Lab Code: 200167-0

FCC PART 15.407
IC RSS-210, ISSUE 8, DEC 2010
TEST AND MEASUREMENT REPORT

For

DFINE Technology Co., Ltd.

Building A2, Tianfu Software Park, Hi-tech Zone, South Extension of Tianfu Wide Road,

Chengdu, Sichuan, China

FCC ID:Y48TNV-W207
IC: 9679A-TNVW207

Report Type:	**Product Type:**
Original Report	Video Transceiver

Test Engineers:	Quinn Jiang
Report Number:	R1111023-407
Report Date:	2012-04-27
Reviewed By:	Victor Zhang RF/EMC Lead
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1111023-407	Original Report	2012-04-27

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test and measurement report was prepared on behalf of *DFINE Technology Co., Ltd.* and their product, *model: JDMWH200AA, FCC ID: Y48TNV-W207, IC: 9679A-TNVW207* or the "EUT" as referred to this report. The EUT is a video Transceiver with MIMO function that operates in the 4.9~5.9 GHz band.

There is shielding DFS function and the EUT can only operate in four channels (5190 MHz, 5230 MHz, 5755 MHz and 5795 MHz).

1.2 Mechanical Description of EUT

The EUT measures approximately 9 cm **(L)** x 3.5 cm **(W)** x 1.5 cm **(H)** and weighs approximately 27.5 g.

The data gathered are from a typical production sample with serial 11090033, provided by the manufacture.

1.3 Objective

This report is prepared on behalf of *DFINE Technology Co., Ltd.* in accordance with Part 2, Subpart J, and Part 15C and 15E of the Federal Communication Commissions rules and IC RSS-210, Issue 8, Dec 2010.

The objective is to determine compliance with FCC Part 15.407 and IC RSS-210 rules for Output Power, 26 dB Emission Bandwidth, Power Spectral Density, Conducted and Radiated Spurious Emission.

1.4 Related Submittal(s)/Grant(s)

N/A

1.5 Test Methodology

FCC Part 2, Part 15.407 and RSS-210, Issue 8, Dec 2010, ANSI C63.4-2003 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR16-4-2:2003, The Treatment of Uncertainty in EMC Measurements, the values ranging from $\pm$2.0 dB for Conducted Emissions tests and $\pm$4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory, Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

1.7 Test Facility

The test site used by BACL Corp. to collect radiated and conducted emissions measurement data is located at its facility in Sunnyvale, California, USA.

The test site at BACL Corp. has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997, and Article 8 of the VCCI regulations on December 25, 1997. The test site also complies with the test methods and procedures set forth in CISPR 22:2005 + A1:2005 + A2:2006 §10.4 for measurements below 1 GHz and §10.6 for measurements above 1 GHz. The facility also complies with the test methods and procedures set forth in ANSI C63.4-2003 & TIA/EIA-603.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and they are listed under FCC registration number: 90464 and VCCI Registration No.: R-3729, C-4176, G-469, and T-1206. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL Corp. is a National Institute of Standards and Technology (NIST) accredited laboratory under the National Voluntary Laboratory Accredited Program (Lab Code 200167-0). The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2001670.htm

2 EUT Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.4-2003.

The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

2.2 EUT Exercise Software

The software used, Appcom 3.03.16 was provided by client and verified by Quinn Jiang to comply with the standard requirements being tested against.

2.3 Special Accessories

N/A

2.4 Equipment Modifications

No modifications were made to the EUT.

2.5 Local Support Equipment

Manufacturer	Description	Model No.	Serial No.
DELL	Laptop	Latitude D600	H28PP31
Lenovo	Laptop	G560	-

2.6 Power Supply and Line Filters

Manufacturer	Description	Model	Serial Number
-	-	-	-[1]

- **Note:** [1]*EUT was powered by an USB cable*

2.7 Interface Ports and Cabling

Cable Description	Length (m)	From	To
RS232	< 1	Laptop	Configure Board
Interface cable	< 1	EUT	Configure Board
RF Cable	< 1	EUT	Spectrum Analyzer

3 Summary of Test Results

FCC & IC Rules	Description of Test	Results
FCC §15.407(f), §2.1093 IC RSS-102	RF Exposure	Compliant
FCC §15.203 IC RSS-Gen §7.1.2	Antenna Requirement	Compliant
FCC §15.207 IC RSS-Gen §7.2.4	Conducted Emissions	Compliant
FCC §15.209(a), §15.407(b) IC RSS-210 §A9.2	Spurious Radiated Emissions	Compliant
FCC §15.407(a) IC RSS-210 §A9.2	26 dB and 99% Emission Bandwidth	Compliant
FCC §407(a) IC RSS-210 §A9.2	Peak Output Power Measurement	Compliant
FCC §2.1051, §15.407(b) IC RSS-210 §A9.3	Band Edges	Compliant
FCC §15.407(a)(1), (a)(2) IC RSS-210 §A9.2	Power Spectral Density	Compliant
IC RSS-210 §2.3 & RSS-Gen §6	Receiver Spurious Radiated Emissions	Compliant
FCC §15.407(a) (6)	Peak Excursion Ratio	Compliant
FCC §2.1051, §15.407(b) IC RSS-210 §A9.2	Spurious Emissions at Antenna Terminals	Compliant

4 FCC §15.407(f), §2.1093 & IC RSS-102 - RF Exposure

4.1 Applicable Standards

According to FCC §15.407(f) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to RSS 102 §2.5.1:

SAR evaluation is required if the separation distance between the user and the radiating element of the device is less than or equal to 20 cm, except when the device operates as follows:

- above 3 GHz and up to 6 GHz inclusively, and with output power (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 10 mW for general public use and 50 mW for controlled use.

4.2 Test Results

Please refer to SAR evaluation report: R1111023-SAR.

5 FCC §15.203 & IC RSS-Gen §7.1.2 – Antenna Requirements

5.1 Applicable Standard

According to FCC §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to FCC §15.247 (b)(4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

As per IC RSS-Gen §7.1.2: Transmitter Antenna
A transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power before using the power limits specified in RSS-210 or RSS-310 for devices of RF output powers of 10 milliwatts or less. For devices of output powers greater than 10 milliwatts, except devices subject to RSS-210 Annex 8 (Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands) or RSS-210 Annex 9 (Local Area Network Devices), the total antenna gain shall be added to the measured RF output power before using the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

The maximum antenna gain is 2 dBi

Antennas

6 FCC §15.207 & IC RSS-Gen §7.2.4 – Power Line Conducted Emissions

6.1 Applicable Standards

As per FCC §15.207 and IC RSS-Gen §7.2.4 Conducted limits:

For an intentional radiator that 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 the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46*
0.5-5	56	46
5-30	60	50

*Note: * Decreases with the logarithm of the frequency.*

6.2 Test Setup

The measurement was performed at shield room, using the setup per ANSI C63.4-2003 measurement procedure. The specification used was FCC §15.207 and IC RSS-Gen §7.2.2 limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The AC/DC power adapter of the EUT was connected with LISN-1 which provided 120 V / 60 Hz AC power.

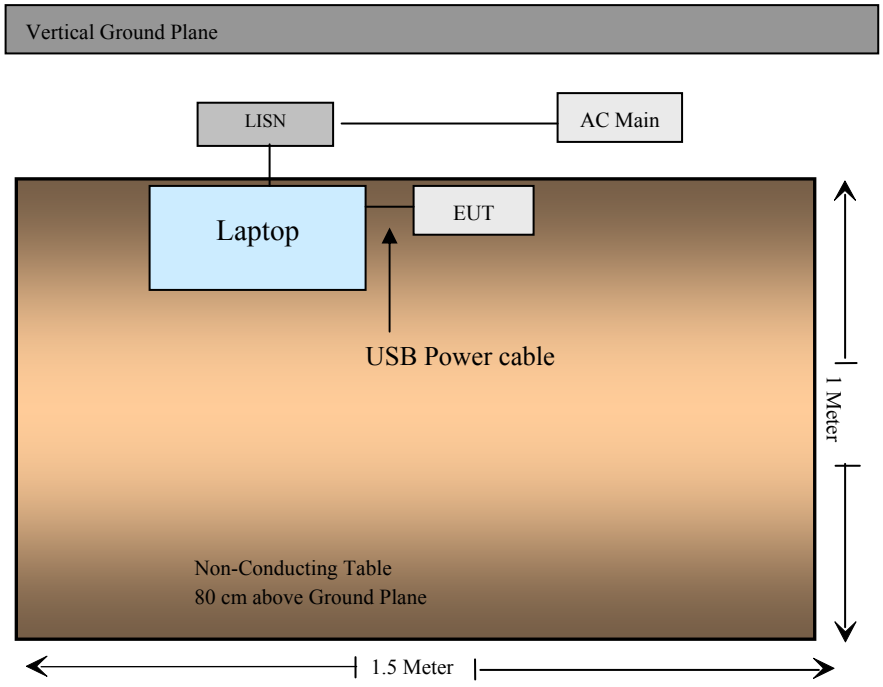
6.3 Test Procedure

During the conducted emissions test, the power cord of the EUT host system was connected to the mains outlet of the LISN-2.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the peak detection mode, quasi-peak and average. Quasi-Peak readings are distinguished with a “QP.” Average readings are distinguished with an “Ave”.

6.4 Test Setup Block Diagram



6.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Cable Loss (CL), the Attenuator Factor (Atten) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + CL + Atten

For example, a corrected amplitude of 46.2 dBuV = Indicated Reading (32.5 dBuV) + Cable Loss (3.7 dB) + Attenuator (10 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude - Limit

6.6 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100044	2011-04-14
Solar Electronics	LISN	9252-R-24-BNC	511205	2011-06-25
TTE	Filter, High Pass	H9962-150K-50-21378	K7133	2011-06-10

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.*

6.7 Test Environmental Conditions

Temperature:	22~24 °C
Relative Humidity:	45 %
ATM Pressure:	101.2 kPa

The testing was performed by Quinn Jiang on 2012-01-19 in 5 meter chamber 3.

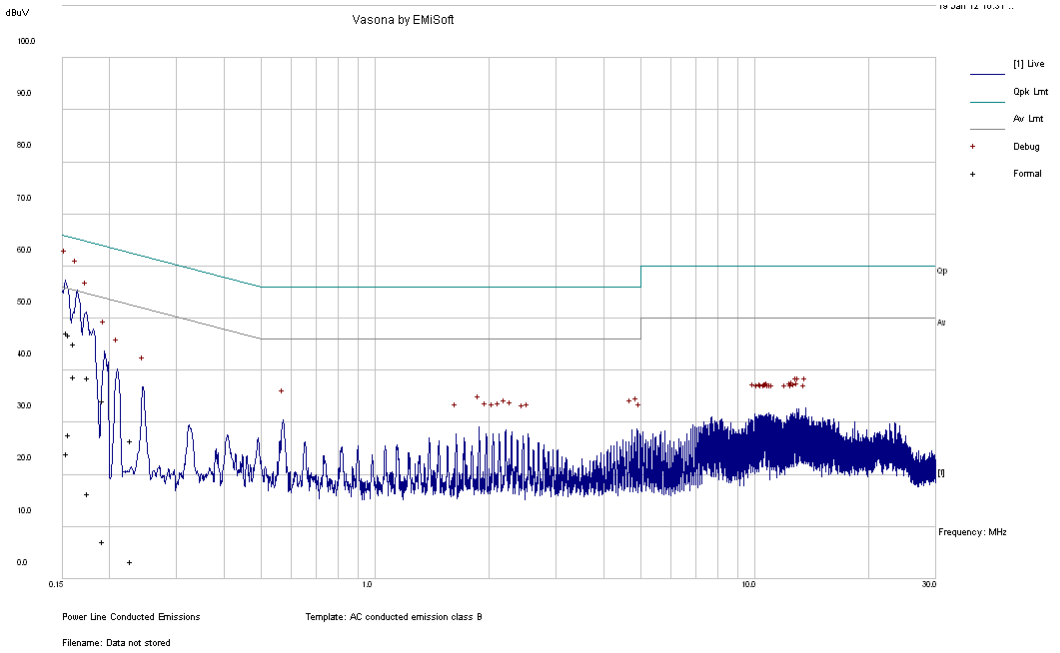
6.8 Summary of Test Results

According to the recorded data in following table, the EUT complied with the FCC/IC standard's conducted emissions limits, with the margin reading of:

Connection: 120 V/60 Hz, AC			
Margin (dB)	**Frequency (MHz)**	**Conductor (Line/Neutral)**	**Range (MHz)**
-12.83	0.163509	Neutral	0.15 to 30

6.9 Conducted Emissions Test Plots and Data

5.2 GHz - 120 V/60 Hz – Line



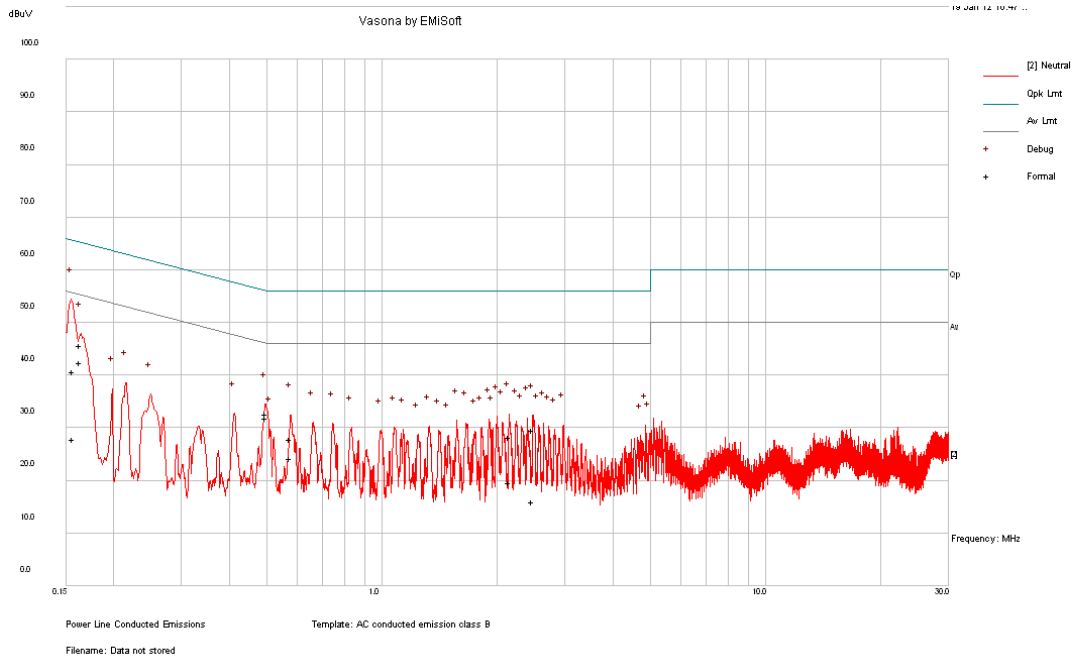
Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.154905	47.18	Line	65.73	-18.55
0.156759	46.91	Line	65.63	-18.72
0.161805	45.18	Line	65.37	-20.2
0.175977	38.68	Line	64.67	-25.99
0.193008	34.19	Line	63.91	-29.71
0.22794	26.63	Line	62.52	-35.9

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.154905	24.11	Line	55.73	-31.62
0.156759	27.73	Line	55.63	-27.9
0.161805	38.76	Line	55.37	-16.61
0.175977	16.3	Line	54.67	-38.38
0.193008	7.21	Line	53.91	-46.7
0.22794	3.37	Line	52.52	-49.15

5.2 GHz - 120 V/60 Hz – Neutral



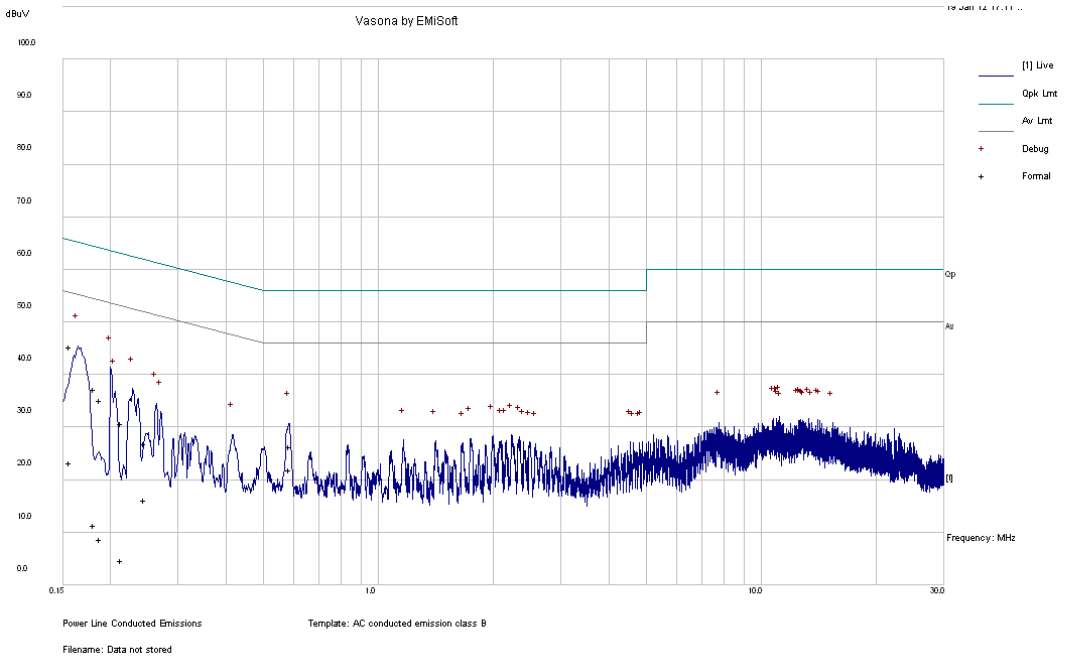
Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.157221	40.69	Neutral	65.61	-24.92
0.163509	45.77	Neutral	65.28	-19.52
0.498285	32.66	Neutral	56.03	-23.36
2.144678	28.35	Neutral	56	-27.65
0.578139	27.92	Neutral	56	-28.08
2.473681	29.51	Neutral	56	-26.49

