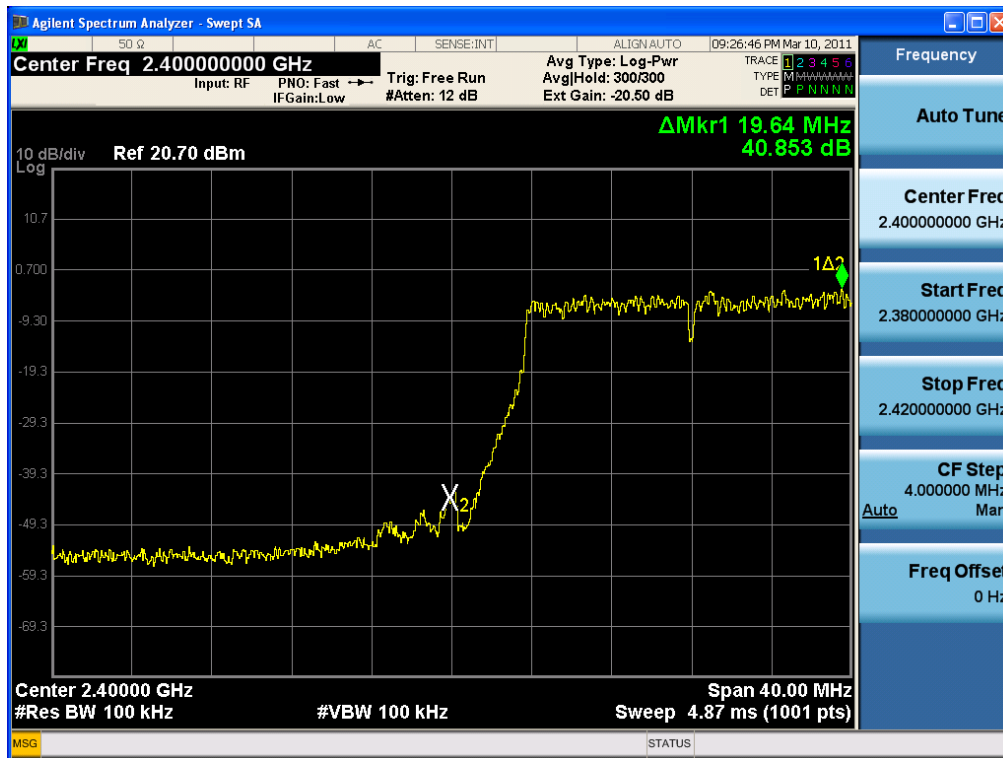
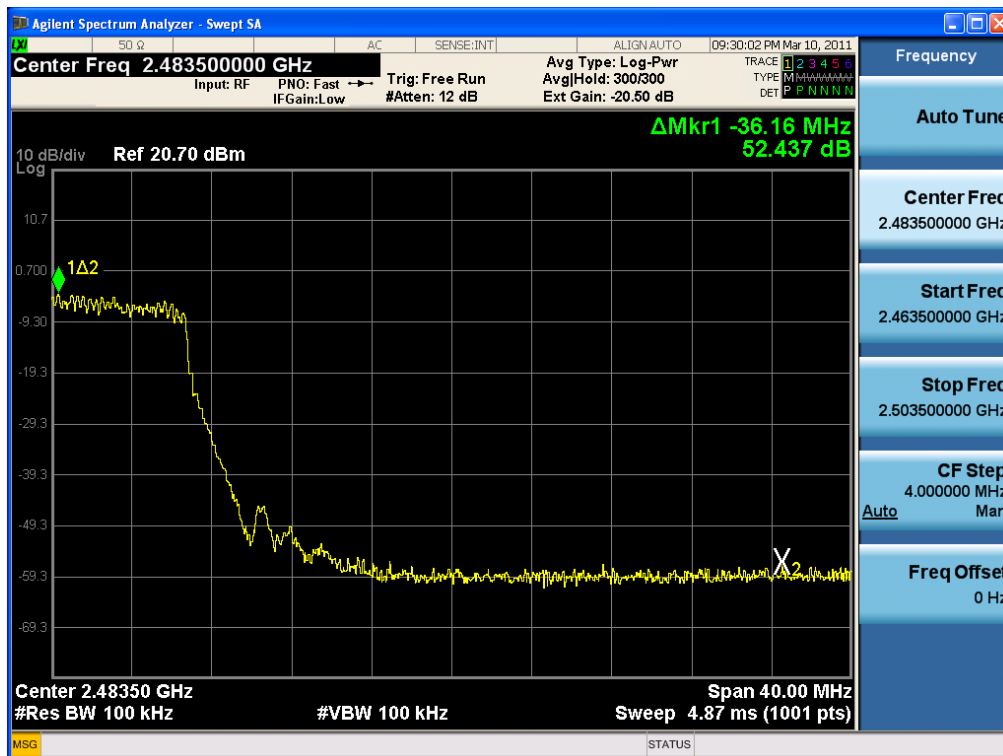


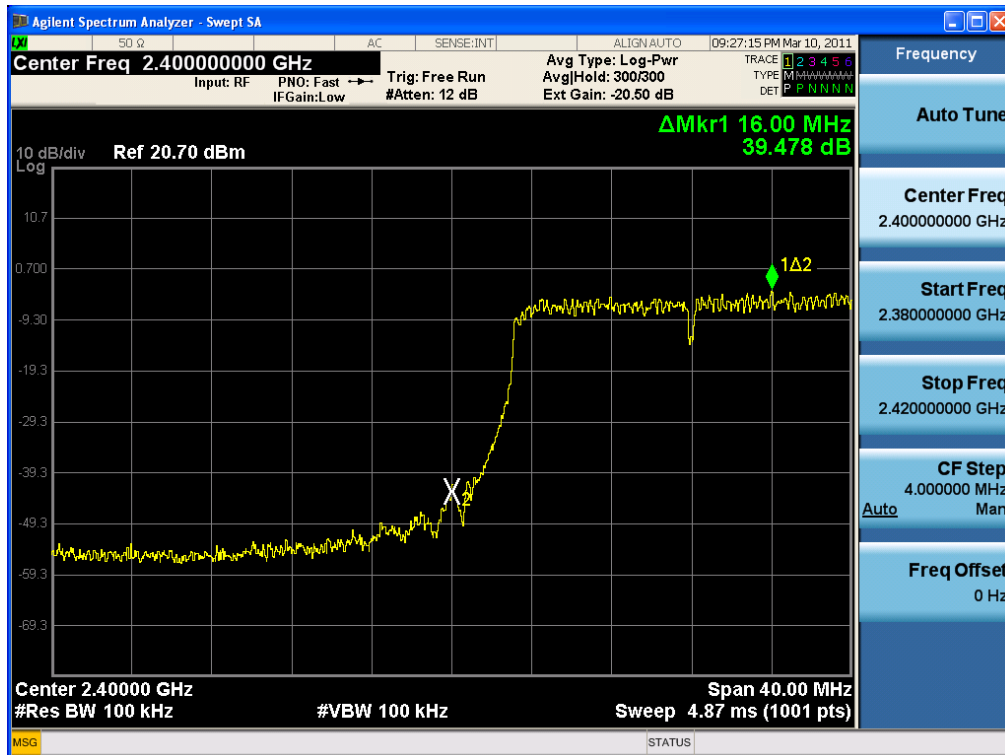
BandEdge (802.11g-CH1)



BandEdge (802.11g-CH11)



