

*EMC Test Report*  
*Application for Grant of Equipment Authorization*  
*Industry Canada RSS-Gen Issue 3 / RSS 210 Issue 8*  
*FCC Part 15, Subpart E*

*Model: SDC-WB40NBT*

IC CERTIFICATION #: 6616A-SDCWB40NBT  
FCC ID: TWG-SDCWB40NBT

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TEST SITE(S): Elliott Laboratories  
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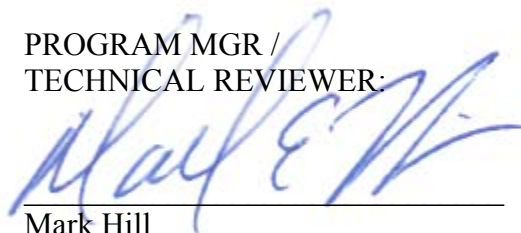
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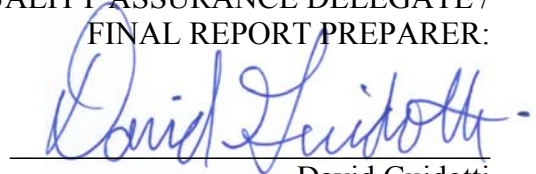
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Testing Cert #2016.01

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**REVISION HISTORY**

Rev#	Date	Comments	Modified By
-	2-15-2012	First release	

**TABLE OF CONTENTS**

<b>REVISION HISTORY .....</b>	<b>2</b>
<b>TABLE OF CONTENTS .....</b>	<b>3</b>
<b>SCOPE.....</b>	<b>4</b>
<b>OBJECTIVE .....</b>	<b>5</b>
<b>STATEMENT OF COMPLIANCE.....</b>	<b>5</b>
<b>DEVIATIONS FROM THE STANDARDS.....</b>	<b>5</b>
<b>TEST RESULTS SUMMARY .....</b>	<b>6</b>
UNII / LELAN DEVICES .....	6
GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS.....	9
MEASUREMENT UNCERTAINTIES.....	10
<b>EQUIPMENT UNDER TEST (EUT) DETAILS.....</b>	<b>11</b>
GENERAL.....	11
OTHER EUT DETAILS.....	11
ANTENNA SYSTEM .....	11
ENCLOSURE.....	11
MODIFICATIONS.....	11
SUPPORT EQUIPMENT .....	12
EUT INTERFACE PORTS .....	12
EUT OPERATION .....	12
<b>TEST SITE.....</b>	<b>13</b>
GENERAL INFORMATION.....	13
CONDUCTED EMISSIONS CONSIDERATIONS .....	13
RADIATED EMISSIONS CONSIDERATIONS .....	13
<b>MEASUREMENT INSTRUMENTATION .....</b>	<b>14</b>
RECEIVER SYSTEM .....	14
INSTRUMENT CONTROL COMPUTER .....	14
LINE IMPEDANCE STABILIZATION NETWORK (LISN).....	14
FILTERS/ATTENUATORS .....	15
ANTENNAS.....	15
ANTENNA MAST AND EQUIPMENT TURNTABLE.....	15
INSTRUMENT CALIBRATION.....	15
<b>TEST PROCEDURES .....</b>	<b>16</b>
EUT AND CABLE PLACEMENT .....	16
CONDUCTED EMISSIONS.....	16
RADIATED EMISSIONS.....	17
CONDUCTED EMISSIONS FROM ANTENNA PORT .....	19
BANDWIDTH MEASUREMENTS .....	19
SPECIFICATION LIMITS AND SAMPLE CALCULATIONS .....	20
CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN .....	20
GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS .....	21
RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS .....	21
OUTPUT POWER LIMITS – FHSS SYSTEMS .....	22
TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS AND DTS SYSTEMS.....	22
FCC 15.407 (A) OUTPUT POWER LIMITS .....	22
OUTPUT POWER LIMITS –LELAN DEVICES.....	23
SPURIOUS EMISSIONS LIMITS –UNII AND LELAN DEVICES .....	23
SAMPLE CALCULATIONS - CONDUCTED EMISSIONS .....	23
SAMPLE CALCULATIONS - RADIATED EMISSIONS.....	24
SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION.....	25
<b>APPENDIX A TEST EQUIPMENT CALIBRATION DATA .....</b>	<b>26</b>
<b>APPENDIX B TEST DATA .....</b>	<b>29</b>
<b>END OF REPORT .....</b>	<b>121</b>

## SCOPE

An electromagnetic emissions test has been performed on the Summit Data Communications model SDC-WB40NBT, pursuant to the following rules:

Industry Canada RSS-Gen Issue 3  
RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"  
FCC Part 15, Subpart E requirements for UNII Devices (using FCC DA 02-2138, August 30, 2002)

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in Elliott Laboratories test procedures:

ANSI C63.4:2003  
FCC UNII test procedure KDB 789033 D01, Dated 10/25/2011

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

## **OBJECTIVE**

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

## **STATEMENT OF COMPLIANCE**

The tested sample of Summit Data Communications model SDC-WB40NBT complied with the requirements of the following regulations:

- Industry Canada RSS-Gen Issue 3
- RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
- FCC Part 15, Subpart E requirements for UNII Devices

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of Summit Data Communications model SDC-WB40NBT and therefore apply only to the tested sample. The sample was selected and prepared by Ron Seide of Summit Data Communications.

## **DEVIATIONS FROM THE STANDARDS**

No deviations were made from the published requirements listed in the scope of this report.

**TEST RESULTS SUMMARY****UNII / LELAN DEVICES****Operation in the 5.15 – 5.25 GHz Band**

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407(e)		Indoor operation only	Refer to user's manual	N/A	Complies
15.407(a)(2)		26dB Bandwidth	27.8MHz	N/A – limits output power if < 20MHz	N/A
15.407(a)(1)	A9.2(1)	Output Power	802.11a: 10.8dBm (0.012W) n20: 9.7dBm (0.009W) (Max eirp: 0.053W)	17dBm	Complies
15.407(a)(1)	-	Power Spectral Density	802.11a: 0.3dBm/MHz	4 dBm/MHz	Complies
-	A9.5 (2)			5 dBm/MHz	Complies

**Operation in the 5.25 – 5.35 GHz Band**

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a)(2)		26dB Bandwidth	22.2MHz	N/A – limits output power if < 20MHz	N/A
15.407(a)(2)	A9.2(2)	Output Power	802.11a: 14.2dBm (0.026W) n20: 13.2dBm (0.021W) (Max eirp: 0.116W)	17dBm (50mW)	Complies
15.407(a)(2)	-	Power Spectral Density	802.11a: 3.1dBm/MHz	10.5 dBm/MHz	Complies
-	A9.2(2) / A9.5 (2)	Power Spectral Density		802.11n20: 1.7dBm/MHz	11 dBm/MHz

**Operation in the 5.47 – 5.725 GHz Band**

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth	22.3MHz	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	A9.2(2)	Output Power	802.11a: 15.0dBm (0.031W)  802.11n20: 13.3dBm (0.021W)  (Max eirp: 0.140W)	24 dBm / 250mW (eirp < 30dBm)	Complies
15.407(a) (2))		Power Spectral Density	802.11a: 4.0 dBm/MHz	10.5 dBm/MHz	Complies
	A9.2(2) / A9.5 (2)	Power Spectral Density	802.11n20: 2.1dBm/MHz	11 dBm/MHz	Complies
KDB 443999	A9	Non-operation in 5600 – 5650 MHz sub band	Device cannot operate in the 5600 – 5650 MHz band –refer to Operational Description		Complies

**Requirements for all U-NII/LELAN bands**

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	A9.5a	Modulation	Digital Modulation is used	Digital modulation is required	Complies
15.407(b)(5) / 15.209	A9.3	Spurious Emissions	53.8dB $\mu$ V/m @ 5350.1MHz (-0.2dB)	Refer to page 23	Complies
15.407(a)(6)	-	Peak Excursion Ratio	12.1dB	< 13dB	Complies
	A9.5 (3)	Channel Selection	Spurious emissions tested at outermost channels in each band	Device was tested on the top, bottom and center channels in each band	N/A
15			Measurements on three channels in each band		Complies
15.407 (c)	A9.5(4)	Operation in the absence of information to transmit	Operation is discontinued in the absence of information	Device shall automatically discontinue operation in the absence of information to transmit	Complies
15.407 (g)	A9.5 (5)	Frequency Stability	Frequency stability is better than 10ppm	Signal shall remain within the allocated band	Complies
15.407 (h1)	A9.4	Transmit Power Control	TPC is not required as the device operates at below 500mW eirp	The U-NII device shall have the capability to operate with a mean EIRP value lower than 24dBm (250mW)	Complies
15.407 (h2)	A9.4	Dynamic frequency Selection (device without radar detection)	Refer to separate test report, reference R86361	Channel move time < 10s Channel closing transmission time < 260ms	Complies
	A9.9g	User Manual information	Refer to Exhibit 6 for details	Warning regarding interference from Satellite Systems	Complies



**GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS**

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	EUT uses u.FL connectors	Unique or integral antenna required	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	32.7dB $\mu$ V @ 0.457MHz (-14.1dB)	Refer to page 20	Complies
15.109	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	51.8dB $\mu$ V/m @ 2994.7MHz (-2.2dB)	Refer to page 21	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations in Exhibit 11, RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual		Statement required regarding non-interference	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual		Statement for products with detachable antenna	Complies
-	RSP 100 RSS GEN 4.4.1	99% Bandwidth	802.11a: 17.3MHz 802.11n20: 18.1MHz	Information only	N/A

**MEASUREMENT UNCERTAINTIES**

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
RF power, conducted (power meter)	dBm	25 to 7000 MHz	± 0.52 dB
RF power, conducted (Spectrum analyzer)	dBm	25 to 7000 MHz	± 0.7 dB
Conducted emission of transmitter	dBm	25 to 26500 MHz	± 0.7 dB
Conducted emission of receiver	dBm	25 to 26500 MHz	± 0.7 dB
Radiated emission (substitution method)	dBm	25 to 26500 MHz	± 2.5 dB
Radiated emission (field strength)	dB $\mu$ V/m	25 to 1000 MHz	± 3.6 dB
		1000 to 40000 MHz	± 6.0 dB
Conducted Emissions (AC Power)	dB $\mu$ V	0.15 to 30 MHz	± 2.4 dB

**EQUIPMENT UNDER TEST (EUT) DETAILS****GENERAL**

The Summit Data Communications model SDC-WB40NBT is an 802.11abgn 1x1 with Bluetooth 2.1 module.

The sample was received on October 19, 2010 and tested on October 19, 20 and 21 and November 19 and 24, 2010 and May 11, August 2, 4, 10, 12, 13, 16, 17, 18 19, 20, 23, 24, 26 and October 6, 7, 19, 20 and 26 and November 3, 4, 7, 8, 9, 15, 2011. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Summit	SDC-WB40NBT	802.11abgn 1x with BT	Prototype	TWG-SDCW40NBT

**OTHER EUT DETAILS**

The EUT supports single transmit chain operation. The EUT supports 20MHz operation only.

**ANTENNA SYSTEM**

Monopole Antenna - 2.4 and 5GHz bands - Huber+Suhner, SOA 2459/360/5/0/V\_C, 3dBi (2.4GHz), 6.5dBi (5GHz)

Dipole Antenna #1 - 2.4 and 5GHz bands - Larsen, R380.500.314, 1.6dBi (2.4GHz), 5dBi (5GHz)

Dipole Antenna #2 - 2.4 GHz only - Cisco Air-Ant 4941 2dBi(2.4GHz)

Magnetic Dipole - 2.4GHz and 5GHz bands – Ethertronics, 2.5dBi (2.4GHz), 5dBi (5GHz)

In the 2.4GHz range, the Huber+Suhner (H&S), Cisco and Ethertronics antennas were tested as they represented the highest gain antennas of each available type.

In the 5GHz range, the H&S, Larsen, and Ethertronics antennas were tested as they represented the highest gain antennas of each available type.

The antenna connects to the EUT via a non-standard u.FL antenna connector, thereby meeting the requirements of FCC 15.203.

**ENCLOSURE**

The EUT has no enclosure. It is designed to be installed within the enclosure of a host computer.

**MODIFICATIONS**

No modifications were made to the EUT during the time the product was at Elliott.

**SUPPORT EQUIPMENT**

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Lenovo	Inspiron 1545	Laptop Computer (Note 1)	953R2K1	DoC
GME	GFP181U-A330	AC/DC Adapter (Note 2)	1005-000194	-
-	-	Battery Pack (Note 3)	-	-

Note 1 - Used to configure the EUT and then disconnected prior to testing

Note 2 – Used for AC conducted emissions only

Note 3 – Used for radiated spurious emissions tests

**EUT INTERFACE PORTS**

The I/O cabling configuration during testing was as follows:

Port	Connected To	Description	Cable(s)	
			Shielded or Unshielded	Length(m)
AC/DC Adapter – DC out	WB40	2wire	Unshielded	1.5m
Battery Pack	WB40	2wire	Unshielded	0.1m

**EUT OPERATION**

During testing, the EUT was configured to transmit continuously at the lowest data rate for the mode as this resulted in the highest output power.

**TEST SITE****GENERAL INFORMATION**

Final test measurements were taken at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission and with industry Canada.

Site	Registration Numbers		Location
	FCC	Canada	
Chamber 3	769238	2845B-3	41039 Boyce Road Fremont, CA 94538-2435
Chamber 4	211948	2845B-4	
Chamber 5	211948	2845B-5	
Chamber 7	A2LA accreditation	2845B-7	

ANSI C63.4:2003 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4:2003.

**CONDUCTED EMISSIONS CONSIDERATIONS**

Conducted emissions testing is performed in conformance with ANSI C63.4:2003. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

**RADIATED EMISSIONS CONSIDERATIONS**

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4:2003.

## **MEASUREMENT INSTRUMENTATION**

### **RECEIVER SYSTEM**

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

### **INSTRUMENT CONTROL COMPUTER**

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

### **LINE IMPEDANCE STABILIZATION NETWORK (LISN)**

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

### *FILTERS/ATTENUATORS*

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

### *ANTENNAS*

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

### *ANTENNA MAST AND EQUIPMENT TURNTABLE*

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.4:2003 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

### *INSTRUMENT CALIBRATION*

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

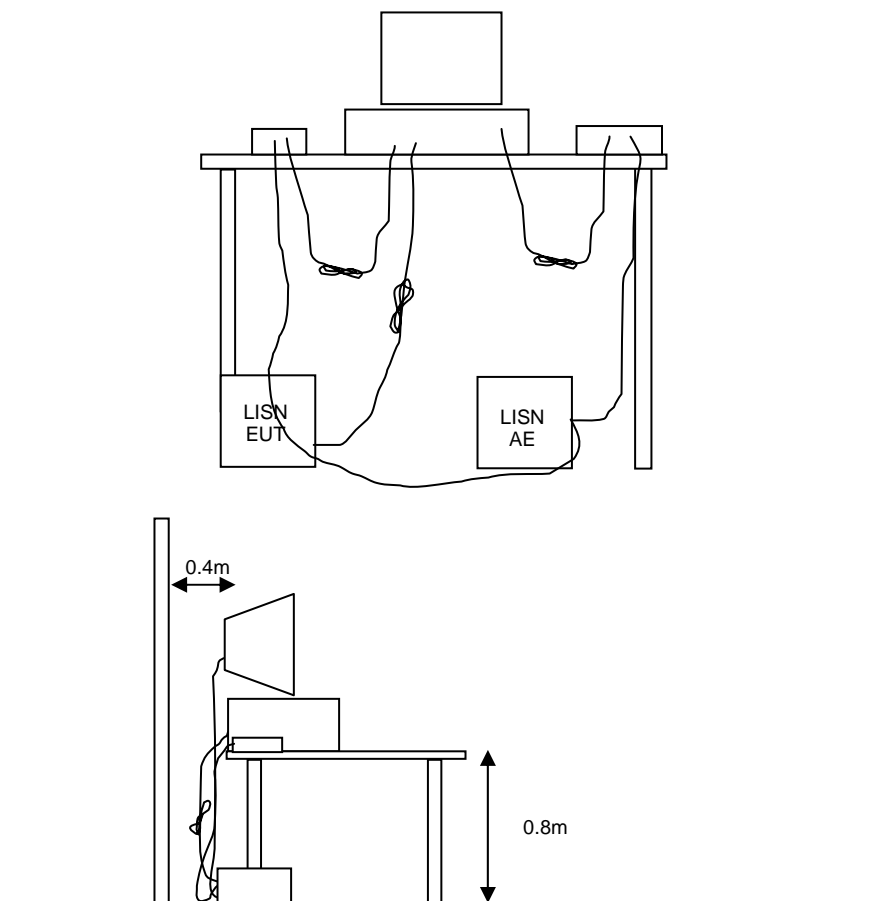
## TEST PROCEDURES

### EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4:2003, and the worst-case orientation is used for final measurements.

### CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.



**Figure 1 Typical Conducted Emissions Test Configuration**



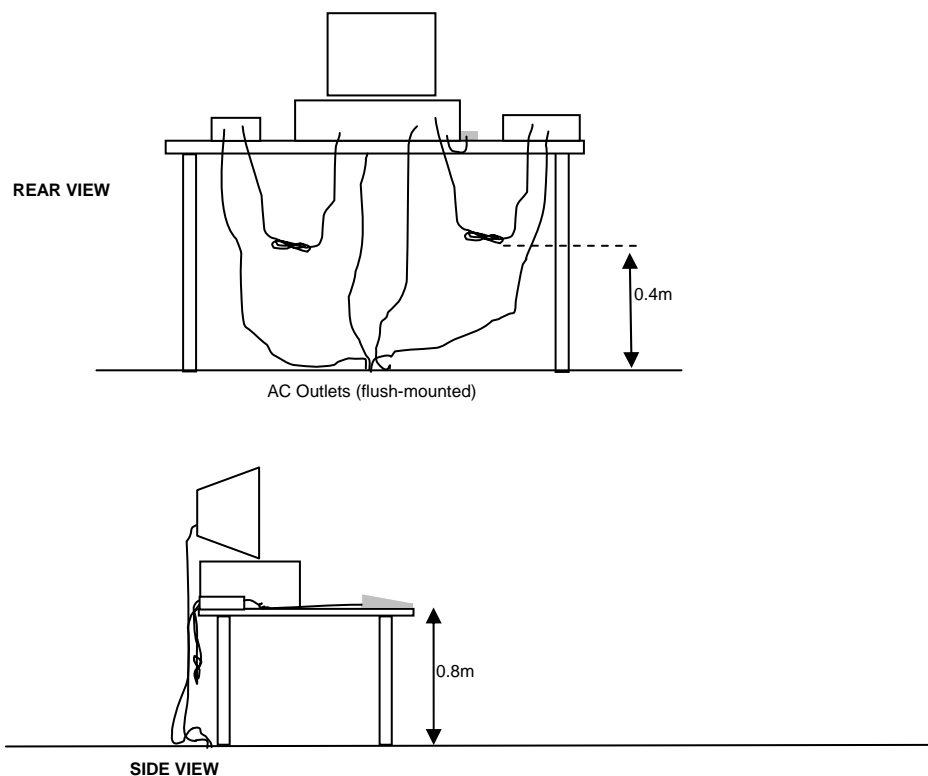
**RADIATED EMISSIONS**

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

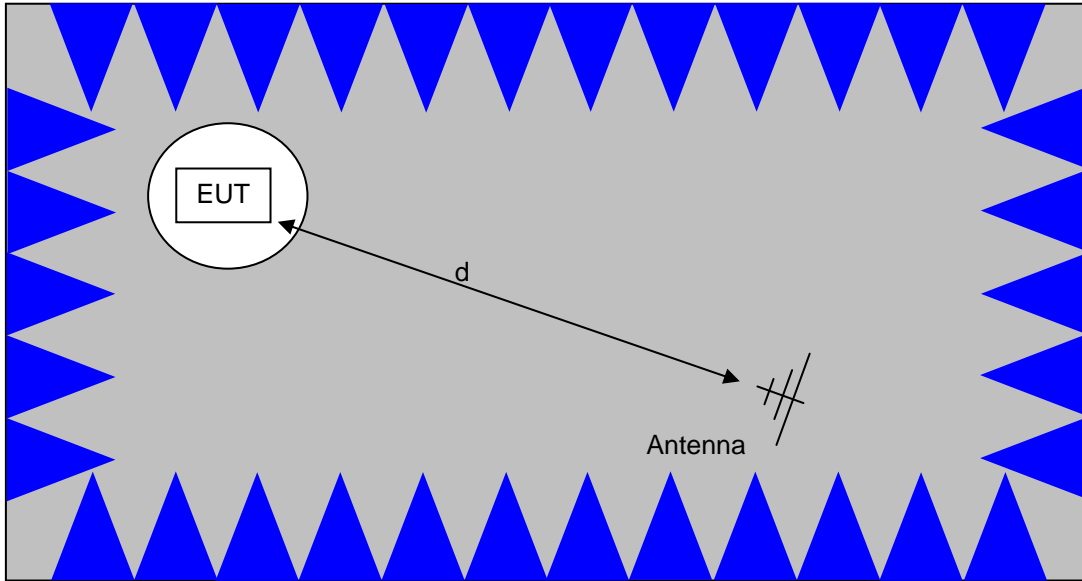
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

When testing above 18 GHz, the receive antenna is located at 1 meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.

