNII power measurement)

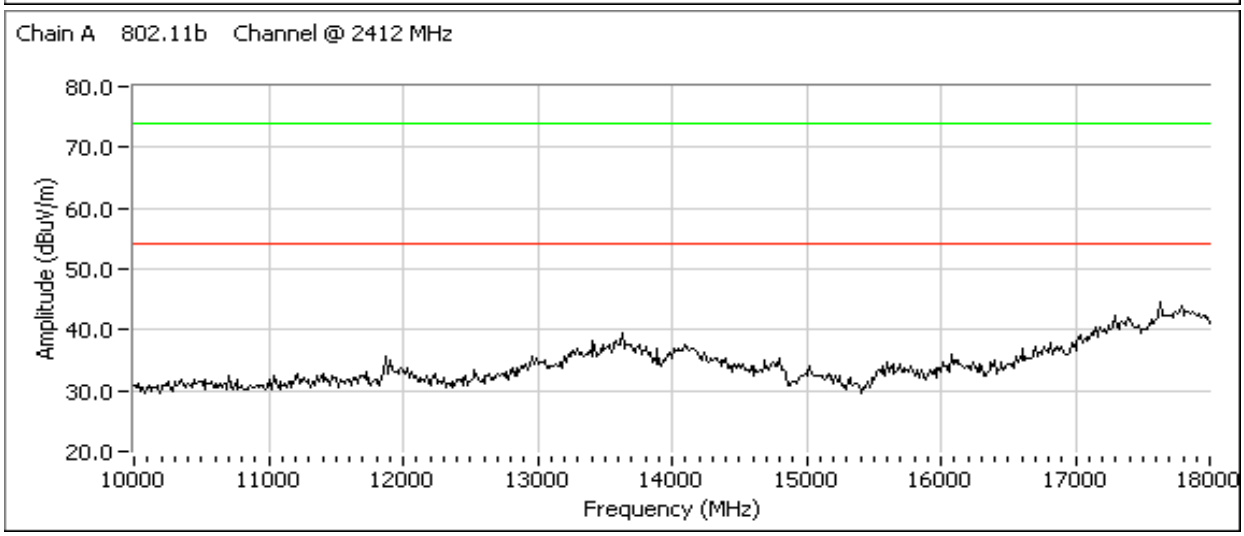
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1748.120	34.9	V	54.0	-19.1	AVG	297	1.5	Note 2
3994.070	34.6	V	54.0	-19.4	AVG	284	1.5	
6431.960	46.3	V	54.0	-7.7	AVG	165	1.5	Note 2
9647.890	48.8	V	54.0	-5.2	AVG	205	1.5	Note 2
1748.120	55.3	V	74.0	-18.7	PK	297	1.5	Note 2
3994.070	54.7	V	74.0	-19.3	PK	284	1.5	
6431.960	50.1	V	74.0	-23.9	PK	165	1.5	Note 2
9647.890	53.5	V	54.0	-20.5	PK	205	1.5	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 1b : Center Channel @ 2437 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2437.860	102.2	V	-	-	Pk	271	1.0	RB = VB = 100kHz
2437.770	103.7	H	-	-	Pk	271	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	102.2	dBµV/m
Limit for emissions outside of restricted bands:	72.2	dBµV/m

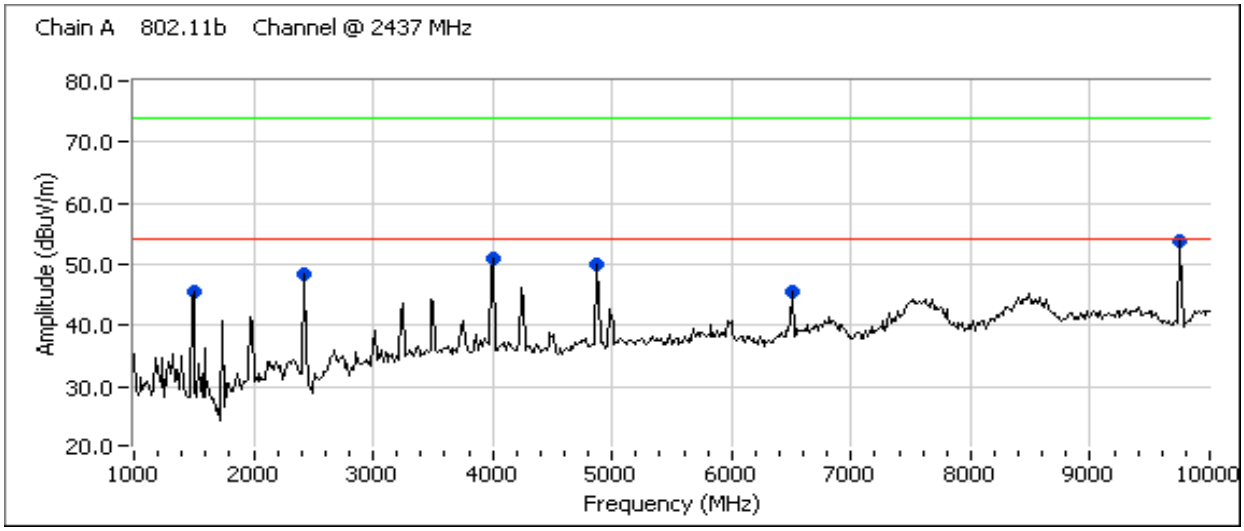
Limit is -30dBc (UNII power measurement)

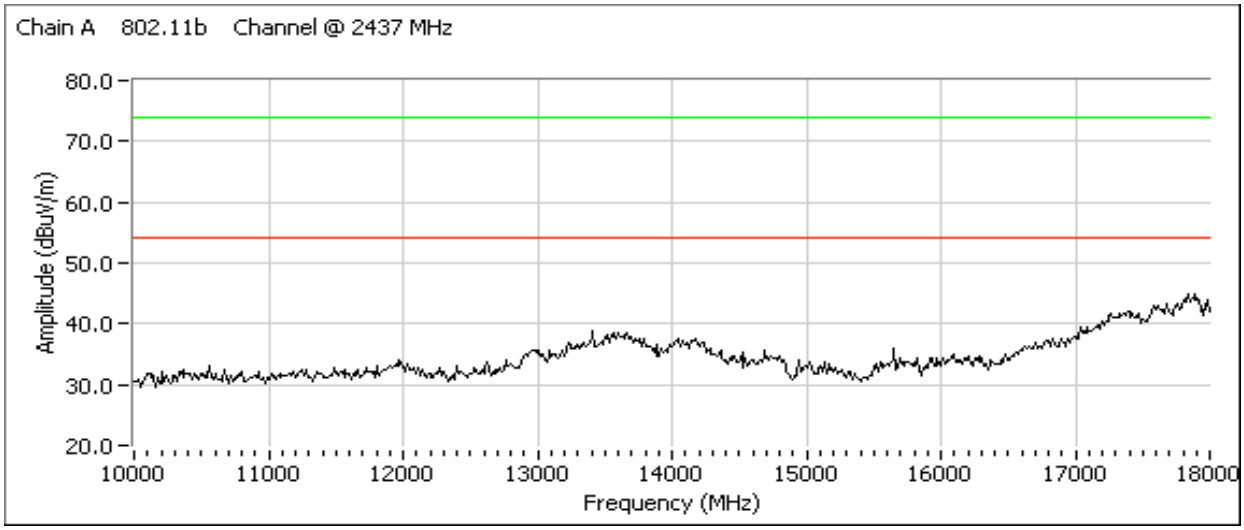
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.660	34.9	H	54.0	-17.1	AVG	248	1.0	Note 2
3995.750	35.8	H	54.0	-18.2	AVG	255	1.0	
4873.990	49.9	V	54.0	-4.1	AVG	167	1.0	
6498.610	47.0	V	54.0	-7.0	AVG	180	1.0	Note 2
9747.990	55.1	V	72.2	-18.6	AVG	166	1.5	Note 2
1497.660	52.1	H	74.0	-21.9	PK	248	1.0	Note 2
3995.750	58.7	H	74.0	-15.3	PK	255	1.0	
4873.990	52.3	V	74.0	-21.7	PK	167	1.0	Note 2
6498.610	50.4	V	74.0	-23.6	PK	180	1.0	Note 2
9747.990	57.2	V	74.0	-16.8	PK	166	1.5	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 1C : High Channel @ 2462 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.990	102.3	V	-	-	Pk	208	1.0	RB = VB = 100kHz
2463.030	105.3	H	-	-	Pk	205	1.0	RB = VB = 100kHz

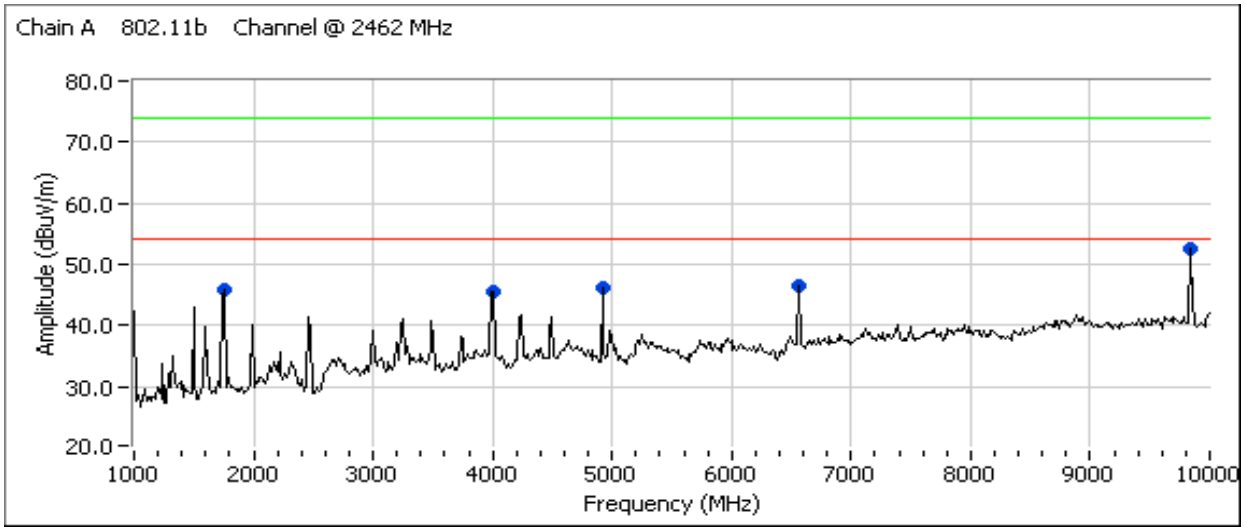
Fundamental emission level @ 3m in 100kHz RBW:	102.2	dBµV/m	
Limit for emissions outside of restricted bands:	72.2	dBµV/m	Limit is -30dBc (UNII power measurement)

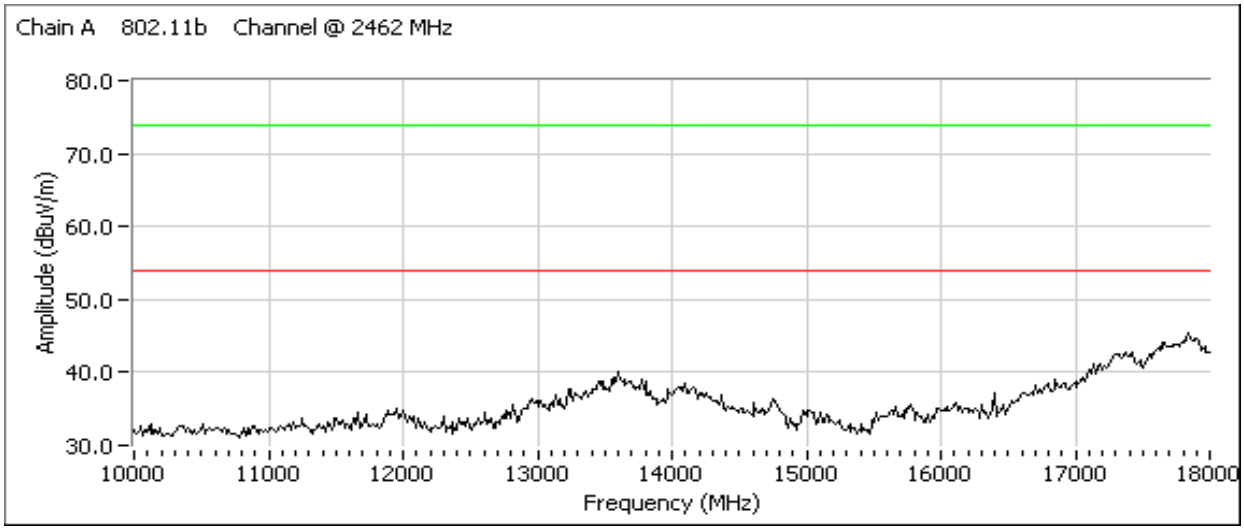
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.420	34.5	V	54.0	-19.5	AVG	298	1.0	Note 2
3996.790	33.8	V	54.0	-20.2	AVG	286	1.5	
4923.970	46.3	H	54.0	-7.7	AVG	243	1.5	
6565.290	47.6	V	54.0	-6.4	AVG	153	1.0	Note 2
9847.910	51.6	V	54.0	-2.4	AVG	190	1.0	Note 2
1747.420	54.7	V	74.0	-19.3	PK	298	1.0	Note 2
3996.790	54.0	V	74.0	-20.0	PK	286	1.5	
4923.970	50.0	H	74.0	-24.0	PK	243	1.5	
6565.290	51.3	V	74.0	-22.7	PK	153	1.0	Note 2
9847.910	55.7	V	74.0	-18.3	PK	190	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11b Chain B
Run # 2a : Low Channel @ 2412 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

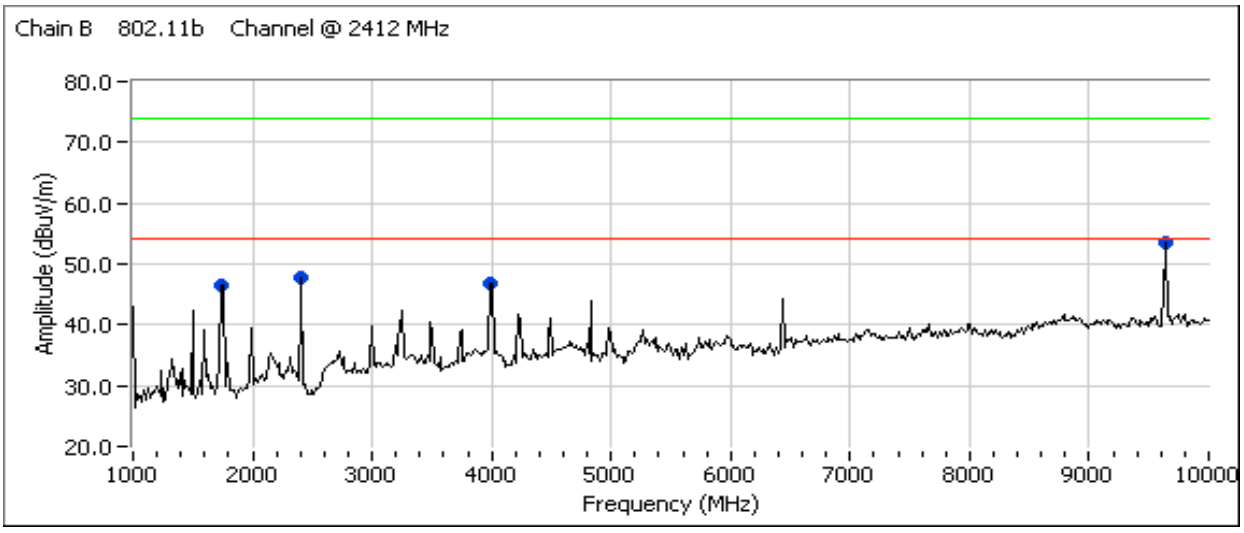
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2410.500	99.2	V	-	-	Pk	80	1.0	RB = VB = 100kHz
2411.480	106.2	H	-	-	Pk	112	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	102.2	dBµV/m	
Limit for emissions outside of restricted bands:	72.2	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1748.190	34.8	V	54.0	-19.2	AVG	297	1.0	Note 2
3986.500	34.7	V	54.0	-19.3	AVG	284	1.5	
9647.920	55.3	V	72.2	-16.9	AVG	178	2.0	Note 2
1748.190	54.4	V	74.0	-19.6	PK	297	1.0	Note 2
3986.500	55.4	V	74.0	-18.6	PK	284	1.5	
9647.920	57.8	V	74.0	-16.2	PK	178	2.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 2b : Center Channel @ 2437 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2436.000	99.8	V	-	-	Pk	212	1.0	RB = VB = 100kHz
2435.500	108.1	H	-	-	Pk	110	1.0	RB = VB = 100kHz

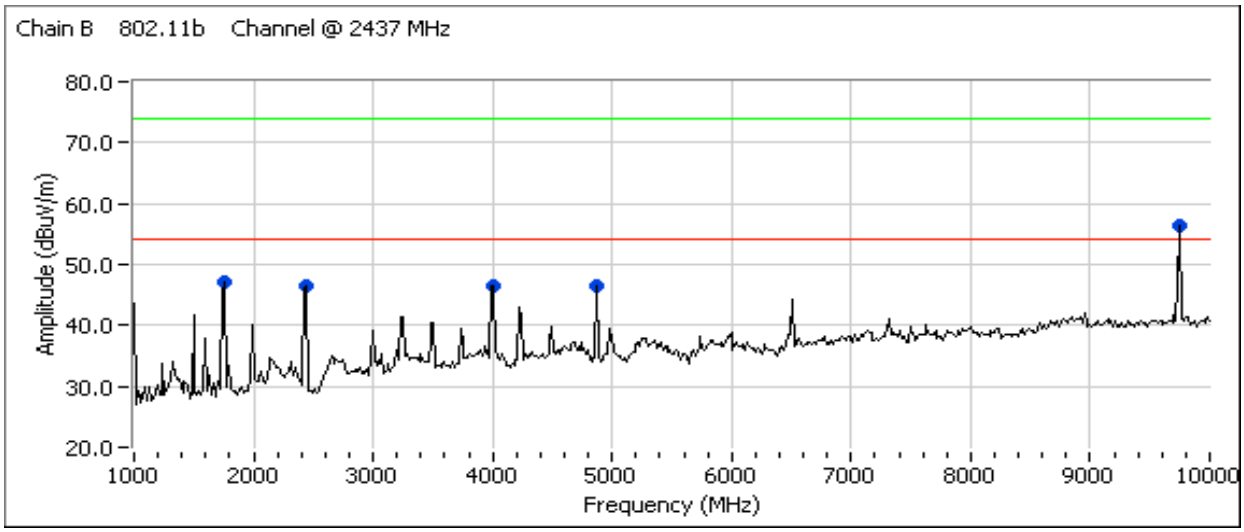
Fundamental emission level @ 3m in 100kHz RBW:	99.8	dBµV/m
Limit for emissions outside of restricted bands:	69.8	dBµV/m

Limit is -30dBc (UNII power measurement)

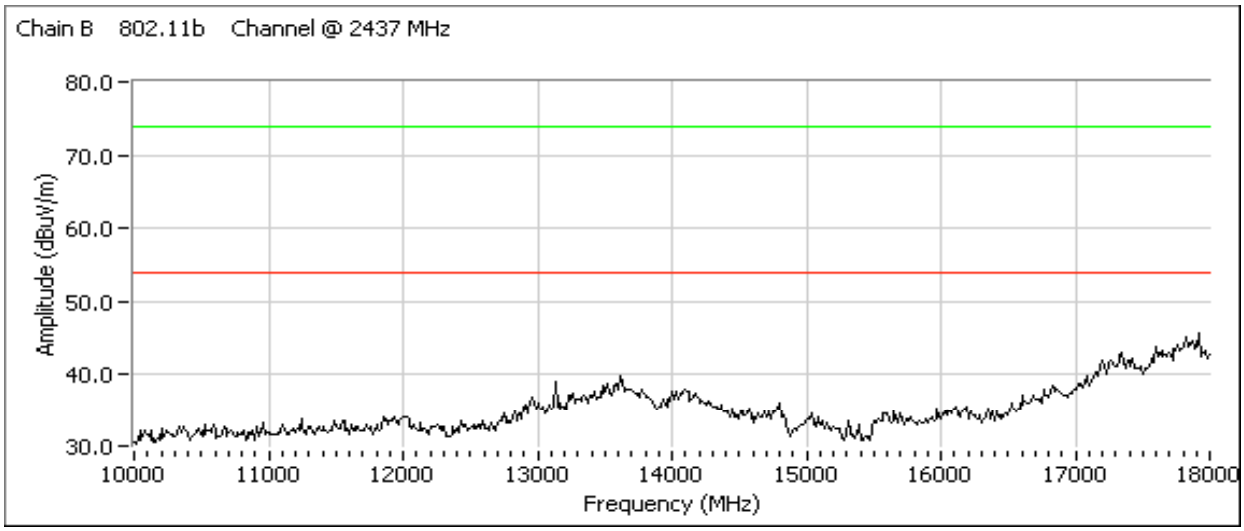
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.270	35.1	V	54.0	-18.9	AVG	297	1.5	Note 2
3993.680	35.2	V	54.0	-18.8	AVG	283	1.5	
4873.950	46.9	V	54.0	-7.1	AVG	144	2.0	
9747.880	55.3	V	69.8	-14.5	AVG	178	1.5	Note 2
1747.270	55.4	V	74.0	-18.6	PK	297	1.5	Note 2
3993.680	56.2	V	74.0	-17.8	PK	283	1.5	
4873.950	50.0	V	74.0	-24.0	PK	144	2.0	
9747.880	57.9	V	74.0	-16.1	PK	178	1.5	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 2c : High Channel @ 2462 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2461.020	101.4	V	-	-	Pk	171	1.0	RB = VB = 100kHz
2463.500	108.0	H	-	-	Pk	112	1.0	RB = VB = 100kHz

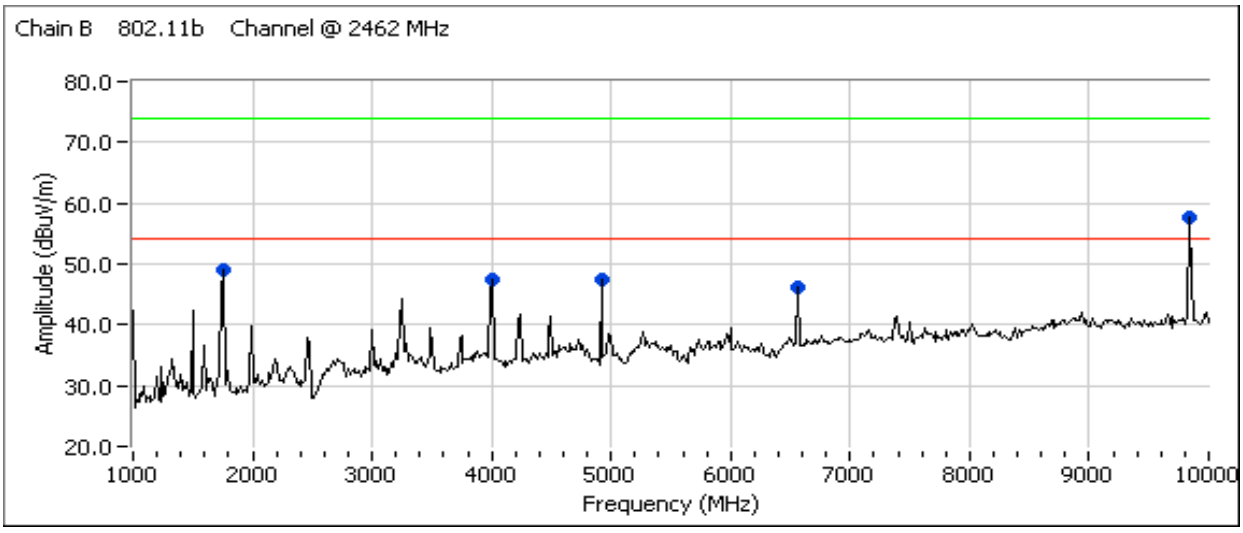
Fundamental emission level @ 3m in 100kHz RBW:	101.4	dBµV/m
Limit for emissions outside of restricted bands:	71.4	dBµV/m

Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.710	31.8	V	54.0	-22.2	AVG	325	1.0	Note 2
3996.920	35.0	V	54.0	-19.0	AVG	285	1.5	
4924.020	47.8	V	54.0	-6.2	AVG	144	2.0	
6565.290	45.4	V	54.0	-8.6	AVG	124	1.0	Note 2
9847.880	56.9	V	71.4	-14.5	AVG	160	2.0	Note 2
1747.710	48.9	V	74.0	-25.1	PK	325	1.0	Note 2
3996.920	55.8	V	74.0	-18.2	PK	285	1.5	
4924.020	50.6	V	74.0	-23.4	PK	144	2.0	
6565.290	49.9	V	74.0	-24.1	PK	124	1.0	Note 2
9847.880	59.1	V	74.0	-14.9	PK	160	2.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11b Chain C
Run # 3a : Low Channel @ 2412 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.030	99.2	V	-	-	Pk	52	1.0	RB = VB = 100kHz
2412.530	107.7	H	-	-	Pk	110	1.0	RB = VB = 100kHz

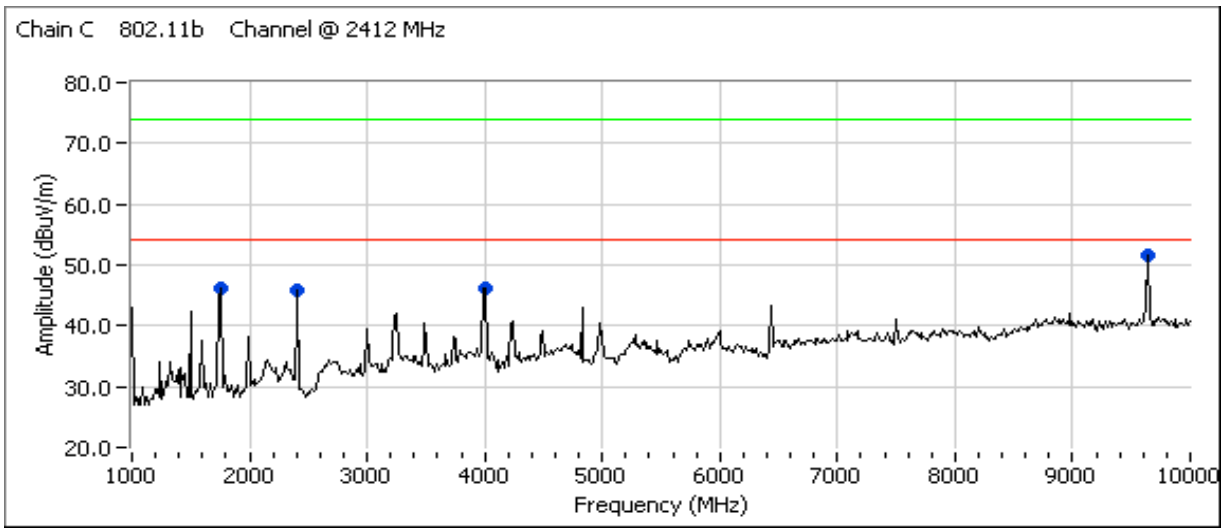
Fundamental emission level @ 3m in 100kHz RBW:	102.2	dBµV/m
Limit for emissions outside of restricted bands:	72.2	dBµV/m

Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1745.340	32.8	V	54.0	-21.2	AVG	289	1.0	Note 2
3997.250	35.0	V	54.0	-19.0	AVG	288	1.5	
9648.060	48.6	V	54.0	-5.4	AVG	160	2.0	Note 2
1745.340	51.8	V	74.0	-22.2	PK	289	1.0	Note 2
3997.250	56.3	V	74.0	-17.7	PK	288	1.5	
9648.060	53.2	V	74.0	-20.8	PK	160	2.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 3b : Center Channel @ 2437 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2436.520	99.4	V	-	-	Pk	89	1.0	RB = VB = 100kHz
2436.470	107.0	H	-	-	Pk	103	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:		dBµV/m
Limit for emissions outside of restricted bands:	-30	dBµV/m

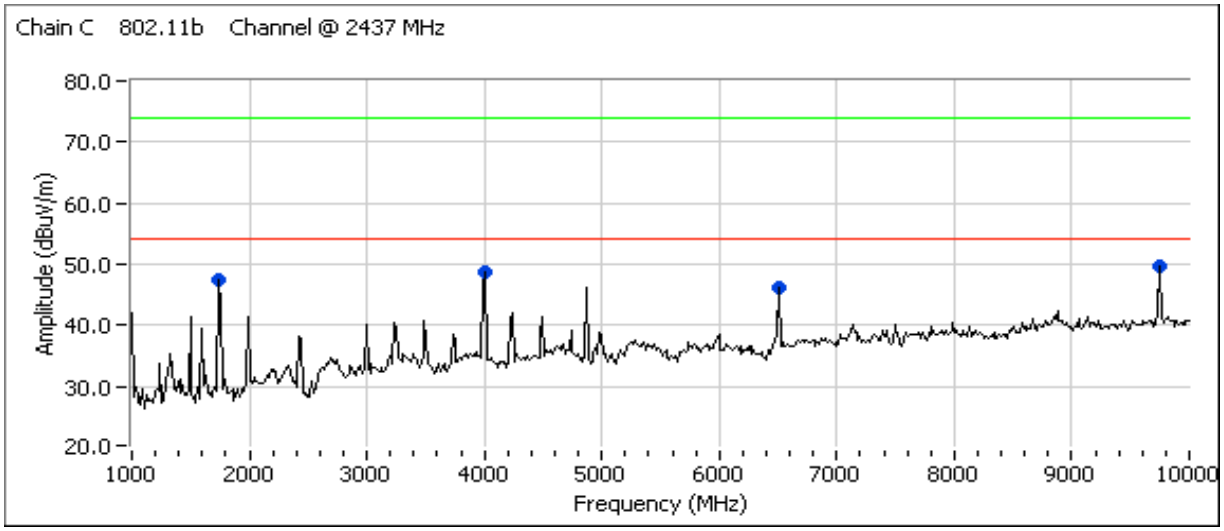
Limit is -30dBc (UNII power measurement)

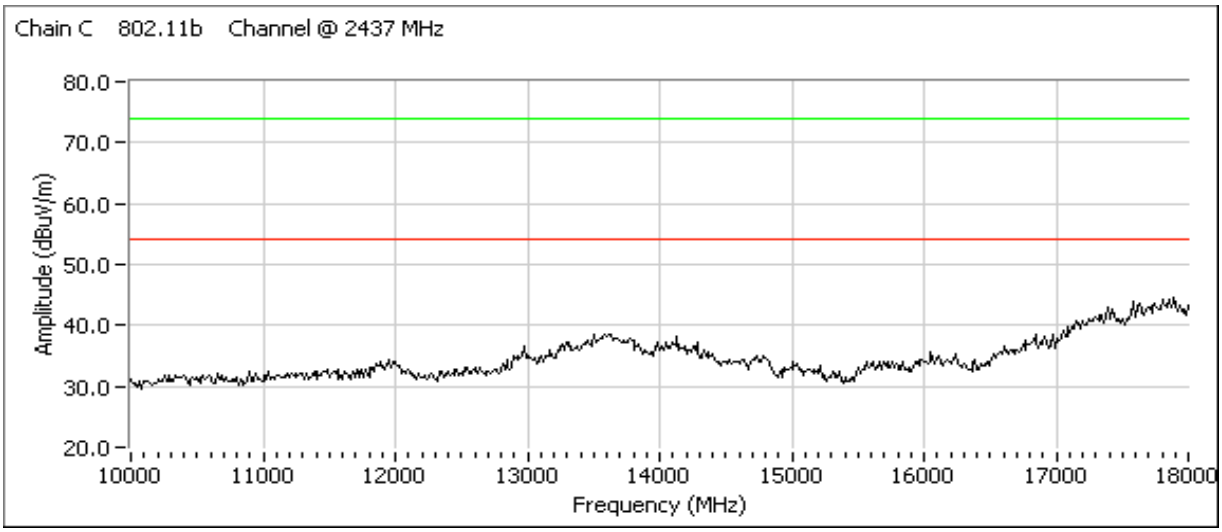
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.830	35.0	V	54.0	-19.0	AVG	296	1.5	Note 2
3996.740	34.7	V	54.0	-19.3	AVG	284	1.5	
6498.640	45.9	V	54.0	-8.1	AVG	185	1.5	Note 2
9747.980	48.3	V	54.0	-5.7	AVG	188	1.5	Note 2
1747.830	54.9	V	74.0	-19.1	PK	296	1.5	Note 2
3996.740	55.8	V	74.0	-18.2	PK	284	1.5	
6498.640	50.2	V	74.0	-23.8	PK	185	1.5	Note 2
9747.980	53.0	V	74.0	-21.0	PK	188	1.5	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 3c : High Channel @ 2462 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.500	99.8	V	-	-	Pk	61	1.0	RB = VB = 100kHz
2461.000	106.6	H	-	-	Pk	103	1.0	RB = VB = 100kHz

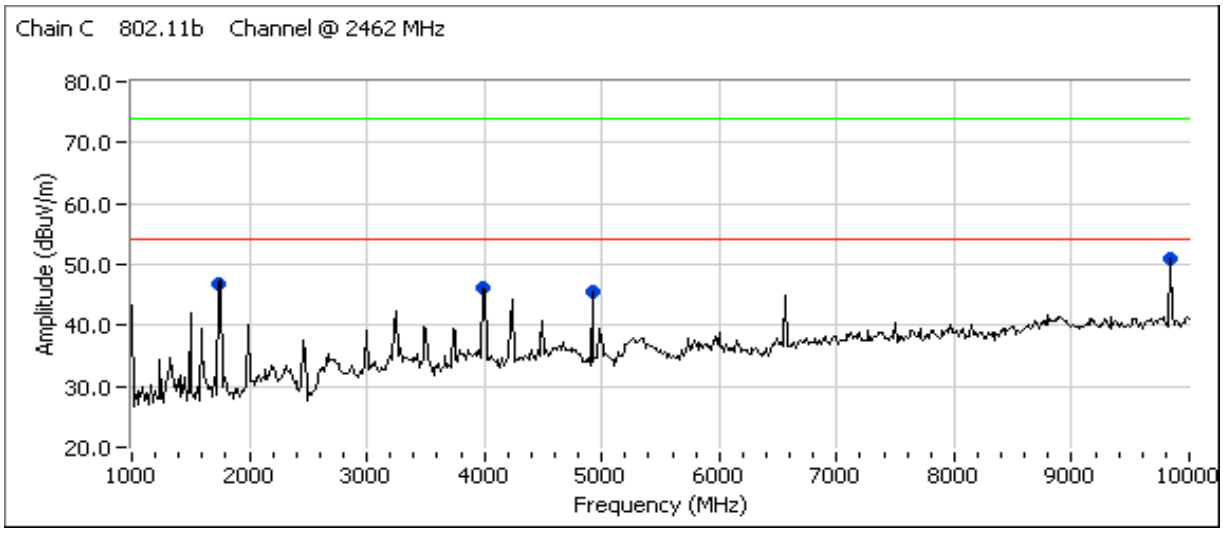
Fundamental emission level @ 3m in 100kHz RBW:	102.2	dBµV/m
Limit for emissions outside of restricted bands:	72.2	dBµV/m

Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.280	31.9	V	54.0	-22.1	AVG	324	1.0	Note 2
3996.610	34.2	V	54.0	-19.8	AVG	290	1.5	
4923.880	45.5	V	54.0	-8.5	AVG	170	2.0	
9847.960	50.9	V	54.0	-3.1	AVG	167	1.5	Note 2
1747.280	51.2	V	74.0	-22.8	PK	324	1.0	Note 2
3996.610	54.2	V	74.0	-19.8	PK	290	1.5	
4923.880	48.9	V	74.0	-25.1	PK	170	2.0	
9847.960	54.6	V	74.0	-19.4	PK	167	1.5	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11g Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C

Rel. Humidity: 55 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11g Chain A	1 2412MHz	24.5	12.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.3dBµV/m @ 2389.3MHz (-1.7dB)
1b	802.11g Chain A	11 2462MHz	28.0	15.8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.1dBµV/m @ 2510.8MHz (-1.9dB)
2a	802.11g Chain B	1 2412MHz	28.5	16.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.8dBµV/m @ 2361.4MHz (-1.2dB)
2b	802.11g Chain B	11 2462MHz	26.0	14.5	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.9 dBuV/m @ 2483.6 MHz (-1.1dB)
3a	802.11g Chain C	1 2412MHz	22.5	12.3	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.2 dBuV/m @ 2389.9MHz (-1.8dB)
3b	802.11g Chain C	11 2462MHz	24.5	13.5	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.6 dBuV/m @ 2483.8 MHz (-1.4dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain A

Date of Test: 3/25/2008
Test Engineer: Suhaila Khushzad
Test Location: FT Chamber # 4

Run #1a: Low Channel @ 2412 MHz

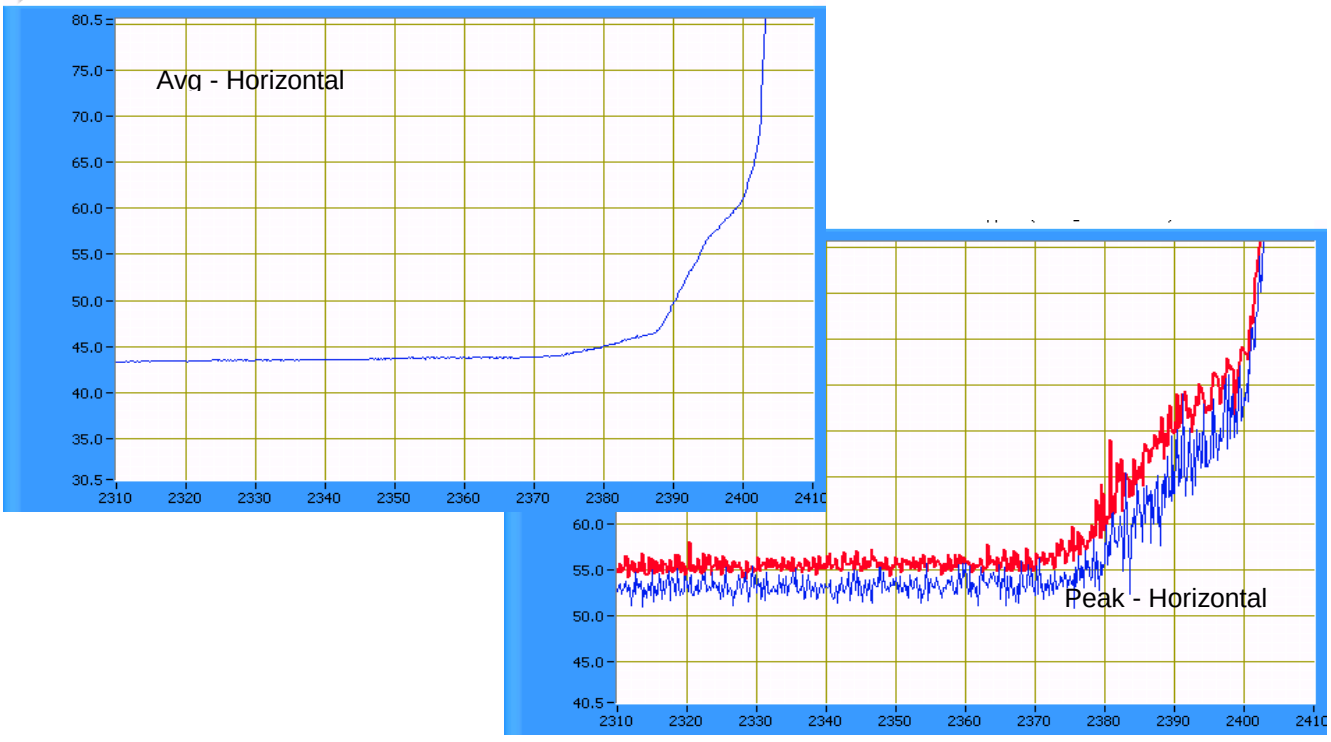
Power Setting: 24.5 Average power: 12.9 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2409.330	100.6	H	-	-	AVG	250	1.1	GC: 24.5, Avg Power: 12.9
2409.330	110.0	H	-	-	PK	250	1.1	GC: 24.5, Avg Power: 12.9
2414.830	94.4	V	-	-	AVG	261	1.0	GC: 24.5, Avg Power: 12.9
2414.830	102.8	V	-	-	PK	261	1.0	GC: 24.5, Avg Power: 12.9

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.250	72.3	H	74.0	-1.7	Pk	250	1.1	GC: 24.5, Avg Power: 12.9
2389.960	49.9	H	54.0	-4.1	Avg	250	1.1	GC: 24.5, Avg Power: 12.9
2389.890	45.9	V	54.0	-8.1	Avg	261	1.0	GC: 24.5, Avg Power: 12.9
2389.880	65.4	V	74.0	-8.6	Pk	261	1.0	GC: 24.5, Avg Power: 12.9



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain A
Run #1b: High Channel @ 2462 MHz
Power Setting: 28 Average power: 15.8 (for reference purposes)
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.720	106.2	H	-	-	AVG	243	1.0	GC: 28, Avg Power: 15.8
2460.720	114.2	H	-	-	PK	243	1.0	GC: 28, Avg Power: 15.8
2463.310	105.8	V	-	-	AVG	246	1.0	GC: 28, Avg Power: 15.8
2463.310	114.4	V	-	-	PK	246	1.0	GC: 28, Avg Power: 15.8

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2509.790	51.0	V	54.0	-3.0	AVG	204	1.0	GC: 28.5, Avg Power: 16.4
2509.790	64.4	V	74.0	-9.6	PK	204	1.0	GC: 28.5, Avg Power: 16.4
2510.770	52.1	H	54.0	-1.9	AVG	247	1.0	GC: 28, Avg Power: 15.8
2510.770	67.0	H	74.0	-7.0	PK	247	1.0	GC: 28, Avg Power: 15.8

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain B

Run #2a: Low Channel @ 2412 MHz

Date of Test: 3/26/2008
Test Engineer: Joseph Cadigal
Test Location: FT Chamber # 5
Power Setting: 28.5 Average power: 16.4 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.340	99.3	V	-	-	AVG	50	1.0	GC: 28.5, Avg Power: 16.4
2413.340	107.3	V	-	-	PK	50	1.0	GC: 28.5, Avg Power: 16.4
2413.290	105.6	H	-	-	AVG	102	1.0	GC: 28.5, Avg Power: 16.4
2413.290	114.0	H	-	-	PK	102	1.0	GC: 28.5, Avg Power: 16.4

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2361.370	52.8	H	54.0	-1.2	AVG	107	1.0	GC: 28.5, Avg Power: 16.4
2361.370	69.8	H	74.0	-4.2	PK	107	1.0	GC: 28.5, Avg Power: 16.4
2361.450	50.7	V	54.0	-3.3	AVG	78	1.0	GC: 28.5, Avg Power: 16.4
2361.450	65.1	V	74.0	-8.9	PK	78	1.0	GC: 28.5, Avg Power: 16.4

Run #2b: High Channel @ 2462 MHz

Date of Test: 3/26/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 3
Power Setting: 26 Average power: 14.5 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.500	97.7	V	-	-	AVG	55	1.0	RB = 1MHz, VB = 10Hz
2460.500	105.9	V	-	-	PK	55	1.0	RB = VB = 1MHz
2460.520	104.2	H	-	-	AVG	99	1.0	RB = 1MHz, VB = 10Hz
2460.520	112.4	H	-	-	PK	99	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.610	72.9	H	74.0	-1.1	PK	97	1.0	GC: 26, Avg Power: 14.5
2483.600	50.6	H	54.0	-3.4	AVG	98	1.0	GC: 26, Avg Power: 14.5
2483.660	67.8	V	74.0	-6.2	PK	55	1.0	GC: 26, Avg Power: 14.5
2483.600	47.6	V	54.0	-6.4	AVG	55	1.0	GC: 26, Avg Power: 14.5

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain C

Date of Test: 3/26/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 3

Run #3a: Low Channel @ 2412 MHz

Power Setting: 22.5 Average power: 12.3 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2410.730	104.5	H	-	-	AVG	110	1.0	RB = 1MHz, VB = 10Hz
2410.730	112.6	H	-	-	PK	110	1.0	RB = VB = 1MHz
2413.080	96.0	V	-	-	AVG	65	1.0	RB = 1MHz, VB = 10Hz
2413.080	104.6	V	-	-	PK	65	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.880	72.2	H	74.0	-1.8	PK	113	1.0	GC: 22.5, Avg Power: 12.3
2389.860	49.3	H	54.0	-4.7	AVG	109	1.0	GC: 22.5, Avg Power: 12.3
2389.870	65.4	V	74.0	-8.6	PK	77	1.0	GC: 22.5, Avg Power: 12.3
2389.860	45.2	V	54.0	-8.8	AVG	74	1.0	GC: 22.5, Avg Power: 12.3

Run #3b: High Channel @ 2462 MHz

Power Setting: 24.5 Average power: 14.1 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.600	104.5	H	-	-	AVG	116	1.0	RB = 1MHz, VB = 10Hz
2460.600	112.7	H	-	-	PK	116	1.0	RB = VB = 1MHz
2460.510	96.0	V	-	-	AVG	73	1.0	RB = 1MHz, VB = 10Hz
2460.510	103.8	V	-	-	PK	73	1.0	RB = VB = 1MHz

PK, Vertical

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.800	72.6	H	74.0	-1.4	??	110	1.0	GC: 24.5, Avg Power: 13.5
2483.500	48.3	H	54.0	-5.7	??	108	1.0	GC: 24.5, Avg Power: 13.5
2483.680	62.9	V	74.0	-11.1	??	79	1.0	GC: 24.5, Avg Power: 13.5
2483.600	44.6	V	54.0	-9.4	??	79	1.0	GC: 24.5, Avg Power: 13.5

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11g Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20.1 °C
Rel. Humidity: 43 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11g Chain A	1 (2412) 6 (2437) 11 (2462)	27.5 27.5 28	16.3 16.2 16.2	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	43.4dBµV/m @ 6498.6MHz (-10.6dB)
2	802.11g Chain B	1 (2412) 6 (2437) 11 (2462)	27.5 27.5 28	16.4 16.2 16.4	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	46.3dBµV/m @ 6565.4MHz (-7.7dB)
3	802.11g Chain C	1 (2412) 6 (2437) 11 (2462)	27 28 27	16.4 16.4 16.4	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	42.7dBµV/m @ 6498.6MHz (-11.3dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

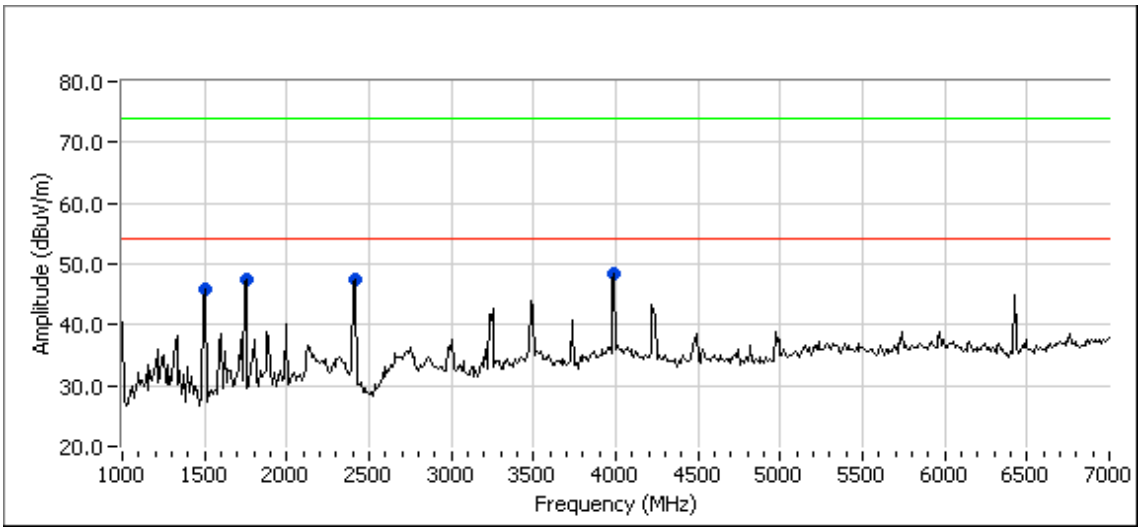
Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11g Chain A

Date of Test: 3/27/2008
Test Engineer: Joseph Cadigal
Test Location: FT Chamber # 3

Run #1a: Low Channel @ 2412 MHz
GP = 27.5 AP = 16.3
Spurious Emissions

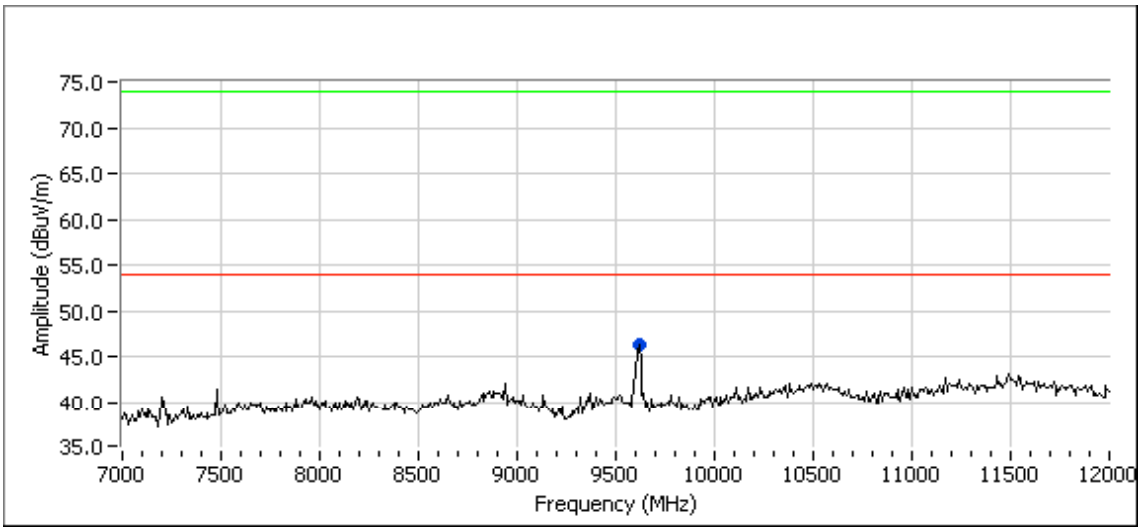
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.910	37.0	H	54.0	-17.0	AVG	179	1.0	
1747.840	34.5	V	54.0	-19.5	AVG	68	1.0	Note 2
3996.350	34.9	V	54.0	-19.1	AVG	104	1.3	
9629.650	37.3	V	54.0	-16.7	AVG	158	1.9	Note 2
1497.910	52.0	H	74.0	-22.0	PK	179	1.0	
1747.840	53.8	V	74.0	-20.2	PK	68	1.0	Note 2
3996.350	55.5	V	74.0	-18.5	PK	104	1.3	
9629.650	51.5	V	74.0	-22.5	PK	158	1.9	Note 2

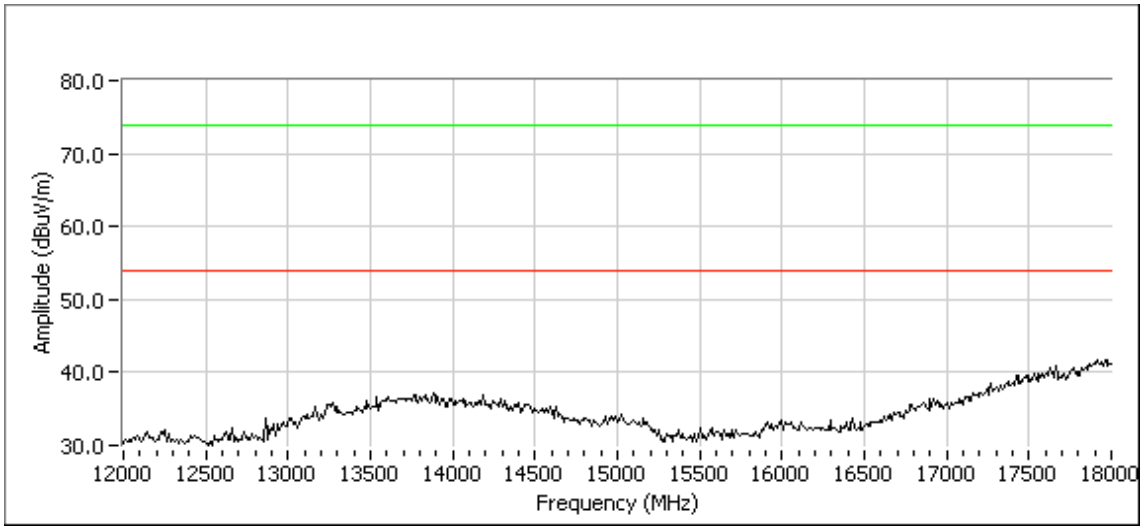
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1a: Low Channel @ 2412 MHz





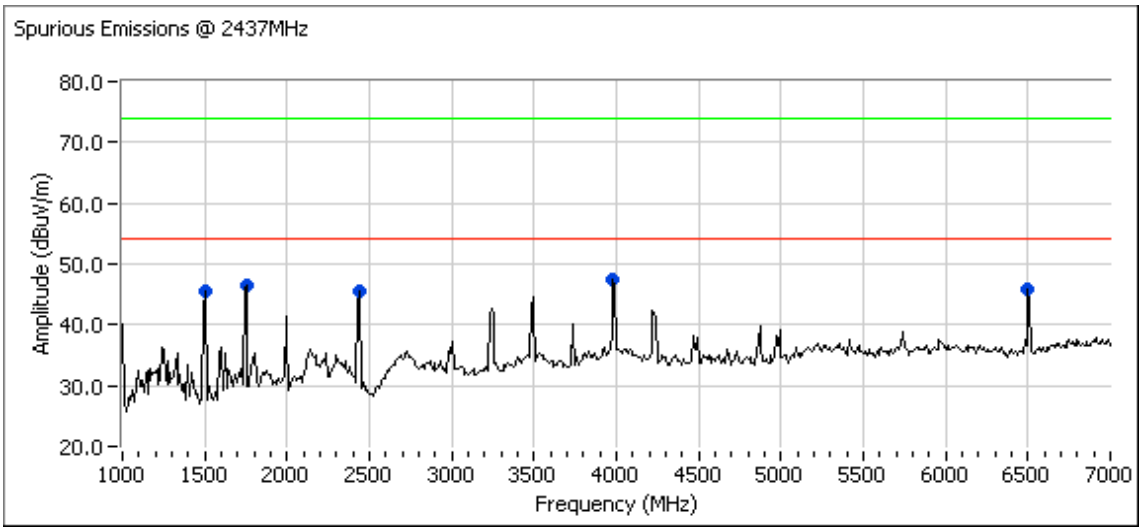
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: Center Channel @ 2437 MHz
GP = 27.5 AP = 16.2

Spurious Emissions

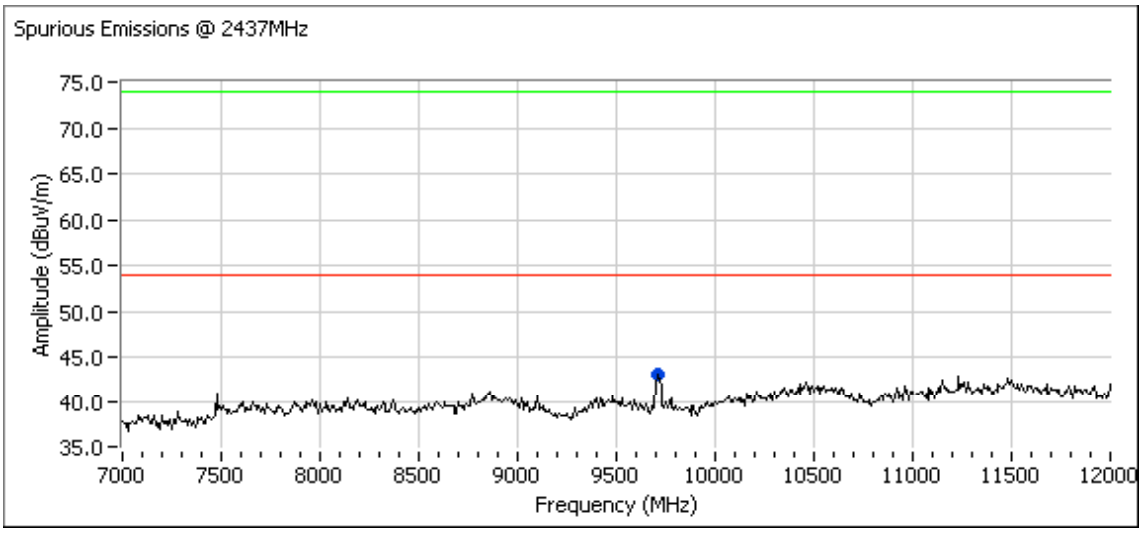
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1498.210	37.3	H	54.0	-16.7	AVG	177	1.0	
1747.420	32.7	V	54.0	-21.3	AVG	180	2.2	Note 2
3983.000	34.4	H	54.0	-19.6	AVG	148	2.2	
6498.630	43.4	V	54.0	-10.6	AVG	209	1.9	Note 2
9704.670	34.7	V	54.0	-19.3	AVG	171	1.9	Note 2
1498.210	52.3	H	74.0	-21.7	PK	177	1.0	
1747.420	51.3	V	74.0	-22.7	PK	180	2.2	Note 2
3983.000	55.4	H	74.0	-18.6	PK	148	2.2	
6498.630	48.0	V	74.0	-26.0	PK	209	1.9	Note 2
9704.670	46.1	V	74.0	-27.9	PK	171	1.9	Note 2