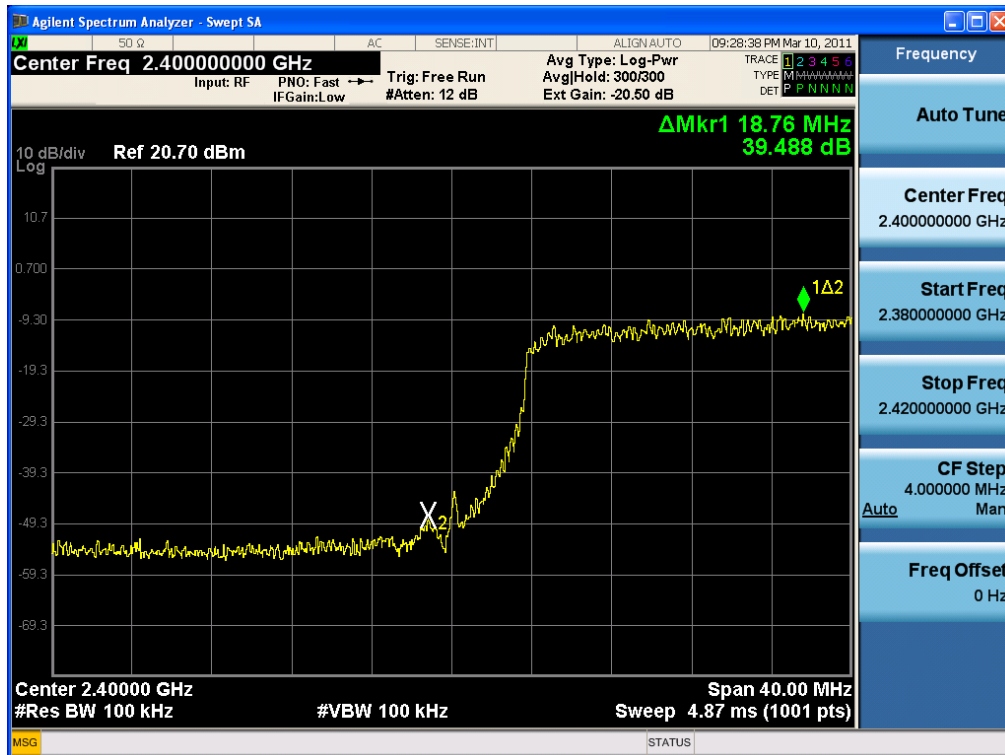
BandEdge (802.11n-CH1) – 20 MHz



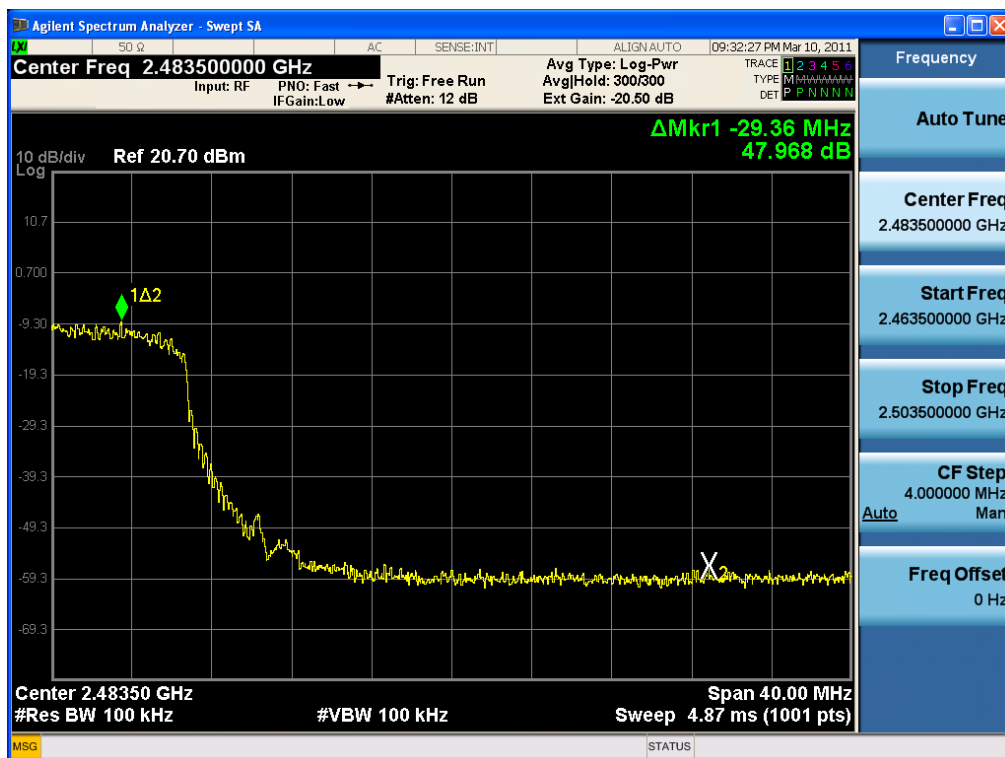
BandEdge (802.11n-CH11) – 20 MHz



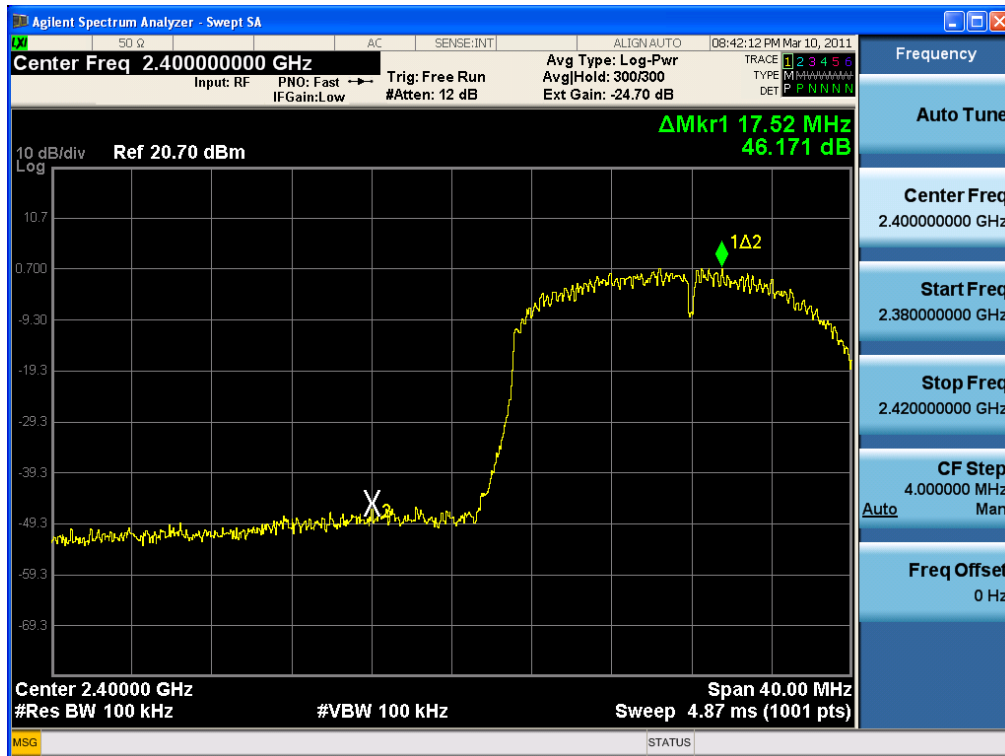
BandEdge (802.11n-CH1) – 40 MHz



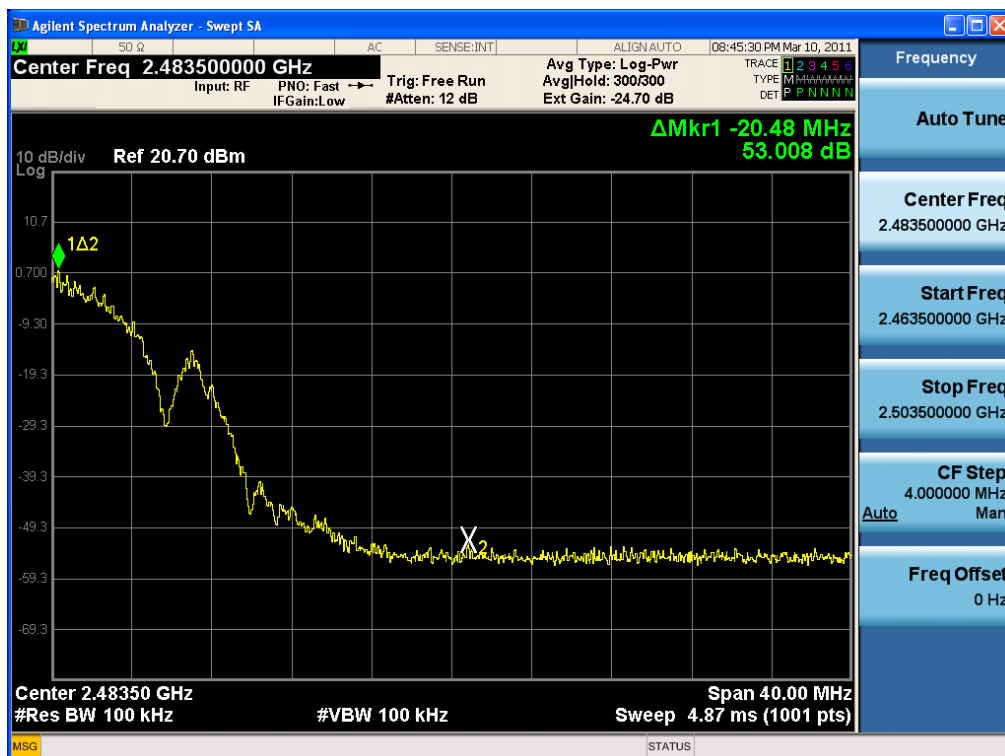
BandEdge (802.11n-CH7) – 40 MHz



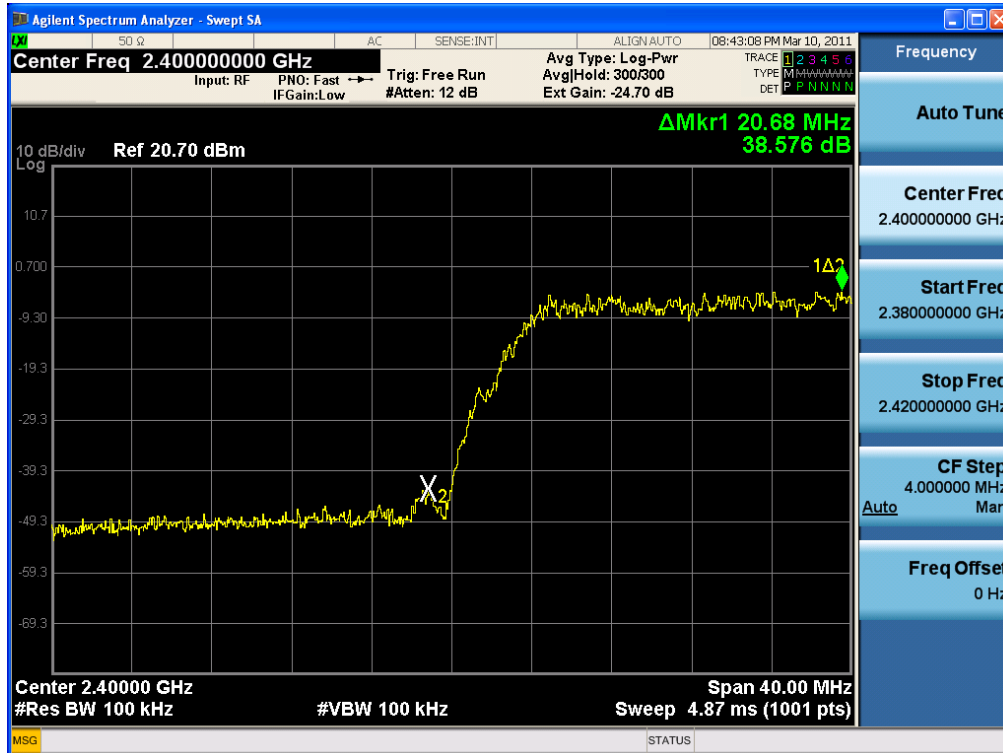
**- Port 0 & 1
BandEdge (802.11n-CH1) – 20 MHz**