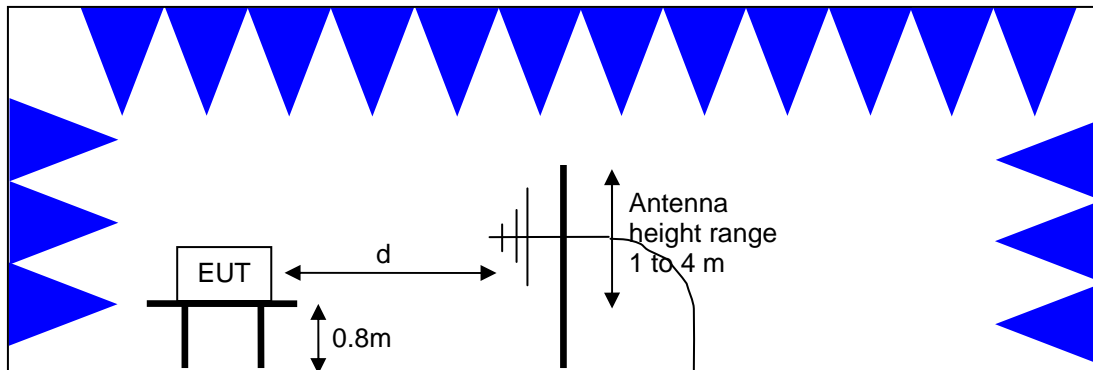


Typical Test Configuration for Radiated Field Strength Measurements



The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

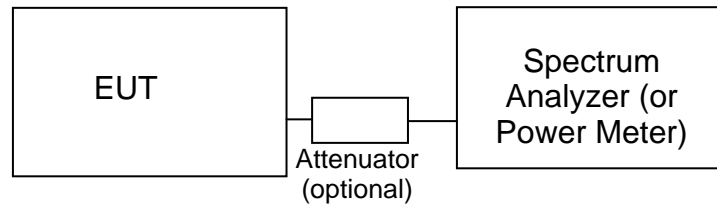
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



Test Configuration for Radiated Field Strength Measurements  
Semi-Anechoic Chamber, Plan and Side Views

**CONDUCTED EMISSIONS FROM ANTENNA PORT**

Direct measurements of power, bandwidth and power spectral density are performed, where possible, with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.

**Test Configuration for Antenna Port Measurements**

Measurement bandwidths (video and resolution) are set in accordance with the relevant standards and Elliott's test procedures for the type of radio being tested. When power measurements are made using a resolution bandwidth less than the signal bandwidth the power is calculated by summing the power across the signal bandwidth using either the analyzer channel power function or by capturing the trace data and calculating the power using software. In both cases the summed power is corrected to account for the equivalent noise bandwidth (ENBW) of the resolution bandwidth used.

If power averaging is used (typically for certain digital modulation techniques), the EUT is configured to transmit continuously. Power averaging is performed using either the built-in function of the analyzer or, if the analyzer does not feature power averaging, using external software. In both cases the average power is calculated over a number of sweeps (typically 100). When the EUT cannot be configured to continuously transmit then either the analyzer is configured to perform a gated sweep to ensure that the power is averaged over periods that the device is transmitting or power averaging is disabled and a max-hold feature is used.

If a power meter is used to make output power measurements the sensor head type (peak or average) is stated in the test data table.

**BANDWIDTH MEASUREMENTS**

The 6dB, 20dB and/or 26dB signal bandwidth is measured in using the bandwidths recommended by ANSI C63.4. When required, the 99% bandwidth is measured using the methods detailed in RSS GEN.

**SPECIFICATION LIMITS AND SAMPLE CALCULATIONS**

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

**CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN**

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

**GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS**

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands<sup>1</sup> (with the exception of transmitters operating under FCC Part 15 Subpart D and RSS 210 Annex 9), the limits for all emissions from a low power device operating under the general rules of RSS 310 (tables 3 and 4), RSS 210 (table 2) and FCC Part 15 Subpart C section 15.209.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	2400/F <sub>KHz</sub> @ 300m	67.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 300m
0.490-1.705	24000/F <sub>KHz</sub> @ 30m	87.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

**RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS**

The table below shows the limits for the spurious emissions from receivers as detailed in FCC Part 15.109, RSS 210 Table 2, RSS GEN Table 1 and RSS 310 Table 3. Note that receivers operating outside of the frequency range 30 MHz – 960 MHz are exempt from the requirements of 15.109.

Frequency Range (MHz)	Limit (uV/m @ 3m)	Limit (dBuV/m @ 3m)
30 to 88	100	40
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

<sup>1</sup> The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

**OUTPUT POWER LIMITS – FHSS SYSTEMS**

The table below shows the limits for output power based on the number of channels available for the hopping system.

Operating Frequency (MHz)	Number of Channels	Output Power
902 – 928	≥ 50	1 Watt (30 dBm)
902 – 928	25 to 49	0.25 Watts (24 dBm)
2400 – 2483.5	≥ 75	1 Watt (30 dBm)
2400 – 2483.5	< 75	0.125 Watts (21 dBm)
5725 – 5850	75	1 Watt (30 dBm)

The maximum permitted output power is reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 – 5850 MHz band are not subject to this restriction.

**TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS and DTS SYSTEMS**

The limits for unwanted (spurious) emissions from the transmitter falling in the restricted bands are those specified in the general limits sections of FCC Part 15 and RSS 210. All other unwanted (spurious) emissions shall be at least 20dB below the level of the highest in-band signal level (30dB if the power is measured using the sample detector/power averaging method).

**FCC 15.407 (a) OUTPUT POWER LIMITS**

The table below shows the limits for output power and output power density. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 – 5250	50mW (17 dBm)	4 dBm/MHz
5250 – 5350	250 mW (24 dBm)	11 dBm/MHz
5725 – 5825	1 Watts (30 dBm)	17 dBm/MHz

For system using antennas with gains exceeding 6dBi, the output power and power spectral density limits are reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 – 5825 MHz band may use antennas with gains of up to 23dBi without this limitation. If the gain exceeds 23dBi then the output power limit of 1 Watt is reduced by 1dB for every dB the gain exceeds 23dBi.

The peak excursion envelope is limited to 13dB.

**OUTPUT POWER LIMITS –LELAN DEVICES**

The table below shows the limits for output power and output power density defined by RSS 210. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 – 5250	200mW (23 dBm) eirp	10 dBm/MHz eirp
5250 – 5350	250 mW (24 dBm) <sup>2</sup> 1W (30dBm) eirp	11 dBm/MHz
5470 – 5725	250 mW (24 dBm) <sup>3</sup> 1W (30dBm) eirp	11 dBm/MHz
5725 – 5825	1 Watts (30 dBm) 4W eirp	17 dBm/MHz

In addition, the power spectral density limit shall be reduced by 1dB for every dB the highest power spectral density exceeds the “average” power spectral density ) by more than 3dB. The “average” power spectral density is determined by dividing the output power by  $10\log(\text{EBW})$  where EBW is the 99% power bandwidth.

Fixed point-to-point applications using the 5725 – 5825 MHz band may use antennas with gains of up to 23dBi without this limitation. If the gain exceeds 23dBi then the output power limit of 1 Watt is reduced by 1dB for every dB the gain exceeds 23dBi.

**SPURIOUS EMISSIONS LIMITS –UNII and LELAN DEVICES**

The spurious emissions limits for signals below 1GHz are the FCC/RSS-GEN general limits. For emissions above 1GHz, signals in restricted bands are subject to the FCC/RSS GEN general limits. All other signals have a limit of  $-27\text{dBm/MHz}$ , which is a field strength of  $68.3\text{dBuV/m/MHz}$  at a distance of 3m. This is an average limit so the peak value of the emission may not exceed  $-7\text{dBm/MHz}$  ( $88.3\text{dBuV/m/MHz}$  at a distance of 3m). For devices operating in the 5725-5850Mhz bands under the LELAN/UNII rules, the limit within 10Mhz of the allocated band is increased to  $-17\text{dBm/MHz}$ .

**SAMPLE CALCULATIONS - CONDUCTED EMISSIONS**

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

$R_r$  = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

<sup>2</sup> If EIRP exceeds 500mW the device must employ TPC

<sup>3</sup> If EIRP exceeds 500mW the device must employ TPC

**SAMPLE CALCULATIONS - RADIATED EMISSIONS**

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20 * \text{LOG}_{10} (D_m/D_s)$$

where:

$$F_d = \text{Distance Factor in dB}$$

$$D_m = \text{Measurement Distance in meters}$$

$$D_s = \text{Specification Distance in meters}$$

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40 * \text{LOG}_{10} (D_m/D_s)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

$$R_r = \text{Receiver Reading in dBuV/m}$$

$$F_d = \text{Distance Factor in dB}$$

$$R_c = \text{Corrected Reading in dBuV/m}$$

$$L_s = \text{Specification Limit in dBuV/m}$$

$$M = \text{Margin in dB Relative to Spec}$$



**SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION**

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of d (meters) from the equipment under test:

$$E = \frac{1000000 \sqrt{30 P}}{d} \quad \text{microvolts per meter}$$

where P is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.

**Appendix A Test Equipment Calibration Data****Radio (2nd Harmonic), 19-Nov-10**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/15/2010
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/2/2012
Hewlett Packard	High Pass filter, 8.2 GHz	P/N 84300-80039	1156	6/25/2011
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	4/14/2011
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1422	7/19/2011
Rohde & Schwarz	Power Sensor 100 uW - 10 Watts	NRV-Z53	1555	2/5/2011
Rohde & Schwarz	Attenuator, 20 dB , 50 ohm, 10W, DC-18 GHz	20dB, 10W, Type N	1556	2/5/2011

**Radio Antenna Port (Power and Spurious Emissions), 24-Nov-10**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	4/14/2011
Rohde & Schwarz	Power Sensor 100 uW - 10 Watts	NRV-Z53	1555	2/5/2011
Rohde & Schwarz	Attenuator, 20 dB , 50 ohm, 10W, DC-18 GHz	20dB, 10W, Type N	1556	2/5/2011
Rohde & Schwarz	Power Meter, Dual Channel	NRVD	1787	12/4/2010

**Radiated Emissions, 1000 - 18,000 MHz, 04-Aug-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/2/2012
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	8/12/2011
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	10/21/2011

**Radiated Emissions, 30 - 40,000 MHz, 12-Aug-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
Narda West	High Pass Filter, 8 GHz	HPF 180	821	3/23/2012
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	8/5/2012
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	7/28/2012

**Radiated Emissions, 1000 - 40,000 MHz, 13-Aug-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
Narda West	High Pass Filter, 8 GHz	HPF 180	821	3/23/2012
Hewlett Packard	Head (Inc flex cable, 1143, 2198) Red	84125C	1145	2/17/2012
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	8/5/2012
A.H. Systems	Purple System Horn, 18-40GHz	SAS-574, p/n: 2581	2160	2/9/2012
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	7/28/2012

**Radiated Emissions, 1000 - 40,000 MHz, 16-Aug-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
Hewlett Packard	Head (Inc flex cable, 1143, 2198) Red	84125C	1145	2/17/2012
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1681	5/3/2012
A.H. Systems	Purple System Horn, 18-40GHz	SAS-574, p/n: 2581	2160	2/9/2012
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	10/21/2011
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	7/28/2012

**Radiated Emissions, 1000 - 18,000 MHz, 17-Aug-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
Narda West	High Pass Filter, 8 GHz	HPF 180	821	3/23/2012
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	10/1/2011
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	7/28/2012

**Radiated Emissions, 1000 - 18,000 MHz, 18-Aug-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	10/1/2011
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	10/1/2011
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	7/28/2012

**Radio Antenna Port (Power and Spurious Emissions), 24-Aug-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	8/9/2012
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	11/2/2011

**Radio Antenna Port (Power and Spurious Emissions), 26-Aug-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	8/15/2012
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	4/6/2012

**Radiated Emissions, 1000 - 18,000 MHz, 15-Nov-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	8/15/2012
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	6/22/2012
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/23/2012

**Conducted Emissions - AC Power Ports, 16-Dec-11**

<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	LISN, 10 kHz-100 MHz, 25A	3825/2	1292	3/1/2012
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	4/6/2012

## *Appendix B Test Data*

T80880 Pages 30 – 111  
T83198 Pages 112 - 120

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		-
Emissions Standard(s):	FCC 15.E/RSS-210	Class:	-
Immunity Standard(s):	-	Environment:	-

## EMC Test Data

For The

### Summit Data Communications

Model

SDC-WB40 (1x1 802.11abg + BT 2.1)

Date of Last Test: 8/24/2011

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

## RSS 210 and FCC 15.407 (UNII) Radiated Bandedge Emissions (Larsen Antenna)

### 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.

### General Test Configuration

The EUT was installed into a test fixture such that the EUT was exposed (i.e. outside of a host PC).

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

### Ambient Conditions:

Rel. Humidity: 30-40 %  
Temperature: 18 - 25 °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:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Summary of Results**

**New Module #2011-1296, Laptop #2011-2312, Linux Shell**

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin
Run # 1	802.11a Chain A	#36 5180MHz	Larsen	-	Restricted Band Edge at 5150 MHz	15.209	53.1dBµV/m @ 5149.9MHz (-0.9dB)
Run # 1	802.11a Chain A	#56 5280MHz	Larsen	-	Restricted Band Edge at 5250 MHz	LP0002 (Taiwan Only)	52.3dBµV/m @ 5249.8MHz (-1.7dB)
Run # 1	802.11a Chain A	#64 5320MHz	Larsen	-	Restricted Band Edge at 5350 MHz	15.209	53.8dBµV/m @ 5350.1MHz (-0.2dB)
Run # 1	802.11a Chain A	#100 5500MHz	Larsen	-	Restricted Band Edge at 5460 MHz	15.209	47.3dBµV/m @ 5459.3MHz (-6.7dB)
Run # 2	802.11n20 Chain A	#36 5180MHz	Larsen	-	Restricted Band Edge at 5150 MHz	15.209	48.3dBµV/m @ 5148.2MHz (-5.7dB)
Run # 2	802.11n20 Chain A	#56 5280MHz	Larsen	-	Restricted Band Edge at 5250 MHz	LP0002 (Taiwan Only)	50.7dBµV/m @ 5249.8MHz (-3.3dB)
Run # 2	802.11n20 Chain A	#64 5320MHz	Larsen	-	Restricted Band Edge at 5350 MHz	15.209	53.6dBµV/m @ 5350.0MHz (-0.4dB)
Run # 2	802.11n20 Chain A	#100 5500MHz	Larsen	-	Restricted Band Edge at 5460 MHz	15.209	47.5dBµV/m @ 5458.9MHz (-6.5dB)



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 1, Band Edge Field Strength - 802.11a, Chain A**

Date of Test: 8/3/2011  
Test Engineer: M. Birgani

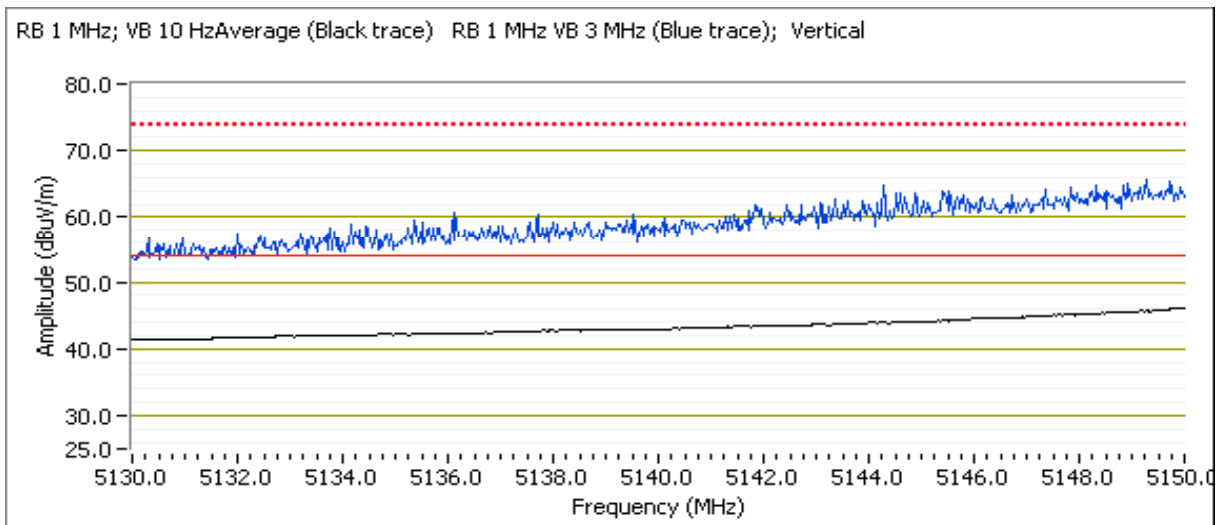
Test Location: FT Chamber #5  
Config Change: None

**Run # 1a, EUT on Channel #36 5180MHz - 802.11a, Chain A**

*Direct Measurement of Field Strength at the bandedge*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.900	53.1	V	54.0	-0.9	AVG	350	1.0	RB 1 MHz;VB 10 Hz;Pk
5147.900	68.0	V	74.0	-6.0	PK	350	1.0	RB 1 MHz;VB 3 MHz;Pk

Note - based on preliminary measurements, vertical orientation was worse case



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 1b, EUT on Channel #56 5280MHz - 802.11a, Chain A**

Date of Test: 8/16/2011

Test Location: FT Chamber #5

Test Engineer: Rafael Varelas

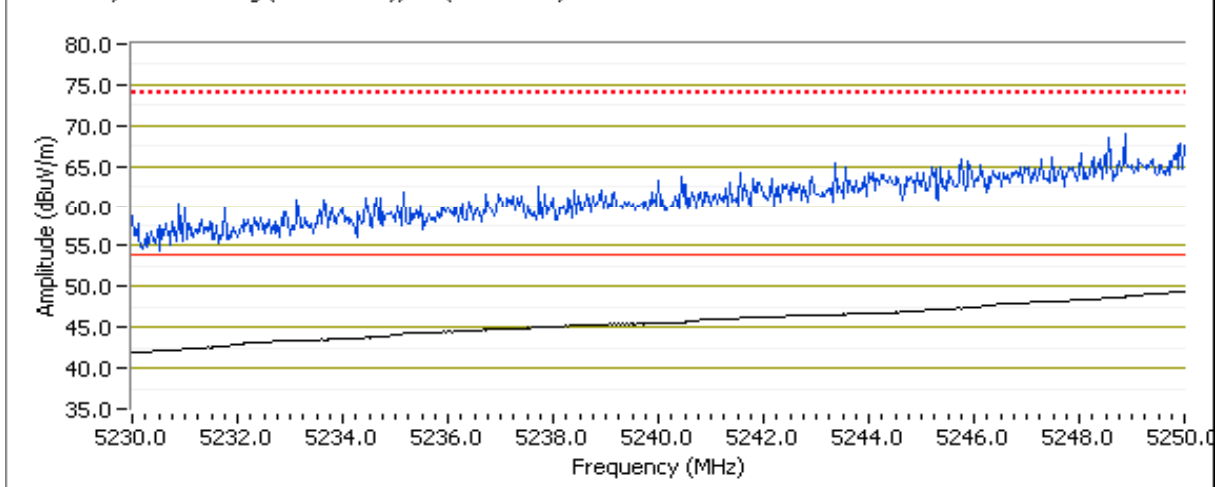
Config Change: None

**For Taiwan Only**

**5250MHz Band Edge Signal Radiated Field Strength**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	LP0002		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5249.840	52.3	V	54.0	-1.7	AVG	129	1.1	RB 1 MHz;VB 10 Hz;Pk
5248.980	68.6	V	74.0	-5.4	PK	129	1.1	RB 1 MHz;VB 3 MHz;Pk
5249.770	47.5	H	54.0	-6.5	AVG	330	1.0	RB 1 MHz;VB 10 Hz;Pk
5249.580	63.4	H	74.0	-10.6	PK	330	1.0	RB 1 MHz;VB 3 MHz;Pk

RB 1 MHz; VB 10 Hz Avg (Black Trace); PK (Blue Trace) Vertical



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 1c, EUT on Channel #64 5320MHz - 802.11a, Chain A**

Date of Test: 11/14/2011  
Test Engineer: Rafael Varelas

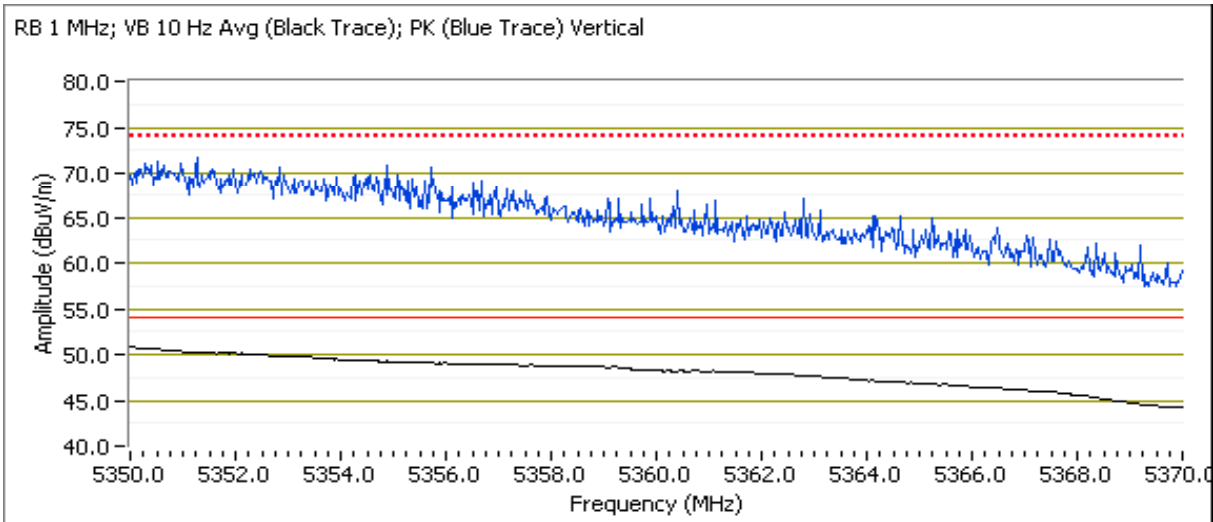
Test Location: FT Chamber #5  
Config Change: None