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.157221	27.96	Neutral	55.61	-27.65
0.163509	42.45	Neutral	55.28	-12.83
0.498285	31.98	Neutral	46.03	-14.04
2.144678	19.62	Neutral	46	-26.38
0.578139	24.32	Neutral	46	-21.68
2.473681	16.08	Neutral	46	-29.92

5.8 GHz - 120 V/60 Hz – Line



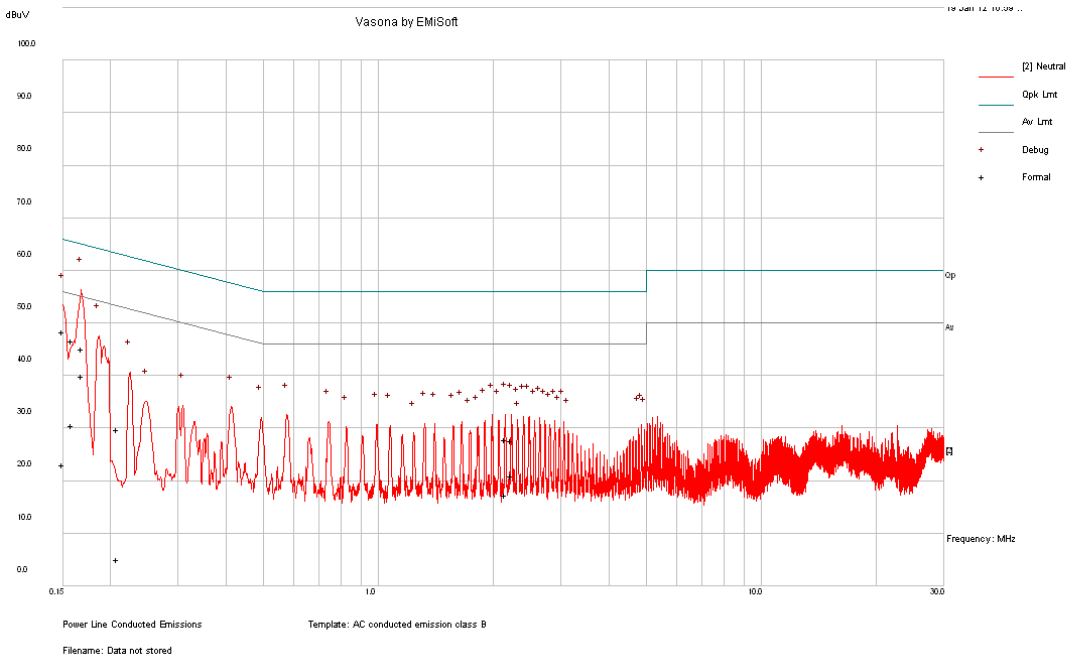
Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.157209	45.37	Line	65.61	-20.24
0.181719	37.31	Line	64.41	-27.09
0.213414	30.67	Line	63.07	-32.4
0.587484	26.33	Line	56	-29.67
0.187839	35.15	Line	64.13	-28.99
0.245631	26.97	Line	61.9	-34.93

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.157209	23.26	Line	55.61	-32.35
0.181719	11.37	Line	54.41	-43.04
0.213414	4.74	Line	53.07	-48.33
0.587484	22.02	Line	46	-23.98
0.187839	8.73	Line	54.13	-45.4
0.245631	16.22	Line	51.9	-35.68

5.8 GHz - 120 V/60 Hz – Neutral



Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.158331	46.62	Neutral	65.55	-18.93
0.150059	48.4	Neutral	66	-17.6
0.169161	45.09	Neutral	65	-19.91
0.208116	29.73	Neutral	63.28	-33.55
2.144559	27.82	Neutral	56	-28.18
2.230363	27.66	Neutral	56	-28.34

Average Measurements

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)
0.158331	30.47	Neutral	55.55	-25.08
0.150059	23.09	Neutral	56	-32.9
0.169161	39.95	Neutral	55	-15.05
0.208116	5.02	Neutral	53.28	-48.26
2.144559	17.42	Neutral	46	-28.58
2.230363	20.99	Neutral	46	-25.01

7 FCC §15.209 (a), §15.407(b) & IC RSS-210 §A9.2 – Spurious Radiated Emissions

7.1 Applicable Standard

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

As per FCC §15.209(a) and RSS-210: Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100 Note 2	3
88 - 216	150 Note 2	3
216 - 960	200 Note 2	3
Above 960	500	3

Note 2: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110 0.495 – 0.505 2.1735 – 2.1905 4.125 – 4.128 4.17725 – 4.17775 4.20725 – 4.20775 6.215 – 6.218 6.26775 – 6.26825 6.31175 – 6.31225 8.291 – 8.294 8.362 – 8.366 8.37625 – 8.38675 8.41425 – 8.41475 12.29 – 12.293 12.51975 – 12.52025 12.57675 – 12.57725 13.36 – 13.41	16.42 – 16.423 16.69475 – 16.69525 25.5 – 25.67 37.5 – 38.25 73 – 74.6 74.8 – 75.2 108 – 121.94 123 – 138 149.9 – 150.05 156.52475 – 156.52525 156.7 – 156.9 162.0125 –167.17 167.72 – 173.2 240 – 285 322 – 335.4 399.9 – 410 608 – 614	960 – 1240 1300 – 1427 1435 – 1626.5 1645.5 – 1646.5 1660 – 1710 1718.8 – 1722.2 2200 – 2300 2310 – 2390 2483.5 – 2500 2690 – 2900 3260 – 3267 3.332 – 3.339 3 3458 – 3 358 3.600 – 4.400	4. 5 – 5. 15 5. 35 – 5. 46 7.25 – 7.75 8.025 – 8.5 9.0 – 9.2 9.3 – 9.5 10.6 – 12.7 13.25 – 13.4 14.47 – 14.5 15.35 – 16.2 17.7 – 21.4 22.01 – 23.12 23.6 – 24.0 31.2 – 31.8 36.43 – 36.5 Above 38.6

As per FCC Part 15.407 (b)(2), (3) and IC RSS-210

(2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15–5.25 GHz band.

(3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.

7.2 EUT Setup

The radiated emissions tests were performed using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15E/IC RSS-210 limits.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test table and bundle when necessary.

7.3 Test Procedure

For the radiated emissions test, the EUT host, and all support equipment power cords was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

The spectrum analyzer or receiver is set as:

Below 1000 MHz:

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

(1) Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto
(2) Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

7.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude - Limit

7.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100338	2011-09-14
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10
Sunol Science Corp	System Controller	SC99V	122303-1	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-2	2011-08-10
EMCO	Horn antenna	3115	9511-4627	2011-10-03
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2011-06-09
Mini-Circuits	Pre-amplifier	ZVA-183-S	667400960	2011-05-08

Statement of Traceability: BACL *attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.*

7.6 Test Environmental Conditions

Temperature:	20-22 °C
Relative Humidity:	35-45%
ATM Pressure:	101-102kPa

The testing was performed by Quinn Jiang from 2012-01-14 to 2012-01-15 at 5 meter chamber 3.

7.7 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15, Subpart C, section 15.205, 15.209 and 15.247 & IC RSS-210, RSS-Gen standard's radiated emissions limits, and had the worst margin of:

30-1000 MHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Channel, Range**
-[1]	-	-	30-1000 MHz

1 – 40 GHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Channel, Range**
-[1]	-	-	1-40 GHz

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

Please refer to the following table and plots for specific test result details

7.8 Radiated Emissions Test Result Data

1) 30 MHz – 1 GHz, Measured at 3 meters

W52 Band, Worst channel

Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
-	-	-	-	-	-	-[1]

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

W58 Band, Worst channel

Quasi-Peak Measurements

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
-	-	-	-	-	-	-[1]

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

2) 1–40 GHz, Measured at 3 meters

W52 Band:

Frequency (MHz)	S.A. Reading (dBµV)	Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5190 MHz, measured at 3 meters											
-	-	-	-	-	-	-	-	-	-	-	-[1]
High Channel 5230 MHz, measured at 3 meters											
-	-	-	-	-	-	-	-	-	-	-	-[1]

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

W58 Band:

Frequency (MHz)	S.A. Reading (dBµV)	Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5755 MHz, measured at 3 meters											
11511	38.89	72	100	V	38.7	7.60	27.5	57.69	74	-16.31	Peak
11511	39.01	67	100	H	38.7	7.60	27.5	57.81	74	-16.19	Peak
11511	29.3	72	100	V	38.7	7.60	27.5	48.10	54	-5.90	Ave
11511	24.22	67	100	H	38.7	7.60	27.5	43.02	54	-10.98	Ave
-	-	-	-	-	-	-	-	-	-	-	-[1]
High Channel 5795 MHz, measured at 3 meters											
11587	38.28	69	100	V	38.8	7.60	27.5	57.18	74	-16.82	Peak
11587	37.26	68	100	H	38.8	7.60	27.5	56.16	74	-17.84	Peak
11587	29.4	69	100	V	38.8	7.60	27.5	48.30	54	-5.70	Ave
11587	22.52	68	100	H	38.8	7.60	27.5	41.42	54	-12.58	Ave
-	-	-	-	-	-	-	-	-	-	-	-1

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

3) Restricted Band Emissions

W52 Band:

Frequency (MHz)	S.A. Reading (dBµV)	Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 5190 MHz, measured at 3 meters											
5150	28.060	76	105	V	33.3	4.56	0.0	65.920	74	-8.080	Peak
5150	29.870	67	105	H	33.3	4.56	0.0	67.730	74	-6.270	Peak
5150	13.950	76	105	V	33.3	4.56	0.0	51.810	54	-2.190	Ave
5150	15.010	67	105	H	33.3	4.56	0.0	52.870	54	-1.130	Ave

8 FCC §15.407(a) & IC RSS-210 §A9.2 – 26 dB and 99% Emission Bandwidth

8.1 Applicable Standard

FCC §15.407(a) and RSS-210 A9.2.

8.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 26 dB from the reference level. Record the frequency difference as the emissions bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

8.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.*

8.4 Test Environmental Conditions

Temperature:	20-22 °C
Relative Humidity:	45%
ATM Pressure:	101.3kPa

The testing was performed by Quinn Jiang in 2012-01-11 at RF Test Site.

8.5 Test Results

Measurements were taken on 2 transmitting chains: chain K1 and chain K2.

5.2 GHz Band, 802.11n40 mode:

Chain: K1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Results
Low	5190	39.369	37.4799	Compliant
High	5230	39.297	37.5212	Compliant

Chain: K2

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Results
Low	5190	39.360	37.5263	Compliant
High	5230	39.641	37.5326	Compliant

5.8 GHz Band, 802.11n40 mode:

Chain: K1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Results
Low	5755	39.237	37.4332	Compliant
High	5795	39.273	37.4146	Compliant

Chain K2

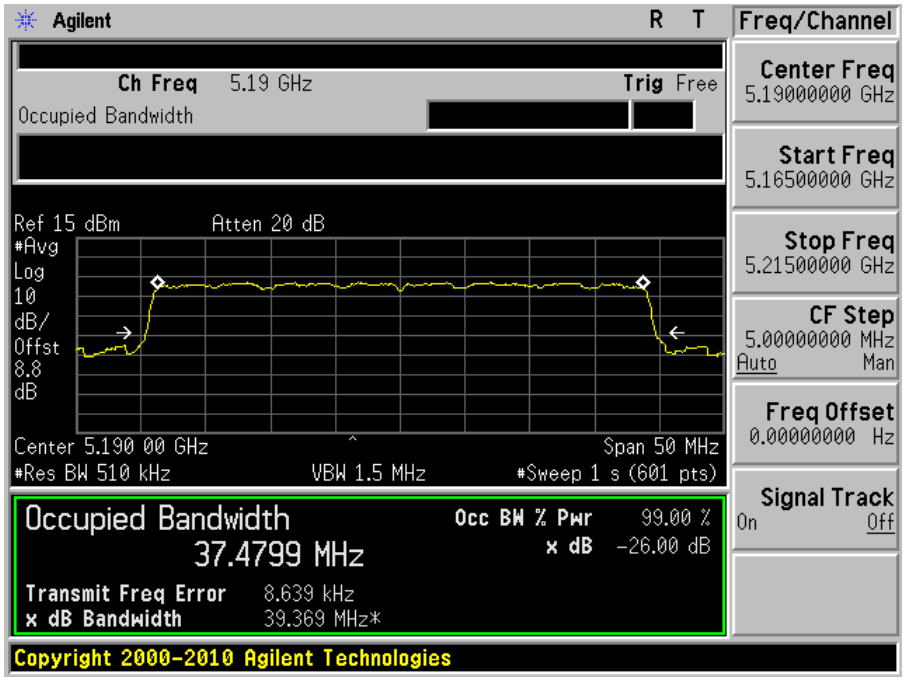
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Results
Low	5755	39.300	37.4787	Compliant
High	5795	39.338	37.4857	Compliant

Please refer to the following plots.