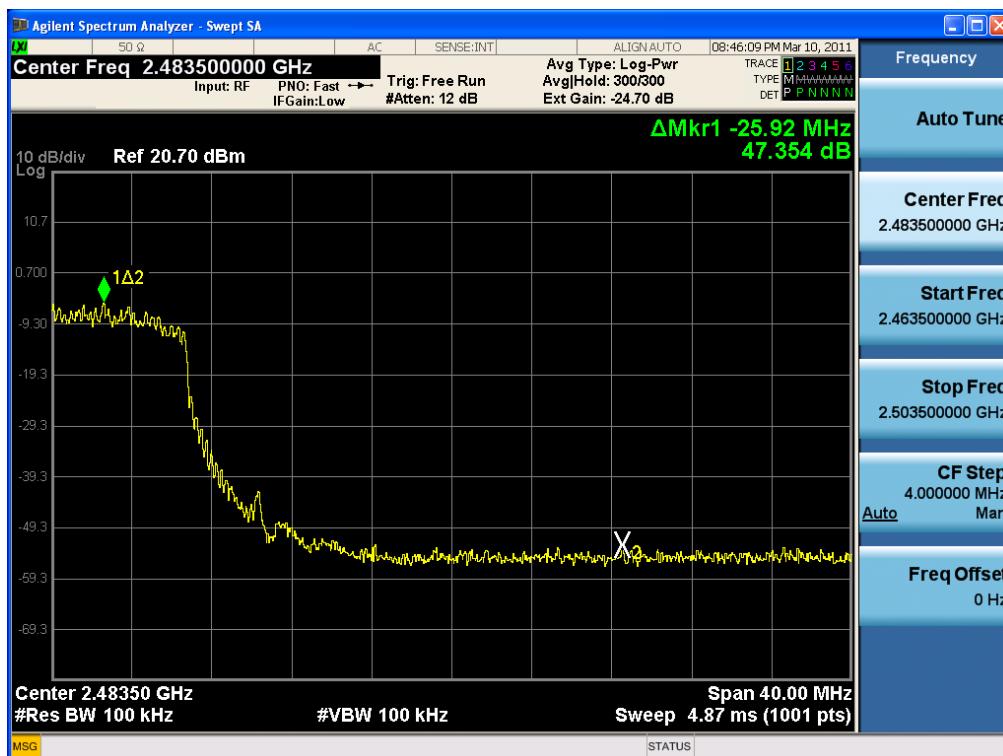
BandEdge (802.11n-CH11) – 20 MHz



BandEdge (802.11n-CH1) – 40 MHz



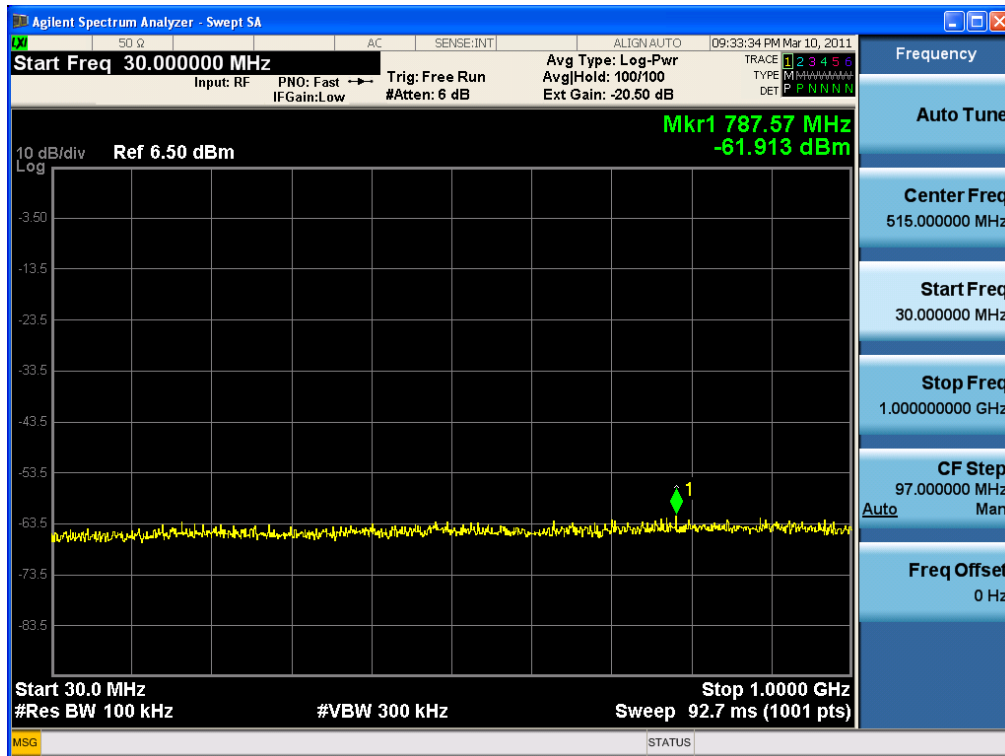
BandEdge (802.11n-CH7) – 40 MHz



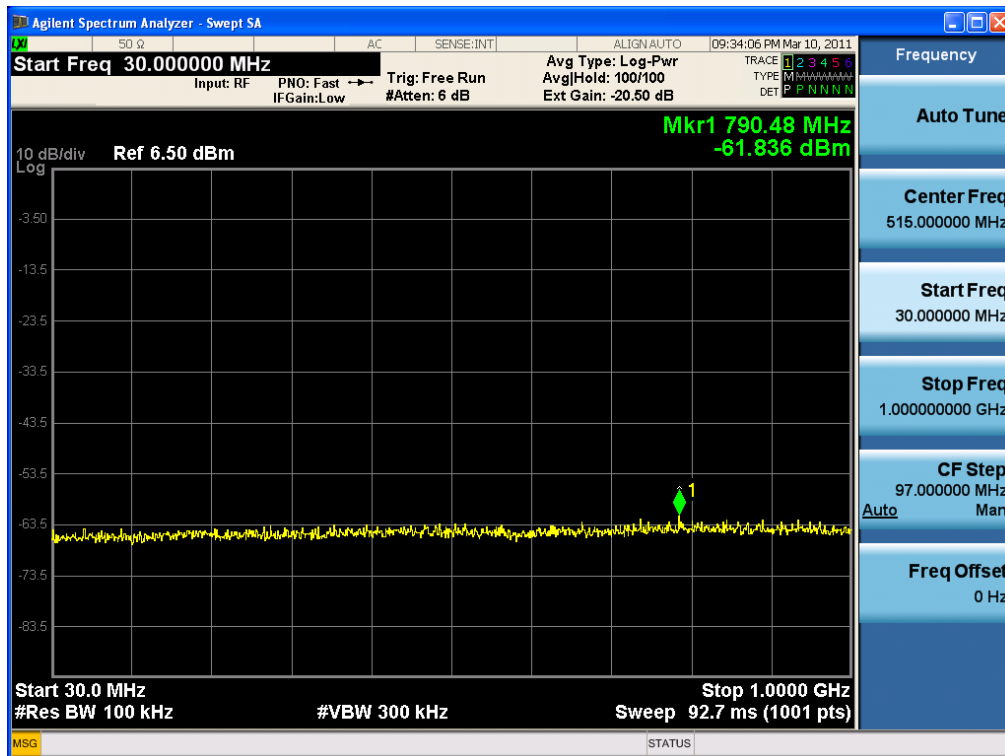
- Port 1

30 MHz ~ 1 GHz

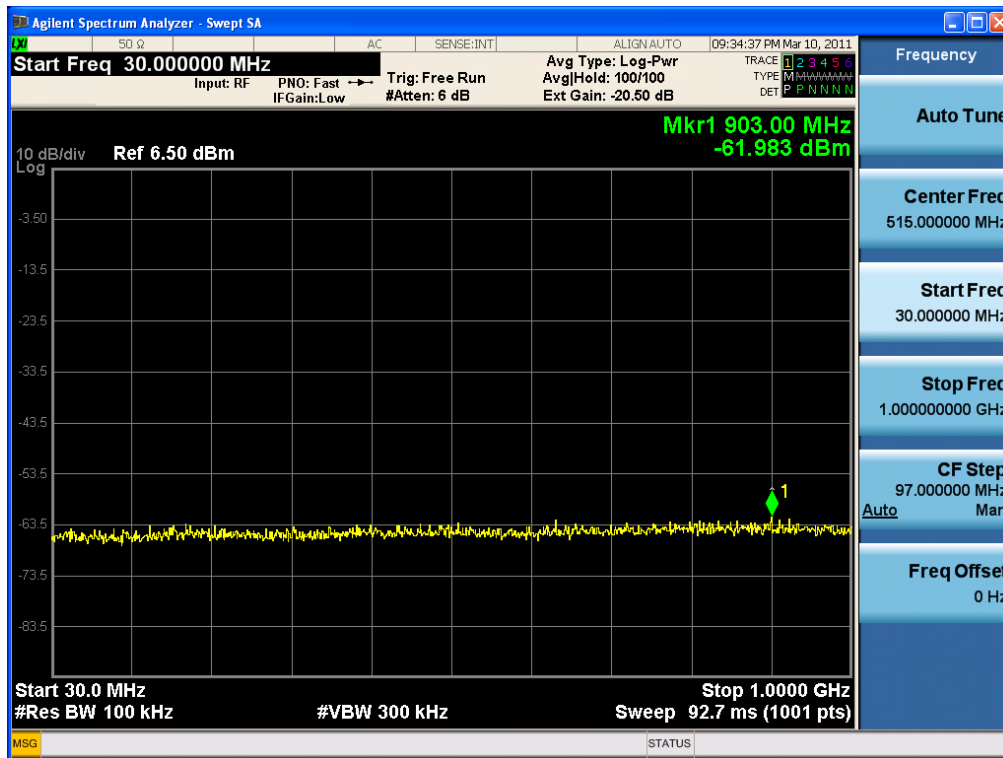
Conducted Spurious Emission (802.11b-CH1)



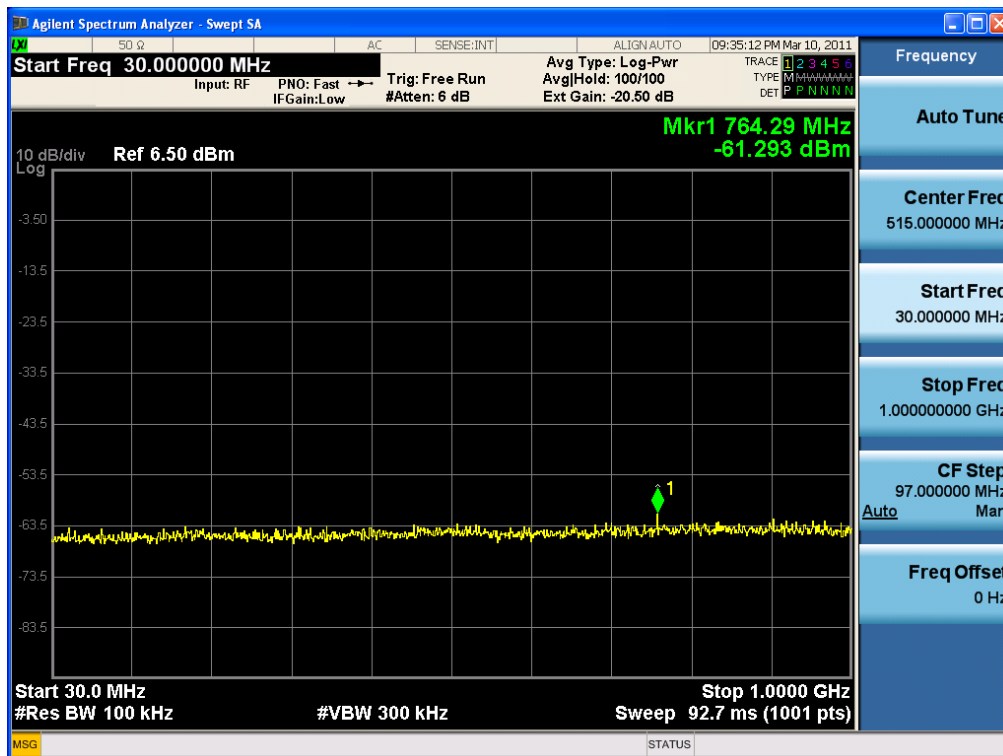
Conducted Spurious Emission (802.11b-CH6)



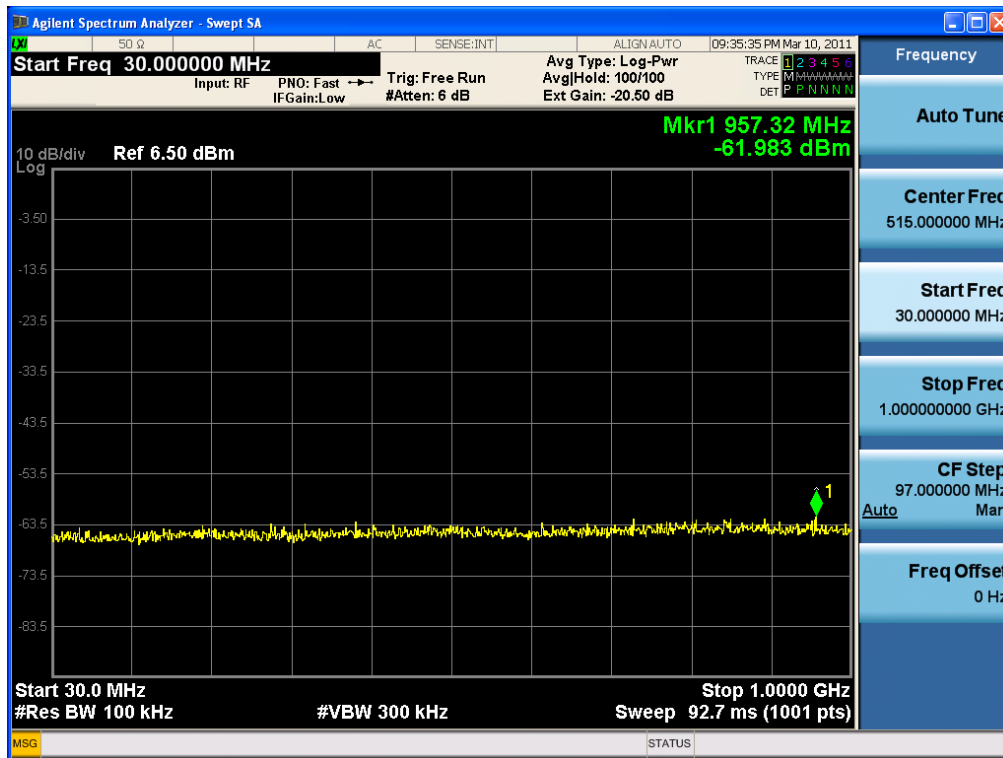
Conducted Spurious Emission (802.11b-CH11)



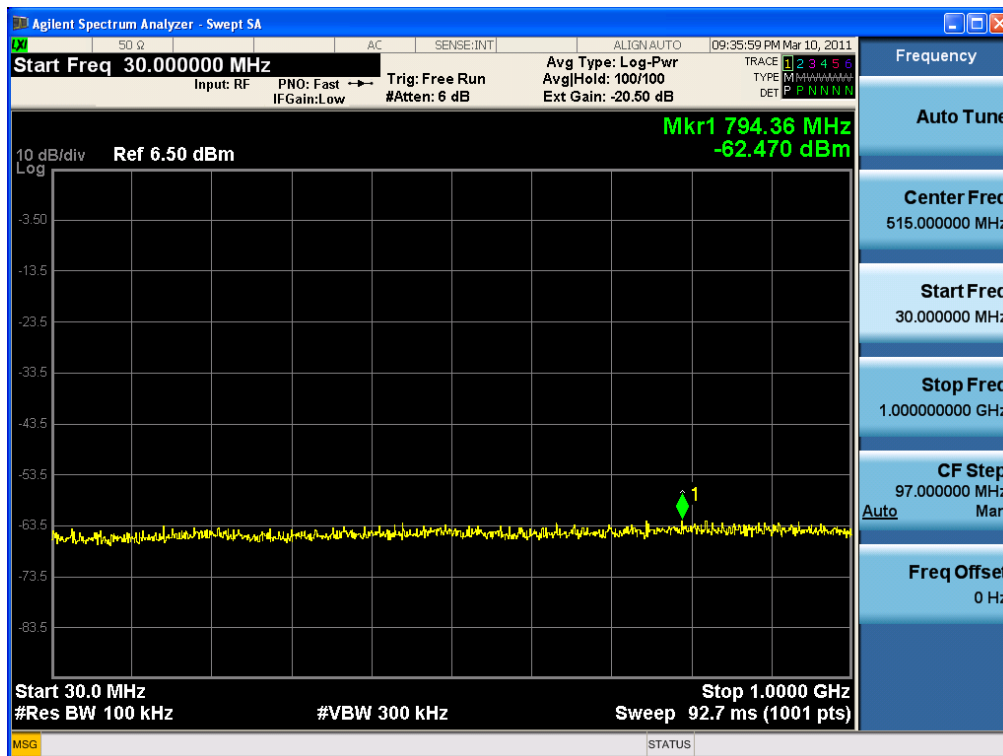
Conducted Spurious Emission (802.11g-CH1)