Tested Sample #2011-1055, Larsen antenna 2011-1286, Linux Shell

**Direct Measurement of Field Strength at the bandedge**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
5350.100	53.8	V	54.0	-0.2	AVG	157	1.0	RB 1 MHz;VB 10 Hz;Pk
5350.790	71.5	V	74.0	-2.5	PK	157	1.0	RB 1 MHz;VB 3 MHz;Pk
5350.010	43.5	H	54.0	-10.5	AVG	77	1.4	RB 1 MHz;VB 10 Hz;Pk
5350.250	56.6	H	74.0	-17.4	PK	77	1.4	RB 1 MHz;VB 3 MHz;Pk

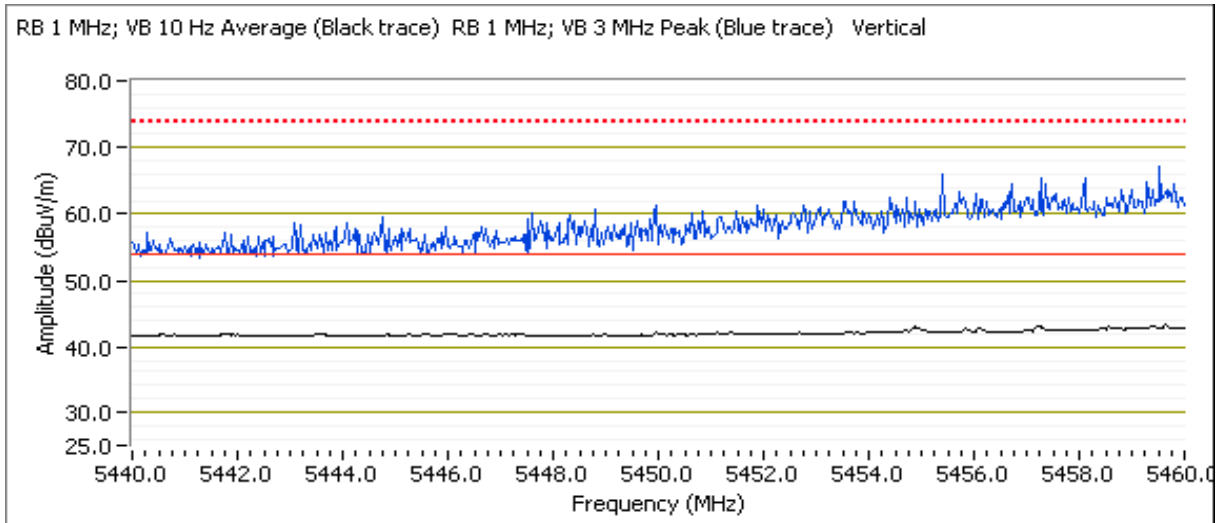
RB 1 MHz; VB 10 Hz Avg (Black Trace); PK (Blue Trace) Vertical



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 1d, EUT on Channel #100 5500MHz - 802.11a, Chain A  
 Direct Measurement of Field Strength at the bandedge @ 5460 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
5459.330	47.3	V	54.0	-6.7	AVG	45	1.1	RB 1 MHz;VB 10 Hz;Pk
5459.530	45.9	H	54.0	-8.1	AVG	355	1.0	RB 1 MHz;VB 10 Hz;Pk
5459.330	62.7	V	74.0	-11.3	PK	45	1.1	RB 1 MHz;VB 3 MHz;Pk
5459.600	60.1	H	74.0	-13.9	PK	355	1.0	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 2, Band Edge Field Strength - 802.11n20, Chain A**

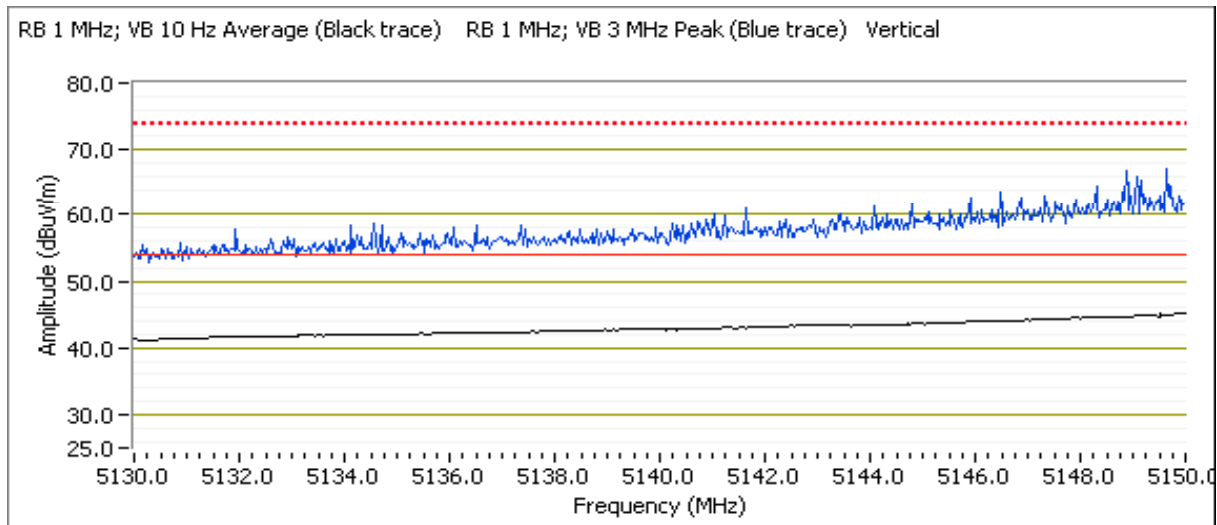
Date of Test: 8/3/2011  
Test Engineer: M. Birgani

Test Location: FT Chamber #5  
Config Change: None

**Run # 2a, EUT on Channel #36 5180MHz - 802.11n20, Chain A**

*Direct Measurement of Field Strength at the bandedge*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5148.170	48.3	V	54.0	-5.7	AVG	91	1.0	RB 1 MHz;VB 10 Hz;Pk
5149.130	45.6	H	54.0	-8.4	AVG	26	1.0	RB 1 MHz;VB 10 Hz;Pk
5149.130	62.4	V	74.0	-11.6	PK	91	1.0	RB 1 MHz;VB 3 MHz;Pk
5149.230	59.3	H	74.0	-14.7	PK	26	1.0	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 2b, EUT on Channel #56 5280MHz - 802.11n20, Chain A**

Date of Test: 8/16/2011

Test Engineer: Rafael Varelas

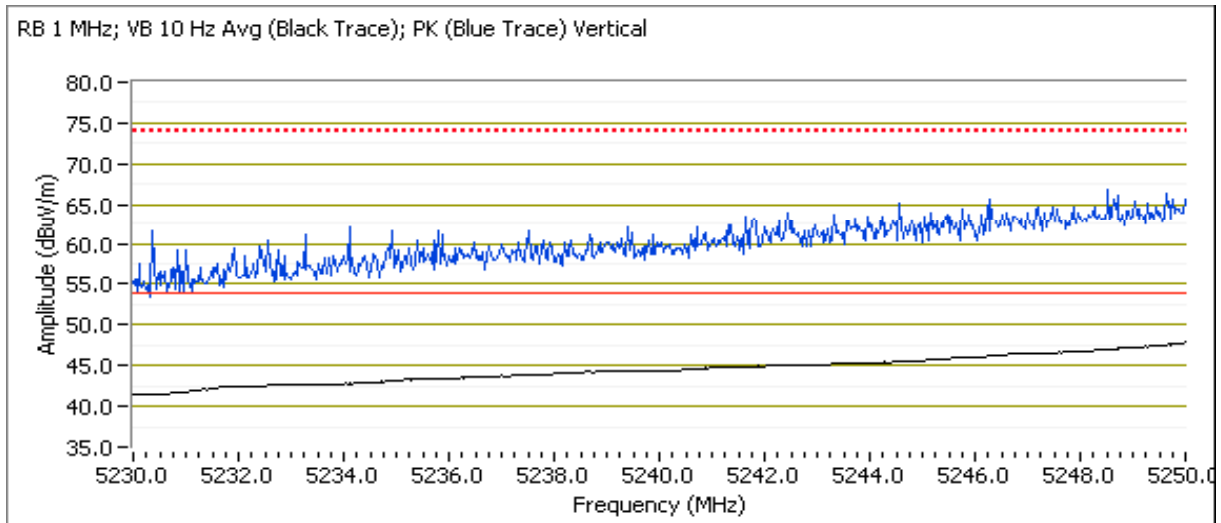
Test Location: FT Chamber #5

Config Change: None

**For Taiwan Only**

**5250MHz Band Edge Signal Radiated Field Strength**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	LP0002		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5249.840	50.7	V	54.0	-3.3	AVG	143	1.1	RB 1 MHz;VB 10 Hz;Pk
5248.620	65.7	V	74.0	-8.3	PK	143	1.1	RB 1 MHz;VB 3 MHz;Pk
5249.500	46.0	H	54.0	-8.0	AVG	324	1.0	RB 1 MHz;VB 10 Hz;Pk
5248.470	61.4	H	74.0	-12.6	PK	324	1.0	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 2c, EUT on Channel #64 5320MHz - 802.11n20, Chain A

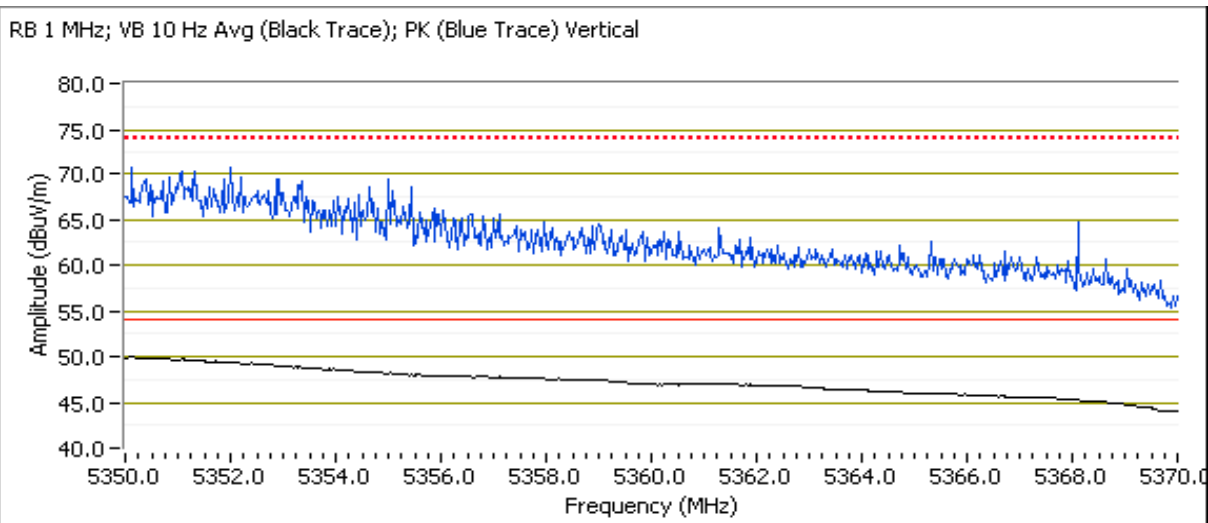
Date of Test: 11/14/2011  
Test Engineer: Rafael Varelas

Test Location: FT Chamber #5  
Config Change: None

Tested Sample #2011-1055, Larsen antenna 2011-1286, Linux Shell

*Direct Measurement of Field Strength at the bandedge*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.020	53.6	V	54.0	-0.4	AVG	167	1.0	RB 1 MHz;VB 10 Hz;Pk
5350.180	70.3	V	74.0	-3.7	PK	167	1.0	RB 1 MHz;VB 3 MHz;Pk
5350.030	43.8	H	54.0	-10.2	AVG	71	1.0	RB 1 MHz;VB 10 Hz;Pk
5350.930	56.5	H	74.0	-17.5	PK	71	1.0	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 2d, EUT on Channel #100 5500MHz - 802.11n20, Chain A**

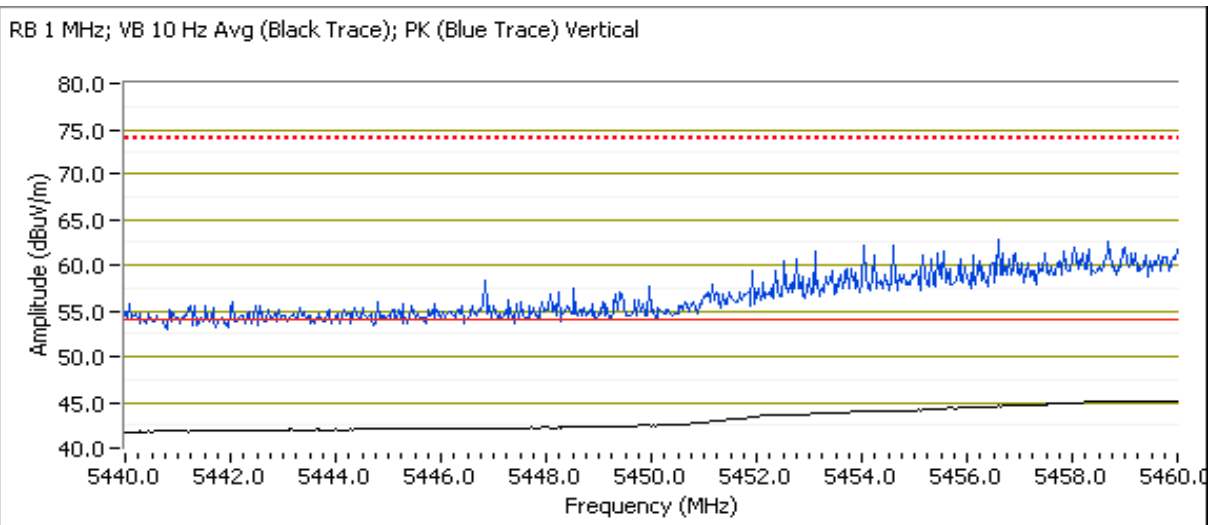
Date of Test: 11/142011  
Test Engineer: Rafael Varelas

Test Location: FT Chamber #5  
Config Change: None

Tested Sample #2011-1055, Larsen antenna 2011-1286, Linux Shell

**Direct Measurement of Field Strength at the bandedge @ 5460 MHz**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5458.910	47.5	V	54.0	-6.5	AVG	163	1.0	RB 1 MHz;VB 10 Hz;Pk
5459.380	62.8	V	74.0	-11.2	PK	163	1.0	RB 1 MHz;VB 3 MHz;Pk
5458.860	43.4	H	54.0	-10.6	AVG	71	1.0	RB 1 MHz;VB 10 Hz;Pk
5458.690	55.2	H	74.0	-18.8	PK	71	1.0	RB 1 MHz;VB 3 MHz;Pk





Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

## RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions (Larsen)

### 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.

### General Test Configuration

The EUT was installed into a test fixture such that the EUT was exposed (i.e. outside of a host PC).

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

### Ambient Conditions:

Rel. Humidity: 15 - 55 %  
Temperature: 18 - 25 °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.

Run #3 and Run #4- Tested with New WB40 module Mac: 0017231566CF

### Notes:

No radio related emissions were observed below 1GHz and above 18GHz in preliminary measurements.

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Summary of Results**

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin	
Scans on center channel in all three OFDM modes to determine the worst case								
Run #1 (5150-5250MHz Band)	802.11a Chain A	#40 5200MHz	Larsen	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	36.2dBµV/m @ 1197.8MHz (-17.8dB)	
	n20 Chain A	#40 5200MHz	Larsen	-			54.5dBµV/m @ 1596.4MHz (-19.5dB)	
	Worst case mode - top and bottom channels.							
	802.11a Chain A	#36 5180MHz	Larsen	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	36.1dBµV/m @ 1586.0MHz (-17.9dB)	
	#48 5240MHz	Larsen	-	46.0dBµV/m @ 1046.2MHz (-8.0dB)				
Run #2 (5250-5350MHz Band)	802.11a Chain A	#60 5300MHz	Larsen	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	48.5dBµV/m @ 10601.7MHz (-5.5dB)	
	n20 Chain A	#60 5300MHz	Larsen	-			47.5dBµV/m @ 10600.6MHz (-6.5dB)	
	Worst case mode/worse case Chain A - top and bottom channels.							
	802.11a Chain A	#52 5260MHz	Larsen	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	47.2dBµV/m @ 2994.5MHz (-21.1dB)	
	#64 5320MHz	Larsen	-	48.2dBµV/m @ 10640.4MHz (-5.8dB)				

**New Module #2011-1296, Laptop #2011-2312, Linux Shell**

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin	
Run #3 (5470-5725MHz Band)	802.11a Chain A	#116 5580MHz	Larsen	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.8dBµV/m @ 1189.1MHz (-9.2dB)	
	n20 Chain A	#116 5580MHz	Larsen	-			43.5dBµV/m @ 1188.8MHz (-10.5dB)	
	Worst case mode/worse case Chain A/n20) - top and bottom channels.							
	802.11a Chain A	#100 5500MHz	Larsen	-	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.1dBµV/m @ 1188.9MHz (-8.9dB)	
	#140 5700MHz	Larsen	-	40.3dBµV/m @ 1188.4MHz (-13.7dB)				

**Receive mode**

Run #4	Receive	#40 5200MHz	Larsen	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	50.7dBµV/m @ 2994.7MHz (-3.3dB)
		#60 5300MHz	Larsen	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	51.6dBµV/m @ 2994.7MHz (-2.4dB)
		#116 5580MHz	Larsen	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	51.8dBµV/m @ 2994.7MHz (-2.2dB)

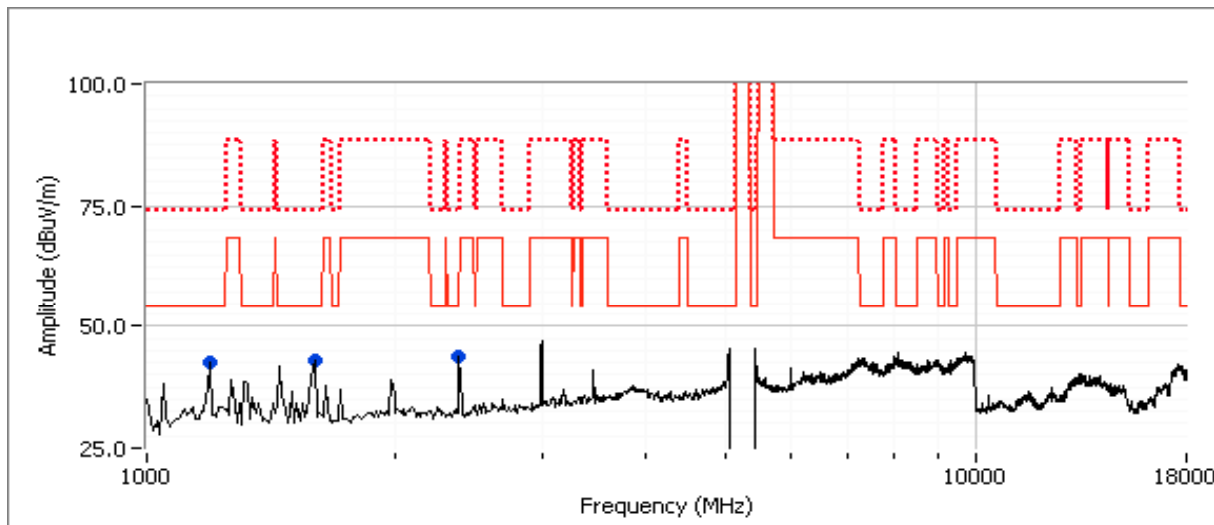


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #1b: Channel #40 5200MHz - 802.11n20, Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1596.350	54.5	V	74.0	-19.5	PK	349	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.260	32.3	V	54.0	-21.7	AVG	349	1.0	RB 1 MHz;VB 10 Hz;Pk
1189.280	30.7	V	54.0	-23.3	AVG	218	1.0	RB 1 MHz;VB 10 Hz;Pk
2385.420	28.3	V	54.0	-25.7	AVG	59	1.0	RB 1 MHz;VB 10 Hz;Pk
1194.060	45.0	V	74.0	-29.0	PK	218	1.0	RB 1 MHz;VB 3 MHz;Pk
2383.980	40.0	V	74.0	-34.0	PK	59	1.0	RB 1 MHz;VB 3 MHz;Pk



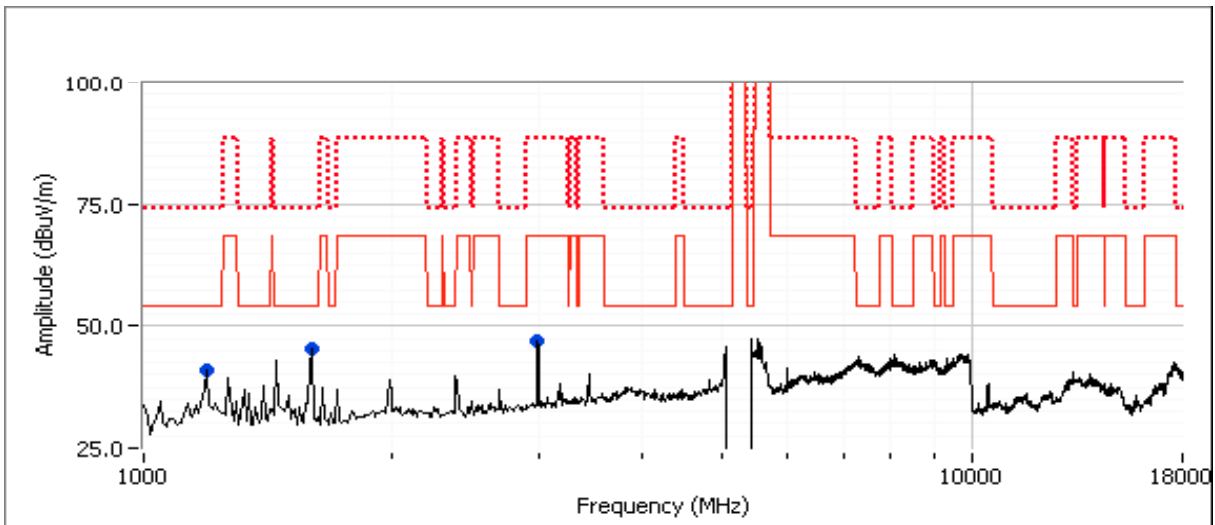
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #1c: Channel #36 5180MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1586.030	36.1	V	54.0	-17.9	AVG	360	1.0	RB 1 MHz;VB 10 Hz;Pk
1197.930	33.6	V	54.0	-20.4	AVG	342	1.0	RB 1 MHz;VB 10 Hz;Pk
2989.170	47.0	V	68.0	-21.0	PK	203	1.0	RB 1 MHz;VB 3 MHz;Pk, note 1
1597.700	46.9	V	74.0	-27.1	PK	360	1.0	RB 1 MHz;VB 3 MHz;Pk
1199.370	46.7	V	74.0	-27.3	PK	342	1.0	RB 1 MHz;VB 3 MHz;Pk