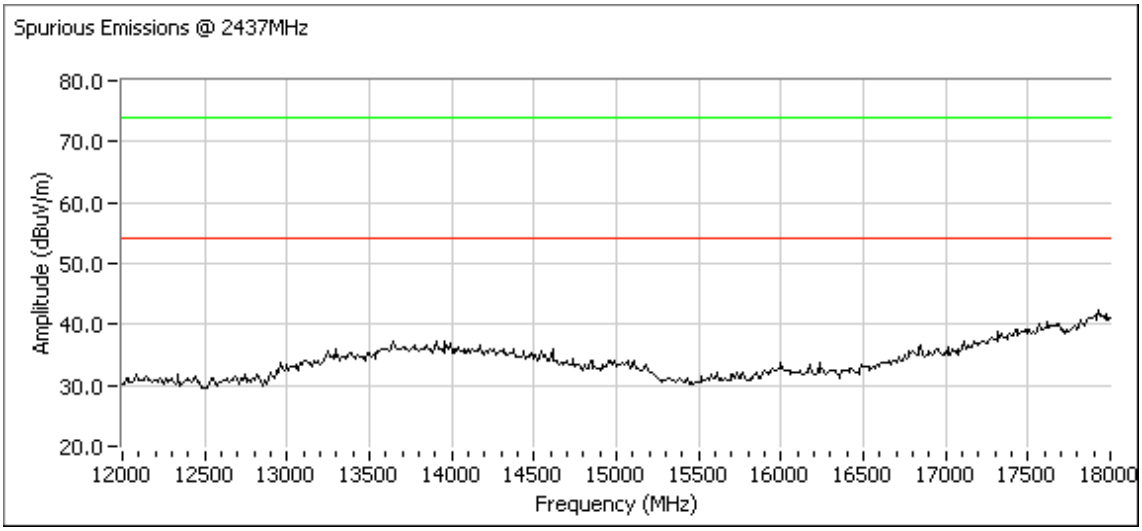
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: Center Channel @ 2437 MHz





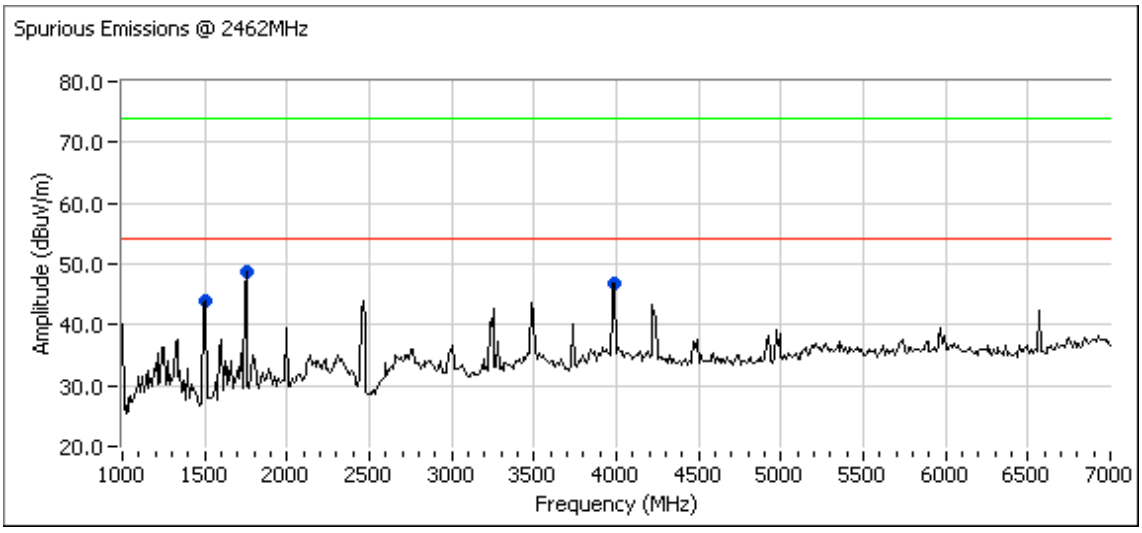
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1c: High Channel @ 2462 MHz
GP = 28 AP = 16.2

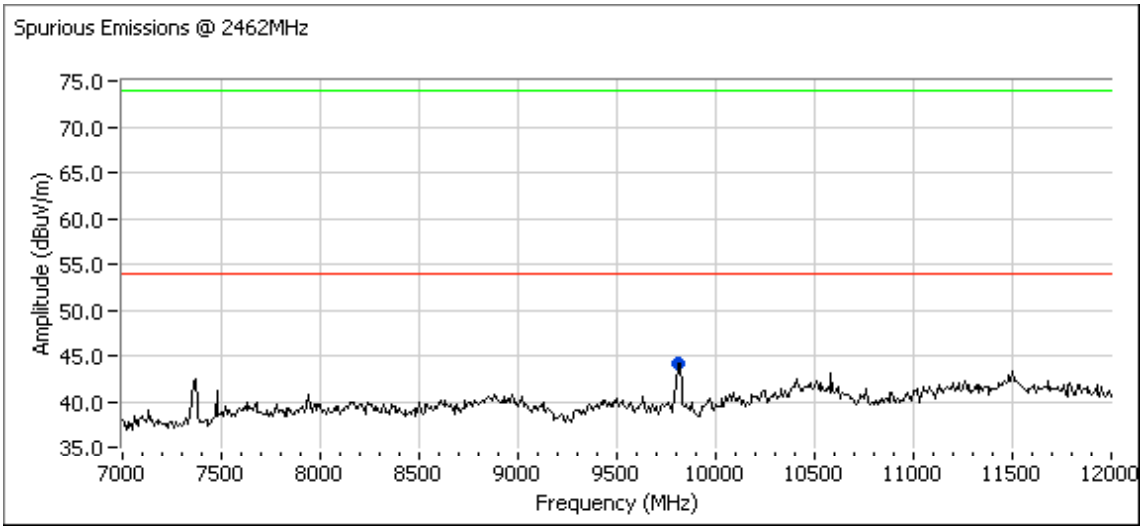
Spurious Emissions

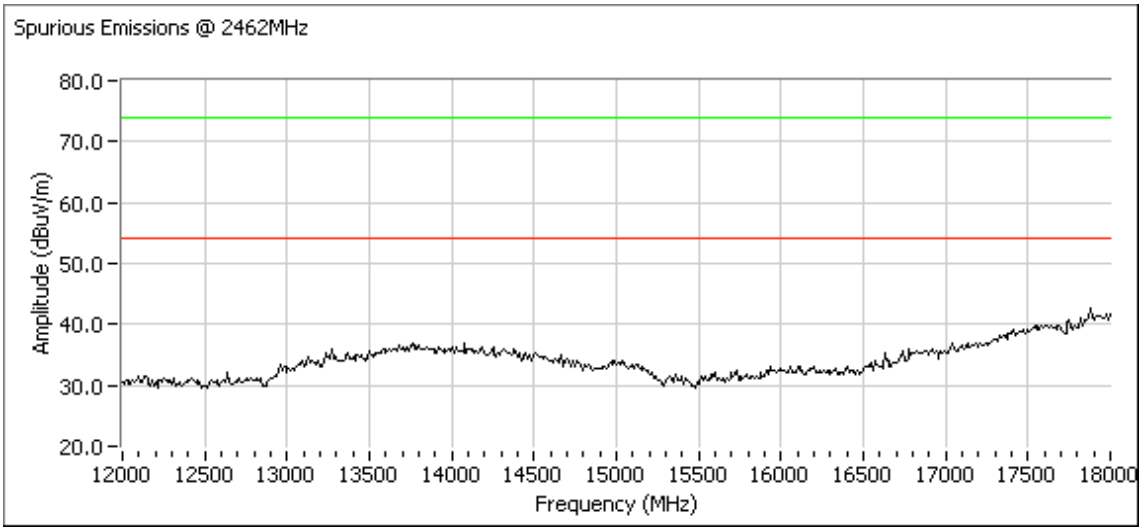
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.800	28.1	H	54.0	-25.9	AVG	178	1.0	
1747.900	27.3	V	54.0	-26.7	AVG	109	1.0	Note 2
3982.930	24.5	V	54.0	-29.5	AVG	103	1.3	
9807.030	25.5	V	54.0	-28.5	AVG	176	1.3	Note 2
1497.800	43.5	H	74.0	-30.5	PK	178	1.0	
1747.900	46.1	V	74.0	-27.9	PK	109	1.0	Note 2
3982.930	44.1	V	74.0	-29.9	PK	103	1.3	
9807.030	37.4	V	74.0	-36.6	PK	176	1.3	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11g Chain B

Date of Test: 3/27/2008
Test Engineer: Joseph Cadigal
Test Location: FT Chamber # 3

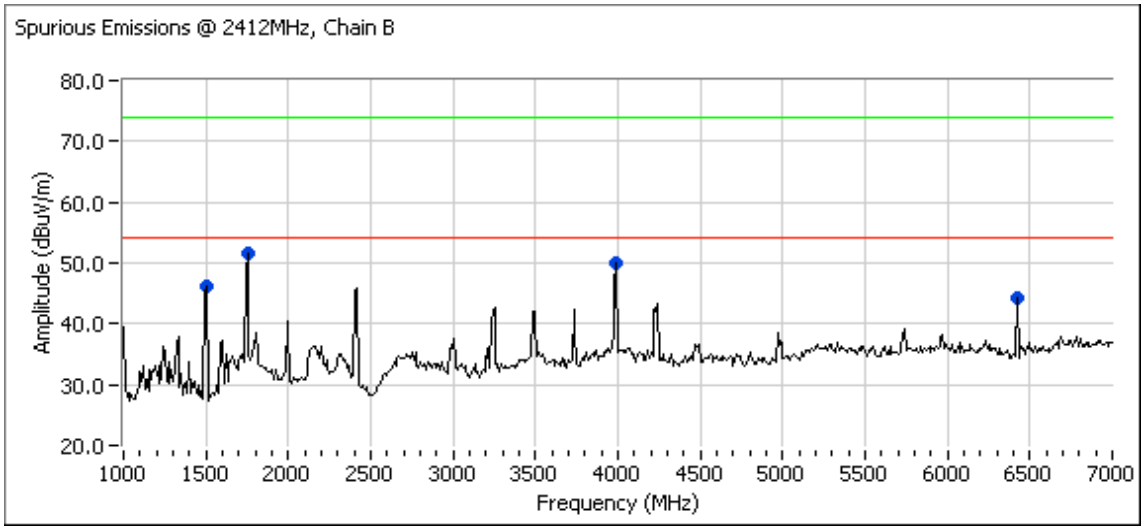
Run #2a: Low Channel @ 2412 MHz

GP = 27.5 AP = 16.4

Spurious Emissions

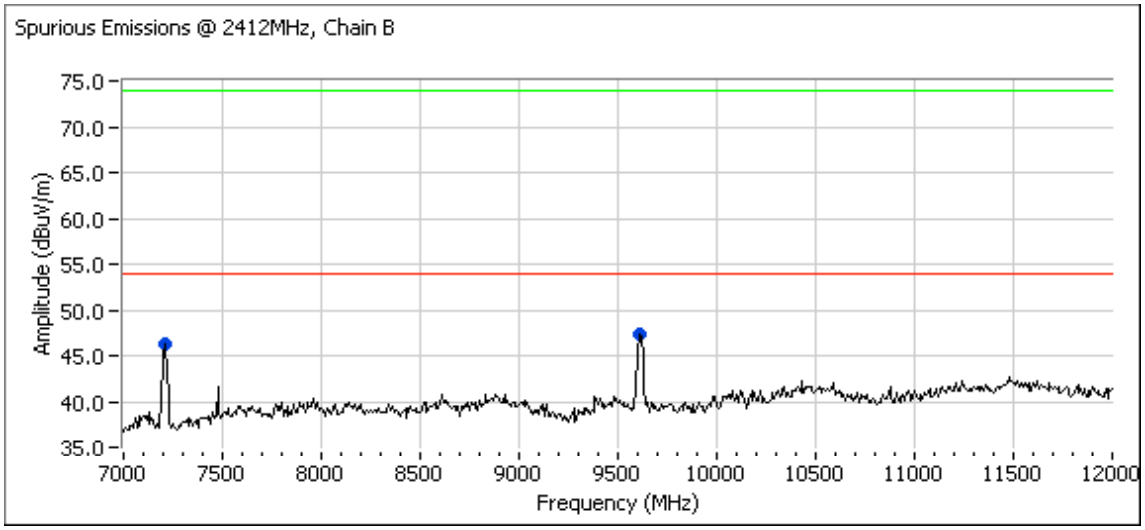
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.760	28.3	H	54.0	-25.7	AVG	179	1.0	
1743.030	29.1	V	54.0	-24.9	AVG	179	1.3	Note 2
3996.450	25.0	V	54.0	-29.0	AVG	143	1.3	
6431.900	33.8	V	54.0	-20.2	AVG	230	1.6	Note 2
7221.790	28.2	V	54.0	-25.8	AVG	188	1.9	Note 2
9605.050	25.2	V	54.0	-28.8	AVG	192	2.2	Note 2
1497.760	43.5	H	74.0	-30.5	PK	179	1.0	
1743.030	48.0	V	74.0	-26.0	PK	179	1.3	Note 2
3996.450	44.7	V	74.0	-29.3	PK	143	1.3	
6431.900	39.0	V	74.0	-35.0	PK	230	1.6	Note 2
7221.790	45.6	V	74.0	-28.4	PK	188	1.9	Note 2
9605.050	36.3	V	74.0	-37.7	PK	192	2.2	Note 2

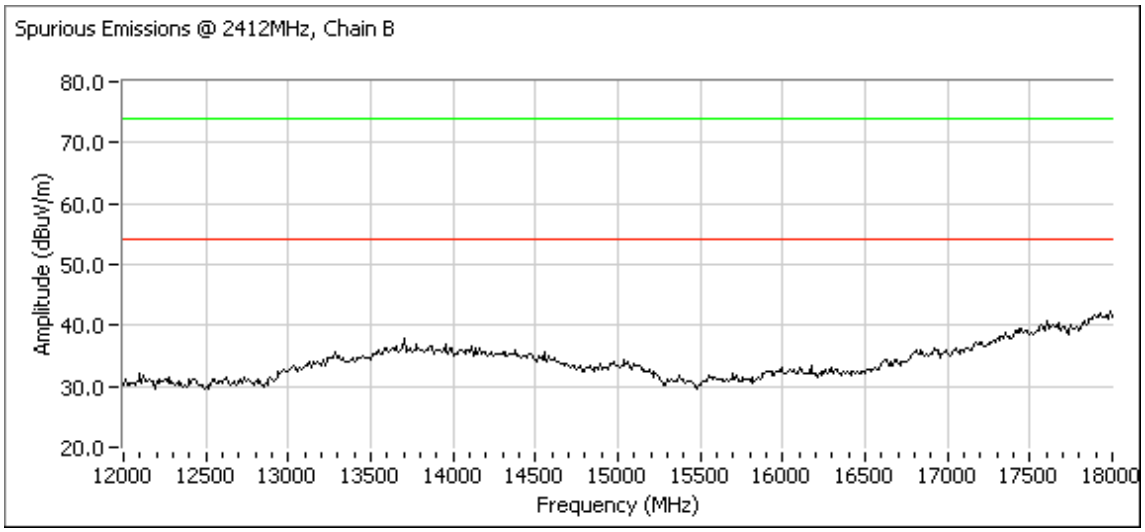
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2a: Low Channel @ 2412 MHz



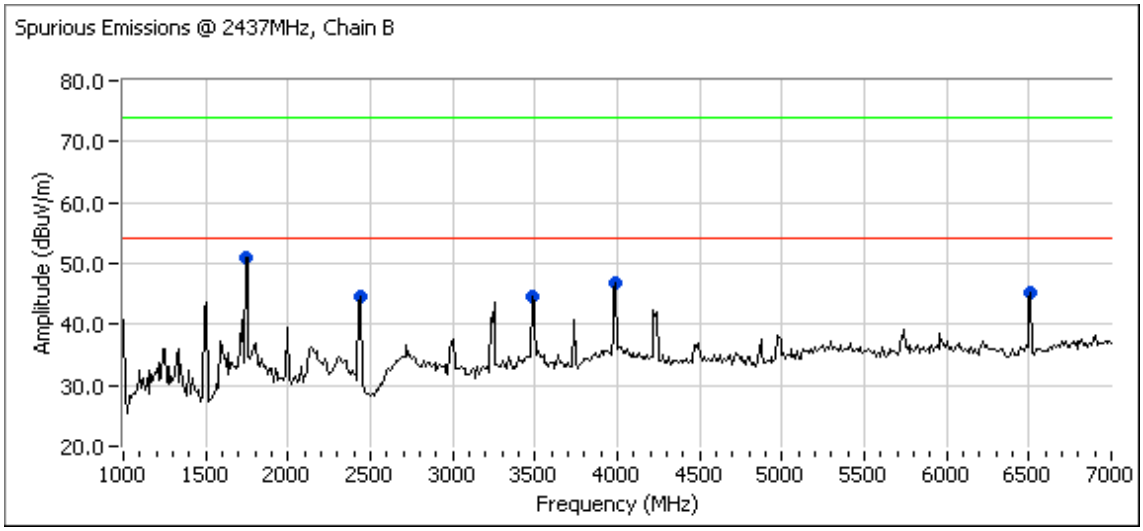


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2b: Center Channel @ 2437 MHz
GP = 27.5 AP = 16.2
Spurious Emissions

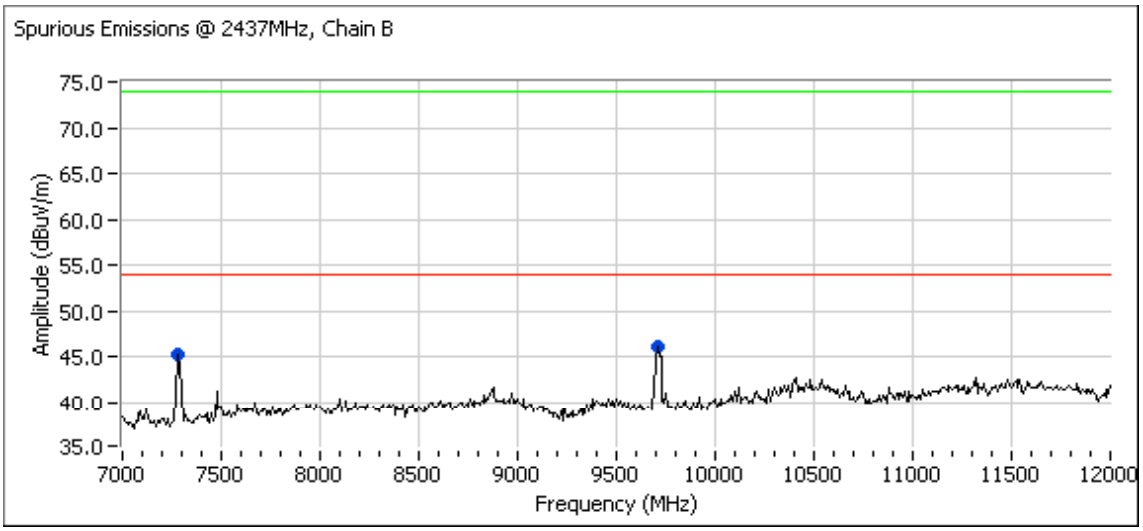
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.760	38.6	V	54.0	-15.4	AVG	104	1.0	Note 2
3486.300	34.4	V	54.0	-19.6	AVG	156	1.0	Note 2
3996.970	34.6	H	54.0	-19.4	AVG	141	2.2	
6498.550	40.7	V	54.0	-13.3	AVG	216	1.6	Note 2
7283.250	33.5	V	54.0	-20.5	AVG	180	1.9	
9716.030	35.1	V	54.0	-18.9	AVG	205	1.6	Note 2
1747.760	59.2	V	74.0	-14.8	PK	104	1.0	Note 2
3486.300	53.3	V	74.0	-20.7	PK	156	1.0	Note 2
3996.970	55.5	H	74.0	-18.5	PK	141	2.2	
6498.550	46.3	V	74.0	-27.7	PK	216	1.6	Note 2
7283.250	46.3	V	74.0	-27.7	PK	180	1.9	
9716.030	46.7	V	74.0	-27.3	PK	205	1.6	Note 2

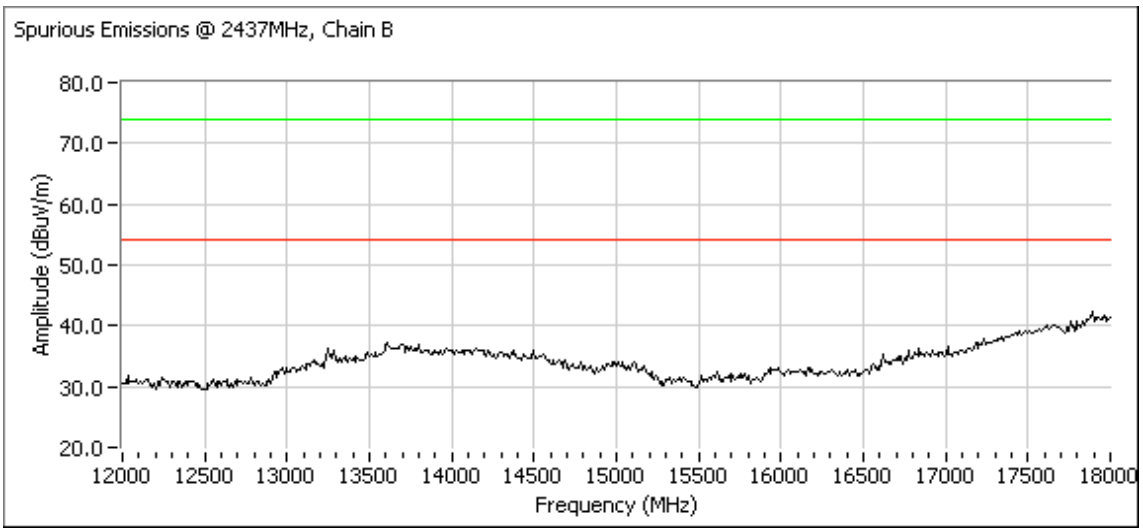
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2b: Center Channel @ 2437 MHz



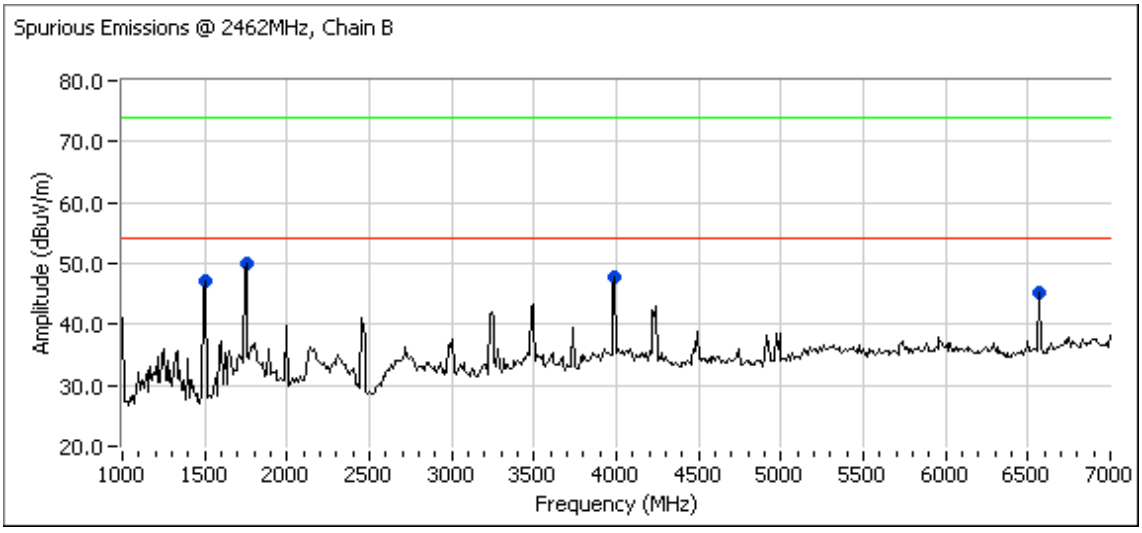


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2c: High Channel @ 2462 MHz
GP = 28 AP = 16.4
Spurious Emissions

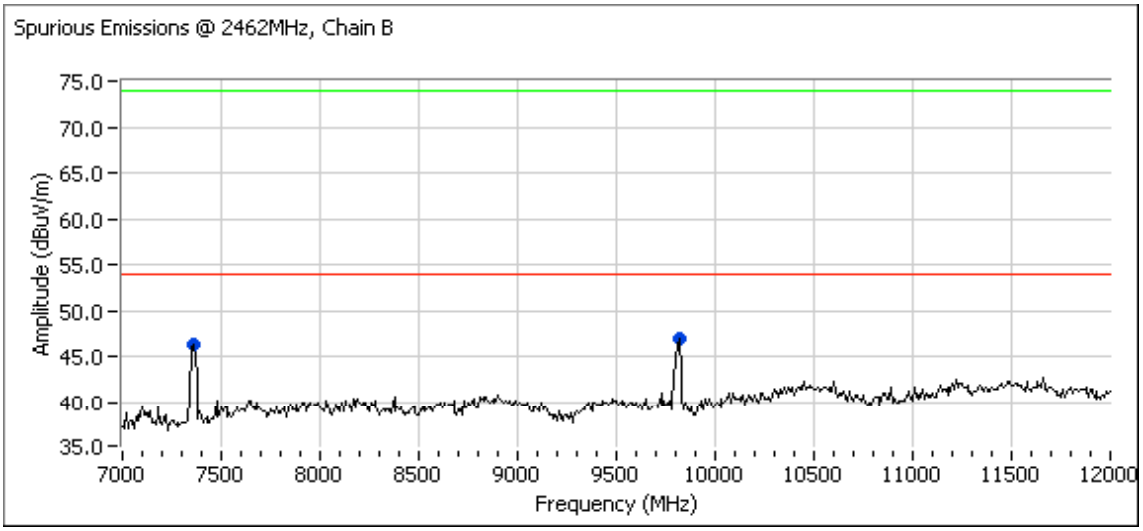
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1498.140	38.6	H	54.0	-15.4	AVG	173	1.0	
1747.440	39.1	V	54.0	-14.9	AVG	178	1.3	Note 2
3997.340	34.3	H	54.0	-19.7	AVG	135	2.2	
6565.410	46.3	V	54.0	-7.7	AVG	218	1.6	Note 2
7369.710	36.2	V	54.0	-17.8	AVG	200	1.6	
9830.090	38.0	V	54.0	-16.0	AVG	199	1.9	Note 2
1498.140	54.1	H	74.0	-19.9	PK	173	1.0	
1747.440	57.9	V	74.0	-16.1	PK	178	1.3	Note 2
3997.340	54.3	H	74.0	-19.7	PK	135	2.2	
6565.410	49.9	V	74.0	-24.1	PK	218	1.6	Note 2
7369.710	54.5	V	74.0	-19.5	PK	200	1.6	
9830.090	52.4	V	74.0	-21.6	PK	199	1.9	Note 2

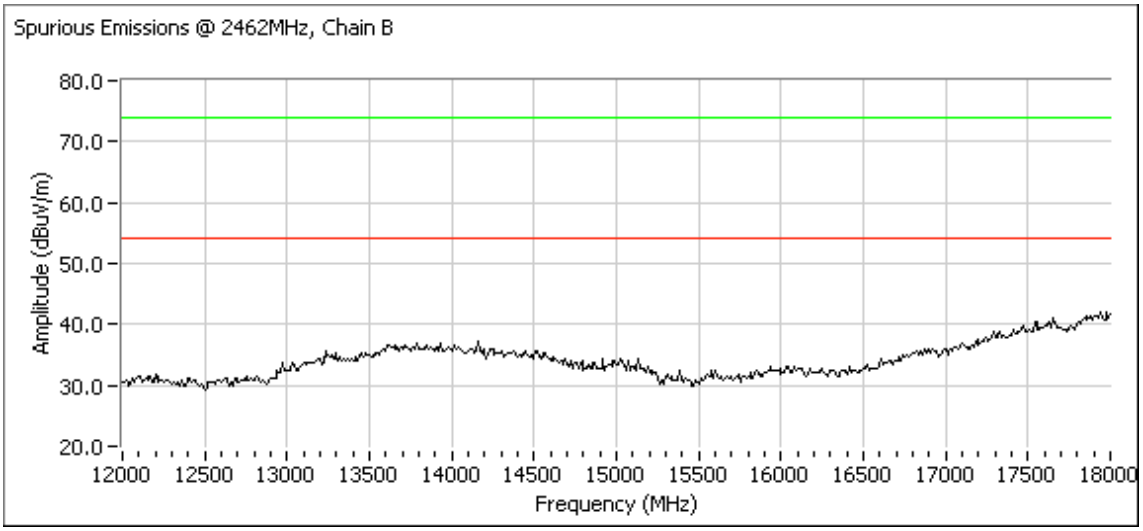
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2c: High Channel @ 2462 MHz





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11g Chain C
Run #3a: Low Channel @ 2412 MHz
GP = 27 AP = 16.4
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.840	20.6	V	54.0	-33.4	AVG	182	1.3	
2409.970	35.9	H	54.0	-18.1	AVG	112	1.0	
3982.860	23.8	V	54.0	-30.2	AVG	92	1.3	
7500.080	31.4	V	54.0	-22.6	AVG	141	1.0	
8328.680	27.5	V	54.0	-26.5	AVG	157	1.3	
1747.840	42.4	V	74.0	-31.6	PK	182	1.3	
2409.970	44.4	H	74.0	-29.6	PK	112	1.0	
3982.860	43.7	V	74.0	-30.3	PK	92	1.3	
7500.080	40.8	V	74.0	-33.2	PK	141	1.0	
8328.680	39.1	V	74.0	-34.9	PK	157	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Run #3b: Center Channel @ 2437 MHz
GP = 27.5 AP = 16.3
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.100	33.7	V	54.0	-20.3	AVG	176	1.3	Note 2
3983.130	33.8	H	54.0	-20.2	AVG	140	1.9	
3986.460	34.1	H	54.0	-19.9	AVG	140	1.9	
6498.600	42.7	V	54.0	-11.3	AVG	237	1.0	Note 2
7501.550	38.5	V	54.0	-15.5	AVG	98	1.0	
1747.100	55.9	V	74.0	-18.1	PK	176	1.3	Note 2
2430.410	55.6	H	74.0	-18.4	PK	108	1.0	
3983.130	56.6	H	74.0	-17.4	PK	140	1.9	
3986.460	56.1	H	74.0	-17.9	PK	140	1.9	
6498.600	48.1	V	74.0	-25.9	PK	237	1.0	Note 2
7501.550	50.0	V	74.0	-24.0	PK	98	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3c: High Channel @ 2462 MHz

Date of Test: 3/27/2008
Test Engineer: Joseph Cadigal
Test Location: FT Chamber # 3

GP = 27 AP = 16.4

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.700	27.5	H	54.0	-26.5	AVG	184	1.0	
1747.920	28.9	V	54.0	-25.1	AVG	102	1.0	Note 2
2454.860	32.6	H	54.0	-21.4	AVG	119	1.0	
3983.070	24.7	H	54.0	-29.3	AVG	116	1.3	Note 2
9818.120	25.4	V	54.0	-28.6	AVG	194	1.6	
1497.700	43.0	H	74.0	-31.0	PK	184	1.0	Note 2
1747.920	49.3	V	74.0	-24.7	PK	102	1.0	
2454.860	40.8	H	74.0	-33.2	PK	119	1.0	
3983.070	44.9	H	74.0	-29.1	PK	116	1.3	
9818.120	37.0	V	74.0	-37.0	PK	194	1.6	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11n20 Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 19.4 °C
Rel. Humidity: 43 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n20 Chain A	1 2412MHz	23.5	13.2	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	71.9dBµV/m @ 2388.6MHz (-2.1dB)
1b	802.11n20 Chain A	11 2462MHz	25.5	13.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.9dBµV/m @ 2485.1MHz (-1.1dB)
2a	802.11n20 Chain B	1 2412MHz	23.5	12.3	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.2dBµV/m @ 2389.9MHz (-1.8dB)
2b	802.11n20 Chain B	11 2462MHz	25.5	14.0	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	71.8dBµV/m @ 2483.8MHz (-2.2dB)
3a	802.11n20 Chain C	1 2412MHz	22.5	12.8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.4dBµV/m @ 2389.8MHz (-1.6dB)
3b	802.11n20 Chain C	11 2462MHz	24.5	14.1	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	71.9dBµV/m @ 2485.0MHz (-2.1dB)
4a	802.11n20 Chain A+B	1 2412MHz	26, 26	13.9, 14	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	53.0dBµV/m @ 2389.9MHz (-1.0dB)
4b	802.11n20 Chain A+B	11 2462MHz	26, 26	13.3, 13.5	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	70.9dBµV/m @ 2484.1MHz (-3.1dB)
5a	802.11n20 Chain A+C	1 2412MHz	24, 24.5	11.1, 13	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	53.0dBµV/m @ 2389.9MHz (-1.0dB)
5b	802.11n20 Chain A+C	11 2462MHz	26.5, 25.5	13.6, 13.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.0dBµV/m @ 2483.5MHz (-2.0dB)

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
6a	802.11n20 Chain B+C	1 2412MHz	25, 24	12.2, 12.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.7dBµV/m @ 2390.0MHz (-1.3dB)
6b	802.11n20 Chain B+C	11 2462MHz	26.5, 25.5	13.8, 13.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	69.9dBµV/m @ 2484.6MHz (-4.1dB)
7a	802.11n20 A+B+C	1 2412MHz	25, 25.5, 24.5	12, 12, 12.2	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	50.4dBµV/m @ 2390.0MHz (-3.6dB)
7b	802.11n20 A+B+C	11 2462MHz	26, 26, 25	12.2, 12.4, 12.1	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	46.6dBµV/m @ 2483.5MHz (-7.4dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A

Date of Test: 3/21/2008
Test Engineer: Rafael Varelas
Test Location: FT Chamber #3

Run #1a: Low Channel @ 2412 MHz

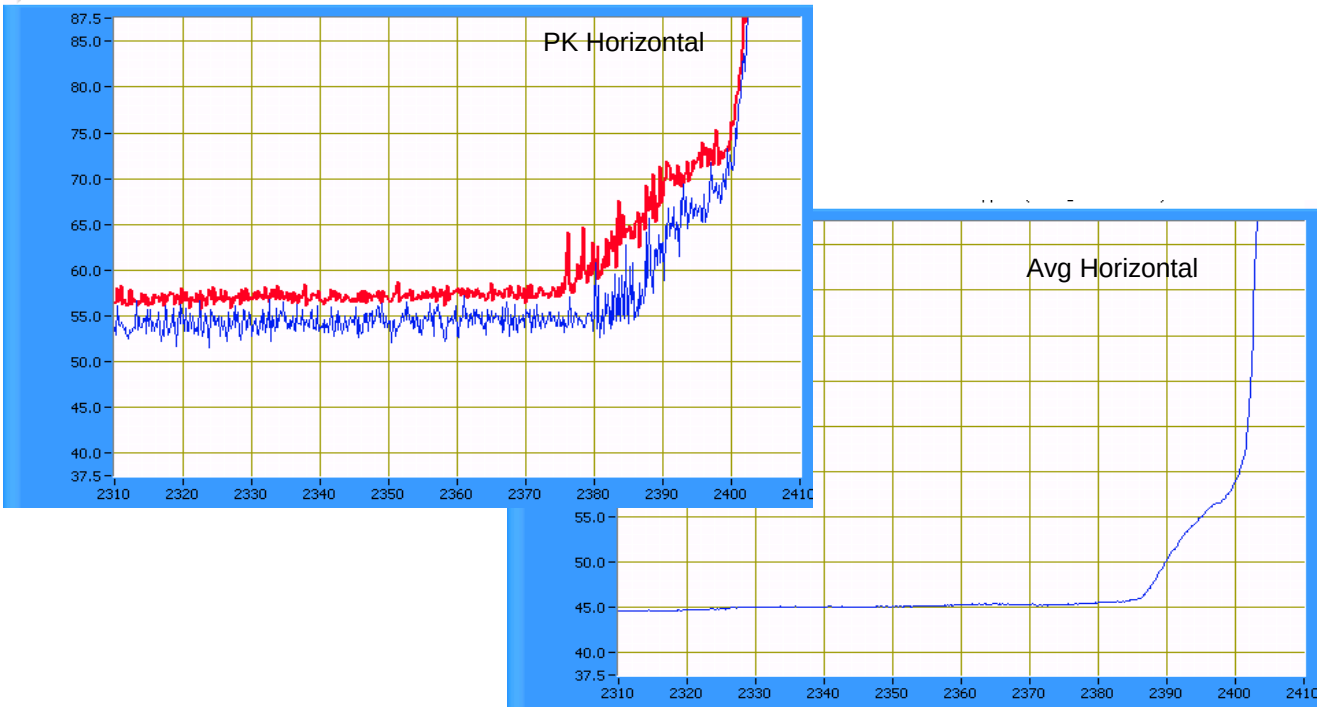
Power Setting: 23.5 Average power: 13.2 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2415.630	99.6	H	-	-	AVG	244	1.0	GC:23.5, Avg Power:13.2
2415.630	108.7	H	-	-	PK	244	1.0	GC:23.5, Avg Power:13.2
2413.360	94.7	V	-	-	AVG	265	1.0	GC:23.5, Avg Power:13.2
2413.360	102.9	V	-	-	PK	265	1.0	GC:23.5, Avg Power:13.2

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Setting for Passing Data : 23.5								
2388.570	71.9	H	74.0	-2.1	PK	244	1.0	GC:23.5, Avg Power:13.2
2389.940	50.9	H	54.0	-3.1	Avg	244	1.0	GC:23.5, Avg Power:13.2
2389.920	47.9	V	54.0	-6.1	Avg	265	1.0	GC:23.5, Avg Power:13.2
2387.170	66.4	V	74.0	-7.6	PK	265	1.0	GC:23.5, Avg Power:13.2



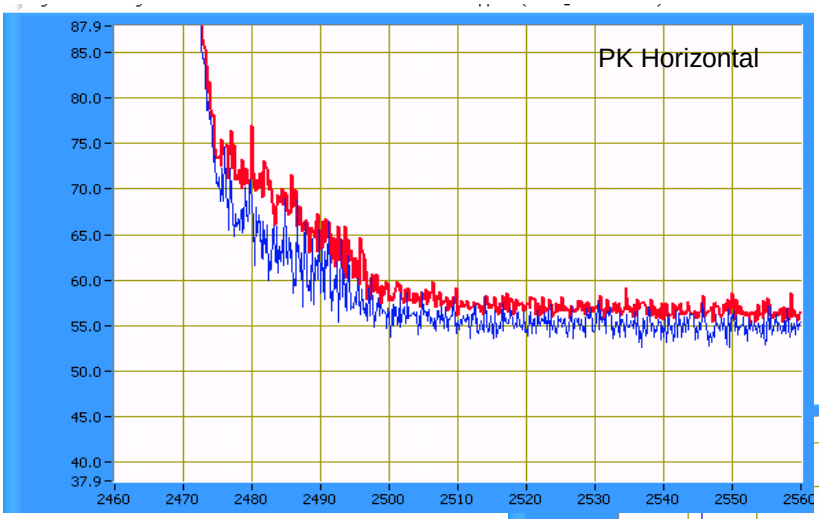
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

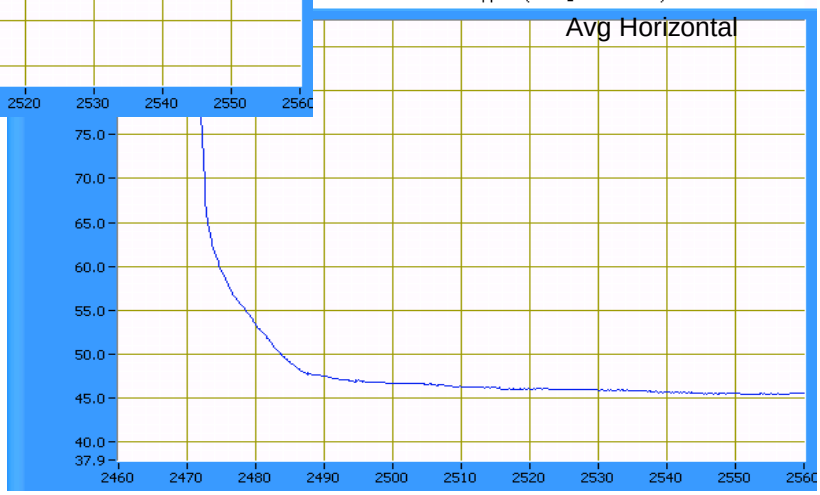
Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A
Run #1b: High Channel @ 2462 MHz
Power Setting: 25.5 Average power: 13.9 (for reference purposes)
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2454.230	100.7	H	-	-	AVG	249	1.0	GC:25.5, Avg Power: 13.9
2454.230	108.7	H	-	-	PK	249	1.0	GC:25.5, Avg Power: 13.9

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2485.090	72.9	H	74.0	-1.1	PK	249	1.0	GC:25.5, Avg Power: 13.9
2483.500	50.0	H	54.0	-4.0	Avg	249	1.0	GC:25.5, Avg Power: 13.9
2483.520	67.7	V	74.0	-6.3	PK	269	1.0	GC:25.5, Avg Power: 13.9
2483.540	47.4	V	54.0	-6.6	Avg	269	1.0	GC:25.5, Avg Power: 13.9





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain B

Date of Test: 3/21/2008
Test Engineer: Rafael Varelas
Test Location: FT Chamber #3

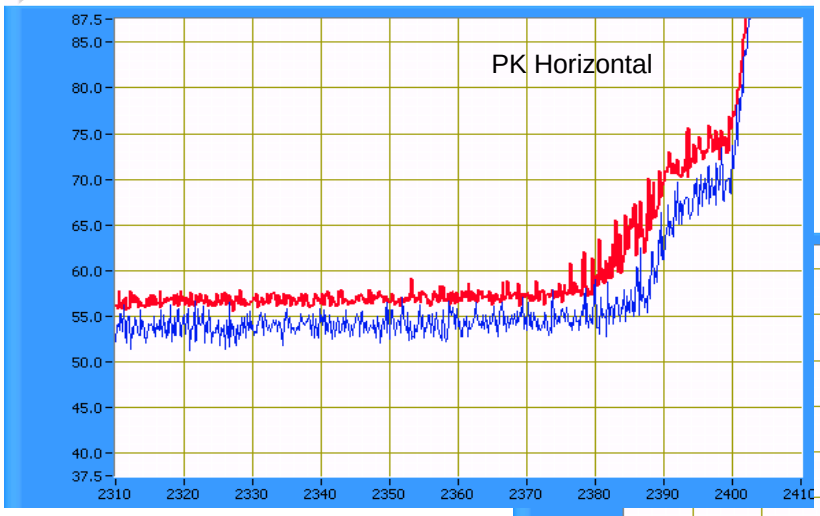
Run #2a: Low Channel @ 2412 MHz
Power Setting: 23.5 Average power: 12.3 (for reference purposes)

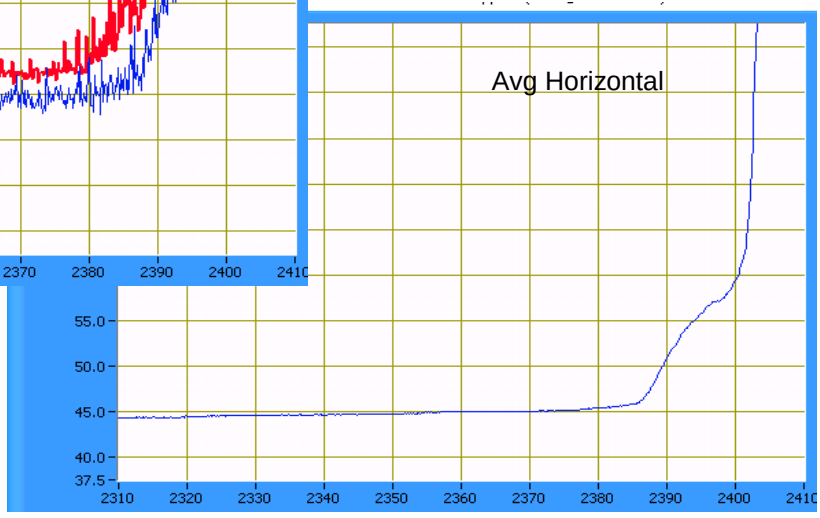
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2417.230	100.2	H	-	-	AVG	154	1.2	G.C: 23.5, Avg Power: 12.3
2417.230	109.9	H	-	-	PK	154	1.2	G.C: 23.5, Avg Power: 12.3

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Setting for Passing Data : 23.5								
2389.900	72.2	H	74.0	-1.8	PK	154	1.2	G.C: 23.5, Avg Power: 12.3
2389.980	51.3	H	54.0	-2.7	Avg	154	1.2	G.C: 23.5, Avg Power: 12.3
2389.940	47.9	V	54.0	-6.1	Avg	25	1.0	G.C: 23.5, Avg Power: 12.3
2389.420	67.7	V	74.0	-6.3	PK	25	1.0	G.C: 23.5, Avg Power: 12.3





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2b: High Channel @ 2462 MHz

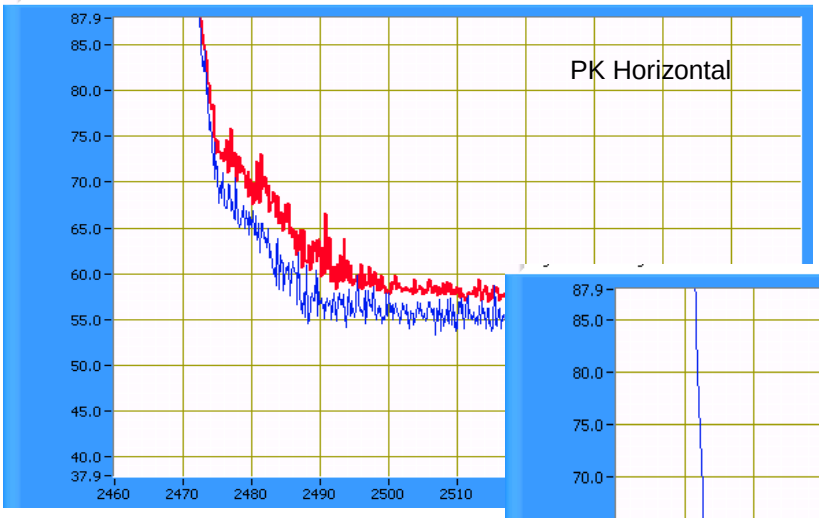
Power Setting: 25.5 Average power: 14.0 (for reference purposes)

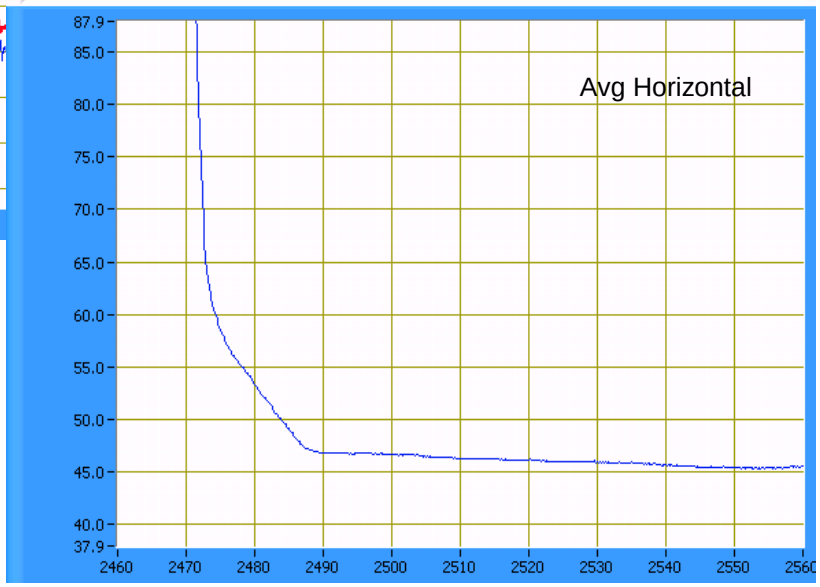
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2454.930	100.0	H	-	-	AVG	113	1.7	G.C: 25.5, Avg Power: 14.0
2454.930	108.5	H	-	-	PK	113	1.7	G.C: 25.5, Avg Power: 14.0
2454.430	94.3	V	-	-	AVG	48	1.0	G.C: 25.5, Avg Power: 14.0
2454.430	102.2	V	-	-	PK	48	1.0	G.C: 25.5, Avg Power: 14.0

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.830	71.8	H	74.0	-2.2	PK	113	1.7	G.C: 25.5, Avg Power: 14.0
2483.500	50.4	H	54.0	-3.6	Avg	113	1.7	G.C: 25.5, Avg Power: 14.0
2485.320	65.0	V	74.0	-9.0	PK	48	1.0	G.C: 25.5, Avg Power: 14.0
2483.500	47.8	V	54.0	-6.2	Avg	48	1.0	G.C: 25.5, Avg Power: 14.0





Elliott — EMC Test Data

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain C

Date of Test: 3/21/2008
Test Engineer: Rafael Varelas
Test Location: FT Chamber #3

Run #3a: Low Channel @ 2412 MHz

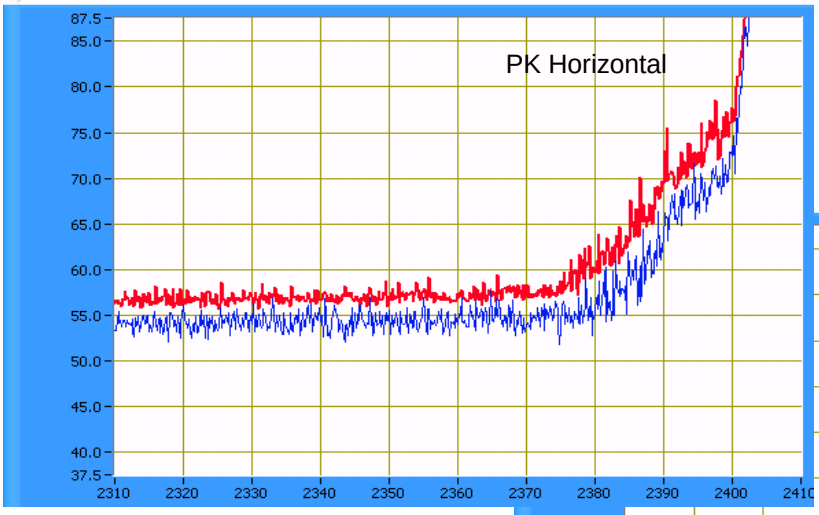
Power Setting: 22.5 Average power: 12.8 (for reference purposes)

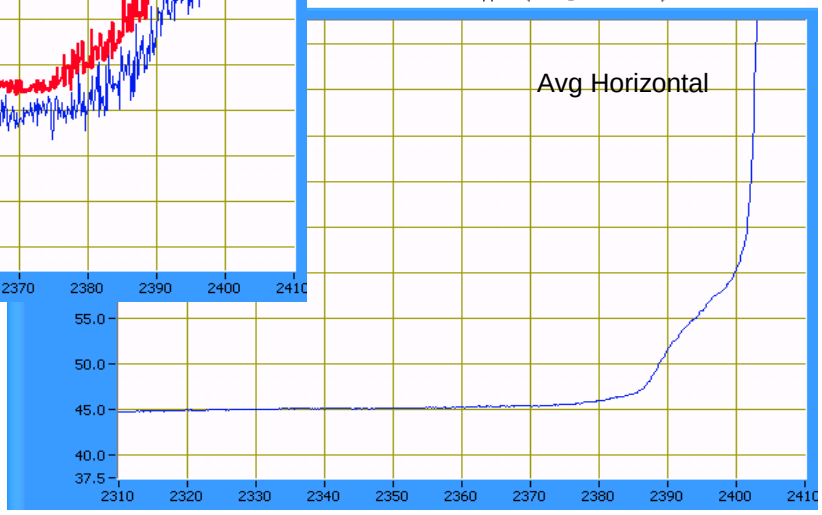
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2419.300	101.0	H	-	-	AVG	132	1.7	G.C: 22.5, Avg Power: 12.8
2419.300	109.1	H	-	-	PK	132	1.7	G.C: 22.5, Avg Power: 12.8
2419.470	95.6	V	-	-	AVG	61	1.0	G.C: 22.5, Avg Power: 12.8
2419.470	103.8	V	-	-	PK	61	1.0	G.C: 22.5, Avg Power: 12.8

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Setting for Passing Data : 22.5								
2389.800	72.4	H	74.0	-1.6	PK	132	1.7	G.C: 22.5, Avg Power: 12.8
2389.990	52.0	H	54.0	-2.0	Avg	132	1.7	G.C: 22.5, Avg Power: 12.8
2388.100	70.1	V	74.0	-3.9	PK	61	1.0	G.C: 22.5, Avg Power: 12.8
2389.940	48.7	V	54.0	-5.3	Avg	61	1.0	G.C: 22.5, Avg Power: 12.8





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b: High Channel @ 2462 MHz

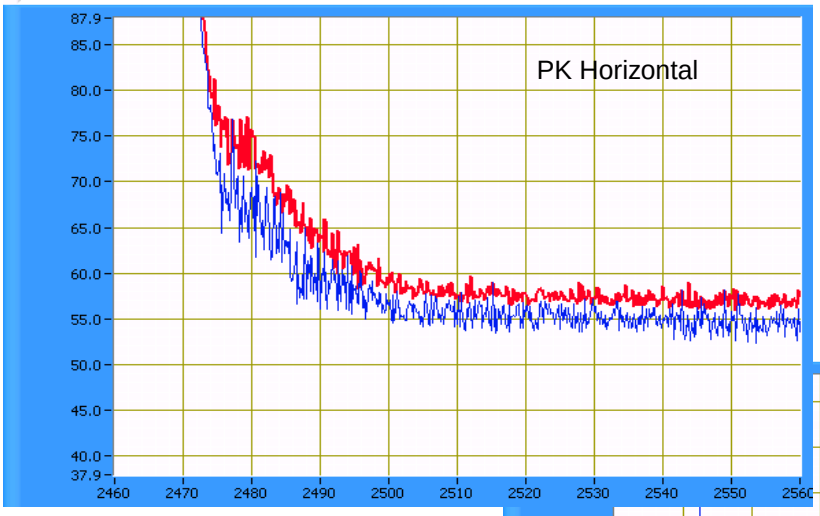
Power Setting: 24.5 Average power: 14.1 (for reference purposes)

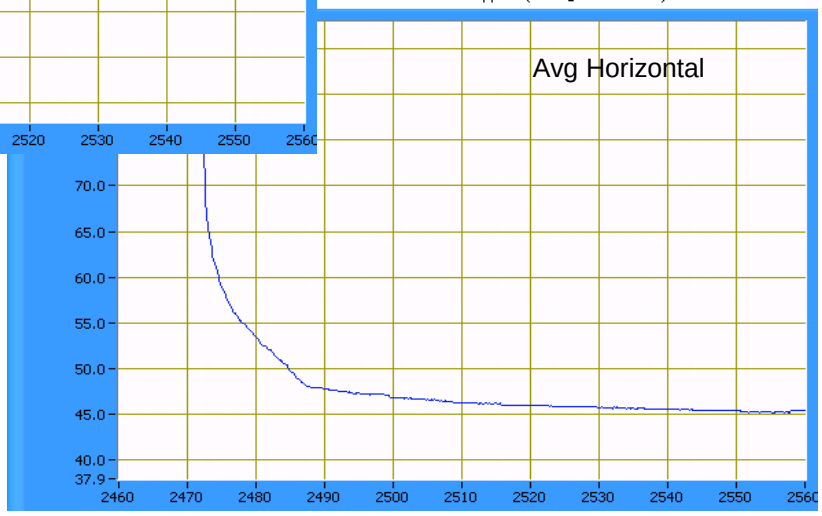
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2469.530	100.9	H	-	-	AVG	103	1.1	G.C: 24.5, Avg Power: 14.1
2469.530	109.3	H	-	-	PK	103	1.1	G.C: 24.5, Avg Power: 14.1
2455.130	96.1	V	-	-	AVG	62	1.0	G.C: 24.5, Avg Power: 14.1
2455.130	104.6	V	-	-	PK	62	1.0	G.C: 24.5, Avg Power: 14.1

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.960	71.9	H	74.0	-2.1	PK	103	1.1	G.C: 24.5, Avg Power: 14.1
2483.500	50.8	H	54.0	-3.2	Avg	103	1.1	G.C: 24.5, Avg Power: 14.1
2485.280	68.4	V	74.0	-5.6	PK	62	1.0	G.C: 24.5, Avg Power: 14.1
2483.500	48.6	V	54.0	-5.4	Avg	62	1.0	G.C: 24.5, Avg Power: 14.1





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 4: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+B