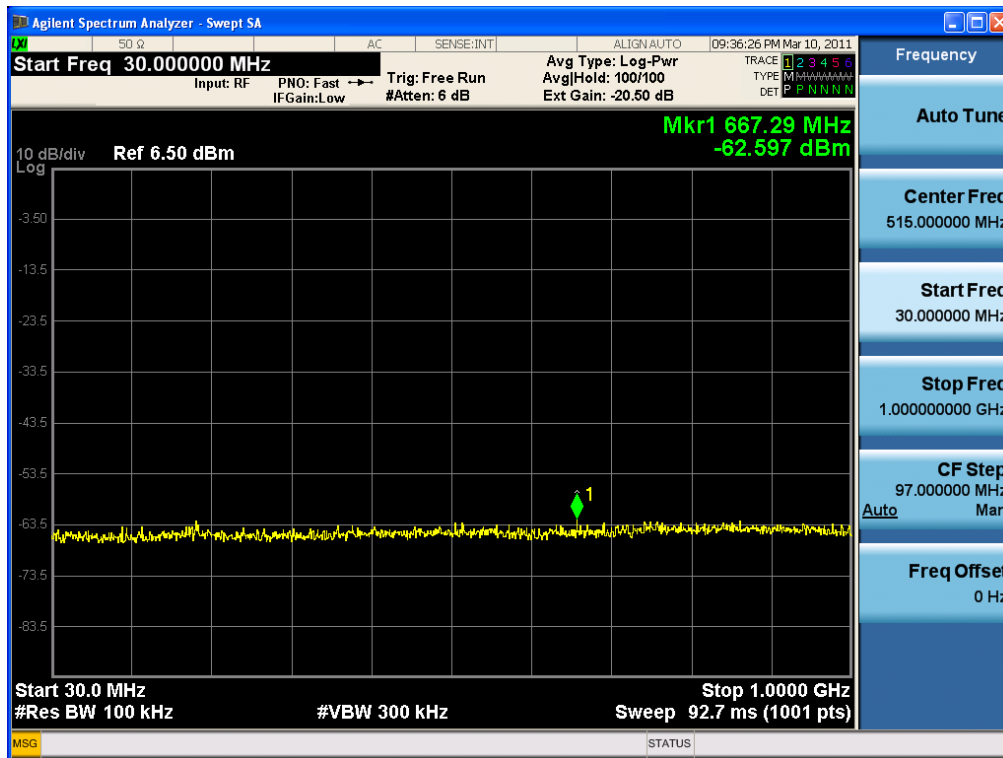
Conducted Spurious Emission (802.11g-CH6)



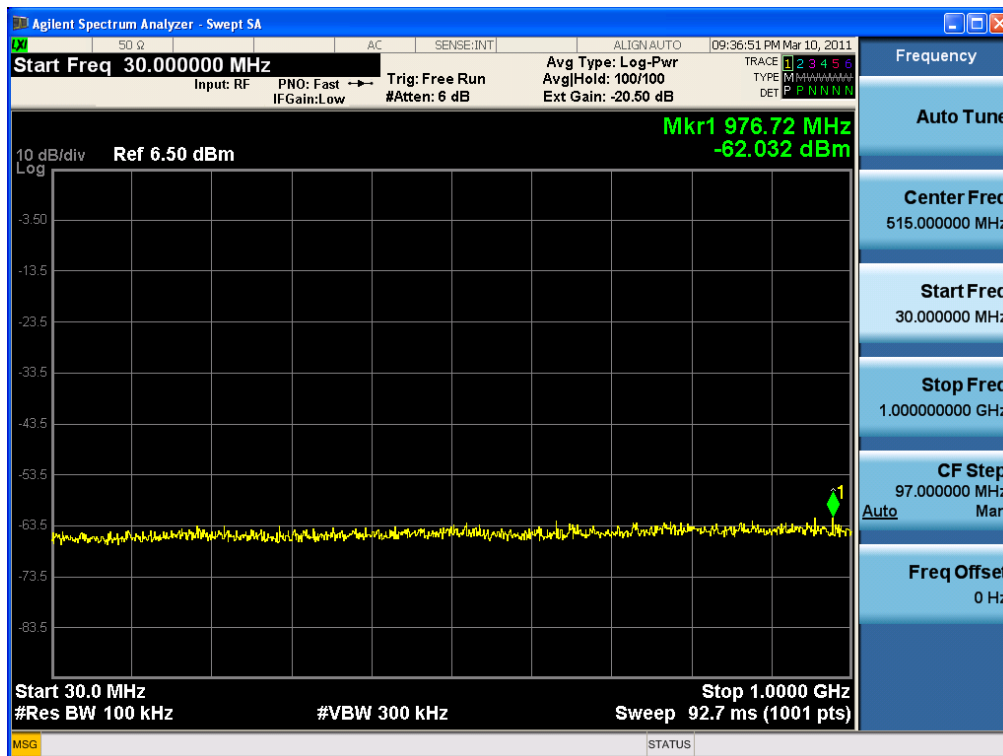
Conducted Spurious Emission (802.11g-CH11)



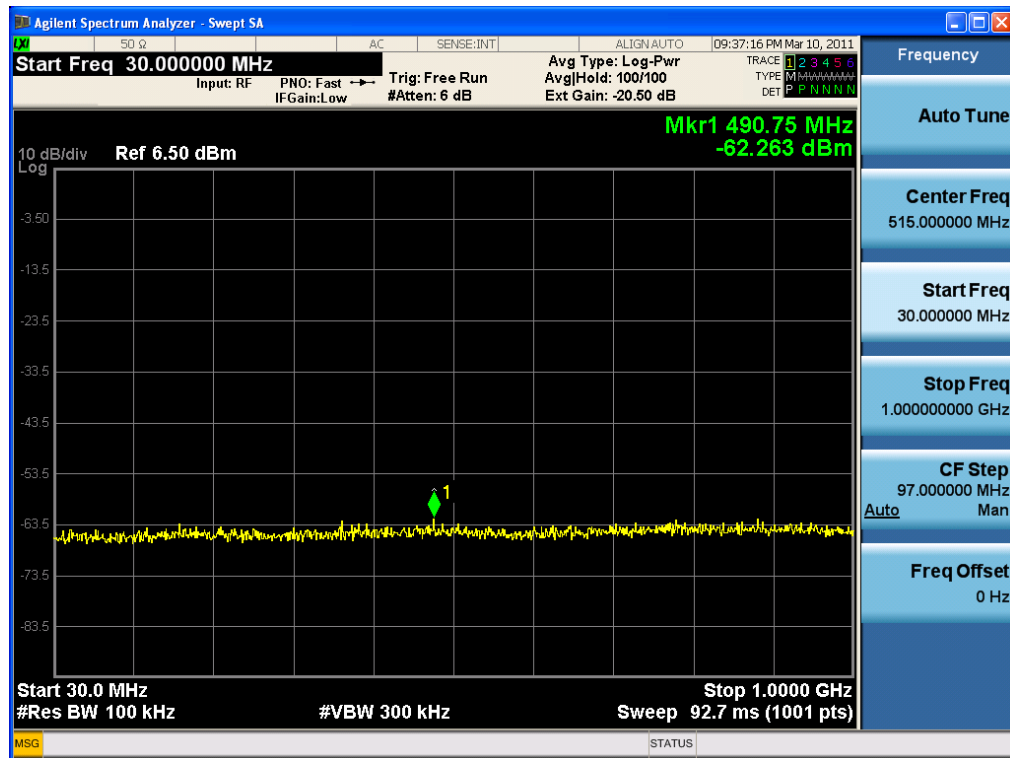
Conducted Spurious Emission (802.11n-CH1)- 20 MHz



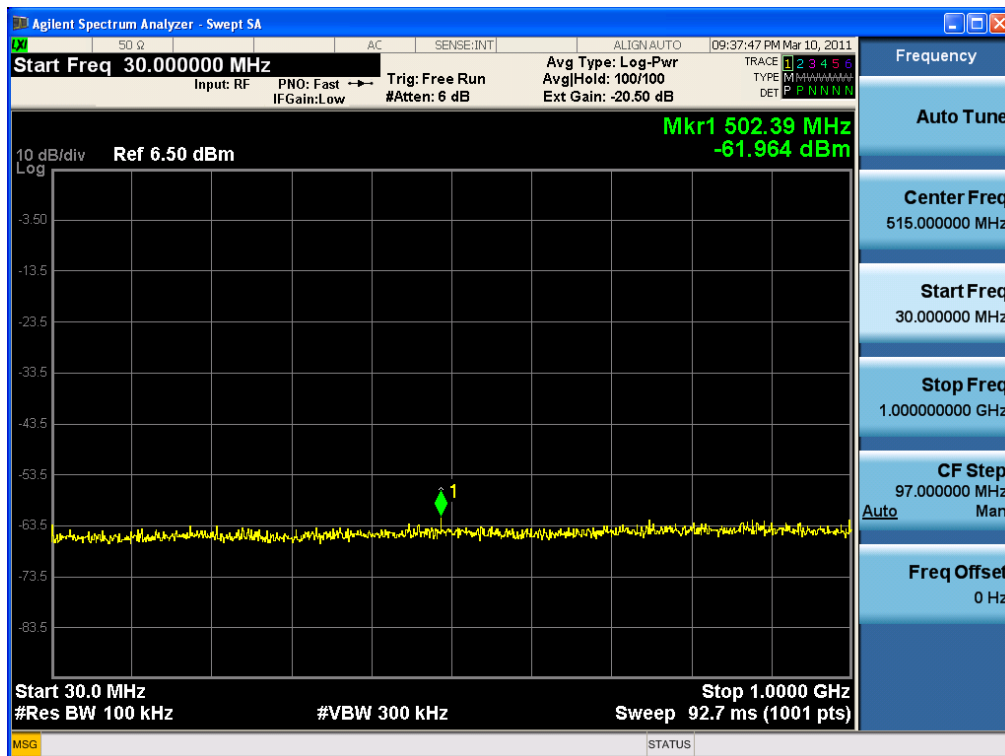
Conducted Spurious Emission (802.11n-CH6) - 20 MHz



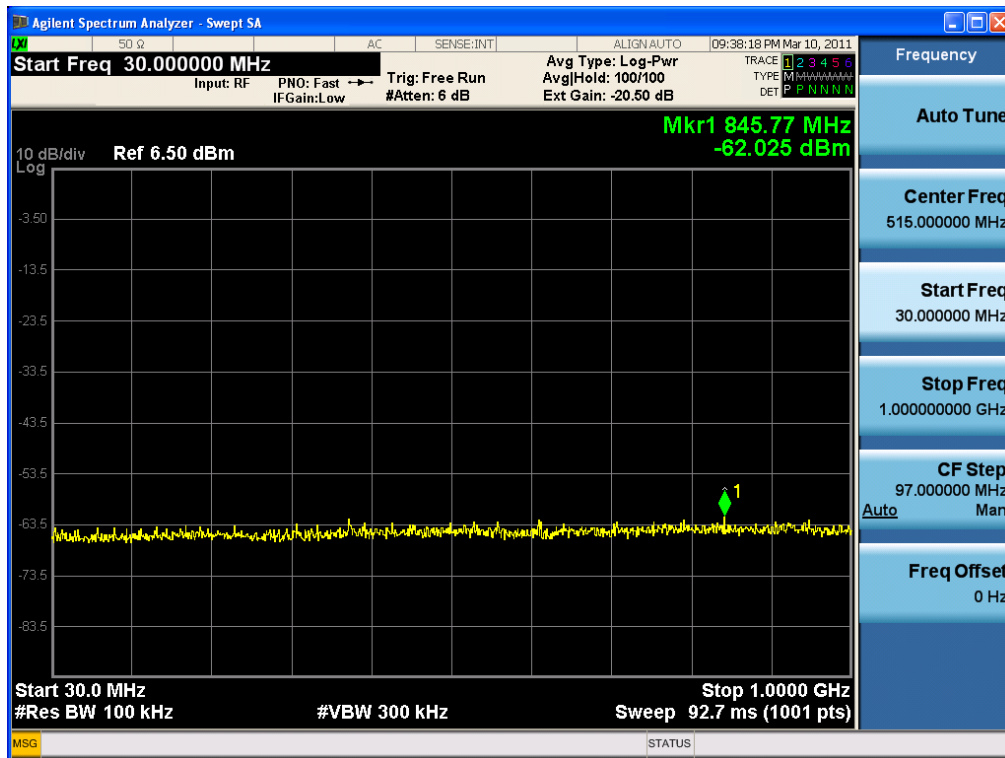
Conducted Spurious Emission (802.11n-CH11) - 20 MHz