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



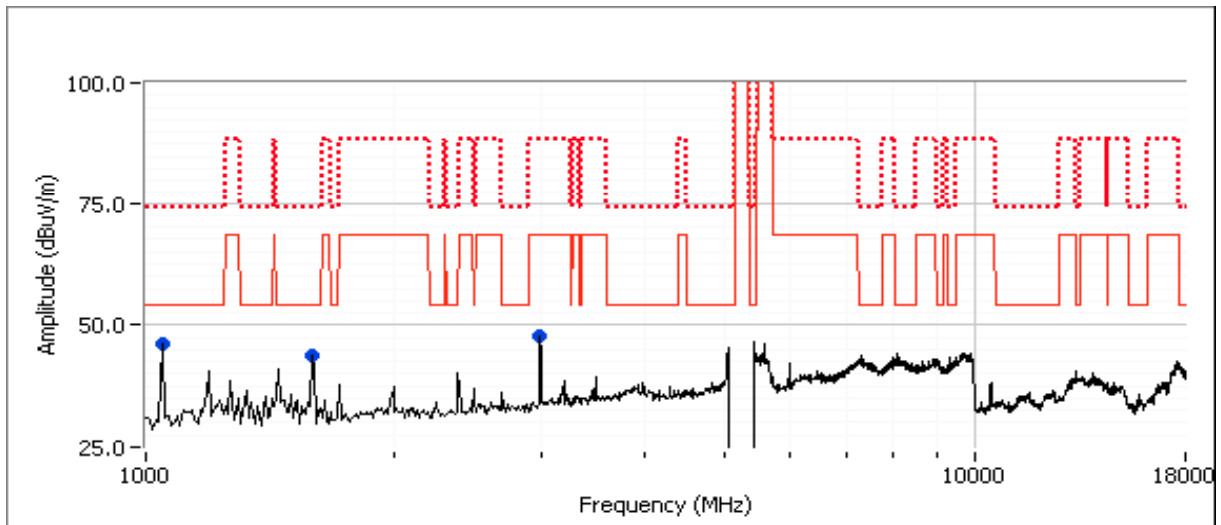
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #1d: Channel #48 5240MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1046.230	46.0	V	54.0	-8.0	PK	221	1.3	RB 1 MHz;VB 3 MHz;Pk
1586.030	37.2	V	54.0	-16.8	AVG	5	1.0	RB 1 MHz;VB 10 Hz;Pk
1045.830	36.2	V	54.0	-17.8	AVG	221	1.3	RB 1 MHz;VB 10 Hz;Pk
2989.170	47.7	V	68.3	-20.6	Peak	196	1.0	RB 1 MHz;VB 3 MHz;Pk, note 1
1597.700	47.2	V	74.0	-26.8	PK	5	1.0	RB 1 MHz;VB 3 MHz;Pk

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #2, Radiated Spurious Emissions, 1-40GHz, Center Channel 5250-5350MHz - 802.11a, n20**  
 Date of Test: 8/3/2011 Test Location: FT Chamber #5  
 Test Engineer: Rafael Varelas Config Change: None

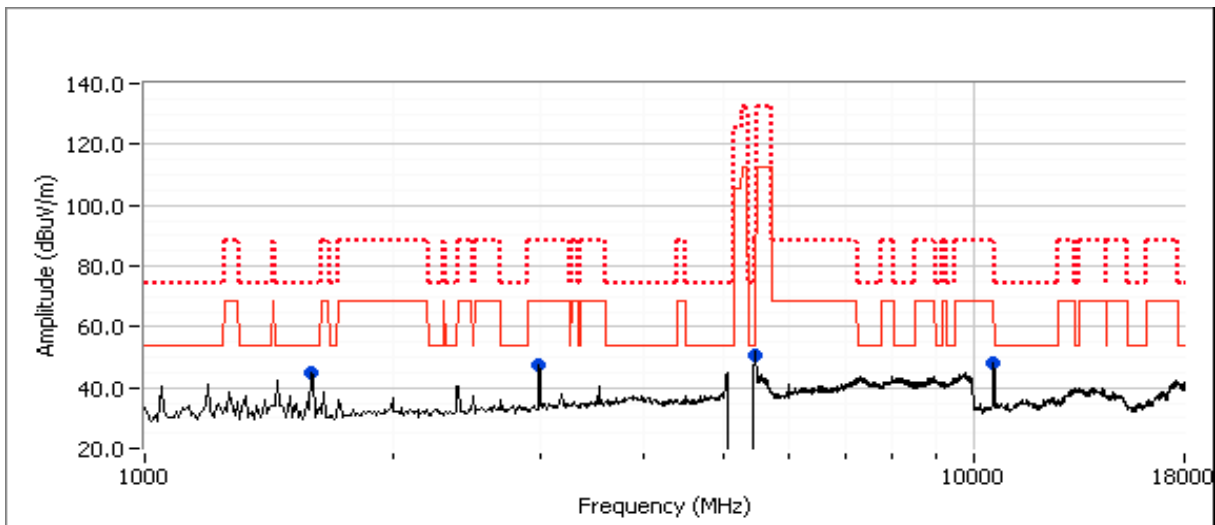
For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -27dBm eirp (68.3dBuV/m @3m).

**Run #2a: Channel #60 5300MHz - 802.11a,Chain A**

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
10601.730	48.5	V	54.0	-5.5	AVG	30	1.3	RB 1 MHz;VB 10 Hz;Pk
10602.800	60.2	V	74.0	-13.8	PK	30	1.3	RB 1 MHz;VB 3 MHz;Pk
1597.330	31.6	V	54.0	-22.4	AVG	145	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.030	54.3	V	74.0	-19.7	PK	145	1.0	RB 1 MHz;VB 3 MHz;Pk
5426.150	43.6	V	54.0	-10.4	AVG	76	1.0	RB 1 MHz;VB 10 Hz;Pk
5426.090	55.4	V	74.0	-18.6	PK	76	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.390	47.2	V	68.3	-21.1	Peak	122	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



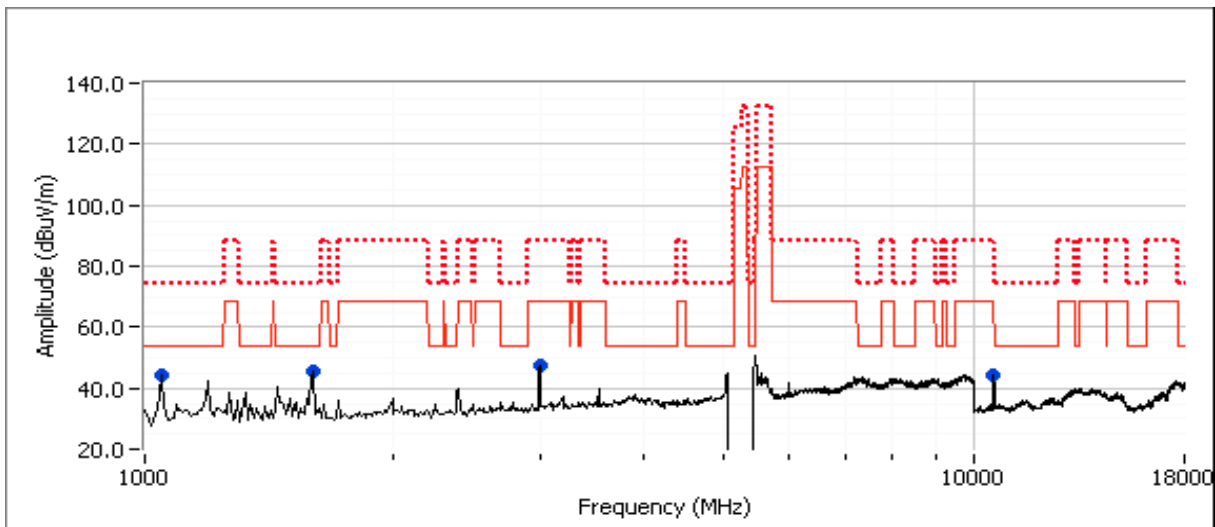
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2b: Channel #60 5300MHz - 802.11n20,Chain A

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
10600.630	47.5	V	54.0	-6.5	AVG	104	1.1	RB 1 MHz;VB 10 Hz;Pk
10601.630	58.5	V	74.0	-15.5	PK	104	1.1	RB 1 MHz;VB 3 MHz;Pk
2998.330	47.6	V	68.3	-20.7	Peak	200	1.0	Note 1
1030.090	27.7	H	54.0	-26.3	AVG	250	1.2	RB 1 MHz;VB 10 Hz;Pk
1030.290	37.3	H	74.0	-36.7	PK	250	1.2	RB 1 MHz;VB 3 MHz;Pk
1596.090	31.6	V	54.0	-22.4	AVG	284	1.0	RB 1 MHz;VB 10 Hz;Pk
1593.050	53.8	V	74.0	-20.2	PK	284	1.0	RB 1 MHz;VB 3 MHz;Pk

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)





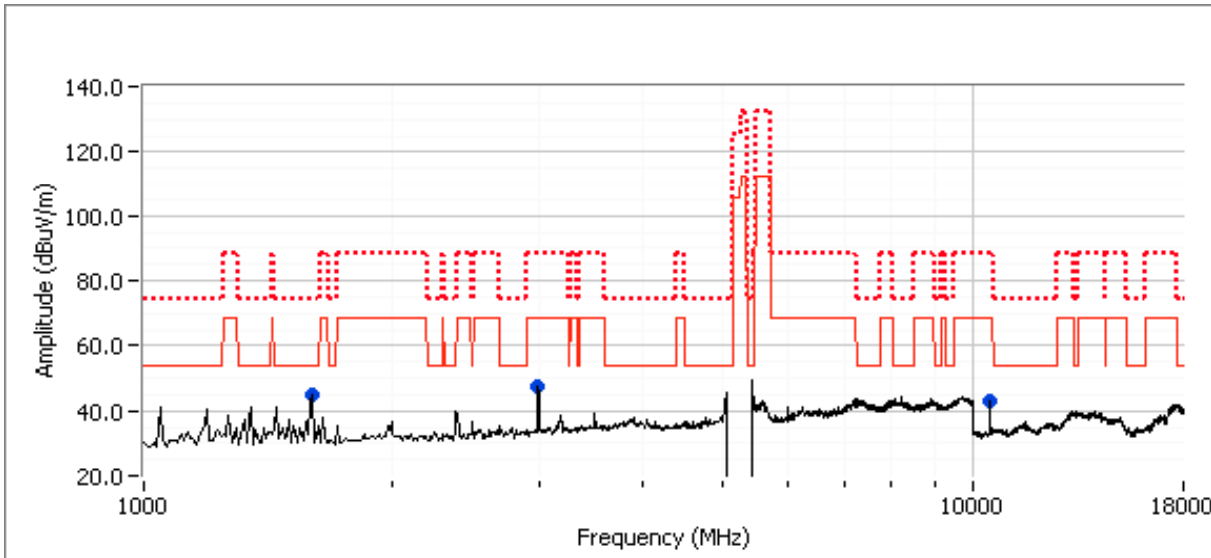
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2c: Channel #52 5260MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
2994.480	47.2	V	68.3	-21.1	Peak	118	1.0	Note 1
1598.140	31.4	V	54.0	-22.6	AVG	283	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.760	52.4	V	74.0	-21.6	PK	283	1.0	RB 1 MHz;VB 3 MHz;Pk
10520.000	43.1	H	68.3	-25.2	Peak	32	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



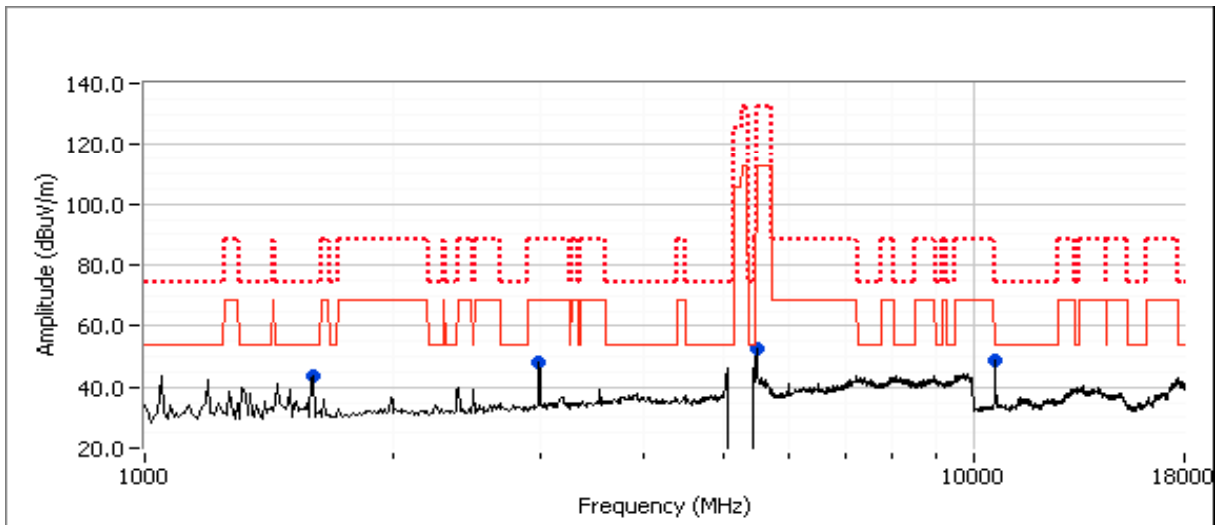
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2d: Channel #64 5320MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
10640.400	48.2	V	54.0	-5.8	AVG	41	1.3	RB 1 MHz;VB 10 Hz;Pk
10640.470	59.3	V	74.0	-14.7	PK	41	1.3	RB 1 MHz;VB 3 MHz;Pk
1597.230	34.3	V	54.0	-19.7	AVG	196	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.240	57.9	V	74.0	-16.1	PK	196	1.0	RB 1 MHz;VB 3 MHz;Pk
2993.930	47.8	V	68.3	-20.5	Peak	122	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)





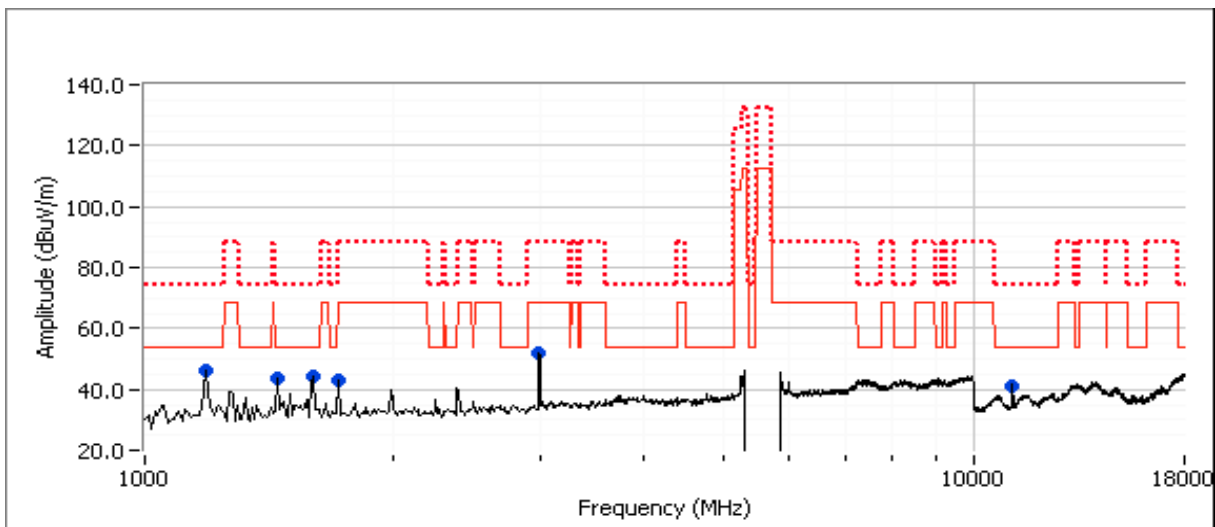
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3b: Channel #116 5580MHz - 802.11n20, Chain A

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1188.800	43.5	V	54.0	-10.5	AVG	251	1.0	RB 1 MHz;VB 10 Hz;Pk
1195.670	40.2	V	74.0	-33.8	PK	251	1.0	RB 1 MHz;VB 3 MHz;Pk
1453.070	42.7	H	54.0	-11.3	AVG	26	1.0	RB 1 MHz;VB 10 Hz;Pk
1452.550	45.2	H	74.0	-28.8	PK	26	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.050	32.5	V	54.0	-21.5	AVG	174	1.0	RB 1 MHz;VB 10 Hz;Pk
1594.320	51.1	V	74.0	-22.9	PK	174	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.750	52.0	V	68.3	-16.3	Peak	121	1.0	Note 1
1715.000	42.9	V	68.3	-25.4	Peak	311	1.9	Note 1
11160.600	39.9	V	54.0	-14.1	AVG	335	1.71	
11160.470	53.2	V	74.0	-20.8	PK	335	1.71	

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



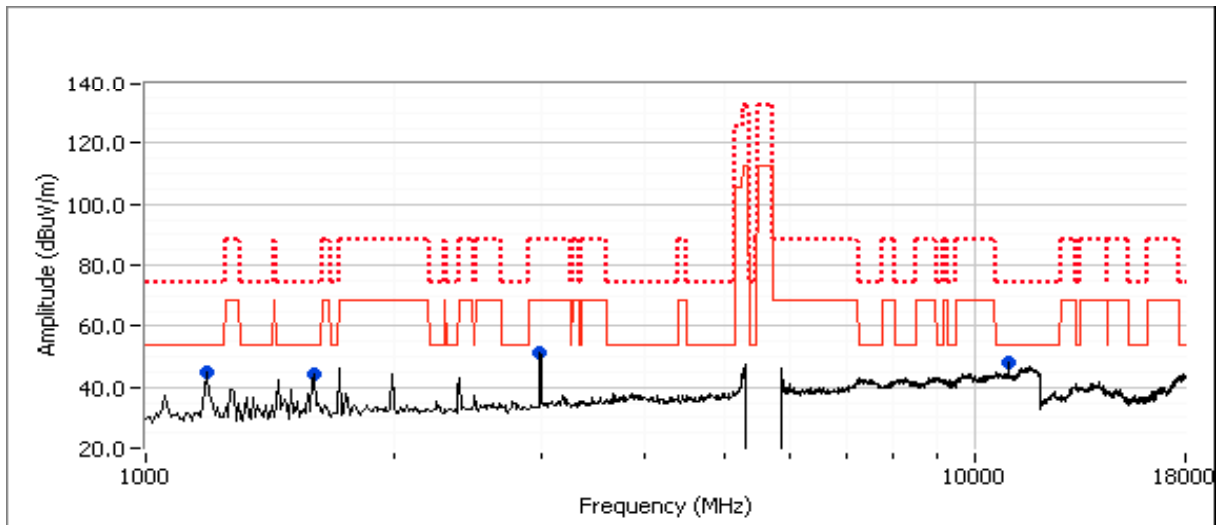
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3c: Channel #100 5500 MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1188.930	45.1	V	54.0	-8.9	AVG	256	1.0	RB 1 MHz;VB 10 Hz;Pk
1198.530	47.3	V	74.0	-26.7	PK	256	1.0	RB 1 MHz;VB 3 MHz;Pk
10998.870	42.9	V	54.0	-11.1	AVG	3	1.7	RB 1 MHz;VB 10 Hz;Pk
10995.510	54.8	V	74.0	-19.2	PK	3	1.7	RB 1 MHz;VB 3 MHz;Pk
1597.210	32.6	V	54.0	-21.4	AVG	173	1.0	RB 1 MHz;VB 10 Hz;Pk
1597.170	51.2	V	74.0	-22.8	PK	173	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.840	51.5	V	68.3	-16.8	Peak	128	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