Date of Test: 3/30/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 4

Run #4a: Low Channel @ 2412 MHz

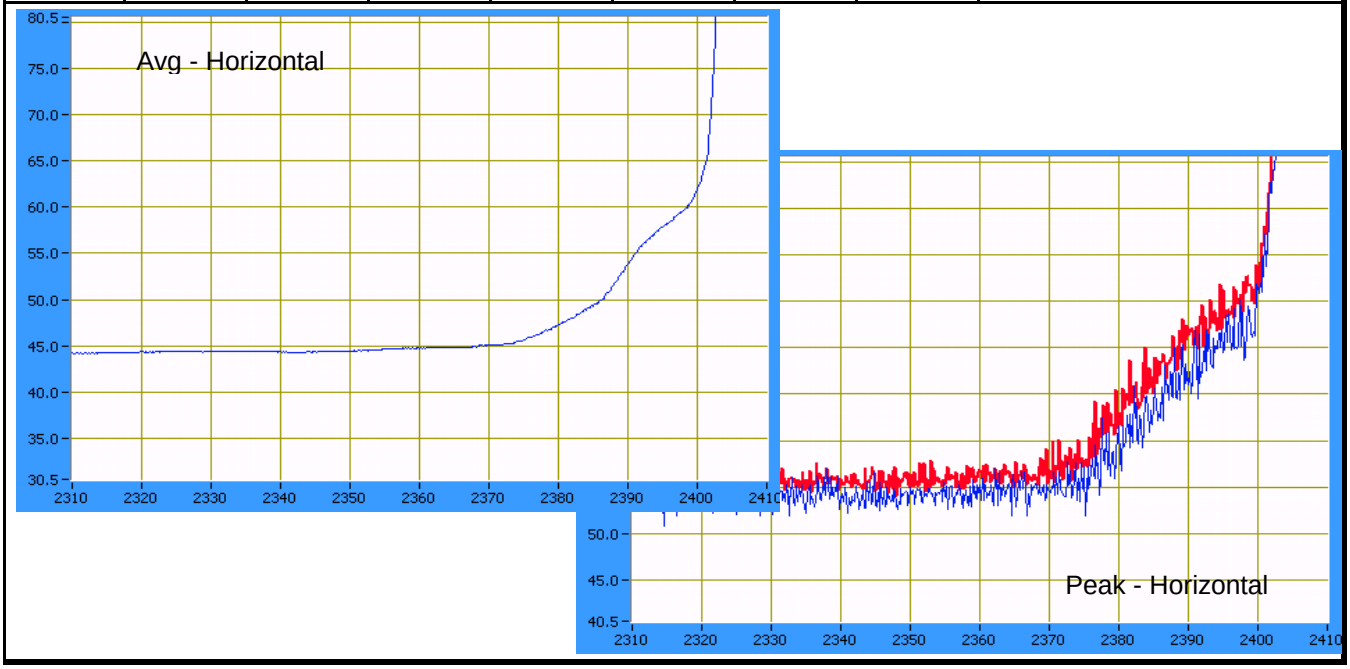
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.0	13.9	26.0	14		

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2415.330	99.5	H	-	-	AVG	240	1.0	
2415.330	109.6	H	-	-	PK	240	1.0	
2419.330	97.0	V	-	-	AVG	215	1.0	
2419.330	107.0	V	-	-	PK	215	1.0	

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.930	53.0	H	54.0	-1.0	AVG	240	1.0	
2389.890	71.5	H	74.0	-2.5	PK	240	1.0	
2389.910	50.4	V	54.0	-3.6	AVG	215	1.0	
2388.100	69.8	V	74.0	-4.2	PK	215	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 4: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+B
Run #4b: High Channel @ 2462 MHz

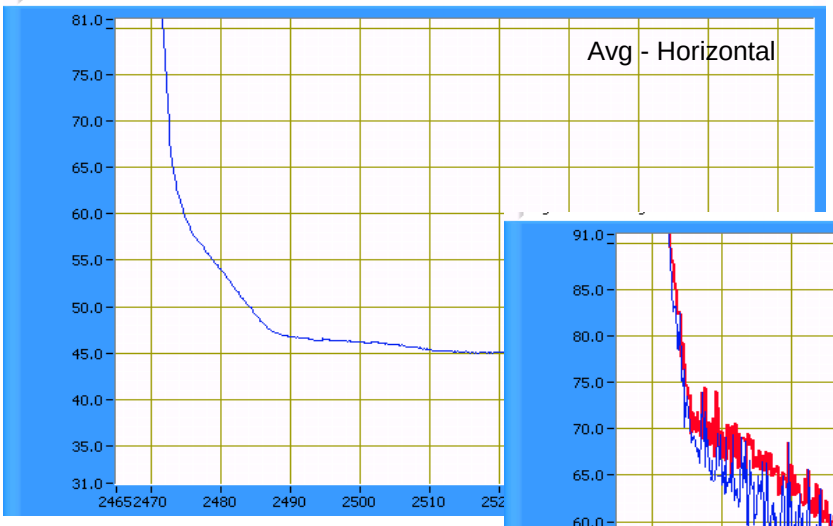
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.0	13.3	26.0	13.5		

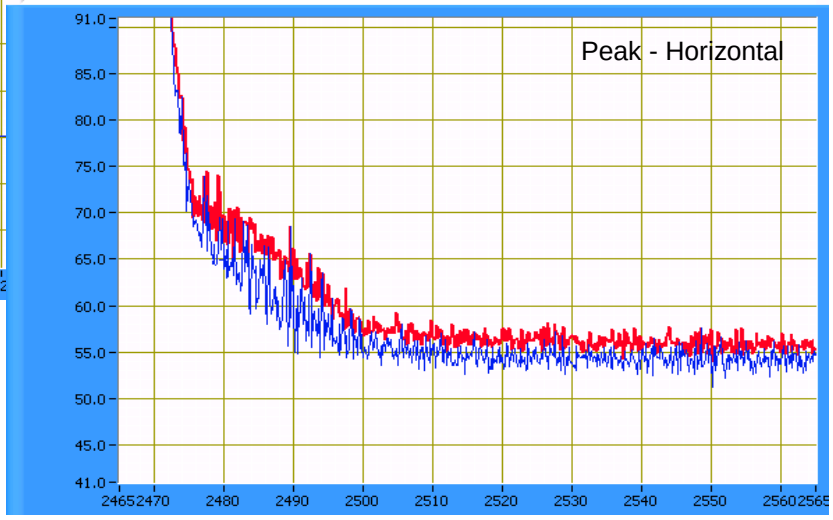
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2467.500	101.0	H	-	-	AVG	249	1.0	
2467.500	111.3	H	-	-	PK	249	1.0	
2470.750	95.2	V	-	-	AVG	65	1.0	
2470.750	105.3	V	-	-	PK	65	1.0	

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.050	70.9	H	74.0	-3.1	PK	249	1.0	
2483.500	50.6	H	54.0	-3.4	AVG	249	1.0	
2483.510	47.5	V	54.0	-6.5	AVG	65	1.0	
2484.940	68.5	V	74.0	-5.5	PK	65	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #5: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+C

Date of Test: 3/30/2008

Test Engineer: Suhaila Khushzad

Test Location: Chamber # 4

Run #5a: Low Channel @ 2412 MHz

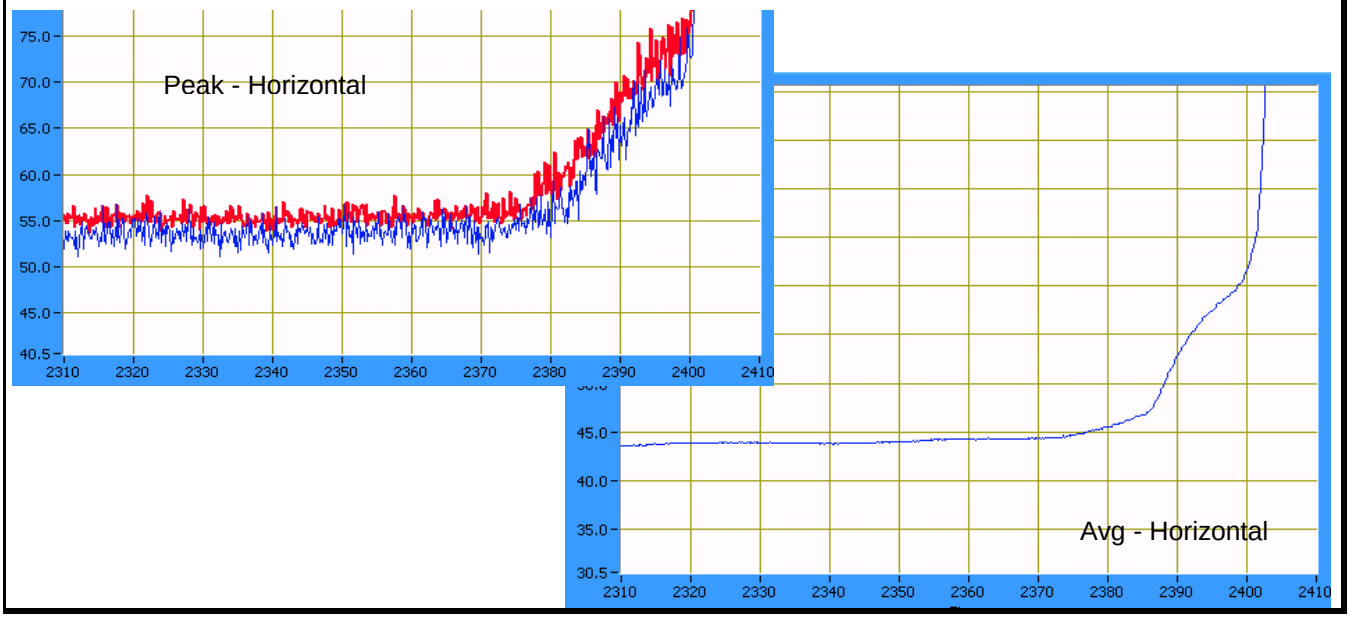
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
24.0	11.1	[redacted]		24.5	13.0

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.300	101.4	H	-	-	AVG	249	1.0	
2413.300	111.4	H	-	-	PK	249	1.0	
2415.750	94.0	V	-	-	AVG	237	1.0	
2415.750	104.8	V	-	-	PK	237	1.0	

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.940	53.0	H	54.0	-1.0	AVG	249	1.0	
2389.520	71.4	H	74.0	-2.6	PK	249	1.0	
2389.920	46.7	V	54.0	-7.3	AVG	237	1.0	
2389.330	60.9	V	74.0	-13.1	PK	237	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #5b: High Channel @ 2462 MHz

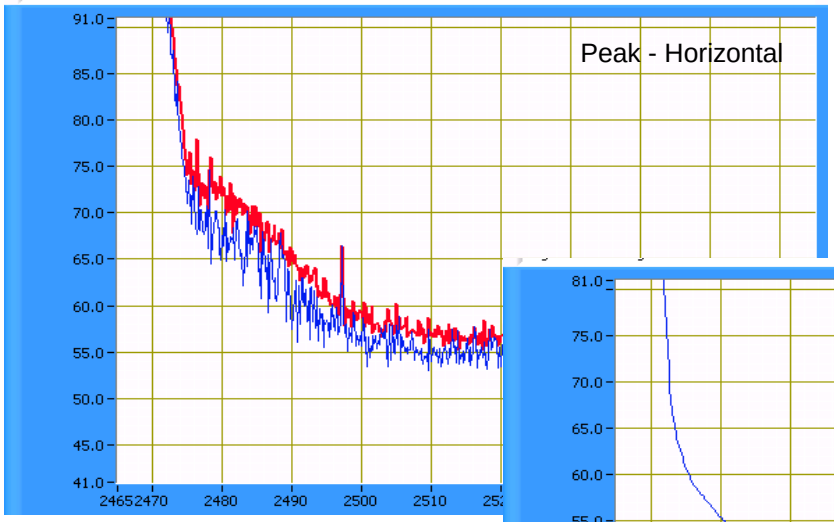
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.5	13.6			25.5	13.4

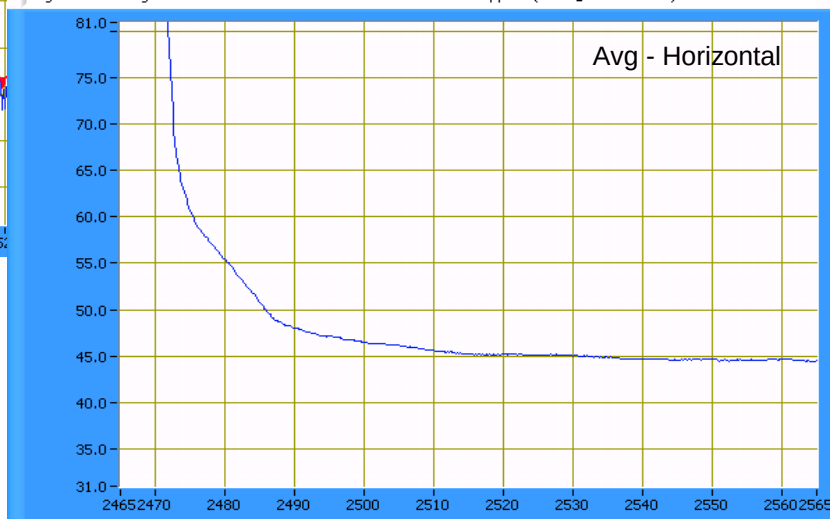
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2470.670	102.8	H	-	-	AVG	247	1.0	
2470.670	112.2	H	-	-	PK	247	1.0	
2466.080	95.4	V	-	-	AVG	222	1.0	
2466.080	105.5	V	-	-	PK	222	1.0	

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.530	52.0	H	54.0	-2.0	AVG	247	1.0	
2485.460	71.8	H	74.0	-2.2	PK	247	1.0	
2483.500	48.3	V	54.0	-5.7	AVG	222	1.0	
2483.950	68.8	V	74.0	-5.2	PK	222	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #6: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain B+C

Date of Test: 3/30/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 4

Run #6a: Low Channel @ 2412 MHz

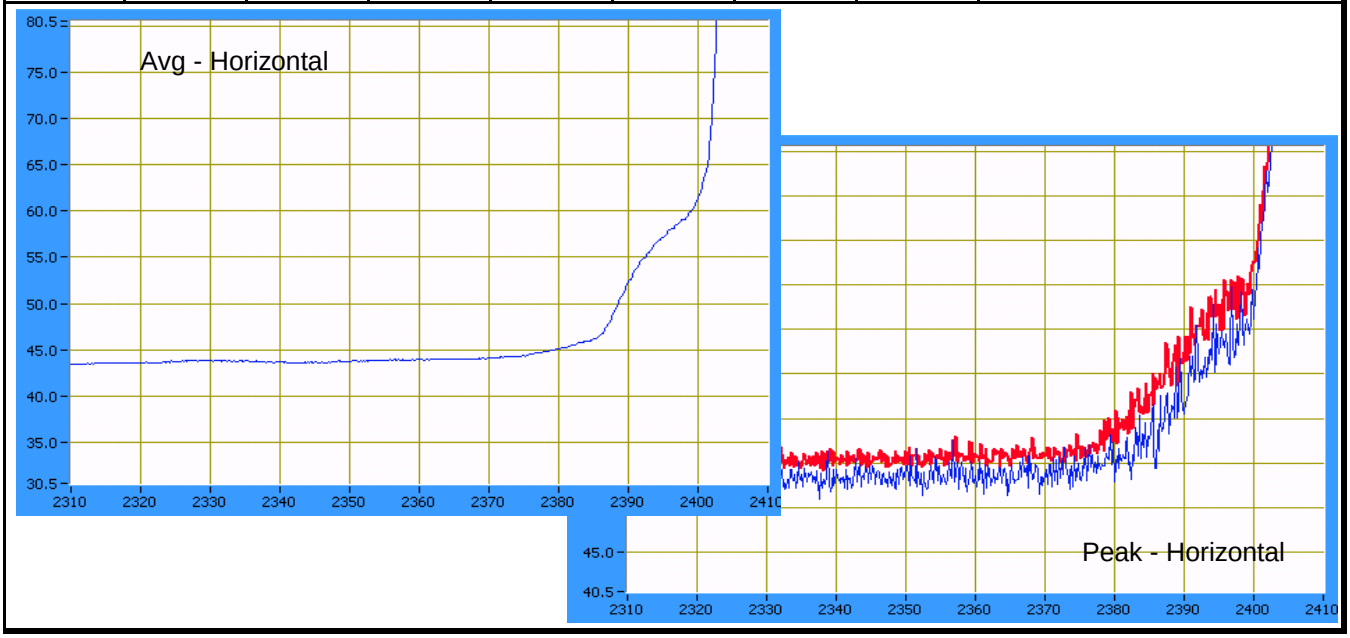
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		25.0	12.2	24.0	12.4

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2411.430	100.4	H	-	-	AVG	107	1.0	
2411.430	111.1	H	-	-	PK	107	1.0	
2415.500	95.9	V	-	-	AVG	61	1.1	
2415.500	106.2	V	-	-	PK	61	1.1	

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.990	52.7	H	54.0	-1.3	AVG	107	1.0	
2389.910	68.8	H	74.0	-5.2	PK	107	1.0	
2389.980	48.2	V	54.0	-5.8	AVG	61	1.1	
2389.890	64.5	V	74.0	-9.5	PK	61	1.1	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #6: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain B+C

Date of Test: 4/9/2008
Test Engineer: Suhaila Khushzad
Test Location: FT Chamber #3

Run #6b: High Channel @ 2462 MHz

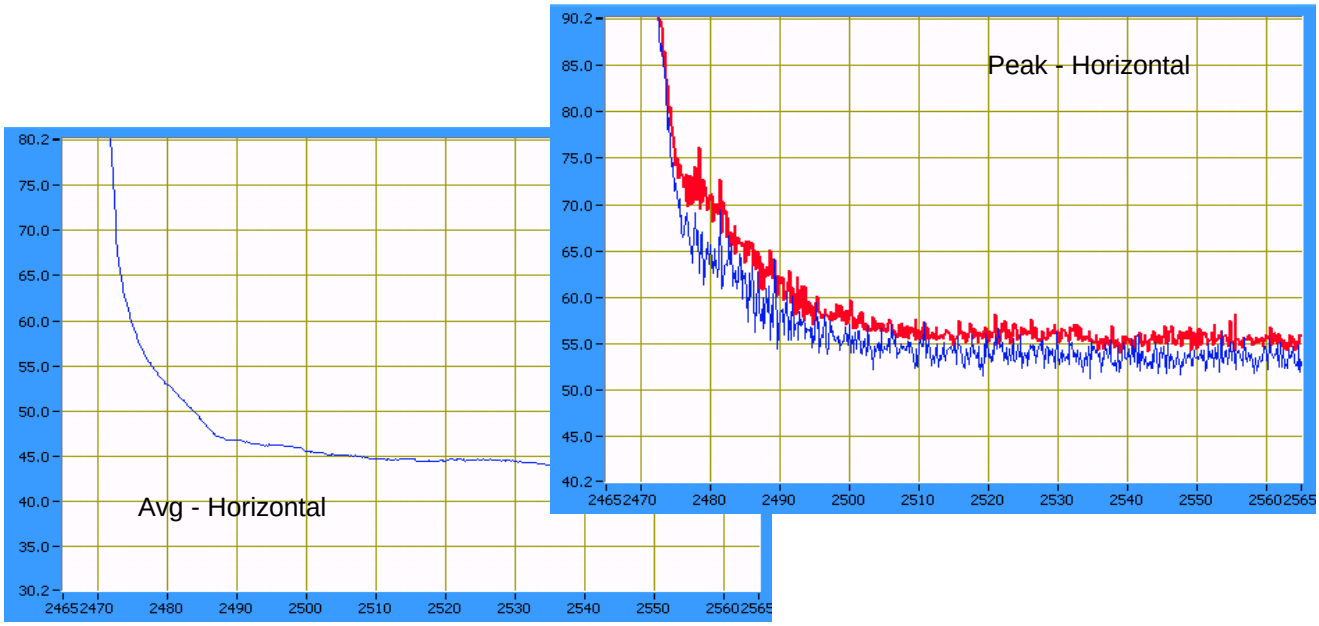
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		26.5	13.8	25.5	13.6

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2468.170	102.5	H	-	-	AVG	107	1.0	RB = 1MHz, VB = 10Hz
2468.170	112.6	H	-	-	PK	107	1.0	RB = VB = 1MHz
2467.920	95.7	V	-	-	AVG	52	1.2	RB = 1MHz, VB = 10Hz
2467.920	106.1	V	-	-	PK	52	1.2	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.610	69.9	H	74.0	-4.1	Pk	107	1.0	
2483.510	49.6	H	54.0	-4.4	Avg	107	1.0	
2484.650	63.0	V	74.0	-11.0	Pk	52	1.2	
2483.500	45.6	V	54.0	-8.4	Avg	52	1.2	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #7: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+B+C

Date of Test: 4/9/2008

Test Engineer: Suhaila Khushzad

Test Location: FT Chamber #3

Run #7a: Low Channel @ 2412 MHz

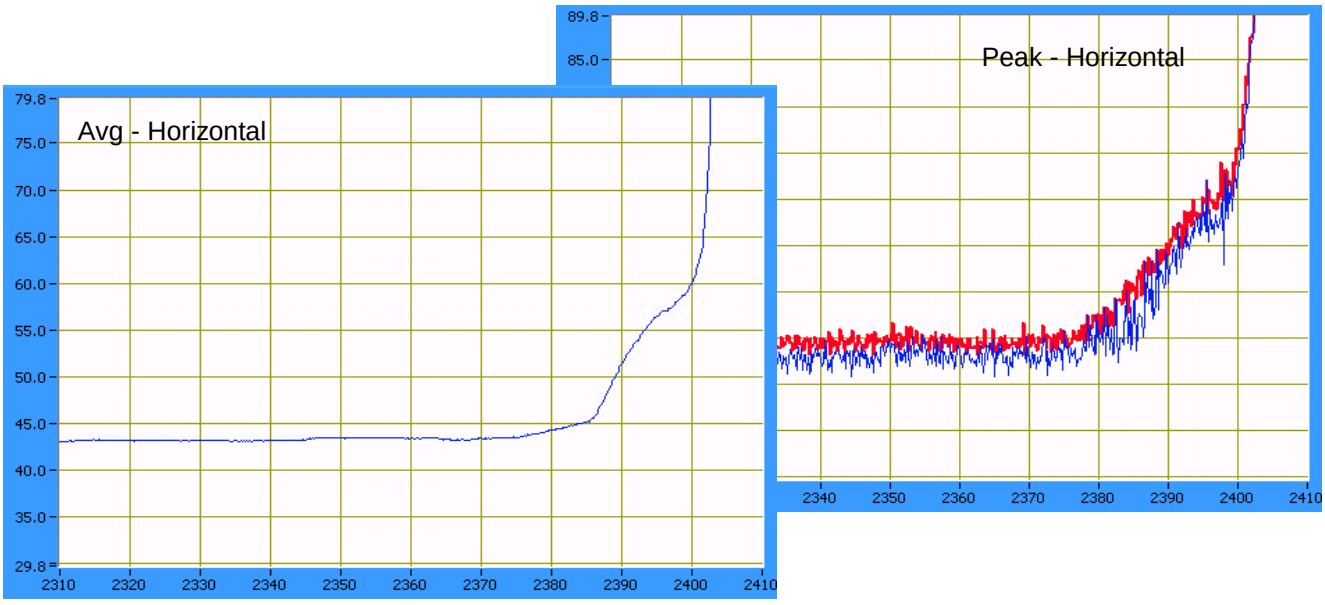
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
25	12	25.5	12	24.5	12.2

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.170	98.4	H	-	-	AVG	100	1.1	RB = 1MHz, VB = 10Hz
2413.170	109.2	H	-	-	PK	100	1.1	RB = VB = 1MHz
2409.500	93.8	V	-	-	AVG	64	1.0	RB = 1MHz, VB = 10Hz
2409.500	103.9	V	-	-	PK	64	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.980	50.4	H	54.0	-3.6	Avg	100	1.1	
2389.600	66.5	H	74.0	-7.5	Pk	100	1.1	
2389.970	46.9	V	54.0	-7.1	Avg	64	1.0	
2388.850	62.6	V	74.0	-11.4	Pk	64	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #7: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+B+C
Run #7b: High Channel @ 2462 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26	12.2	26	12.4	25	12.1

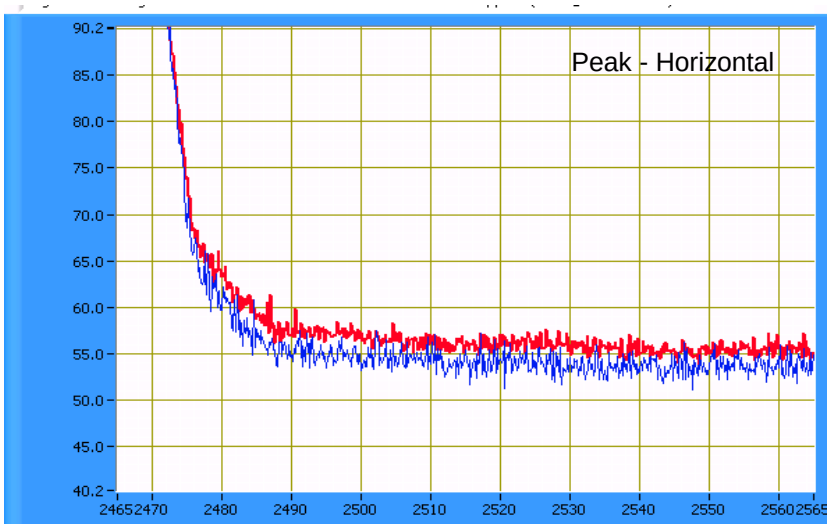
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

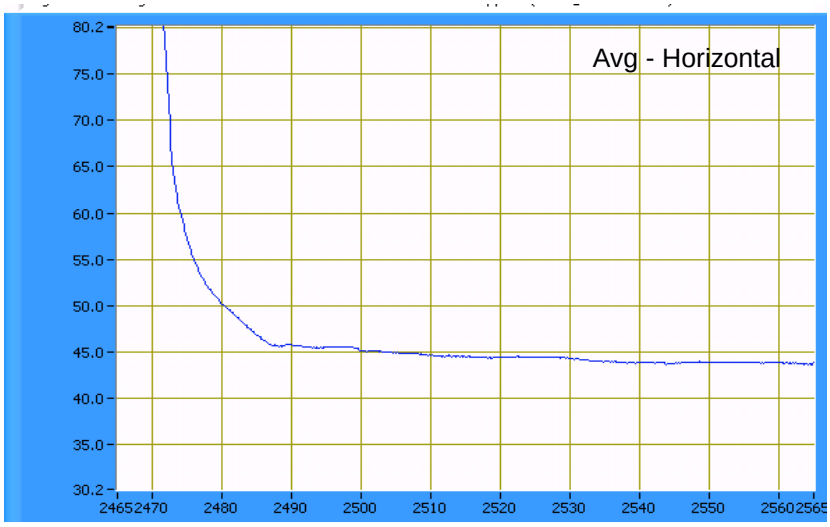
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2469.420	100.3	H	-	-	AVG	105	1.0	RB = 1MHz, VB = 10Hz
2469.420	111.1	H	-	-	PK	105	1.0	RB = VB = 1MHz
2466.830	95.2	V	-	-	AVG	66	1.2	RB = 1MHz, VB = 10Hz
2466.830	106.4	V	-	-	PK	66	1.2	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.510	46.6	H	54.0	-7.4	Avg	105	1.0	
2483.880	62.0	H	74.0	-12.0	Pk	105	1.0	
2483.500	45.1	V	54.0	-8.9	Avg	66	1.2	
2485.730	60.2	V	74.0	-13.8	Pk	66	1.2	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11n20 Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 4/1/2008
Test Engineer: Ben Jing
Test Location: Chamber # 5

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 34 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	Chain A Chain B Chain C	6 (2437)	28.0 27.5 26.5	16.5 dBm	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	41.2dBµV/m @ 1497.9MHz (-12.8dB)
2	802.11n20 Chains A+B+C	1 (2412) 6 (2437) 11 (2462)	Power set to single chain settings from run 1, 2 and 3		Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	44.8dBµV/m @ 9746.8MHz (-9.2dB)
-	802.11n20 Dual Chain modes (A+B, A+C, B+C)				Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	Covered by tests on chains A+B+C

Single chain measurements on center channel demonstrated that 802.11b single-chain mode was worst case.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11n 20MHz Chain A

Run #1a: Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
28.0	16.6				

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2438.290	101.4	V	-	-	Pk	277	1.0	RB = VB = 100kHz
2438.300	103.6	H	-	-	Pk	213	1.0	RB = VB = 100kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.920	41.2	V	54.0	-12.8	AVG	105	1.0	
3986.320	34.3	V	54.0	-19.7	AVG	292	1.0	
1497.920	57.2	V	74.0	-16.8	PK	105	1.0	
1744.270	52.5	V	73.6	-21.1	PK	294	1.5	Note 2
3986.320	54.3	V	74.0	-19.7	PK	292	1.0	
6498.620	49.3	V	73.6	-24.3	PK	217	1.0	Note 2

Run #1b: Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		27.5	16.5		

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2435.700	98.6	V	-	-	Pk	74	1.0	RB = VB = 100kHz
2435.720	106.8	H	-	-	Pk	112	1.0	RB = VB = 100kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
6498.540	48.0	H	76.8	-28.8	PK	290	1.5	Note 2
6498.550	50.2	V	76.8	-26.6	PK	134	1.0	Note 2
6498.560	50.7	V	76.8	-26.1	PK	219	1.0	Note 2
6498.560	49.6	H	76.8	-27.2	PK	33	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1c: Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
				26.5	16.5

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2438.310	99.5	V	-	-	Pk	58	1.0	RB = VB = 100kHz
2438.280	106.3	H	-	-	Pk	114	1.0	RB = VB = 100kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.810	39.0	V	54.0	-15.0	AVG	105	1.0	
3983.560	35.2	V	54.0	-18.8	AVG	286	1.5	
1494.810	56.5	V	74.0	-17.5	PK	105	1.0	
1747.280	54.7	V	76.3	-21.6	PK	328	1.0	Note 2
3983.560	56.9	V	74.0	-17.1	PK	286	1.5	
6498.650	48.7	V	76.3	-27.6	PK	240	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11n 20MHz Chains A+B+C
These tests run at a power setting equal to the highest single-chain settings to cover all possible dual- and triple-chain operating modes.

Run #2a: Low Channel @ 2412 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
29.5	16.5	30.5	16.5	29.5	16.5

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.320	110.8	H	-	-	Pk	111	1.0	RB = VB = 100kHz
2410.760	104.4	V	-	-	Pk	79	1.0	RB = VB = 100kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1744.620	37.2	V	54.0	-16.8	AVG	77	1.5	Note 2
7233.500	41.4	V	54.0	-12.6	AVG	136	2.0	Note 2
9650.190	42.2	V	54.0	-11.8	AVG	177	1.5	Note 2
1744.620	59.8	V	74.0	-14.2	PK	77	1.5	Note 2
7233.500	57.7	V	74.0	-16.3	PK	136	2.0	Note 2
9650.190	54.2	V	74.0	-19.8	PK	177	1.5	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2b: Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
30.0	16.5	30.5	16.6	29.5	16.6

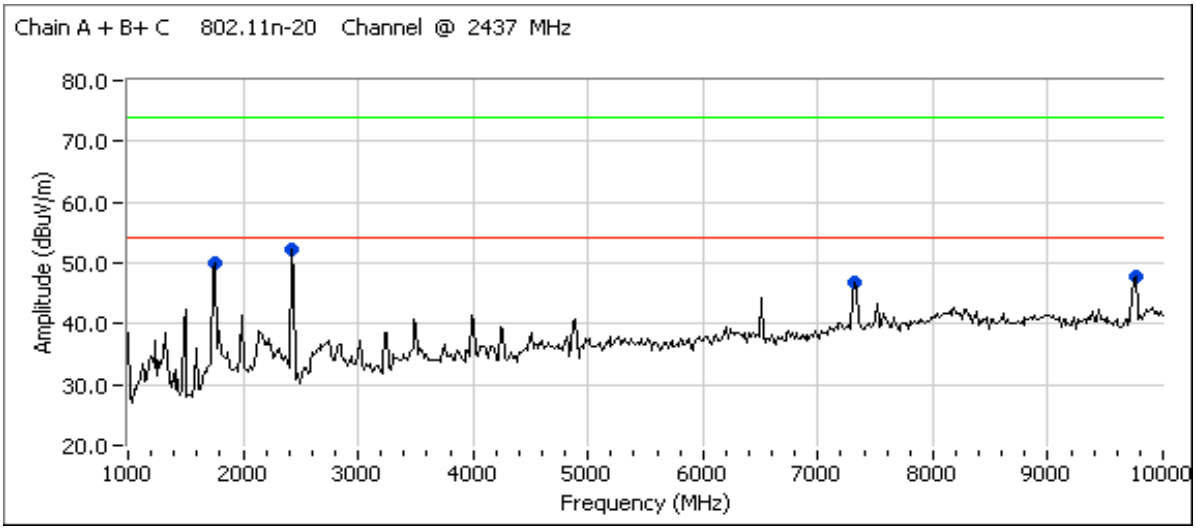
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2438.330	105.2	V	-	-	Pk	64	1.0	RB = VB = 100kHz
2438.040	104.5	H	-	-	Pk	44	1.0	RB = VB = 100kHz

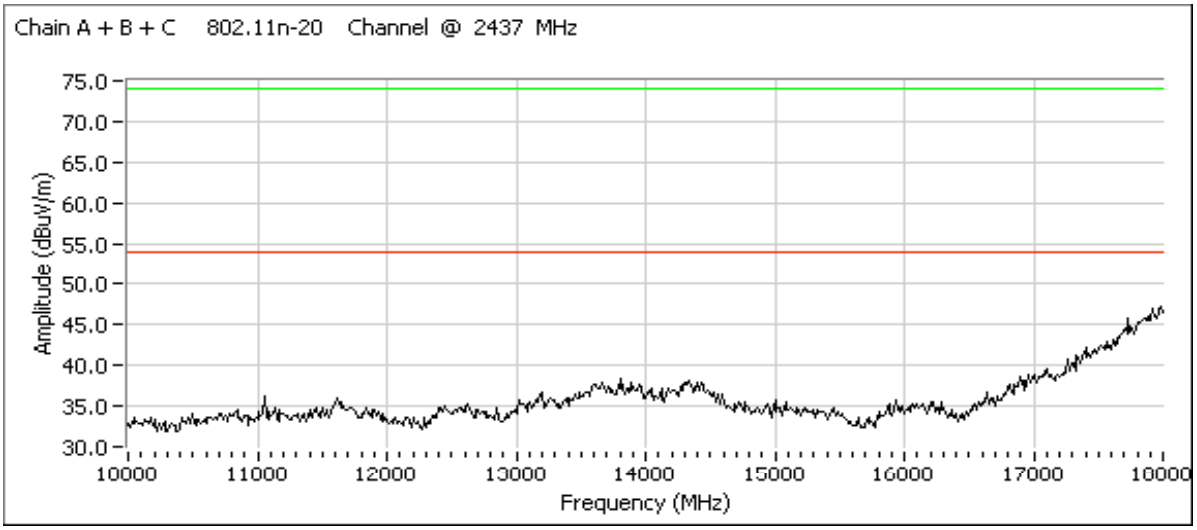
Spurious Emissions

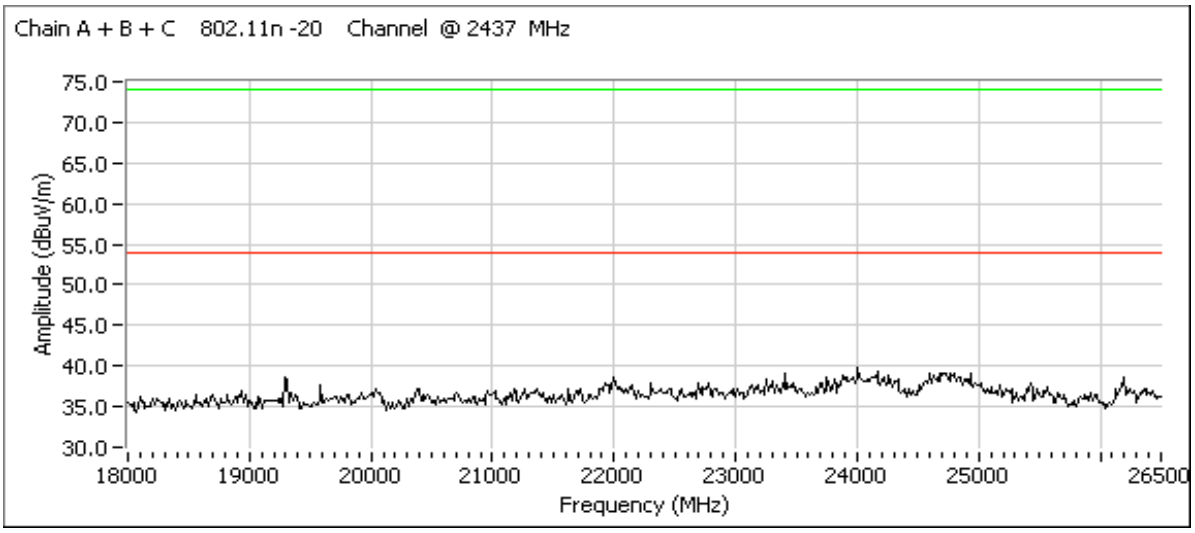
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.970	36.3	V	54.0	-17.7	AVG	81	1.5	Note 2
7311.050	38.7	V	54.0	-15.3	AVG	179	1.5	
9746.750	44.8	V	54.0	-9.2	AVG	181	2.0	Note 2
1747.970	59.2	V	74.0	-14.8	PK	81	1.5	Note 2
7311.050	53.1	V	74.0	-20.9	PK	179	1.5	
9746.750	56.7	V	74.0	-17.3	PK	181	2.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2c: High Channel @ 2462 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
30.5	16.5	31.0	16.6	30.0	16.5

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.740	105.5	V	-	-	Pk	79	1.0	RB = VB = 100kHz
2463.300	110.4	H	-	-	Pk	118	1.0	RB = VB = 100kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1744.410	36.7	V	54.0	-17.3	AVG	79	1.5	Note 2
7408.540	36.2	V	54.0	-17.8	AVG	151	1.5	
1744.410	58.7	V	74.0	-15.3	PK	79	1.5	Note 2
7408.540	51.0	V	74.0	-23.0	PK	151	1.5	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11n40 Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature:	19 °C
Rel. Humidity:	44 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n40 Chain A	1 2422MHz	23.0	12.0	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.1dBµV/m @ 2390.0MHz (-1.9dB)
1b	802.11n40 Chain A	11 2452MHz	25.0	13.7	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.6dBµV/m @ 2485.1MHz (-1.4dB)
2a	802.11n40 Chain B	1 2422MHz	23.5	12.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.5dBµV/m @ 2389.8MHz (-1.5dB)
2b	802.11n40 Chain B	11 2452MHz	25.5	14.3	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.2dBµV/m @ 2483.5MHz (-1.8dB)
3a	802.11n40 Chain C	1 2422MHz	21.0	11.5	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.7dBµV/m @ 2389.9MHz (-1.3dB)
3b	802.11n40 Chain C	11 2452MHz	24.0	13.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.6dBµV/m @ 2485.6MHz (-1.4dB)
4a	802.11n40 Chain A+B	1 2422MHz	A : 23.5 B : 23.5	A : 11.3 B : 11.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.1dBµV/m @ 2389.7MHz (-1.9dB)
4b	802.11n40 Chain A+B	11 2452MHz	A : 26.0 B : 26.5	A : 13.8 B : 14.1	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	53.0dBµV/m @ 2484.9MHz (-1.0dB)
5a	802.11n40 Chain A+C	1 2422MHz	A : 24.5 C : 22.5	A : 12.1 C : 11.8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.7dBµV/m @ 2389.7MHz (-1.3dB)
5b	802.11n40 Chain A+C	11 2452MHz	A : 26.5 C : 25.5	A : 13.9 C : 14.1	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.3dBµV/m @ 2485.6MHz (-1.7dB)
6a	802.11n40 Chain B+C	1 2422MHz	B : 23.5 C : 21.0	B : 11.1 C : 10.2	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.7dBµV/m @ 2388.2MHz (-1.3dB)
6b	802.11n40 Chain B+C	11 2452MHz	B : 25.5 C : 24.5	B : 13.5 C : 13.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.4 dBuV/m @ 2485.6 MHz (-1.6dB)
7a	802.11n40 A+B+C	1 2422MHz	A : 23.0 B : 22.5 C : 21.0	A : 10.2 B : 10.1 C : 10.0	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.5dBµV/m @ 2386.8MHz (-1.5dB)
7b	802.11n40 A+B+C	11 2452MHz	A : 26.0 B : 26.0 C : 25.5	A : 12.8 B : 12.8 C : 12.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.5dBµV/m @ 2483.5MHz (-1.5dB)

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A

Date of Test: 3/24/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 5

Run #1a: Low Channel @ 2422 MHz

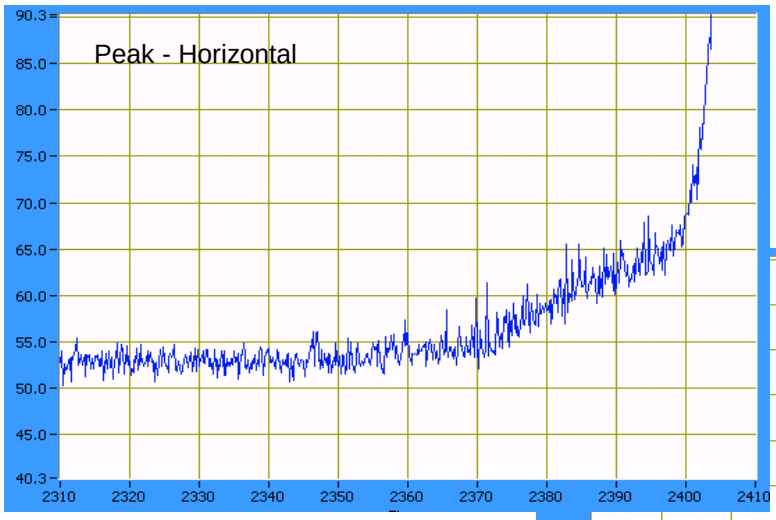
Power Setting: 23 Average power: 12 (for reference purposes)

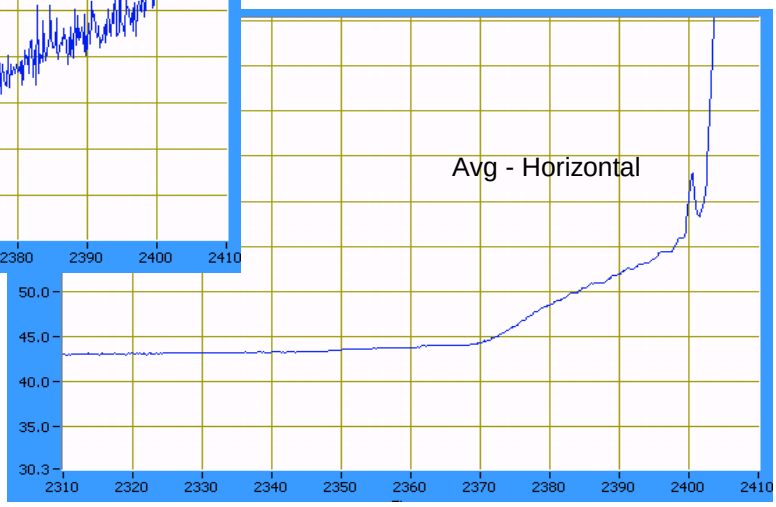
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2420.540	94.6	H	-	-	AVG	252	1.0	GC: 23, Avg Power: 12
2420.540	103.0	H	-	-	PK	252	1.0	GC: 23, Avg Power: 12
2437.870	91.0	V	-	-	AVG	176	1.3	GC: 23, Avg Power: 12
2437.870	99.6	V	-	-	PK	176	1.3	GC: 23, Avg Power: 12

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.970	52.1	H	54.0	-1.9	Avg	252	1.0	GC: 23, Avg Power: 12
2387.920	70.1	H	74.0	-3.9	Pk	252	1.0	GC: 23, Avg Power: 12
2389.640	47.4	V	54.0	-6.6	Avg	176	1.3	GC: 23, Avg Power: 12
2387.570	64.1	V	74.0	-9.9	Pk	176	1.3	GC: 23, Avg Power: 12





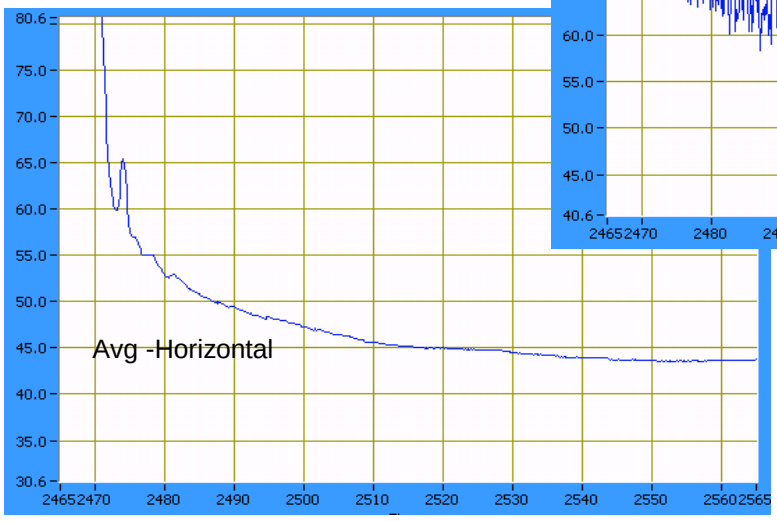
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

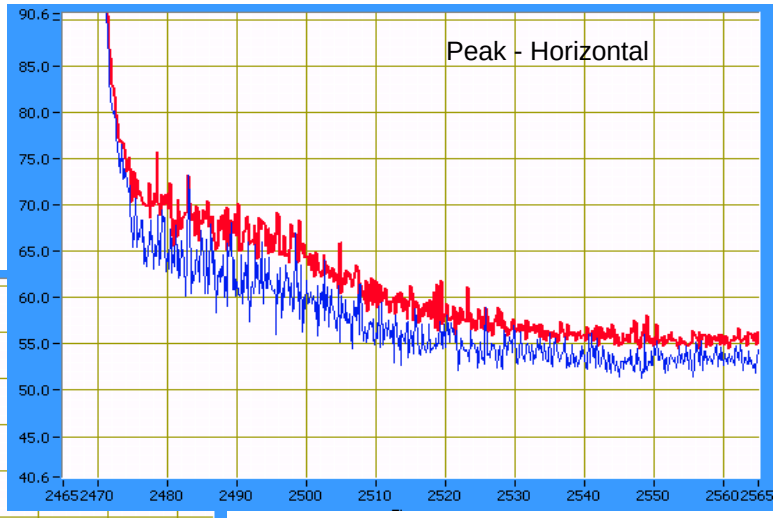
Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A
Run #1b: High Channel @ 2452 MHz
Power Setting: 25 Average power: 13.7 (for reference purposes)
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2436.670	99.9	H	-	-	AVG	250	1.0	GC: 27.5, Avg Power: 16.5
2436.670	108.7	H	-	-	PK	250	1.0	GC: 27.5, Avg Power: 16.6
2436.370	98.1	H	-	-	AVG	250	1.0	GC: 25, Avg Power: 13.7
2436.370	107.0	H	-	-	PK	250	1.0	GC: 25, Avg Power: 13.7
2468.000	93.4	V	-	-	AVG	241	1.5	GC: 25, Avg Power: 13.7
2468.000	101.7	V	-	-	PK	241	1.5	GC: 25, Avg Power: 13.7

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2485.050	72.6	H	74.0	-1.4	Pk	250	1.0	GC: 25, Avg Power: 13.7
2483.510	51.3	H	54.0	-2.7	Avg	250	1.0	GC: 25, Avg Power: 13.7
2484.770	70.6	V	74.0	-3.4	Avg	241	1.5	GC: 25, Avg Power: 13.7
2483.530	48.8	V	54.0	-5.2	Pk	241	1.5	GC: 25, Avg Power: 13.7





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain B

Date of Test: 3/24/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 5

Run #2a: Low Channel @ 2422 MHz

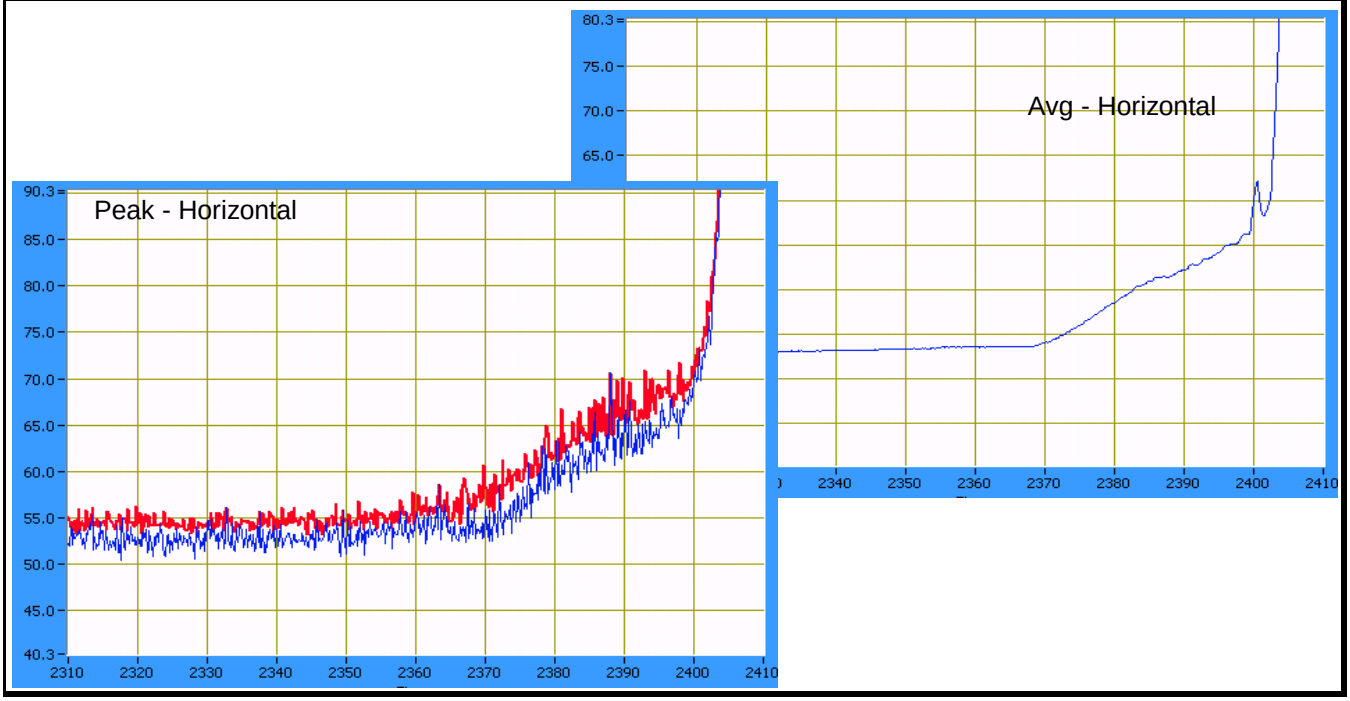
Power Setting: 23.5 Average power: 12.6 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2406.400	97.9	H	-	-	AVG	107	1.0	GC: 27, Avg Power: 16.6
2406.400	106.9	H	-	-	PK	107	1.0	GC: 27, Avg Power: 16.6
2423.090	92.1	H	-	-	AVG	107	1.0	GC: 23.5, Avg Power: 12.6
2423.090	100.5	H	-	-	PK	107	1.0	GC: 23.5, Avg Power: 12.6
2437.730	91.0	V	-	-	AVG	50	1.0	GC: 23.5, Avg Power: 12.6
2437.730	99.4	V	-	-	PK	50	1.0	GC: 23.5, Avg Power: 12.6

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.770	52.5	H	54.0	-1.5	Avg	107	1.0	GC: 23.5, Avg Power: 12.6
2388.170	71.4	H	74.0	-2.6	Pk	107	1.0	GC: 23.5, Avg Power: 12.6
2389.840	48.5	V	54.0	-5.5	Avg	50	1.0	GC: 23.5, Avg Power: 12.6
2388.270	66.4	V	74.0	-7.6	Pk	50	1.0	GC: 23.5, Avg Power: 12.6



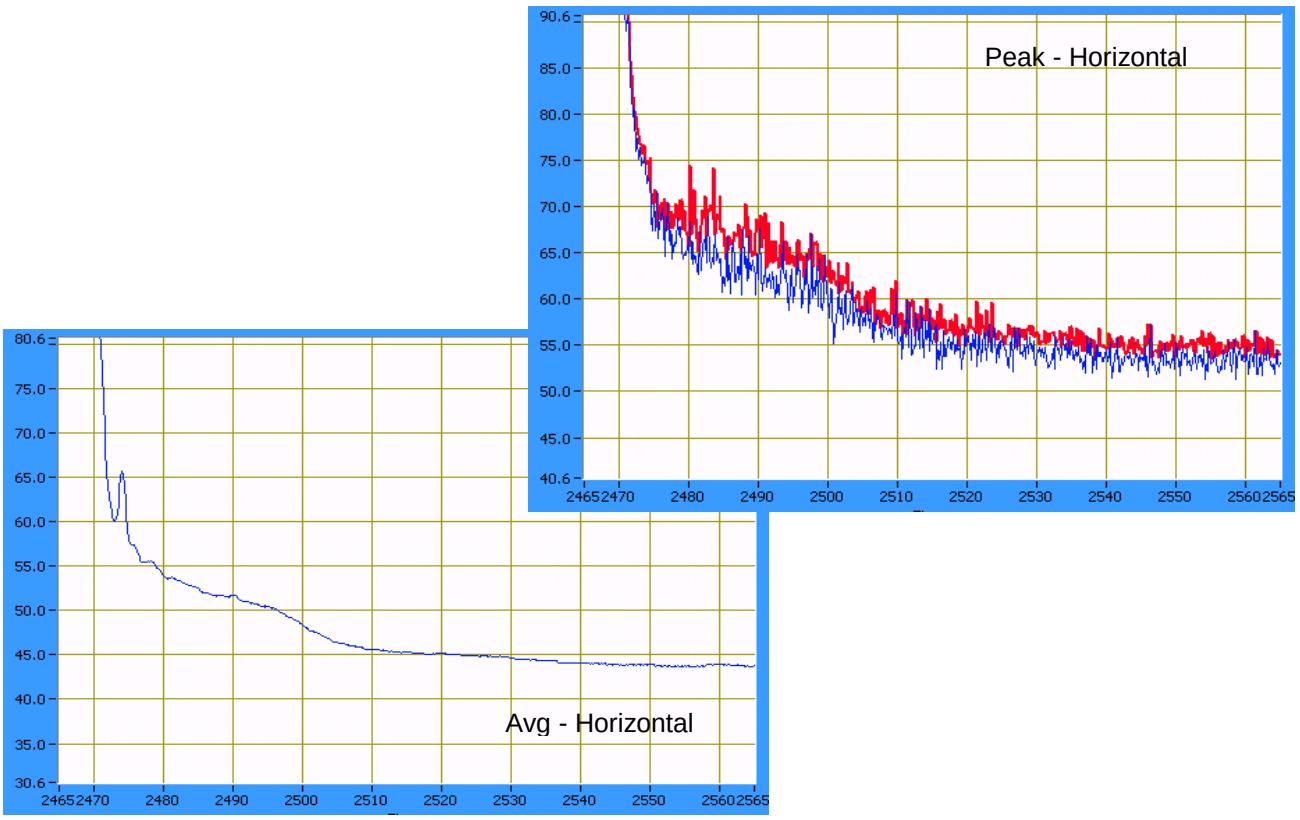
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain B
Run #2b: High Channel @ 2452 MHz
Power Setting: 25.5 Average power: 14.3 (for reference purposes)
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2436.500	97.1	H	-	-	AVG	112	1.0	GC: 25.5, Avg Power: 14.3
2436.500	106.2	H	-	-	PK	112	1.0	GC: 25.5, Avg Power: 14.3
2440.330	92.6	V	-	-	AVG	53	1.0	GC: 25.5, Avg Power: 14.3
2440.330	101.7	V	-	-	PK	53	1.0	GC: 25.5, Avg Power: 14.3

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Setting for Passing Data : 25.5								
2483.500	52.2	H	54.0	-1.8	Avg	112	1.0	GC: 25.5, Avg Power: 14.3
2485.770	73.0	H	74.0	-1.0	Pk	112	1.0	GC: 25.5, Avg Power: 14.3
2483.500	47.0	V	54.0	-7.0	Avg	53	1.0	GC: 25.5, Avg Power: 14.3
2484.400	66.4	V	74.0	-7.6	Pk	53	1.0	GC: 25.5, Avg Power: 14.3



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain C

Date of Test: 3/24/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 5

Run #3a: Low Channel @ 2422 MHz

Power Setting: 21 Average power: 11.5 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.500	94.1	H	-	-	AVG	113	1.0	GC: 21, Avg Power: 11.5
2423.500	102.4	H	-	-	PK	113	1.0	GC: 21, Avg Power: 11.5
2405.750	88.7	V	-	-	AVG	54	1.0	GC: 21, Avg Power: 11.5
2405.750	97.5	V	-	-	PK	54	1.0	GC: 21, Avg Power: 11.5

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.860	52.7	H	54.0	-1.3	Avg	113	1.0	GC: 21, Avg Power: 11.5
2388.030	70.7	H	74.0	-3.3	Pk	113	1.0	GC: 21, Avg Power: 11.5
2389.810	46.6	V	54.0	-7.4	Avg	54	1.0	GC: 21, Avg Power: 11.5
2388.720	61.8	V	74.0	-12.2	Pk	54	1.0	GC: 21, Avg Power: 11.5

Run #3b: High Channel @ 2452 MHz

Power Setting: 24 Average power: 13.9 (for reference purposes)

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2436.250	99.3	H	-	-	AVG	117	1.0	GC: 24, Avg Power: 13.9
2436.250	107.7	H	-	-	PK	117	1.0	GC: 24, Avg Power: 13.9
2436.500	90.7	V	-	-	AVG	91	1.0	GC: 24, Avg Power: 13.9
2436.500	99.1	V	-	-	PK	91	1.0	GC: 24, Avg Power: 13.9

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2485.640	72.6	H	74.0	-1.4	Pk	117	1.0	GC: 24, Avg Power: 13.9
2483.640	51.1	H	54.0	-2.9	Avg	117	1.0	GC: 24, Avg Power: 13.9
2483.510	45.9	V	54.0	-8.1	Avg	91	1.0	GC: 24, Avg Power: 13.9
2485.340	64.7	V	74.0	-9.3	Pk	91	1.0	GC: 24, Avg Power: 13.9

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #4: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A+B

Date of Test: 4/21/2008
Test Engineer: Ben Jing
Test Location: Chamber # 4

Run #4a: Low Channel @ 2422 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
23.5	11.3	23.5	11.4		

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.410	94.6	H	-	-	AVG	115	1.0	RB = 1MHz, VB = 10Hz
2423.410	105.7	H	-	-	PK	115	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.700	52.1	H	54.0	-1.9	AVG	111	1.0	
2389.720	67.3	H	74.0	-6.7	PK	111	1.0	
2389.750	66.2	V	74.0	-7.8	PK	206	1.0	
2389.710	51.7	V	54.0	-2.3	AVG	206	1.0	

Run #4b: High Channel @ 2452 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.0	13.8	26.5	14.1		

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2450.560	94.5	H	-	-	AVG	116	1.0	RB = 1MHz, VB = 10Hz
2450.560	104.6	H	-	-	PK	116	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.880	53.0	H	54.0	-1.0	AVG	115	1.0	
2485.490	72.2	H	74.0	-1.8	PK	115	1.0	
2483.610	65.4	V	74.0	-8.6	PK	84	1.0	
2483.420	47.6	V	54.0	-6.4	AVG	64	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #5: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A+C

Run #5a: Low Channel @ 2422 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
24.5	12.1	[redacted]		22.5	11.8

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2420.900	94.1	H	-	-	AVG	128	1.0	RB = 1MHz, VB = 10Hz
2420.900	104.0	H	-	-	PK	128	1.0	RB = VB = 1MHz
2420.530	83.0	V	-	-	AVG	64	1.0	RB = 1MHz, VB = 10Hz
2420.530	93.5	V	-	-	PK	64	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.720	52.7	H	54.0	-1.3	AVG	119	1.0	
2389.750	70.5	H	74.0	-3.5	PK	114	1.0	
2389.760	62.0	V	74.0	-12.0	PK	72	1.0	
2389.700	45.8	V	54.0	-8.2	AVG	70	1.0	

Run #5b: High Channel @ 2452 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.5	13.9	[redacted]		25.5	14.1

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2450.700	96.3	H	-	-	AVG	118	1.0	RB = 1MHz, VB = 10Hz
2450.700	106.5	H	-	-	PK	118	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2485.570	72.3	H	74.0	-1.7	PK	134	1.0	
2484.420	49.1	H	54.0	-4.9	AVG	126	1.0	
2484.380	67.4	V	74.0	-6.6	PK	67	1.0	
2484.380	45.2	V	54.0	-8.8	AVG	62	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #6: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain B+C

Run #6a: Low Channel @ 2422 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		23.5	11.1	21.0	10.2

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.480	96.2	H	-	-	AVG	117	1.0	RB = 1MHz, VB = 10Hz
2423.480	106.6	H	-	-	PK	117	1.0	RB = VB = 1MHz
2423.220	89.5	V	-	-	AVG	66	1.0	RB = 1MHz, VB = 10Hz
2423.220	99.7	V	-	-	PK	66	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2388.240	52.7	H	54.0	-1.3	AVG	113	1.0	
2388.230	68.8	H	74.0	-5.2	PK	111	1.0	
2388.530	64.3	V	74.0	-9.7	PK	64	1.0	
2388.400	47.6	V	54.0	-6.4	AVG	62	1.0	

Run #6b: High Channel @ 2452 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		25.5	13.5	24.5	13.6

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2450.760	99.6	H	-	-	AVG	115	1.0	RB = 1MHz, VB = 10Hz
2450.760	110.2	H	-	-	PK	115	1.0	RB = VB = 1MHz
2450.560	93.0	V	-	-	AVG	63	1.0	RB = 1MHz, VB = 10Hz
2450.560	103.0	V	-	-	PK	63	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.520	51.7	H	54.0	-2.3	AVG	114	1.0	
2485.570	72.4	H	74.0	-1.6	PK	110	1.0	
2484.320	65.1	V	74.0	-8.9	PK	58	1.0	
2484.540	47.5	V	54.0	-6.5	AVG	68	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #7: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A+B+C

Run #7a: Low Channel @ 2422 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
23.0	10.2	22.5	10.1	21.0	10.0

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.120	96.4	H	-	-	AVG	115	1.0	RB = 1MHz, VB = 10Hz
2423.120	108.0	H	-	-	PK	115	1.0	RB = VB = 1MHz
2420.610	90.0	V	-	-	AVG	181	1.0	RB = 1MHz, VB = 10Hz
2420.610	100.6	V	-	-	PK	181	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2386.810	52.5	H	54.0	-1.5	AVG	109	1.0	
2386.650	67.8	H	74.0	-6.2	PK	117	1.0	
2389.860	65.2	V	74.0	-8.8	PK	182	1.0	
2389.800	48.8	V	54.0	-5.2	AVG	186	1.0	

Run #7b: High Channel @ 2452 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.0	12.8	26.0	12.8	25.5	12.9

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2450.540	97.5	H	-	-	AVG	116	1.0	RB = 1MHz, VB = 10Hz
2450.540	108.6	H	-	-	PK	116	1.0	RB = VB = 1MHz
2450.950	92.0	V	-	-	AVG	63	1.0	RB = 1MHz, VB = 10Hz
2450.950	102.7	V	-	-	PK	63	1.0	RB = VB = 1MHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.500	52.5	H	54.0	-1.5	AVG	108	1.0	
2483.660	69.0	H	74.0	-5.0	PK	116	1.0	
2483.620	62.9	V	74.0	-11.1	PK	57	1.0	
2483.600	49.0	V	54.0	-5.0	AVG	59	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11n 40MHz Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 4/2/2008
Test Engineer: Ben Jing
Test Location: Chamber # 5

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 33 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11n40 Chains A+B+C	3 (2422) 6 (2437) 9 (2452)		16.5dBm per chain	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	41.8dBµV/m @ 7274.6MHz (-12.2dB)

Measurements made to demonstrate that 802.11n 20-MHz mode had higher emissions than the n-40MHz mode.