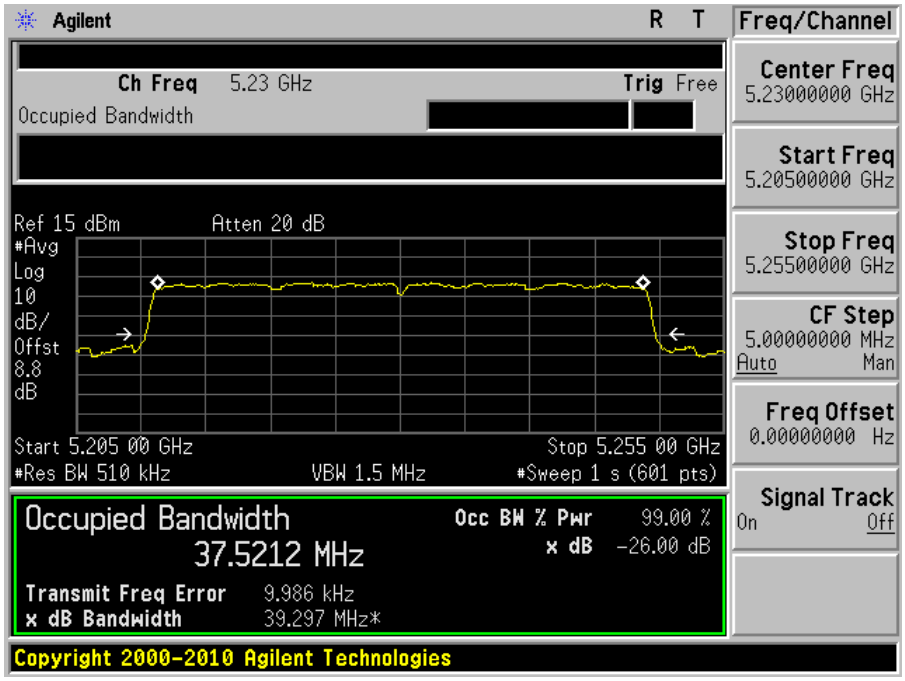
5.2 GHz Band

Chain K1

Low CH, 5190 MHz



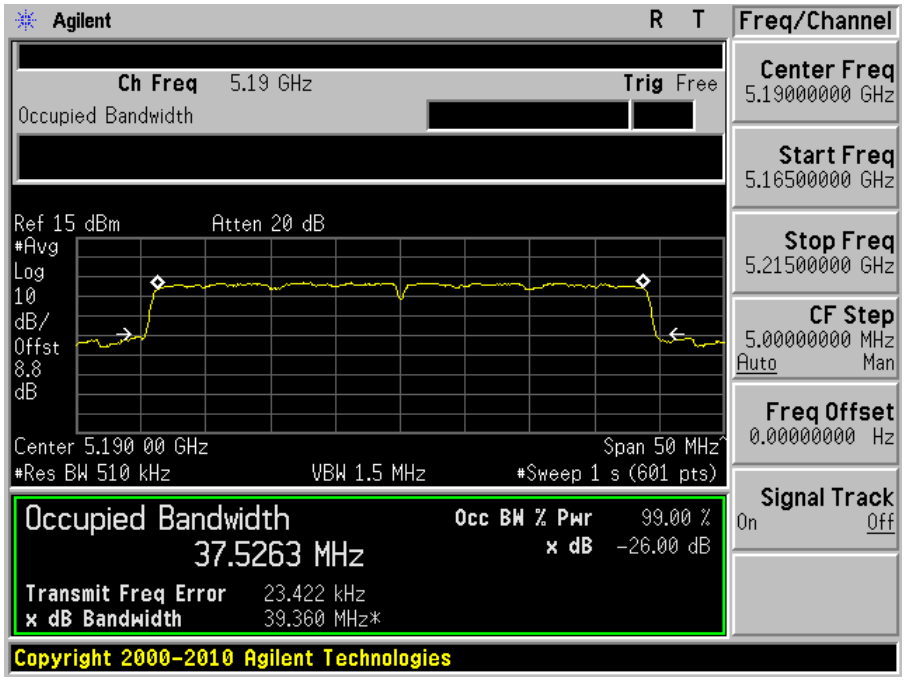
High CH, 5230 MHz



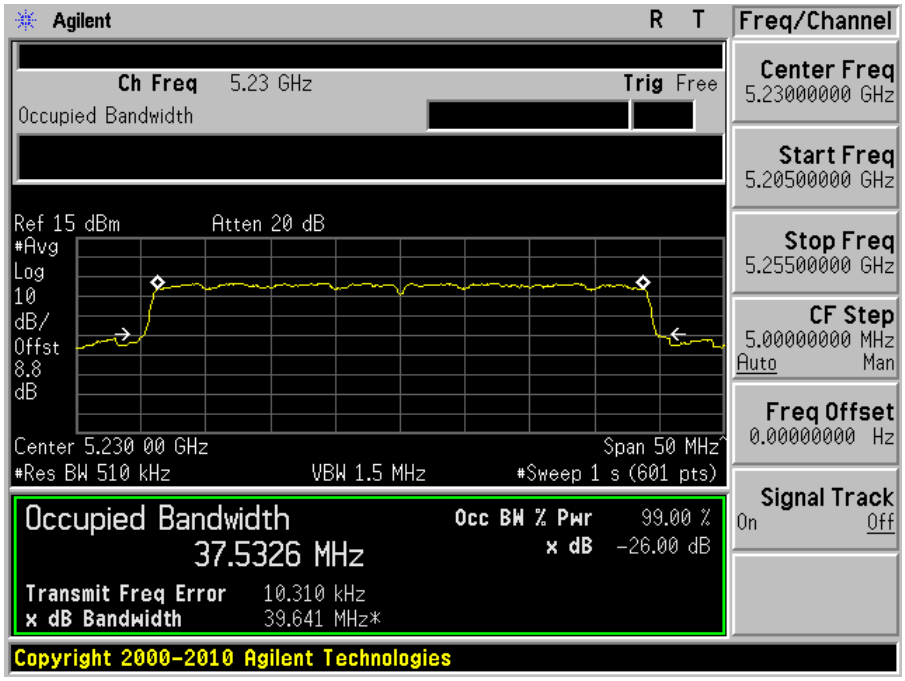
5.2 GHz Band

Chain K2

Low CH, 5190 MHz



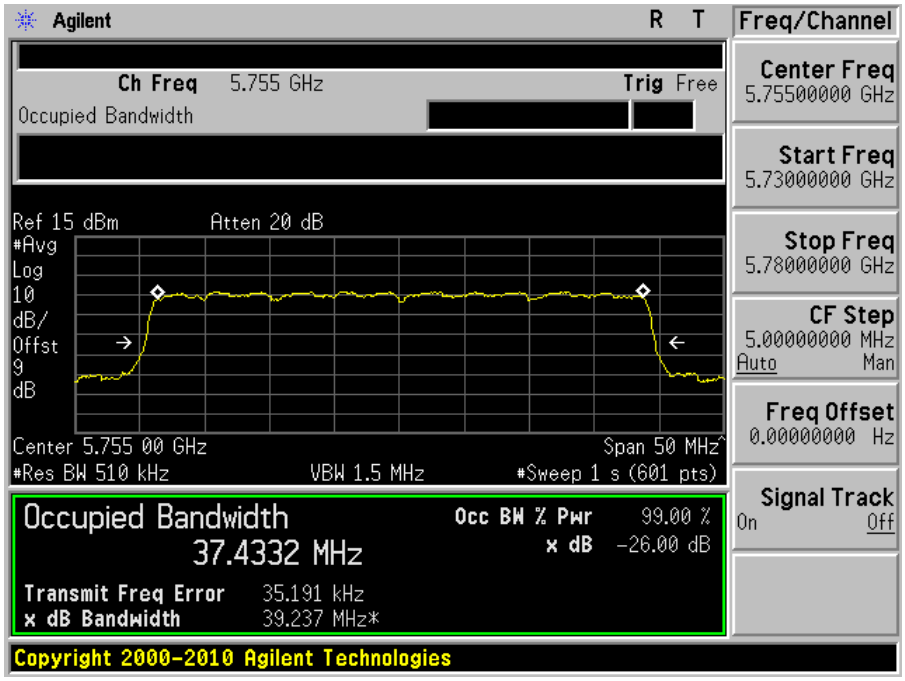
High CH, 5230 MHz



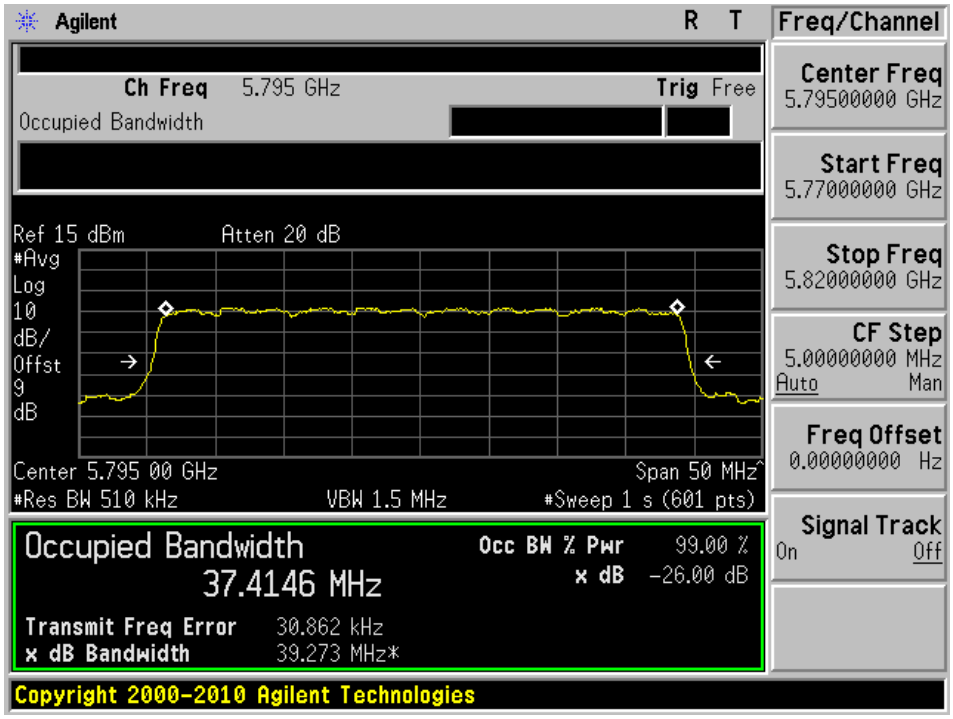
5.8 GHz Band

Chain K1

Low CH, 5755 MHz



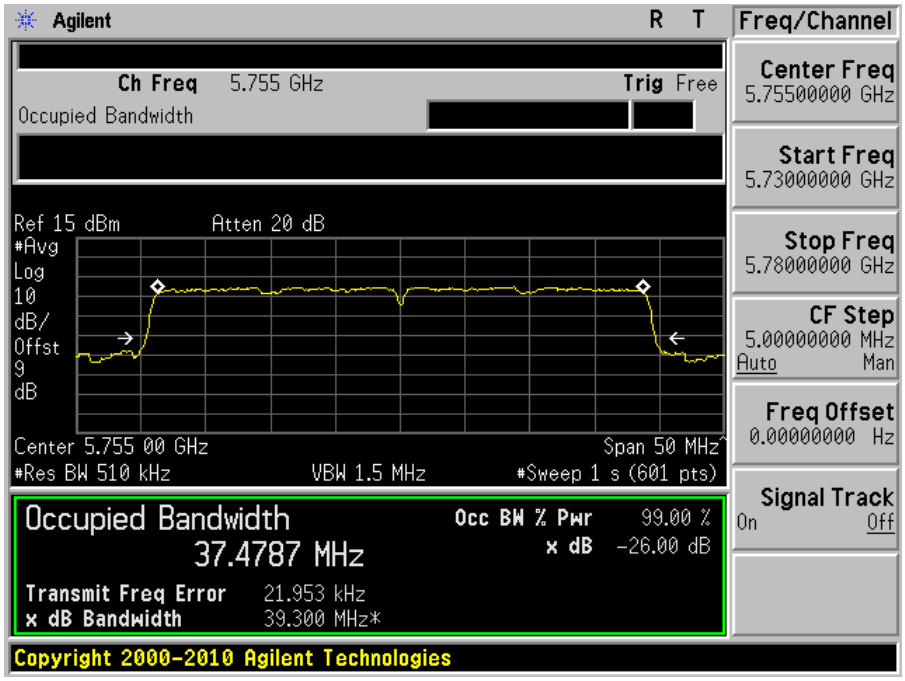
High CH, 5795 MHz



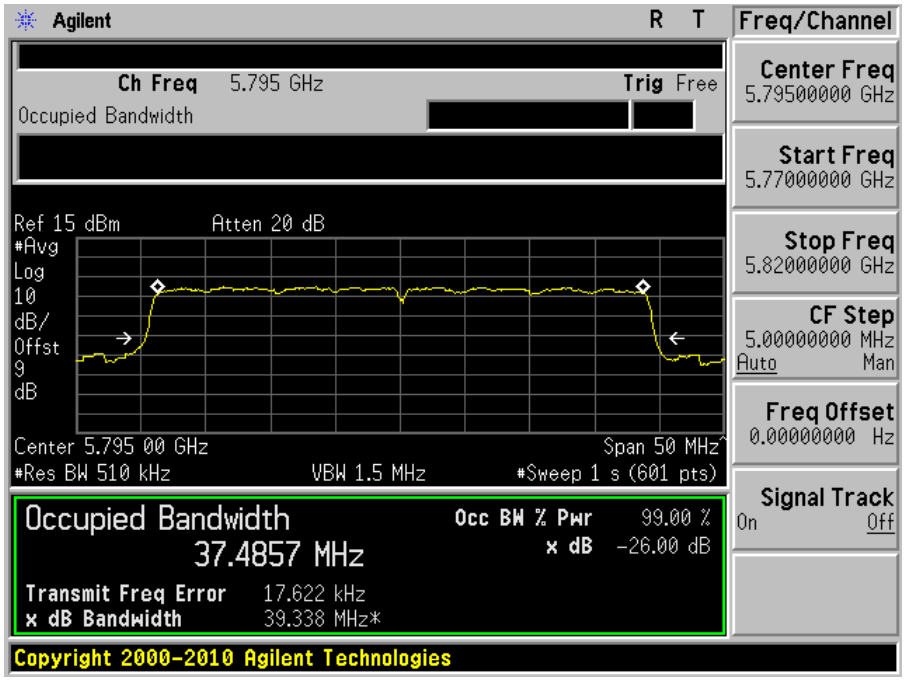
5.8 GHz Band

Chain K2

Low CH, 5755 MHz



High CH, 5795 MHz



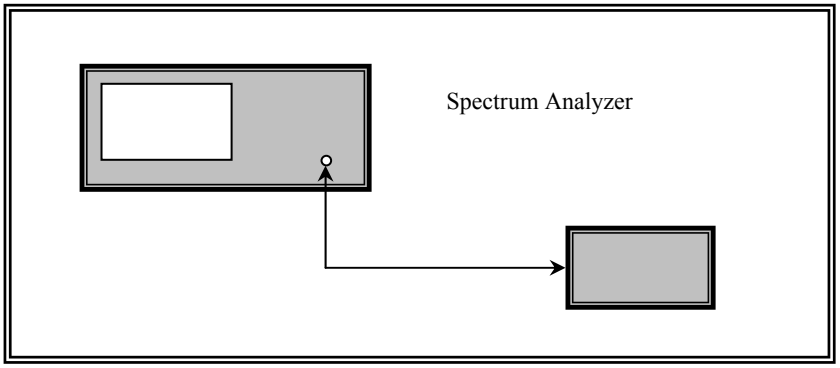
9 FCC §407(a) & IC RSS-210 §A9.2 - Peak Output Power

9.1 Applicable Standard

FCC §15.407(a) and IC RSS-210 §A9.2

9.2 Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to a spectrum analyzer.
3. Add a correction factor to the display.



9.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.*

9.4 Test Environmental Conditions

Temperature:	20-22 °C
Relative Humidity:	45%
ATM Pressure:	101.3kPa

The testing was performed by Quinn Jiang in 2012-01-11 at RF Test Site.

9.5 Test Results

Measurements were taken on 2 transmitting chains: chain K1 and chain K2.

5.2 GHz Band:

Channel	Frequency (MHz)	TX Chain K1 Power (dBm)	TX Chain K2 Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	5190	8.51	9.03	11.79	17	-5.21
High	5230	8.18	8.84	11.53	17	-5.47

5.8 GHz Band:

Channel	Frequency (MHz)	TX Chain K1 Power (dBm)	TX Chain K2 Power (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	5755	4.62	6.86	8.89	30	-21.11
High	5795	4.61	6.42	8.62	30	-21.38

10 FCC §15.407(b) & IC RSS-210 §A9.2 – Out of Band Emissions

10.1 Applicable Standard

According to FCC §15.407(b) and IC RSS-210 §A9.2, For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. For transmitters operating in the 5.725–5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of –17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of –27 dBm/MHz.

10.2 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 1MHz and VBW to 3 MHz of spectrum analyzer.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

10.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.*

10.4 Test Environmental Conditions

Temperature:	20-22 °C
Relative Humidity:	45%
ATM Pressure:	101.3kPa

The testing was performed by Quinn Jiang in 2012-01-11 at RF Test Site.

10.5 Test Results

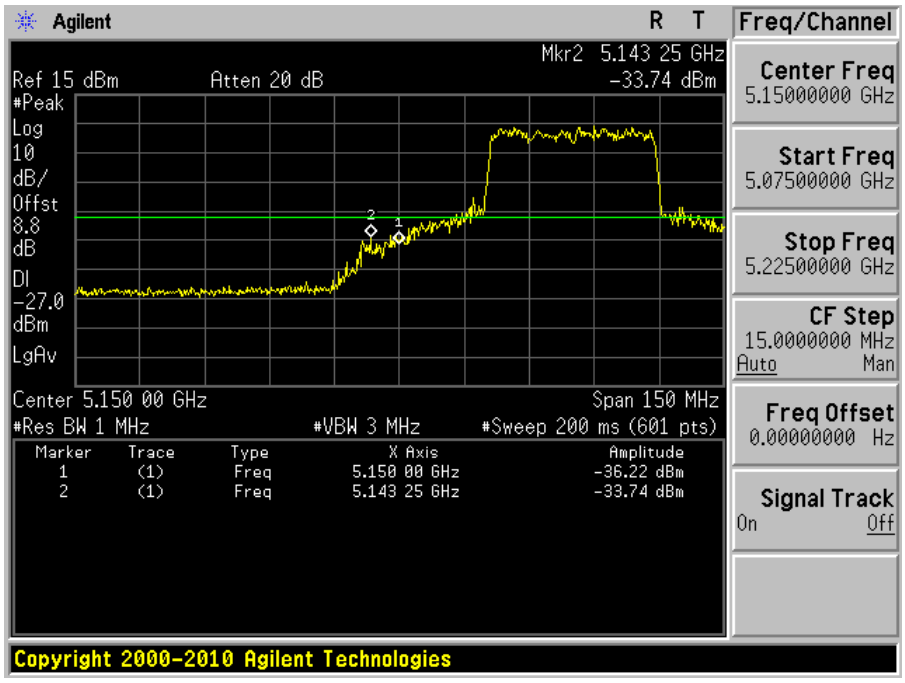
Please refer to following pages for plots of band edge.