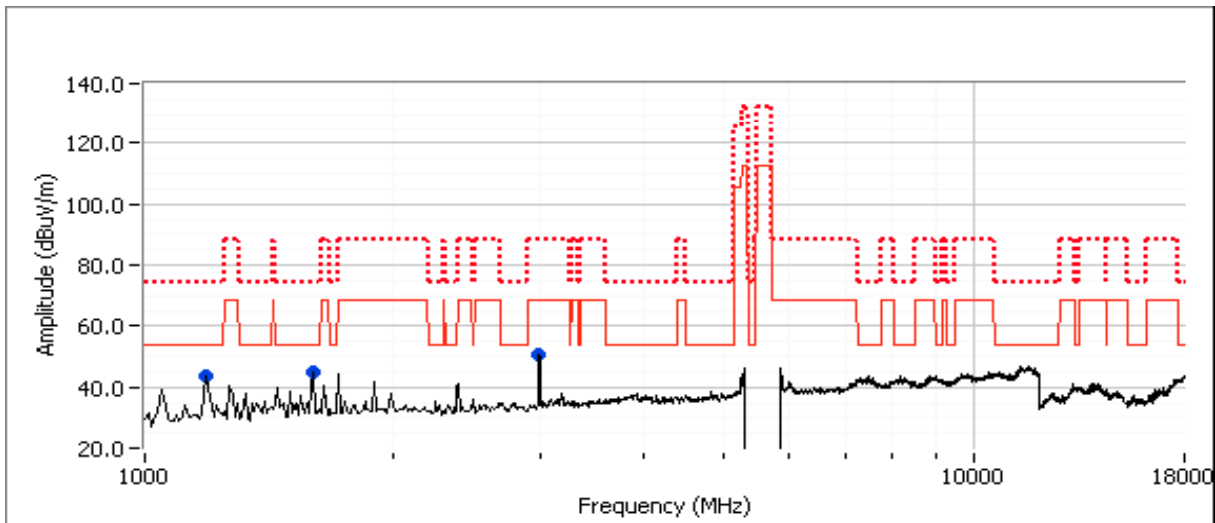
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3d: Channel #140 5700 MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1188.380	40.3	H	54.0	-13.7	AVG	256	1.0	RB 1 MHz;VB 10 Hz;Pk
1187.550	39.8	H	74.0	-34.2	PK	256	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.220	33.5	V	54.0	-20.5	AVG	177	1.0	RB 1 MHz;VB 10 Hz;Pk
1592.890	53.5	V	74.0	-20.5	PK	177	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.750	50.5	V	68.3	-17.8	Peak	123	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #4, Radiated Spurious Emissions, 1-18GHz, Receive, Chain A**

Date of Test: 8/12/2011

Test Location: FT3

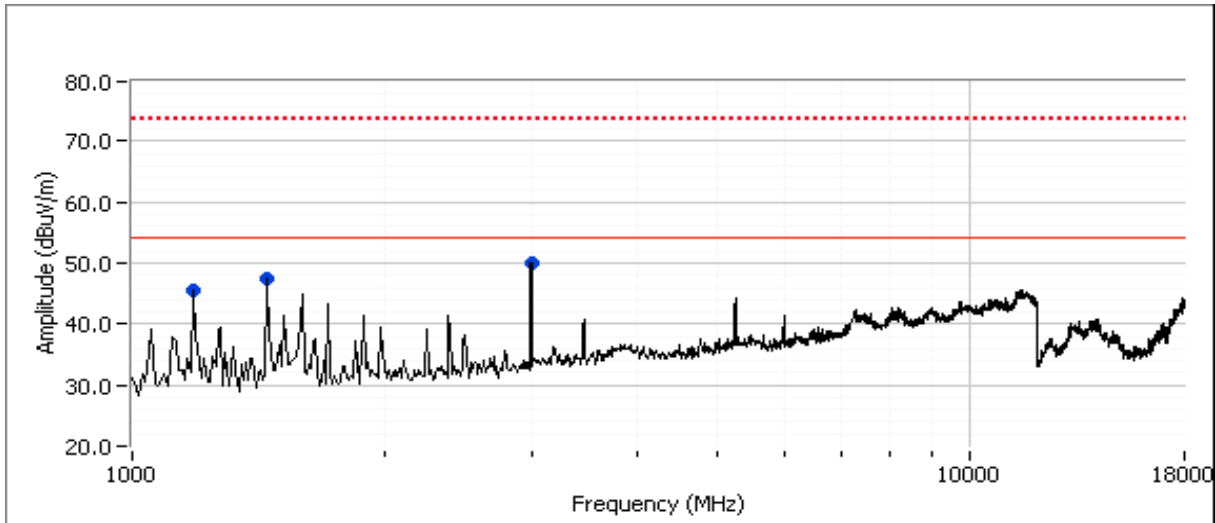
Test Engineer: Rafael Varelas

Config Change: none

**Run #4a: EUT on Channel #40 5200MHz - Receive, Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	RSS-GEN		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2994.670	50.7	V	54.0	-3.3	AVG	117	1.0	RB 1 MHz;VB 10 Hz;Pk
2994.700	52.9	V	74.0	-21.1	PK	117	1.0	RB 1 MHz;VB 3 MHz;Pk
1453.080	43.6	H	54.0	-10.4	AVG	110	1.0	RB 1 MHz;VB 10 Hz;Pk
1453.380	48.7	H	74.0	-25.3	PK	110	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.230	37.4	H	54.0	-16.6	AVG	312	1.0	RB 1 MHz;VB 10 Hz;Pk
1182.260	35.8	H	74.0	-38.2	PK	312	1.0	RB 1 MHz;VB 3 MHz;Pk

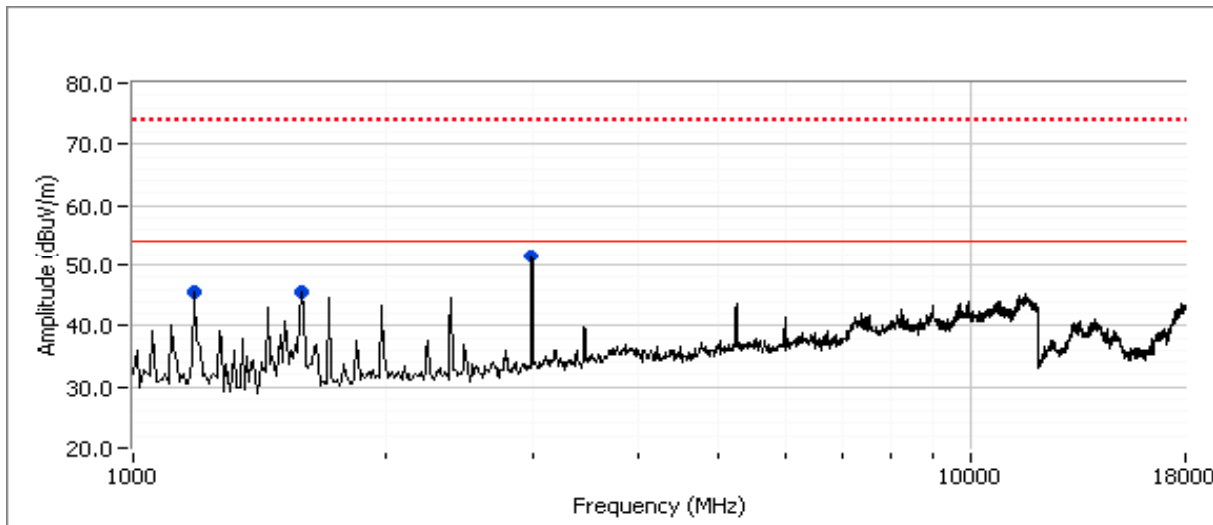


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #4b: EUT on Channel #60 5300MHz - Receive, Chain A

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	RSS-GEN		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2994.670	51.6	V	54.0	-2.4	AVG	113	1.0	RB 1 MHz;VB 10 Hz;Pk
2994.690	53.7	V	74.0	-20.3	PK	113	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.400	38.0	H	54.0	-16.0	AVG	51	1.0	RB 1 MHz;VB 10 Hz;Pk
1181.130	36.7	H	74.0	-37.3	PK	51	1.0	RB 1 MHz;VB 3 MHz;Pk
1590.750	38.3	H	54.0	-15.7	AVG	307	1.0	RB 1 MHz;VB 10 Hz;Pk
1596.650	43.2	H	74.0	-30.8	PK	307	1.0	RB 1 MHz;VB 3 MHz;Pk



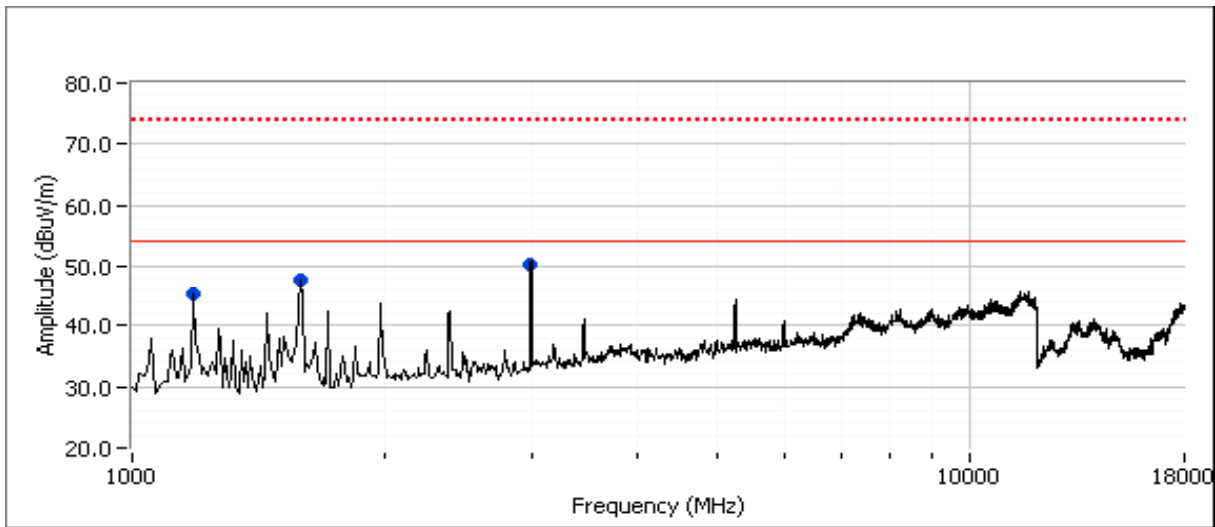


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #4c: EUT on Channel #116 5580MHz - Receive, Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	RSS-GEN		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2994.670	51.8	V	54.0	-2.2	AVG	115	1.0	RB 1 MHz;VB 10 Hz;Pk
2994.560	53.9	V	74.0	-20.1	PK	115	1.0	RB 1 MHz;VB 3 MHz;Pk
1585.040	48.0	H	54.0	-6.0	AVG	299	1.0	RB 1 MHz;VB 10 Hz;Pk
1583.910	53.7	H	74.0	-20.3	PK	299	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.930	37.1	H	54.0	-16.9	AVG	248	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.120	42.6	H	74.0	-31.4	PK	248	1.0	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**RSS 210 and FCC 15.407 (UNII) Radiated Bandedge Emissions (Ethertronics Antenna)**

**Summary of Results**

**New Module #2011-1296, Laptop #2011-2312, Linux Shell**

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin
Run # 1	802.11a Chain A	#36 5180MHz	Ethertronics	100%	Restricted Band Edge at 5150 MHz	15.209	45.5dB $\mu$ V/m @ 5149.8MHz (-8.5dB)
		#56 5280MHz	Ethertronics	100%	Restricted Band Edge at 5250 MHz	LP0002 (Taiwan Only)	50.8dB $\mu$ V/m @ 5250.0MHz (-3.2dB)
		#64 5320MHz	Ethertronics	100%	Restricted Band Edge at 5350 MHz	15.209	50.0dB $\mu$ V/m @ 5350.0MHz (-4.0dB)
		#100 5500MHz	Ethertronics	100%	Restricted Band Edge at 5460 MHz	15.209	47.4dB $\mu$ V/m @ 5459.7MHz (-6.6dB)
Run # 2	802.11n20 Chain A	#36 5180MHz	Ethertronics	100%	Restricted Band Edge at 5150 MHz	15.209	43.0dB $\mu$ V/m @ 5149.8MHz (-11.0dB)
		#56 5280MHz	Ethertronics	100%	Restricted Band Edge at 5250 MHz	LP0002 (Taiwan Only)	48.5dB $\mu$ V/m @ 5249.7MHz (-5.5dB)
		#64 5320MHz	Ethertronics	100%	Restricted Band Edge at 5350 MHz	15.209	49.3dB $\mu$ V/m @ 5350.0MHz (-4.7dB)
		#100 5500MHz	Ethertronics	100%	Restricted Band Edge at 5460 MHz	15.209	45.9dB $\mu$ V/m @ 5459.5MHz (-8.1dB)

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**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.

**General Test Configuration**

The EUT was installed into a test fixture such that the EUT was exposed (i.e. outside of a host PC).  
 For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**

Rel. Humidity: 15 - 55 %  
 Temperature: 18 - 25 °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:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 1, Band Edge Field Strength - 802.11a, Chain A**

**Run # 1a, EUT on Channel #36 5180MHz - 802.11a, Chain A**

Date of Test: 8/12/2011

Test Location: FT3

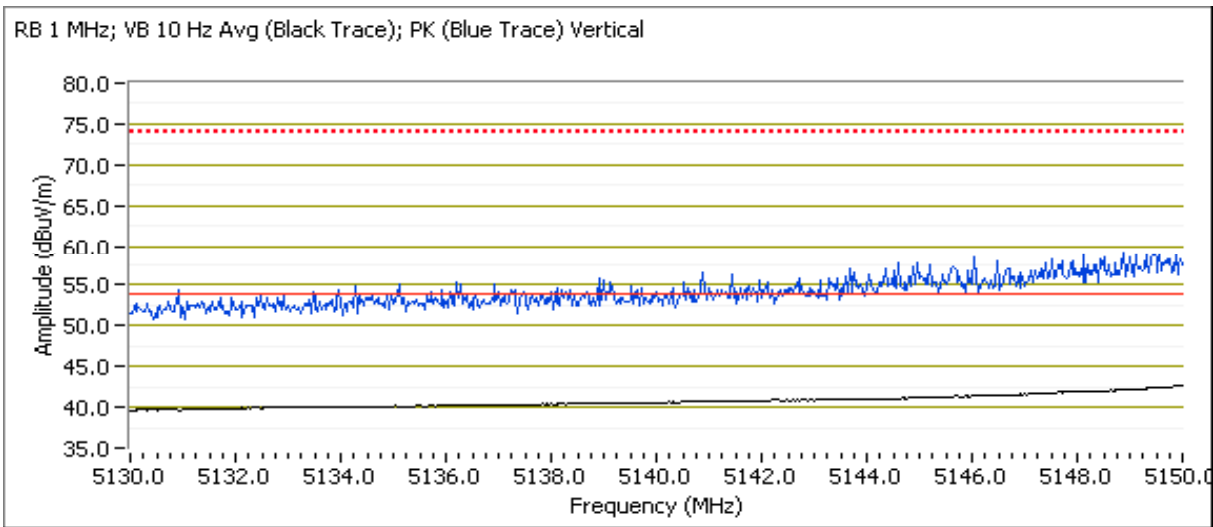
Test Engineer: Rafael Varelas

Config Change: none

**Direct Measurement of Field Strength at the bandedge**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.820	45.5	V	54.0	-8.5	AVG	14	1.2	RB 1 MHz;VB 10 Hz;Pk
5149.290	59.2	V	74.0	-14.8	PK	14	1.2	RB 1 MHz;VB 3 MHz;Pk
5149.850	43.0	H	54.0	-11.0	AVG	333	1.0	RB 1 MHz;VB 10 Hz;Pk
5149.400	55.1	H	74.0	-18.9	PK	333	1.0	RB 1 MHz;VB 3 MHz;Pk

RB 1 MHz; VB 10 Hz Avg (Black Trace); PK (Blue Trace) Vertical



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 1b, EUT on Channel #56 5280MHz - 802.11a, Chain A**

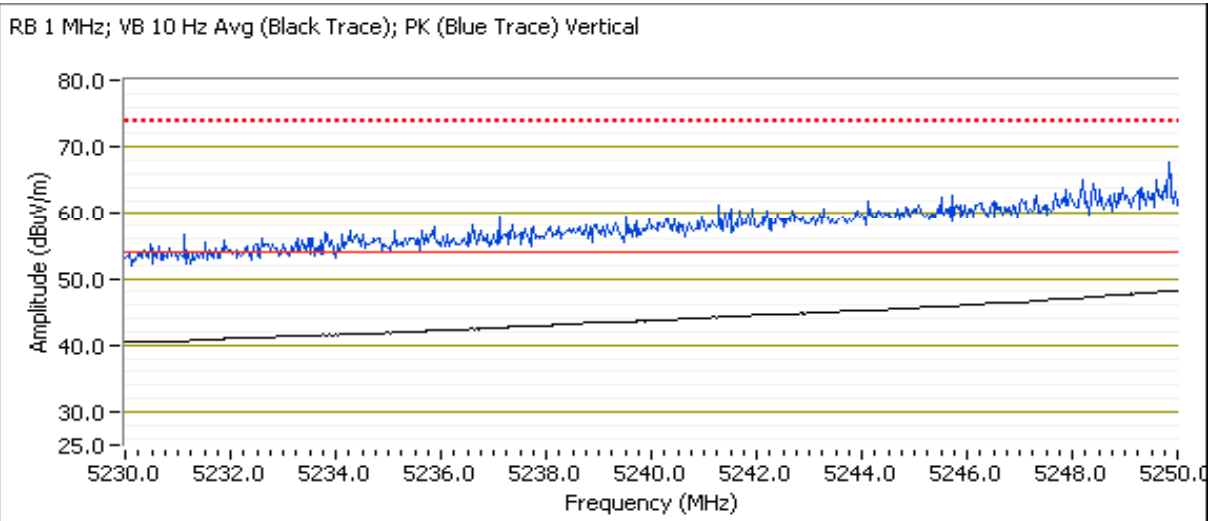
Date of Test: 8/16/2011  
Test Engineer: Rafael Varelas

Test Location: FT Chamber #5  
Config Change: None

**For Taiwan Only**

**5250MHz Band Edge Signal Radiated Field Strength**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	LP0002		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5249.970	50.8	V	54.0	-3.2	AVG	360	1.2	RB 1 MHz;VB 10 Hz;Pk
5249.070	64.7	V	74.0	-9.3	PK	360	1.2	RB 1 MHz;VB 3 MHz;Pk
5249.960	50.4	H	54.0	-3.6	AVG	230	1.0	RB 1 MHz;VB 10 Hz;Pk
5249.620	66.0	H	74.0	-8.0	PK	230	1.0	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 1c, EUT on Channel #64 5320MHz - 802.11a, Chain A**

Date of Test: 11/14/2011  
 Test Engineer: Rafael Varelas

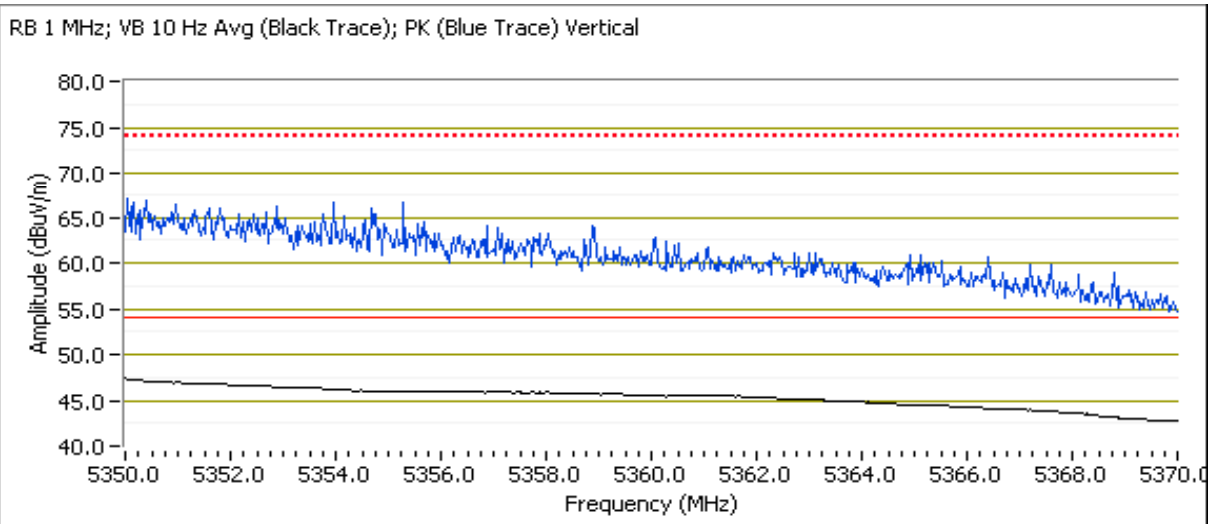
Test Location: FT5  
 Config Change: none

Tested Sample #2011-1055, Ethertronics antenna 2011-2861, Linux Shell

**Direct Measurement of Field Strength at the bandedge**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.020	50.0	V	54.0	-4.0	AVG	17	1.3	RB 1 MHz;VB 10 Hz;Pk
5351.200	66.6	V	74.0	-7.4	PK	17	1.3	RB 1 MHz;VB 3 MHz;Pk
5350.110	47.9	H	54.0	-6.1	AVG	223	1.0	RB 1 MHz;VB 10 Hz;Pk
5350.550	64.2	H	74.0	-9.8	PK	223	1.0	RB 1 MHz;VB 3 MHz;Pk