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26,000 MHz. Operating Mode: 802.11n 40MHz Chain A+B+C at Max power
Run #1a: Low Channel @ 2422 MHz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
29. 5	16. 5	30. 0	16. 5	28. 5	16. 5	<--- highest power setting for single channel

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2422.670	97.8	V	-	-	Pk	86	1.0	RB = VB = 100kHz
2422.640	104.9	H	-	-	Pk	119	1.0	RB = VB = 100kHz

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1744.210	36.0	V	54.0	-18.0	AVG	316	1.0	
7274.600	41.8	V	54.0	-12.2	AVG	151	1.5	
9687.990	41.2	V	54.0	-12.8	AVG	118	1.5	Note 2
1744.210	56.0	V	74.0	-18.0	PK	316	1.0	
7274.600	55.4	V	74.0	-18.6	PK	151	1.5	
9687.990	53.8	V	74.0	-20.2	PK	118	1.5	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
30. 0	16. 5	30. 0	16. 6	29. 0	16. 6	<--- highest power setting for single channel

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

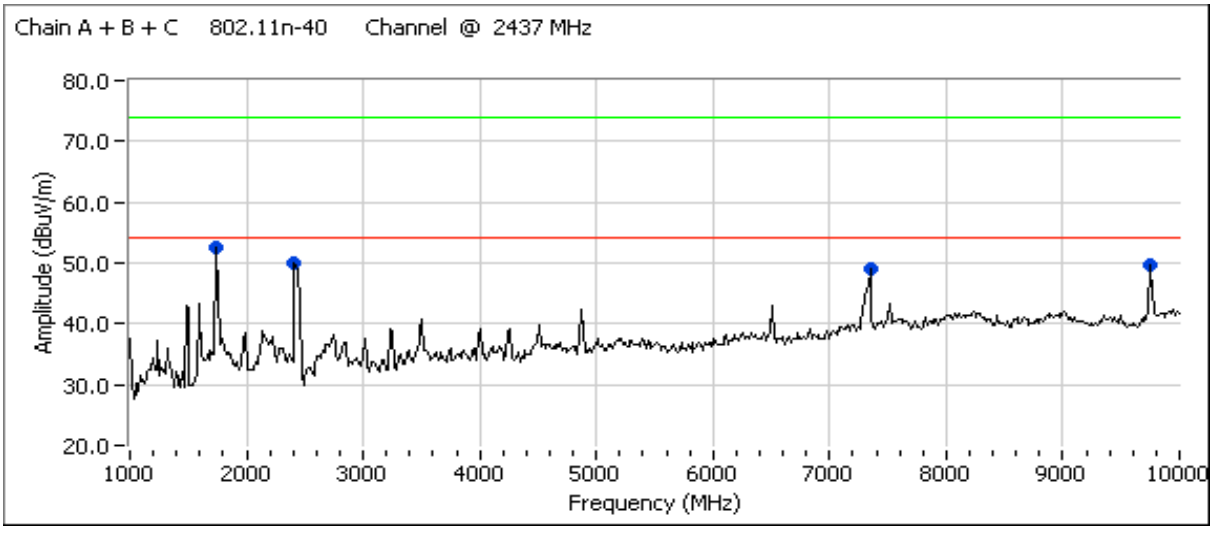
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2437.670	105.6	H	-	-	Pk	116	1.0	RB = VB = 100kHz
2436.020	98.2	V	-	-	Pk	70	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:		dBµV/m	
Limit for emissions outside of restricted bands:	-30	dBµV/m	Limit is -30dBc (UNII power measurement)

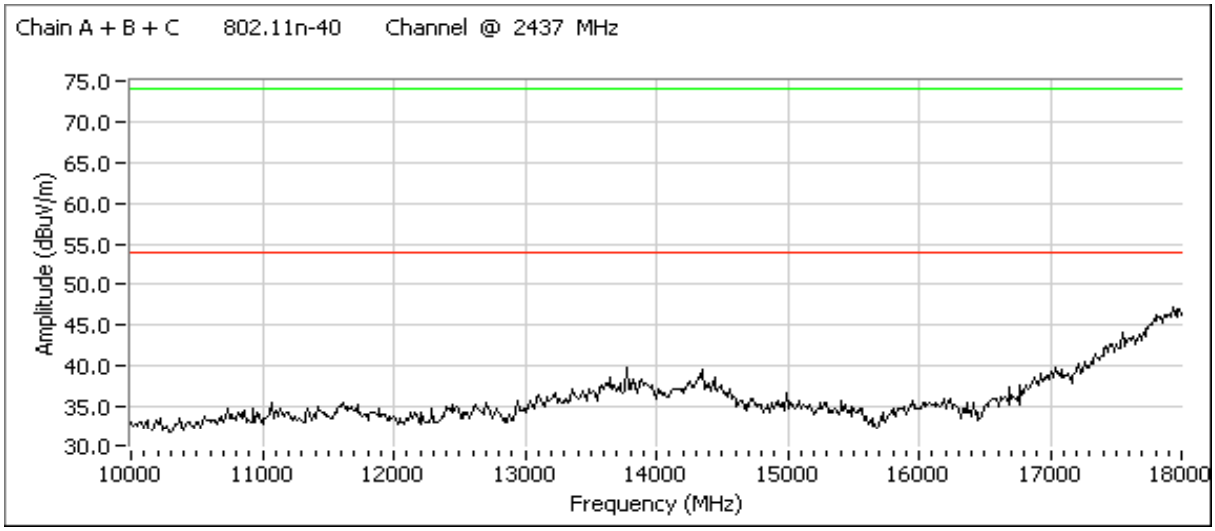
Spurious Emissions

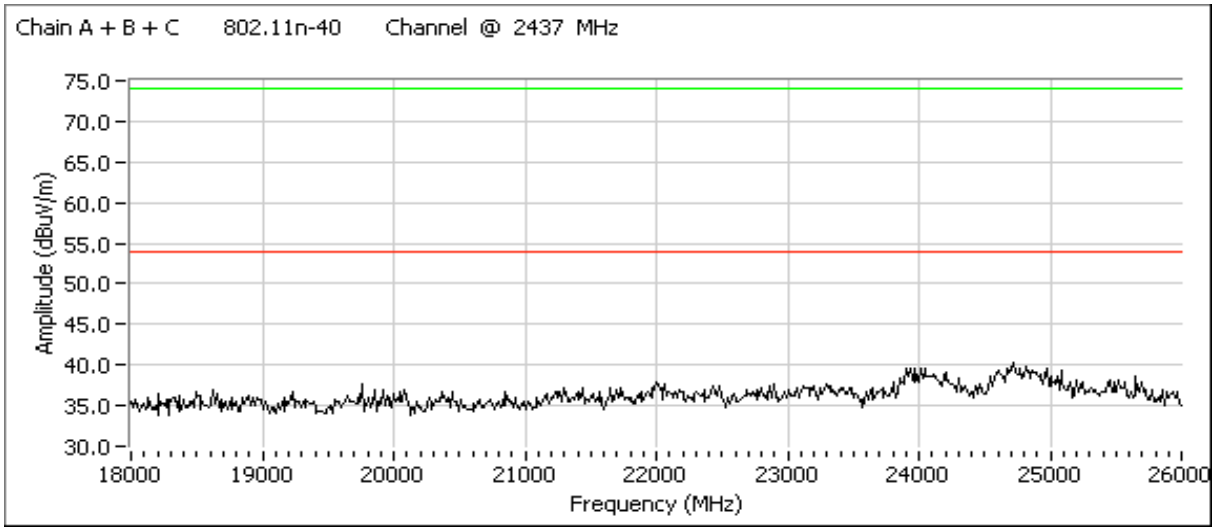
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1748.760	37.3	V	54.0	-16.7	AVG	17	1.0	
7306.410	39.9	V	54.0	-14.1	AVG	148	1.0	
9750.390	39.9	V	54.0	-14.1	AVG	166	2.0	Note 2
1748.760	58.2	V	74.0	-15.8	PK	17	1.0	
7306.410	54.1	V	74.0	-19.9	PK	148	1.0	
9750.390	52.5	V	74.0	-21.5	PK	166	2.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1c: High Channel @ 2452 MHz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
30. 5	16. 6	30. 0	16. 6	29. 5	16. 6	<--- highest power setting for single channel

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2452.920	98.9	V	-	-	Pk	68	1.0	RB = VB = 100kHz
2450.770	104.1	H	-	-	Pk	118	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:		dBµV/m	
Limit for emissions outside of restricted bands:	-30	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1743.980	35.3	V	54.0	-18.7	AVG	49	1.0	
7361.280	41.3	V	54.0	-12.7	AVG	146	1.0	
9810.570	39.4	V	54.0	-14.6	AVG	149	2.0	Note 2
1743.980	53.9	V	74.0	-20.1	PK	49	1.0	
7361.280	54.5	V	74.0	-19.5	PK	146	1.0	
9810.570	51.9	V	74.0	-22.1	PK	149	2.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 5725 - 5850 MHz)

Radiated Spurious Emissions 802.11a Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 4/2/2008
Test Engineer: Ben Jing
Test Location: Chamber # 4

Config. Used: 1
Config Change: -
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 33 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11a Chain A	5745 MHz 5785 MHz 5825 MHz	26.0 26.0 26.5	16.7 16.6 16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	51.3dBµV/m @ 11571.7MHz (-2.7dB)
2	802.11a Chain B	5745 MHz 5785 MHz 5825 MHz	25.0 25.5 26.0	16.6 16.6 16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	49.6dBµV/m @ 11650.6MHz (-4.4dB)
3	802.11a Chain C	5745 MHz 5785 MHz 5825 MHz	25.5 26.0 26.5	16.6 16.7 16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	46.9dBµV/m @ 11649.7MHz (-7.1dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain A
Run #1a: Low Channel @ 5745 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5743.740	99.9	V	-	-	Pk	144	1.0	RB = VB = 100kHz
5743.750	93.1	H	-	-	Pk	258	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	99.9	dBµV/m
Limit for emissions outside of restricted bands:	69.9	dBµV/m

Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11481.330	48.3	V	54.0	-5.7	AVG	141	1.0	
11481.330	60.5	V	74.0	-13.5	PK	141	1.0	
1747.270	59.1	V	69.9	-10.8	PK	360	1.0	Note 2
1498.210	32.2	V	54.0	-21.8	AVG	115	1.0	
1498.210	50.1	V	74.0	-23.9	PK	115	1.0	
7659.900	47.6	V	69.9	-22.3	PK	150	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: Center Channel @ 5785 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

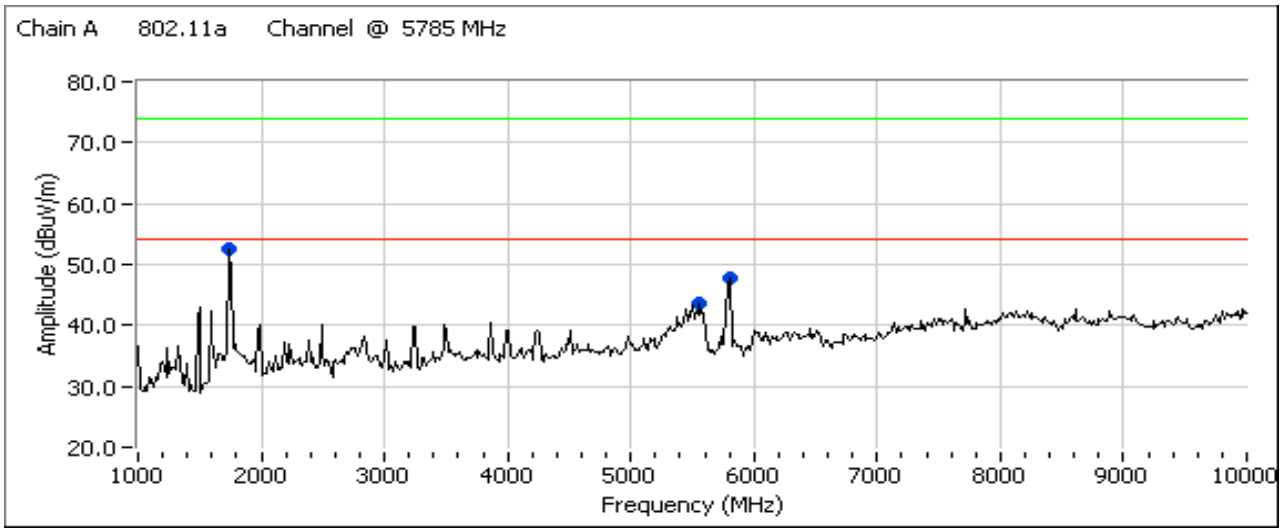
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5786.250	99.4	V	-	-	Pk	148	1.0	RB = VB = 100kHz
5786.290	94.0	H	-	-	Pk	264	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	99.4	dBµV/m	
Limit for emissions outside of restricted bands:	69.4	dBµV/m	Limit is -30dBc (UNII power measurement)

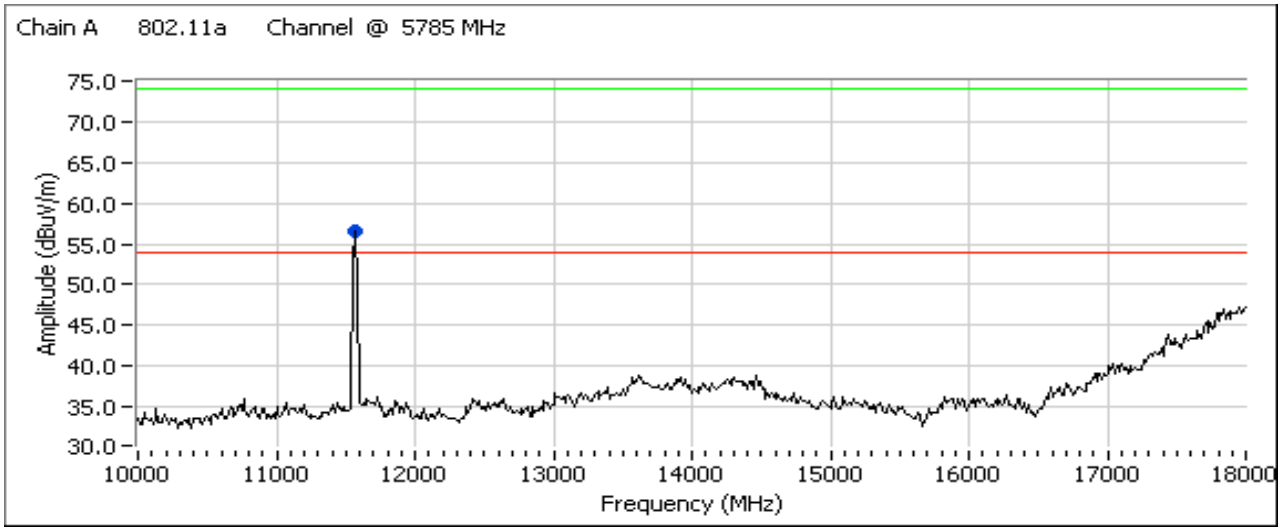
Spurious Emissions

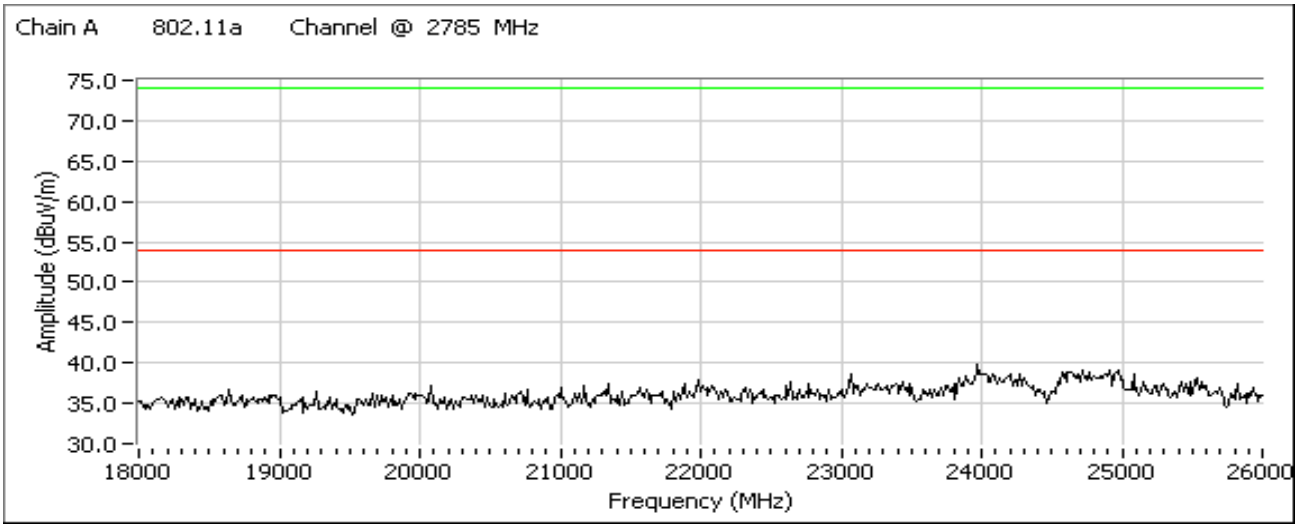
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11571.720	51.3	V	54.0	-2.7	AVG	195	1.0	
11571.720	63.3	V	74.0	-10.7	PK	195	1.0	
1743.460	59.1	V	69.4	-10.3	PK	0	1.0	Note 2
5578.410	51.9	V	69.4	-17.5	PK	163	1.5	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1c: High Channel @ 5825 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5826.270	99.8	V	-	-	Pk	145	1.0	RB = VB = 100kHz
5823.750	94.0	H	-	-	Pk	261	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	99.8	dBµV/m	
Limit for emissions outside of restricted bands:	69.8	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11641.420	49.5	V	54.0	-4.5	AVG	156	1.0	
11641.420	62.3	V	74.0	-11.7	PK	156	1.0	
1743.280	59.4	V	69.8	-10.4	PK	24	1.0	Note 2
5578.060	48.5	V	69.8	-21.3	PK	143	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain B
Run #2a: Low Channel @ 5745 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5743.720	102.4	V	-	-	Pk	167	1.0	RB = VB = 100kHz
5746.250	94.2	H	-	-	Pk	174	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	102.4	dBµV/m	
Limit for emissions outside of restricted bands:	72.4	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7660.040	46.7	V	54.0	-7.3	AVG	117	1.0	
11484.250	43.6	V	54.0	-10.4	AVG	171	1.0	
1743.810	59.3	V	72.4	-13.1	PK	23	1.0	note 2
11484.250	55.6	V	74.0	-18.4	PK	171	1.0	
7660.040	51.5	V	74.0	-22.5	PK	117	1.0	

Run #2b: Center Channel @ 5785 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5786.290	101.1	V	-	-	Pk	219	1.0	RB = VB = 100kHz
5783.730	93.7	H	-	-	Pk	175	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	101.1	dBµV/m	
Limit for emissions outside of restricted bands:	71.1	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7713.380	44.6	V	54.0	-9.4	AVG	160	1.0	
11570.290	43.7	V	54.0	-10.3	AVG	85	1.0	
11570.290	56.6	V	74.0	-17.4	PK	85	1.0	
1744.230	56.0	V	71.1	-15.1	PK	8	1.5	note 2
7713.380	49.5	V	74.0	-24.5	PK	160	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2c: High Channel @ 5825 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5826.280	95.8	H	-	-	Pk	173	1.0	RB = VB = 100kHz
5826.270	99.9	V	-	-	Pk	219	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	99.9	dBµV/m	
Limit for emissions outside of restricted bands:	69.9	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11650.630	49.6	V	54.0	-4.4	AVG	244	1.0	
11650.630	61.6	V	74.0	-12.4	PK	244	1.0	
1743.810	58.7	V	69.9	-11.2	PK	5	1.0	Note 2
7766.640	49.5	V	69.9	-20.4	PK	118	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Date of Test: 4/3/2008
Test Engineer: Ben Jing
Test Location: Chamber # 3

Run #3: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain C
Run #3a: Low Channel @ 5745 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5746.260	101.6	V	-	-	Pk	189	1.0	RB = VB = 100kHz
5746.270	98.9	H	-	-	Pk	96	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	101.6	dBµV/m	
Limit for emissions outside of restricted bands:	71.6	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11490.170	44.8	V	54.0	-9.2	AVG	232	1.0	
1747.660	58.1	V	71.6	-13.5	PK	287	1.5	Note 2
11490.170	57.0	V	74.0	-17.0	PK	232	1.0	
3484.920	53.1	V	71.6	-18.5	PK	229	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b: Center Channel @ 5785 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5786.250	100.4	V	-	-	Pk	191	1.0	RB = VB = 100kHz
5783.730	97.9	H	-	-	Pk	97	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	100.4	dBµV/m	
Limit for emissions outside of restricted bands:	70.4	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11569.830	44.5	V	54.0	-9.5	AVG	234	1.0	
1748.060	57.1	H	70.4	-13.3	PK	329	1.5	Note 2
11569.830	56.1	V	74.0	-17.9	PK	234	1.0	
3487.730	49.6	V	70.4	-20.8	PK	231	1.0	Note 2

Run #3c: High Channel @ 5825 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5826.230	99.9	V	-	-	Pk	196	1.0	RB = VB = 100kHz
5823.750	98.7	H	-	-	Pk	99	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	99.9	dBµV/m	
Limit for emissions outside of restricted bands:	69.9	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11649.690	46.9	V	54.0	-7.1	AVG	232	1.0	
11649.690	58.8	V	74.0	-15.2	PK	232	1.0	
1747.110	56.8	H	69.9	-13.1	PK	312	2.0	Note 2
1996.860	49.0	V	69.9	-20.9	PK	232	1.0	Note 2

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 5725 - 5850 MHz)

Radiated Spurious Emissions 802.11n20 Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 4/3/2008
Test Engineer: Ben Jing
Test Location: Chamber # 3

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 33 %

Summary of Results

Note - emissions from 18-40GHz covered by testing all three chains transmitting at highest power.

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
4	802.11n20 Chain A+B+C	5745 MHz 5785 MHz 5825 MHz			Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	52.7dBµV/m @ 11649.1MHz (-1.3dB)
-	802.11n20 Chain A	5745 MHz 5785 MHz 5825 MHz			Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	By measuring triple-chain mode at full power we also cover single- and dual-chain modes.
-	802.11n20 Dual Chain modes (A+B, A+C, B+C)				Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11n 20MHz Chains A+B+C
These tests run at a power setting equal to the highest single-chain settings to cover all possible dual- and triple-chain operating modes.

Run #1a: Low Channel @ 5745 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
31. 5	16.5	30.5	16.5	31.0	16.6

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5746.290	104.2	V	-	-	Pk	207	1.0	RB = VB = 100kHz
5746.310	101.1	H	-	-	Pk	250	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	104.2	dBµV/m	
Limit for emissions outside of restricted bands:	74.2	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11489.860	51.1	V	54.0	-2.9	AVG	236	1.0	
1748.070	58.0	H	74.2	-16.2	PK	248	1.0	note 2
11489.860	61.6	V	74.0	-12.4	PK	236	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: Center Channel @ 5785 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
32. 0	16.6	31.0	16.6	31.5	16.6

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

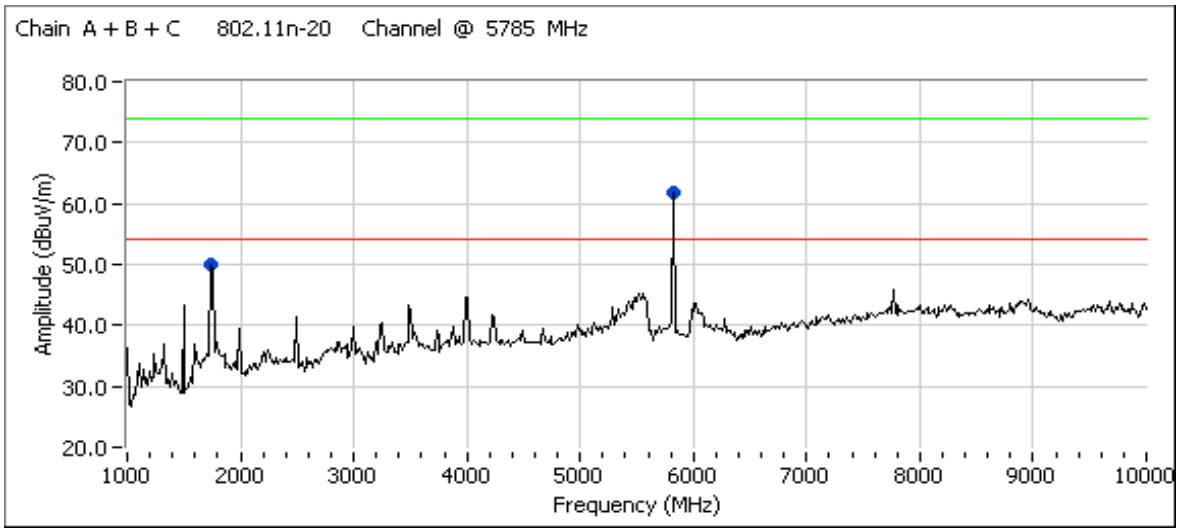
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5783.750	106.9	V	-	-	Pk	200	1.0	RB = VB = 100kHz
5783.750	100.2	H	-	-	Pk	100	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	106.9	dBµV/m	
Limit for emissions outside of restricted bands:	76.9	dBµV/m	Limit is -30dBc (UNII power measurement)

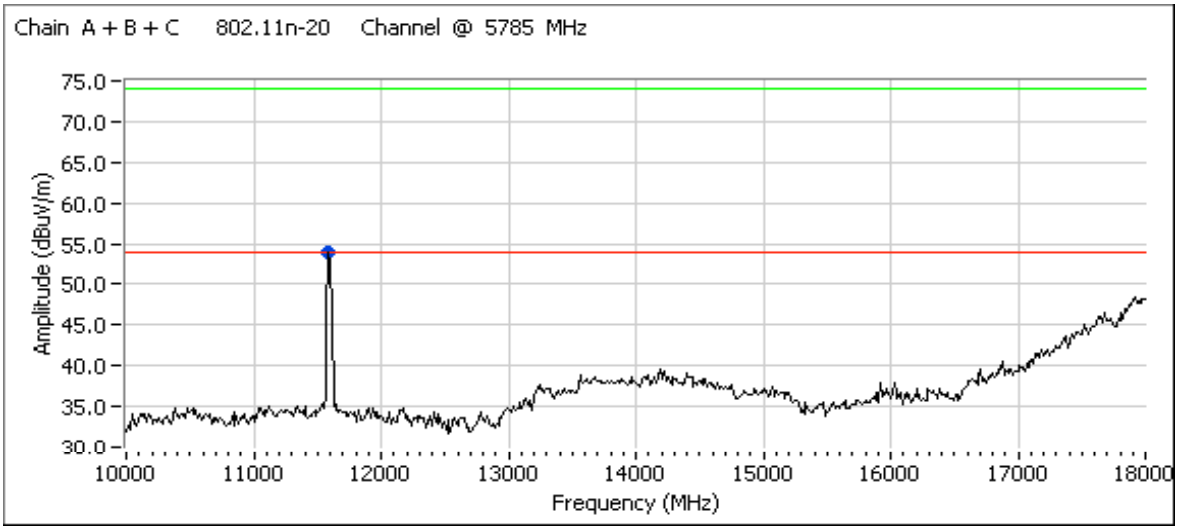
Spurious Emissions

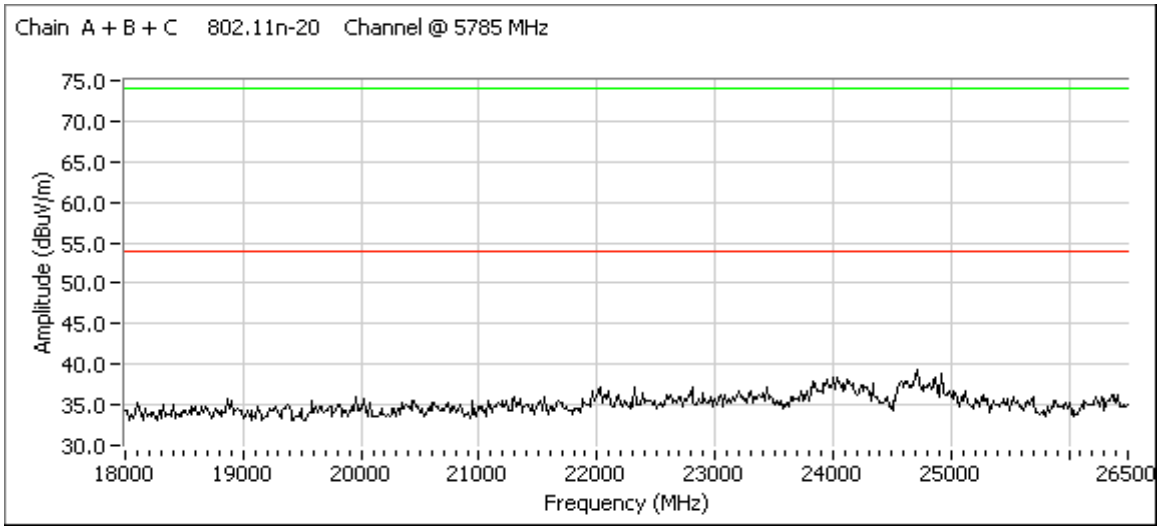
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11570.260	51.2	V	54.0	-2.8	AVG	161	1.0	
1744.260	57.8	H	76.9	-19.1	PK	301	1.0	
11570.260	62.4	V	74.0	-11.6	PK	161	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

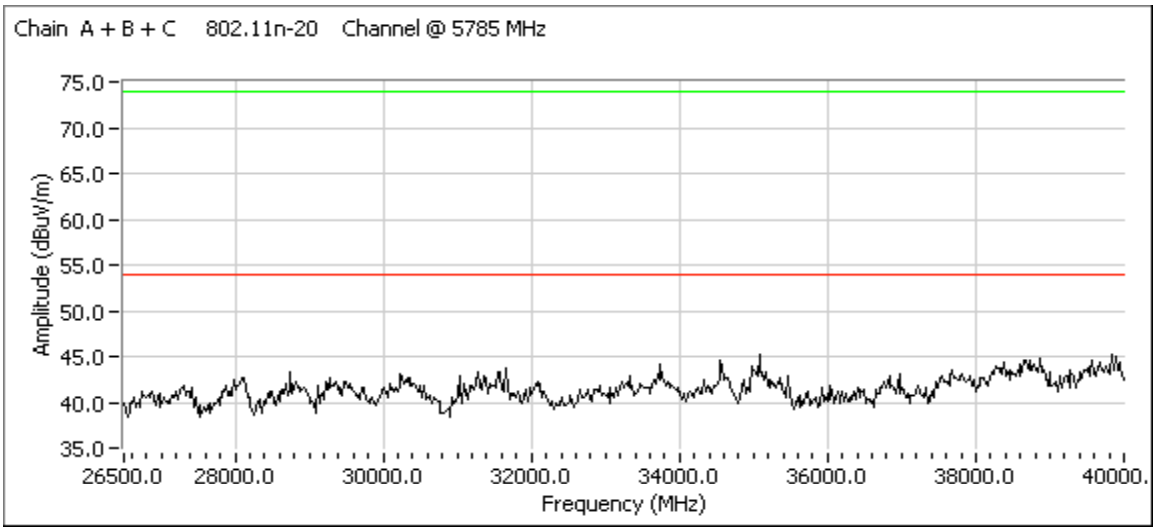


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A



Run #1c: High Channel @ 5825 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
32. 5	16.6	31.0	16.5	32.0	16.6

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5826.270	105.8	H	-	-	Pk	255	1.0	RB = VB = 100kHz
5826.290	109.7	V	-	-	Pk	202	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	109.7	dBµV/m	
Limit for emissions outside of restricted bands:	79.7	dBµV/m	Limit is -30dBc (UNII power measurement)

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3996.480	35.6	V	54.0	-18.4	AVG	295	2.0	
11649.050	52.7	V	54.0	-1.3	AVG	231	1.0	
1747.390	57.8	H	74.0	-16.2	PK	243	1.0	note 2
3996.480	53.6	V	74.0	-20.4	PK	295	2.0	
11649.050	63.3	V	74.0	-10.7	PK	231	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 Receiver Spurious Emissions - Ethertronics Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 15-25 °C
Rel. Humidity: 35-55 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	Chain A RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	45.9dBµV/m @ 6498.7MHz (-8.1dB)
1b	Chain A RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	45.7dBµV/m @ 7713.4MHz (-8.3dB)
2a	Chain B RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	45.5dBµV/m @ 6498.6MHz (-8.5dB)
2b	Chain B RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	46.5dBµV/m @ 7713.4MHz (-7.5dB)
3a	Chain C RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	43.6dBµV/m @ 6498.6MHz (-10.4dB)
3b	Chain C RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	45.0dBµV/m @ 7713.4MHz (-9.0dB)
4a	Chain A+B+C RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	43.8dBµV/m @ 7500.1MHz (-10.2dB)
4b	Chain A+B+C RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	50.1dBµV/m @ 7713.3MHz (-3.9dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

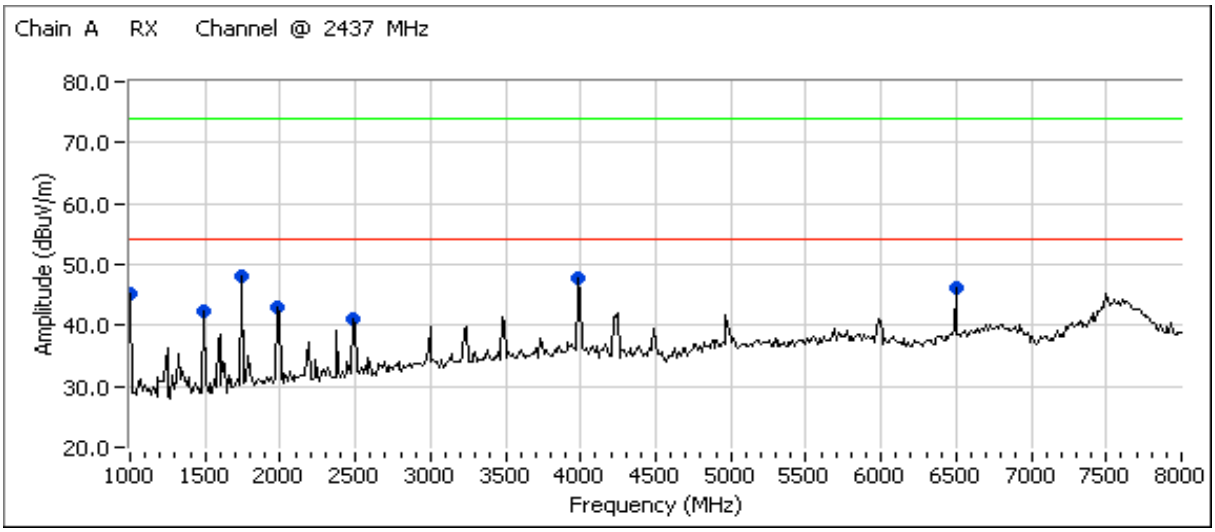
Run # 1: Chain A Rx Radiated Spurious Emissions, 1000 - 18000 MHz

Date of Test: 4/24/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 3

Config. Used: 1
Config Change: None
EUT Voltage: Powered From Host System

Run # 1a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain A

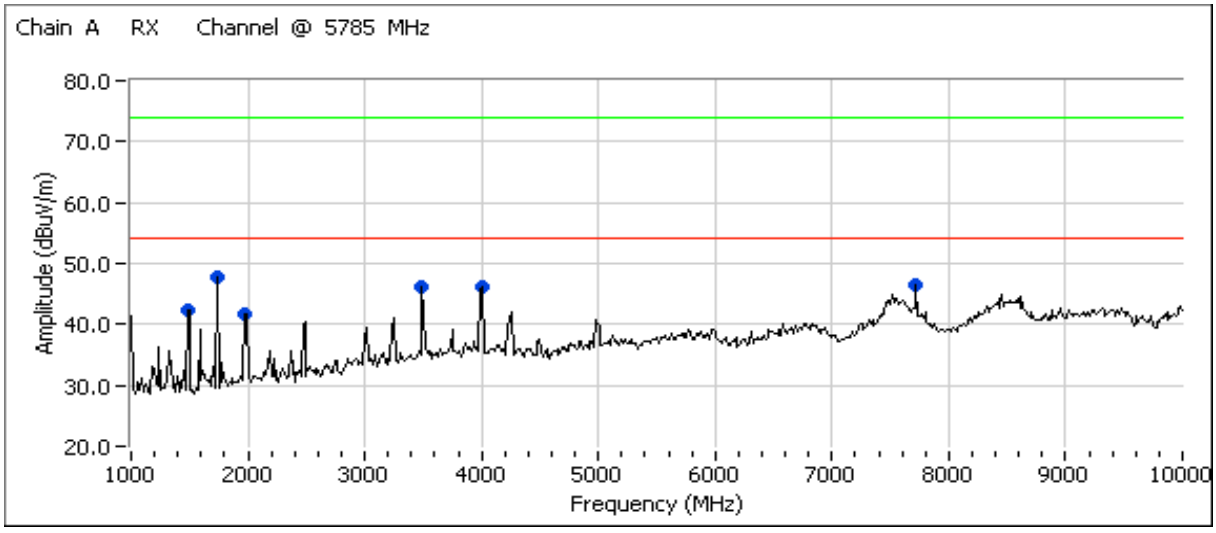
Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1498.180	30.8	V	54.0	-23.2	AVG	358	1.5	
1748.310	32.0	V	54.0	-22.0	AVG	15	1.0	
1996.780	34.3	V	54.0	-19.7	AVG	246	1.0	
2497.430	30.1	H	54.0	-23.9	AVG	302	2.0	
3996.420	33.2	V	54.0	-20.8	AVG	263	1.5	
6498.680	45.9	V	54.0	-8.1	AVG	199	1.5	
1498.180	46.2	V	74.0	-27.8	PK	358	1.5	
1748.310	53.1	V	74.0	-20.9	PK	15	1.0	
1996.780	50.4	V	74.0	-23.6	PK	246	1.0	
2497.430	50.1	H	74.0	-23.9	PK	302	2.0	
3996.420	54.2	V	74.0	-19.8	PK	263	1.5	
6498.680	49.9	V	74.0	-24.1	PK	199	1.5	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 1b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain A

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.740	33.1	V	54.0	-20.9	AVG	0	1.0	
1747.260	31.1	V	54.0	-22.9	AVG	23	1.0	
1996.820	33.4	V	54.0	-20.6	AVG	246	1.0	
3495.310	31.8	V	54.0	-22.2	AVG	232	1.0	
3995.470	33.3	H	54.0	-20.7	AVG	281	1.5	
7713.370	45.7	V	54.0	-8.3	AVG	112	1.5	
11569.980	36.5	V	54.0	-17.5	AVG	130	1.0	
1497.740	47.2	V	74.0	-26.8	PK	0	1.0	
1747.260	51.8	V	74.0	-22.2	PK	23	1.0	
1996.820	49.7	V	74.0	-24.3	PK	246	1.0	
3495.310	52.5	V	74.0	-21.5	PK	232	1.0	
3995.470	53.8	H	74.0	-20.2	PK	281	1.5	
7713.370	51.5	V	74.0	-22.5	PK	112	1.5	
11569.980	43.0	V	74.0	-31.0	PK	130	1.0	



Scan from 10-18GHz not included as no signals observed

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Chain B Rx Radiated Spurious Emissions, 1000 - 18000 MHz

Run #2a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain B

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.650	31.9	H	54.0	-22.1	AVG	154	1.5	
1748.070	33.4	V	54.0	-20.6	AVG	241	1.5	
1996.950	33.9	V	54.0	-20.1	AVG	247	1.0	
3495.340	31.5	V	54.0	-22.5	AVG	232	1.0	
3986.350	33.4	V	54.0	-20.6	AVG	266	1.0	
6498.610	45.5	V	54.0	-8.5	AVG	231	1.0	
1497.650	46.4	H	74.0	-27.6	PK	154	1.5	
1748.070	55.6	V	74.0	-18.4	PK	241	1.5	
1996.950	49.7	V	74.0	-24.3	PK	247	1.0	
3495.340	53.6	V	74.0	-20.4	PK	232	1.0	
3986.350	54.3	V	74.0	-19.7	PK	266	1.0	
6498.610	49.4	V	74.0	-24.6	PK	231	1.0	

Run #2b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain B

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.590	32.6	V	54.0	-21.4	AVG	14	1.0	
1747.150	32.7	V	54.0	-21.3	AVG	237	1.5	
3485.760	31.9	V	54.0	-22.1	AVG	233	1.0	
3992.720	32.4	H	54.0	-21.6	AVG	221	1.5	
4243.330	31.5	V	54.0	-22.5	AVG	280	1.5	
7713.390	46.5	V	54.0	-7.5	AVG	231	1.0	
11569.980	41.7	V	54.0	-12.3	AVG	178	1.0	
1497.590	47.9	V	74.0	-26.1	PK	14	1.0	
1747.150	54.8	V	74.0	-19.2	PK	237	1.5	
3485.760	54.0	V	74.0	-20.0	PK	233	1.0	
3992.720	52.0	H	74.0	-22.0	PK	221	1.5	
4243.330	49.5	V	74.0	-24.5	PK	280	1.5	
7713.390	52.6	V	74.0	-21.4	PK	231	1.0	
11569.980	45.8	V	74.0	-28.2	PK	178	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Chain C Rx Radiated Spurious Emissions, 1000 - 18000 MHz

Run #3a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain C

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1747.330	31.8	V	54.0	-22.2	AVG	230	1.0	
2491.920	29.2	V	54.0	-24.8	AVG	246	1.0	
3497.300	31.9	V	54.0	-22.1	AVG	232	1.0	
3985.340	32.9	V	54.0	-21.1	AVG	258	1.0	
6498.630	43.6	V	54.0	-10.4	AVG	198	1.5	
7500.080	42.2	V	54.0	-11.8	AVG	100	1.5	
1747.330	52.6	V	74.0	-21.4	PK	230	1.0	
2491.920	48.2	V	74.0	-25.8	PK	246	1.0	
3497.300	53.2	V	74.0	-20.8	PK	232	1.0	
3985.340	53.0	V	74.0	-21.0	PK	258	1.0	
6498.630	49.0	V	74.0	-25.0	PK	198	1.5	
7500.080	50.8	V	74.0	-23.2	PK	100	1.5	

Date of Test: 4/28/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 4

Run #3b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain C

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.700	31.6	V	54.0	-22.4	AVG	42	1.0	
1747.980	33.5	V	54.0	-20.5	AVG	245	1.5	
2490.520	30.3	V	54.0	-23.7	AVG	252	1.0	
3994.440	33.0	H	54.0	-21.0	AVG	256	1.5	
7713.390	45.0	V	54.0	-9.0	AVG	112	1.0	
11569.980	41.5	V	54.0	-12.5	AVG	219	1.0	
1497.700	48.0	V	74.0	-26.0	PK	42	1.0	
1747.980	54.7	V	74.0	-19.3	PK	245	1.5	
2490.520	50.5	V	74.0	-23.5	PK	252	1.0	
3994.440	52.2	H	74.0	-21.8	PK	256	1.5	
7713.390	51.5	V	74.0	-22.5	PK	112	1.0	
11569.980	45.7	V	74.0	-28.3	PK	219	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #4: Chain A+B+C Rx Radiated Spurious Emissions, 1000 - 18000 MHz

Run #4a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain A+B+C

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.600	31.8	H	54.0	-22.2	AVG	285	1.0	
1746.930	33.5	V	54.0	-20.5	AVG	222	1.0	
2497.990	29.8	V	54.0	-24.2	AVG	258	1.5	
3236.920	31.8	V	54.0	-22.2	AVG	193	1.0	
3993.230	33.0	H	54.0	-21.0	AVG	261	1.5	
7500.100	43.8	V	54.0	-10.2	AVG	245	1.5	
1497.600	49.0	H	74.0	-25.0	PK	285	1.0	
1746.930	54.1	V	74.0	-19.9	PK	222	1.0	
2497.990	48.1	V	74.0	-25.9	PK	258	1.5	
3236.920	49.6	V	74.0	-24.4	PK	193	1.0	
3993.230	52.2	H	74.0	-21.8	PK	261	1.5	
7500.100	51.6	V	74.0	-22.4	PK	245	1.5	

Run #4b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain A+B+C

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.950	32.3	V	54.0	-21.7	AVG	71	1.3	
1746.940	33.4	V	54.0	-20.6	AVG	213	1.0	
3237.050	31.5	V	54.0	-22.5	AVG	177	1.0	
3990.100	32.9	V	54.0	-21.1	AVG	267	1.3	
7713.320	50.1	V	54.0	-3.9	AVG	134	1.3	
11569.960	43.3	V	54.0	-10.7	AVG	222	1.0	
1497.950	48.7	V	74.0	-25.3	PK	71	1.3	
1746.940	53.9	V	74.0	-20.1	PK	213	1.0	
3237.050	48.3	V	74.0	-25.7	PK	177	1.0	
3990.100	53.0	V	74.0	-21.0	PK	267	1.3	
7713.320	54.1	V	74.0	-19.9	PK	134	1.3	
11569.960	46.7	V	74.0	-27.3	PK	222	1.0	

Elliott	EMC Test Data		
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		-
Emissions Standard(s):	FCC	Class:	-
Immunity Standard(s):	-	Environment:	-

EMC Test Data
DTS Radiated Emissions, Universe Antenna

For The

Intel Corporation

Model

533AN-MMW(MMC)

Date of Last Test: 6/16/2008

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11b Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 19 °C
Rel. Humidity: 43 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11b Chain A	1 2412MHz	24.0	16. 8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	49.4dBµV/m @ 2389.3MHz (-4.6dB)
1b	802.11b Chain A	11 2462MHz	24.0	16. 8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	43.9dBµV/m @ 2440.9MHz (-10.1dB)
2a	802.11b Chain B	1 2412MHz	25. 0	17. 4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	44.5dBµV/m @ 2389.4MHz (-9.5dB)
2b	802.11b Chain B	11 2462MHz	26. 0	17. 7	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	46.6 dBuV/m @ 2484.7 MHz (-7.4dB)
3a	802.11b Chain C	1 2412MHz	23. 0	16. 5	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	47.4dBµV/m @ 2389.2MHz (-6.6dB)
3b	802.11b Chain C	11 2462MHz	24. 5	16. 9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	47.2 dBuV/m @ 2487.8 MHz (-6.8dB)

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11b - Chain A

Sample ID: 0016EA02D660
Date of Test: 6/13/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #4

Run #1a: Low Channel @ 2412 MHz

Power Setting: 24.0 Average power: 16.8 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2408.100	93.2	V	74.0	19.2	PK	312	2.2	RB = VB = 100kHz
2408.370	96.3	H	74.0	22.3	PK	76	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.050	58.9	V	74.0	-15.1	PK	313	2.2	
2389.300	47.9	V	54.0	-6.1	AVG	313	2.2	
2389.690	58.9	H	74.0	-15.1	PK	76	1.0	
2389.270	49.4	H	54.0	-4.6	AVG	76	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: High Channel @ 2462 MHz

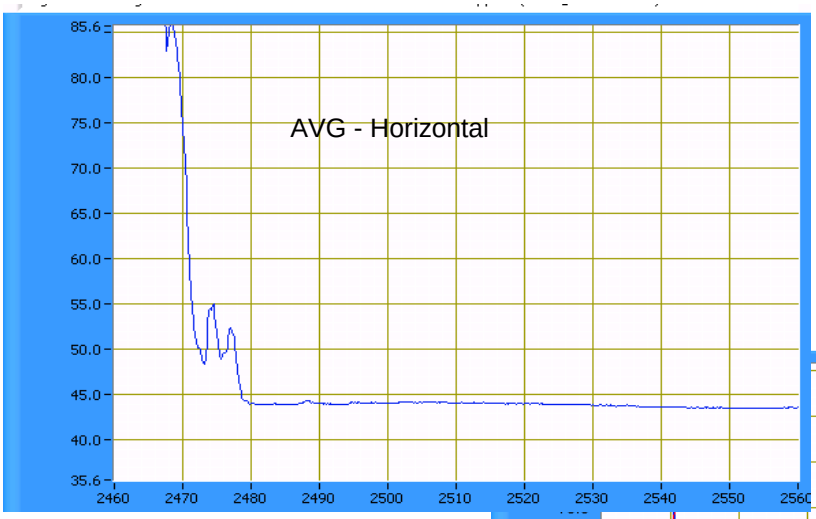
Power Setting: 24.0 Average power: 16.8 (for reference purposes)

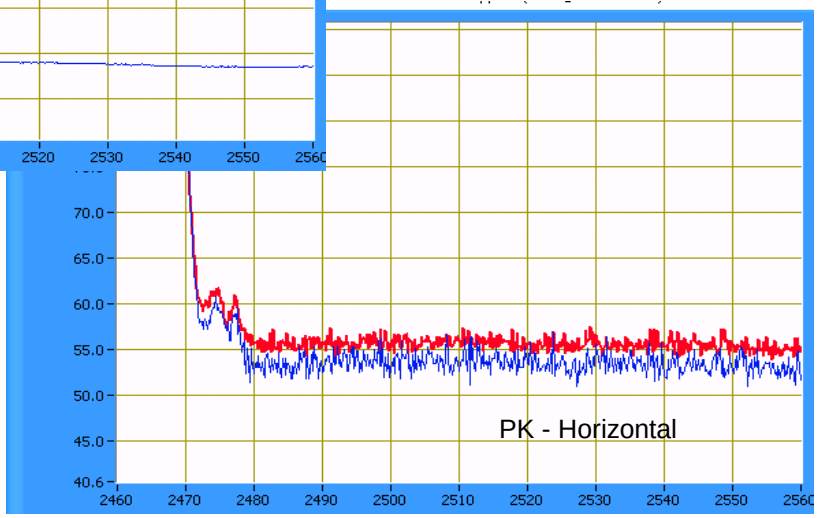
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.210	97.1	H	74.0	23.1	PK	63	1.8	RB = VB = 100kHz
2464.920	96.3	V	74.0	22.3	PK	360	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2441.110	56.3	H	74.0	-17.7	PK	60	1.8	
2440.920	43.9	H	54.0	-10.1	AVG	60	1.8	
2441.370	56.5	V	74.0	-17.5	PK	360	1.0	
2440.810	43.9	V	54.0	-10.1	AVG	360	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11b - Chain B