5.2 GHz Band

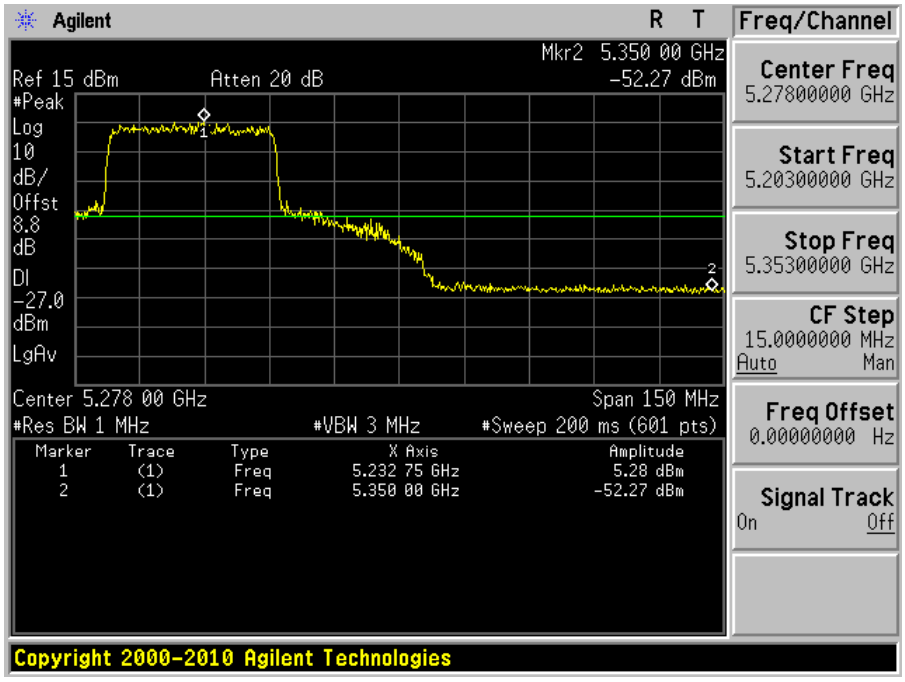
Measurements were taken on 2 transmitting chains: chain K1 and chain K2.

Chain K1

Low CH, 5190 MHz



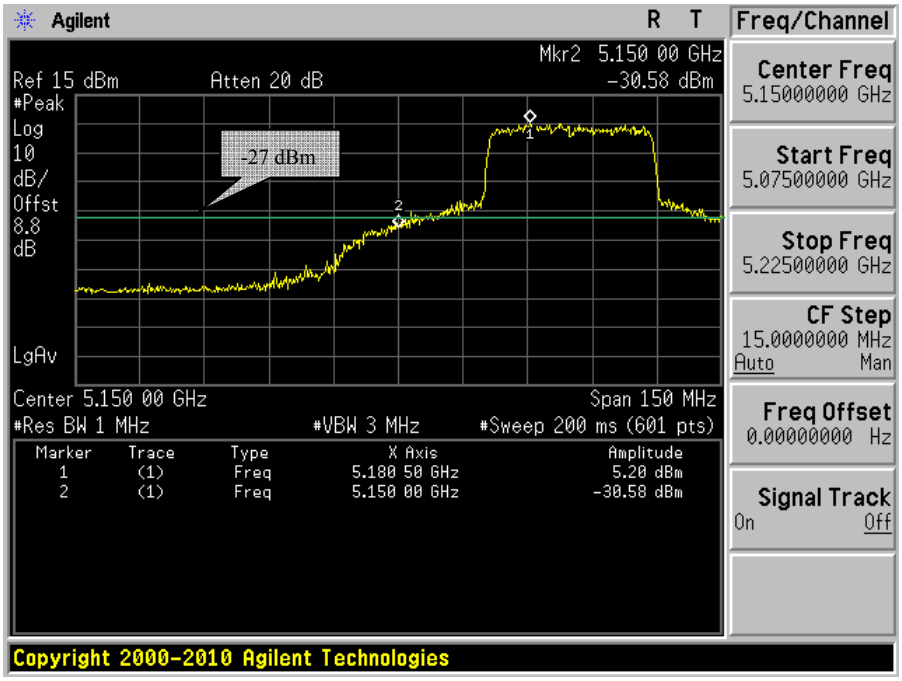
High CH, 5230 MHz



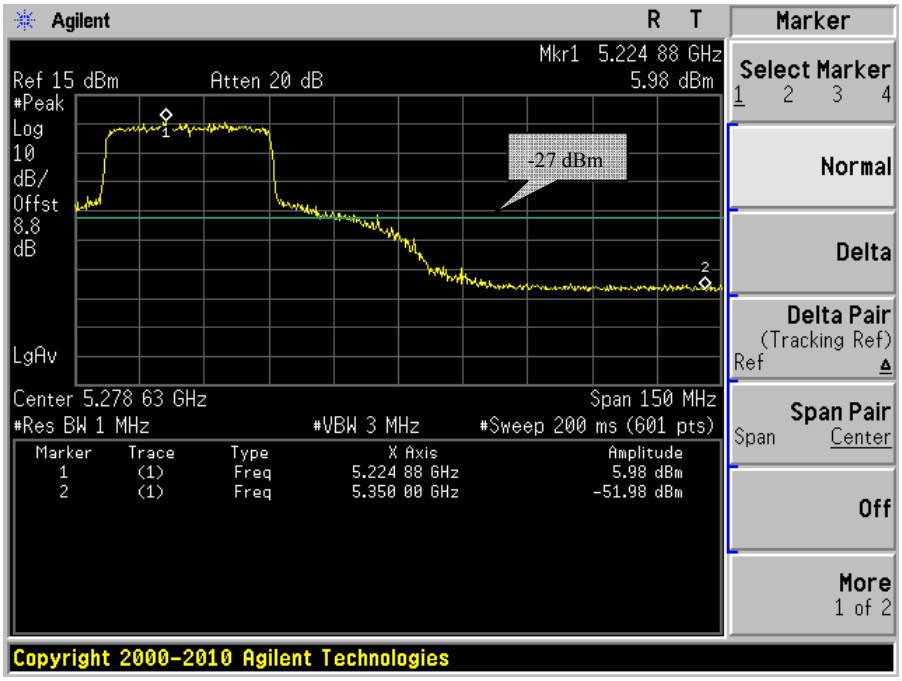
5.2 GHz Band

Chain K2

Low CH, 5190 MHz



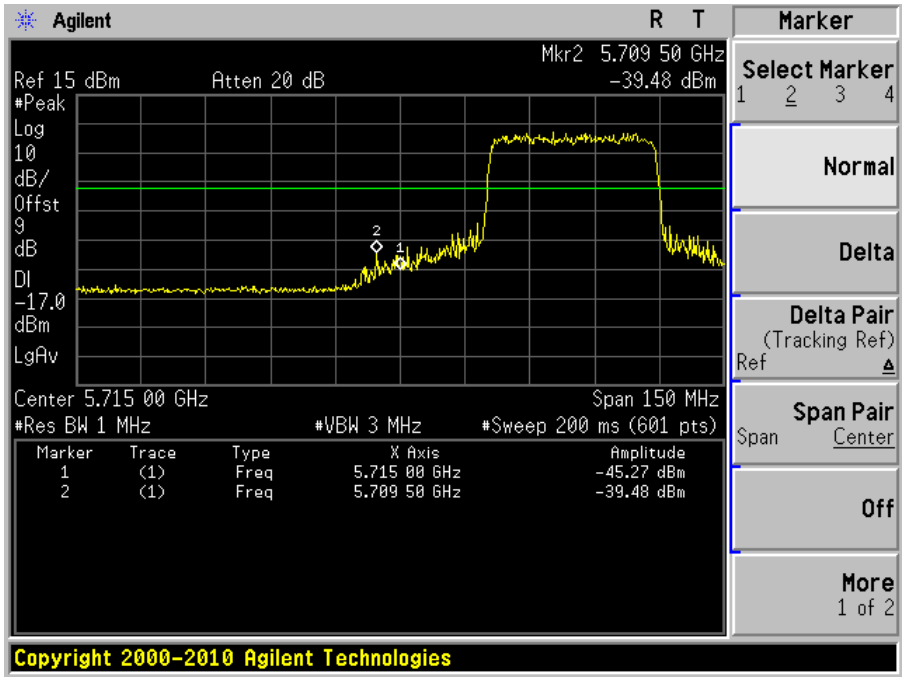
High CH, 5230 MHz



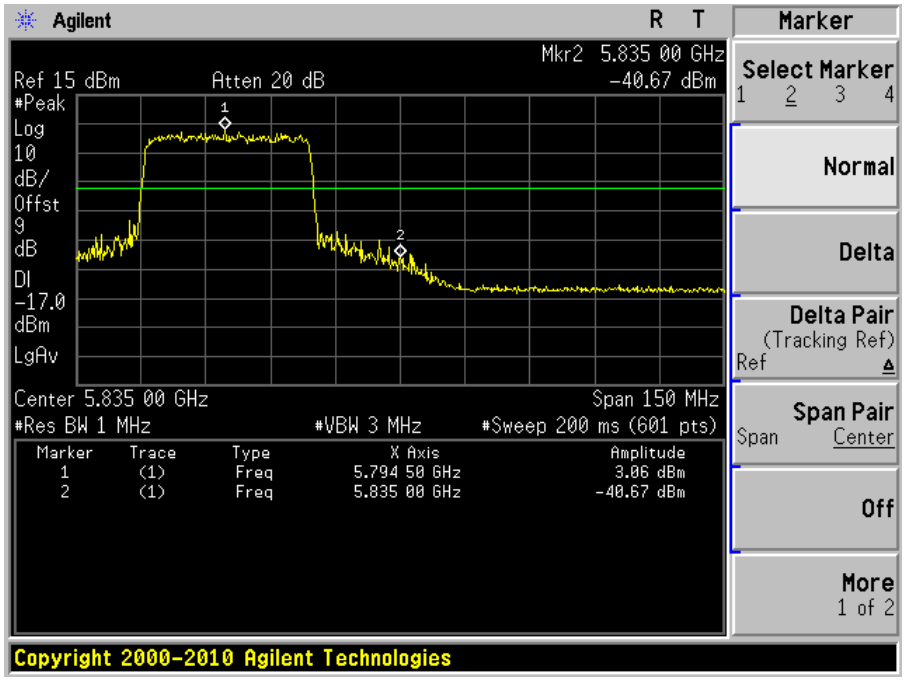
5.8 GHz Band

Chain K1

Low CH, 5755 MHz



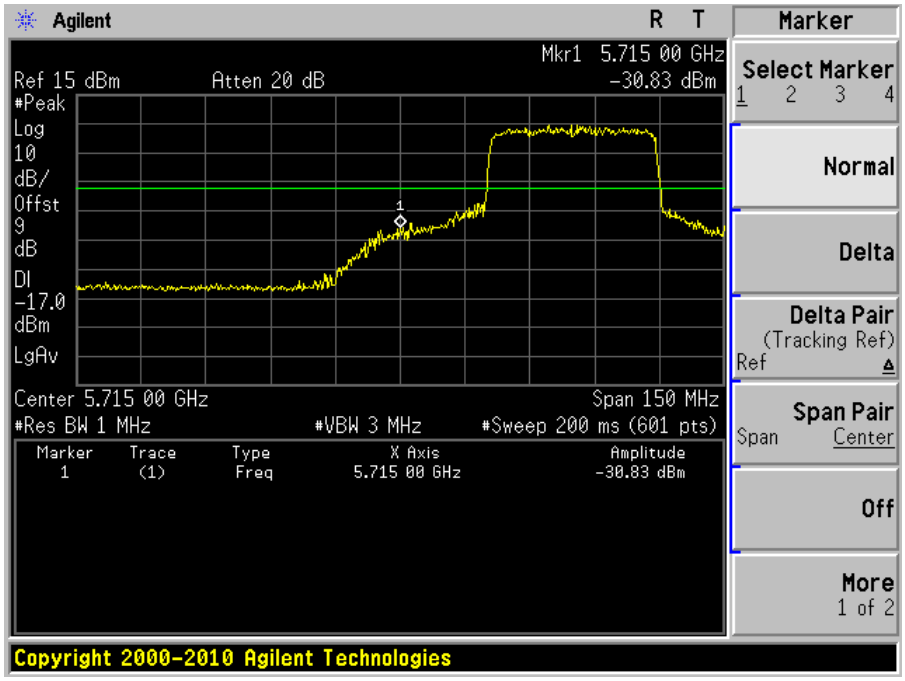
High CH, 5795 MHz



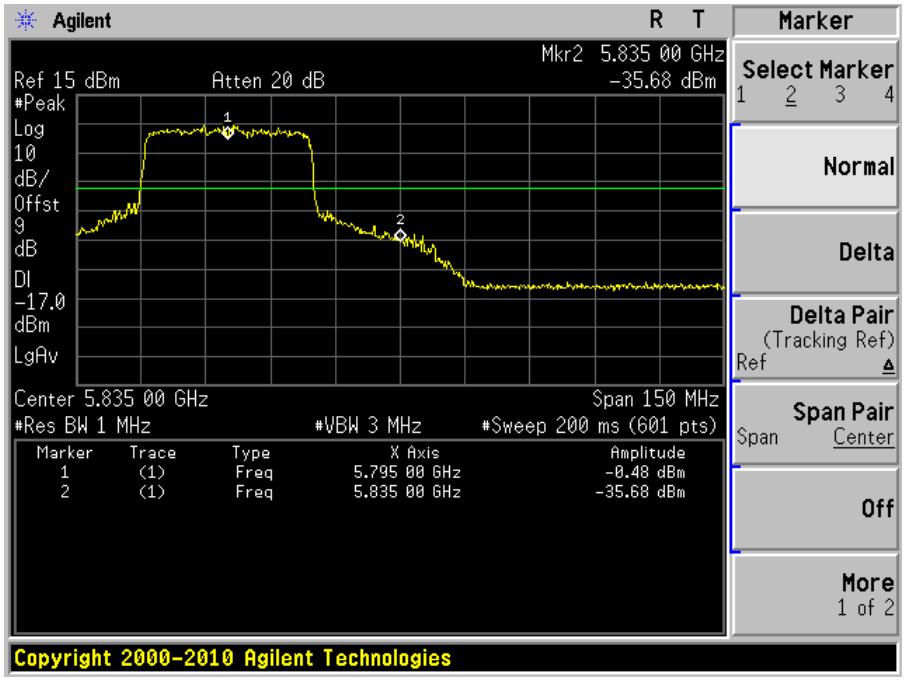
5.8 GHz Band

Chain K2

Low CH, 5755 MHz



High CH, 5795 MHz,



11 FCC §15.407(a) & IC RSS-210 §A9.2 - Power Spectral Density

11.1 Applicable Standard

According to FCC §15.407(a) and UC RSS-210 §A9.2

(1) For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

2) For the band 5.725–5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 17 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

11.2 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency be measured and set SA to 1.5MHz span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Repeat above procedures until all frequencies measured were complete.

11.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.*

11.4 Test Environmental Conditions

Temperature:	20-22 °C
Relative Humidity:	45%
ATM Pressure:	101.3kPa

The testing was performed by Quinn Jiang in 2012-01-11 at RF Test Site.

11.5 Test Results

Measurements were taken on 2 transmitting chains: chain K1 and chain K2.

5.2 GHz Band:

Channel	Frequency (MHz)	TX Chain K1 PSD (dBm)	TX Chain K2 PSD (dBm)	Total PDS (dBm)	Limit (dBm)	Margin (dB)
Low	5190	-6.503	-5.815	-3.14	4	-7.14
High	5230	-6.685	-6.414	-3.54	4	-7.54

5.8 GHz Band:

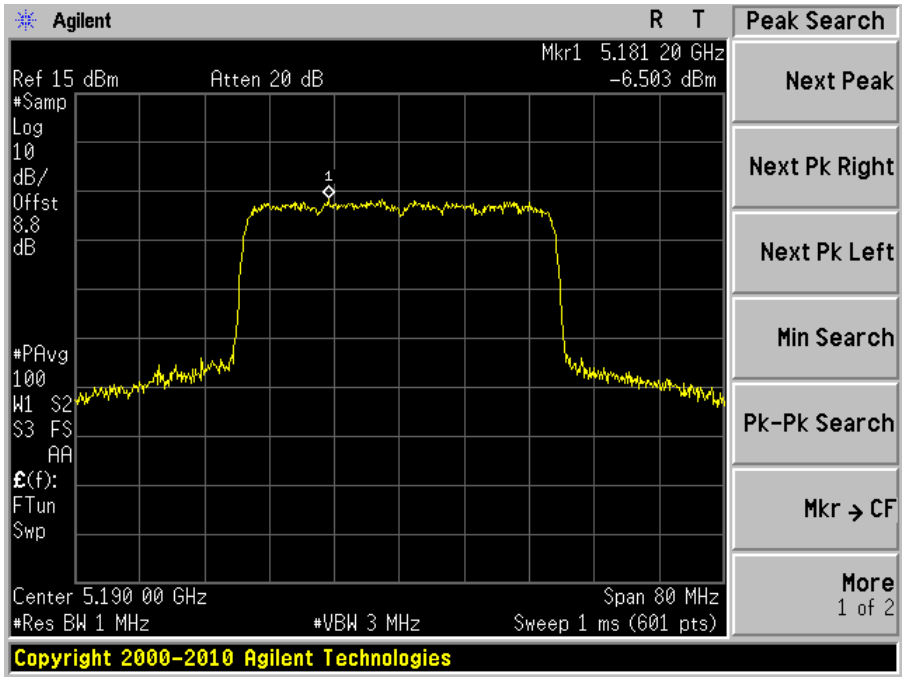
Channel	Frequency (MHz)	TX Chain K1 PSD (dBm)	TX Chain K2 PSD (dBm)	Total PDS (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-8.849	-6.920	-4.77	17	-21.77
High	5795	-10.248	-8.749	-6.42	17	-23.42

Please refer to the following plots.