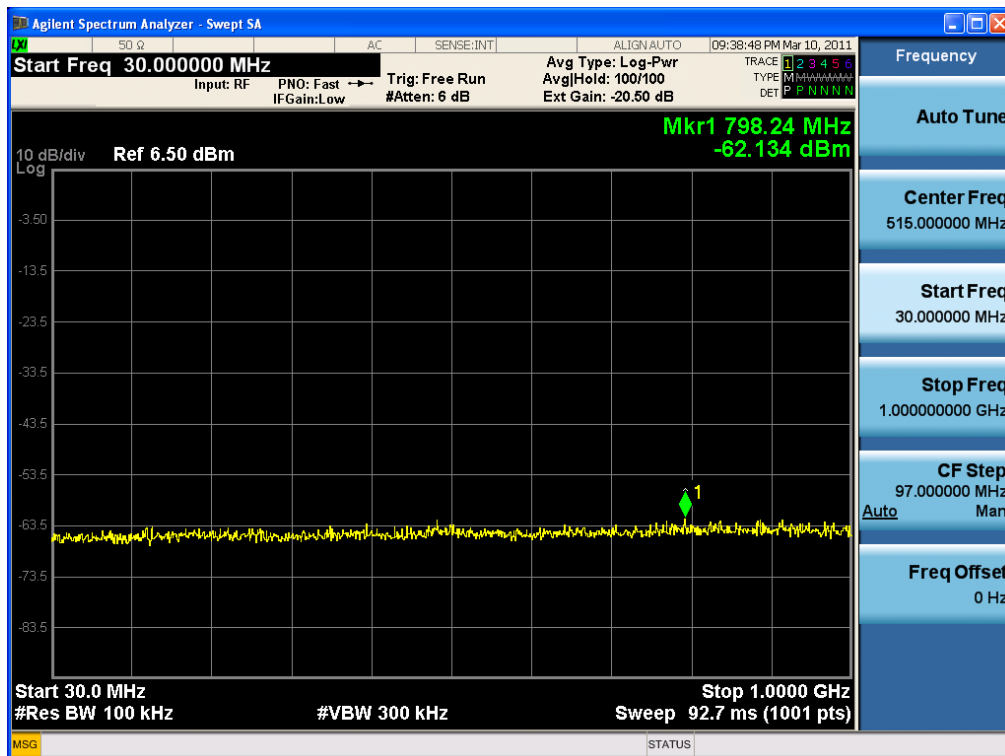
Conducted Spurious Emission (802.11n-CH1)- 40 MHz



Conducted Spurious Emission (802.11n-CH4) - 40 MHz



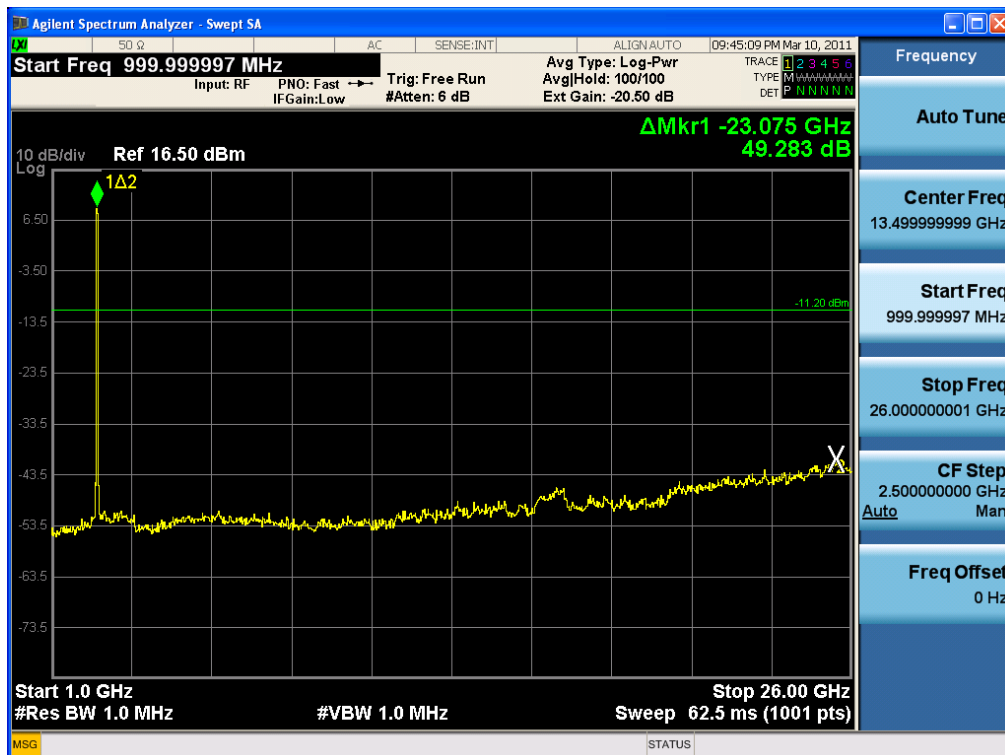
Conducted Spurious Emission (802.11n-CH7) - 40 MHz



1 GHz ~ 26 GHz
Conducted Spurious Emission (802.11b-CH1)



Conducted Spurious Emission (802.11b-CH6)



Conducted Spurious Emission (802.11b-CH11)



Conducted Spurious Emission (802.11g-CH1)



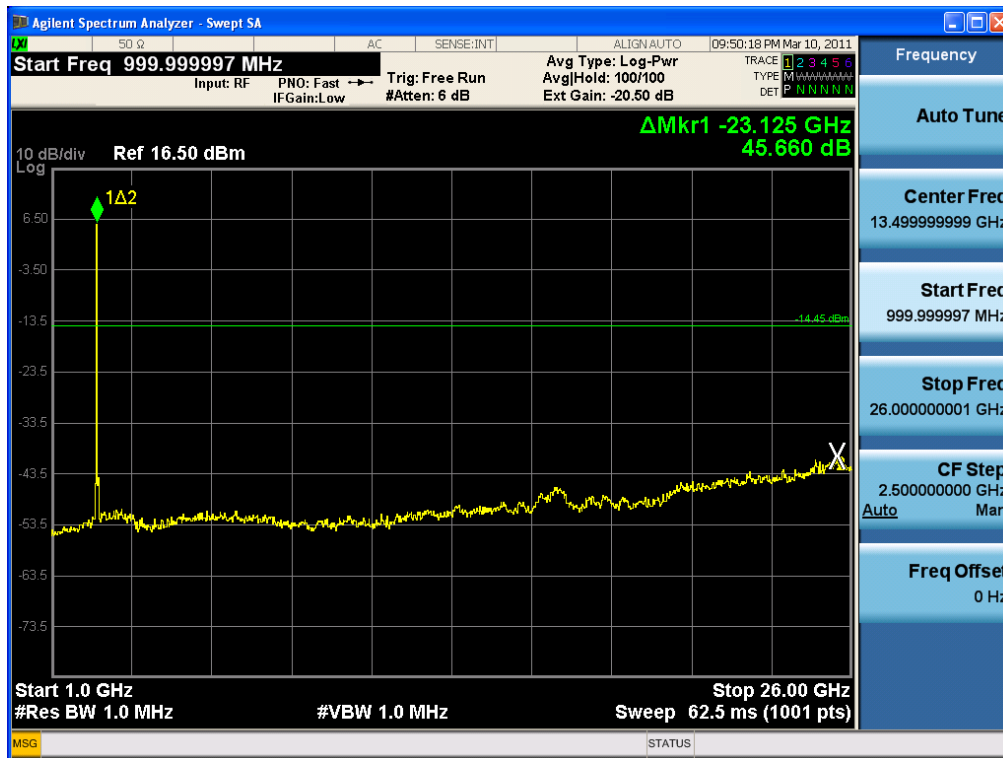
Conducted Spurious Emission (802.11g-CH6)



Conducted Spurious Emission (802.11g-CH11)



Conducted Spurious Emission (802.11n-CH1) – 20 MHz



Conducted Spurious Emission (802.11n-CH6) – 20 MHz



Conducted Spurious Emission (802.11n-CH11) – 20 MHz



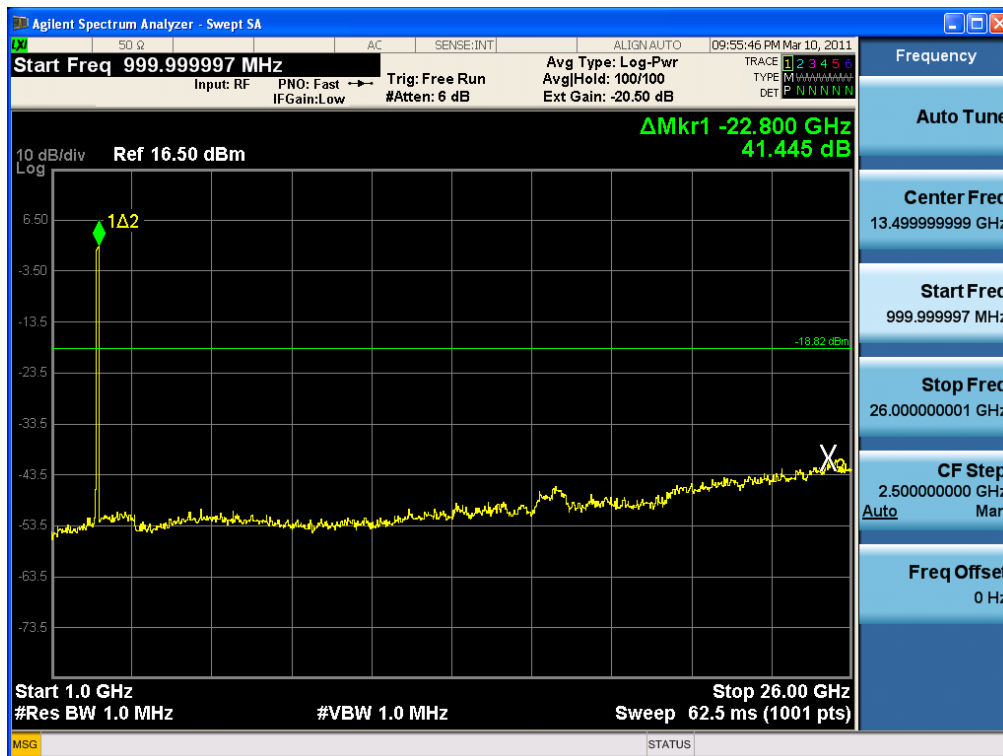
Conducted Spurious Emission (802.11n-CH1) – 40 MHz