Sample ID: 0016EA02D660
Date of Test: 6/14/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #4

Run #2a: Low Channel @ 2412 MHz

Power Setting: 25.0 Average power: 17.4 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2412.670	97.6	H	-	-	PK	238	1.0	RB = VB = 100kHz
2409.270	95.9	V	-	-	PK	314	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.440	56.4	V	74.0	-17.6	PK	314	1.0	
2389.440	44.4	V	54.0	-9.6	AVG	314	1.0	
2389.690	56.2	H	74.0	-17.8	PK	236	1.0	
2389.430	44.5	H	54.0	-9.5	AVG	239	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Sample ID: 0016EA02D660
Date of Test: 6/14/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #4

Run #2b: High Channel @ 2462 MHz
Power Setting: 26. 0 Average power: 17.7 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.500	97.6	V	-	-	PK	137	1.0	RB = VB = 100kHz
2463.060	97.6	H	-	-	PK	264	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.900	45.3	V	54.0	-8.7	AVG	140	1.0	
2484.710	58.0	V	74.0	-16.0	PK	135	1.0	
2484.650	46.6	H	54.0	-7.4	AVG	260	1.0	
2484.730	58.3	H	74.0	-15.7	PK	261	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11b - Chain C

Sample ID: 0016EA02D660
Date of Test: 6/14/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #4

Run #3a: Low Channel @ 2412 MHz

Power Setting: 23. 0 Average power: 16.5 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.030	95.7	V	-	-	PK	163	1.1	RB = VB = 100kHz
2413.020	100.0	H	-	-	PK	221	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.200	47.4	H	54.0	-6.6	AVG	219	1.0	
2389.570	57.6	H	74.0	-16.4	PK	219	1.0	
2389.170	44.9	V	54.0	-9.1	AVG	162	1.0	
2388.750	57.1	V	74.0	-16.9	PK	160	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b: High Channel @ 2462 MHz

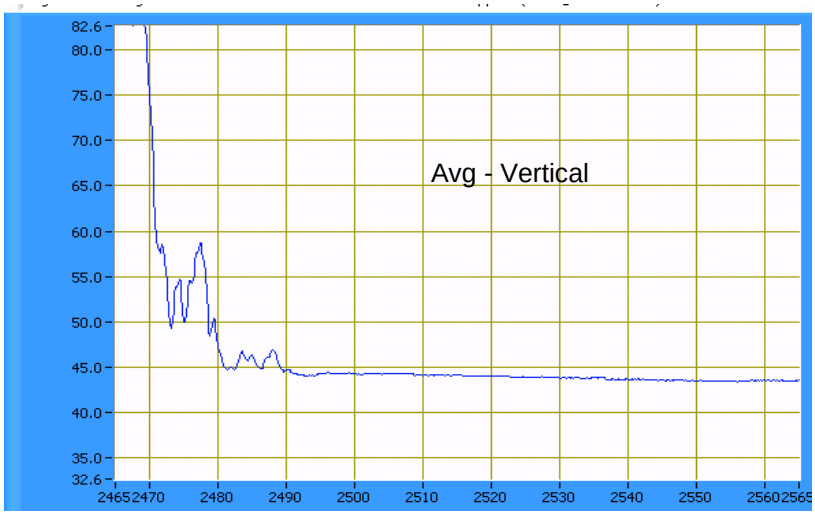
Power Setting: 24. 5 Average power: 16.9 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2462.530	95.9	V	-	-	PK	164	1.0	RB = VB = 100kHz
2461.030	95.9	H	-	-	PK	258	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2487.850	47.0	H	54.0	-7.0	AVG	257	1.0	
2487.820	58.8	H	74.0	-15.2	PK	256	1.0	
2487.790	47.2	V	54.0	-6.8	AVG	160	1.0	
2487.980	59.0	V	74.0	-15.0	PK	184	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11b Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Config. Used: 1
Config Change: None
Host Unit Voltage 3.3V DC

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 34 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11b Chain A	1 (2412)	24.5	16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	31.7dBµV/m @ 1000.1MHz (-22.3dB)
1b	802.11b Chain A	6 (2437)	24.5	16.6	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	38.3dBµV/m @ 4874.0MHz (-15.7dB)
1c	802.11b Chain A	11 (2462)	25.0	16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	47.4dBµV/m @ 4924.0MHz (-6.6dB)
2a	802.11b Chain B	1 (2412)	24.0	16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	36.4dBµV/m @ 1494.6MHz (-17.6dB)
2b	802.11b Chain B	6 (2437)	24.5	16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	39.1dBµV/m @ 4873.9MHz (-14.9dB)
2c	802.11b Chain B	11 (2462)	25.0	16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	36.5dBµV/m @ 1494.2MHz (-17.5dB)
3a	802.11b Chain C	1 (2412)	23.0	16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	32.9dBµV/m @ 1494.5MHz (-21.1dB)
3b	802.11b Chain C	6 (2437)	23.0	16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	32.5dBµV/m @ 1493.8MHz (-21.5dB)
3c	802.11b Chain C	11 (2462)	23.5	16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	46.1 dBuV/m @ 4924.0 MHz (-7.9dB)

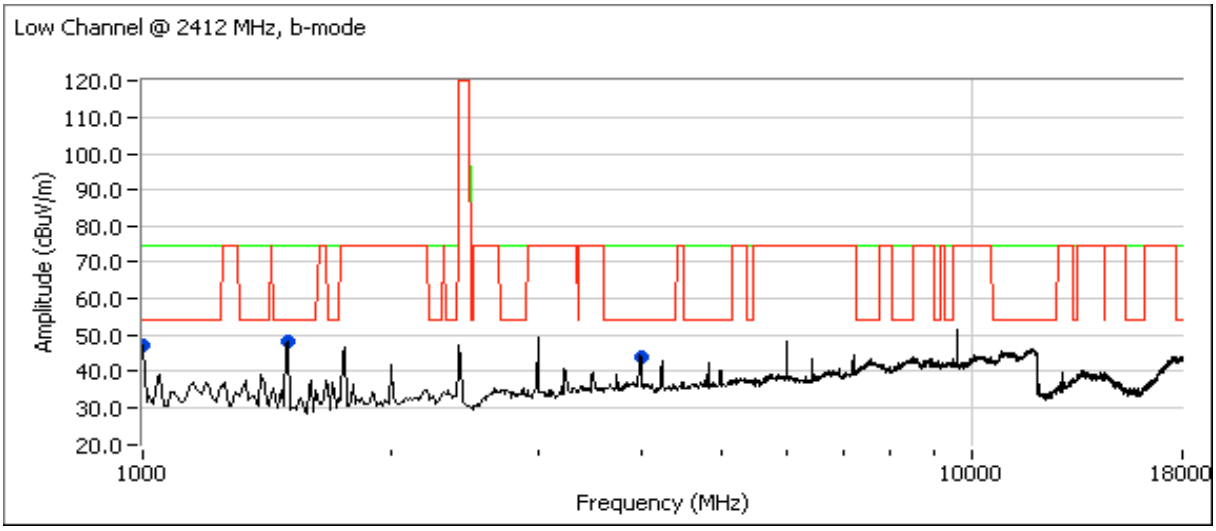
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11b Chain A

Sample tested: 0016EA02D660
Date of Test: 6/16/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 5

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz (EUT 3.3V DC)

Run # 1a : Low Channel @ 2412 MHz



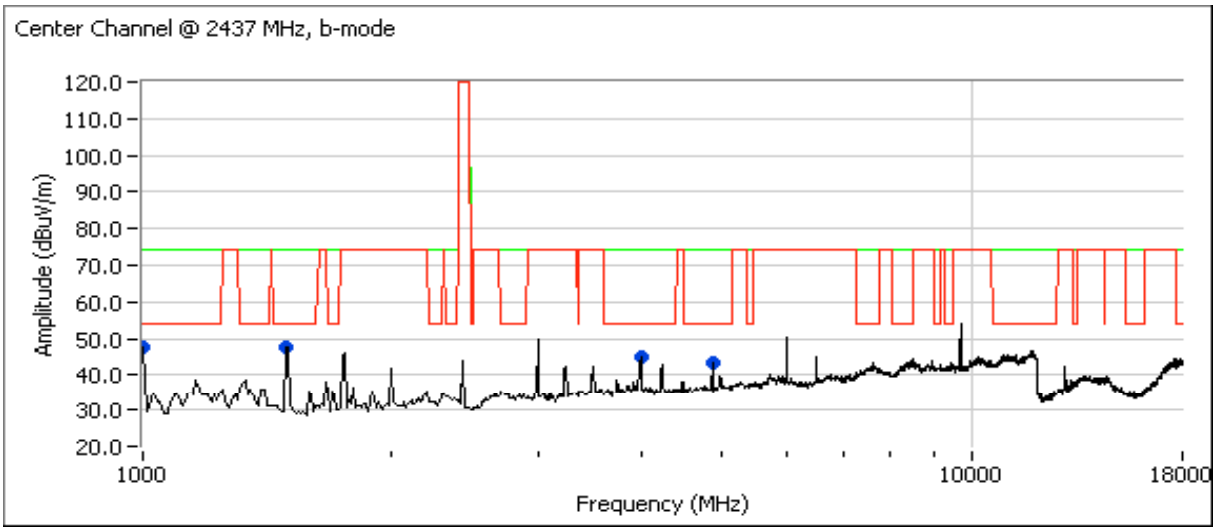
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1000.110	31.7	V	54.0	-22.3	AVG	135	1.0	
1494.480	30.1	H	54.0	-23.9	AVG	159	1.0	
3994.770	25.3	H	54.0	-28.7	AVG	142	1.6	
1000.110	47.7	V	74.0	-26.3	PK	135	1.0	
1494.480	50.3	H	74.0	-23.7	PK	159	1.0	
3994.770	46.1	H	74.0	-27.9	PK	142	1.6	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11b Chain A
Run # 1b : Center Channel @ 2437 MHz



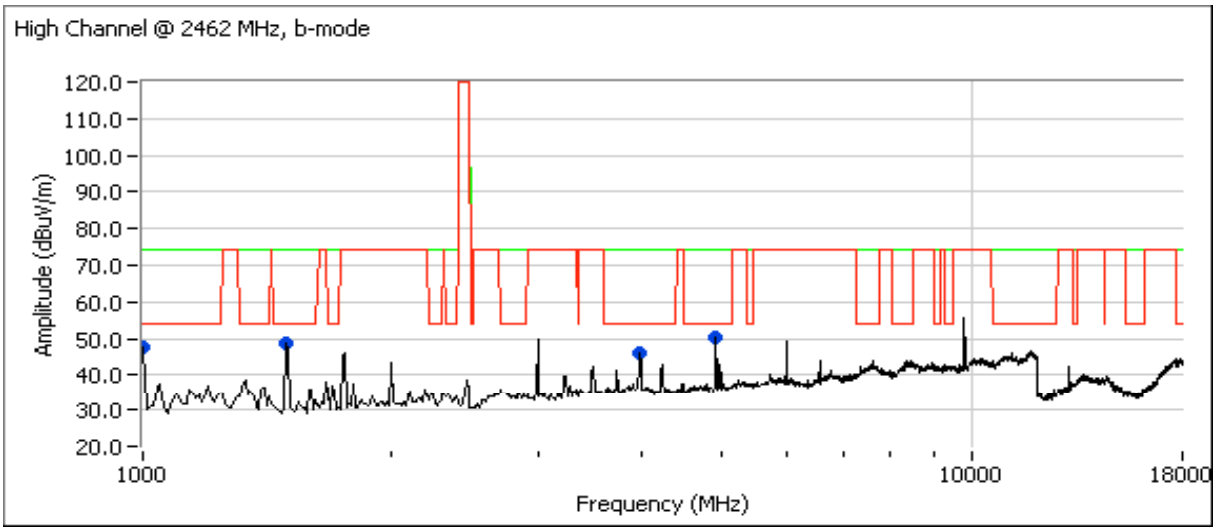
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
999.963	25.5	V	54.0	-28.5	AVG	166	1.0	
1494.210	37.7	H	54.0	-16.3	AVG	159	1.0	
3981.540	33.8	H	54.0	-20.2	AVG	174	1.3	
4874.020	38.3	V	54.0	-15.7	AVG	202	1.0	
999.963	40.5	V	74.0	-33.5	PK	166	1.0	
1494.210	55.0	H	74.0	-19.0	PK	159	1.0	
3981.540	50.9	H	74.0	-23.1	PK	174	1.3	
4874.020	46.0	V	74.0	-28.0	PK	202	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11b Chain A
Run # 1c : High Channel @ 2462 MHz



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
999.991	24.9	V	54.0	-29.1	AVG	167	1.0	
1494.810	37.5	H	54.0	-16.5	AVG	165	1.0	
3983.900	34.5	V	54.0	-19.5	AVG	142	1.0	
4923.960	47.4	V	54.0	-6.6	AVG	155	1.3	
999.991	37.5	V	74.0	-36.5	PK	167	1.0	
1494.810	54.4	H	74.0	-19.6	PK	165	1.0	
3983.900	51.1	V	74.0	-22.9	PK	142	1.0	
4923.960	51.1	V	74.0	-22.9	PK	155	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

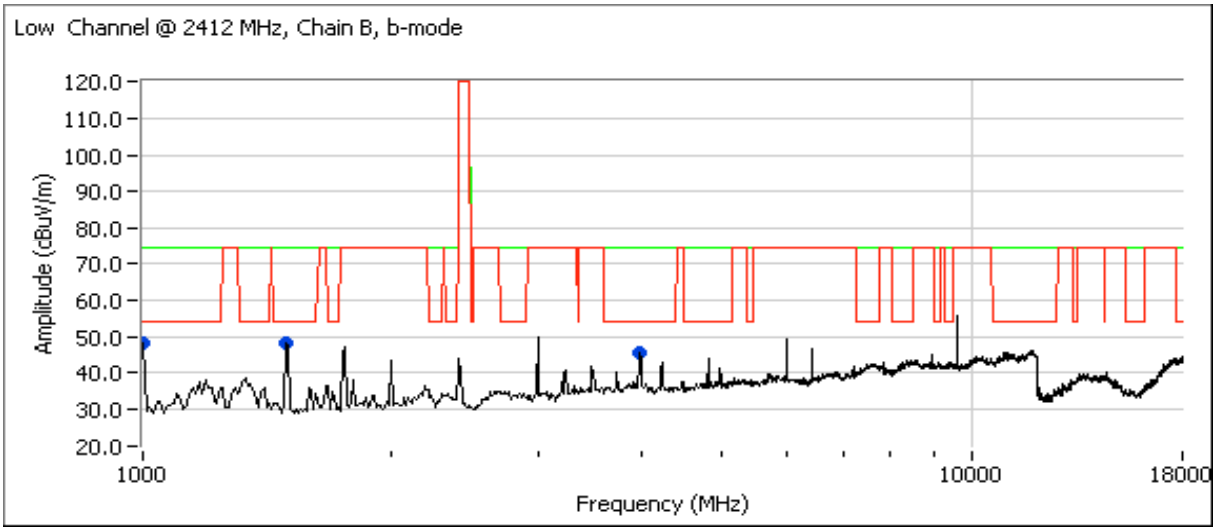
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11b Chain B

Sample tested: 0016EA02D660
Date of Test: 6/16/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 5

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz (EUT 3.3V DC)

Run # 2a : Low Channel @ 2412 MHz



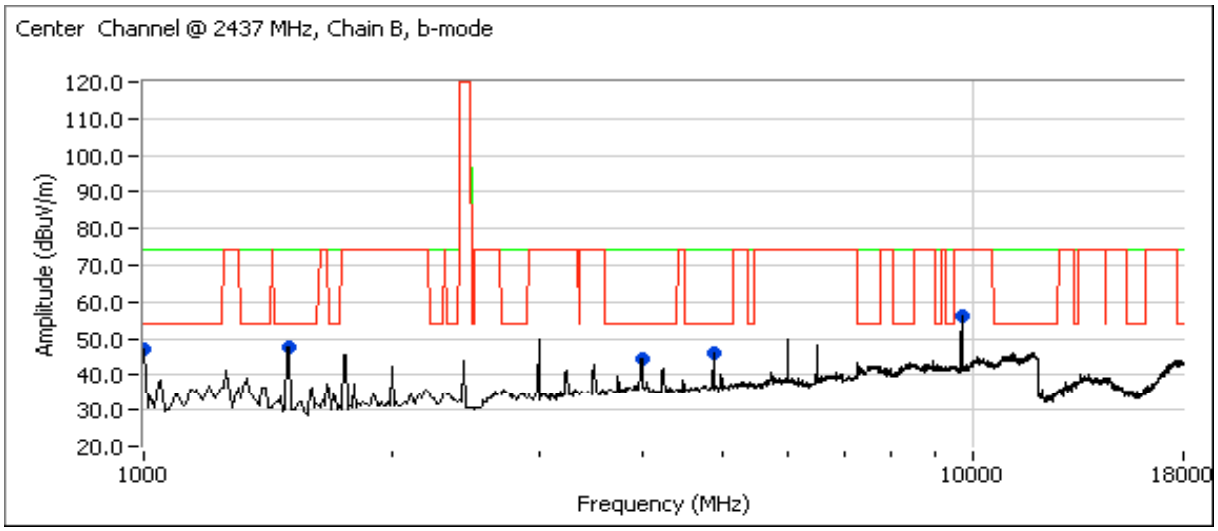
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1000.000	26.6	V	54.0	-27.4	AVG	163	1.0	
1494.570	36.4	H	54.0	-17.6	AVG	164	1.0	
3984.990	34.4	H	54.0	-19.6	AVG	145	1.6	
1000.000	39.4	V	74.0	-34.6	PK	163	1.0	
1494.570	53.9	H	74.0	-20.1	PK	164	1.0	
3984.990	51.7	H	74.0	-22.3	PK	145	1.6	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11b Chain B
Run # 2b : Center Channel @ 2437 MHz



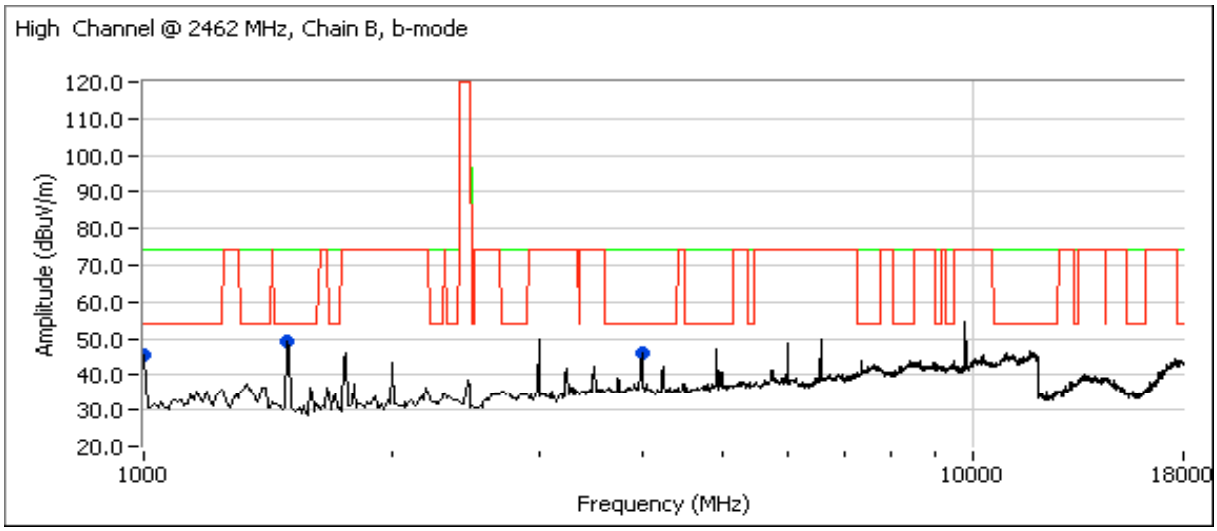
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1000.000	19.0	H	54.0	-35.0	AVG	76	1.0	
1497.180	31.0	H	54.0	-23.0	AVG	156	1.0	
3984.440	25.0	H	54.0	-29.0	AVG	146	1.6	
4873.940	39.1	V	54.0	-14.9	AVG	157	1.6	
9747.820	44.4	V	74.0	-29.6	AVG	157	1.9	
1000.000	34.5	H	74.0	-39.5	PK	76	1.0	
1497.180	50.3	H	74.0	-23.7	PK	156	1.0	
3984.440	43.4	H	74.0	-30.6	PK	146	1.6	
4873.940	42.2	V	74.0	-31.8	PK	157	1.6	
9747.820	47.5	V	74.0	-26.5	PK	157	1.9	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11b Chain B
Run # 2c : High Channel @ 2462 MHz



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
999.953	29.8	V	54.0	-24.2	AVG	132	1.1	
1494.220	36.5	H	54.0	-17.5	AVG	161	1.0	
3985.090	34.7	H	54.0	-19.3	AVG	145	1.6	
999.953	45.0	V	74.0	-29.0	PK	132	1.1	
1494.220	54.0	H	74.0	-20.0	PK	161	1.0	
3985.090	52.2	H	74.0	-21.8	PK	145	1.6	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

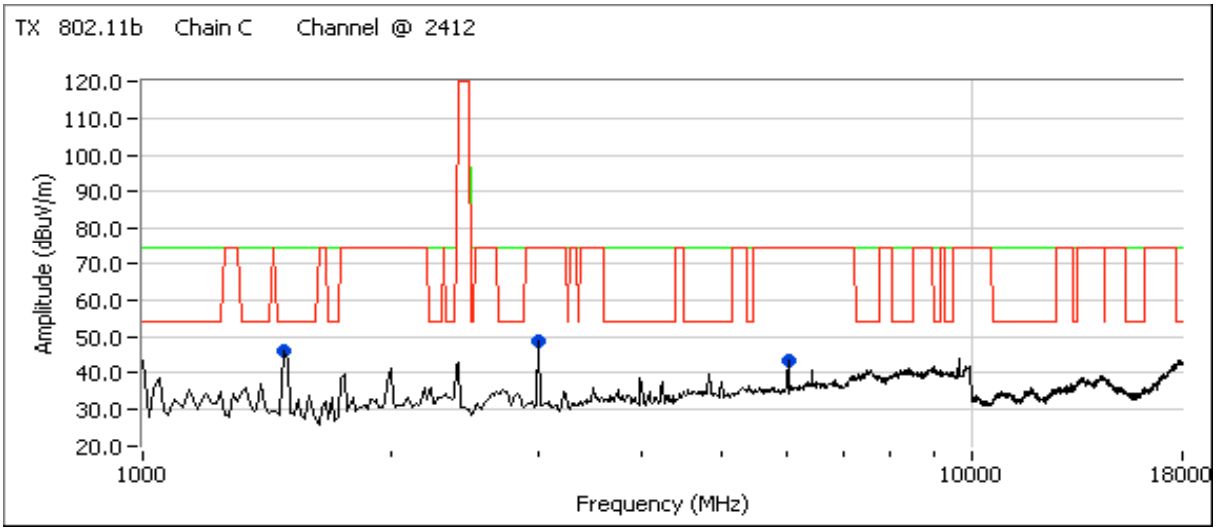
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11b Chain C

Sample tested: 0016EA02D660
Date of Test: 6/17/2008
Test Engineer: Ben Jing
Test Location: Chamber # 4

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz (EUT 3.3V DC)

Run #3a : Low Channel @ 2412 MHz



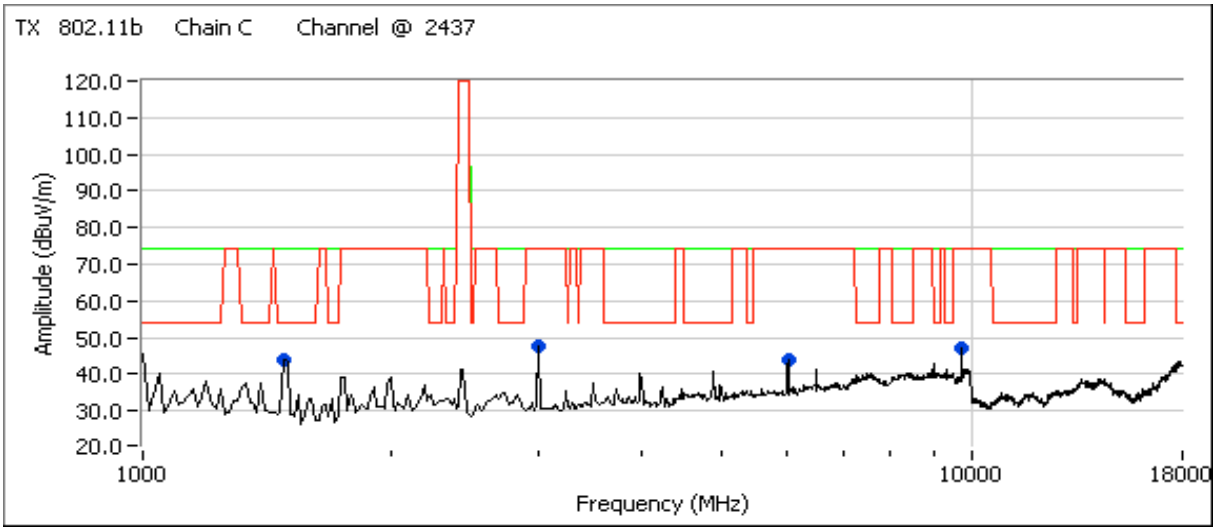
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.450	32.9	V	54.0	-21.1	AVG	92	1.0	
3000.410	47.9	V	74.0	-26.1	AVG	271	1.0	
6000.810	43.8	V	74.0	-30.2	AVG	110	1.0	
1494.450	50.5	V	74.0	-23.5	PK	92	1.0	
3000.410	51.4	V	74.0	-22.6	PK	271	1.0	
6000.810	48.0	V	74.0	-26.0	PK	110	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b : Center Channel @ 2437 MHz



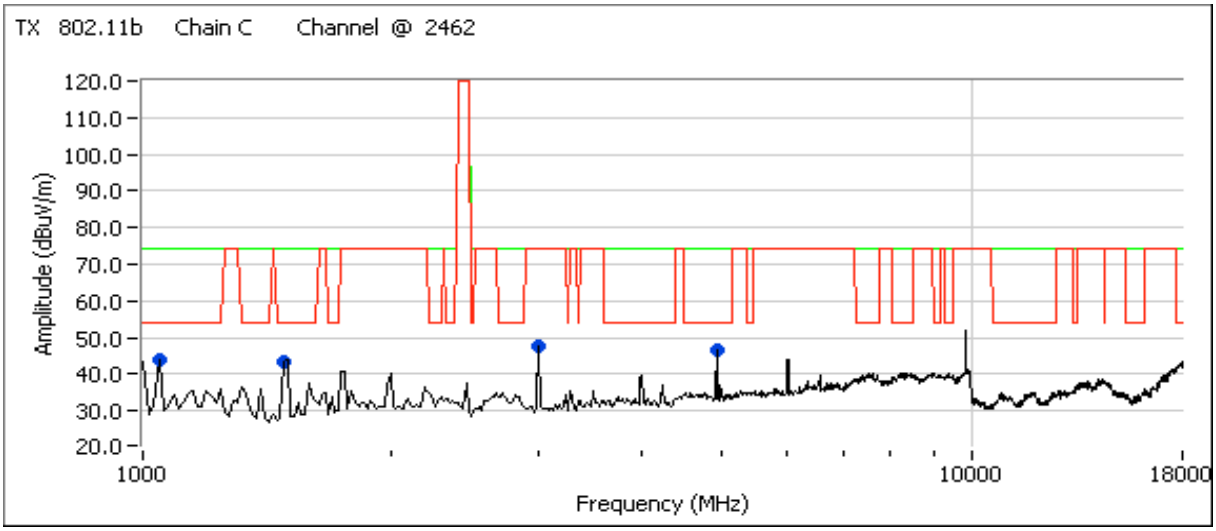
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1493.840	32.5	V	54.0	-21.5	AVG	93	1.0	
3000.310	48.1	V	74.0	-25.9	AVG	273	1.0	
6000.690	44.5	V	74.0	-29.5	AVG	108	1.0	
9748.010	46.5	V	74.0	-27.5	AVG	189	1.6	
1493.840	50.8	V	74.0	-23.2	PK	93	1.0	
3000.310	51.7	V	74.0	-22.3	PK	273	1.0	
6000.690	48.2	V	74.0	-25.8	PK	108	1.0	
9748.010	50.5	V	74.0	-23.5	PK	189	1.6	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3c : High Channel @ 2462 MHz



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1055.995	28.7	H	54.0	-25.3	AVG	193	1.0	
1498.380	31.9	V	54.0	-22.1	AVG	91	1.0	
4924.030	46.1	V	54.0	-7.9	AVG	165	1.3	
1055.995	39.5	H	74.0	-34.5	PK	193	1.0	
1498.380	49.9	V	74.0	-24.1	PK	91	1.0	
4924.030	48.6	V	74.0	-25.4	PK	165	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11g Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C

Rel. Humidity: 55 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11g Chain A	1 2412MHz	24.5	12.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.3 dBuV/m @ 2389.8 MHz (-1.7dB)
1b	802.11g Chain A	11 2462MHz	27.0	15.8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	73.0 dBuV/m @ 2483.7 MHz (-1.0dB)
2a	802.11g Chain B	1 2412MHz	28.0	16.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	48.7dBµV/m @ 2389.8MHz (-5.3dB)
2b	802.11g Chain B	11 2462MHz	26.0	14.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	46.4dBµV/m @ 2483.5MHz (-7.6dB)
3a	802.11g Chain C	1 2412MHz	23.0	12.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	45.2dBµV/m @ 2389.9MHz (-8.8dB)
3b	802.11g Chain C	11 2462MHz	24.5	13.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	46.758.9 @ 2483.62483.9 (-7.3dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Elliott — EMC Test Data

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain A

Sample ID: 0016EA02D660
Date of Test: 6/14/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #4

Run #1a: Low Channel @ 2412 MHz

Power Setting: 24. 5 Average power: 12.9 (for reference purposes)

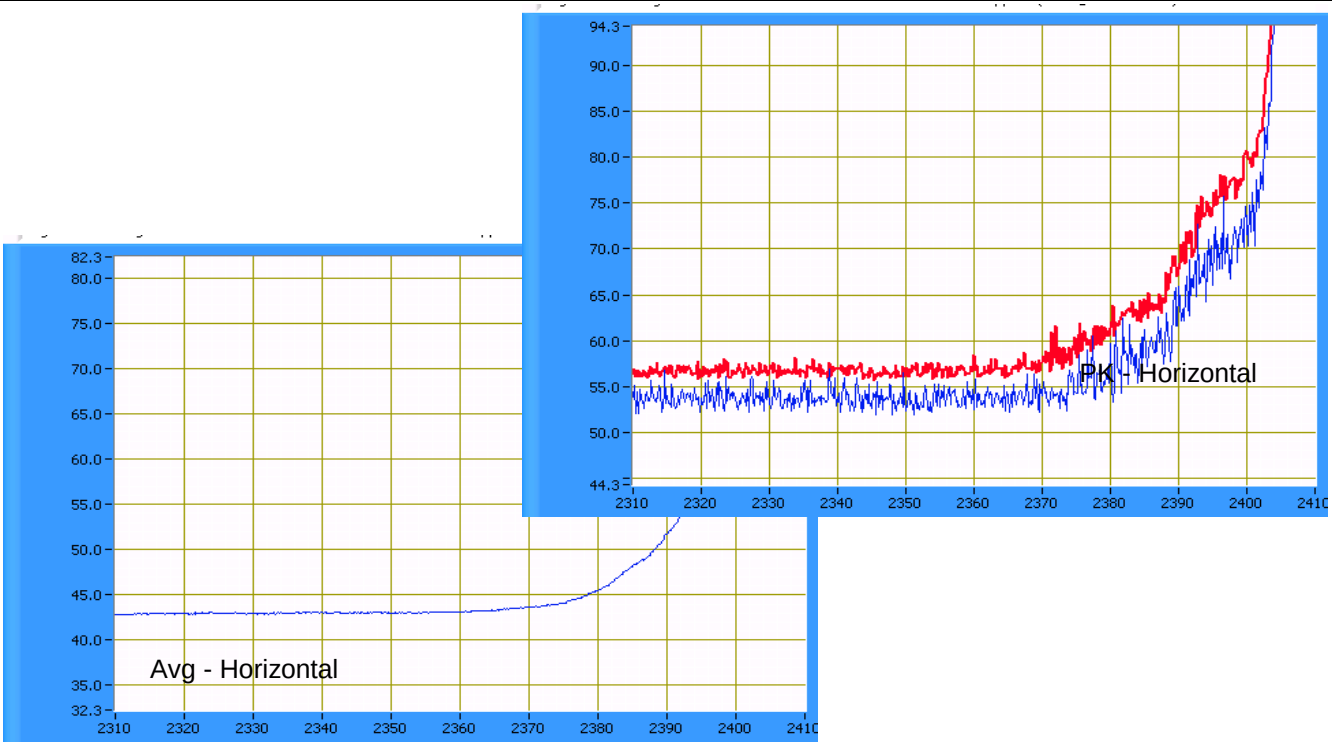
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.300	94.0	V	-	-	PK	169	1.0	RB = VB = 100kHz
2410.750	95.3	H	-	-	PK	210	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.890	51.9	H	54.0	-2.1	AVG	212	1.0	
2389.840	72.3	H	74.0	-1.7	PK	211	1.0	
2391.270	50.5	V	54.0	-3.5	AVG	158	1.0	
2389.690	70.8	V	74.0	-3.2	PK	161	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: High Channel @ 2462 MHz

Power Setting: 27. 0 Average power: 15.8 (for reference purposes)

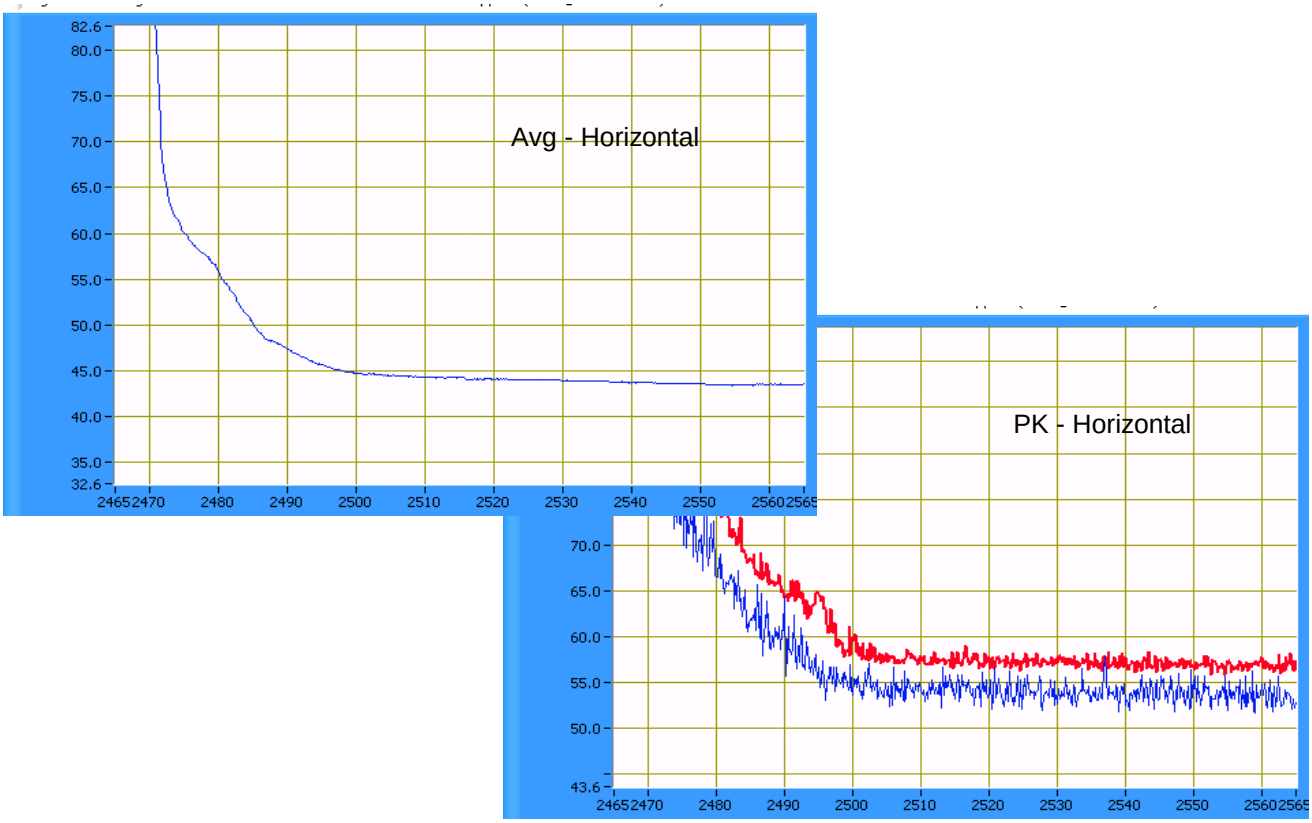
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.310	96.5	V	-	-	PK	195	1.0	RB = VB = 100kHz
2460.780	97.3	H	-	-	PK	207	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.610	52.2	H	54.0	-1.8	AVG	210	1.2	Note 1
2483.680	73.0	H	74.0	-1.0	PK	208	1.2	Note 1
2483.630	50.1	V	54.0	-3.9	AVG	196	1.0	Note 1
2483.700	69.2	V	74.0	-4.8	PK	195	1.0	Note 1

Note 1	Target GC = 28.0 , AP = 15.8 dBm ; Passing Setting GC = 27.0 , AP = 15.8 dBm ;



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain B

Sample ID: 0016EA02D660
Date of Test: 6/14/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #4

Run #2a: Low Channel @ 2412 MHz

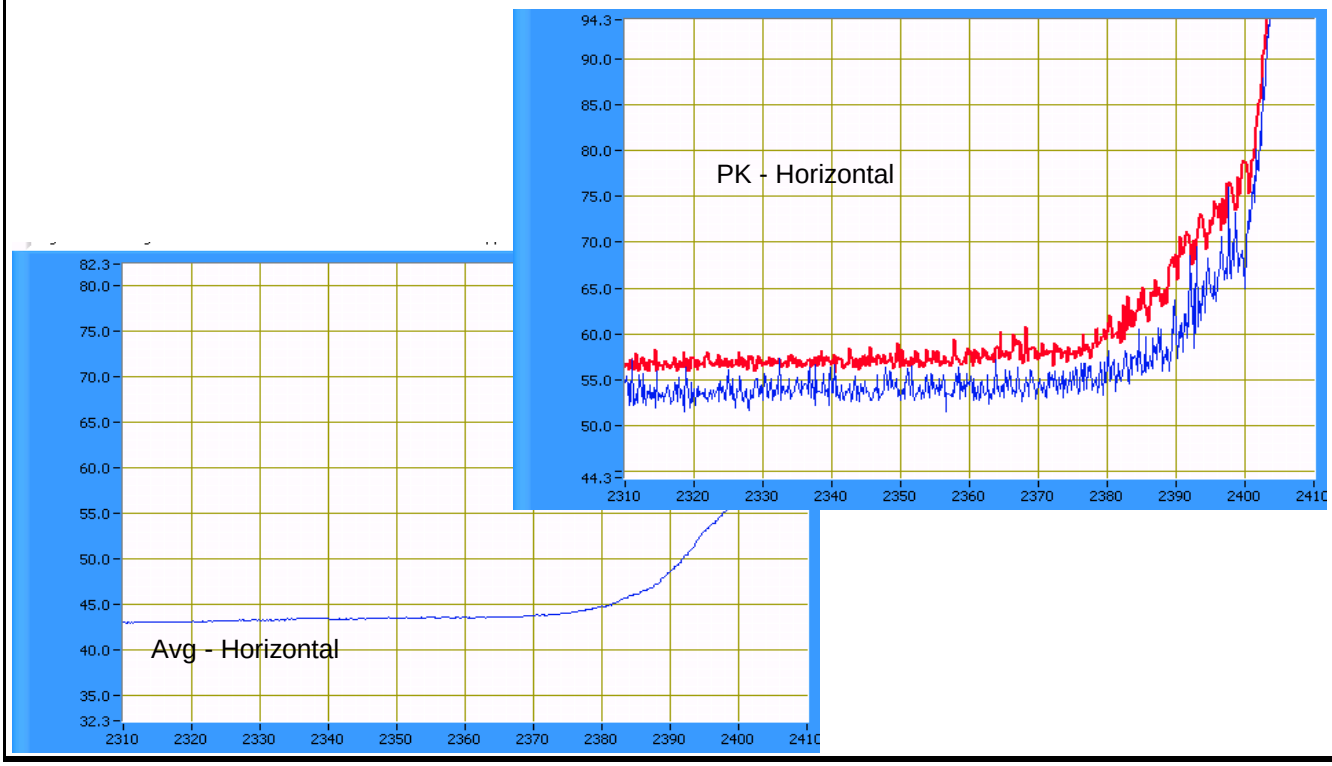
Power Setting: 28. 0 Average power: 16.4 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2410.740	94.0	V	-	-	PK	228	1.0	RB = VB = 100kHz
2410.770	96.6	H	-	-	PK	239	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.830	48.7	H	54.0	-5.3	AVG	240	1.0	Note 1
2389.860	66.3	H	74.0	-7.7	PK	236	1.0	Note 1
2389.720	47.4	V	54.0	-6.6	AVG	226	1.0	Note 1
2389.790	65.9	V	74.0	-8.1	PK	228	1.0	Note 1



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2b: High Channel @ 2462 MHz

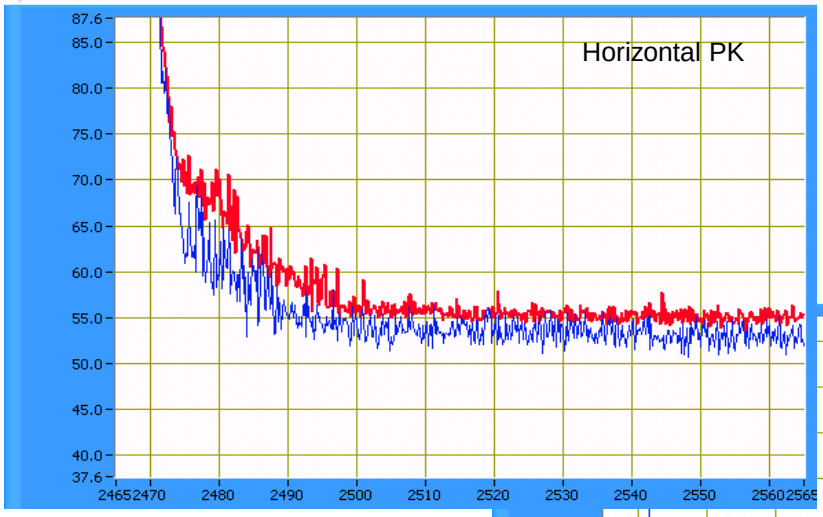
Sample ID: 0016EA02D660
Date of Test: 6/16/2008
Test Engineer: Rafael Varelas
Test Location: Fremont Chamber #4
Power Setting: 26 Average power: 14.6 (for reference purposes)

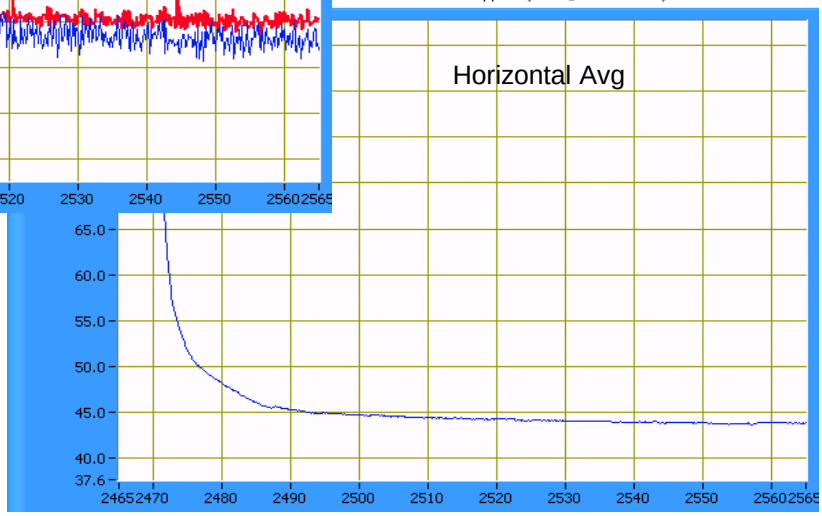
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2454.600	91.8	V	74.0	17.8	PK	179	1.0	RB = VB = 100kHz
2469.770	93.2	H	74.0	19.2	PK	270	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.510	46.3	V	54.0	-7.7	Avg	179	1.0	
2483.860	65.1	V	74.0	-8.9	PK	179	1.0	
2483.500	46.4	H	54.0	-7.6	Avg	270	1.0	
2484.720	66.4	H	74.0	-7.6	PK	270	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11g - Chain C

Sample ID: 0016EA02D660
Date of Test: 6/16/2008
Test Engineer: Rafael Varelas
Test Location: Fremont Chamber #4

Run #3a: Low Channel @ 2412 MHz

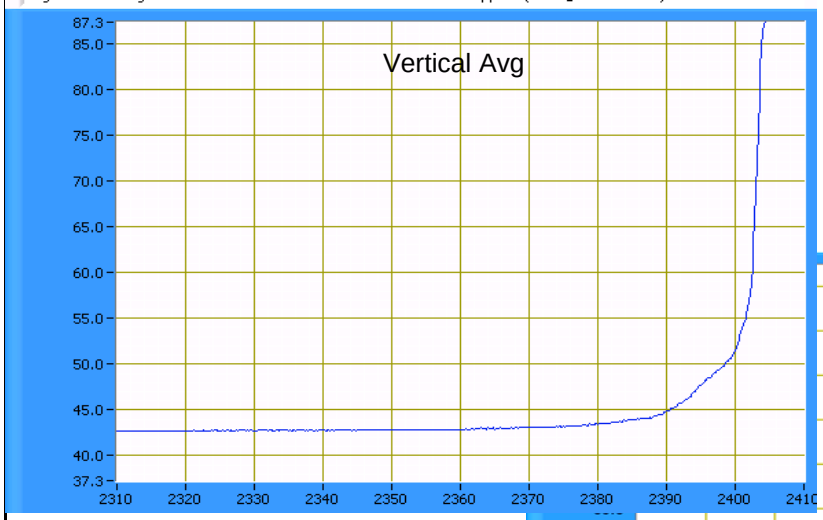
Power Setting: 23 Average power: 12.4 (for reference purposes)

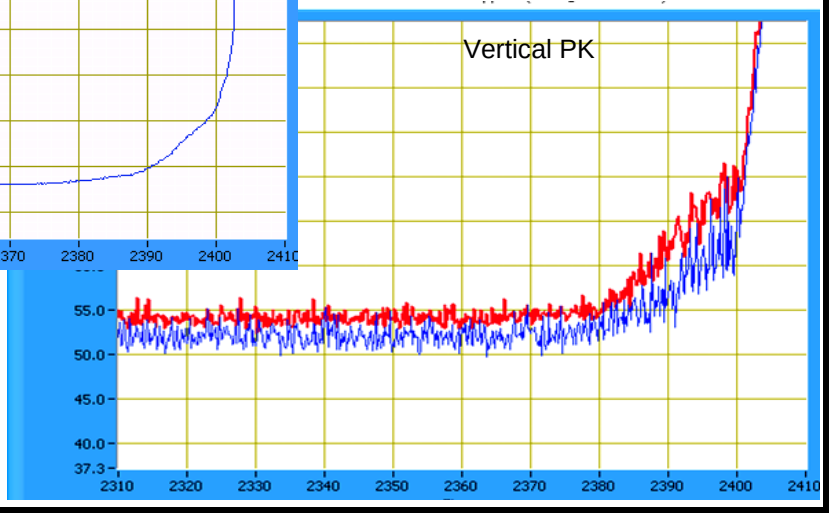
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2408.370	92.0	V	-	-	PK	137	1.1	RB = VB = 100kHz
2405.830	90.2	H	-	-	PK	188	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.870	45.2	V	54.0	-8.8	Avg	137	1.1	
2389.990	63.5	V	74.0	-10.5	PK	137	1.1	
2389.750	44.4	H	54.0	-9.6	Avg	188	1.0	
2388.370	62.1	H	74.0	-11.9	PK	188	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b: High Channel @ 2462 MHz

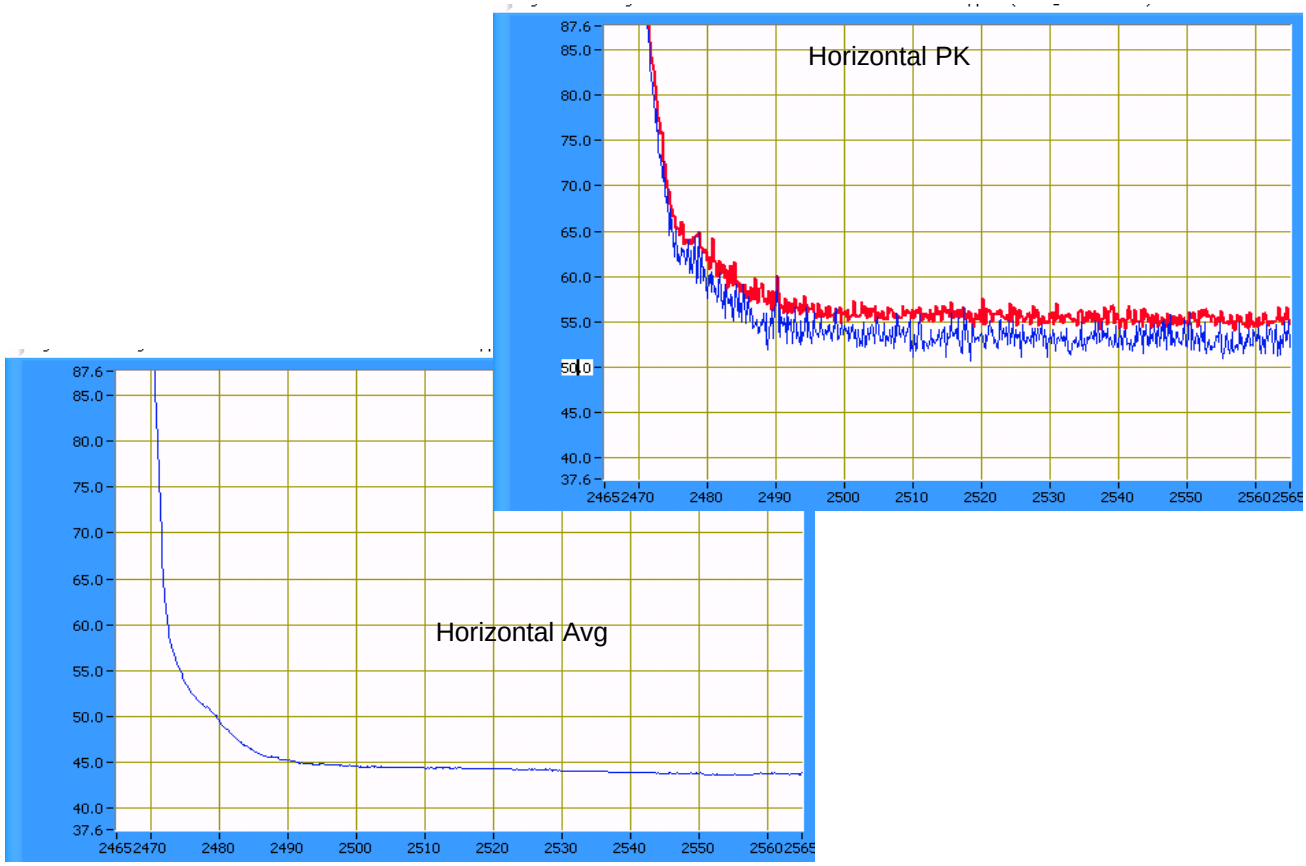
Power Setting: 24.5 Average power: 13.6 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2468.530	92.6	V	-	-	PK	210	1.0	RB = VB = 100kHz
2468.270	94.4	H	-	-	PK	250	1.6	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.500	45.4	V	54.0	-8.6	Avg	210	1.0	
2483.900	58.9	V	74.0	-15.1	PK	210	1.0	
2483.580	46.7	H	54.0	-7.3	Avg	250	1.5	
2484.470	60.3	H	74.0	-13.7	PK	250	1.5	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11g Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20.1 °C
Rel. Humidity: 43 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11g Chain A	1 (2412) 6 (2437) 11 (2462)	27.5 27.5 28	16.3 16.2 16.2	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	Testing with the ethertronics antenna showed that 802.11b mode had higher emissions than 802.11g mode. 802.11b results cover both legacy modes.
2	802.11g Chain B	1 (2412) 6 (2437) 11 (2462)	27.5 27.5 28	16.4 16.2 16.4	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	
3	802.11g Chain C	1 (2412) 6 (2437) 11 (2462)	27 28 27	16.4 16.4 16.4	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11n20MHz Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 22 °C

Rel. Humidity: 36 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n20 Chain A	1 2412MHz	22.0	11.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.6dBµV/m @ 2389.6MHz (-1.4dB)
1b	802.11n20 Chain A	11 2462MHz	25.0	13.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	50.0 dBuV/m @ 2483.6 MHz (-4.0dB)
2a	802.11n20 Chain B	1 2412MHz	23.5	12.3	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	48.6dBµV/m @ 2389.6MHz (-5.4dB)
2b	802.11n20 Chain B	11 2462MHz	25.5	14.0	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	49.6 dBuV/m @ 2483.6 MHz (-4.4dB)
3a	802.11n20 Chain C	1 2412MHz	23.5	12.8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	72.9dBµV/m @ 2389.6MHz (-1.1dB)
3b	802.11n20 Chain C	11 2462MHz	24.5	14.1	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.1dBµV/m @ 2483.6MHz (-1.9dB)
4a	802.11n20 Chain A+B	1 2412MHz	25.5, 25.5	13.0, 12.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.4dBµV/m @ 2390.0MHz (-2.6dB)
4b	802.11n20 Chain A+B	11 2462MHz	25.5, 26.5	13.3, 13.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	48.9dBµV/m @ 2483.9MHz (-5.1dB)
5a	802.11n20 Chain A+C	1 2412MHz	23.5, 25.0	11.1, 13	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	47.9dBµV/m @ 2389.6MHz (-6.1dB)
5b	802.11n20 Chain A+C	11 2462MHz	26, 26	13.8, 14.2	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	48.5dBµV/m @ 2484.8MHz (-5.5dB)

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
6a	802.11n20 Chain B+C	1 2412MHz	25, 24	12.2, 12.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	45.4dBµV/m @ 2389.9MHz (-8.6dB)
6b	802.11n20 Chain B+C	11 2462MHz	26.5, 25.5	13.8, 13.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	47.4dBµV/m @ 2441.4MHz (-6.6dB)
7a	802.11n20 A+B+C	1 2412MHz	25, 25.5, 24.5	12, 12, 12.2	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	47.5dBµV/m @ 2390.0MHz(-6.5dB)
7b	802.11n20 A+B+C	11 2462MHz	26, 26, 25	12.2, 12.4, 12.1	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	47.1dBµV/m @ 2441.4MHz (-6.9dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Sample ID:
Date of Test: 6/11/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 4

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Sample ID: 0016EA02D660
Date of Test: 6/11/2008
Test Engineer: Ben Jing
Test Location: FT Chamber # 4

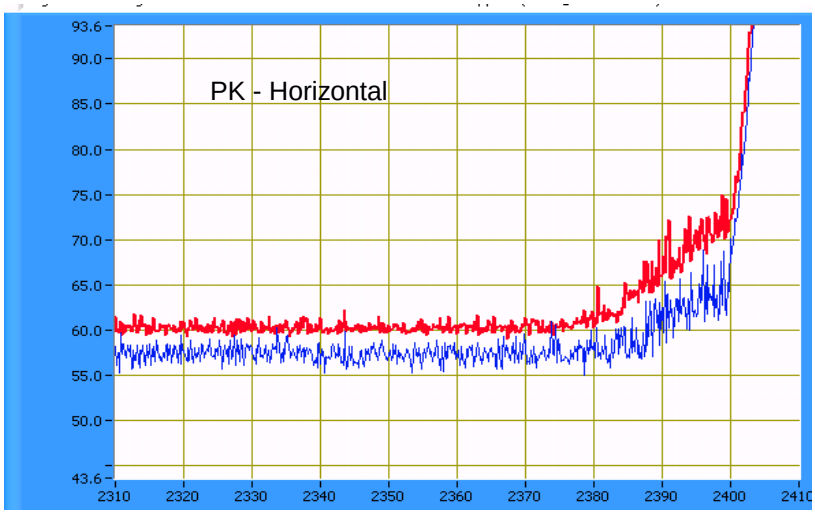
Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A
Run #1a: Low Channel @ 2412 MHz
Power Setting: 22. 0 Average power: 11.4 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2410.730	94.4	V	-	-	PK	163	1.0	RB = VB = 100kHz
2410.720	96.0	H	-	-	PK	245	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.620	72.6	H	74.0	-1.4	PK	247	1.0	
2389.690	50.1	H	54.0	-3.9	AVG	245	1.0	
2389.630	65.3	V	74.0	-8.7	PK	162	1.0	
2389.600	48.9	V	54.0	-5.1	AVG	164	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: High Channel @ 2462 MHz