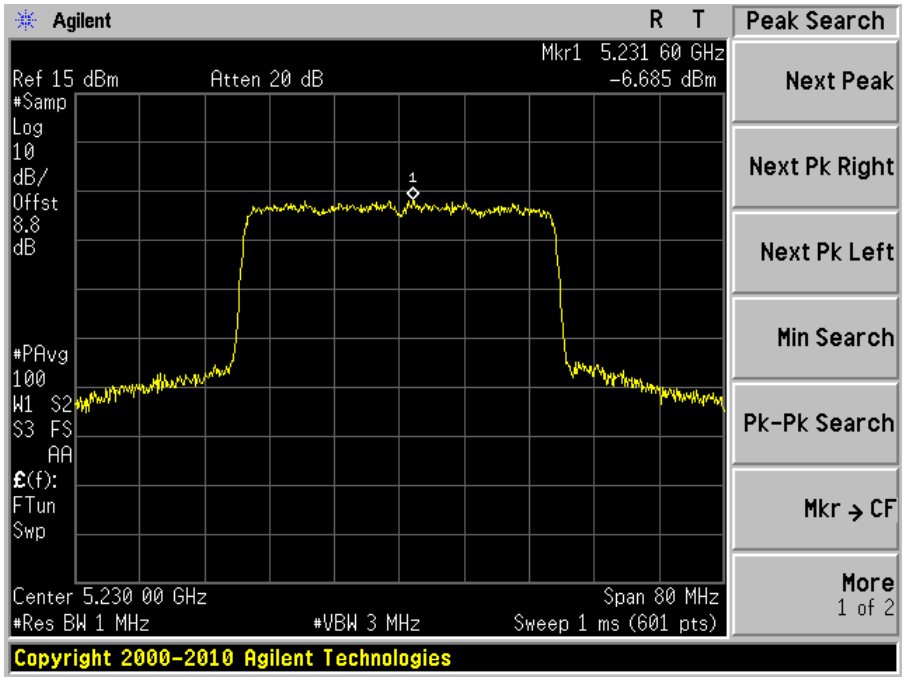
5.2 GHz Band

Chain K1

Low CH, 5190 MHz



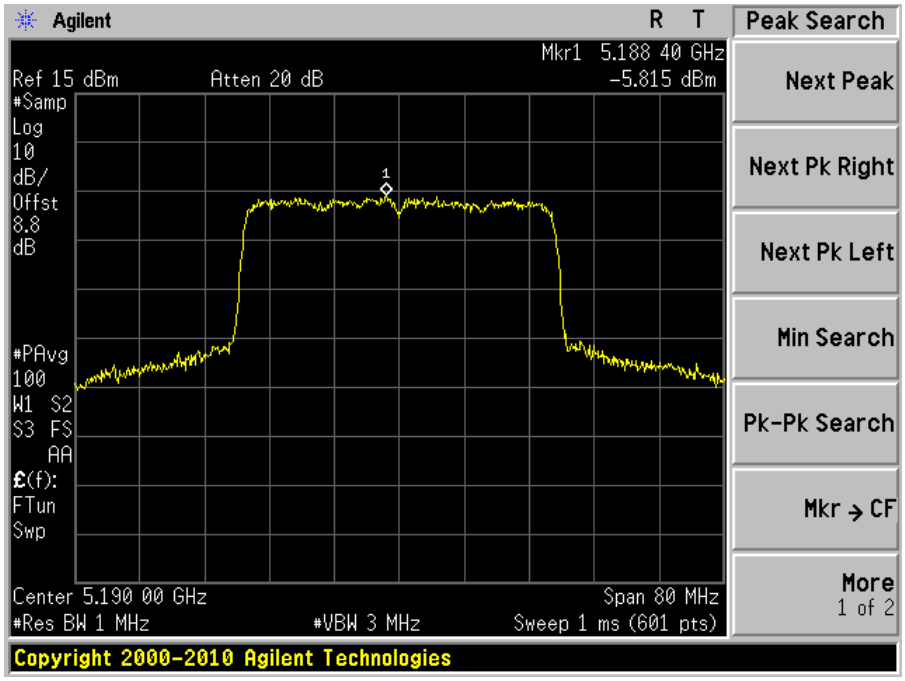
High CH, 5230 MHz



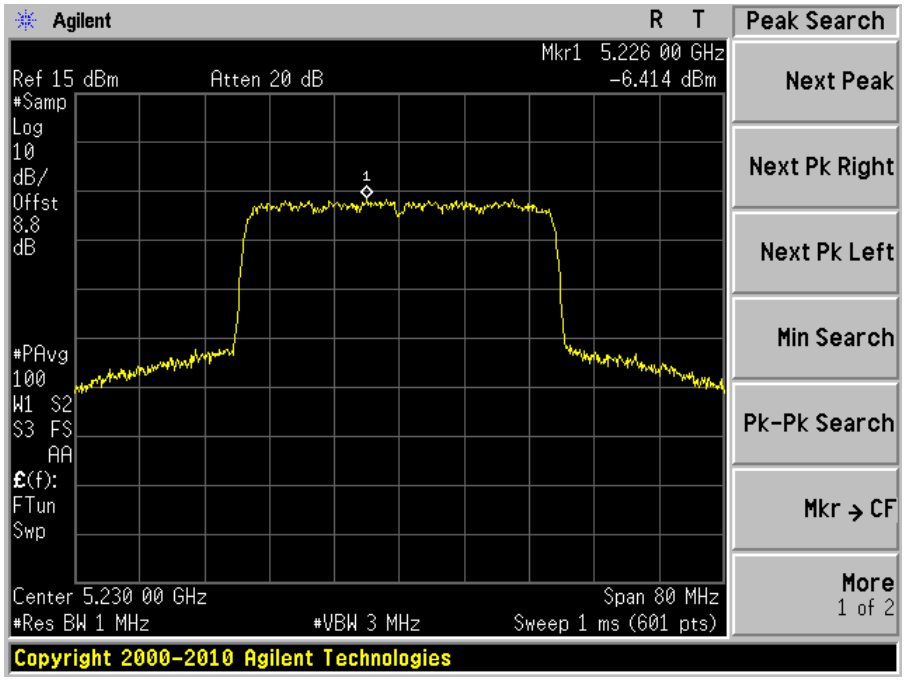
5.2 GHz Band

Chain K2

Low CH, 5190 MHz



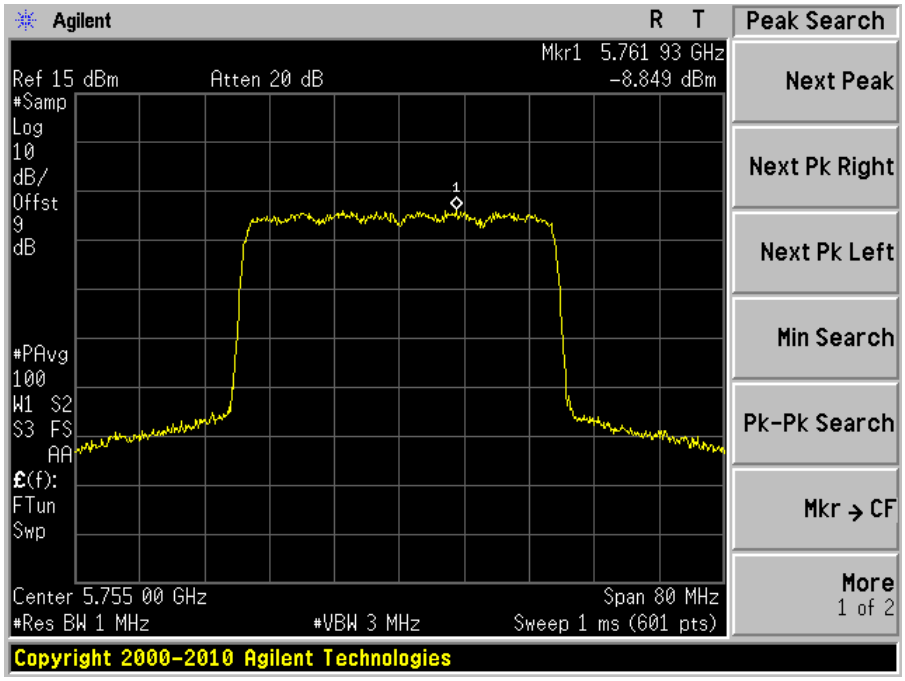
High CH, 5230 MHz



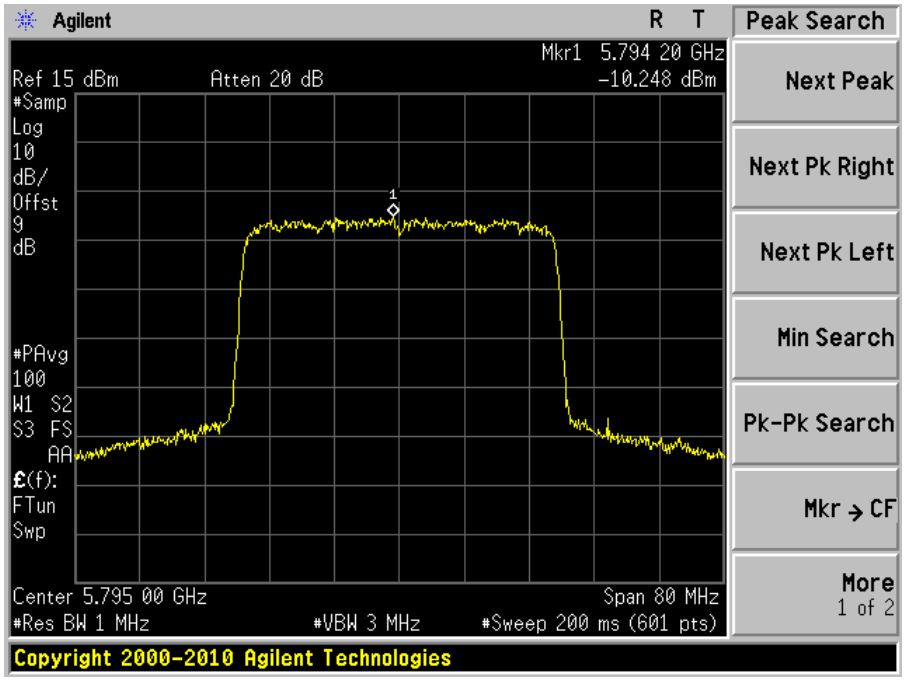
5.8 GHz Band

Chain K1

Low CH, 5755 MHz



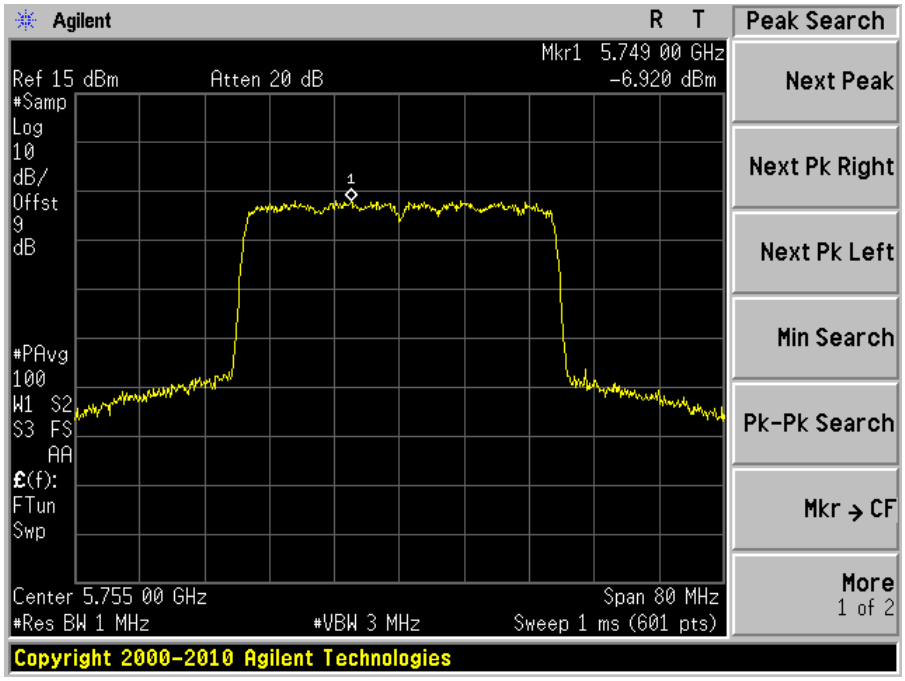
High CH, 5795 MHz



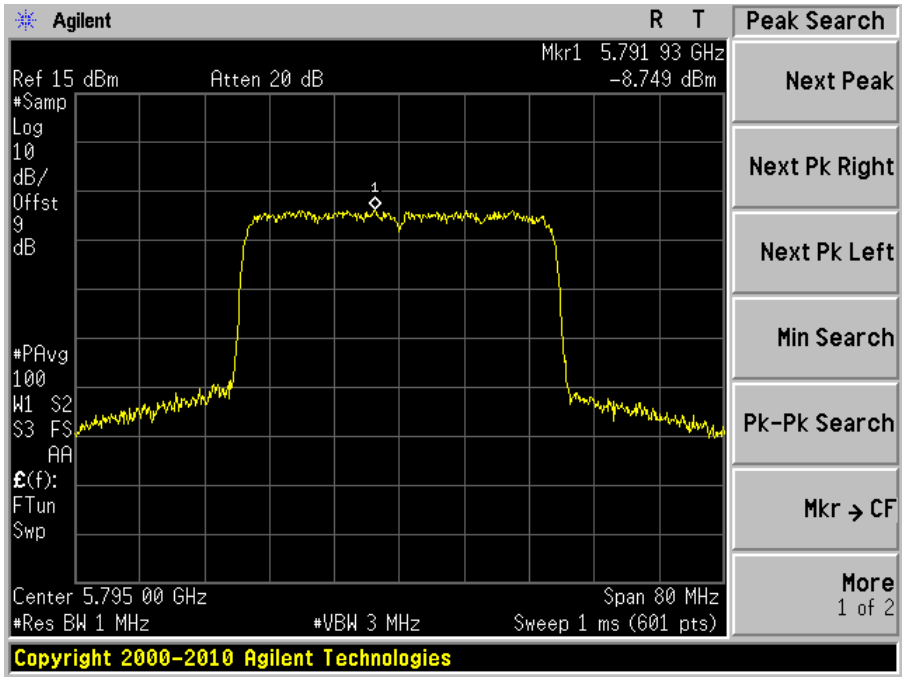
5.8 GHz Band

Chain K2

Low CH, 5755 MHz



High CH, 5795 MHz



12 FCC §15.407(a)(6) – Peak Excursion Ratio

12.1 Applicable Standard

According to FCC §15.407(a) (6), the ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

12.2 Test Procedure

Set the spectrum analyzer span to view the entire emission bandwidth.
The largest difference between the following two traces must be ≤ 13 dB for all frequencies across the emission bandwidth. Submit a plot.

1st Trace:
• Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and maxhold settings.

2nd Trace:
• create the 2nd trace using the settings described in the section "FCC §15.407(a)(1)(2) – CONDUCTED TRANSMITTER OUTPUT POWER".

12.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.*

12.4 Test Environmental Conditions

Temperature:	20-22 °C
Relative Humidity:	45%
ATM Pressure:	101.3kPa

The testing was performed by Quinn Jiang in 2012-01-11 at RF Test Site.

12.5 Test Results

Measurements were taken on 2 transmitting chains: chain K1 and chain K2.

5.2 GHz Band:

Channel	Frequency (MHz)	TX Chain K1 Peak Excursion Ratio (dBm)	TX Chain K2 Peak Excursion Ratio (dBm)	Limit (dBm)
Low	5190	12.42	11.60	13
High	5230	12.86	12.43	13

5.8 GHz Band:

Channel	Frequency (MHz)	TX Chain K1 Peak Excursion Ratio (dBm)	TX Chain K2 Peak Excursion Ratio (dBm)	Limit (dBm)
Low	5755	12.57	12.41	13
High	5795	12.65	12.54	13

13 IC RSS-210 §2.3 & RSS-Gen §6 - Receiver Spurious Radiated Emissions

13.1 Applicable Standard

According to RSS-Gen §4.10, The receiver shall be operated in the normal receive mode near the mid-point of the band over which the receiver is designed to operate.

Unless otherwise specified in the applicable RSS, the radiated emission measurement is the standard measurement method (with the device's antenna in place) to measure receiver spurious emissions.

Radiated emission measurements are to be performed using a calibrated open-area test site.

For either method, the search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

For emissions below 1 GHz, measurements shall be performed using a CISPR quasi-peak detector and the related measurement bandwidth. As an alternative to CISPR quasi-peak measurement, compliance with the emission limit can be demonstrated using measuring equipment employing a peak detector with the same measurement bandwidth as that for CISPR quasi-peak measurements. Above 1 GHz, measurements shall be performed using an average detector and a resolution bandwidth of 300 kHz to 1 MHz.

According to RSS-210 §2.6, Tables 2 and 3 show the general field strength limits of unwanted emissions, where applicable, for transmitters and receivers operating in accordance with the provisions specified in this RSS. Transmitters whose wanted emissions are also within the limits shown in Tables 2 and 3 may operate in any of the frequency bands of Tables 2 and 3, other than the restricted bands of Table 1 and the TV bands, and shall be certified under RSS-210.