RB 1 MHz; VB 10 Hz Avg (Black Trace); PK (Blue Trace) Vertical



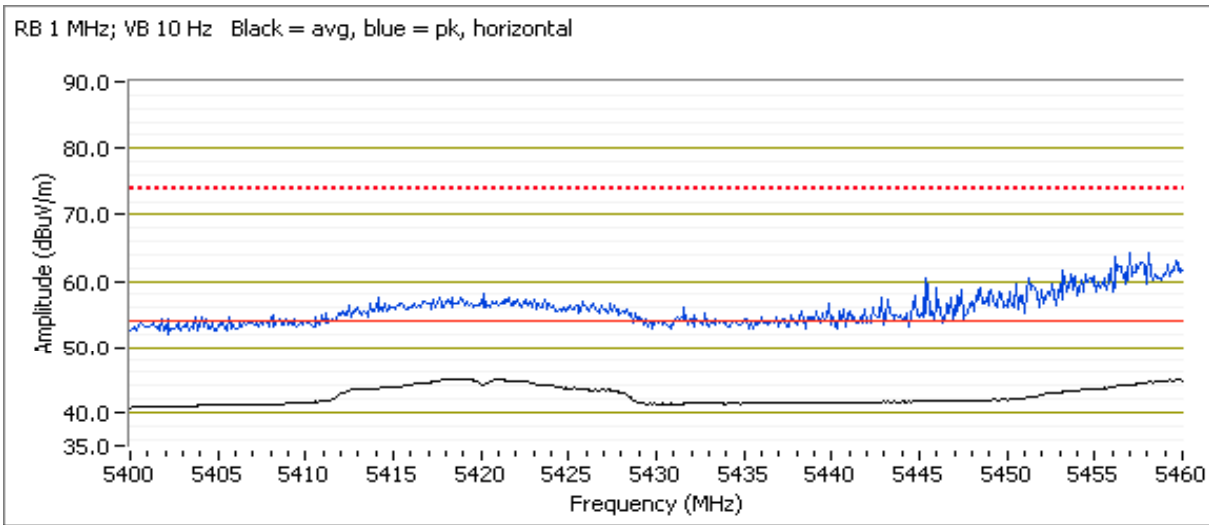
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 1d, EUT on Channel #100 5500MHz - 802.11a, Chain A

*Direct Measurement of Field Strength at the bandedge @ 5460 MHz*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
5459.700	47.4	H	54.0	-6.6	AVG	210	1.12	
5454.000	62.3	H	74.0	-11.7	PK	210	1.12	
5459.600	46.8	V	54.0	-7.2	AVG	297	1.38	
5459.100	60.0	V	74.0	-14.0	PK	297	1.38	

RB 1 MHz; VB 10 Hz Black = avg, blue = pk, horizontal



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

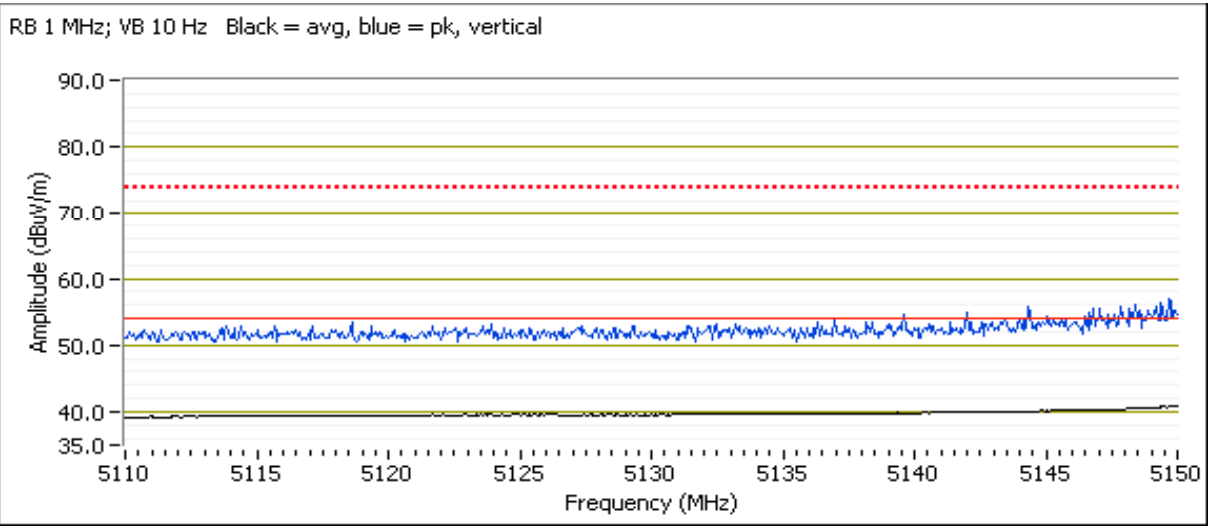
Run # 2, Band Edge Field Strength - 802.11n20, Chain A  
Run # 2a, EUT on Channel #36, 5180MHz

Date of Test: 8/15/2011  
Test Engineer: John Caizzi

Test Location: FT5  
Config Change: none

*Direct Measurement of Field Strength at the bandedge*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.870	42.2	H	54.0	-11.8	AVG	354	1.34	
5147.730	53.1	H	74.0	-20.9	PK	354	1.34	
5149.800	43.0	V	54.0	-11.0	AVG	29	2.08	
5149.470	54.5	V	74.0	-19.5	PK	29	2.08	





Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 2b, EUT on Channel #56 5280MHz - 802.11n20, Chain A**

Date of Test: 8/16/2011

Test Engineer: Rafael Varelas

Test Location: FT Chamber #5

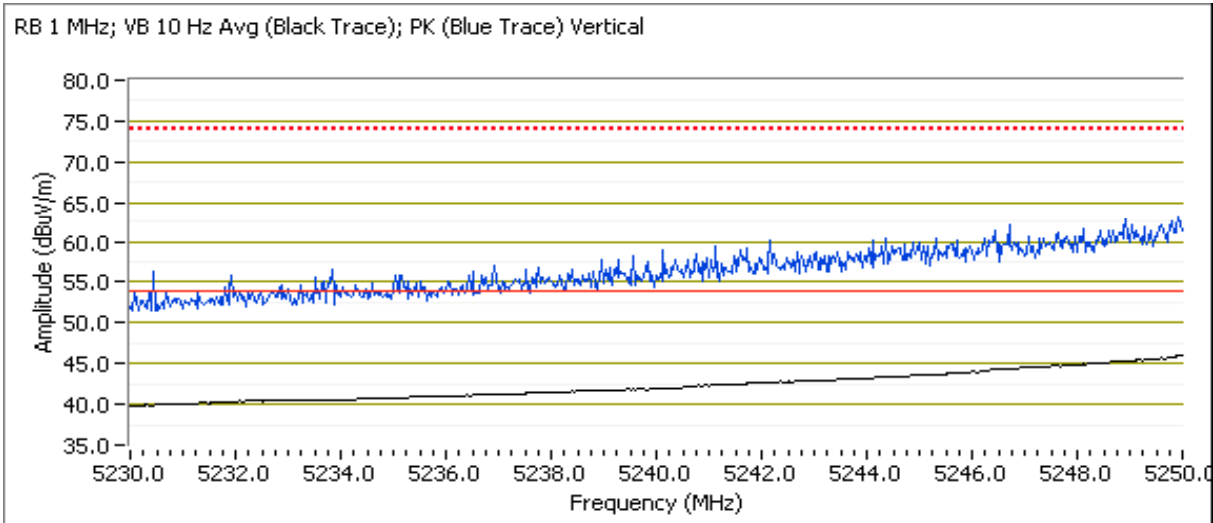
Config Change: None

**For Taiwan Only**

**5250MHz Band Edge Signal Radiated Field Strength**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	LP0002		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5249.710	48.5	V	54.0	-5.5	AVG	34	1.3	RB 1 MHz;VB 10 Hz;Pk
5248.960	62.5	V	74.0	-11.5	PK	34	1.3	RB 1 MHz;VB 3 MHz;Pk
5249.810	47.6	H	54.0	-6.4	AVG	222	1.0	RB 1 MHz;VB 10 Hz;Pk
5249.800	63.8	H	74.0	-10.2	PK	222	1.0	RB 1 MHz;VB 3 MHz;Pk

RB 1 MHz; VB 10 Hz Avg (Black Trace); PK (Blue Trace) Vertical



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 2c, EUT on Channel #64 5320MHz - 802.11n20, Chain A

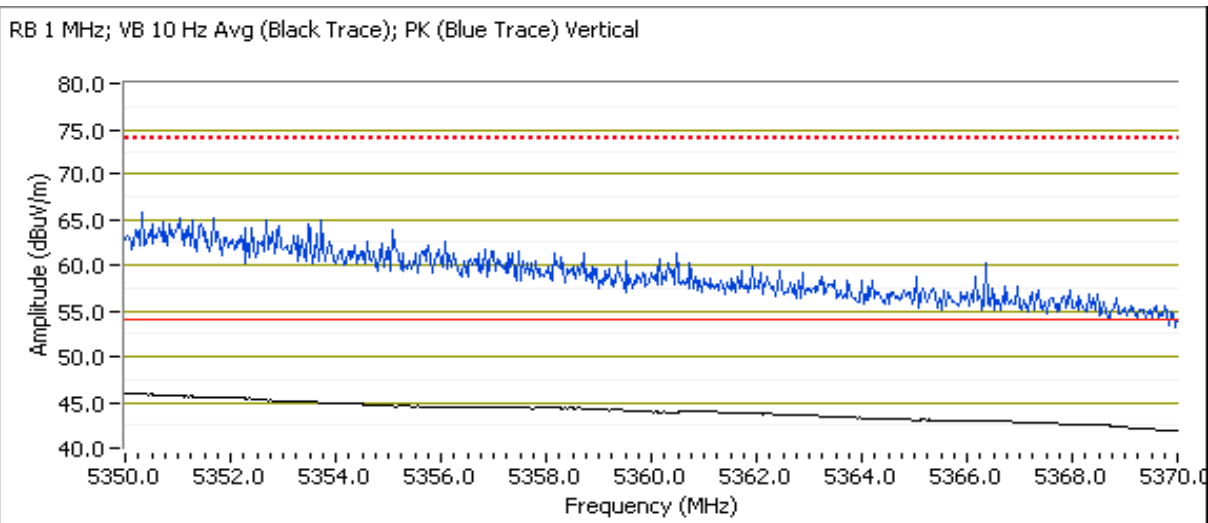
Date of Test: 11/14/2011  
Test Engineer: Rafael Varelas

Test Location: FT5  
Config Change: none

Tested Sample #2011-1055, Ethertronics antenna 2011-2861, Linux Shell

*Direct Measurement of Field Strength at the bandedge*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.010	49.3	V	54.0	-4.7	AVG	173	1.0	RB 1 MHz;VB 10 Hz;Pk
5351.360	65.1	V	74.0	-8.9	PK	173	1.0	RB 1 MHz;VB 3 MHz;Pk
5350.130	47.1	H	54.0	-6.9	AVG	223	1.1	RB 1 MHz;VB 10 Hz;Pk
5350.980	63.4	H	74.0	-10.6	PK	223	1.1	RB 1 MHz;VB 3 MHz;Pk



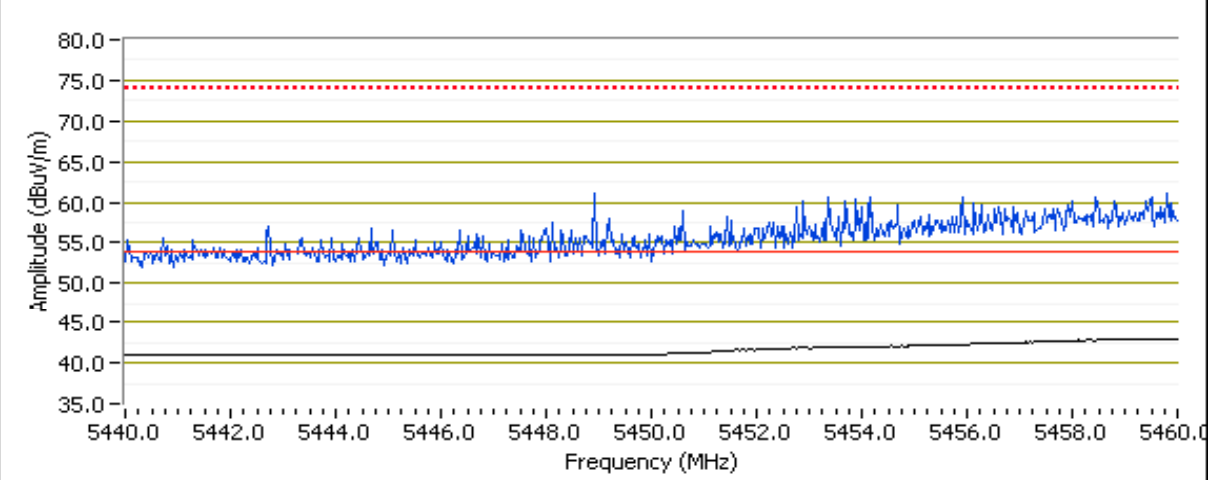
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 2d, EUT on Channel #100 5500MHz - 802.11n20, Chain A

*Direct Measurement of Field Strength at the bandedge @ 5460 MHz*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
5459.520	45.9	V	54.0	-8.1	AVG	59	1.5	RB 1 MHz;VB 10 Hz;Pk
5458.370	61.1	V	74.0	-12.9	PK	59	1.5	RB 1 MHz;VB 3 MHz;Pk
5458.900	45.4	H	54.0	-8.6	AVG	196	1.0	RB 1 MHz;VB 10 Hz;Pk
5458.400	60.4	H	74.0	-13.6	PK	196	1.0	RB 1 MHz;VB 3 MHz;Pk

RB 1 MHz; VB 10 Hz Avg (Black Trace); Pk (Blue Trace) Vertical



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions (Ethertronics)**

**Summary of Results**

**New Module #2011-1296, Laptop #2011-2312, Linux Shell**

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin	
Scans on center channel in all three OFDM modes to determine the worst case								
Run #1 (5150-5250MHz Band)	802.11a Chain A	#40 5200MHz	Ethertronics	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	46.4dBµV/m @ 1453.1MHz (-7.6dB)	
	n20 Chain A	#40 5200MHz	Ethertronics	100%			42.7dBµV/m @ 1453.1MHz (-11.3dB)	
	Worst case mode/worse case Chain A top and bottom channels.							
	802.11a Chain A	#38 5180MHz	Ethertronics	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	46.0dBµV/m @ 1453.1MHz (-8.0dB)	
	#48 5240MHz	Ethertronics	100%	41.2dBµV/m @ 1453.3MHz (-12.8dB)				
Run #2 (5250-5350MHz Band)	802.11a Chain A	#60 5300MHz	Ethertronics	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	46.6dBµV/m @ 1453.1MHz (-7.4dB)	
	n20 Chain A	#60 5300MHz	Ethertronics	100%			44.3dBµV/m @ 5458.9MHz (-9.7dB)	
	Worst case mode (802.11a) - top and bottom channels.							
	802.11a Chain A	#52 5260MHz	Ethertronics	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	42.2dBµV/m @ 1188.8MHz (-11.8dB)	
	#64 5320MHz	Ethertronics	100%	44.6dBµV/m @ 1453.2MHz (-9.4dB)				

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin	
Run #3 (5470-5725MHz Band)	802.11a Chain A	#116 5580MHz	Ethertronic s	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	43.7dBµV/m @ 1188.9MHz (-10.3dB)	
	n20 Chain A	#116 5580MHz	Ethertronic s	100%			44.9dBµV/m @ 1453.1MHz (-9.1dB)	
	Worst case mode (802.11n20) - top and bottom channels.							
	n20 Chain A	#100 5500MHz	Ethertronic s	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	44.6dBµV/m @ 1188.9MHz (-9.4dB)	
	#140 5700MHz	Ethertronic s	100%	42.6dBµV/m @ 1188.9MHz (-11.4dB)				

**Receive mode**

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin
Run #4	Receive	#40 5200MHz	Ethertronic s	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	48.1dBµV/m @ 2994.7MHz (-5.9dB)
		#60 5300MHz	Ethertronic s	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	47.2dBµV/m @ 2994.7MHz (-6.8dB)
		#116 5580MHz	Ethertronic s	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	47.3dBµV/m @ 2994.7MHz (-6.7dB)

**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.

**General Test Configuration**

The EUT was installed into a test fixture such that the EUT was exposed (i.e. outside of a host PC). For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**

Rel. Humidity: 15 - 55 %  
Temperature: 18 - 25 °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.

**Notes:**

No radio related emissions were observed below 1GHz and above 18GHz in preliminary measurements.

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #1, Radiated Spurious Emissions, 1-40GHz, Center Channl 5150-5250MHz - 802.11a, n20**

Date of Test: 8/15/2011      Test Location: FT5  
 Test Engineer: Rafael Varelas      Config Change: none

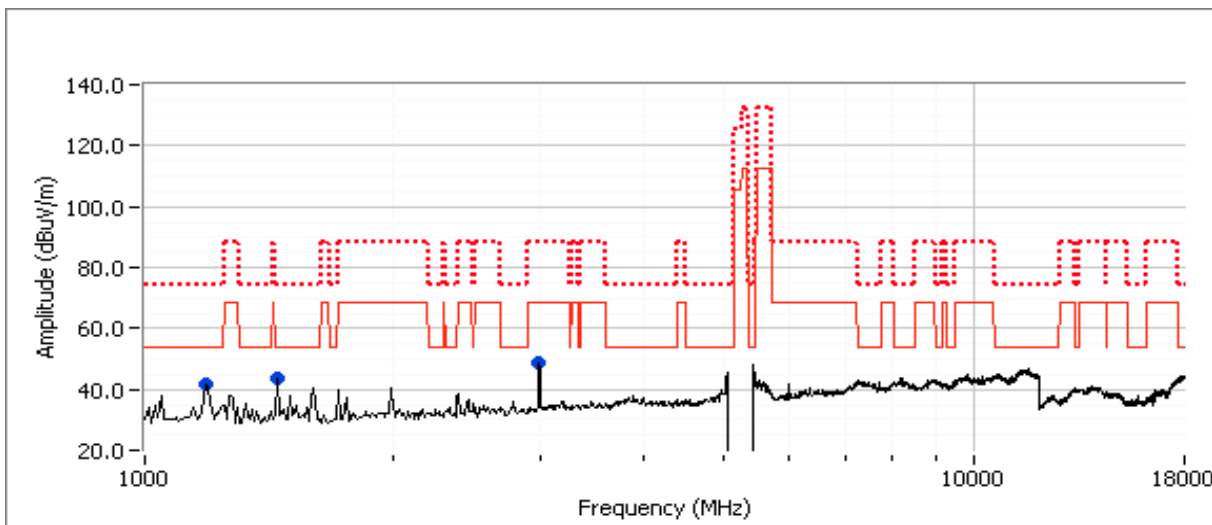
For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -27dBm eirp (68.3dBuV/m @3m).

**Run #1a: Channel #40 5200MHz - 802.11a,Chain A**

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1453.140	46.4	H	54.0	-7.6	AVG	63	1.0	RB 1 MHz;VB 10 Hz;Pk
1454.170	47.7	H	74.0	-26.3	PK	63	1.0	RB 1 MHz;VB 3 MHz;Pk
1189.100	37.7	H	54.0	-16.3	AVG	91	1.0	RB 1 MHz;VB 10 Hz;Pk
1197.270	37.8	H	74.0	-36.2	PK	91	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.750	48.6	V	68.3	-19.7	Peak	204	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



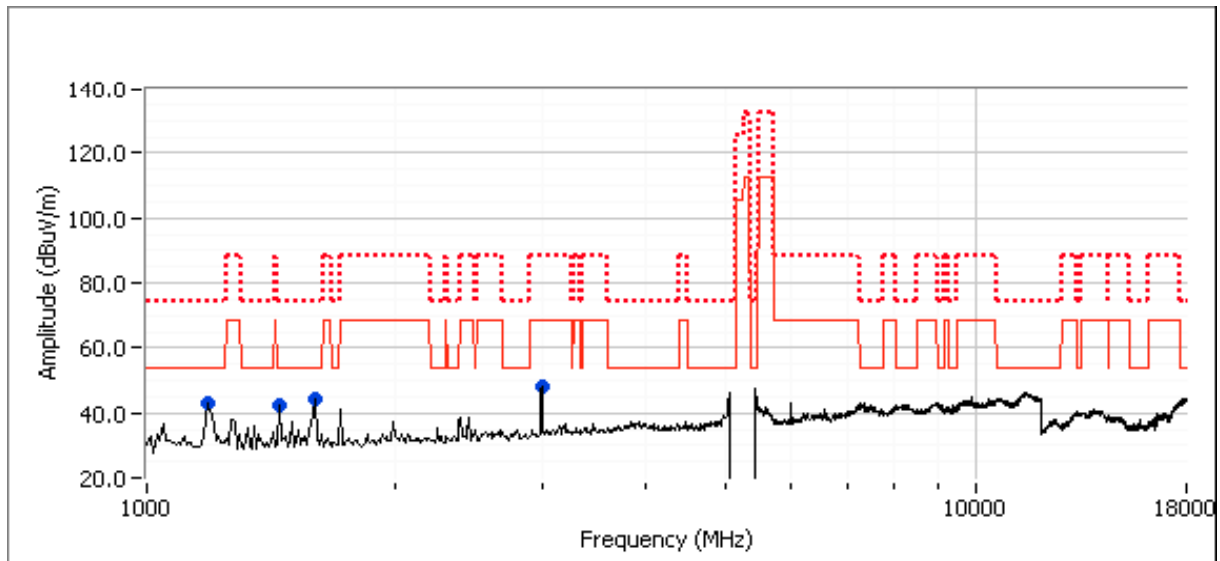
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #1b: Channel #40 5200MHz - 802.11n20, Chain A

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1453.100	42.7	H	54.0	-11.3	AVG	255	1.0	RB 1 MHz;VB 10 Hz;Pk
1453.110	48.9	H	74.0	-25.1	PK	255	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.540	29.0	V	54.0	-25.0	AVG	208	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.950	48.7	V	74.0	-25.3	PK	208	1.0	RB 1 MHz;VB 3 MHz;Pk
1189.130	34.3	H	54.0	-19.7	AVG	56	1.0	RB 1 MHz;VB 10 Hz;Pk
1180.200	36.5	H	74.0	-37.5	PK	56	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.760	47.9	V	68.3	-20.4	Peak	129	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