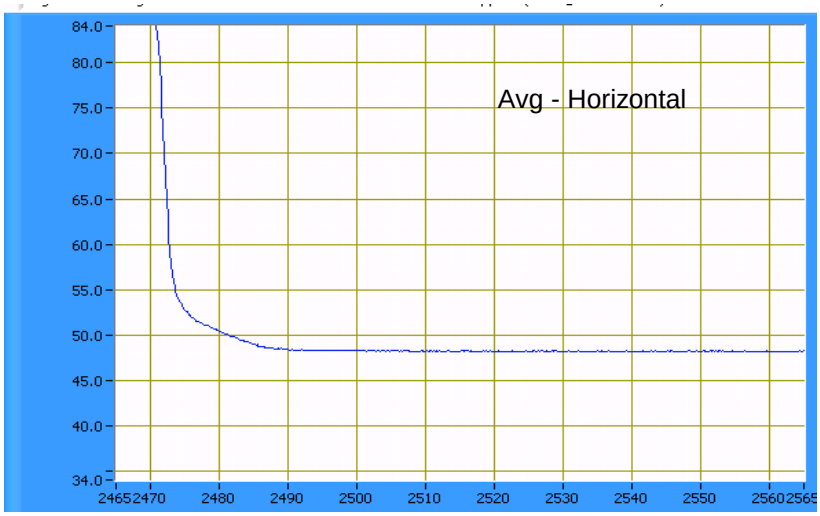
Power Setting: 25. 0 Average power: 13.9 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.310	94.4	V	-	-	PK	162	1.0	RB = VB = 100kHz
2463.290	94.6	H	-	-	PK	209	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.740	65.0	H	74.0	-9.0	PK	209	1.0	
2483.600	50.0	H	54.0	-4.0	AVG	234	1.0	
2483.730	63.7	V	74.0	-10.3	PK	164	1.0	
2483.600	49.0	V	54.0	-5.0	AVG	165	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain B

Run #2a: Low Channel @ 2412 MHz

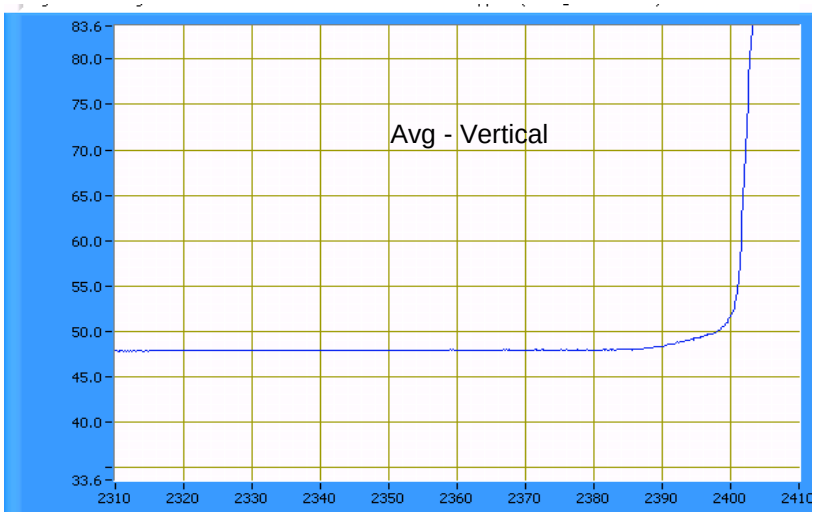
Power Setting: 23. 5 Average power: 12.3 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.300	91.5	V	-	-	PK	129	1.0	RB = VB = 100kHz
2413.280	89.9	H	-	-	PK	277	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.640	48.6	V	54.0	-5.4	AVG	130	1.0	
2389.780	62.1	V	74.0	-11.9	PK	130	1.0	
2389.680	60.6	H	74.0	-13.4	PK	321	1.0	
2389.600	48.2	H	54.0	-5.8	AVG	267	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2b: High Channel @ 2462 MHz

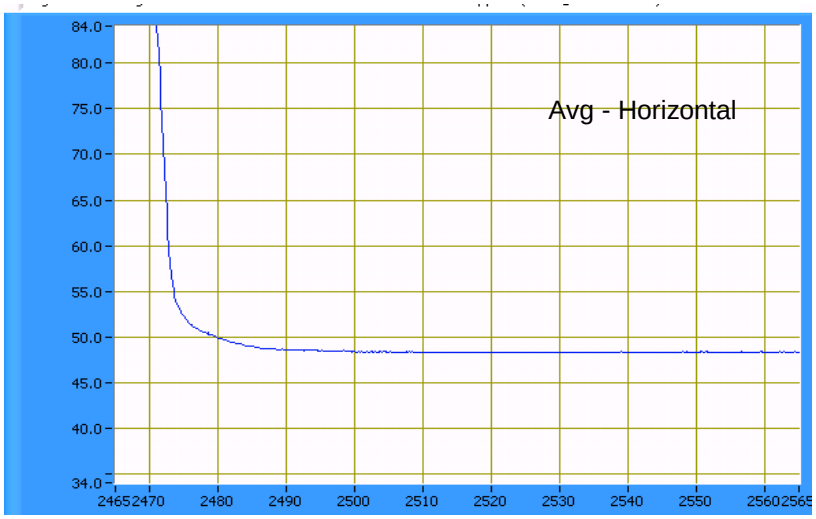
Power Setting: 25. 5 Average power: 14.0 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.290	92.3	V	-	-	PK	132	1.0	RB = VB = 100kHz
2461.020	92.7	H	-	-	PK	236	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.600	68.6	H	74.0	-5.4	PK	216	1.0	
2483.600	49.6	H	54.0	-4.4	AVG	214	1.0	
2483.760	64.5	V	74.0	-9.5	PK	130	1.0	
2483.600	49.0	V	54.0	-5.0	AVG	130	1.0	



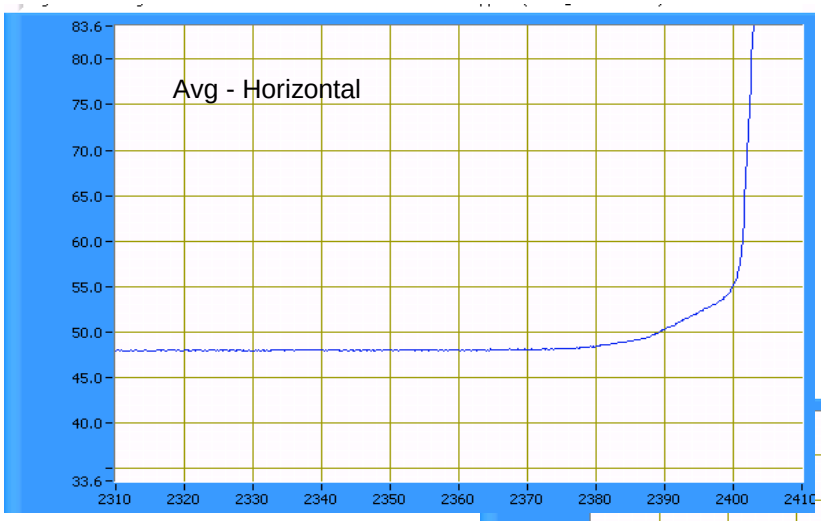
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

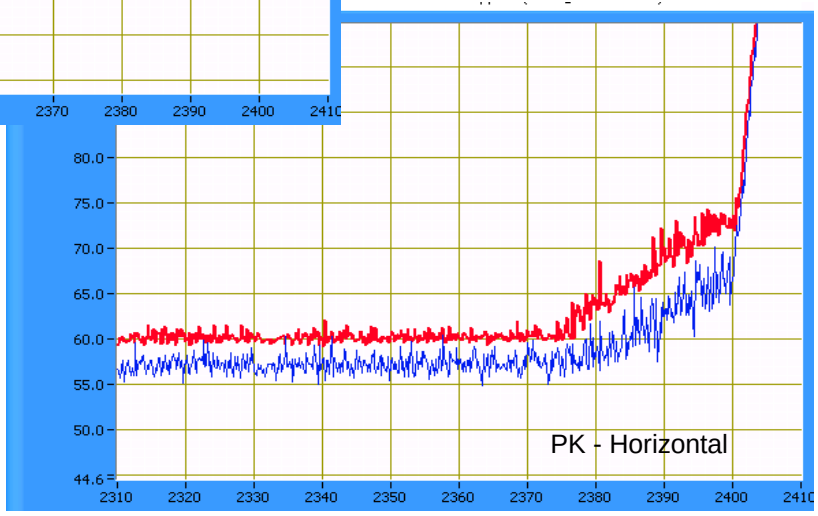
Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain C
Run #3a: Low Channel @ 2412 MHz
Power Setting: 23. 5 Average power: 12.8 (for reference purposes)
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.310	92.4	V	74.0	18.4	PK	218	1.0	RB = VB = 100kHz
2410.760	93.3	H	74.0	19.3	PK	112	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.640	72.9	H	74.0	-1.1	PK	111	1.0	
2389.610	50.4	H	54.0	-3.6	AVG	112	1.0	
2389.630	70.3	V	74.0	-3.7	PK	217	1.0	
2389.600	49.7	V	54.0	-4.3	AVG	217	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b: High Channel @ 2462 MHz

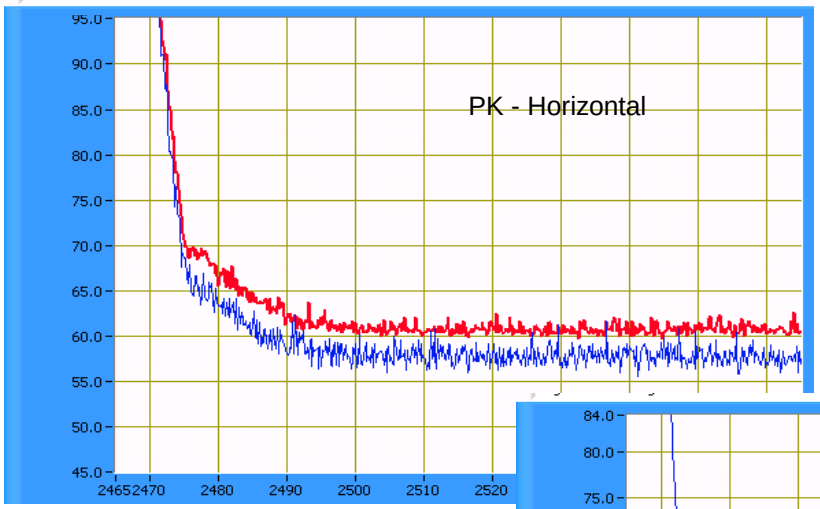
Power Setting: 24. 5 Average power: 14.1 (for reference purposes)

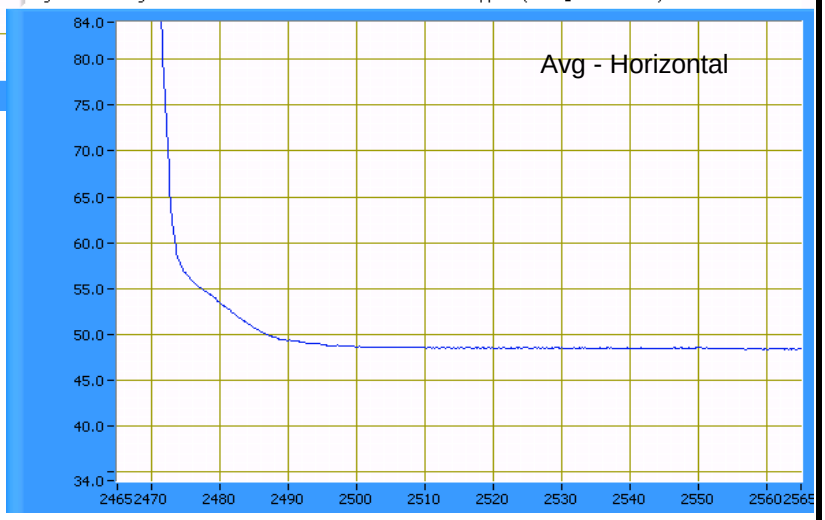
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2460.720	90.7	V	-	-	PK	172	1.0	RB = VB = 100kHz
2460.760	96.8	H	-	-	PK	237	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.600	52.1	H	54.0	-1.9	AVG	239	1.2	
2483.620	65.8	H	74.0	-8.2	PK	238	1.2	
2483.610	62.5	V	74.0	-11.5	PK	172	1.0	
2483.600	49.3	V	54.0	-4.7	AVG	176	1.2	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 4: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+B

Run #4a: Low Channel @ 2412 MHz

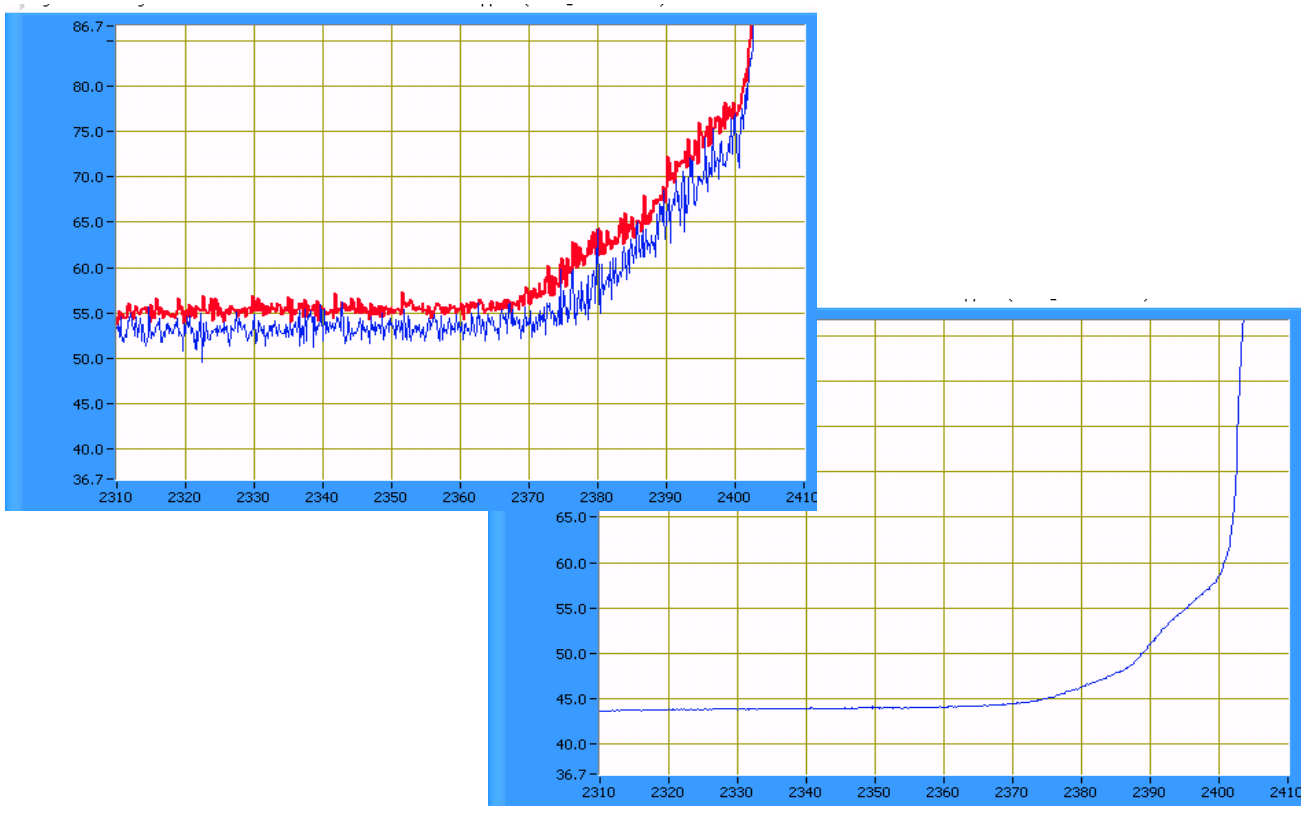
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
25.5	13	25.5	12.4		

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2404.630	99.2	H	-	-	PK	249	1.1	RB = VB = 100kHz
2408.400	96.9	V	-	-	PK	171	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.870	47.4	H	54.0	-6.6	Avg	171	1.0	
2389.230	64.5	H	74.0	-9.5	PK	171	1.0	
2389.970	51.4	H	54.0	-2.6	Avg	249	1.1	
2389.920	70.3	H	74.0	-3.7	PK	249	1.1	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Sample ID: 0016EA02D660
Date of Test: 6/13/2008
Test Engineer: John Caizzi
Test Location: FT #4

Run #4b: High Channel @ 2462 MHz

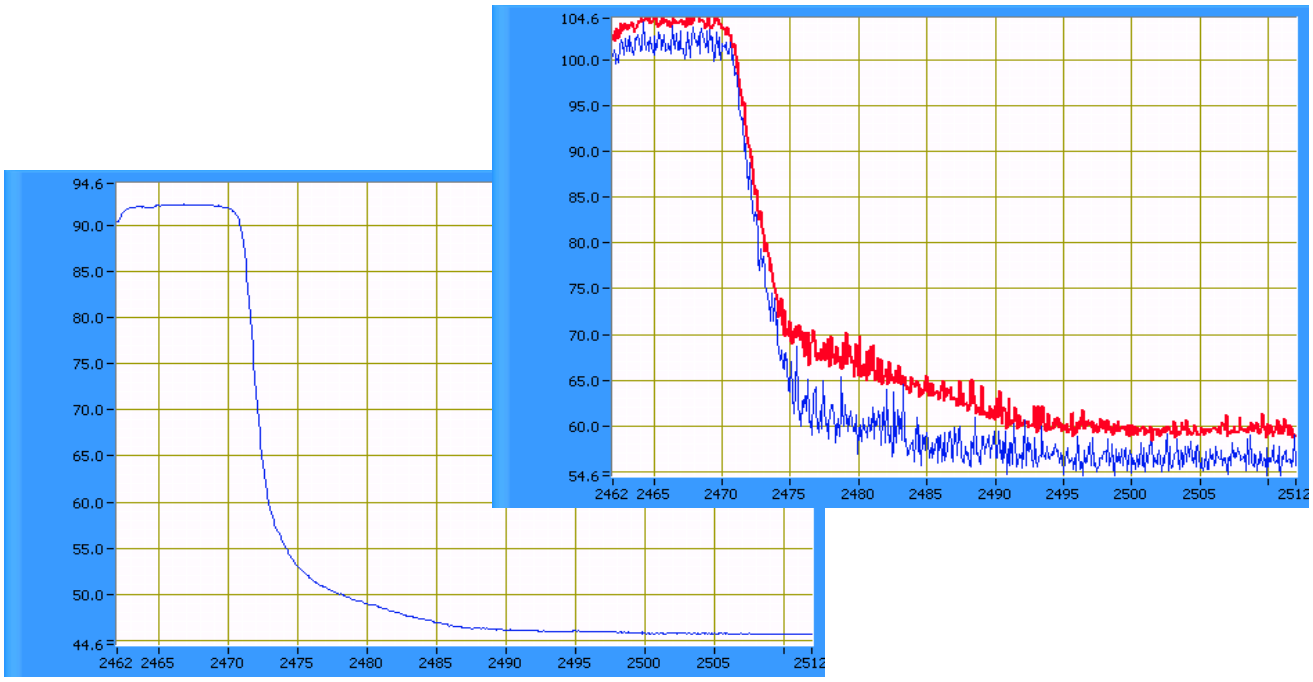
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
25.5	13.3	26.5	13.6		

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2467.330	98.1	H	-	-	Pk	249	1.3	RB = VB = 100kHz
2466.170	94.9	V	-	-	Pk	158	1.2	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.850	48.9	H	54.0	-5.1	AVG	250	1.3	
2484.080	47.2	V	54.0	-6.8	AVG	158	1.2	
2483.850	65.3	H	74.0	-8.7	PK	250	1.3	
2484.080	60.9	V	74.0	-13.1	PK	158	1.2	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #5: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+C

Sample ID: 0016EA02D660
Date of Test: 6/13/2008
Test Engineer: John Caizzi
Test Location: FT #4

Run #5a: Low Channel @ 2412 MHz

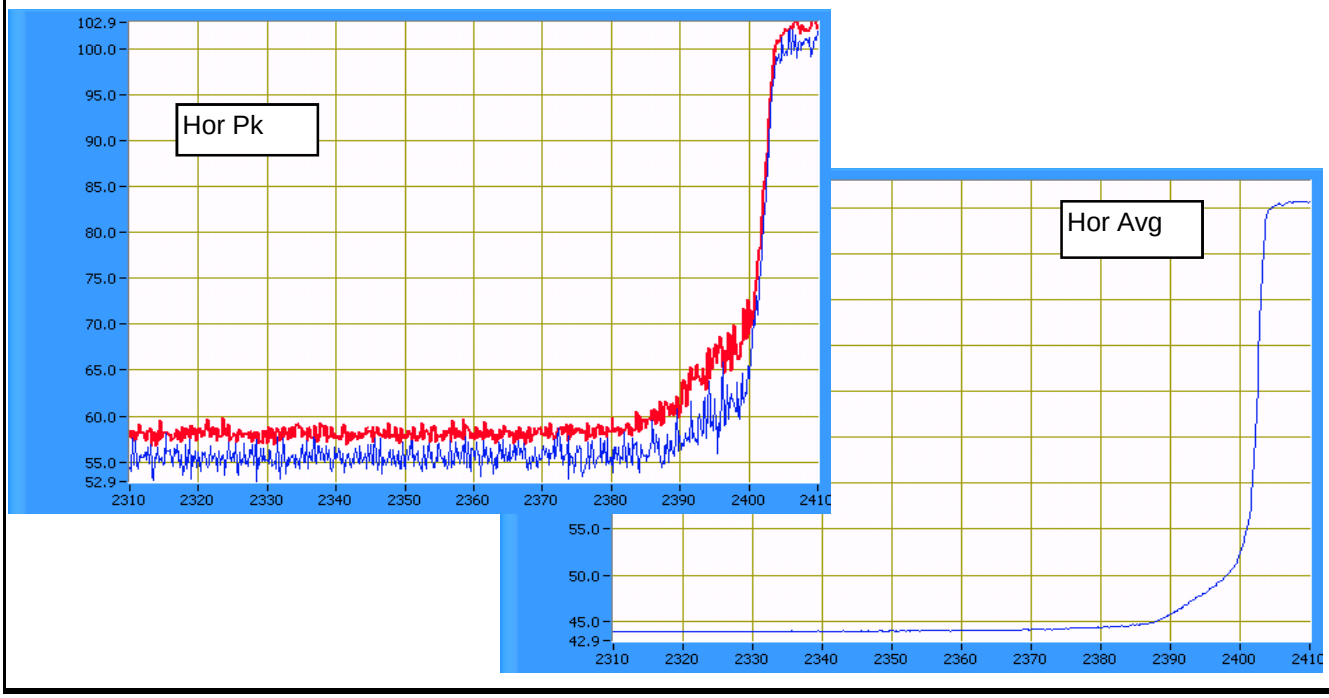
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
23.5	11.1	[redacted]		25.0	13.0

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2414.750	94.3	H			Pk	253	2.1	RB = VB = 100kHz
2406.000	94.4	V			Pk	155	1.1	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.590	47.9	H	54.0	-6.1	AVG	253	2.1	
2388.130	47.4	V	54.0	-6.6	AVG	155	1.1	
2389.590	64.3	H	74.0	-9.7	PK	253	2.1	
2388.130	64.0	V	74.0	-10.0	PK	155	1.1	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #5b: High Channel @ 2462 MHz

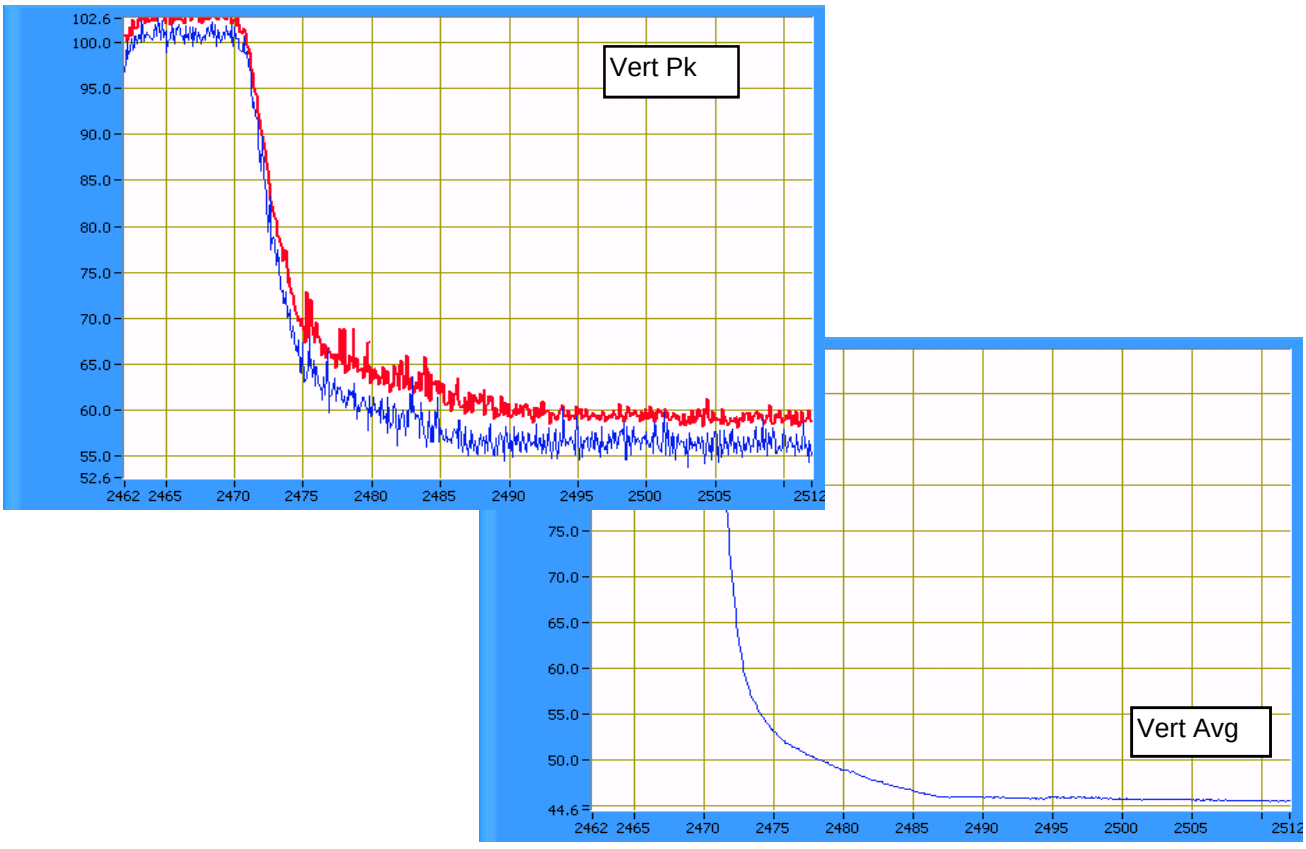
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.0	13.8			26.0	14.2

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2470.080	94.6	H	-	-	Pk	250	2.0	RB = VB = 100kHz
2467.500	94.5	V	-	-	Pk	155	1.2	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.780	48.5	V	54.0	-5.5	AVG	154	1.2	
2484.570	47.1	H	54.0	-6.9	AVG	250	2.0	
2484.780	63.6	V	74.0	-10.4	PK	154	1.2	
2484.570	61.2	H	74.0	-12.8	PK	250	2.0	



Elliott — EMC Test Data

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #6: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain B+C

Sample ID: 0016EA02D660
Date of Test: 6/13/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #4

Run #6a: Low Channel @ 2412 MHz

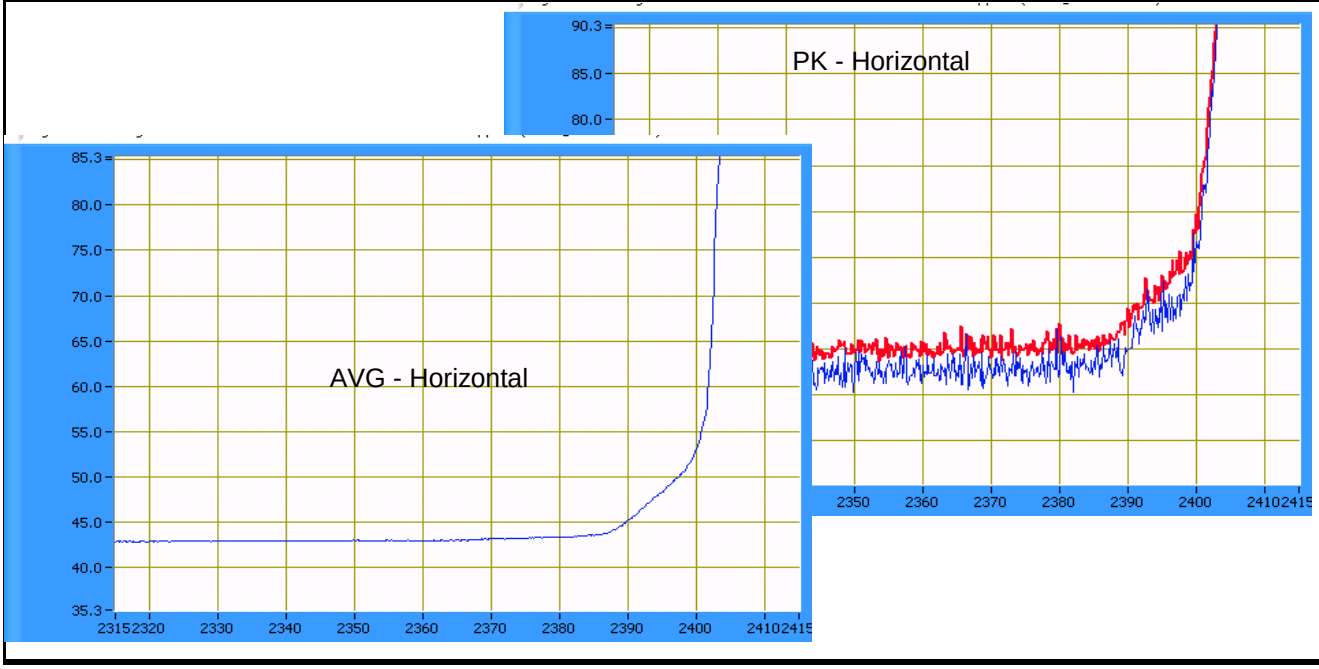
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		25.0	12.2	24.0	12.4

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2419.730	90.9	V	74.0	16.9	PK	305	1.0	RB = VB = 100kHz
2407.070	95.0	H	74.0	21.0	PK	329	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2388.940	59.9	H	74.0	-14.1	PK	329	1.0	
2389.940	45.4	H	54.0	-8.6	AVG	329	1.0	
2387.670	59.2	V	74.0	-14.8	PK	303	1.0	
2389.760	45.4	V	54.0	-8.6	AVG	306	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #6b: High Channel @ 2462 MHz

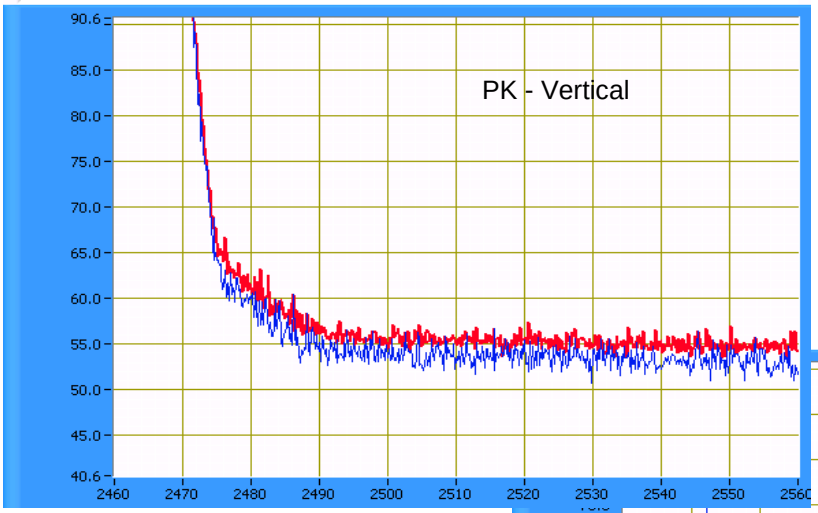
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		26.5	13.8	25.5	13.6

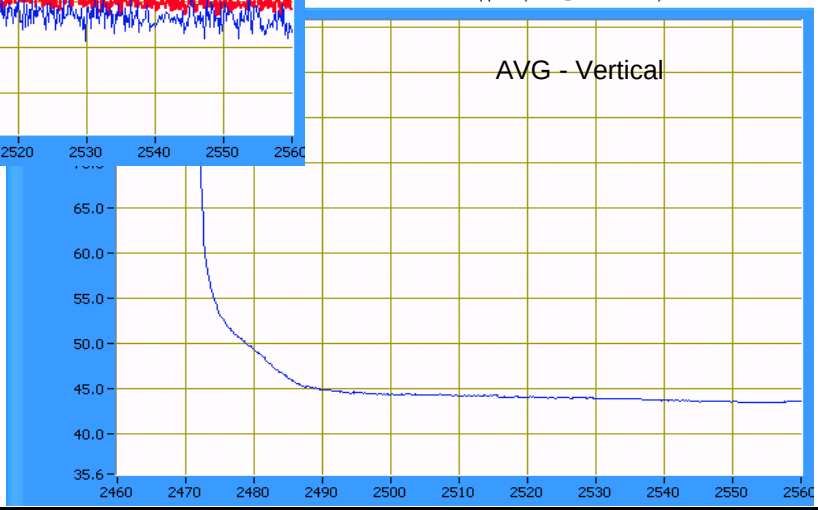
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2469.800	94.3	V	-	-	PK	34	1.0	RB = VB = 100kHz
2460.900	94.3	H	-	-	PK	55	2.5	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2440.900	64.3	V	74.0	-9.7	PK	32	1.0	
2441.380	47.4	V	54.0	-6.6	AVG	35	1.0	
2441.480	63.5	H	74.0	-10.5	PK	55	2.5	
2441.360	47.3	H	54.0	-6.7	AVG	55	2.5	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #7: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (20 MHz Channel) - Chain A+B+C

Sample ID: 0016EA02D660
Date of Test: 6/13/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #4

Run #7a: Low Channel @ 2412 MHz

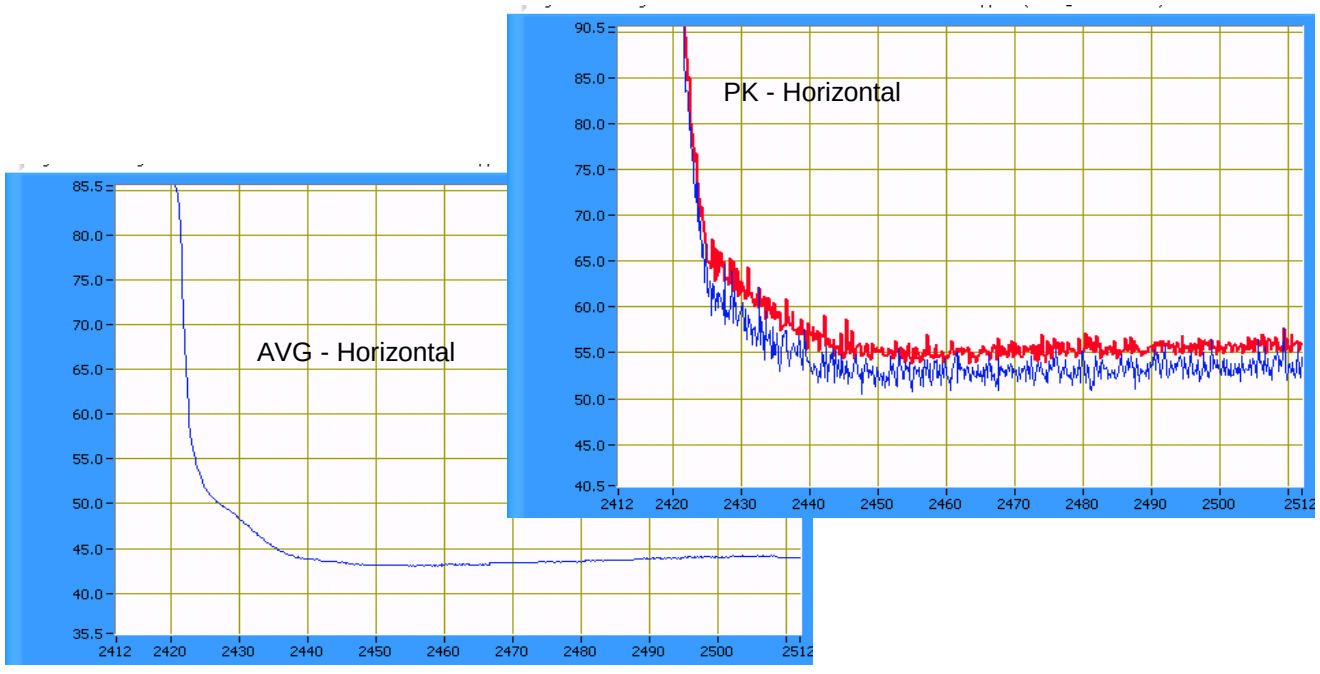
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
25.0	12	25.5	12	24.5	12.2

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2407.070	94.9	V	-	-	PK	308	1.0	RB = VB = 100kHz
2407.100	99.4	H	-	-	PK	65	1.1	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.710	61.2	V	74.0	-12.8	PK	309	1.0	
2389.990	46.4	V	54.0	-7.6	AVG	309	1.0	
2389.740	66.9	H	74.0	-7.1	PK	65	1.1	
2389.970	47.5	H	54.0	-6.5	AVG	65	1.1	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #7b: High Channel @ 2462 MHz

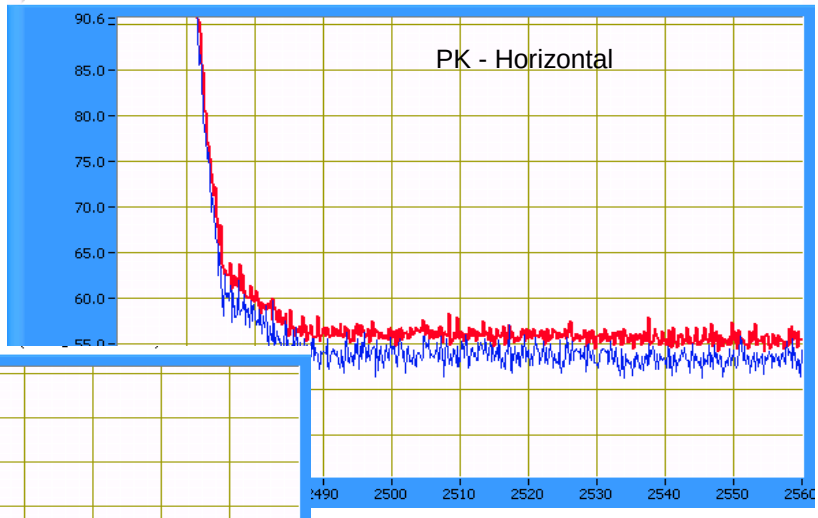
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
26.0	12.2	26.0	12.4	25.0	12.1

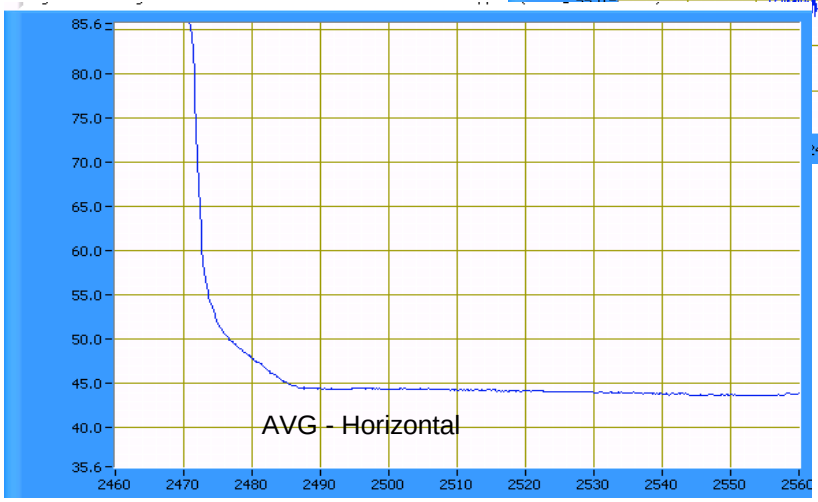
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.500	93.8	V	74.0	19.8	PK	8	1.0	RB = VB = 100kHz
2455.830	95.9	H	74.0	21.9	PK	61	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2441.380	61.2	V	74.0	-12.8	PK	6	1.0	
2441.480	47.0	V	54.0	-7.0	AVG	9	1.0	
2441.370	63.2	H	74.0	-10.8	PK	61	1.0	
2441.410	47.1	H	54.0	-6.9	AVG	61	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11n 20MHz Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 22 °C

Rel. Humidity: 36 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Summary of Results

Note - emissions from 18-26GHz covered by testing all three chains transmitting at highest power.

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	Chain A Chain B Chain C	6 (2437)	28.0 27.5 26.5	16.5 dBm	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	Covered by 802.11b mode as worst case in single chain mode
2a,b,c	802.11n20 Chains A+B+C	2412 MHz	A: 30.5 B: 30.5 C: 29.5	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	33.5dBµV/m @ 1498.4MHz (-20.5dB)
		2437 MHz	A: 31.0 B: 31.0 C: 30.0	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	40.0dBµV/m @ 7309.0MHz (-14.0dB)
		2462 MHz	A: 31.5 B: 31.5 C: 30.5	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	44.5dBµV/m @ 7392.0MHz (-9.5dB)
-	802.11n20 Dual Chain modes (A+B, A+C, B+C)				Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	Covered by tests on chains A+B+C

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11n 20MHz, Single Chain
Covered by measurements on 802.11b mode which represents the worst-case mode
Also covered by tests on triple-chain with all three chains operatign at the higher single-chain power setting.

Run #2: Radiated Spurious Emissions, 1000 - 26000 MHz. Operating Mode: 802.11n 20MHz Chains A+B+C
These tests run at a power setting equal to the highest single-chain settings to cover all possible dual- and triple-chain operating modes.

Sample tested: 0016EA02D660
Date of Test: 6/17/2008
Test Engineer: Ben Jing
Test Location: Chamber # 4
Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

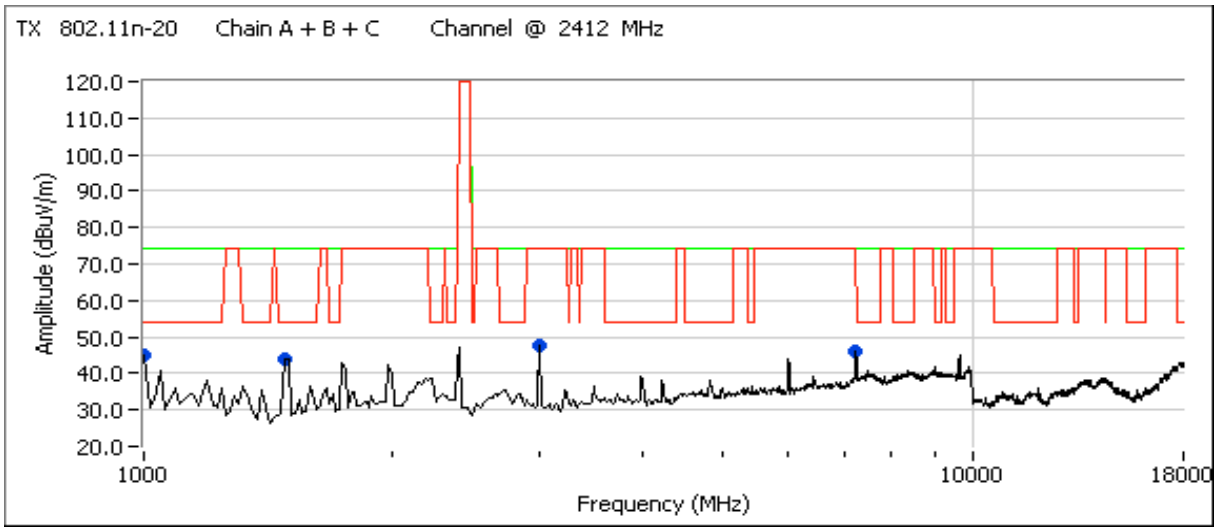
Run #2a: Low Channel @ 2412 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
30. 5	16.5	30. 5	16.5	29. 5	16.5

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1498.400	33.5	V	54.0	-20.5	AVG	69	1.0	
1498.400	51.9	V	74.0	-22.1	PK	69	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz (level =99.4dBuV/m, limit = 69.4dBuV/m).



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

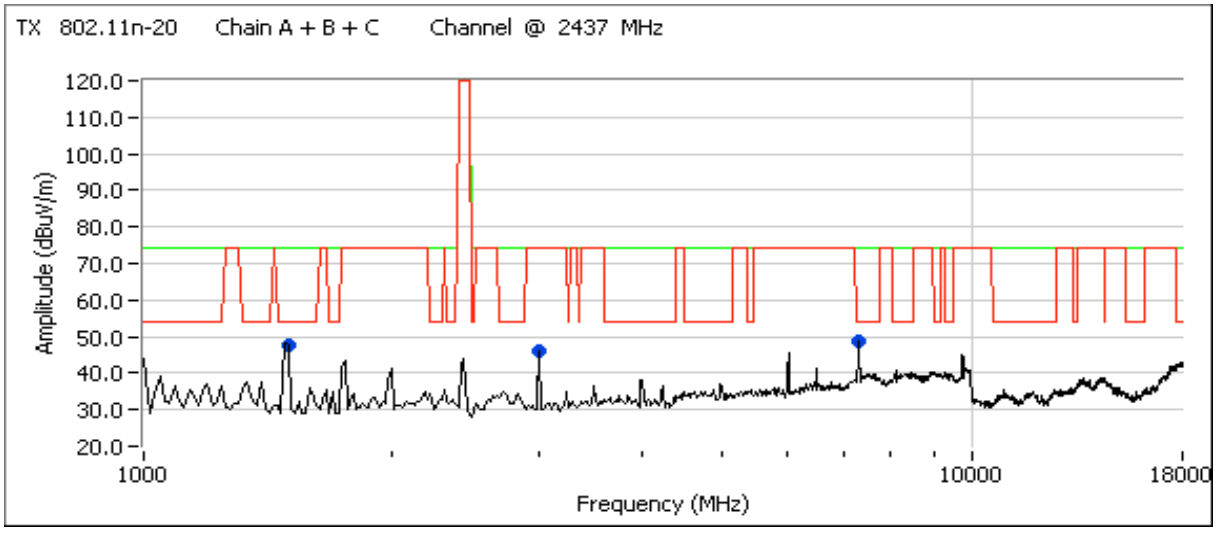
Run #2b: Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
31. 0	16.5	31. 0	16.5	30. 0	16.5

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1493.940	33.2	V	54.0	-20.8	AVG	67	1.0	
7308.990	40.0	V	54.0	-14.0	AVG	229	1.6	
1493.940	54.0	V	74.0	-20.0	PK	67	1.0	
7308.990	52.0	V	74.0	-22.0	PK	229	1.6	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

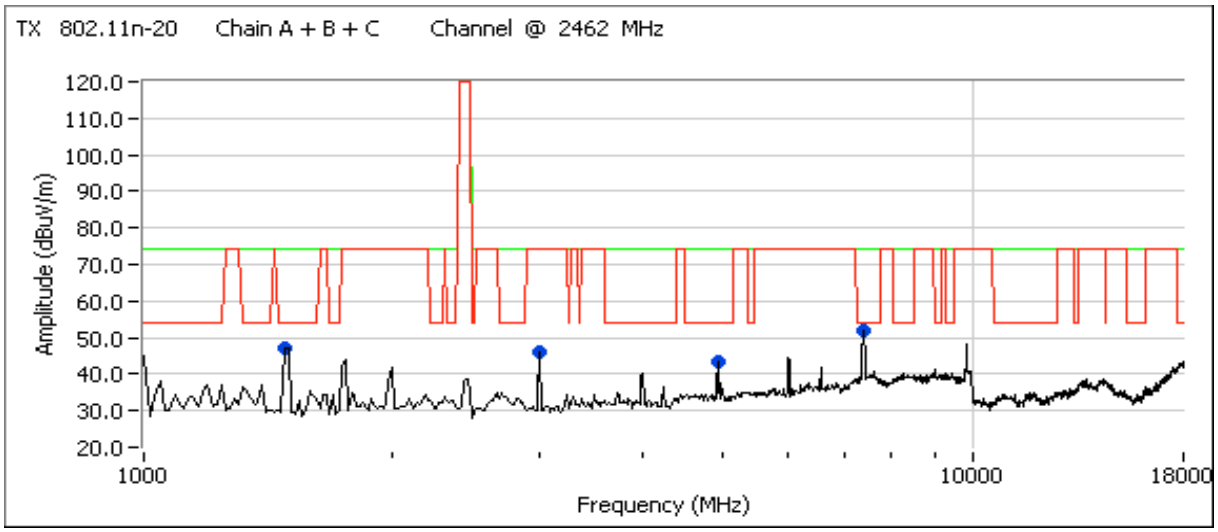
Run #2c: High Channel @ 2462 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
31. 5	16.5	31. 5	16.5	31. 5	16.5

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1493.950	33.1	V	54.0	-20.9	AVG	68	1.0	
4924.210	34.8	V	54.0	-19.2	AVG	165	1.3	
7391.960	44.5	V	54.0	-9.5	AVG	194	1.3	
1493.950	54.4	V	74.0	-19.6	PK	68	1.0	
3000.330	51.2	V	65.9	-14.7	PK	271	1.0	Note 2
4924.210	46.7	V	74.0	-27.3	PK	165	1.3	
7391.960	60.4	V	74.0	-13.6	PK	194	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz (fundamental was 95.9dBuV/m, limit = 65.9dBuV/m).
Note 2:	Signal is not in a restricted band.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Band Edge Field Strength 802.11n40MHz Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature:	19 °C
Rel. Humidity:	44 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n40 Chain A	1 2422MHz	22.0	12.0	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	50.9dBµV/m @ 2390.8MHz (-3.1dB)
1b	802.11n40 Chain A	11 2452MHz	24.5	13.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.3dBµV/m @ 2485.7MHz (-2.7dB)
2a	802.11n40 Chain B	1 2422MHz	23.0	12.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.1dBµV/m @ 2389.1MHz (-2.9dB)
2b	802.11n40 Chain B	11 2452MHz	25.5	14.3	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	50.2 dBuV/m @ 2483.6 MHz (-3.8dB)
3a	802.11n40 Chain C	1 2422MHz	21.0	11.5	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	49.0 dBuV/m @ 2389.7 MHz (-5.0dB)
3b	802.11n40 Chain C	11 2452MHz	24.0	13.9	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.6 dBuV/m @ 2483.6 MHz (-2.4dB)
4a	802.11n40 Chain A+B	1 2422MHz	A : 22.5 B : 23.5	A : 11.3 B : 11.4	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	50.1 dBuV/m @ 2389.7 MHz (-3.9dB)
4b	802.11n40 Chain A+B	11 2452MHz	A : 25.5 B : 26.5	A : 13.8 B : 14.1	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.0 dBuV/m @ 2483.6 MHz (-3.0dB)
5a	802.11n40 Chain A+C	1 2422MHz	A : 23.0 C : 22.5	A : 11.8 C : 11.8	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.9dBµV/m @ 2388.6MHz (-1.1dB)
5b	802.11n40 Chain A+C	11 2452MHz	A : 25.0 C : 24.5	A : 13.4 C : 13.2	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.8dBµV/m @ 2483.6MHz (-1.2dB)
6a	802.11n40 Chain B+C	1 2422MHz	B : 23.5 C : 21.0	B : 11.1 C : 10.2	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.2 dBuV/m @ 2389.8 MHz (-2.8dB)
6b	802.11n40 Chain B+C	11 2452MHz	B : 25.5 C : 24.5	B : 13.5 C : 13.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	53.1 dBuV/m @ 2483.6 MHz (-0.9dB)
7a	802.11n40 A+B+C	1 2422MHz	A : 22.5 B : 23. 0 C : 22.0	A : 10.2 B : 10.1 C : 10.0	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	51.9 dBuV /m @ 2389.7 MHz (-2.1dB)
7b	802.11n40 A+B+C	11 2452MHz	A : 24.5 B : 25.5 C : 24.5	A : 11.7 B : 11.7 C : 11.6	Band Edge radiated field strength	FCC Part 15.209 / 15.247(c)	52.9dBµV/m @ 2483.6MHz (-1.1dB)

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A

Sample ID: 0016EA02D660
Date of Test: 6/9/2008
Test Engineer: John Caizzi
Test Location: FT Chamber #4

Run #1a: Low Channel @ 2422 MHz

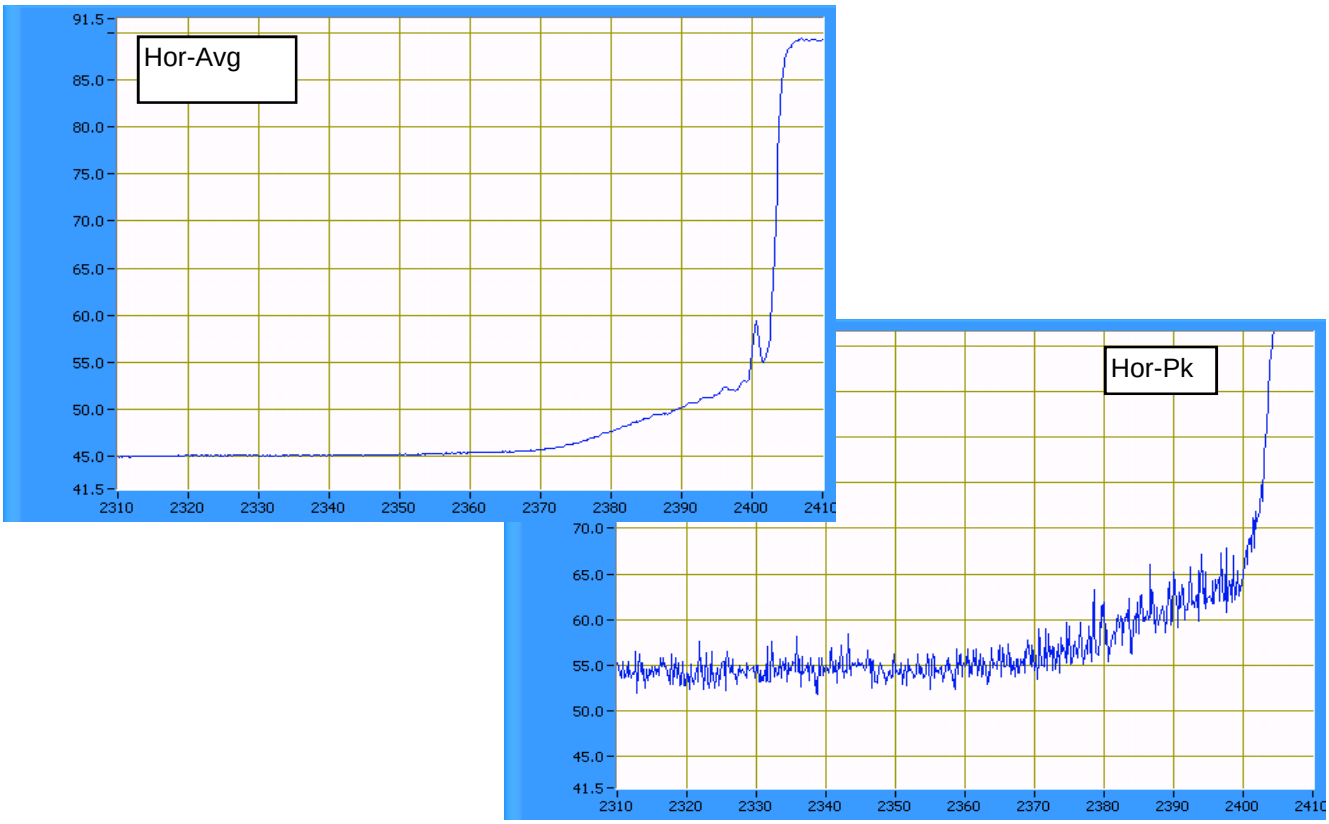
Power Setting: 22 Average power: 12.2 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2407.330	89.5	V	120.0	-30.5	PK	324	1.0	RB = VB = 100kHz
2437.500	92.2	H	120.0	-27.8	PK	64	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.790	50.9	H	54.0	-3.1	Avg	64	1.0	
2386.050	69.7	H	74.0	-4.3	Pk	64	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Sample ID: 0016EA02D660
Date of Test: 6/9/2008
Test Engineer: Peter Salse
Test Location: FT Chamber #4