Table 2: Radiated Limits of Receiver Spurious Emissions

Frequency (MHz)	Field Strength Microvolts/m at 3 meters
30-88	100
88-216	150
216-960	200
Above 960	500

13.2 EUT Setup

The radiated emissions tests were performed in the 3 meter chamber, using the setup in accordance with ANSI C63.4-2003.

13.3 Test Procedure

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations.

All data were recorded in the peak detection mode. Quasi-peak readings was performed only when an emissions was found to be marginal (within -4 dB of specification limits), and are distinguished with a "**QP**" in the data table.

13.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude - Limit

13.5 Test Equipment Lists and Details

Manufacturer	Description	Model Number	Serial Number	Calibration Date
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2011-03-21
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10
Sunol Science Corp	System Controller	SC99V	122303-1	N/R
Sunol Science Corp	Combination Antenna	JB3	A0020106-3	2011-06-29
EMCO	Horn antenna	3115	9511-4627	2011-10-03
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2011-06-09
Mini-Circuits	Pre-amplifier	ZVA-183-S	570400946	2011-05-09

Statement of Traceability: *BACL attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.*

13.6 Test Environmental Conditions

Temperature:	20-22 °C
Relative Humidity:	35-45%
ATM Pressure:	101-102kPa

The testing was performed by Quinn Jiang from 2012-01-14 to 2012-01-15 at 5 meter chamber 3.

13.7 Test Results

According to the test data,, the EUT complied with the with the RSS-210, with the closest margins from the limit listed below:

30-1000 MHz:

Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (MHz)**
-[1]	-	-	30 to 1000

1–40 GHz:

Mode: Receiving			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Range (GHz)**
-[1]	-	-	1 to 40 GHz

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

1) Radiated Emission at 3 meters, 30 MHz -1GHz

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
W52 Band						
-	-	-	-	-	-	-[1]
W58 Band						
-	-	-	-	-	-	-[1]

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

2) 1–40 GHz, Measured at 3 meters

W52 Band:

Frequency (MHz)	S.A. Reading (dBµV)	Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5190 MHz, measured at 3 meters											
-	-	-	-	-	-	-	-	-	-	-	-[1]
High Channel 5230 MHz, measured at 3 meters											
-	-	-	-	-	-	-	-	-	-	-	-[1]

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

W58 Band:

Frequency (MHz)	S.A. Reading (dBµV)	Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5755 MHz, measured at 3 meters											
-	-	-	-	-	-	-	-	-	-	-	-[1]
High Channel 5795 MHz, measured at 3 meters											
-	-	-	-	-	-	-	-	-	-	-	-[1]

- ***Note:*** *[1]All spurious emissions are 20 dB below the limit or are on the noise floor level*

14 FCC §15.407(b) & IC RSS-210 §A9.2 - Spurious Emissions at Antenna Terminals

14.1 Applicable Standard

For FCC §15.407(b) and IC RSS-210 §A9.2: For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. For transmitters operating in the 5.725–5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of –17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of –27 dBm/MHz.

14.2 Measurement Procedure

The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1 Mhz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

14.3 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date
Agilent	Spectrum Analyzer	E4440A	MY44303352	2011-05-10

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.*

14.4 Test Environmental Conditions

Temperature:	20-22 °C
Relative Humidity:	45%
ATM Pressure:	101.3kPa

The testing was performed by Quinn Jiang in 2012-01-11 at RF Test Site.

14.5 Test Results

Please refer to following plots of spurious emissions.

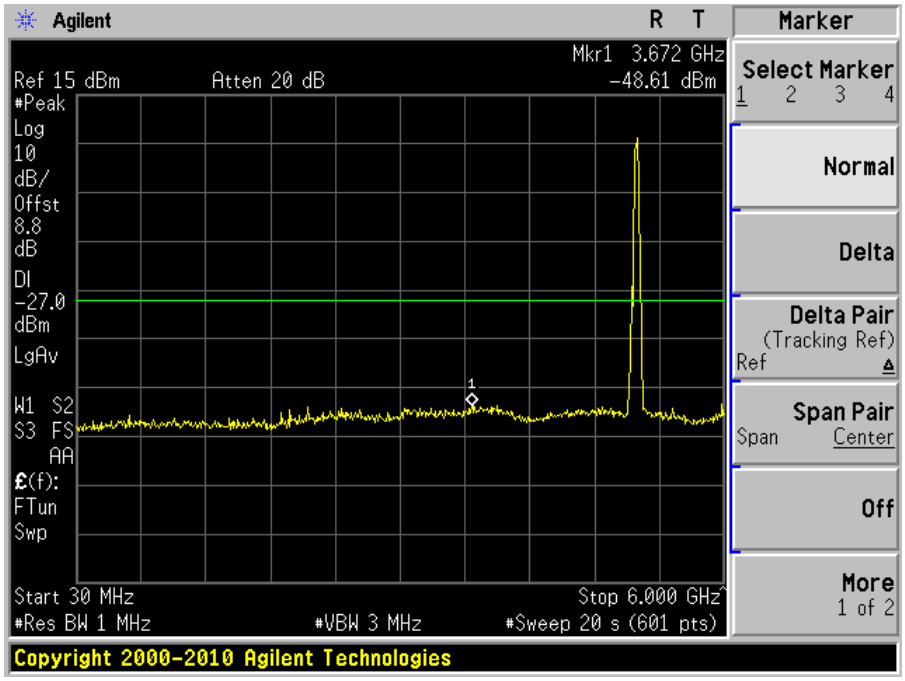
Measurements were taken on 2 transmitting chains: chain K1 and chain K2.

W52 Band:

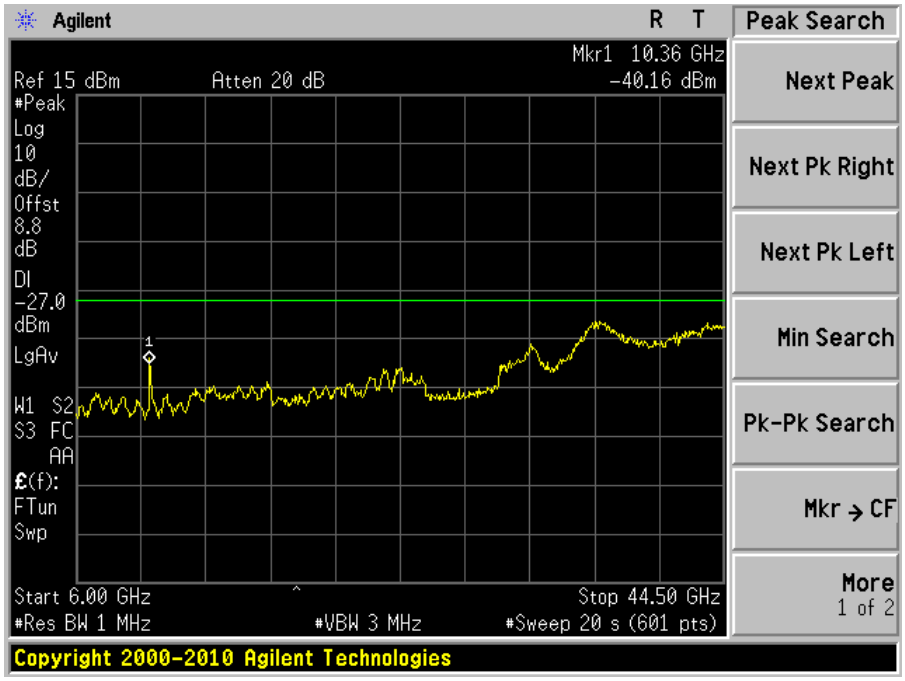
Chain K1

Low Channel (5190 MHz)

30 MHz - 6 GHz

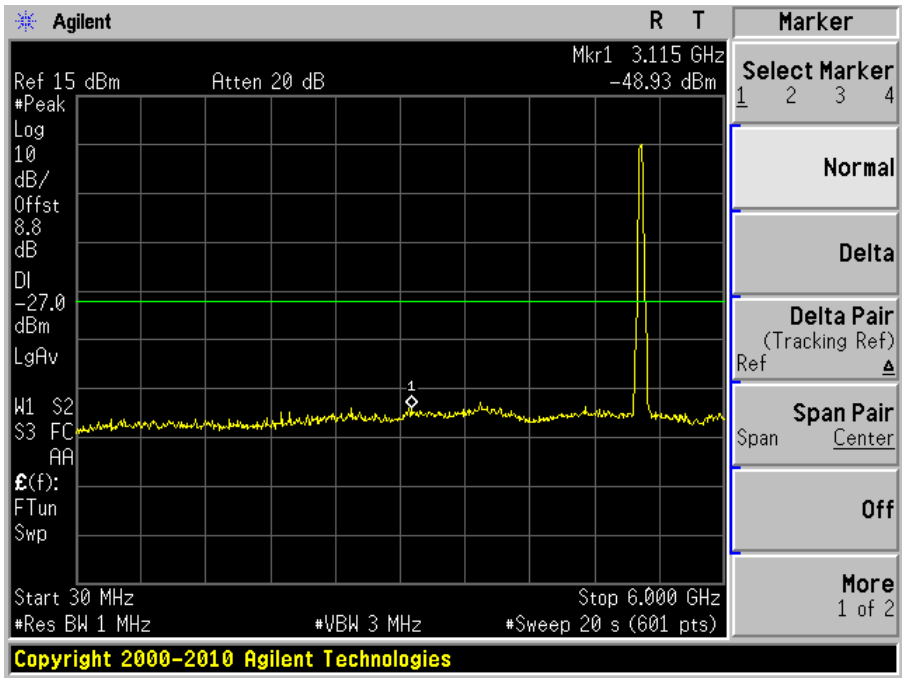


6 GHz - 44.5 GHz

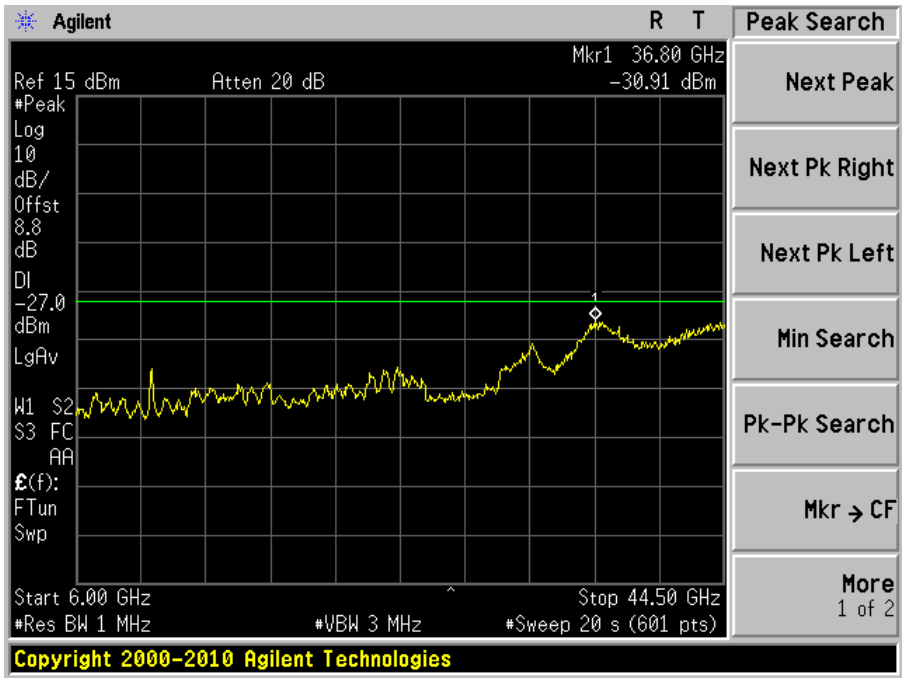


High Channel (5230 MHz)

30 MHz – 6 GHz



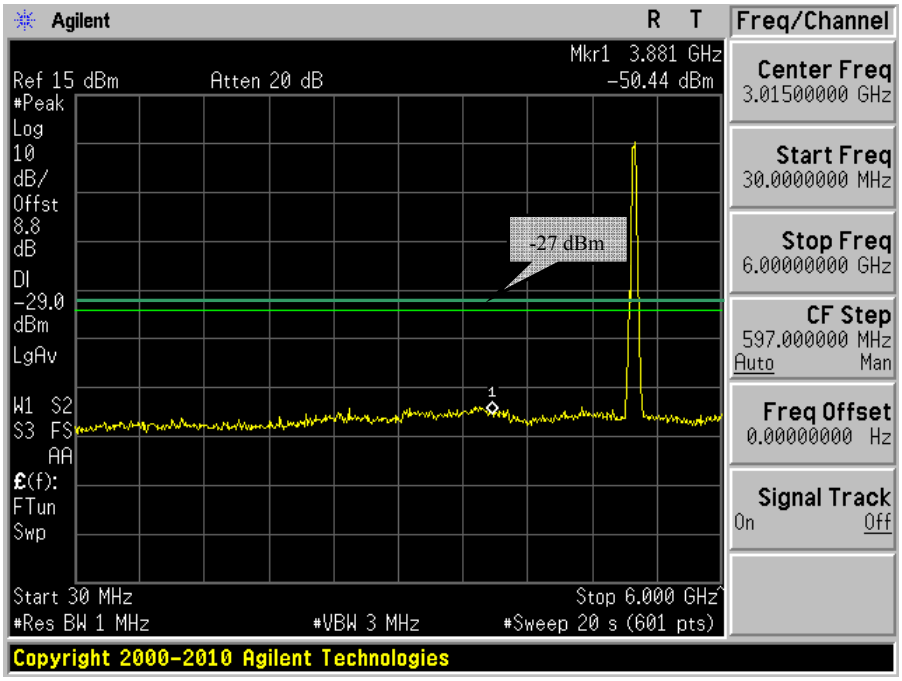
6 GHz - 44.5 GHz



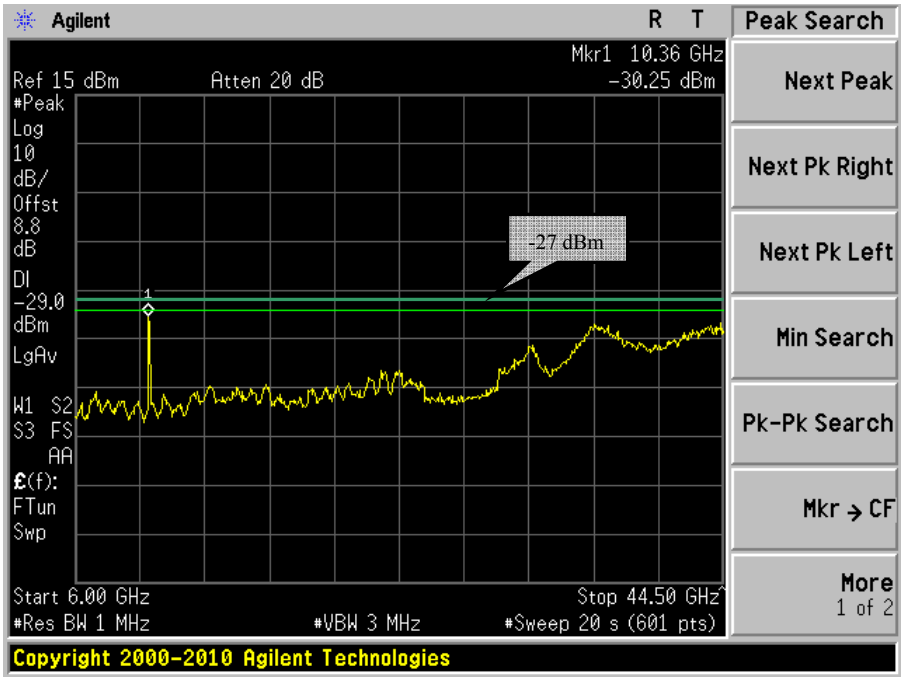
Chain K2

Low Channel (5190 MHz)