Conducted Spurious Emission (802.11n-CH4) – 40 MHz



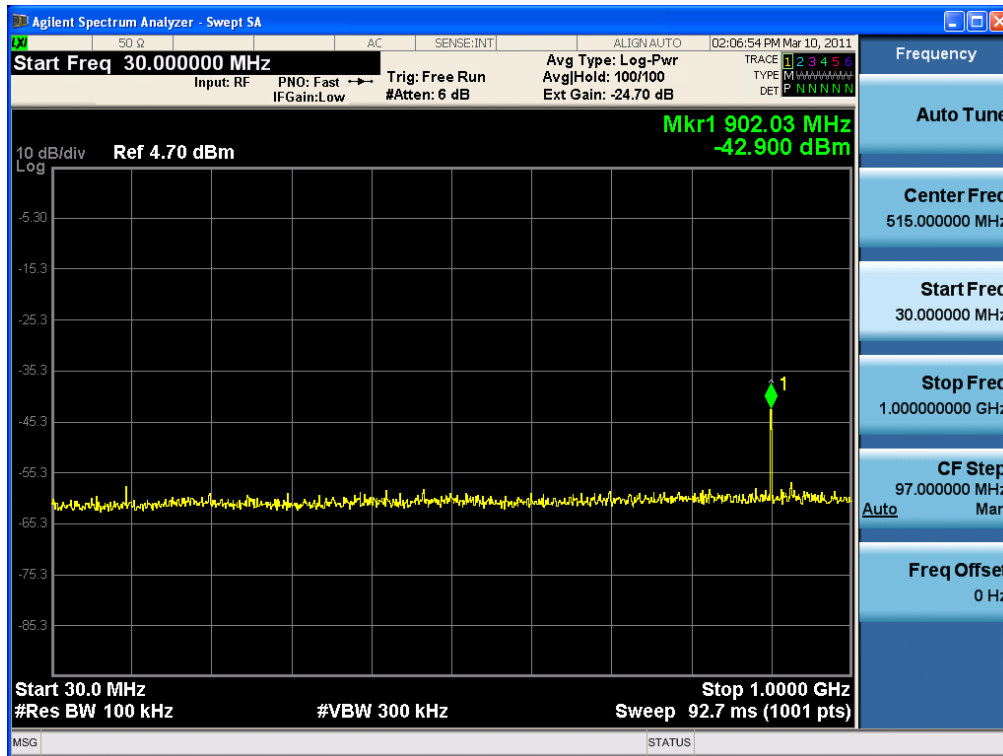
Conducted Spurious Emission (802.11n-CH7) – 40 MHz



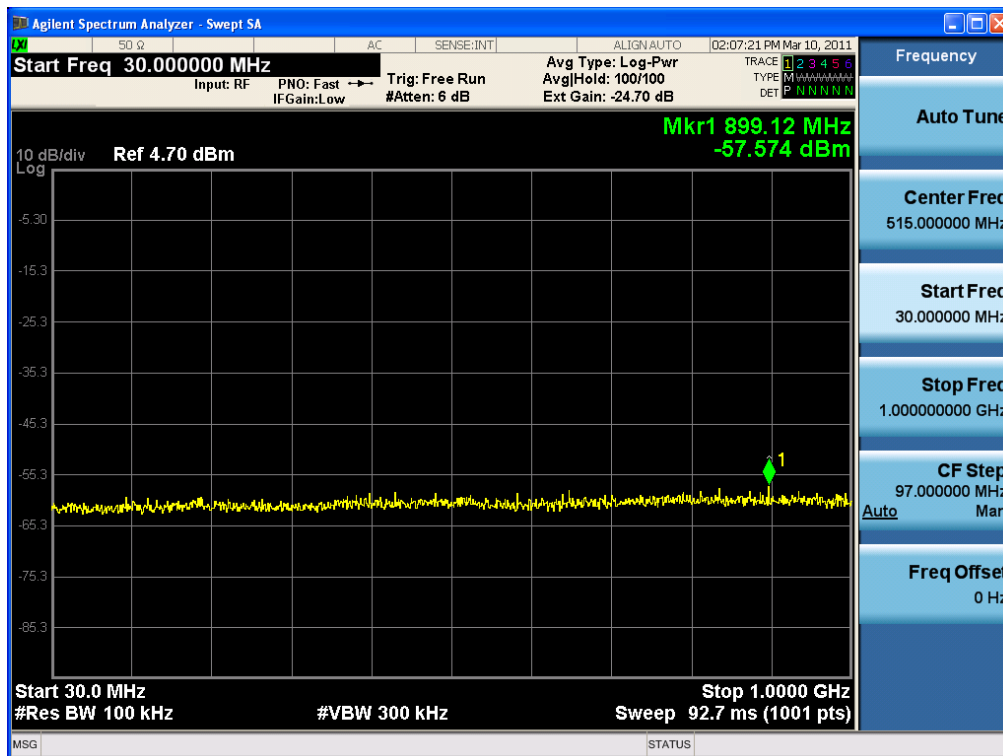
- Port 0 & 1

30 MHz ~ 1 GHz

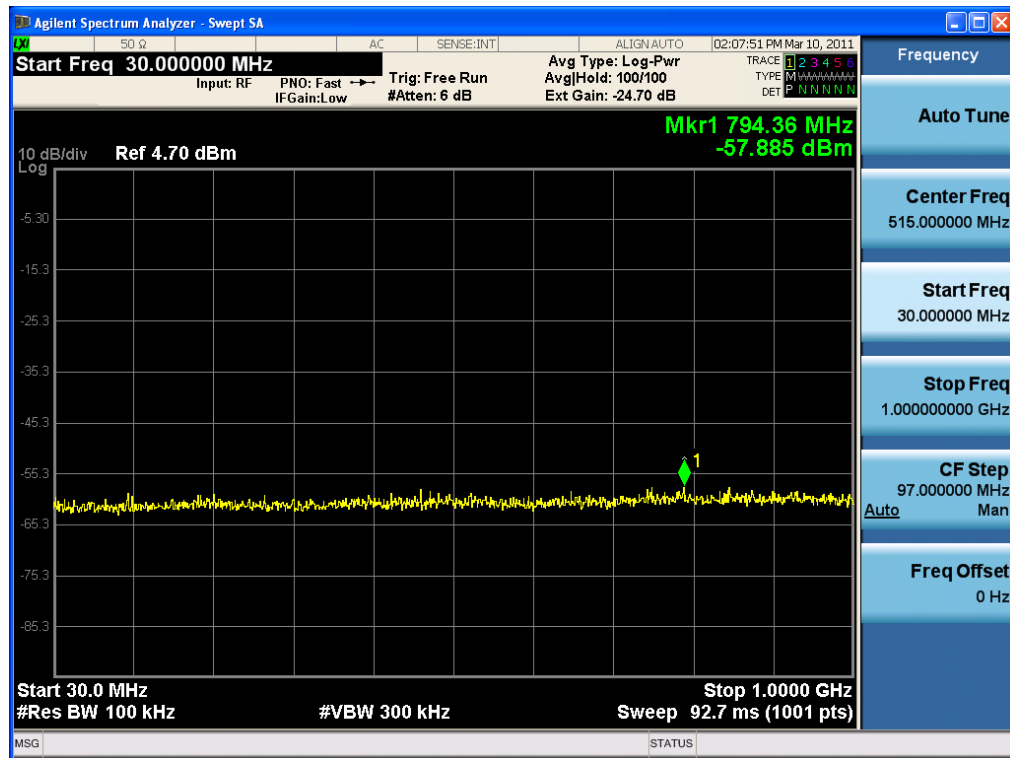
Conducted Spurious Emission (802.11n-CH1)- 20 MHz



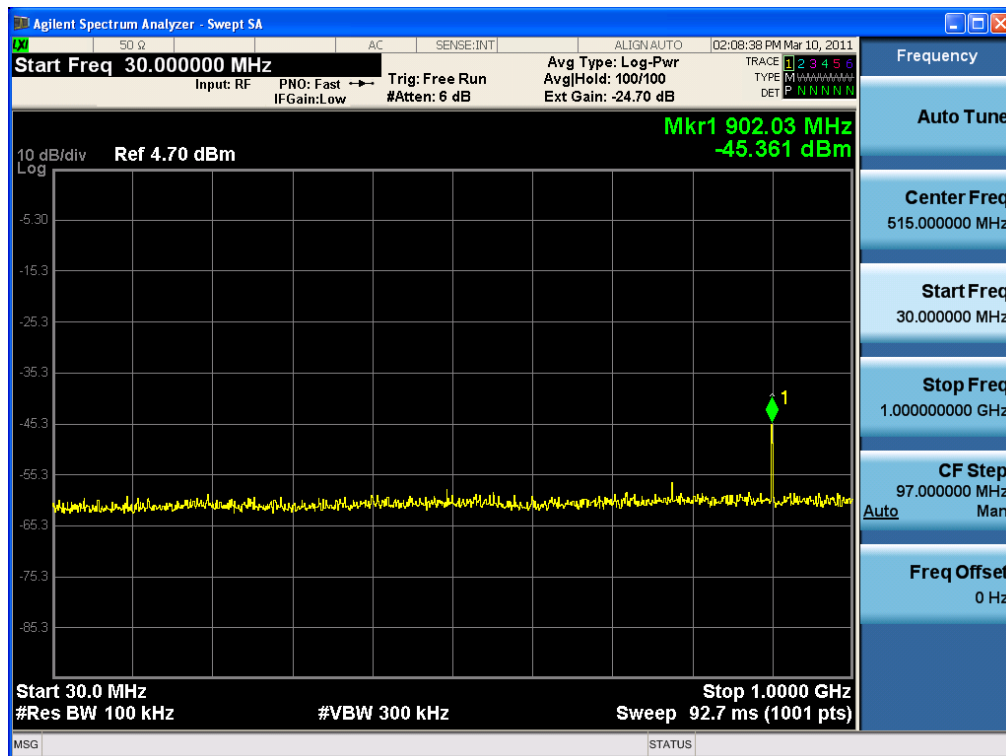
Conducted Spurious Emission (802.11n-CH6) - 20 MHz



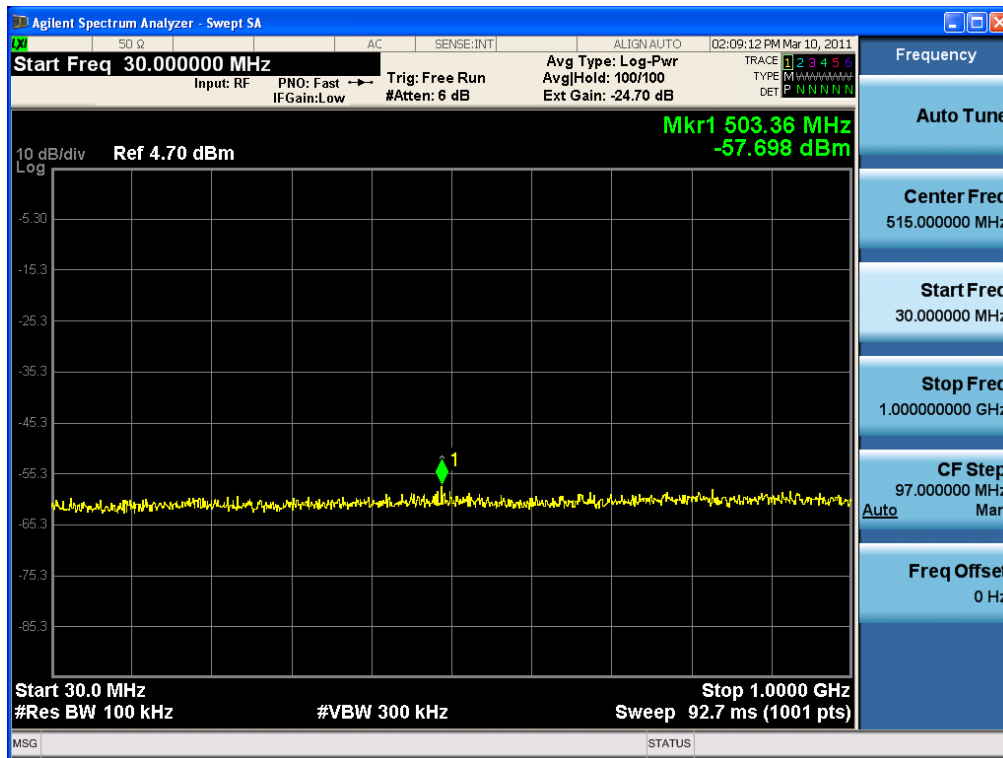
Conducted Spurious Emission (802.11n-CH11) - 20 MHz