Run #1b: High Channel @ 2452 MHz

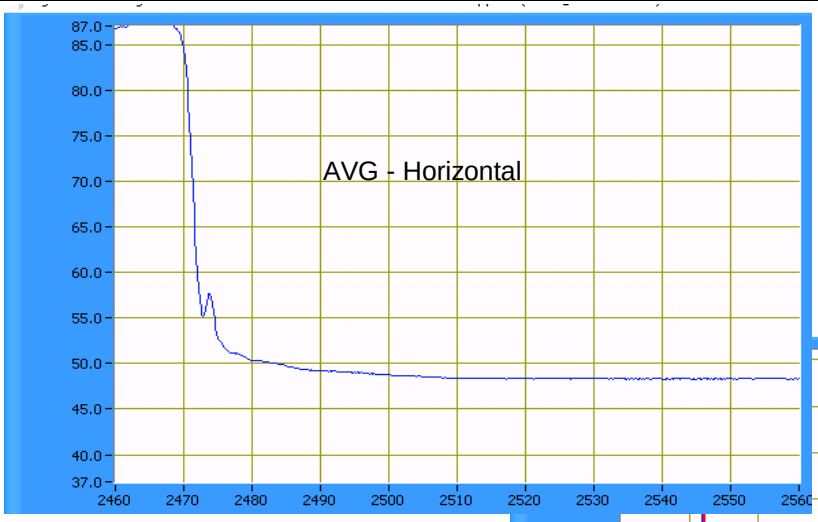
Power Setting: 24.5 Average power: 13.9 (for reference purposes)

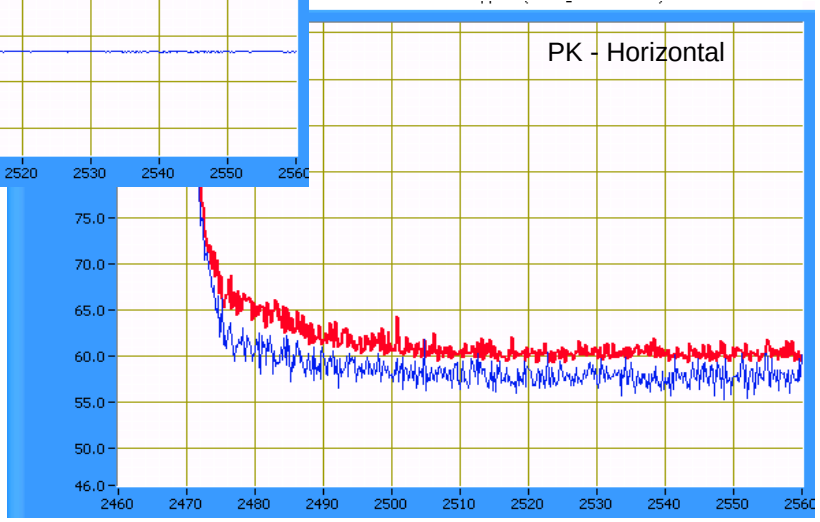
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2440.800	89.6	V	-	-	PK	141	1.0	RB = VB = 100kHz
2437.000	91.3	H	-	-	PK	212	2.3	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2485.740	51.3	H	54.0	-2.7	AVG	212	2.3	
2485.740	66.5	H	74.0	-7.5	PK	212	2.3	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain B

Sample ID: 0016EA02D660
Date of Test: 6/10/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #3

Run #2a: Low Channel @ 2422 MHz

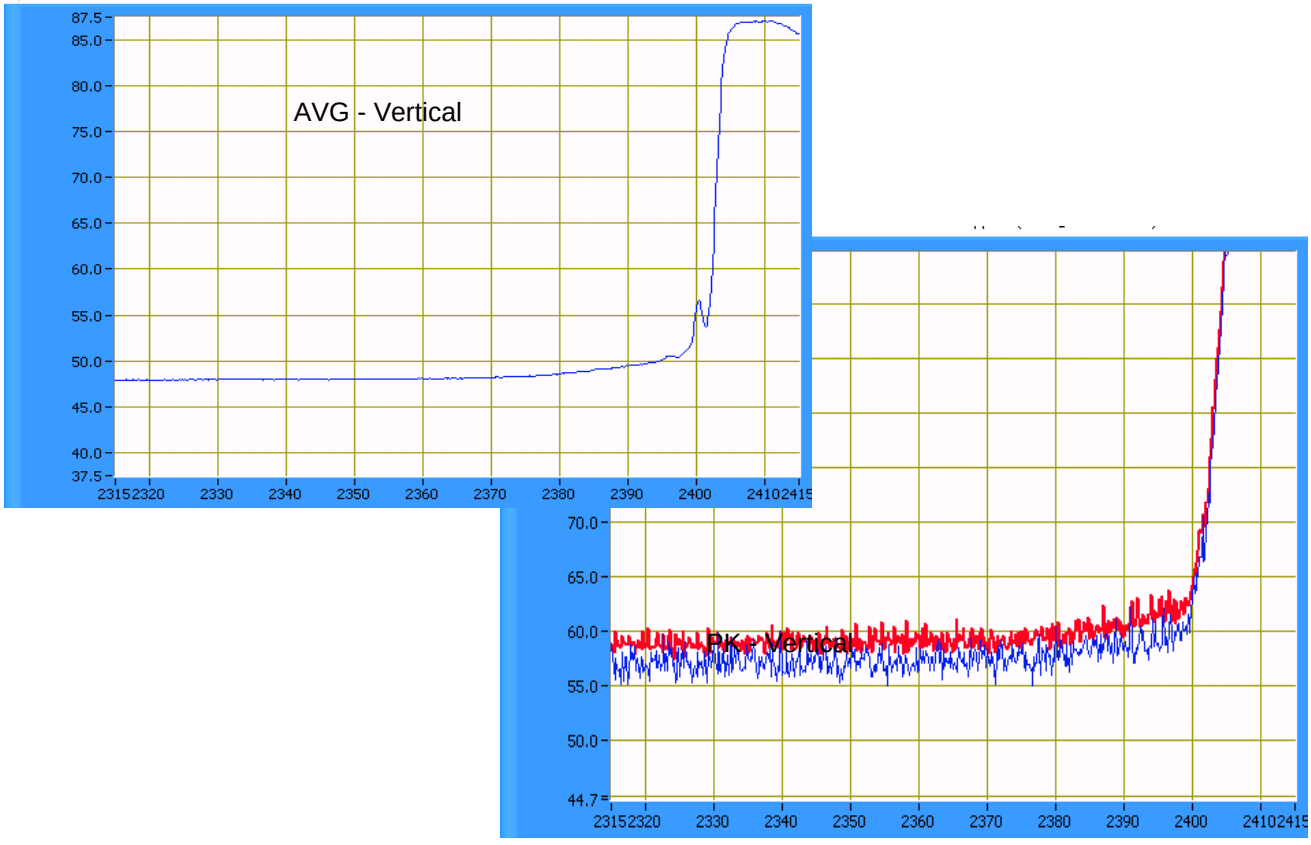
Power Setting: 23.0 Average power: 12.8 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2431.000	88.6	H	-	-	PK	238	1.0	RB = VB = 100kHz
2410.800	91.1	V	-	-	PK	167	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.060	51.1	V	54.0	-2.9	AVG	167	1.0	
2389.060	63.2	V	74.0	-10.8	PK	167	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2b: High Channel @ 2452 MHz

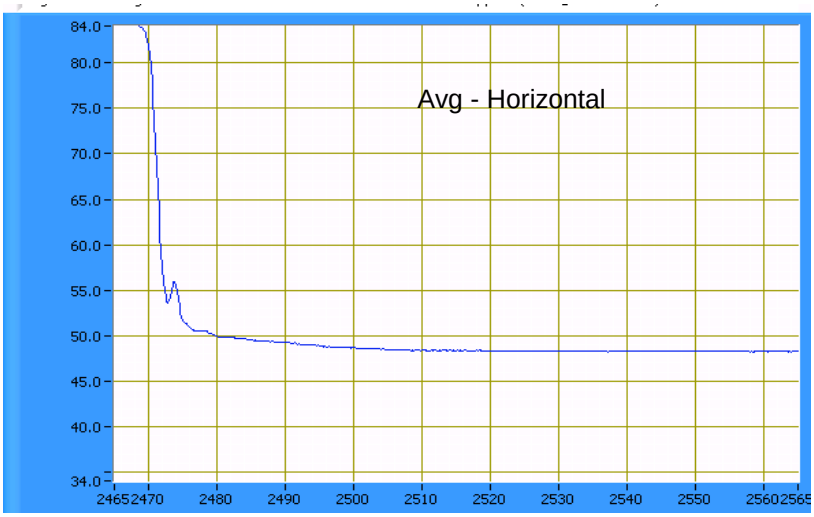
Sample ID: 0016EA02D660
Date of Test: 6/9/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #3
Power Setting: 25.5 Average power: 14.3 (for reference purposes)

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2453.050	88.0	H	-	-	PK	236	1.0	RB = VB = 100kHz
2453.030	85.3	V	-	-	PK	162	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.790	61.0	V	74.0	-13.0	PK	172	2.3	
2483.550	50.0	V	54.0	-4.0	AVG	162	2.3	
2483.560	50.2	H	54.0	-3.8	AVG	236	1.0	
2483.650	63.1	H	74.0	-10.9	PK	242	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain C

Sample ID: 0016EA02D660
Date of Test: 6/9/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #3

Run #3a: Low Channel @ 2422 MHz

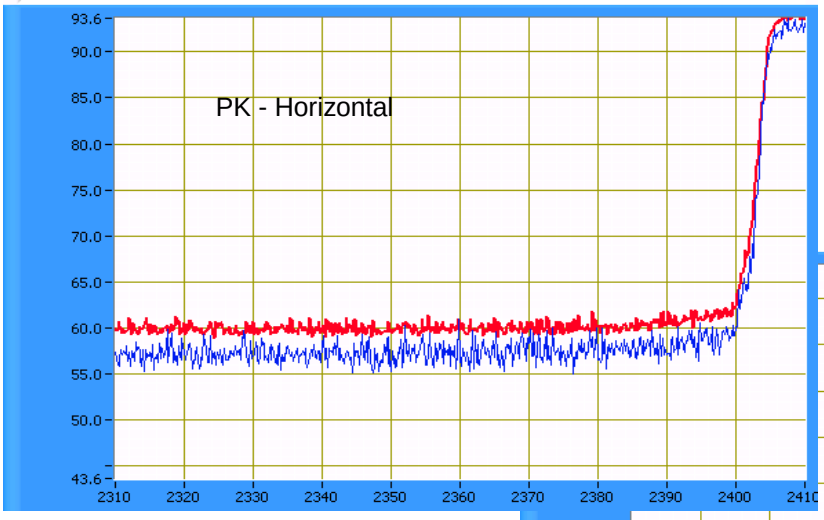
Power Setting: 21. 0 Average power: 11.5 (for reference purposes)

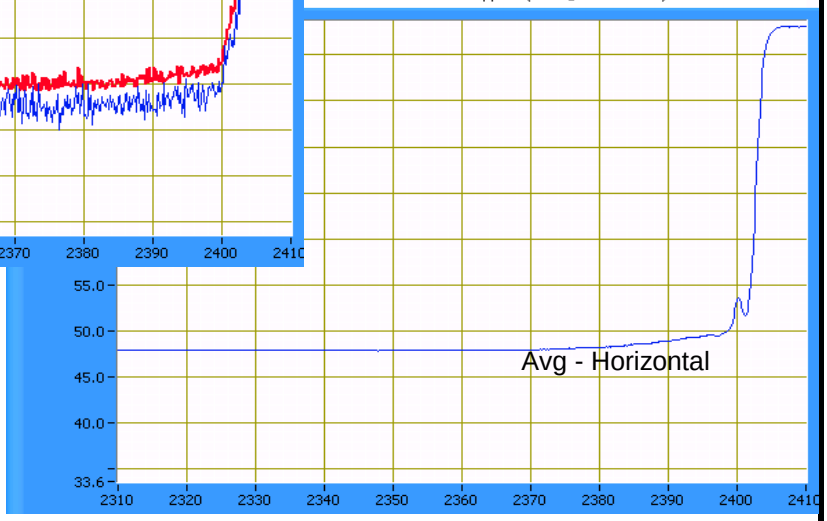
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.070	83.9	V	-	-	PK	209	1.0	RB = VB = 100kHz
2423.070	82.1	H	-	-	PK	140	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.860	62.3	H	74.0	-11.7	PK	143	1.1	
2389.700	49.0	H	54.0	-5.0	AVG	141	1.1	
2389.760	62.2	V	74.0	-11.8	PK	215	1.1	
2389.700	48.4	V	54.0	-5.6	AVG	251	1.1	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b: High Channel @ 2452 MHz

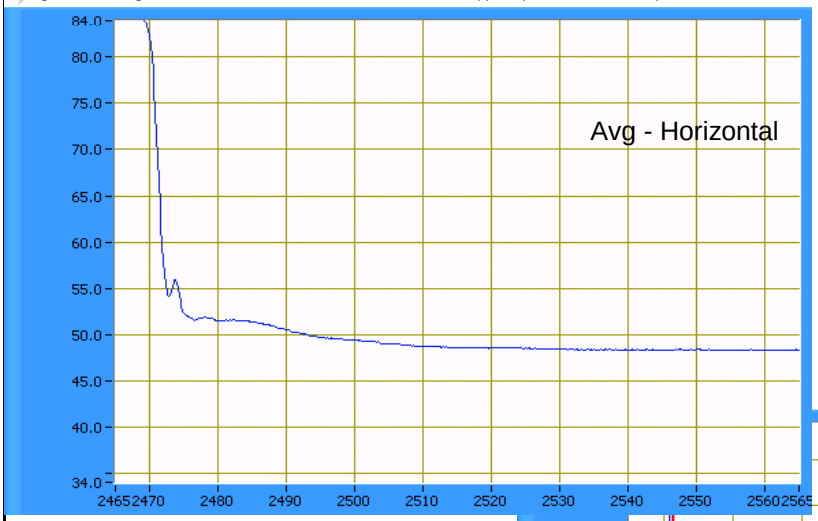
Power Setting: 24. 0 Average power: 13.9 (for reference purposes)

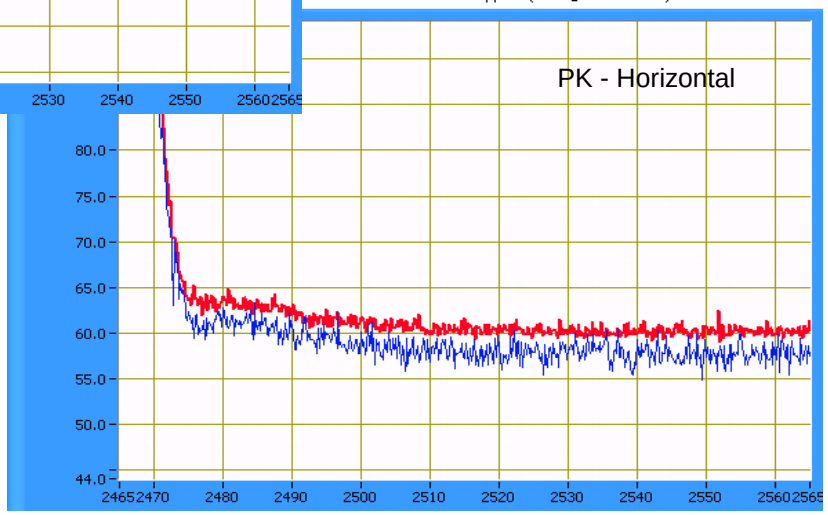
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2453.280	86.2	V	-	-	PK	214	1.0	RB = VB = 100kHz
2453.050	87.2	H	-	-	PK	243	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.670	64.1	H	74.0	-9.9	PK	245	1.0	
2483.600	51.6	H	54.0	-2.4	AVG	246	1.0	
2483.600	50.6	V	54.0	-3.4	AVG	215	1.0	
2483.600	63.2	V	74.0	-10.8	PK	218	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #4: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A+B

Sample ID: 0016EA02D660
Date of Test: 6/9/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #3

Run #4a: Low Channel @ 2422 MHz

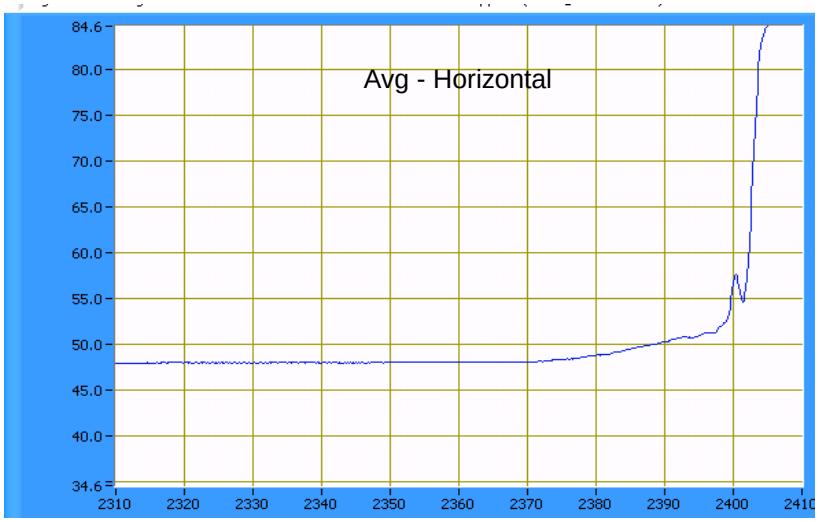
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
22.5	11.3	23.5	11.4		

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.290	89.0	H	-	-	PK	251	1.0	RB = VB = 100kHz
2420.740	86.8	V	-	-	PK	166	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.830	64.2	H	74.0	-9.8	PK	252	1.1	
2389.700	50.1	H	54.0	-3.9	AVG	237	1.1	
2389.890	62.6	V	74.0	-11.4	PK	166	1.1	
2389.880	49.1	V	54.0	-4.9	AVG	168	1.1	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #4b: High Channel @ 2452 MHz

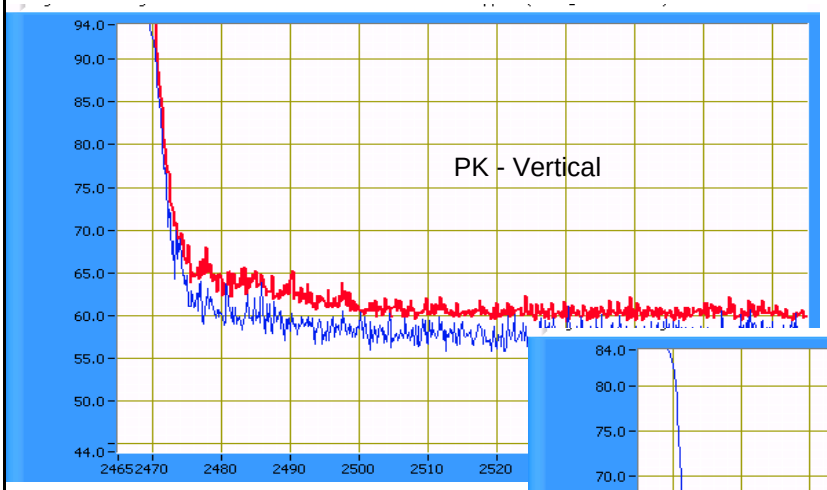
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
25.5	13.8	26.5	14.1		

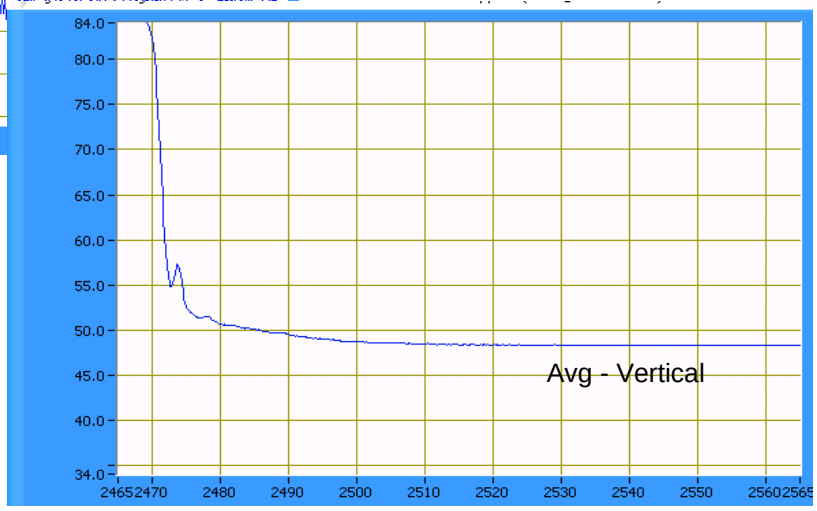
Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2451.160	89.5	H	-	-	PK	214	1.0	RB = VB = 100kHz
2450.750	89.2	V	-	-	PK	180	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.690	64.7	H	74.0	-9.3	PK	234	1.0	
2483.670	50.5	H	54.0	-3.5	AVG	234	1.0	
2483.620	65.4	V	74.0	-8.6	PK	172	1.0	
2483.600	51.0	V	54.0	-3.0	AVG	183	1.0	





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #5: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A+C

Sample ID:
Date of Test: 6/10/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber # 5

Run #5a: Low Channel @ 2422 MHz

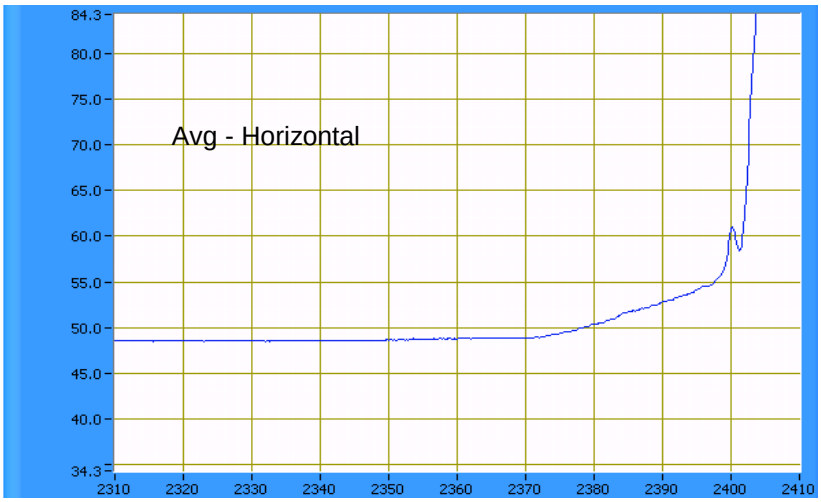
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
23.0	11.8	[redacted]		22.5	11.8

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.300	89.9	V	-	-	PK	134	1.0	RB = VB = 100kHz
2420.560	93.3	H	-	-	PK	246	1.2	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2388.610	52.9	H	54.0	-1.1	AVG	236	1.2	
2389.290	70.1	H	74.0	-3.9	PK	243	1.3	
2389.380	64.4	V	74.0	-9.6	PK	137	1.0	
2389.340	50.1	V	54.0	-3.9	AVG	137	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #5b: High Channel @ 2452 MHz

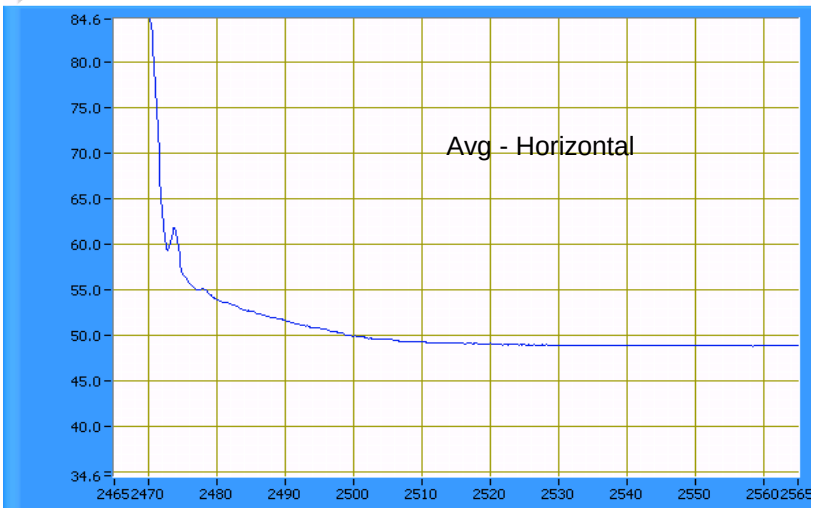
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
25.0	13.4			24.5	13.2

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2453.330	89.7	V	-	-	PK	140	1.0	RB = VB = 100kHz
2453.270	94.5	H	-	-	PK	242	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.550	52.8	H	54.0	-1.2	AVG	243	1.0	
2483.830	67.6	H	74.0	-6.4	PK	239	1.0	
2484.500	63.5	V	74.0	-10.5	PK	136	1.0	
2483.550	50.7	V	54.0	-3.3	AVG	134	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #6: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain B+C

Sample ID: 0016EA02D660
Date of Test: 6/10/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber # 5

Run #6a: Low Channel @ 2422 MHz

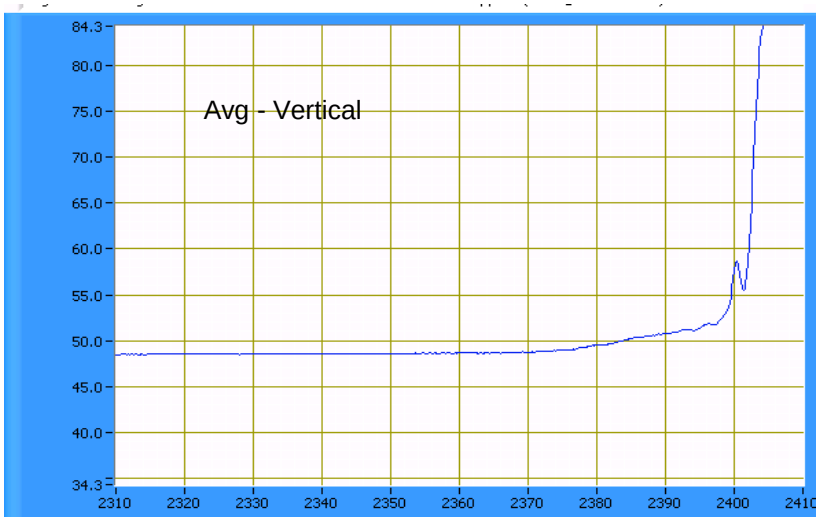
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		23.5	11.1	21.0	10.2

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.320	89.3	V	-	-	PK	207	1.0	RB = VB = 100kHz
2420.760	89.4	H	-	-	PK	239	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.740	64.6	H	74.0	-9.4	PK	239	1.0	
2389.720	50.9	H	54.0	-3.1	AVG	238	1.0	
2389.850	64.4	V	74.0	-9.6	PK	201	1.1	
2389.780	51.2	V	54.0	-2.8	AVG	209	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #6b: High Channel @ 2452 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		25.5	13.5	24.5	13.6

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2450.730	88.5	V	-	-	PK	238	1.0	RB = VB = 100kHz
2453.300	92.4	H	-	-	PK	234	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.610	66.0	H	74.0	-8.0	PK	232	1.0	
2483.610	53.1	H	54.0	-0.9	AVG	241	1.0	
2483.600	50.9	V	54.0	-3.1	AVG	232	1.0	
2483.680	63.2	V	74.0	-10.8	PK	272	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #7: Radiated Spurious Emissions, Band Edges. Operating Mode: 802.11n (40 MHz Channel) - Chain A+B+C

Run #7a: Low Channel @ 2422 MHz

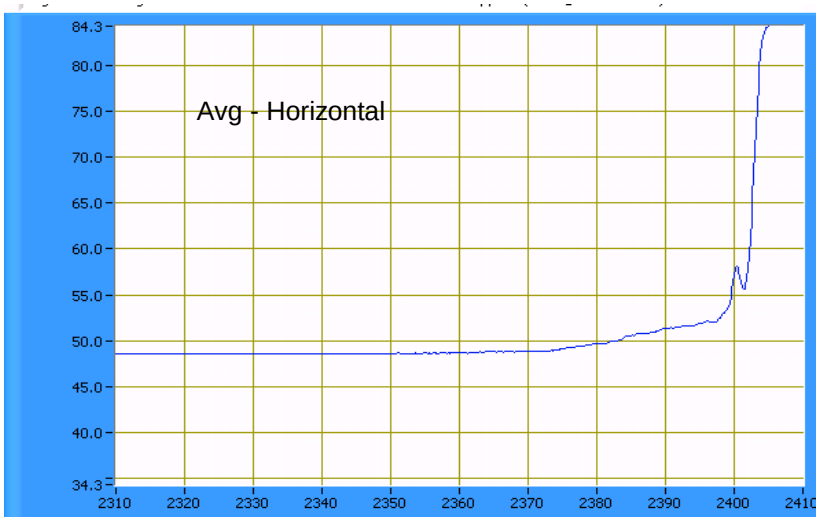
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
22.5	10.2	23.0	10.1	22.0	10.0

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2423.050	90.9	V	-	-	PK	205	1.0	RB = VB = 100kHz
2422.920	90.4	H	-	-	PK	252	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.710	50.9	V	54.0	-3.1	AVG	193	1.0	
2389.770	65.9	V	74.0	-8.1	PK	193	1.1	
2389.700	51.9	H	54.0	-2.1	AVG	251	1.0	
2389.710	68.0	H	74.0	-6.0	PK	253	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #7b: High Channel @ 2452 MHz

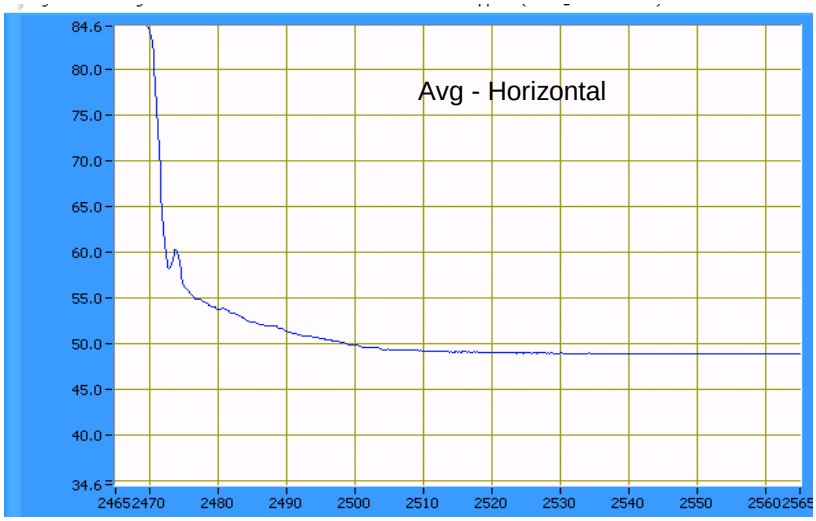
Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
24.5	11.7	25.5	11.7	24.5	11.6

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2450.750	89.6	V	-	-	PK	141	1.0	RB = VB = 100kHz
2451.400	93.1	H	-	-	PK	225	1.0	RB = VB = 100kHz

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.600	52.9	H	54.0	-1.1	AVG	245	1.0	
2483.640	66.1	H	74.0	-7.9	PK	244	1.0	
2483.620	50.3	V	54.0	-3.7	AVG	136	1.0	
2483.620	62.9	V	74.0	-11.1	PK	135	1.0	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 2400 - 2483.5 MHz)

Radiated Spurious Emissions 802.11n 40MHz Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Sample tested: 0016EA02D660
Date of Test: 6/17/2008
Test Engineer: Ben Jing
Test Location: Chamber # 4

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 22 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11n40 Chains A+B+C	2437 MHz	A: 30.5 B: 30.5 C: 29.5	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	46.0 dBuV/m @ 7300.6 MHz (-8.0dB)

Measurements made to demonstrate that 802.11n 40-MHz mode emissions are not signifcantly different to 802.11n 20Mhz mode.

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

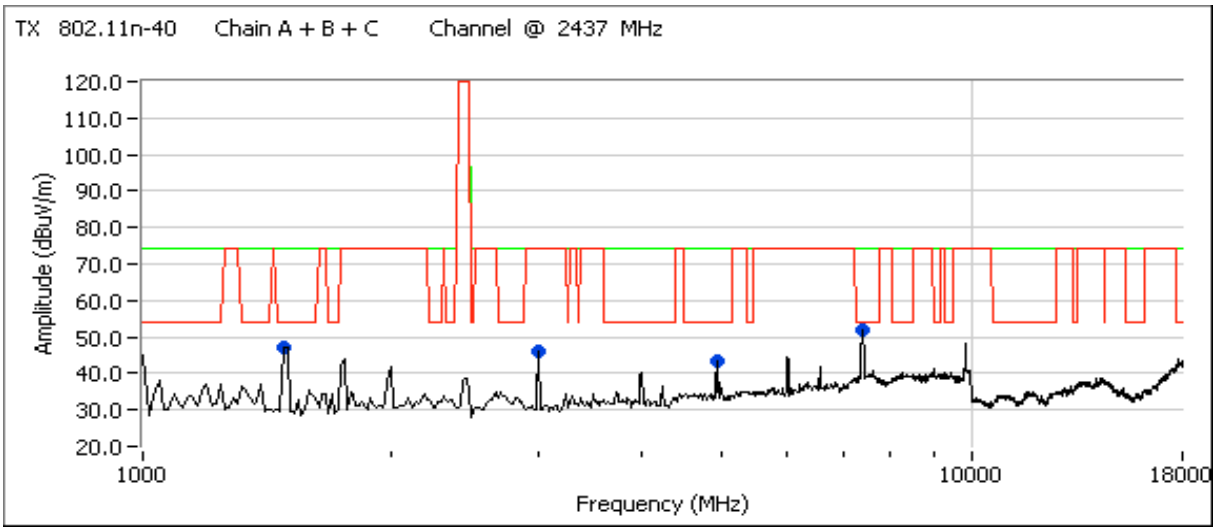
Run #1: Radiated Spurious Emissions, 1000 - 26,000 MHz. Operating Mode: 802.11n 40MHz Chain A+B+C at Max power
Center Channel @ 2437 MHz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
30. 5	16. 5	30. 5	16. 6	29. 5	16. 6	<--- highest power setting for single channel

Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.410	37.1	V	54.0	-16.9	AVG	82	1.0	
1747.970	33.0	V	74.0	-41.0	AVG	87	1.0	Note 2
3995.560	30.9	V	54.0	-23.1	AVG	81	1.0	
7300.560	46.0	V	54.0	-8.0	AVG	159	1.0	
1494.410	60.7	V	74.0	-13.3	PK	82	1.0	
1747.970	56.0	V	74.0	-18.0	PK	87	1.0	Note 2
3995.560	54.5	V	74.0	-19.5	PK	81	1.0	
7300.560	58.8	V	74.0	-15.2	PK	159	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 5725 - 5850 MHz)

Radiated Spurious Emissions 802.11a Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/18/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3

Config. Used: 1
Config Change: -
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 33 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11a Chain A	5745 MHz 5785 MHz 5825 MHz	26.0 26.0 26.5	16.7 16.6 16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	50.3dBµV/m @ 11490.9MHz (-3.7dB)
2	802.11a Chain B	5745 MHz 5785 MHz 5825 MHz	25.0 25.5 26.0	16.6 16.6 16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	46.4dBµV/m @ 11650.1MHz (-7.6dB)
3	802.11a Chain C	5745 MHz 5785 MHz 5825 MHz	25.5 26.0 26.5	16.6 16.7 16.7	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	43.5dBµV/m @ 7713.3MHz (-10.5dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

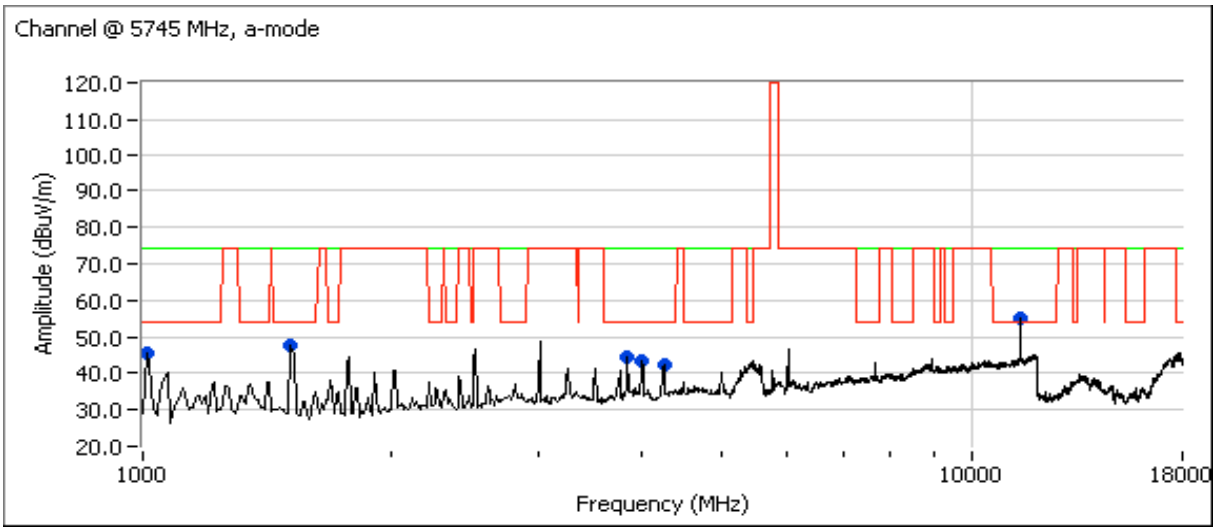
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain A
Run #1a: Low Channel @ 5745 MHz

Sample tested: 0016EA02D660
Date of Test: 6/18/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
26.0	16.7					<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1000.019	36.2	H	54.0	-17.8	AVG	161	1.3	
1498.780	35.1	H	54.0	-18.9	AVG	160	1.0	
3829.870	43.2	V	54.0	-10.8	AVG	179	1.0	
3995.020	32.9	V	54.0	-21.1	AVG	133	1.0	
4249.130	31.6	V	54.0	-22.4	AVG	87	1.0	
11490.920	50.3	V	54.0	-3.7	AVG	228	1.3	
1000.019	49.7	H	74.0	-24.3	PK	161	1.3	
1498.780	52.3	H	74.0	-21.7	PK	160	1.0	
3829.870	50.8	V	74.0	-23.2	PK	179	1.0	
3995.020	51.1	V	74.0	-22.9	PK	133	1.0	
4249.130	48.8	V	74.0	-25.2	PK	87	1.0	
11490.920	61.7	V	74.0	-12.3	PK	228	1.3	

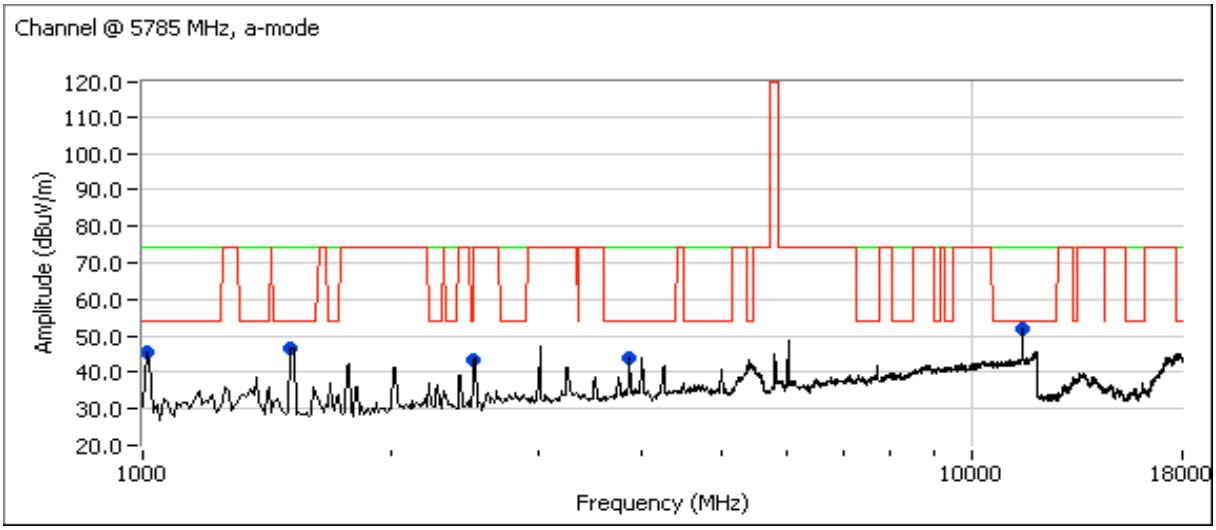
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain A
Run #1b: Center Channel @ 5785 MHz

Sample tested: 0016EA02D660
Date of Test: 6/18/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
26.0	16.6					<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1000.003	37.1	H	54.0	-16.9	AVG	161	1.0	
1498.190	36.9	V	54.0	-17.1	AVG	144	1.0	
2491.190	32.9	V	54.0	-21.1	AVG	151	1.3	
3856.610	43.0	V	54.0	-11.0	AVG	171	1.0	
11524.880	38.7	H	54.0	-15.3	AVG	243	1.2	
1000.003	50.4	H	74.0	-23.6	PK	161	1.0	
1498.190	54.1	V	74.0	-19.9	PK	144	1.0	
2491.190	51.6	V	74.0	-22.4	PK	151	1.3	
3856.610	49.2	V	74.0	-24.8	PK	171	1.0	
11524.880	49.8	H	74.0	-24.2	PK	243	1.2	

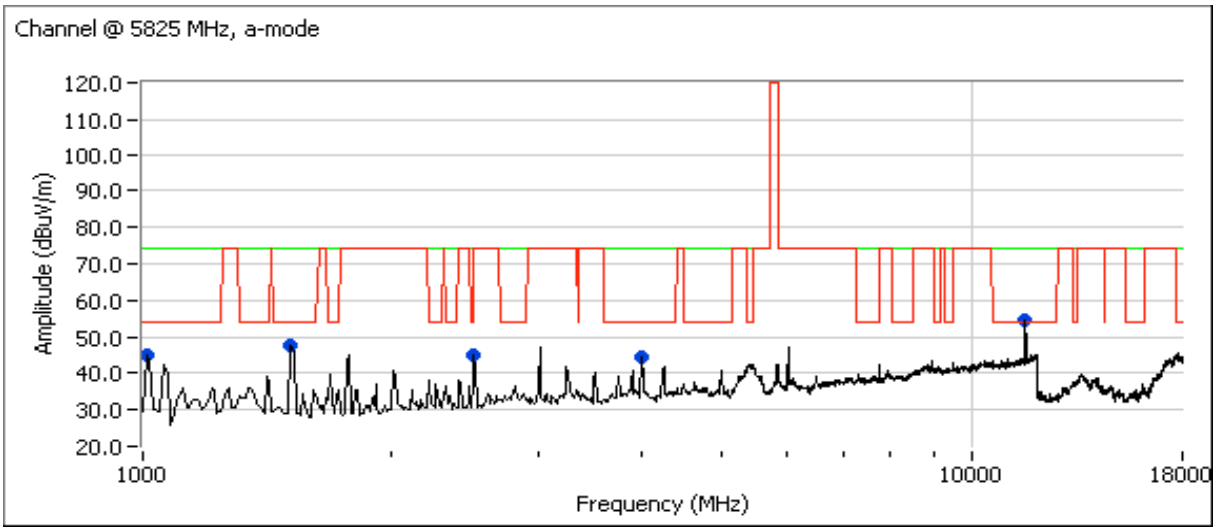
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1c: High Channel @ 5825 MHz

Sample tested: 0016EA02D660
Date of Test: 6/18/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
26.5	16.7					<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
999.997	26.2	H	54.0	-27.8	AVG	163	1.0	
1494.280	36.6	V	54.0	-17.4	AVG	147	1.0	
2489.870	32.8	V	54.0	-21.2	AVG	161	1.0	
3997.630	31.8	H	54.0	-22.2	AVG	143	1.3	
11649.960	45.9	V	54.0	-8.1	AVG	159	1.6	
999.997	42.1	H	74.0	-31.9	PK	163	1.0	
1494.280	54.8	V	74.0	-19.2	PK	147	1.0	
2489.870	51.5	V	74.0	-22.5	PK	161	1.0	
3997.630	48.7	H	74.0	-25.3	PK	143	1.3	
11649.960	57.5	V	74.0	-16.5	PK	159	1.6	

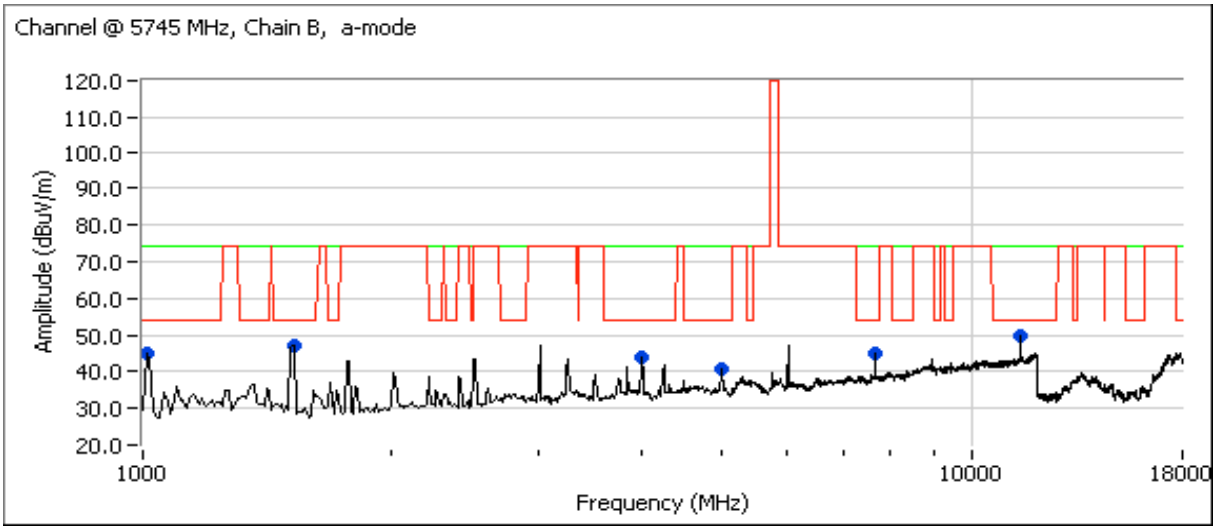
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain B
Run #2a: Low Channel @ 5745 MHz

Sample tested: 0016EA02D660
Date of Test: 6/18/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
		25.0	16.7			<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1000.036	36.4	H	54.0	-17.6	AVG	160	1.0	
1498.210	36.2	V	54.0	-17.8	AVG	148	1.0	
3996.880	31.8	H	54.0	-22.2	AVG	140	1.3	
4995.880	33.1	V	54.0	-20.9	AVG	160	1.0	
7659.960	44.2	V	54.0	-9.8	AVG	243	1.0	
11490.150	44.4	V	54.0	-9.6	AVG	166	1.2	
1000.036	49.7	H	74.0	-24.3	PK	160	1.0	
1498.210	54.2	V	74.0	-19.8	PK	148	1.0	
3996.880	48.4	H	74.0	-25.6	PK	140	1.3	
4995.880	49.6	V	74.0	-24.4	PK	160	1.0	
7659.960	49.7	V	74.0	-24.3	PK	243	1.0	
11490.150	56.7	V	74.0	-17.3	PK	166	1.2	

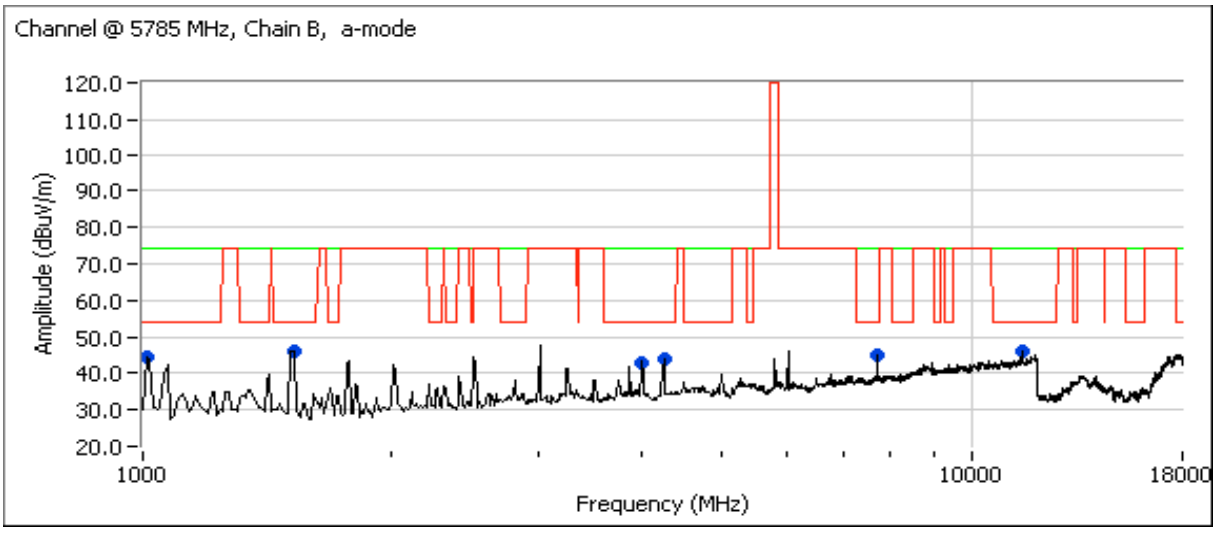
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain B
Run #2b: Center Channel @ 5785 MHz

Sample tested: 0016EA02D660
Date of Test: 6/18/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
		25.5	16.7			<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1000.102	35.5	H	54.0	-18.5	AVG	126	1.0	
1497.450	36.6	V	54.0	-17.4	AVG	170	1.3	
3984.100	32.0	V	54.0	-22.0	AVG	107	1.0	
4245.280	32.2	V	54.0	-21.8	AVG	118	1.0	
7713.310	43.3	V	54.0	-10.7	AVG	246	1.0	
11570.620	43.2	V	54.0	-10.8	AVG	223	1.0	
1000.102	48.1	H	74.0	-25.9	PK	126	1.0	
1497.450	52.8	V	74.0	-21.2	PK	170	1.3	
3984.100	52.3	V	74.0	-21.7	PK	107	1.0	
4245.280	48.9	V	74.0	-25.1	PK	118	1.0	
7713.310	49.6	V	74.0	-24.4	PK	246	1.0	
11570.620	54.4	V	74.0	-19.6	PK	223	1.0	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

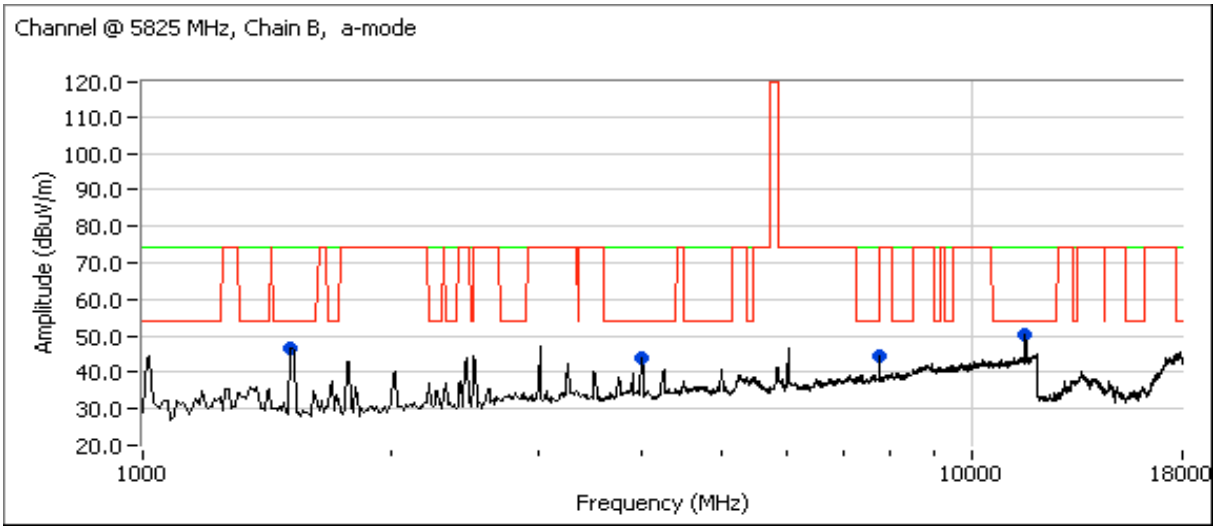
Run #2: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain B
Run #2c: High Channel @ 5825 MHz

Sample tested: 0016EA02D660
Date of Test: 6/18/2008
Test Engineer: Suhaila Khushzad
Test Location: Chamber # 3

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
		26.0	16.7		

<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1495.190	36.9	V	54.0	-17.1	AVG	143	1.0	
3985.350	32.2	H	54.0	-21.8	AVG	134	1.5	
7766.570	42.7	V	74.0	-31.3	AVG	160	1.0	
11650.050	46.4	V	54.0	-7.6	AVG	164	1.4	
1495.190	54.4	V	74.0	-19.6	PK	143	1.0	
3985.350	49.2	H	74.0	-24.8	PK	134	1.5	
7766.570	48.6	V	74.0	-25.4	PK	160	1.0	
11650.050	58.8	V	74.0	-15.2	PK	164	1.4	

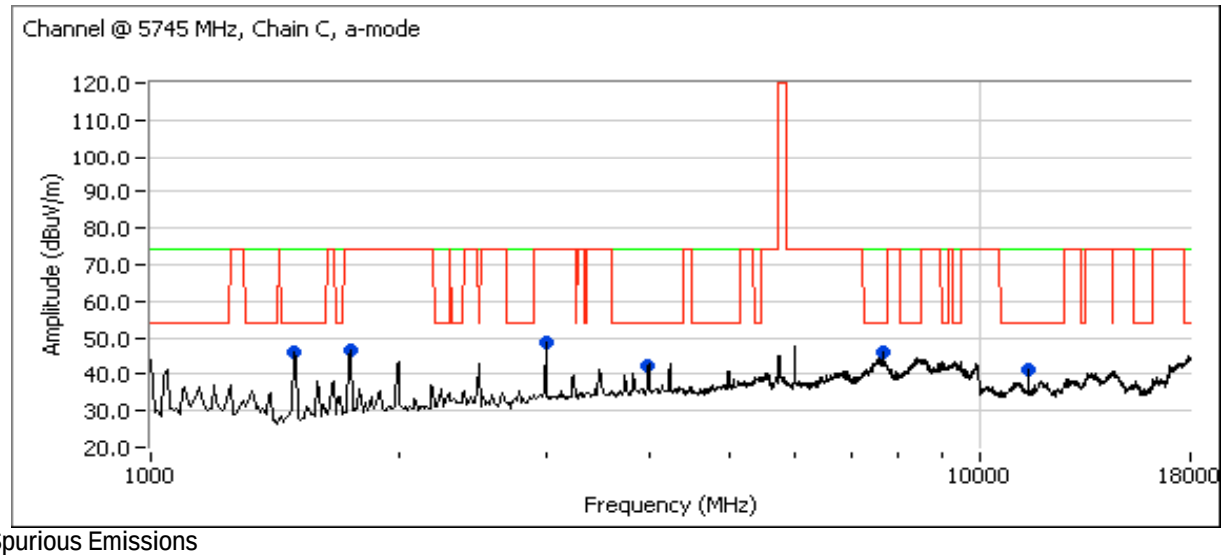
Elliott — EMC Test Data

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11a Chain C
Run #3a: Low Channel @ 5745 MHz

Sample tested:
Date of Test: 6/18/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #4
Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
				25.5	16.7	<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1496.750	33.8	H	54.0	-20.2	AVG	327	1.0	
3994.730	32.7	V	54.0	-21.3	AVG	259	1.0	
7659.960	43.4	V	54.0	-10.6	AVG	356	1.6	
11489.960	35.6	V	54.0	-18.4	AVG	356	1.3	
1749.640	46.4	H	74.0	-27.6	Peak	331	1.3	Note 2
3000.250	48.7	V	74.0	-25.3	Peak	62	1.0	Note 2
1496.750	54.6	H	74.0	-19.4	PK	327	1.0	
3994.730	53.2	V	74.0	-20.8	PK	259	1.0	
7659.960	50.7	V	74.0	-23.3	PK	356	1.6	
11489.960	46.4	V	74.0	-27.6	PK	356	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b: Center Channel @ 5785 MHz

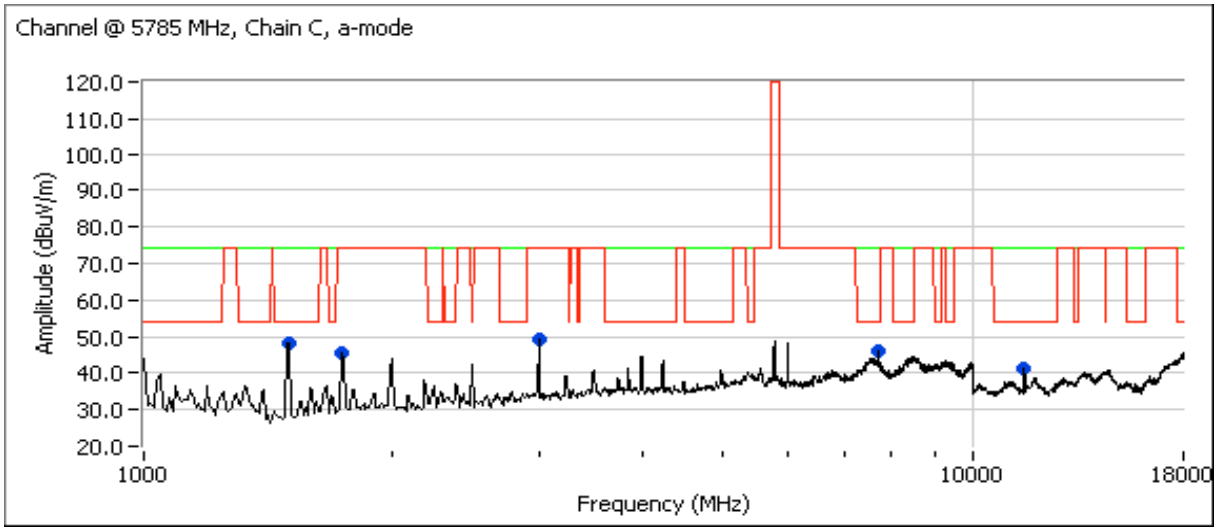
Sample tested:

Date of Test: 6/18/2008 Config. Used: 1

Test Engineer: Peter Sales Config Change: None

Test Location: Fremont Chamber #4 Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
				26.0	16.7	<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.360	32.6	H	54.0	-21.4	AVG	329	1.0	
7713.300	43.5	V	54.0	-10.5	AVG	335	1.3	
11569.940	36.5	H	54.0	-17.5	AVG	64	1.3	
1749.890	45.5	H	74.0	-28.5	Peak	324	1.3	Note 2
3000.250	49.2	V	74.0	-24.8	Peak	89	1.0	Note 2
1497.360	56.0	H	74.0	-18.0	PK	329	1.0	
7713.300	50.1	V	74.0	-23.9	PK	335	1.3	
11569.940	48.3	H	74.0	-25.7	PK	64	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3c: High Channel @ 5785 MHz

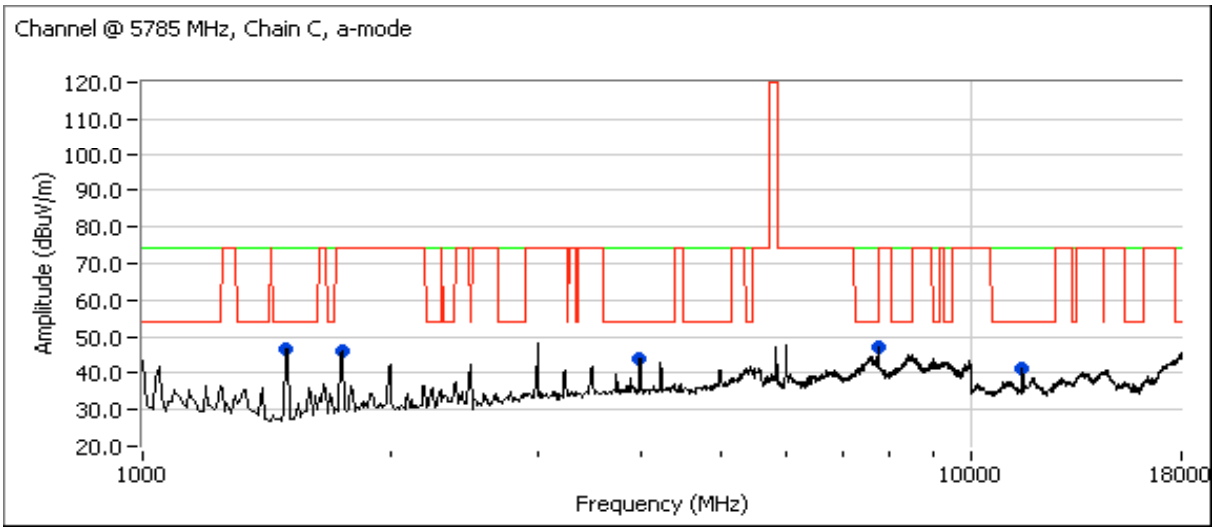
Sample tested:

Date of Test: 6/18/2008 Config. Used: 1

Test Engineer: Peter Sales Config Change: None

Test Location: Fremont Chamber #4 Host Unit Voltage 120V/60Hz

Power Setting and average measurement (for reference)						
Chain A		Chain B		Chain C		
Setting	Avg	Setting	Avg	Setting	Avg	
				26.5	16.7	<--- highest power setting for single channel



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.430	32.5	H	54.0	-21.5	AVG	326	1.0	
3992.310	32.6	V	54.0	-21.4	AVG	307	1.0	
11650.300	41.9	H	54.0	-12.1	AVG	51	1.0	
1743.230	46.3	V	74.0	-27.7	Peak	324	1.3	Note 2
7761.990	47.1	V	74.0	-26.9	Peak	347	1.6	Note 2
1497.430	55.1	H	74.0	-18.9	PK	326	1.0	
3992.310	52.3	V	74.0	-21.7	PK	307	1.0	
11650.300	53.9	H	74.0	-20.1	PK	51	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 5725 - 5850 MHz)

Radiated Spurious Emissions 802.11n20MHz Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/19/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #5

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 33 %

Summary of Results

n20 testing covers both n20 and n40 modes

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n20 Chain A+B+C	5745 MHz	A:29.0 B:30.5 C:29.5	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	48.1dBµV/m @ 7660.0MHz (-5.9dB)
1b	802.11n20 Chain A+B+C	5785 MHz	A:30.0 B:31.0 C:29.5	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	47.7dBµV/m @ 7713.3MHz (-6.3dB)
1c	802.11n20 Chain A+B+C	5825 MHz	A:30.0 B:31.0 C:31.0	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	47.8dBµV/m @ 11649.8MHz (-6.2dB)
-	802.11n20 Chain A, B, C	5745 MHz 5785 MHz 5825 MHz			Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	By measuring triple-chain mode at full power we also cover single- and dual-chain modes.
-	802.11n20 Dual Chain modes (A+B, A+C, B+C)				Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Elliott

EMC Test Data

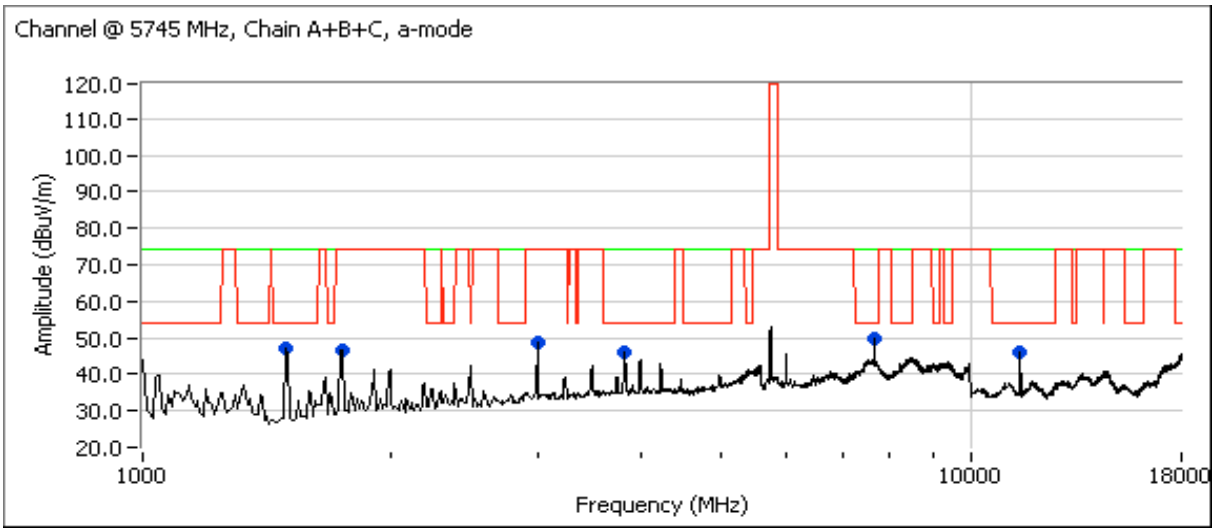
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11n 20MHz Chains A+B+C
These tests run at a power setting equal to the highest single-chain settings to cover all possible dual- and triple-chain operating modes.