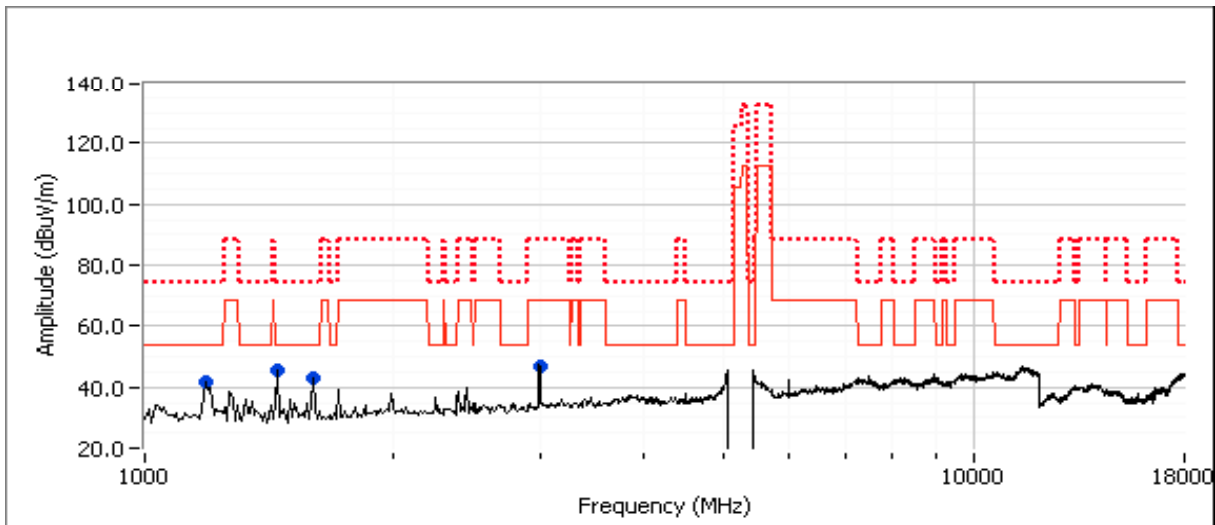
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #1c: Channel #36 5180MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1453.100	46.0	H	54.0	-8.0	AVG	46	1.0	RB 1 MHz;VB 10 Hz;Pk
1454.160	50.1	H	74.0	-23.9	PK	46	1.0	RB 1 MHz;VB 3 MHz;Pk
1595.210	32.0	V	54.0	-22.0	AVG	207	1.0	RB 1 MHz;VB 10 Hz;Pk
1593.640	54.3	V	74.0	-19.7	PK	207	1.0	RB 1 MHz;VB 3 MHz;Pk
1189.280	29.3	H	54.0	-24.7	AVG	46	1.0	RB 1 MHz;VB 10 Hz;Pk
1179.180	36.8	H	74.0	-37.2	PK	46	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.760	47.1	V	68.3	-21.2	Peak	132	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)





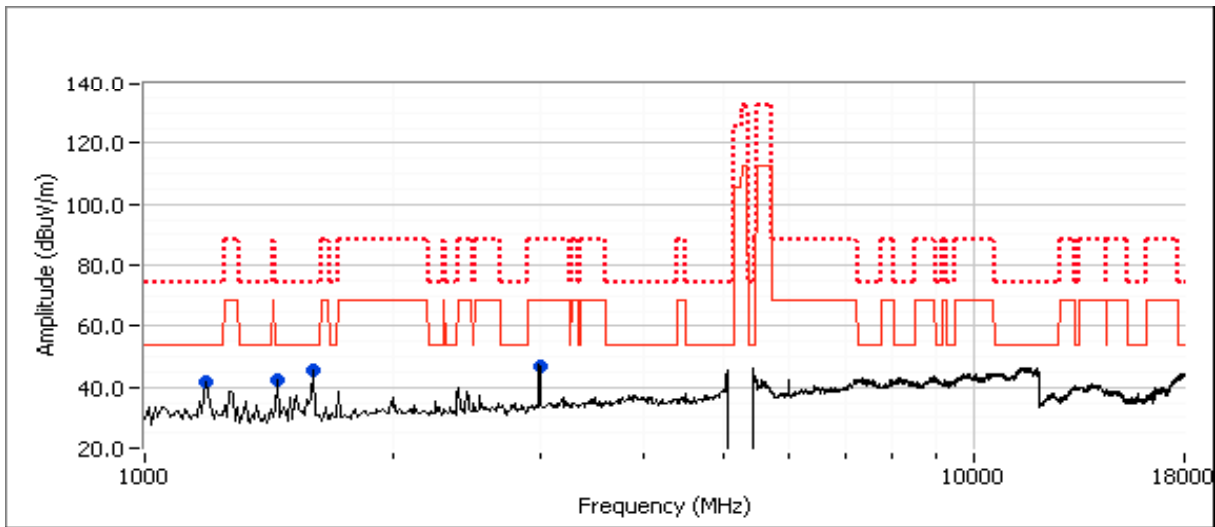
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #1d: Channel #48 5240MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1453.320	41.2	H	54.0	-12.8	AVG	254	1.0	RB 1 MHz;VB 10 Hz;Pk
1453.890	45.8	H	74.0	-28.2	PK	254	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.270	31.8	V	54.0	-22.2	AVG	204	1.0	RB 1 MHz;VB 10 Hz;Pk
1597.780	53.7	V	74.0	-20.3	PK	204	1.0	RB 1 MHz;VB 3 MHz;Pk
1189.070	40.2	V	54.0	-13.8	AVG	239	1.0	RB 1 MHz;VB 10 Hz;Pk
1190.060	40.6	V	74.0	-33.4	PK	239	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.760	46.9	V	68.3	-21.4	Peak	129	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #2, Radiated Spurious Emissions, 1-40GHz, Center Channel 5250-5350MHz - 802.11a, n20**

Date of Test: 8/15/2011      Test Location: FT5  
 Test Engineer: Rafael Varelas      Config Change: none

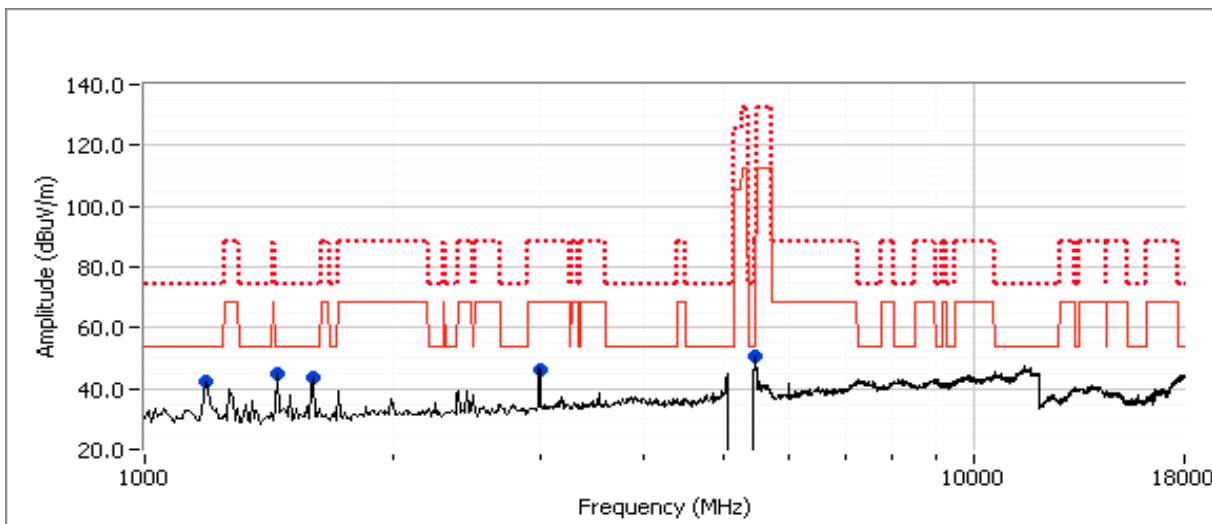
For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -27dBm eirp (68.3dBuV/m @3m).

**Run #2a: Channel #60 5300MHz - 802.11a,Chain A**

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1453.110	46.6	H	54.0	-7.4	AVG	61	1.0	RB 1 MHz;VB 10 Hz;Pk
1452.760	48.5	H	74.0	-25.5	PK	61	1.0	RB 1 MHz;VB 3 MHz;Pk
1594.540	30.0	V	54.0	-24.0	AVG	265	1.0	RB 1 MHz;VB 10 Hz;Pk
1594.010	47.9	V	74.0	-26.1	PK	265	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.620	36.6	H	54.0	-17.4	AVG	84	1.0	RB 1 MHz;VB 10 Hz;Pk
1198.020	36.8	H	74.0	-37.2	PK	84	1.0	RB 1 MHz;VB 3 MHz;Pk
5458.630	44.8	V	54.0	-9.2	AVG	48	1.0	RB 1 MHz;VB 10 Hz;Pk
5458.420	54.6	V	74.0	-19.4	PK	48	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.760	46.4	V	68.3	-21.9	Peak	128	1.5	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



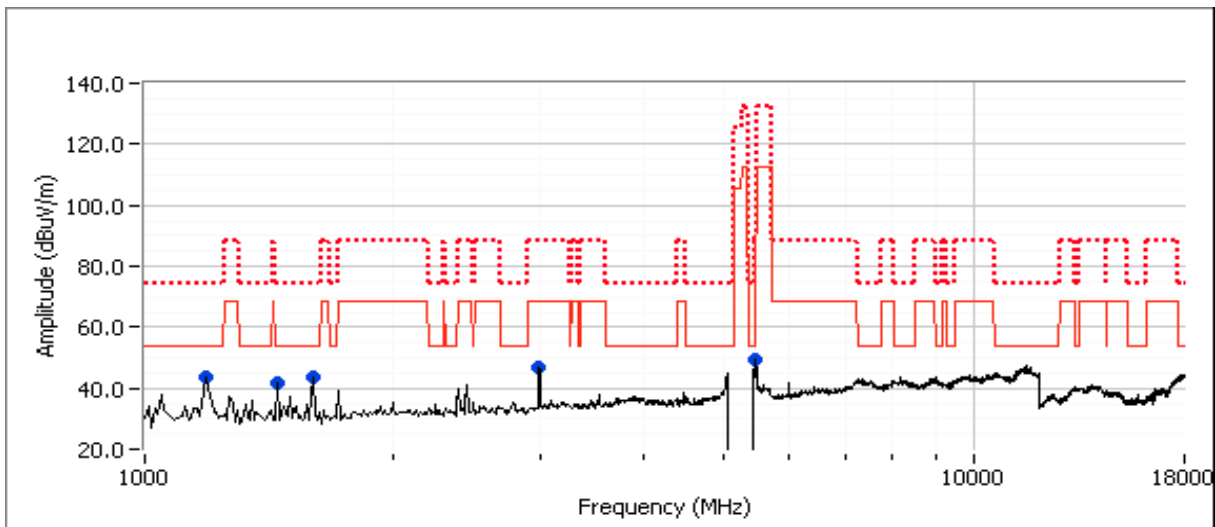
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2b: Channel #60 5300MHz - 802.11n20,Chain A

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5458.930	44.3	V	54.0	-9.7	AVG	67	1.0	RB 1 MHz;VB 10 Hz;Pk
5459.430	54.6	V	74.0	-19.4	PK	67	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.930	30.6	V	54.0	-23.4	AVG	0	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.740	55.0	V	74.0	-19.0	PK	0	1.0	RB 1 MHz;VB 3 MHz;Pk
1447.490	27.7	V	54.0	-26.3	AVG	198	1.0	RB 1 MHz;VB 10 Hz;Pk
1447.390	35.7	V	74.0	-38.3	PK	198	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.630	36.6	H	54.0	-17.4	AVG	237	1.0	RB 1 MHz;VB 10 Hz;Pk
1198.300	42.1	H	74.0	-31.9	PK	237	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.750	47.1	V	68.3	-21.2	Peak	128	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



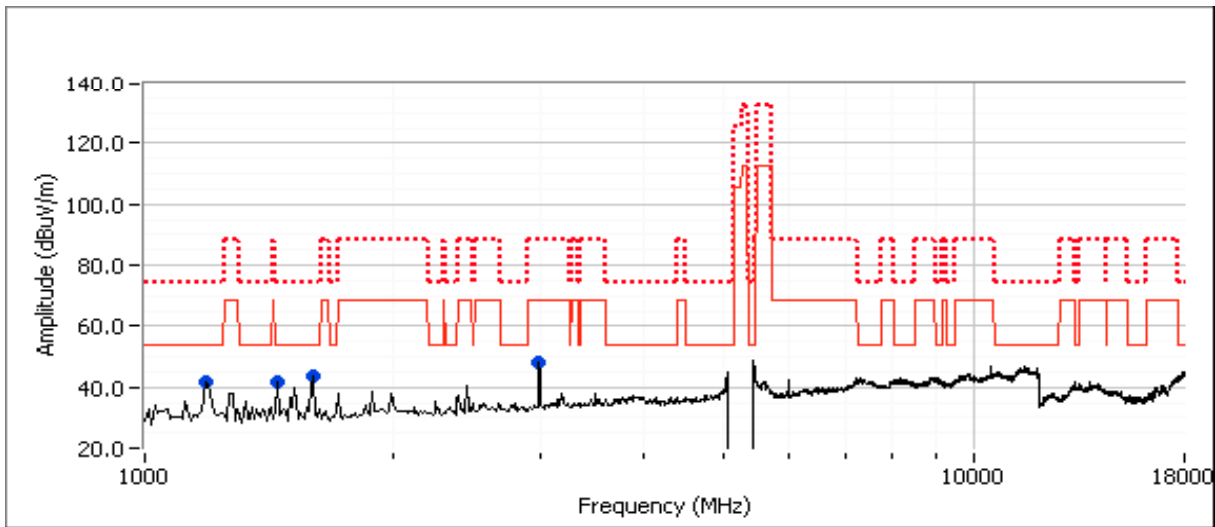
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2c: Channel #52 5260MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1188.830	42.2	V	54.0	-11.8	AVG	333	1.0	RB 1 MHz;VB 10 Hz;Pk
1195.000	42.9	V	74.0	-31.1	PK	333	1.0	RB 1 MHz;VB 3 MHz;Pk
1593.910	29.1	V	54.0	-24.9	AVG	2	1.0	RB 1 MHz;VB 10 Hz;Pk
1593.980	49.3	V	74.0	-24.7	PK	2	1.0	RB 1 MHz;VB 3 MHz;Pk
1452.800	32.5	V	54.0	-21.5	AVG	178	1.0	RB 1 MHz;VB 10 Hz;Pk
1443.730	39.3	V	74.0	-34.7	PK	178	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.750	47.8	V	68.3	-20.5	Peak	123	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



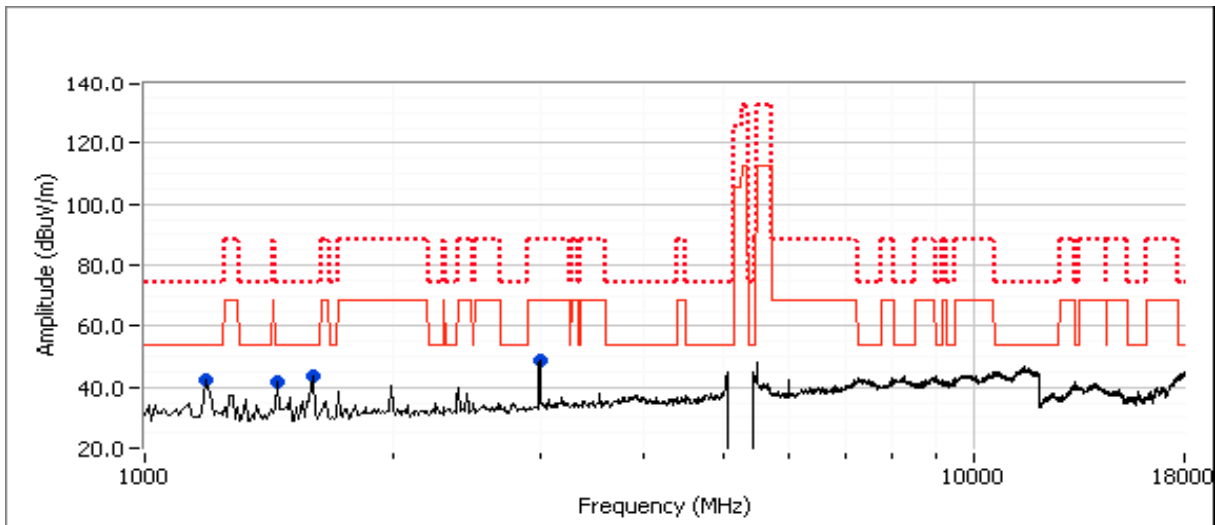
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2d: Channel #64 5320MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1453.240	44.6	H	54.0	-9.4	AVG	291	1.0	RB 1 MHz;VB 10 Hz;Pk
1454.320	45.2	H	74.0	-28.8	PK	291	1.0	RB 1 MHz;VB 3 MHz;Pk
1593.720	30.4	V	54.0	-23.6	AVG	356	1.0	RB 1 MHz;VB 10 Hz;Pk
1593.800	54.0	V	74.0	-20.0	PK	356	1.0	RB 1 MHz;VB 3 MHz;Pk
1189.130	36.6	H	54.0	-17.4	AVG	229	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.870	41.8	H	74.0	-32.2	PK	229	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.760	48.6	V	68.3	-19.7	Peak	200	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #3, Radiated Spurious Emissions, 1-40GHz, Center Channel 5470-5725MHz - 802.11a, n20**

Date of Test: 8/15/2011      Test Location: FT5  
 Test Engineer: Rafael Varelas      Config Change: none

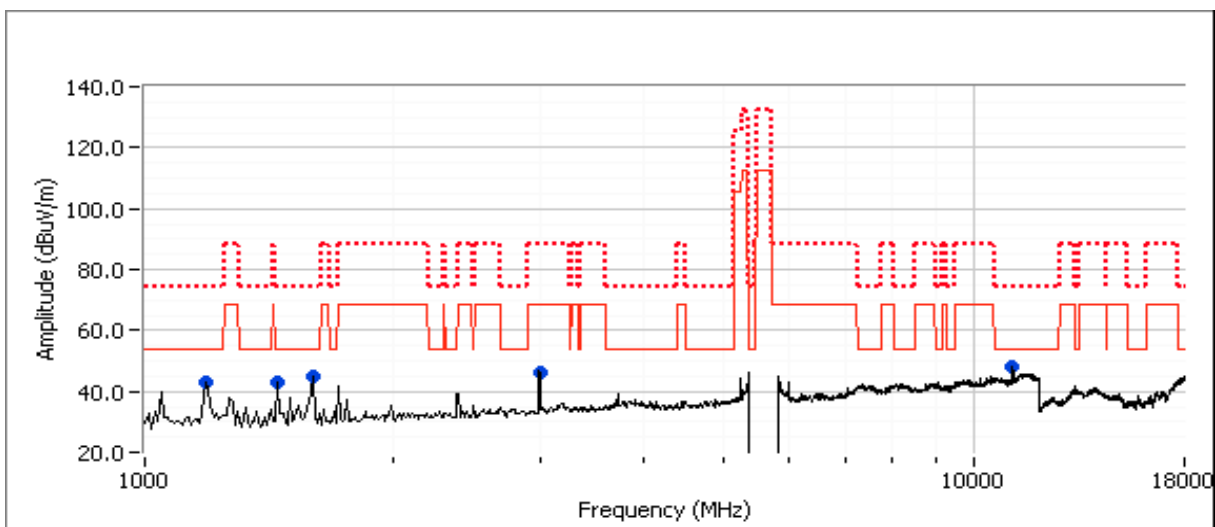
For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -27dBm eirp (68.3dBuV/m @3m).