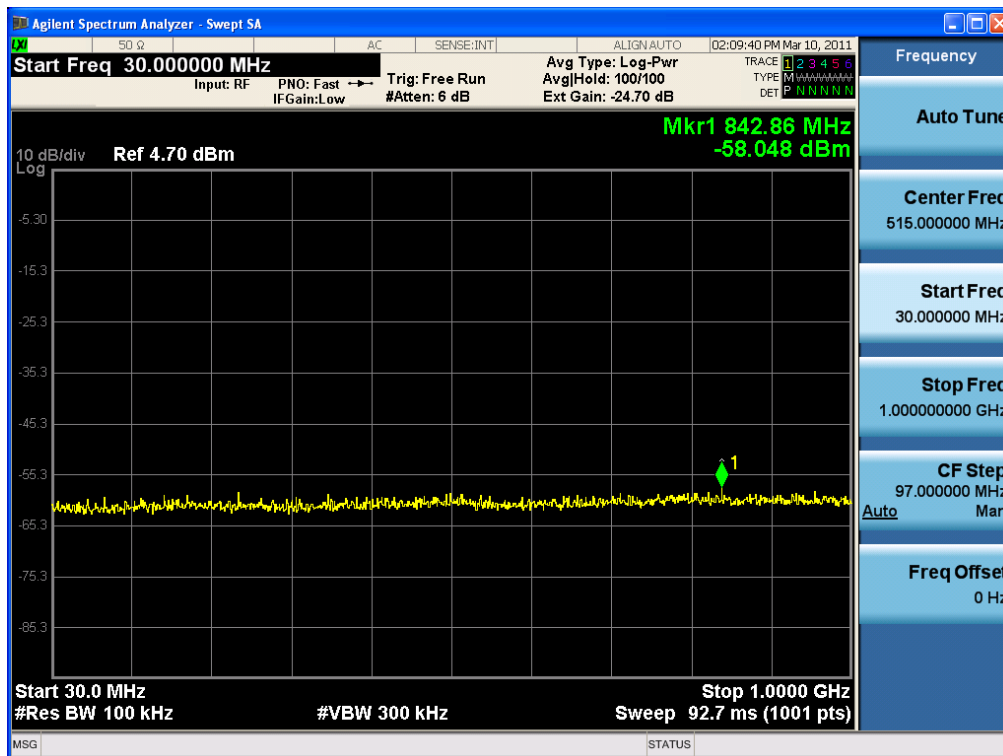
Conducted Spurious Emission (802.11n-CH1)- 40 MHz



Conducted Spurious Emission (802.11n-CH4) - 40 MHz



Conducted Spurious Emission (802.11n-CH7) - 40 MHz



1 GHz ~ 26 GHz

Conducted Spurious Emission (802.11n-CH1) – 20 MHz



Conducted Spurious Emission (802.11n-CH6) – 20 MHz



Conducted Spurious Emission (802.11n-CH11) – 20 MHz



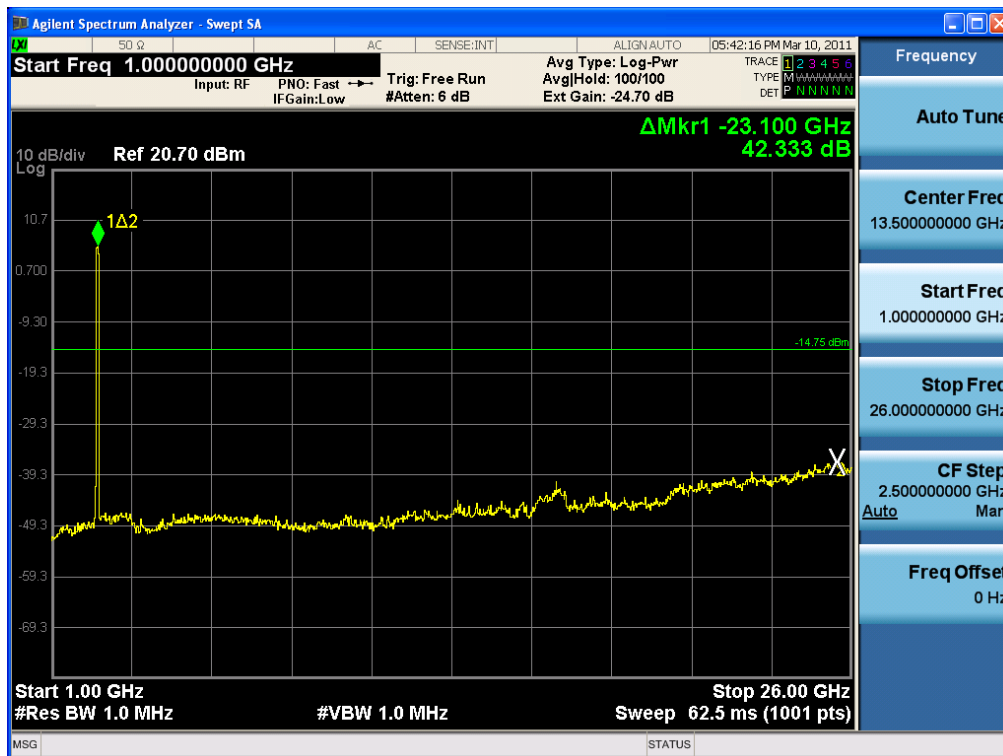
Conducted Spurious Emission (802.11n-CH1) – 40 MHz



Conducted Spurious Emission (802.11n-CH4) – 40 MHz



Conducted Spurious Emission (802.11n-CH7) – 40 MHz



7.5 RADIATED MEASUREMENT.

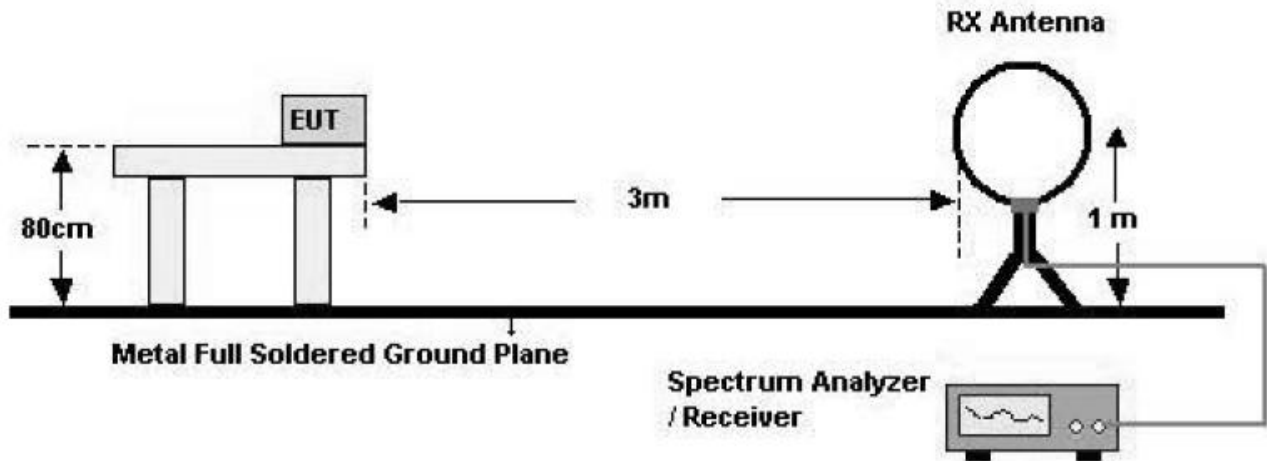
7.5.1 RADIATED SPURIOUS EMISSIONS.

Test Requirements and limit, §15.205, §15.209

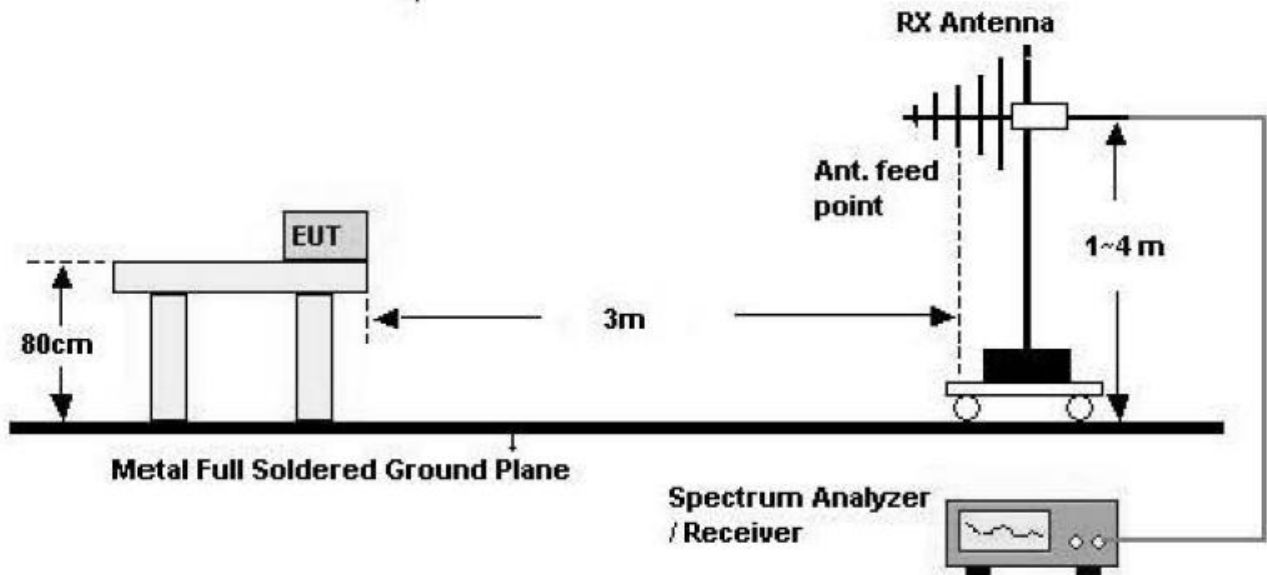
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

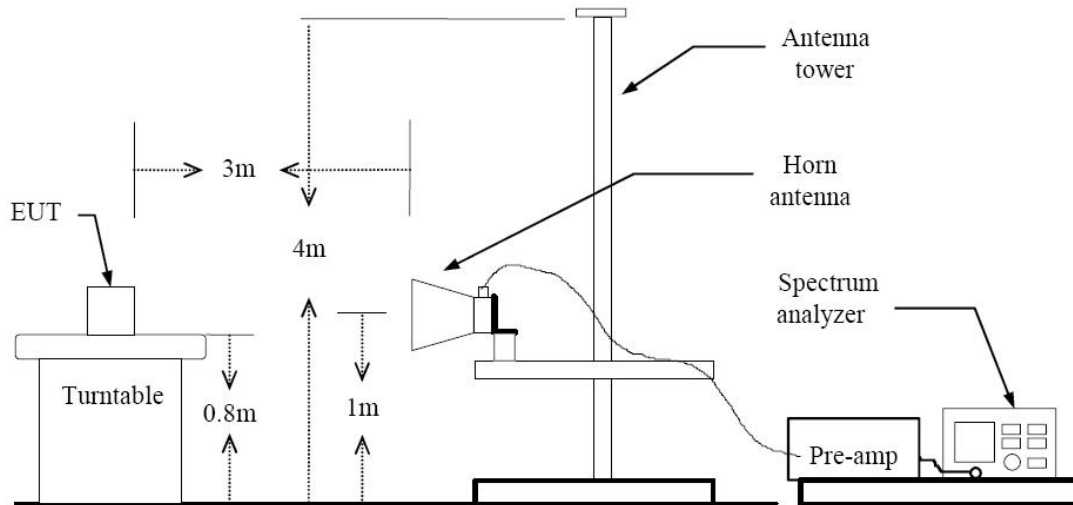
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8 m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Link

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dB μ V	dB /m	dB	(H/V)	dB μ V/m	dB μ V/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 9 kHz to the 30MHz.
2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
4. Limit line = specific Limits (dBuV) + Distance extrapolation factor

TEST RESULTS

Below 1 GHz

Operation Mode: 802.11b Mode (Channel : 11 , Data rate : 11 Mbps)

Frequency MHz	Reading dBuV	Ant. Factor dB/m	Cable Loss dB	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
95.8	28.1	8.4	1.3	V	37.8	43.5	5.7
136.0	22.0	12.4	1.4	V	35.8	43.5	7.7
180.0	26.4	11.6	1.8	V	39.8	43.5	3.7
180.0	26.4	11.6	1.8	H	39.8	43.5	3.7
200.0	28.0	9.9	1.5	V	39.4	43.5	4.1
400.0	21.5	15.6	2.6	H	39.7	46.0	6.3
800.0	14.3	22.6	3.9	H	40.8	46.0	5.2

Notes:

1. Measuring frequencies from 30 MHz to the 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
3. We have done 802.11b Mode, 802.11g and 802.11n mode test. Worst case of EUT is 11 Mbps in 802.11b Mode.