Run #1a: Low Channel @ 5745 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
29.0	16.5	30.5	16.5	29.5	16.6

Sample tested:
Date of Test: 6/18/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #4
Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1496.810	32.5	H	54.0	-21.5	AVG	328	1.0	
3829.960	43.9	V	54.0	-10.1	AVG	317	1.0	
7660.020	48.1	V	54.0	-5.9	AVG	349	1.6	
11490.030	40.8	H	54.0	-13.2	AVG	354	1.3	
1496.810	55.6	H	74.0	-18.4	PK	328	1.0	
3829.960	51.1	V	74.0	-22.9	PK	317	1.0	
7660.020	52.9	V	74.0	-21.1	PK	349	1.6	
11490.030	51.8	H	74.0	-22.2	PK	354	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

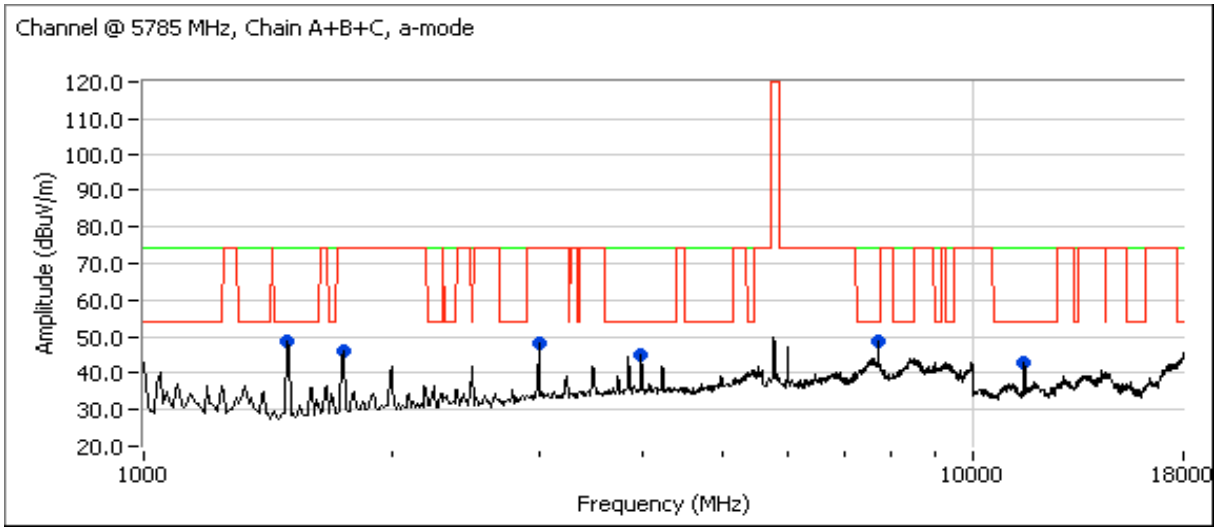
Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: Center Channel @ 5785 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
30.0	16.6	31.0	16.6	29.5	16.6

Sample tested:
Date of Test: 6/19/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #4

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1496.910	33.4	H	54.0	-20.6	AVG	328	1.0	
7713.300	47.7	V	54.0	-6.3	AVG	331	1.3	
3998.850	45.1	V	54.0	-8.9	Peak	311	1.0	
11574.780	43.0	V	54.0	-11.0	Peak	298	1.0	
1496.910	55.6	H	74.0	-18.4	PK	328	1.0	
7713.300	52.5	V	74.0	-21.5	PK	331	1.3	

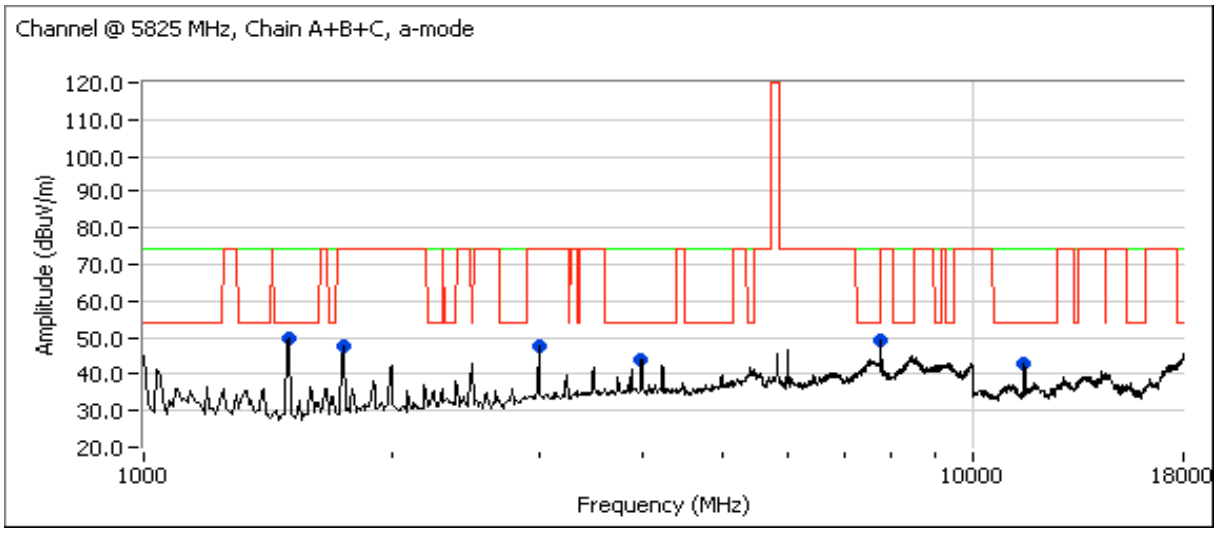
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1c: High Channel @ 5825 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
30.0	16.6	31.0	16.5	31.0	16.6

Sample tested:
Date of Test: 6/19/2008
Test Engineer: Peter Sales
Test Location: Fremont Chamber #4
Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1495.380	33.2	H	54.0	-20.8	AVG	325	1.0	
3993.050	32.3	V	54.0	-21.7	AVG	310	1.0	
7766.670	48.6	V	74.0	-25.4	AVG	347	1.6	
11649.800	47.8	V	54.0	-6.2	AVG	27	1.0	
1495.380	56.4	H	74.0	-17.6	PK	325	1.0	
3993.050	52.2	V	74.0	-21.8	PK	310	1.0	
7766.670	52.9	V	74.0	-21.1	PK	347	1.6	
11649.800	59.2	V	74.0	-14.8	PK	27	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS, 5725 - 5850 MHz)

Radiated Spurious Emissions 802.11n40MHz Universe Antenna

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 33 %

Summary of Results

n20 testing covers both n20 and n40 modes

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n40 Chain A+B+C	5755 MHz	A:29 B:30 C:29	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	43.4dBµV/m @ 11510.0MHz (-10.6dB)
1b	802.11n40 Chain A+B+C	5795 MHz	A:30 B:28 C:29	A: 16.5 B: 16.5 C: 16.5	Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	38.7dBµV/m @ 11590.1MHz (-15.3dB)
-	802.11n40 Chain A, B, C	5745 MHz 5785 MHz 5825 MHz			Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	By measuring triple-chain mode at full power we also cover single- and dual-chain modes.
-	802.11n40 Dual Chain modes (A+B, A+C, B+C)				Radiated Emissions, 1 - 40 GHz	FCC Part 15.209 / 15.247(c)	

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

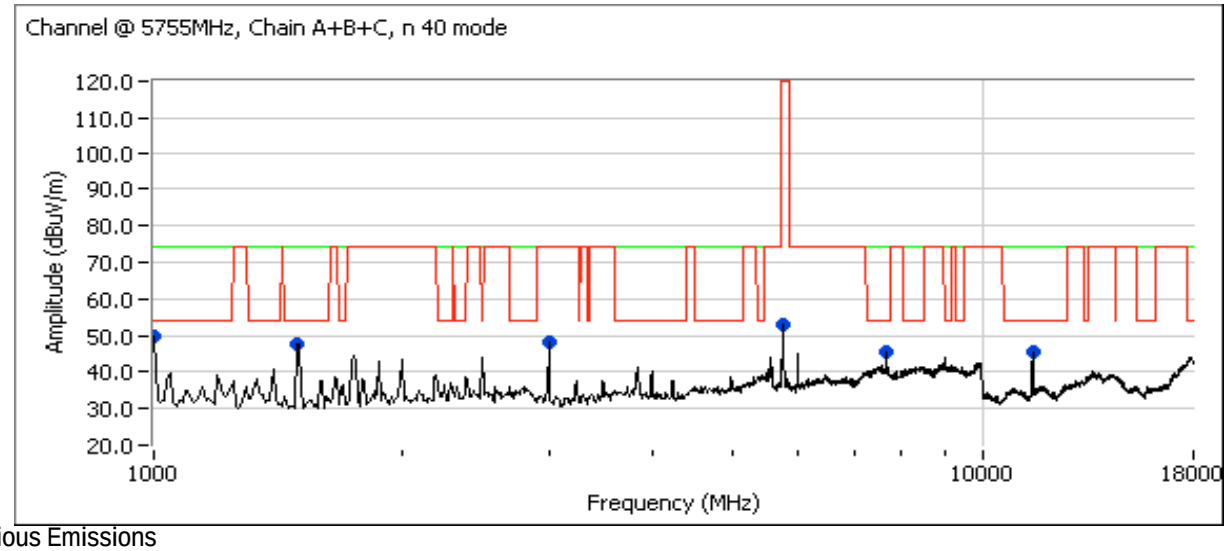
Run #1: Radiated Spurious Emissions, 1000 - 18000 MHz. Operating Mode: 802.11n 40MHz Chains A+B+C
These tests run at a power setting equal to the highest single-chain settings to cover all possible dual- and triple-chain operating modes.

Sample tested: 0016EA02D660
Date of Test: 6/20/2008
Test Engineer: Jospeh Cadigal
Test Location: Chamber # 3

Config. Used: 1
Config Change: None
Host Unit Voltage 120V/60Hz

Run #1a: Low Channel @ 5755 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
29.0	16.5	30.0	16.5	29.0	16.5



Spurious Emissions

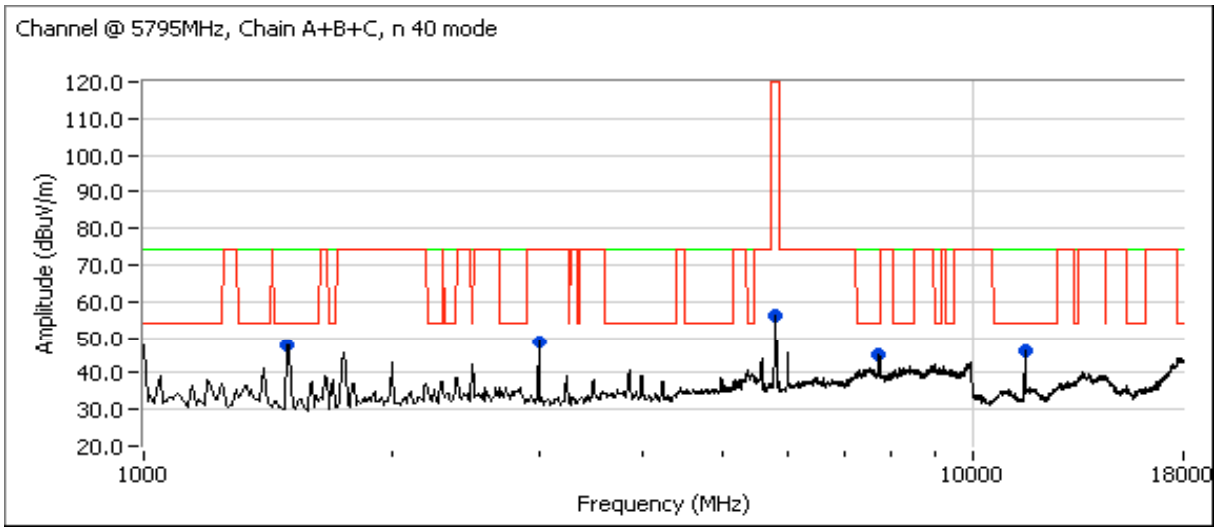
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1000.000	20.4	H	54.0	-33.6	AVG	358	1.0	
1494.990	23.8	H	54.0	-30.2	AVG	5	1.0	
3000.440	38.5	V	74.0	-35.5	AVG	84	1.3	
7673.370	32.3	V	54.0	-21.7	AVG	359	1.6	
11510.030	43.4	H	54.0	-10.6	AVG	67	1.6	
1000.000	34.6	H	74.0	-39.4	PK	358	1.0	
1494.990	45.8	H	74.0	-28.2	PK	5	1.0	
3000.440	42.1	V	74.0	-31.9	PK	84	1.3	
7673.370	38.7	V	74.0	-35.3	PK	359	1.6	
11510.030	50.6	H	74.0	-23.4	PK	67	1.6	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1b: High Channel @ 5795 MHz

Power Setting and average measurement (for reference)					
Chain A		Chain B		Chain C	
Setting	Avg	Setting	Avg	Setting	Avg
30.0	16.5	28.0	16.5	29.0	16.5



Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.930	23.8	H	54.0	-30.2	AVG	312	1.3	
3000.340	38.1	V	74.0	-35.9	AVG	94	1.3	
7726.720	33.5	V	54.0	-20.5	AVG	358	1.6	
11590.050	38.7	V	54.0	-15.3	AVG	309	1.3	
1497.930	44.9	H	74.0	-29.1	PK	312	1.3	
3000.340	41.9	V	74.0	-32.1	PK	94	1.3	
7726.720	39.1	V	74.0	-34.9	PK	358	1.6	
11590.050	45.0	V	74.0	-29.0	PK	309	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Signal is not in a restricted band.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 15-25 °C
Rel. Humidity: 35-55 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	Chain A RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	47.2dBµV/m @ 3000.41MHz (-6.8dB)
1b	Chain A RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	47.8dBµV/m @ 3000.42MHz (-6.2dB)
2a	Chain B RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	47.8dBµV/m @ 3000.41MHz (-6.2dB)
2b	Chain B RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	48.1dBµV/m @ 3000.31MHz (-5.9dB)
3a	Chain C RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	48.3dBµV/m @ 3000.41MHz (-5.7dB)
3b	Chain C RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	47.7dBµV/m @ 3000.41MHz (-6.3dB)
4a	Chain A+B+C RX	2437 MHz	-	-	Radiated Emissions, 1 - 8GHz	RSS 210 / RSS GEN	48.3dBµV/m @ 3000.41MHz (-5.7dB)
4b	Chain A+B+C RX	5785 MHz	-	-	Radiated Emissions, 1 - 18GHz	RSS 210 / RSS GEN	48dBµV/m @ 3000.41MHz (-6.0dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

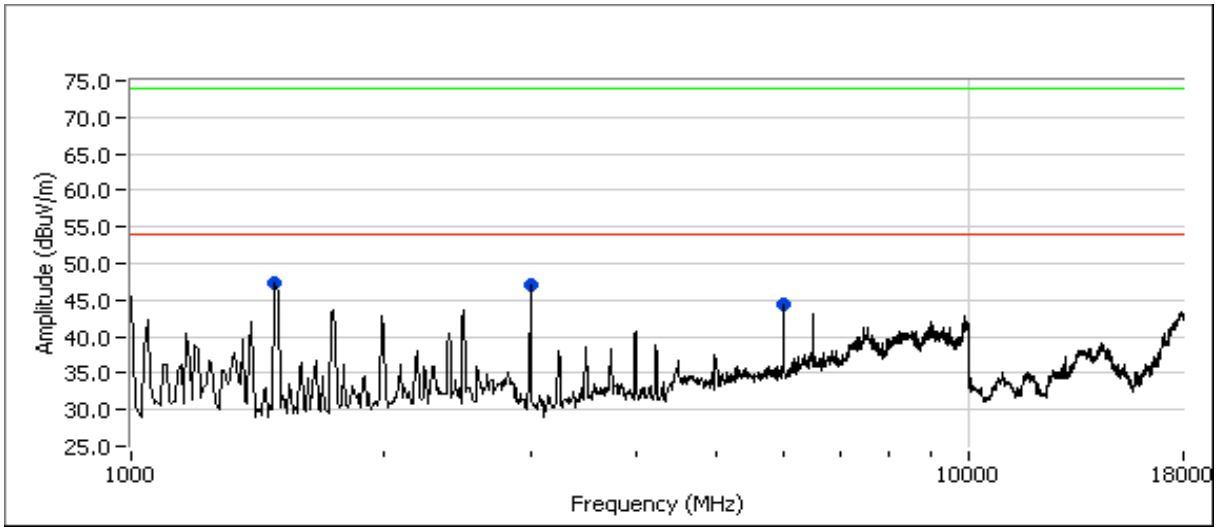
No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 1: Chain A Rx Radiated Spurious Emissions, 1000 - 18000 MHz
Run # 1a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain A

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.750	32.6	V	54.0	-21.4	AVG	183	1.0	
3000.400	47.2	H	54.0	-6.8	AVG	169	1.0	
5995.830	44.3	V	54.0	-9.7	Peak	273	2.0	Pk measurement, avg limit
1494.750	53.0	V	74.0	-21.0	PK	183	1.0	
3000.400	51.4	H	74.0	-22.6	PK	169	1.0	

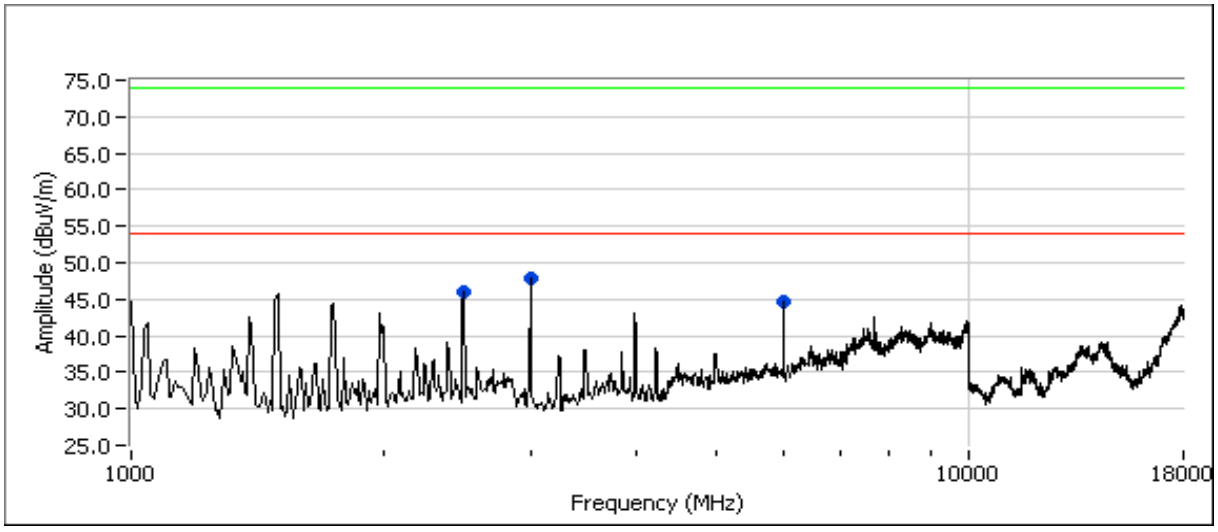


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run # 1b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain A

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2490.610	30.3	H	54.0	-23.7	AVG	144	1.0	
3000.410	47.8	V	54.0	-6.2	AVG	259	1.3	
5995.830	44.6	V	54.0	-9.4	Peak	96	1.0	Pk measurement, avg limit
2490.610	50.9	H	74.0	-23.1	PK	144	1.0	
3000.410	51.2	V	74.0	-22.8	PK	259	1.3	

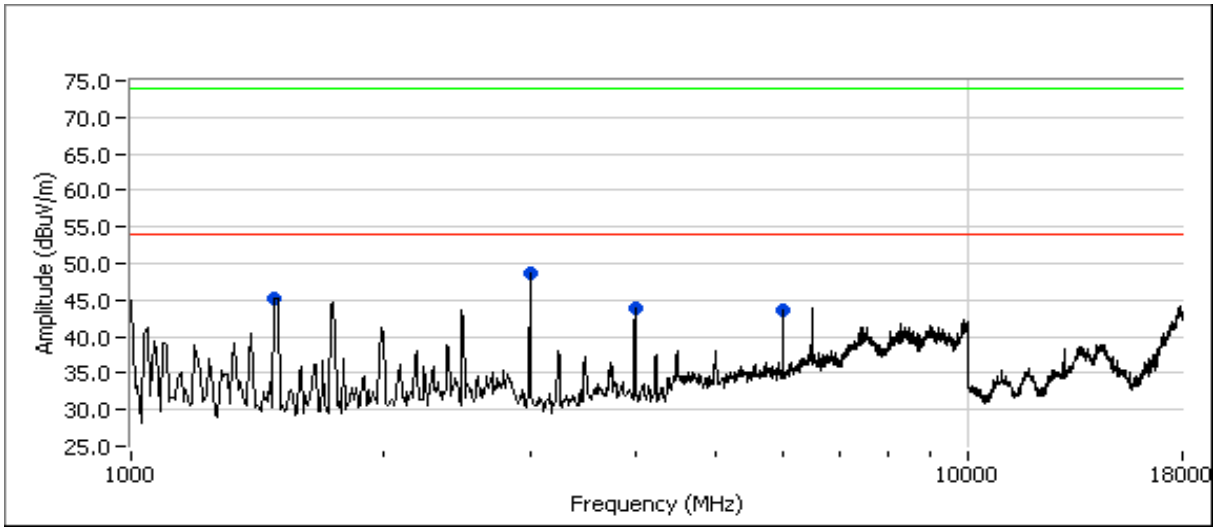


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: Chain B Rx Radiated Spurious Emissions, 1000 - 18000 MHz
Run #2a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain B

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.790	32.8	V	54.0	-21.2	AVG	252	1.3	
3000.400	47.8	V	54.0	-6.2	AVG	259	1.3	
3997.500	43.8	V	54.0	-10.2	Peak	128	1.0	Pk measurement, avg limit
5995.830	43.6	V	54.0	-10.4	Peak	98	1.0	Pk measurement, avg limit
1497.790	49.6	V	74.0	-24.4	PK	252	1.3	
3000.400	51.1	V	74.0	-22.9	PK	259	1.3	

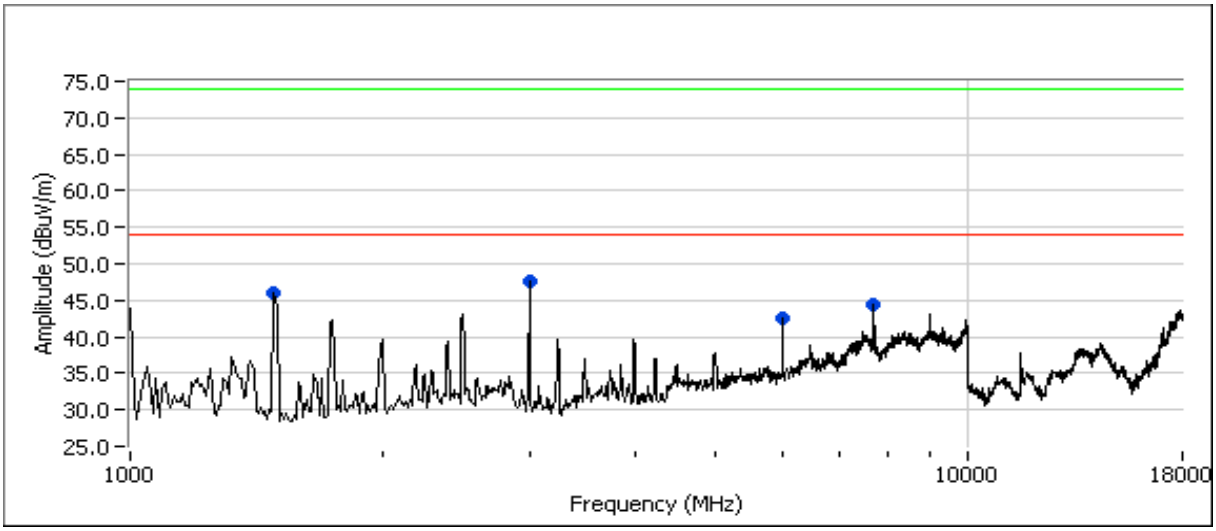


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain B

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.410	33.6	H	54.0	-20.4	AVG	163	1.0	
3000.340	48.1	V	54.0	-5.9	AVG	262	1.3	
5995.830	42.5	V	54.0	-11.5	Peak	263	1.3	Pk measurement, avg limit
7713.330	44.4	V	54.0	-9.6	Peak	255	1.6	Pk measurement, avg limit
1494.410	53.6	H	74.0	-20.4	PK	163	1.0	
3000.340	51.6	V	74.0	-22.4	PK	262	1.3	

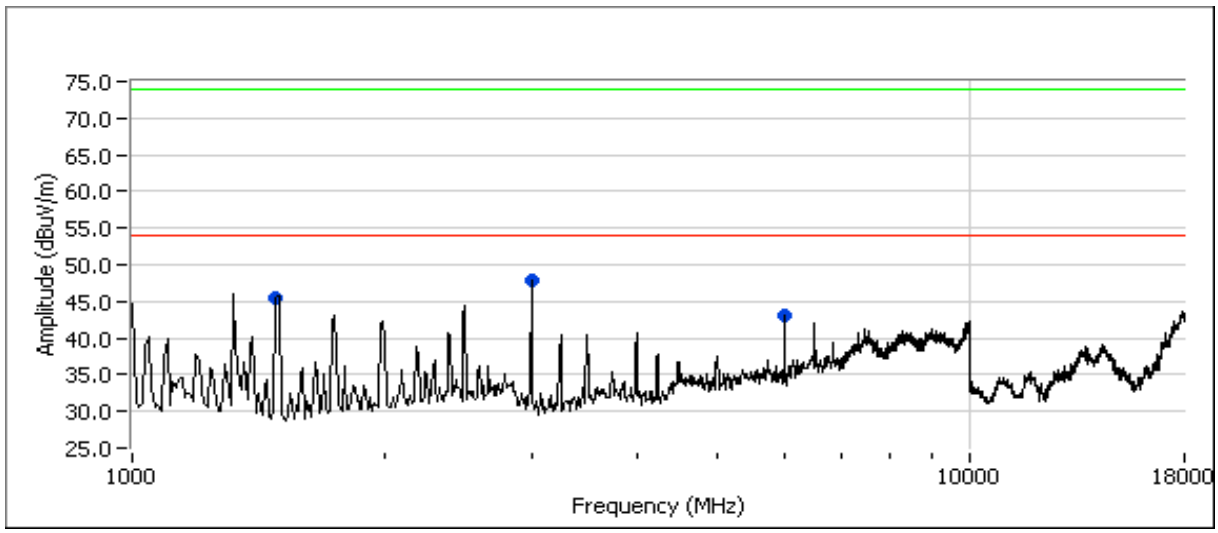


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3: Chain C Rx Radiated Spurious Emissions, 1000 - 18000 MHz
Run #3a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain C

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.200	33.8	H	54.0	-20.2	AVG	164	1.0	
3000.440	48.3	V	54.0	-5.7	AVG	261	1.3	
5995.830	43.1	V	54.0	-10.9	Peak	103	1.3	Pk measurement, avg limit
1494.200	53.9	H	74.0	-20.1	PK	164	1.0	
3000.440	51.4	V	74.0	-22.6	PK	261	1.3	

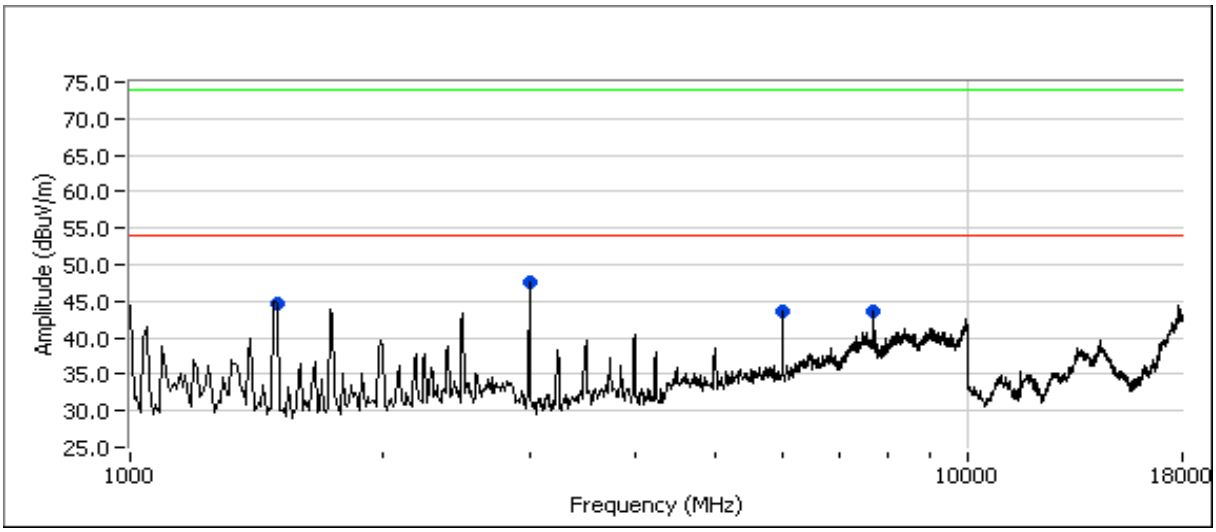


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #3b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain C

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1497.560	32.2	V	54.0	-21.8	AVG	182	1.6	
3000.360	47.7	V	54.0	-6.3	AVG	261	1.3	
5995.830	43.6	V	54.0	-10.4	Peak	106	1.3	Pk measurement, avg limit
7713.330	43.5	V	54.0	-10.5	Peak	253	1.6	Pk measurement, avg limit
1497.560	51.8	V	74.0	-22.2	PK	182	1.6	
3000.360	50.8	V	74.0	-23.2	PK	261	1.3	

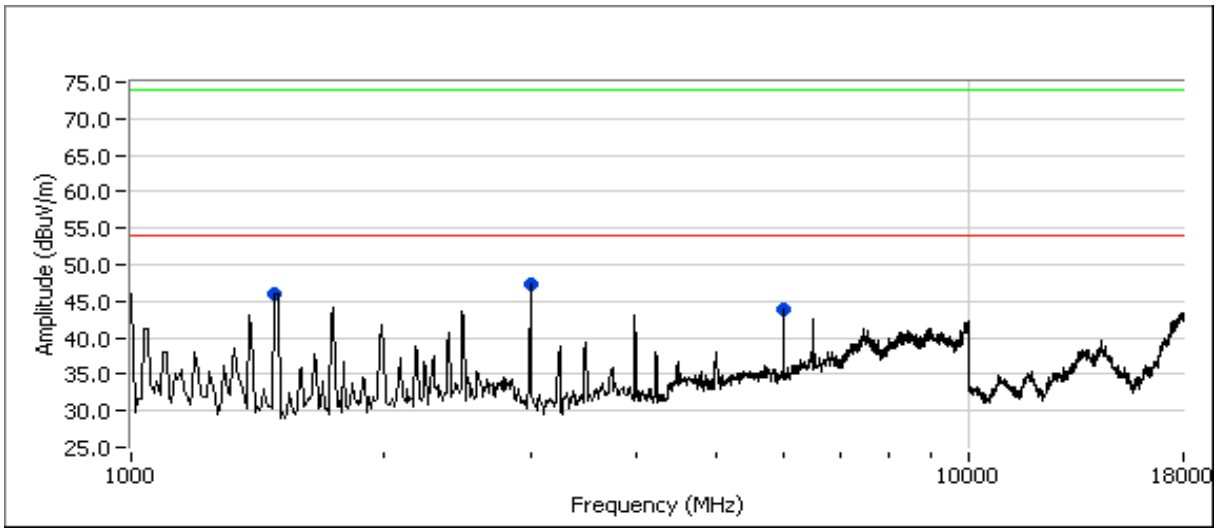


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #4: Chain A+B+C Rx Radiated Spurious Emissions, 1000 - 18000 MHz
Run #4a: Rx Radiated Spurious Emissions, 1000 - 7500 MHz. Receiver at 2437 MHz, Chain A+B+C

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1494.670	33.9	H	54.0	-20.1	AVG	168	1.0	
3000.350	48.3	V	54.0	-5.7	AVG	258	1.3	
5995.830	43.8	V	54.0	-10.2	Peak	105	1.3	Pk measurement, avg limit
1494.670	53.5	H	74.0	-20.5	PK	168	1.0	
3000.350	51.8	V	74.0	-22.2	PK	258	1.3	

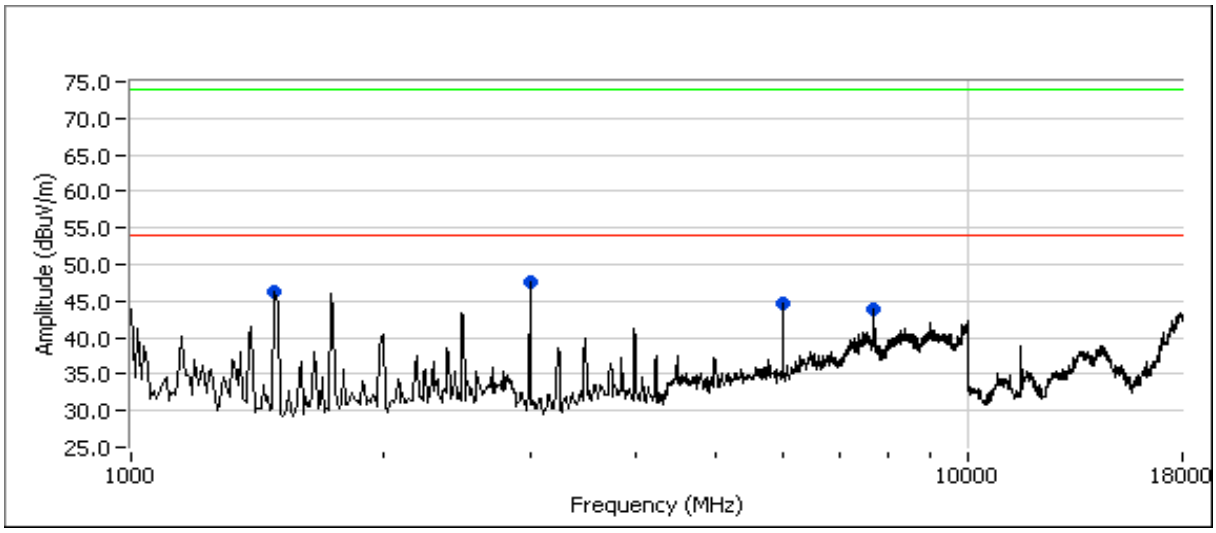


Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71851 Band Edge
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #4b: Rx Radiated Spurious Emissions, 1000 - 18000 MHz. Receiver at 5785 MHz, Chain A+B+C

Sample tested: 0016EA02D660
Date of Test: 6/19/2008
Test Engineer: Rafael Varelas
Test Location: Chamber # 4

Frequency	Level	Pol	RSS GEN		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1498.200	33.1	H	54.0	-20.9	AVG	162	1.0	
3000.370	48.0	V	54.0	-6.0	AVG	257	1.3	
5995.830	44.8	V	54.0	-9.2	Peak	95	1.0	Pk measurement, avg limit
7713.330	43.9	V	54.0	-10.1	Peak	252	1.6	Pk measurement, avg limit
1498.200	52.9	H	74.0	-21.1	PK	162	1.0	
3000.370	51.4	V	74.0	-22.6	PK	257	1.3	



Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		-
Emissions Standard(s):	FCC	Class:	-
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Intel Corporation

Model

533AN-MMW(MMC)

Date of Last Test: 5/5/2008

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Conducted Emissions

(Elliott Laboratories Fremont Facility, Semi-Anechoic Chamber)

Test Specific Details

Objective: The objective of this test session is to perform engineering evaluation testing of the EUT with respect to the specification listed above.

Date of Test: 5/5/2008
Test Engineer: Ben Jing
Test Location: Fremont Chamber #4

Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

For tabletop equipment, the EUT and host system was located on a wooden table inside the semi-anechoic chamber, 40 cm from a vertical coupling plane and 80cm from the LISN. A second LISN was used for all local support equipment. Remote support equipment was located outside of the semi-anechoic chamber. Any cables running to remote support equipment where routed through metal conduit and when possible passed through a ferrite clamp upon exiting the chamber.

Ambient Conditions:

Temperature: 21 °C
Rel. Humidity: 36 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1 (DTS)	CE, AC Power,120V/60Hz	FCC 15.207 / RSS GEN	Pass	47.4dBµV @ 0.522MHz (-8.6dB)
2 (UNII)	CE, AC Power,120V/60Hz	FCC 15.207 / RSS GEN	Pass	47.4dBµV @ 0.524MHz (-8.6dB)

Modifications Made During Testing

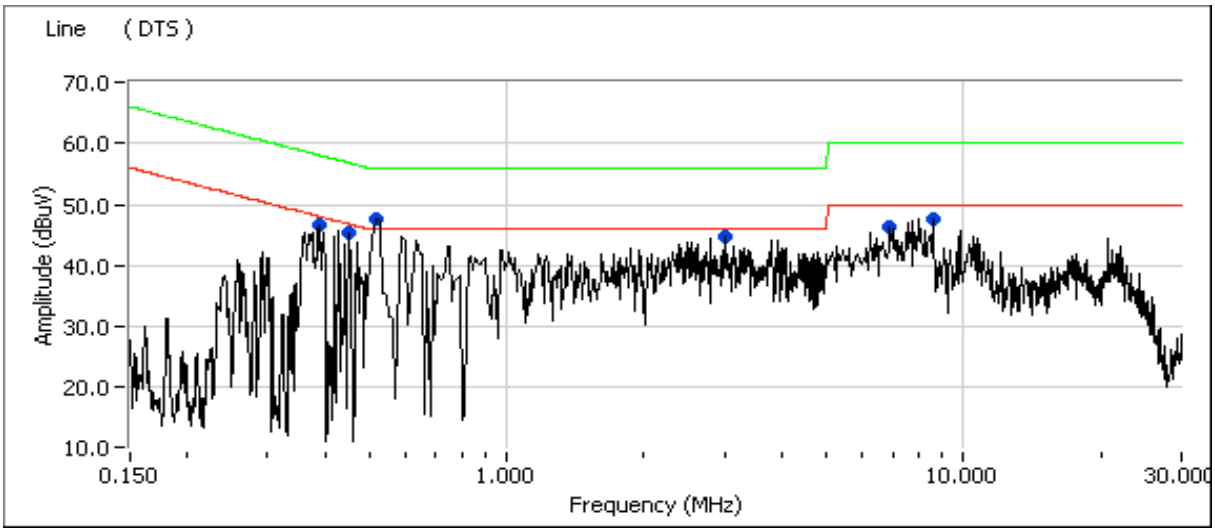
No modifications were made to the EUT during testing

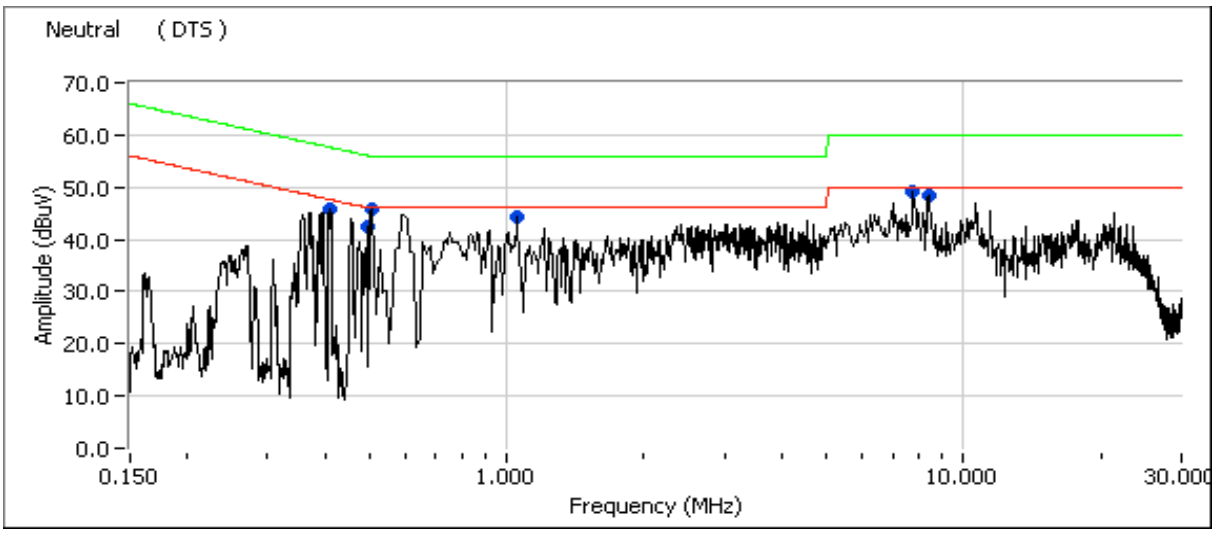
Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #1: DTS AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz
Target power ; All chains active .





Elliott

EMC Test Data

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Preliminary peak readings captured during pre-scan (peak readings vs. average limit)

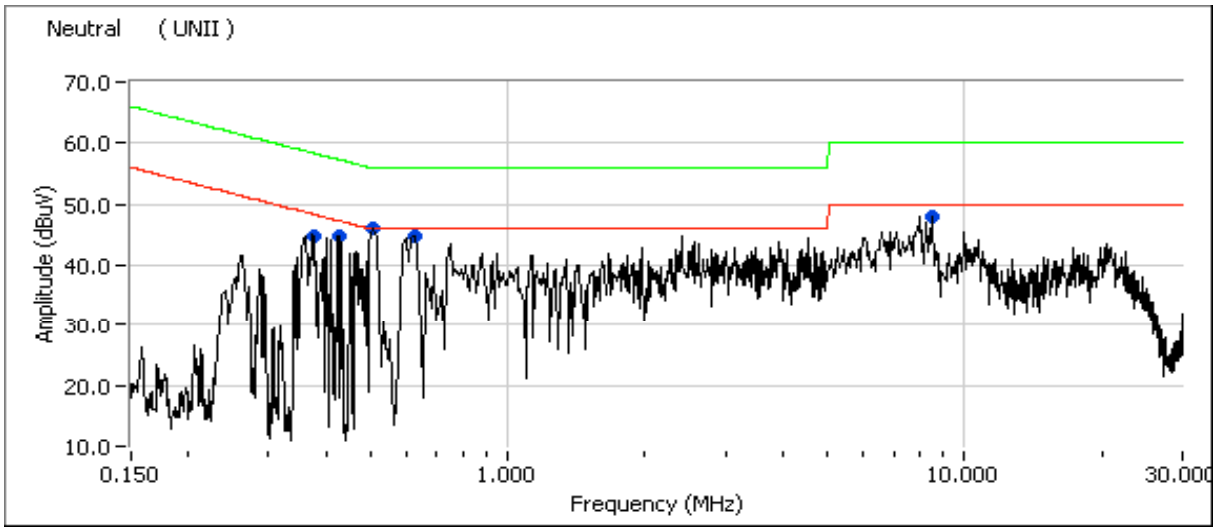
Frequency	Level	AC	FCC 15.207		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.524	47.8	Line	46.0	1.8	Peak	
0.522	45.9	Neutral	46.0	-0.1	Peak	
7.733	49.1	Neutral	50.0	-0.9	Peak	
3.013	44.7	Line	46.0	-1.3	Peak	
0.389	46.6	Line	48.1	-1.5	Peak	
0.450	45.3	Line	46.9	-1.6	Peak	
1.047	44.4	Neutral	46.0	-1.6	Peak	
0.413	45.9	Neutral	47.6	-1.7	Peak	
8.393	48.3	Neutral	50.0	-1.7	Peak	
8.500	47.8	Line	50.0	-2.2	Peak	
6.918	46.4	Line	50.0	-3.6	Peak	
0.497	42.4	Neutral	46.1	-3.7	Peak	

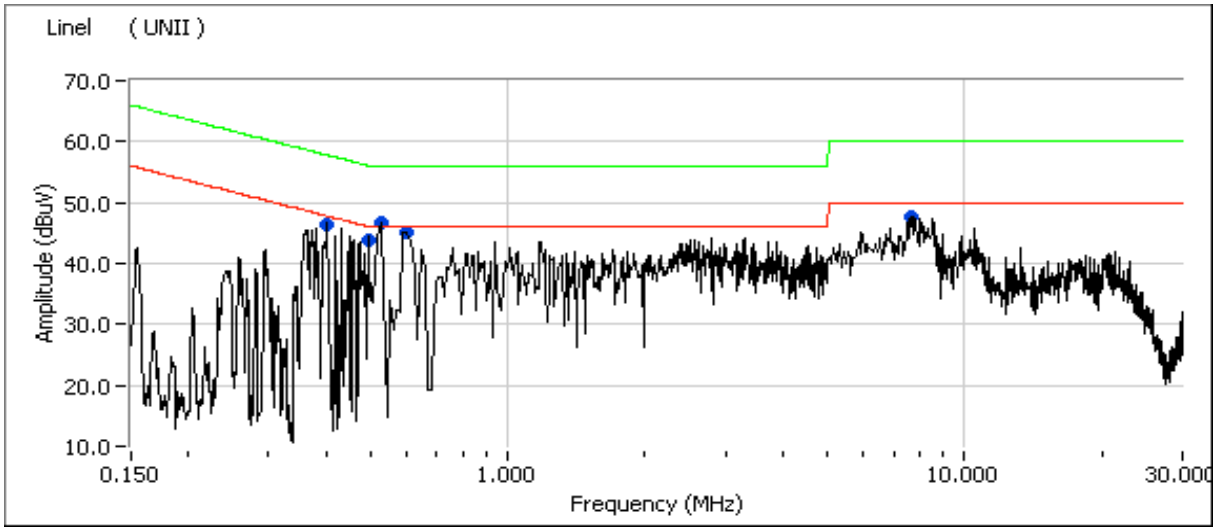
Final quasi-peak and average readings

Frequency	Level	AC	FCC 15.207		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.522	47.4	Neutral	56.0	-8.6	QP	
0.524	46.8	Line	56.0	-9.2	QP	
0.450	44.9	Line	56.9	-12.0	QP	
0.497	43.9	Neutral	56.0	-12.1	QP	
0.389	44.5	Line	58.1	-13.6	QP	
0.413	42.5	Neutral	57.6	-15.1	QP	
1.047	40.7	Neutral	56.0	-15.3	QP	
3.013	38.0	Line	56.0	-18.0	QP	
8.500	41.4	Line	60.0	-18.6	QP	
0.522	27.0	Neutral	46.0	-19.0	AVG	
8.393	40.9	Neutral	60.0	-19.1	QP	
0.497	26.5	Neutral	46.0	-19.5	AVG	
8.500	30.3	Line	50.0	-19.7	AVG	
7.733	40.2	Neutral	60.0	-19.8	QP	
8.393	29.9	Neutral	50.0	-20.1	AVG	
6.918	39.7	Line	60.0	-20.3	QP	
3.013	25.3	Line	46.0	-20.7	AVG	
0.524	25.0	Line	46.0	-21.0	AVG	
7.733	29.0	Neutral	50.0	-21.0	AVG	
0.389	27.0	Line	48.1	-21.1	AVG	
1.047	23.9	Neutral	46.0	-22.1	AVG	
0.450	24.2	Line	46.9	-22.7	AVG	
6.918	27.0	Line	50.0	-23.0	AVG	
0.413	19.8	Neutral	47.6	-27.8	AVG	

Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Run #2: UNII AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz
Target power ; All chains active .





Client:	Intel Corporation	Job Number:	J70976
Model:	533AN-MMW(MMC)	T-Log Number:	T71133
		Account Manager:	Dean Eriksen
Contact:	Robert Paxman		
Standard:	FCC	Class:	N/A

Preliminary peak readings captured during pre-scan (peak readings vs. average limit)

Frequency	Level	AC	FCC 15.207		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.524	46.7	Line	46.0	0.7	Peak	
0.500	46.1	Neutral	46.0	0.1	Peak	
0.592	45.0	Line	46.0	-1.0	Peak	
0.624	44.9	Neutral	46.0	-1.1	Peak	
0.403	46.4	Line	47.8	-1.4	Peak	
8.516	48.0	Neutral	50.0	-2.0	Peak	
0.499	43.9	Line	46.0	-2.1	Peak	
7.668	47.7	Line	50.0	-2.3	Peak	
0.427	44.9	Neutral	47.3	-2.4	Peak	
0.375	44.9	Neutral	48.4	-3.5	Peak	

Final quasi-peak and average readings

Frequency	Level	AC	FCC 15.207		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.524	47.4	Line	56.0	-8.6	QP	
0.499	45.5	Line	56.0	-10.5	QP	
0.500	45.2	Neutral	56.0	-10.8	QP	
0.624	43.4	Neutral	56.0	-12.6	QP	
0.375	44.7	Neutral	58.4	-13.7	QP	
0.403	43.7	Line	57.8	-14.1	QP	
0.592	41.8	Line	56.0	-14.2	QP	
0.427	41.0	Neutral	57.3	-16.3	QP	
0.592	28.6	Line	46.0	-17.4	AVG	
0.375	30.3	Neutral	48.4	-18.1	AVG	
8.516	41.0	Neutral	60.0	-19.0	QP	
0.500	26.9	Neutral	46.0	-19.1	AVG	
0.524	26.7	Line	46.0	-19.3	AVG	
0.624	26.6	Neutral	46.0	-19.4	AVG	
0.499	26.6	Line	46.0	-19.4	AVG	
7.668	40.3	Line	60.0	-19.7	QP	
8.516	29.8	Neutral	50.0	-20.2	AVG	
7.668	29.6	Line	50.0	-20.4	AVG	
0.403	21.5	Line	47.8	-26.3	AVG	
0.427	18.0	Neutral	47.3	-29.3	AVG	