30 MHz – 6 GHz

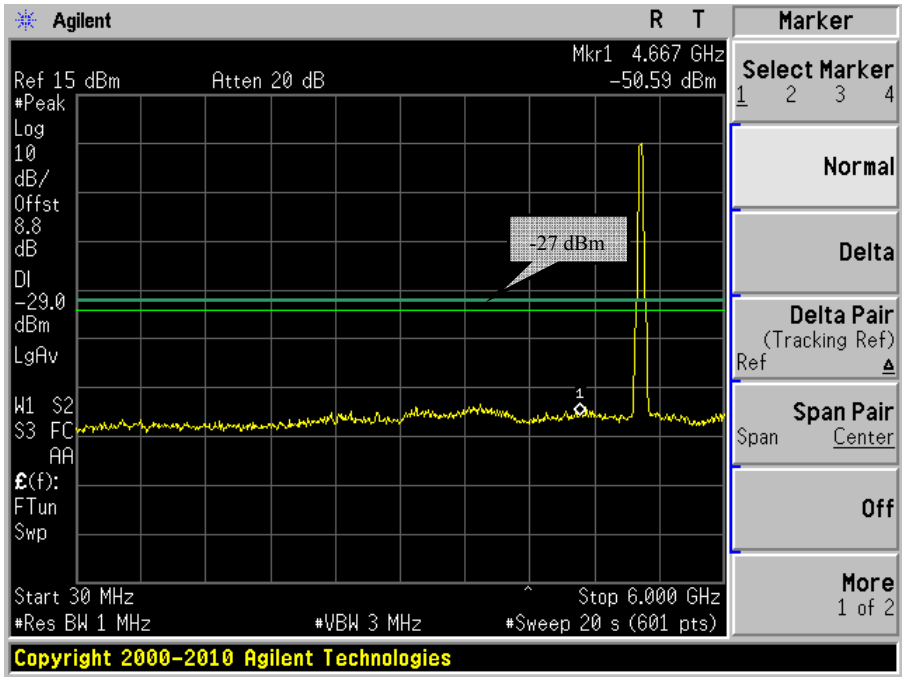


6 GHz - 44.5 GHz

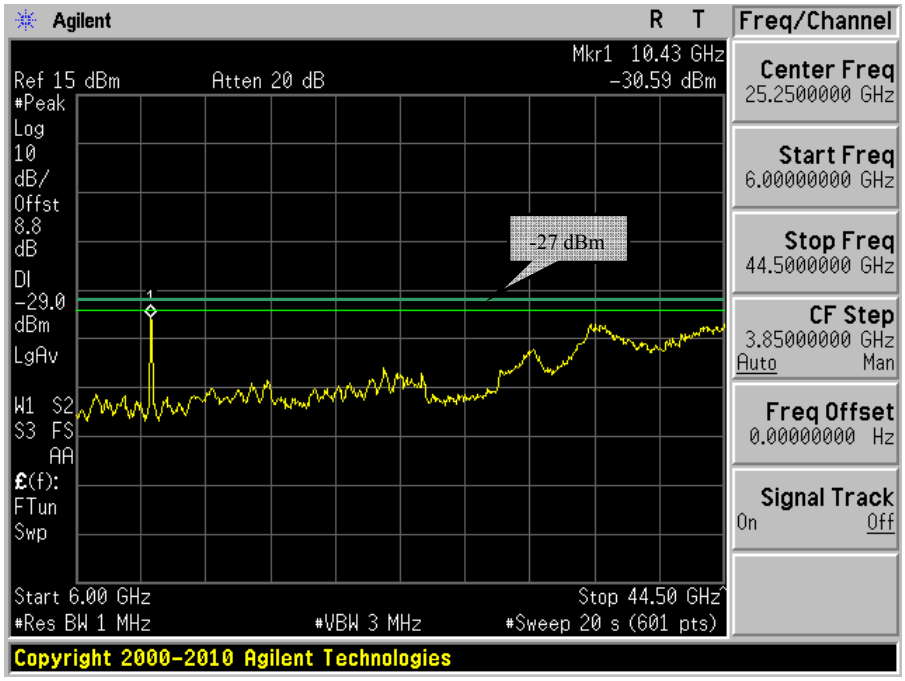


High Channel (5230 MHz)

30 MHz – 6 GHz



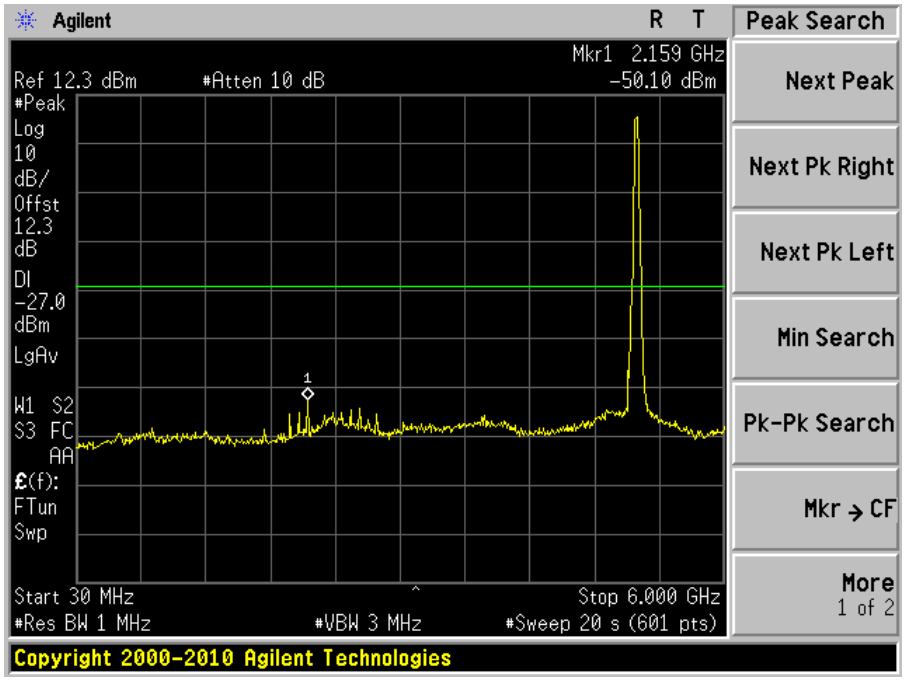
6 GHz - 44.5 GHz



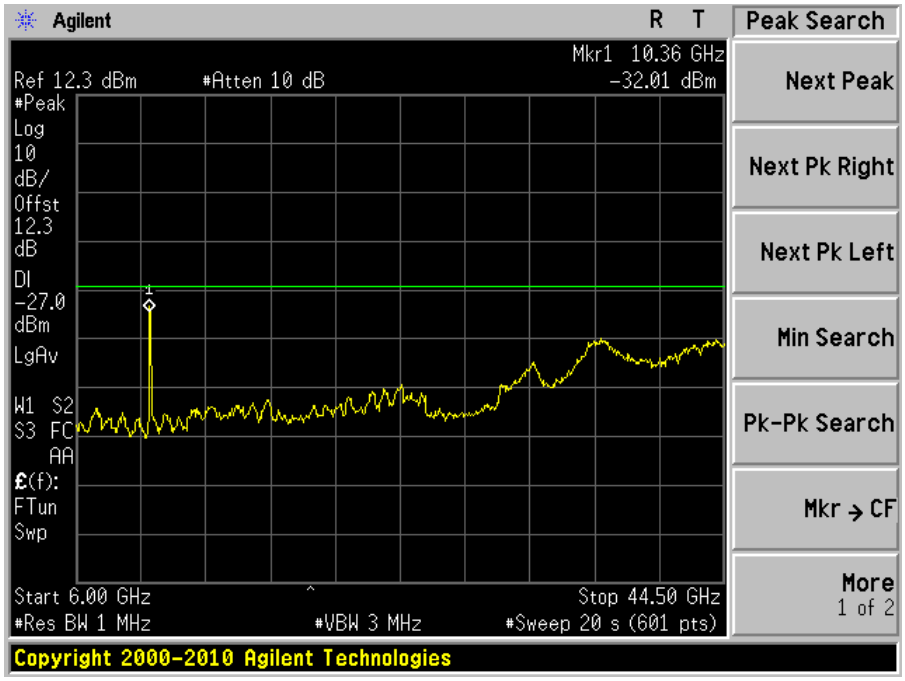
Chain K1 + K2

Low Channel (5190 MHz)

30 MHz - 6 GHz

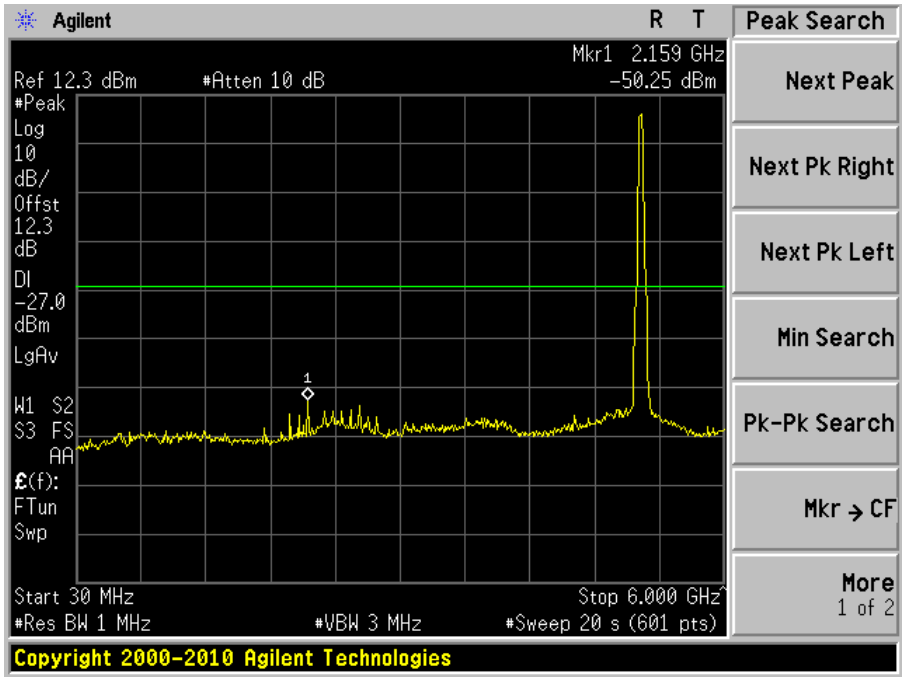


6 GHz - 44.5 GHz

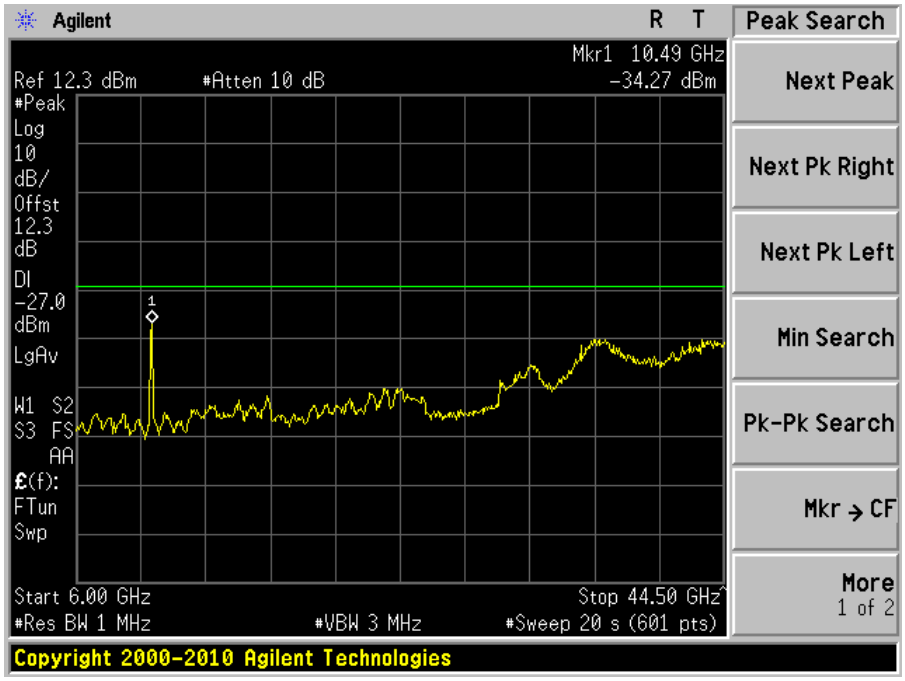


High Channel (5230 MHz)

30 MHz – 6 GHz



6 GHz - 44.5 GHz

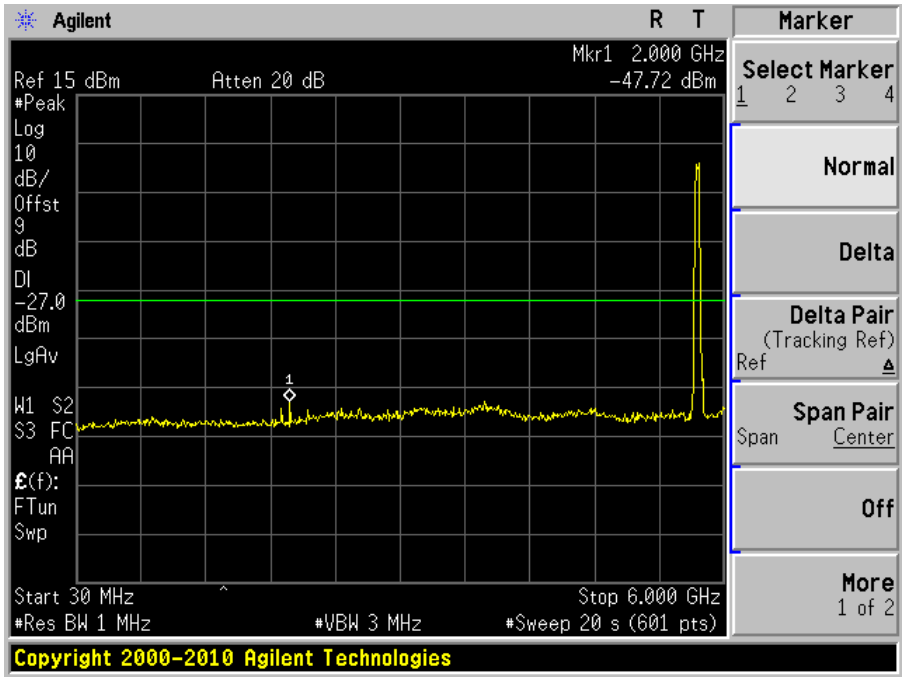


W58 Band:

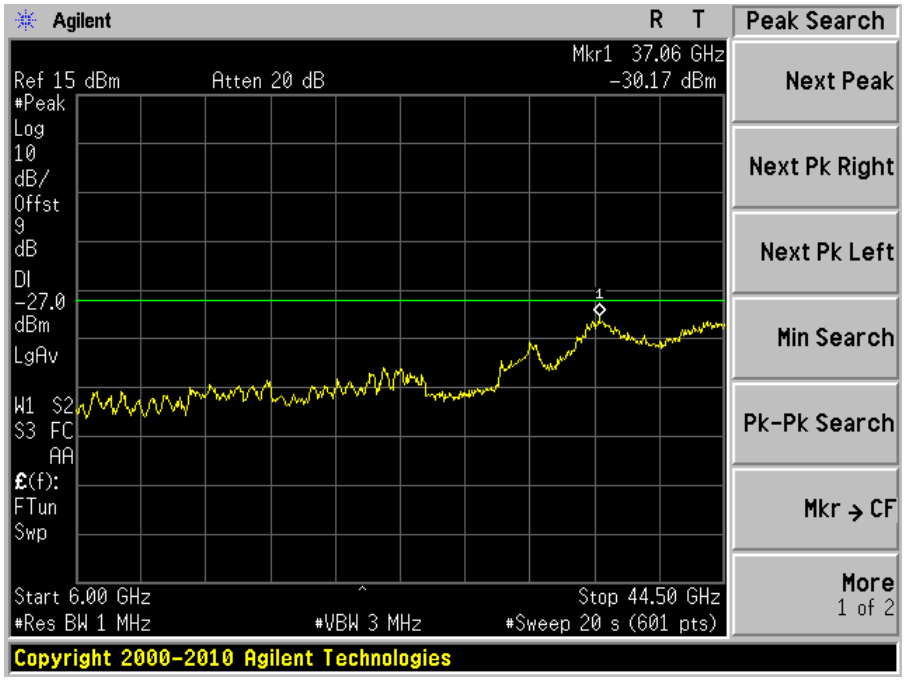
Chain K1

Low Channel (5755 MHz)