Above 1 GHz

Operation Mode:	802.11 b
Transfer Rate:	1 Mbps
Operating Frequency	2412
Channel No.	01 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP G [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4824	55.61	1.08	V	56.69	74	17.31	PK
4824	49.61	1.08	V	50.69	54	3.31	AV
7236	48.58	10.50	V	59.08	74	14.92	PK
7236	35.02	10.50	V	45.52	54	8.48	AV
4824	51.63	1.08	H	52.71	74	21.29	PK
4824	42.88	1.08	H	43.96	54	10.04	AV
7236	48.38	10.50	H	58.88	74	15.12	PK
7236	34.91	10.50	H	45.41	54	8.59	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
 - a. Peak Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
 - b. AV Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 10 Hz.
5. We have done 802.11b, 802.11g and 802.11n test. Worst case of EUT is 1 Mbps in 802.11b.

Operation Mode: 802.11 b
 Transfer Rate: 1 Mbps
 Operating Frequency: 2437
 Channel No. 06 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP G [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4874	50.34	1.46	V	51.80	74	22.20	PK
4874	40.71	1.46	V	42.17	54	11.83	AV
7311	48.68	10.32	V	59.00	74	15.00	PK
7311	34.71	10.32	V	45.03	54	8.97	AV
4874	49.53	1.46	H	50.99	74	23.01	PK
4874	38.76	1.46	H	40.22	54	13.78	AV
7311	48.77	10.32	H	59.09	74	14.91	PK
7311	35.22	10.32	H	45.54	54	8.46	AV

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
 - a. Peak Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
 - b. AV Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 10 Hz.
5. We have done 802.11b, 802.11g and 802.11n test. Worst case of EUT is 1 Mbps in 802.11b.

Operation Mode:	802.11 b
Transfer Rate:	1 Mbps
Operating Frequency	2462
Channel No.	11 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP G [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4924	53.42	1.81	V	55.23	74	18.77	PK
4924	48.25	1.81	V	50.06	54	3.94	AV
7386	49.39	11.89	V	61.27	74	12.73	PK
7386	36.10	11.89	V	47.98	54	6.02	AV
4924	51.20	1.81	H	53.01	74	20.99	PK
4924	42.03	1.81	H	43.84	54	10.16	AV
7386	49.97	11.89	H	61.85	74	12.15	PK
7386	36.25	11.89	H	48.13	54	5.87	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
 - a. Peak Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 1 MH.
 - b. AV Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 10 Hz.
5. We have done 802.11b, 802.11g and 802.11n test. Worst case of EUT is 1 Mbps in 802.11b.

7.5.2 RADIATED RESTRICTED BAND EDGE MEASUREMENTS

Test Requirements and limit, §15.247(d) §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c)).

Operation Mode:	802.11 n_20 MHz
Transfer Rate:	6.5 Mbps
Operating Frequency	2412 MHz, 2462 MHz
Channel No.	01 Ch, 11 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-AMP G [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	31.37	37.52	H	68.89	74	5.11	PK
2390.0	13.34	37.52	H	50.86	54	3.14	AV
2390.0	21.50	37.52	V	59.02	74	14.98	PK
2390.0	9.09	37.52	V	46.61	54	7.39	AV
2483.5	18.67	39.69	H	58.36	74	15.64	PK
2483.5	6.06	39.69	H	45.75	54	8.25	AV
2483.5	19.73	39.69	V	59.42	74	14.58	PK
2483.5	6.13	39.69	V	45.82	54	8.18	AV

Notes:

- Spectrum setting:
 - Peak Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
 - AV Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 10 Hz.
- We have done all data rate in 802.11b, 802.11g and 802.11n test. Worst case of EUT is 6.5 Mbps in 802.11n_20 MHz.

7.6 POWERLINE CONDUCTED EMISSIONS

Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference groundplane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

RESULT PLOTS

Conducted Emissions (Line 1)

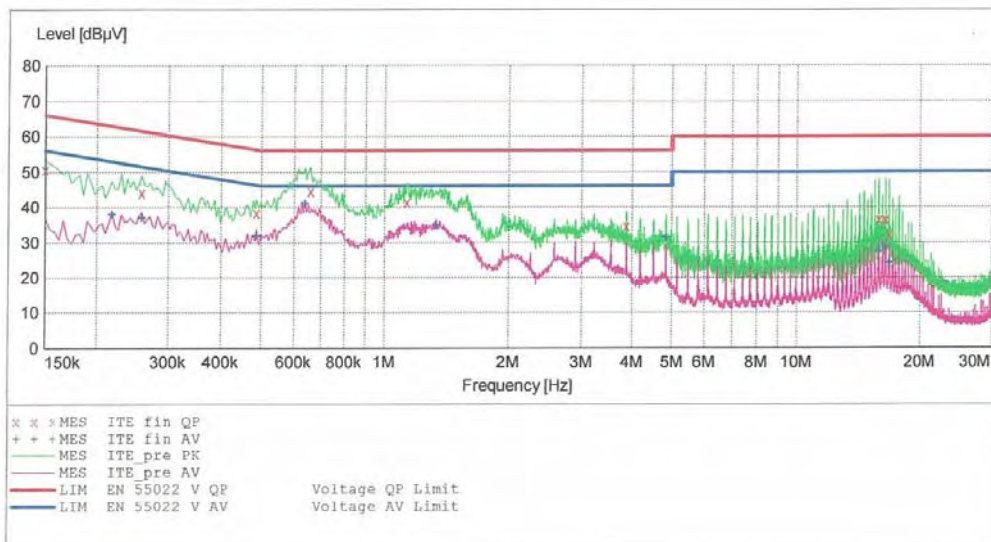
HCT

EMC

EUT: JFW-600
 Manufacturer: JUNI KOREA
 Operating Condition: WLAN MODE
 Test Site: SHIELD ROOM
 Operator: JC SHIN
 Test Specification: CISPR22 CLASS B
 Comment: H

SCAN TABLE: "CISPR22 CLASS B"

Short Description:				CISPR 22 CLASS B			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer	
Frequency	Frequency	Width					
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				



MEASUREMENT RESULT: "ITE_fin QP"

3/24/2011 10:51AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.150010	50.70	10.3	66	15.3	---	---
0.258010	44.10	10.3	62	17.4	---	---
0.486010	38.50	10.3	56	17.7	---	---
0.660000	44.50	10.4	56	11.5	---	---
1.136000	41.50	10.4	56	14.5	---	---
3.872000	34.60	10.6	56	21.4	---	---
15.800000	36.50	11.4	60	23.5	---	---
16.444000	36.40	11.5	60	23.6	---	---
16.768000	32.30	11.5	60	27.7	---	---

MEASUREMENT RESULT: "ITE_fin AV"

3/24/2011 10:51AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.218010	38.00	10.3	53	14.8	---	---
0.258010	36.90	10.3	52	14.6	---	---
0.486010	31.80	10.3	46	14.4	---	---
0.640000	41.10	10.3	46	4.9	---	---
1.340000	34.70	10.4	46	11.3	---	---
4.840000	31.50	10.7	46	14.5	---	---
15.800000	27.30	11.4	50	22.7	---	---
16.444000	28.60	11.5	50	21.4	---	---
16.768000	24.20	11.5	50	25.8	---	---

Conducted Emissions (Line 2)

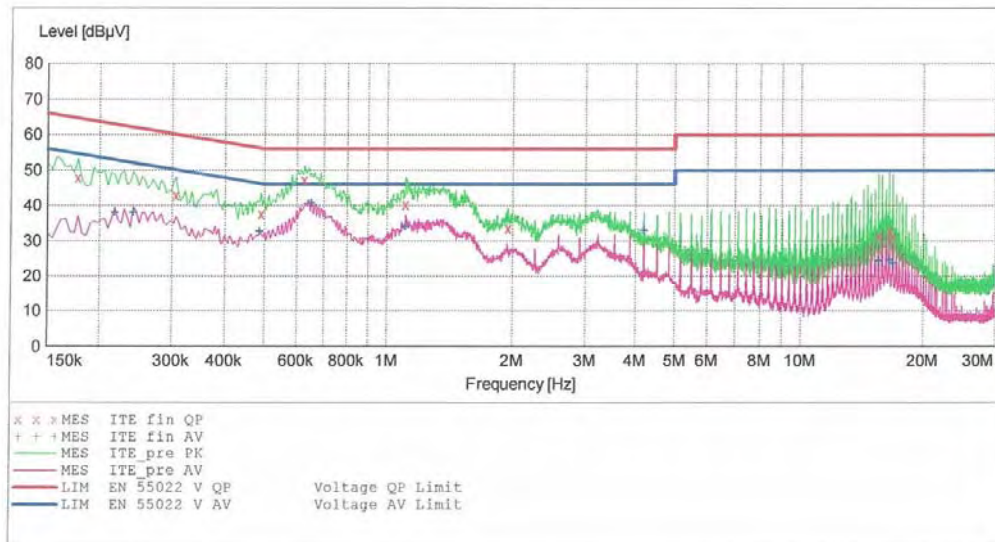
HCT

EMC

EUT: JFW-600
 Manufacturer: JUNI KOREA
 Operating Condition: WLAN MODE
 Test Site: SHIELD ROOM
 Operator: JC SHIN
 Test Specification: CISPR22 CLASS B
 Comment: N

SCAN TABLE: "CISPR22 CLASS B"

Short Description:			CISPR 22 CLASS B			
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			



MEASUREMENT RESULT: "ITE_fin QP"

3/24/2011 10:48AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.178010	47.90	10.3	65	16.7	---	---
0.306010	42.90	10.3	60	17.2	---	---
0.490010	37.80	10.3	56	18.3	---	---
0.628000	47.40	10.3	56	8.6	---	---
1.112000	40.40	10.4	56	15.6	---	---
1.952000	33.60	10.4	56	22.4	---	---
15.512000	31.50	11.4	60	28.5	---	---
16.480000	33.10	11.5	60	26.9	---	---
16.804000	31.30	11.5	60	28.7	---	---

MEASUREMENT RESULT: "ITE_fin AV"

3/24/2011 10:48AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.218010	38.00	10.3	53	14.9	---	---
0.242010	38.00	10.3	52	14.0	---	---
0.486010	32.80	10.3	46	13.5	---	---
0.652000	40.80	10.3	46	5.2	---	---
1.112000	34.10	10.4	46	11.9	---	---
4.204000	33.10	10.6	46	12.9	---	---
15.512000	24.40	11.4	50	25.6	---	---
16.480000	24.70	11.5	50	25.3	---	---
16.804000	23.70	11.5	50	26.3	---	---

8. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ESH2-Z5/ LISN	Annual	02/01/2012	861741/013
Schwarzbeck	VULB 9160/ TRILOG Antenna	Biennial	07/15/2012	9160-3150
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	ESH3-Z2/ PULSE LIMITER	Annual	10/25/2011	375.8810.352
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/29/2011	10094
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	09/23/2011	296
Rohde & Schwarz	FSP30 / Spectrum Analyzer	Annual	03/23/2012	839117/011
Agilent	E4440A / Spectrum Analyzer	Annual	06/09/2011	US45303008
Agilent	N9020A / MXA Signal Analyzer	Annual	03/03/2012	US46220219
Agilent	E4416A /Power Meter	Annual	01/04/2012	GB41291412
Agilent	E9327A /POWER SENSOR	Annual	07/23/2011	MY4442009
Wainwright Instrument	WHF3.3/18G-10EF / High Pass Filter	Annual	06/25/2011	1
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	Annual	07/23/2011	1
Hewlett Packard	11636B/Power Divider	Annual	12/29/2011	11377
Hewlett Packard	11667B / Power Splitter	Annual	11/08/2011	10126
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	01/04/2012	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	12/01/2011	010002156287001199
TESCOM	TC-3000A / BLUETOOTH TESTER	Annual	01/10/2012	3000A490112
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	06/24/2011	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/13/2012	9009-2536