30 MHz – 6 GHz

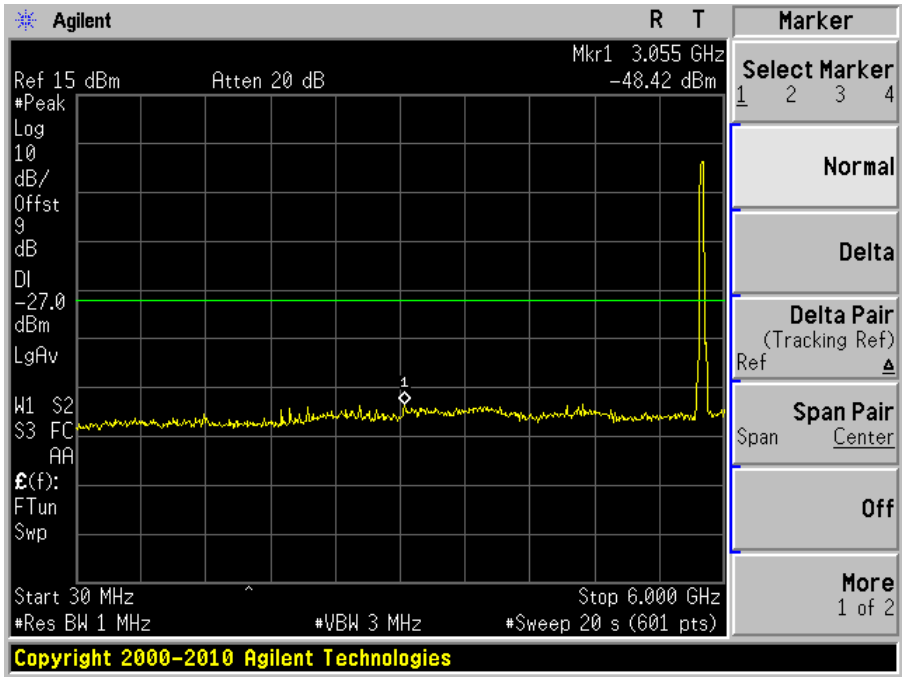


6 GHz - 44.5 GHz

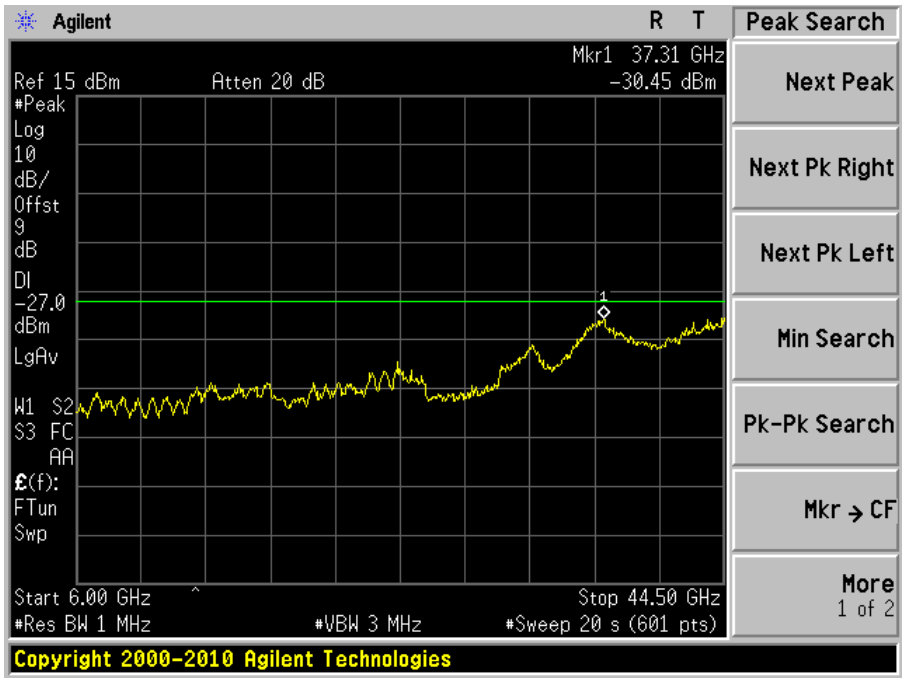


High Channel (5795 MHz)

30 MHz – 6 GHz



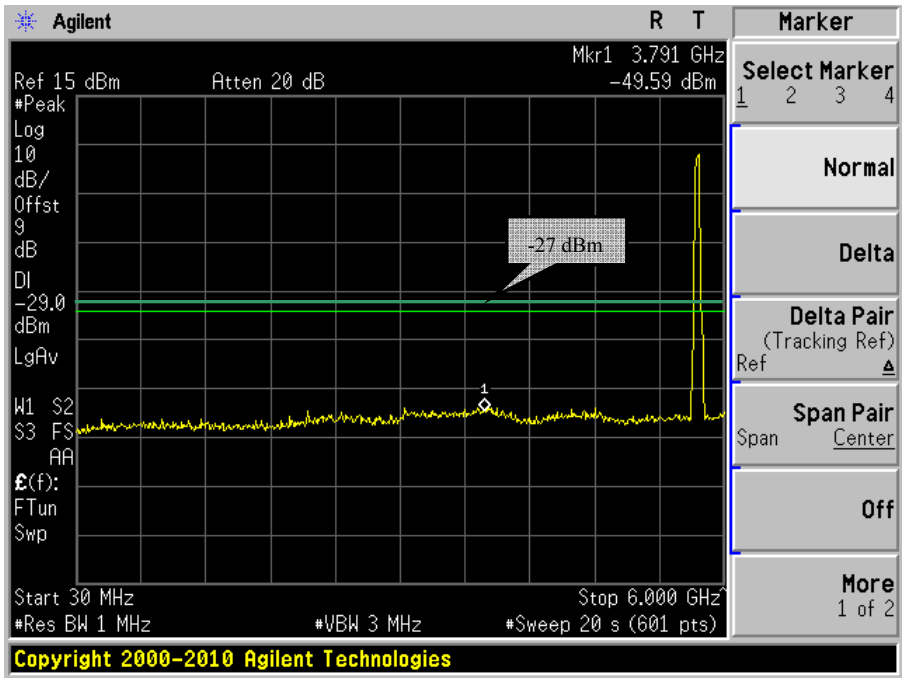
6 GHz - 44.5 GHz



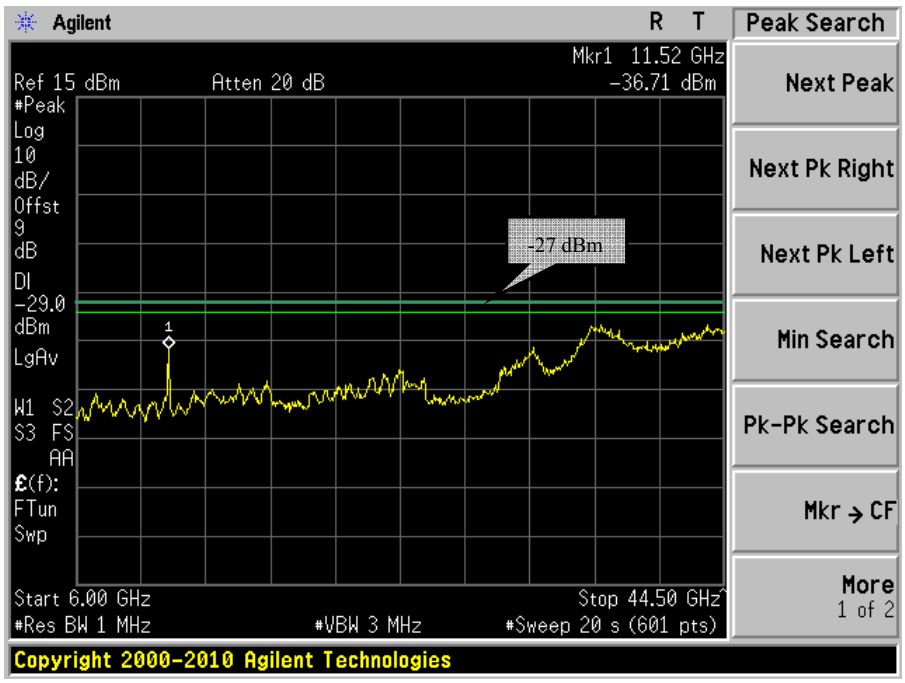
Chain K2

Low Channel (5755 MHz)

30 MHz – 6 GHz

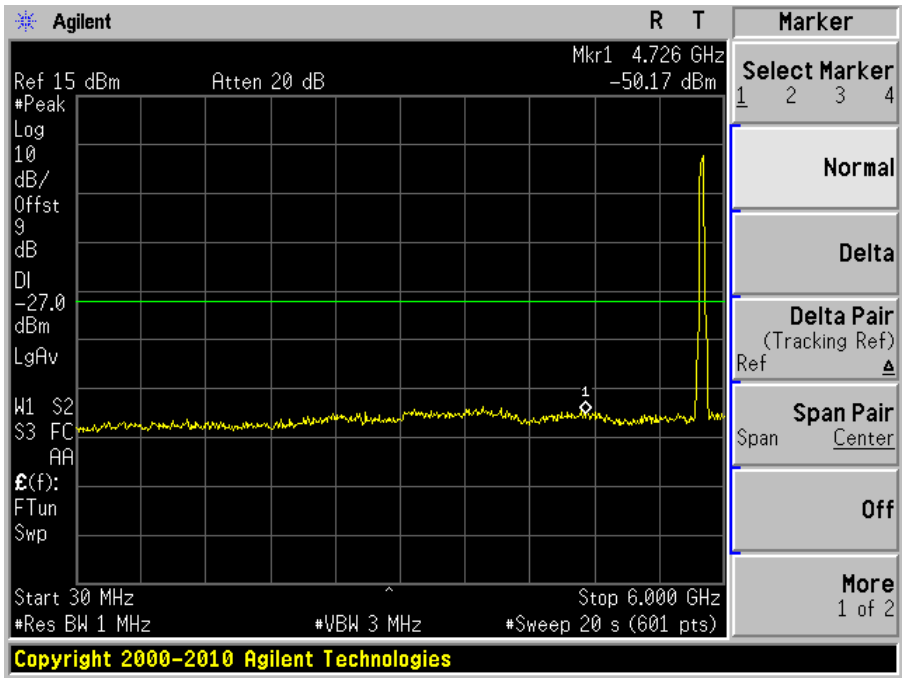


6 GHz - 44.5 GHz

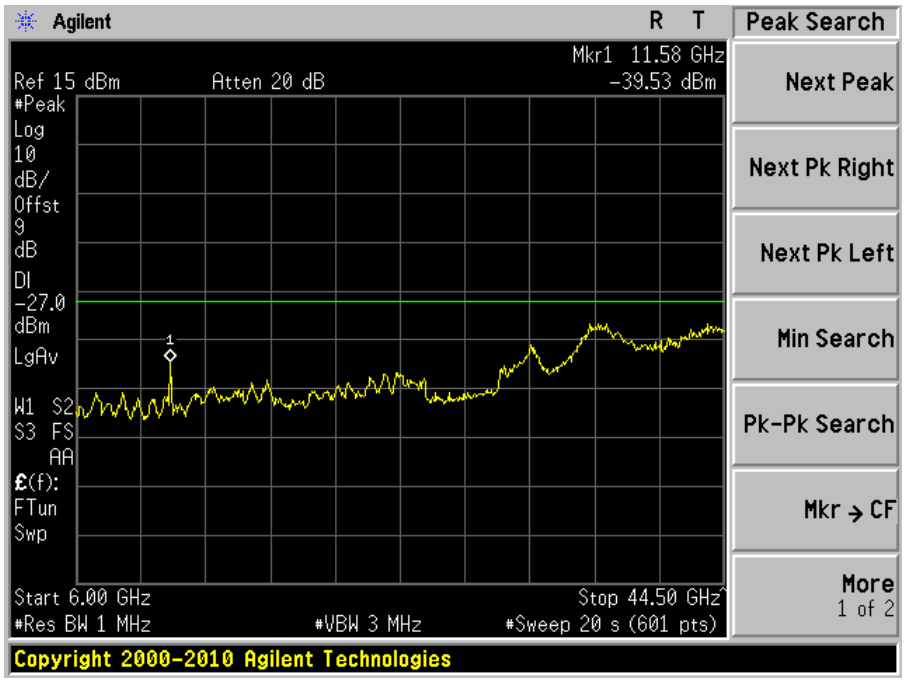


High Channel (5795 MHz)

30 MHz – 6 GHz



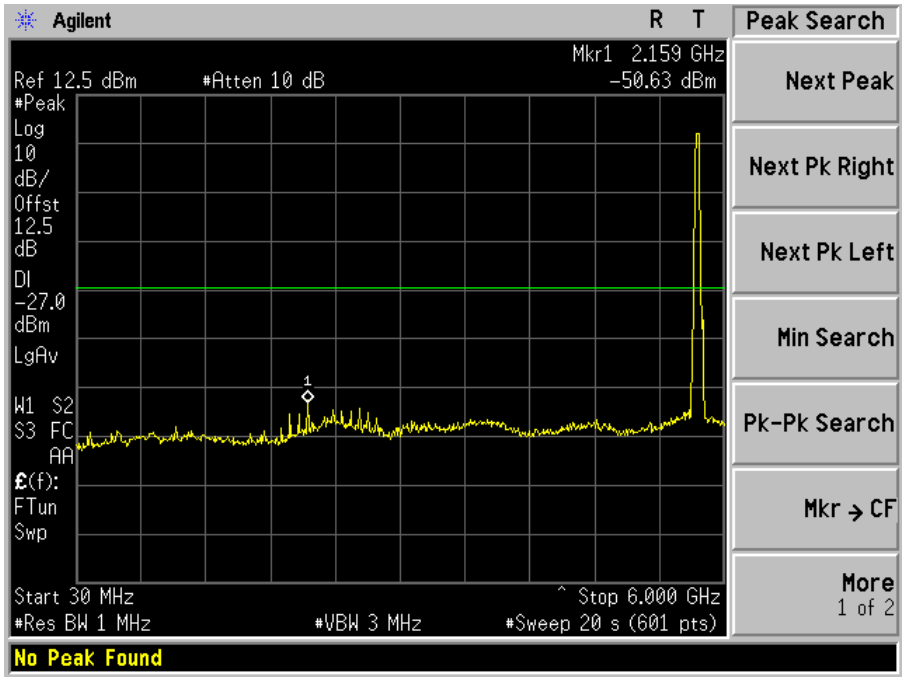
6 GHz - 44.5 GHz



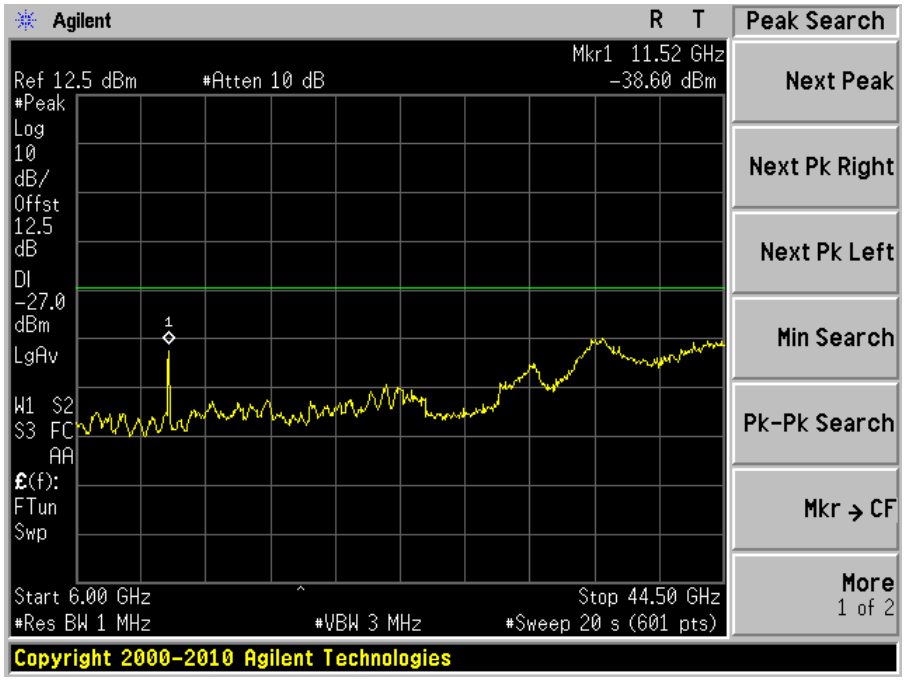
Chain K1 + K2

Low Channel (5755 MHz)

30 MHz – 6 GHz

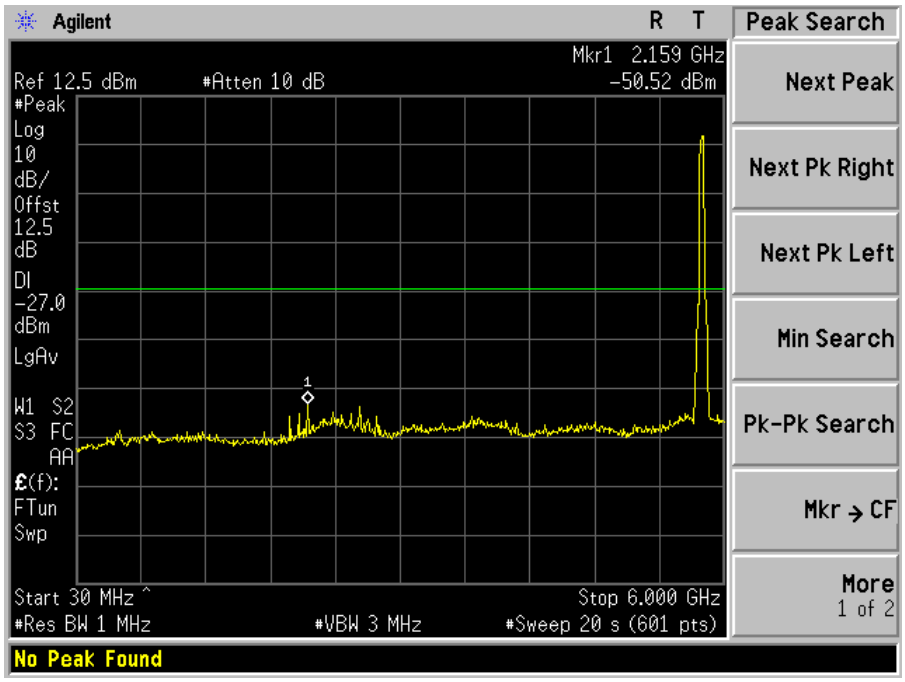


6 GHz- 44.5 GHz



High Channel (5795 MHz)

30 MHz – 6 GHz



6 GHz - 44.5 GHz