**Run #3a: Channel #116 5580MHz - 802.11a,Chain A**

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1188.900	43.7	V	54.0	-10.3	AVG	103	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.240	46.2	V	74.0	-27.8	PK	103	1.0	RB 1 MHz;VB 3 MHz;Pk
1593.240	28.1	V	54.0	-25.9	AVG	3	1.0	RB 1 MHz;VB 10 Hz;Pk
1597.070	50.5	V	74.0	-23.5	PK	3	1.0	RB 1 MHz;VB 3 MHz;Pk
11158.900	42.3	H	54.0	-11.7	AVG	212	1.0	RB 1 MHz;VB 10 Hz;Pk
11159.370	55.3	H	74.0	-18.7	PK	212	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.850	46.4	V	68.3	-21.9	Peak	127	1.0	Note 1

Note 1: Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



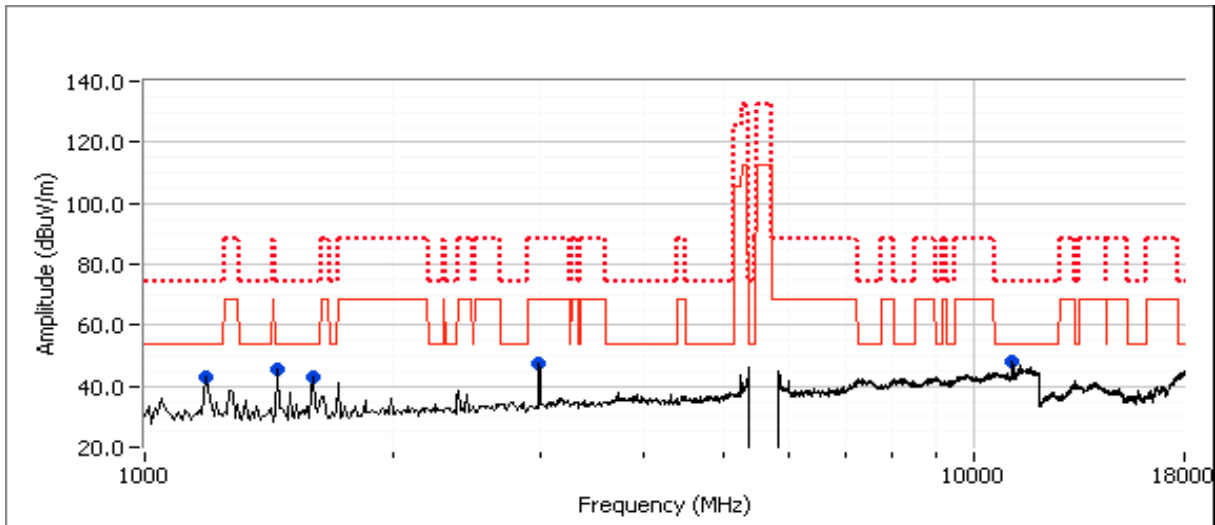
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3b: Channel #116 5580MHz - 802.11n20, Chain A

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1453.080	44.9	H	54.0	-9.1	AVG	33	1.0	RB 1 MHz;VB 10 Hz;Pk
1453.690	45.3	H	74.0	-28.7	PK	33	1.0	RB 1 MHz;VB 3 MHz;Pk
1595.330	30.0	V	54.0	-24.0	AVG	349	1.0	RB 1 MHz;VB 10 Hz;Pk
1594.640	53.5	V	74.0	-20.5	PK	349	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.900	38.4	H	54.0	-15.6	AVG	231	1.0	RB 1 MHz;VB 10 Hz;Pk
1189.280	37.5	H	74.0	-36.5	PK	231	1.0	RB 1 MHz;VB 3 MHz;Pk
11157.100	40.3	H	54.0	-13.7	AVG	215	1.0	RB 1 MHz;VB 10 Hz;Pk
11159.540	54.1	H	74.0	-19.9	PK	215	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.840	47.2	V	68.3	-21.1	Peak	197	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



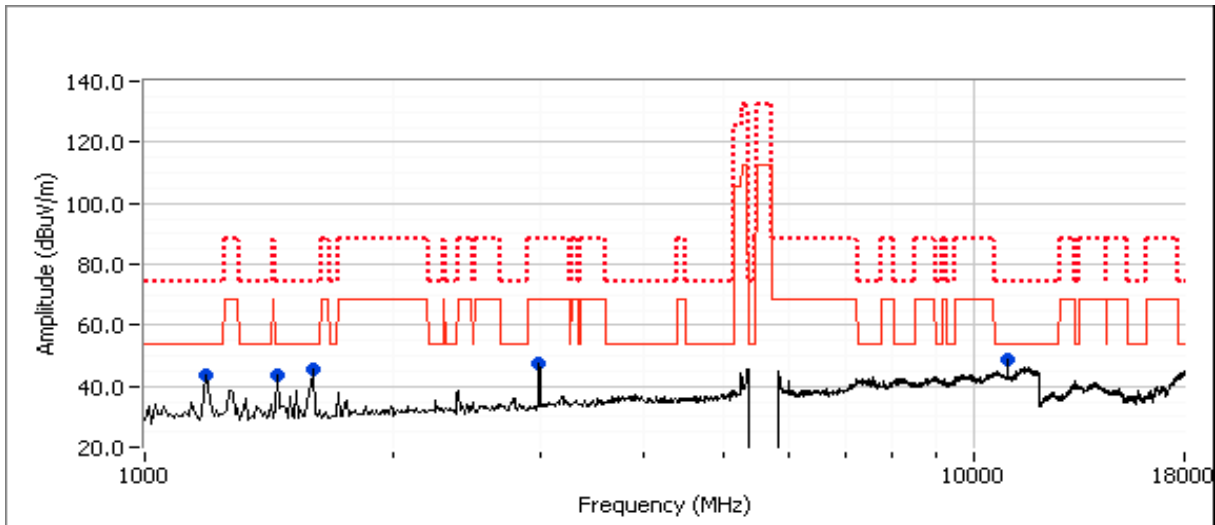
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3c: Channel #100 5500 MHz - 802.11n20

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1188.940	44.6	V	54.0	-9.4	AVG	120	1.0	RB 1 MHz;VB 10 Hz;Pk
1187.910	44.5	V	74.0	-29.5	PK	120	1.0	RB 1 MHz;VB 3 MHz;Pk
1598.410	30.3	V	54.0	-23.7	AVG	0	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.070	54.3	V	74.0	-19.7	PK	0	1.0	RB 1 MHz;VB 3 MHz;Pk
11001.020	43.5	H	54.0	-10.5	AVG	205	1.2	RB 1 MHz;VB 10 Hz;Pk
11000.790	54.1	H	74.0	-19.9	PK	205	1.2	RB 1 MHz;VB 3 MHz;Pk
1452.980	42.9	H	54.0	-11.1	AVG	299	1.0	RB 1 MHz;VB 10 Hz;Pk
1454.070	34.9	H	74.0	-39.1	PK	299	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.840	47.4	V	68.3	-20.9	Peak	199	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)





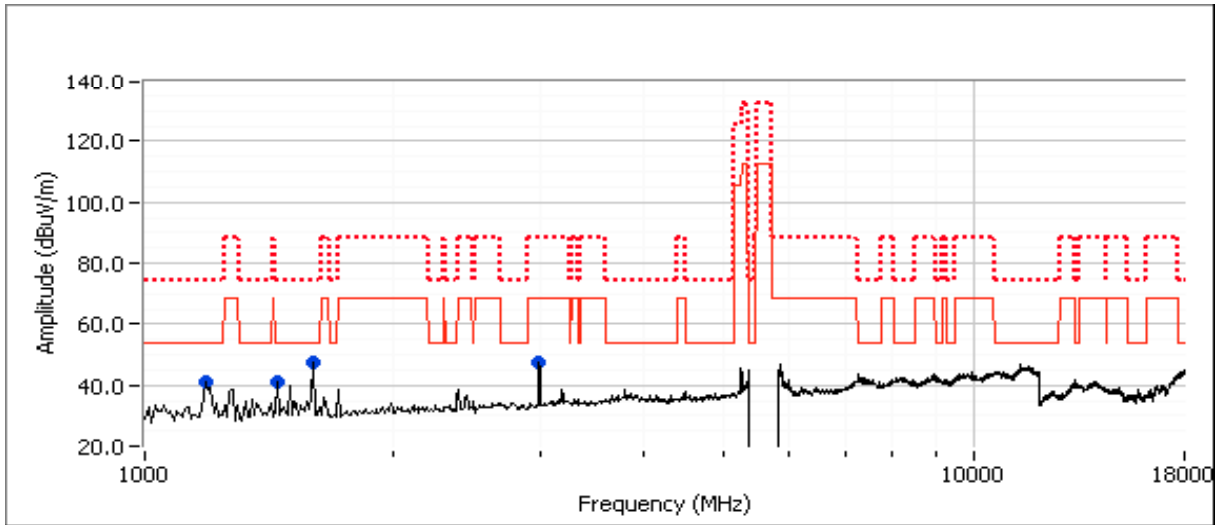
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3d: Channel #140 5700 MHz - 802.11n20

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1188.900	42.6	V	54.0	-11.4	AVG	245	1.0	RB 1 MHz;VB 10 Hz;Pk
1189.820	43.0	V	74.0	-31.0	PK	245	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.380	30.1	V	54.0	-23.9	AVG	354	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.520	54.1	V	74.0	-19.9	PK	354	1.0	RB 1 MHz;VB 3 MHz;Pk
1453.160	41.3	V	54.0	-12.7	AVG	131	1.0	RB 1 MHz;VB 10 Hz;Pk
1452.580	35.3	V	74.0	-38.7	PK	131	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.840	47.7	V	68.3	-20.6	Peak	202	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

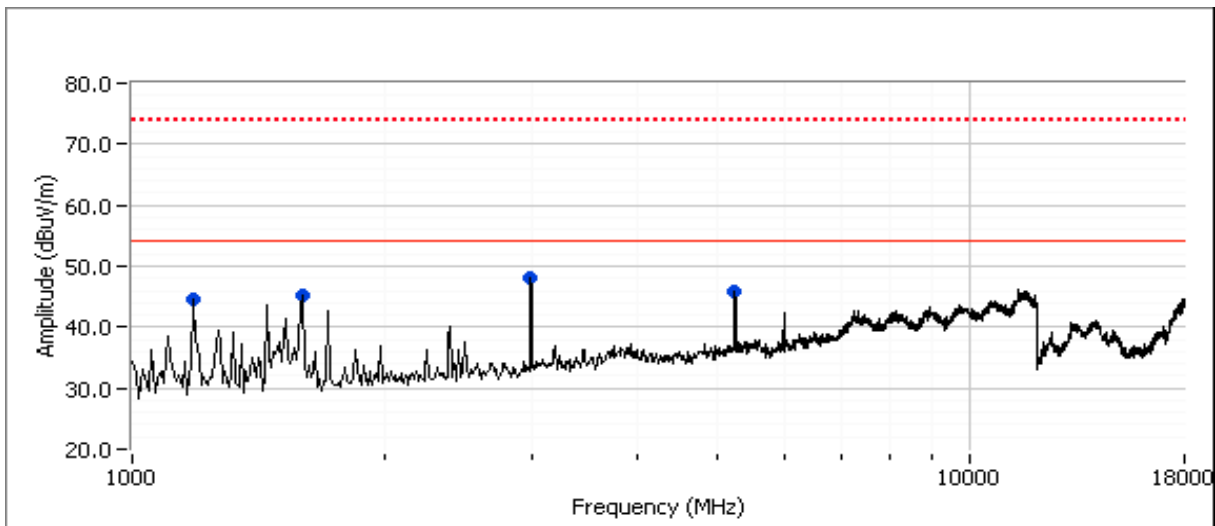
**Run #4, Radiated Spurious Emissions, 1-18GHz, Receive, Chain A**

Date of Test: 8/15/2011      Test Location: FT5  
 Test Engineer: Rafael Varelas      Config Change: none

**Run #4a: EUT on Channel #40 5200MHz - Receive, Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	RSS-GEN		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2994.670	48.1	V	54.0	-5.9	AVG	200	1.0	RB 1 MHz;VB 10 Hz;Pk
2994.810	51.8	V	74.0	-22.2	PK	200	1.0	RB 1 MHz;VB 3 MHz;Pk
1189.190	38.5	H	54.0	-15.5	AVG	228	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.720	42.2	H	74.0	-31.8	PK	228	1.0	RB 1 MHz;VB 3 MHz;Pk
5239.160	36.2	V	54.0	-17.8	AVG	264	1.0	RB 1 MHz;VB 10 Hz;Pk
5235.050	51.5	V	74.0	-22.5	PK	264	1.0	RB 1 MHz;VB 3 MHz;Pk
1585.430	34.2	V	54.0	-19.8	AVG	357	1.0	RB 1 MHz;VB 10 Hz;Pk
1585.900	39.0	V	74.0	-35.0	PK	357	1.0	RB 1 MHz;VB 3 MHz;Pk

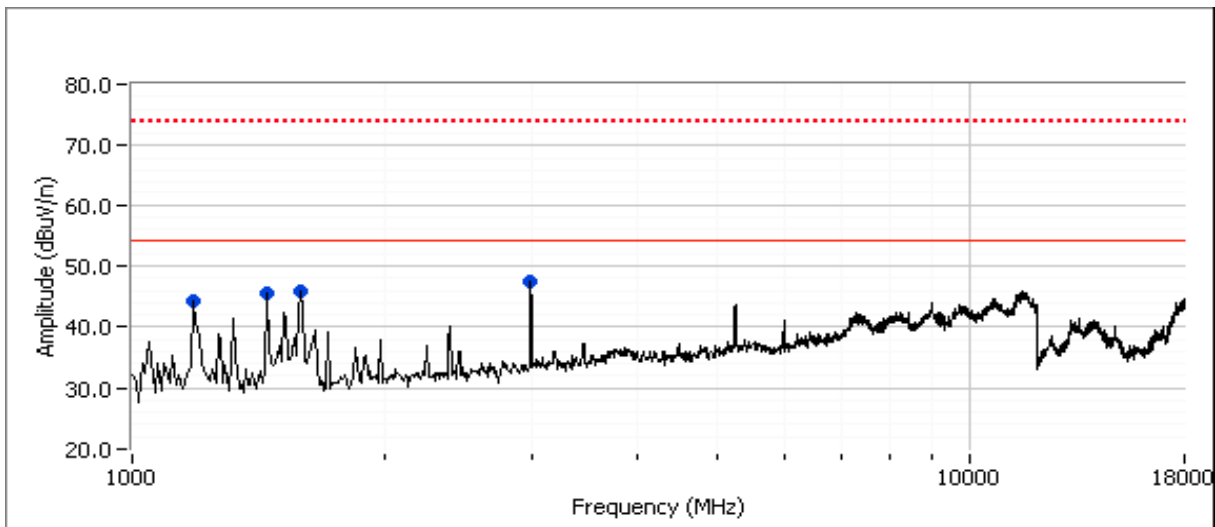


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #4b: EUT on Channel #60 5300MHz - Receive, Chain A

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	RSS-GEN		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2994.690	47.2	V	54.0	-6.8	AVG	203	1.0	RB 1 MHz;VB 10 Hz;Pk
2994.670	50.8	V	74.0	-23.2	PK	203	1.0	RB 1 MHz;VB 3 MHz;Pk
1585.170	46.4	H	54.0	-7.6	AVG	318	1.9	RB 1 MHz;VB 10 Hz;Pk
1586.460	49.0	H	74.0	-25.0	PK	318	1.9	RB 1 MHz;VB 3 MHz;Pk
1188.890	42.0	V	54.0	-12.0	AVG	98	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.360	43.9	V	74.0	-30.1	PK	98	1.0	RB 1 MHz;VB 3 MHz;Pk
1452.930	46.4	H	54.0	-7.6	AVG	58	1.0	RB 1 MHz;VB 10 Hz;Pk
1454.450	44.6	H	74.0	-29.4	PK	58	1.0	RB 1 MHz;VB 3 MHz;Pk

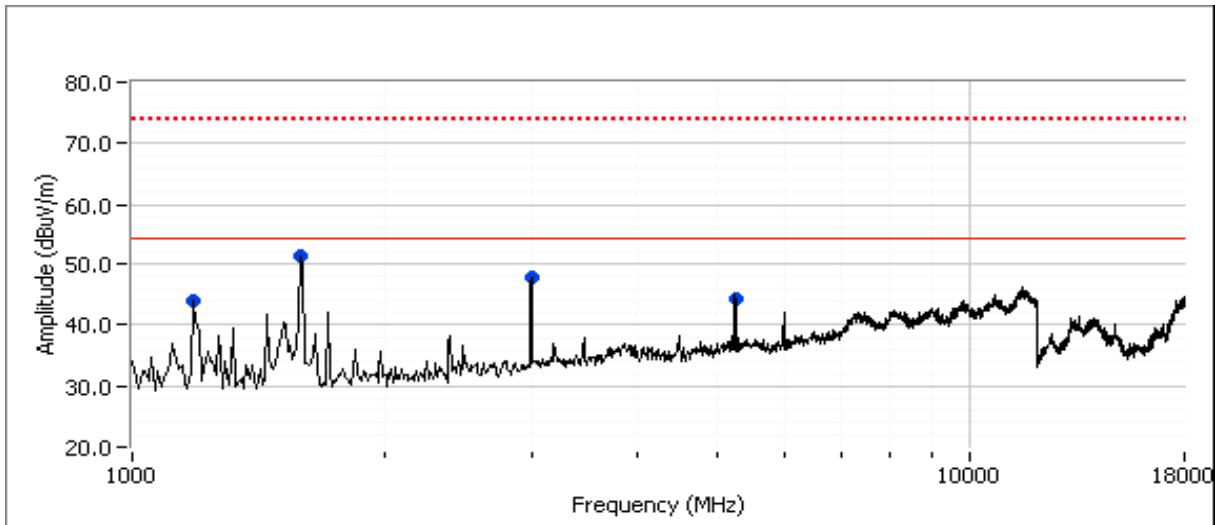


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #4c: EUT on Channel #116 5580MHz - Receive, Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	RSS-GEN		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2994.680	47.3	V	54.0	-6.7	AVG	199	1.0	RB 1 MHz;VB 10 Hz;Pk
2994.650	50.8	V	74.0	-23.2	PK	199	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.860	44.8	V	54.0	-9.2	AVG	124	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.120	43.4	V	74.0	-30.6	PK	124	1.0	RB 1 MHz;VB 3 MHz;Pk
5246.770	34.4	V	54.0	-19.6	AVG	191	1.0	RB 1 MHz;VB 10 Hz;Pk
5246.780	49.2	V	74.0	-24.8	PK	191	1.0	RB 1 MHz;VB 3 MHz;Pk
1585.330	44.8	H	54.0	-9.2	AVG	323	1.0	RB 1 MHz;VB 10 Hz;Pk
1584.070	44.6	H	74.0	-29.4	PK	323	1.0	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**RSS 210 and FCC 15.407 (UNII) Radiated Bandedge Emissions (H&S)**

**Summary of Results**

**New Module #2011-1296, Laptop #2011-2312, Linux Shell**

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin
Run # 1	802.11a Chain A	#36 5180MHz	H&S	100%	Restricted Band Edge at 5150 MHz	15.209	46.7dBµV/m @ 5149.9MHz (-7.3dB)
Run # 1	802.11a Chain A	#56 5280MHz	H&S	100%	Restricted Band Edge at 5250 MHz	LP0002 (Taiwan Only)	49.6dBµV/m @ 5250.0MHz (-4.4dB)
Run # 1	802.11a Chain A	#64 5320MHz	H&S	100%	Restricted Band Edge at 5350 MHz	15.209	51.7dBµV/m @ 5350.4MHz (-2.3dB)
Run # 1	802.11a Chain A	#100 5500MHz	H&S	100%	Restricted Band Edge at 5460 MHz	15.209	45.6dBµV/m @ 5459.5MHz (-8.4dB)
Run # 2	802.11n20 Chain A	#36 5180MHz	H&S	100%	Restricted Band Edge at 5150 MHz	15.209	43.7dBµV/m @ 5149.8MHz (-10.3dB)
Run # 2	802.11n20 Chain A	#56 5280MHz	H&S	100%	Restricted Band Edge at 5250 MHz	LP0002 (Taiwan Only)	48.4dBµV/m @ 5249.5MHz (-5.6dB)
Run # 2	802.11n20 Chain A	#64 5320MHz	H&S	100%	Restricted Band Edge at 5350 MHz	15.209	51.5dBµV/m @ 5350.1MHz (-2.5dB)
Run # 2	802.11n20 Chain A	#100 5500MHz	H&S	100%	Restricted Band Edge at 5460 MHz	15.209	46.4dBµV/m @ 5459.9MHz (-7.6dB)

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**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.

**General Test Configuration**

The EUT was installed into a test fixture such that the EUT was exposed (i.e. outside of a host PC).  
 For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**

Rel. Humidity: 15 - 55 %  
 Temperature: 18 - 25 °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:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 1, Band Edge Field Strength - 802.11a, Chain A**

**Run # 1a, EUT on Channel #36 5180MHz - 802.11a, Chain A**

Date of Test: 8/16/2011

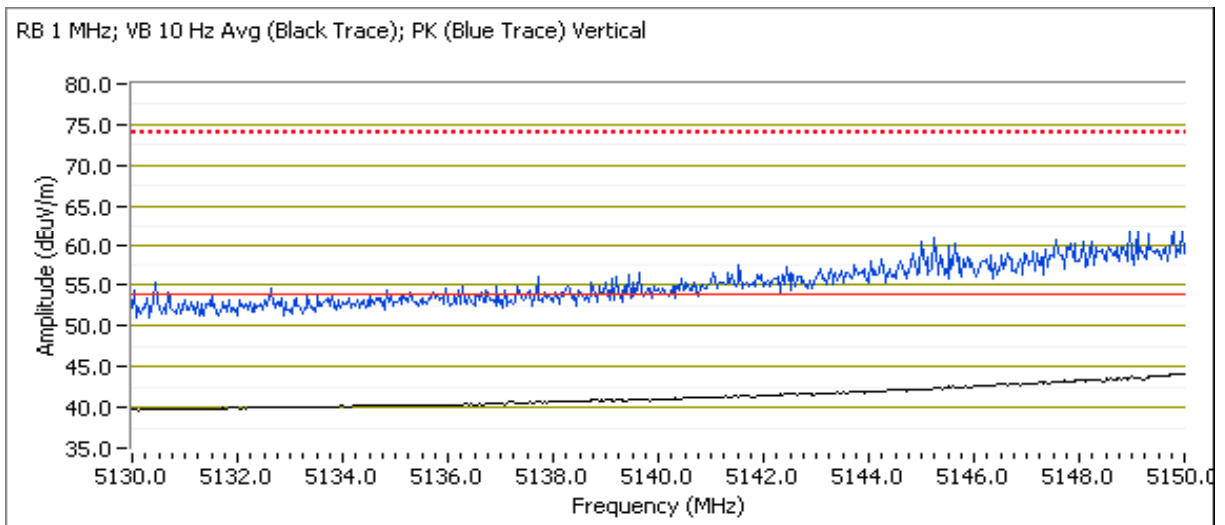
Test Location: FT Chamber #5

Test Engineer: Rafael Varelas

Config Change: None

**Direct Measurement of Field Strength at the bandedge**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5149.910	46.7	V	54.0	-7.3	AVG	277	1.7	RB 1 MHz;VB 10 Hz;Pk
5149.250	60.9	V	74.0	-13.1	PK	277	1.7	RB 1 MHz;VB 3 MHz;Pk
5149.870	44.5	H	54.0	-9.5	AVG	330	1.0	RB 1 MHz;VB 10 Hz;Pk
5148.790	58.5	H	74.0	-15.5	PK	330	1.0	RB 1 MHz;VB 3 MHz;Pk



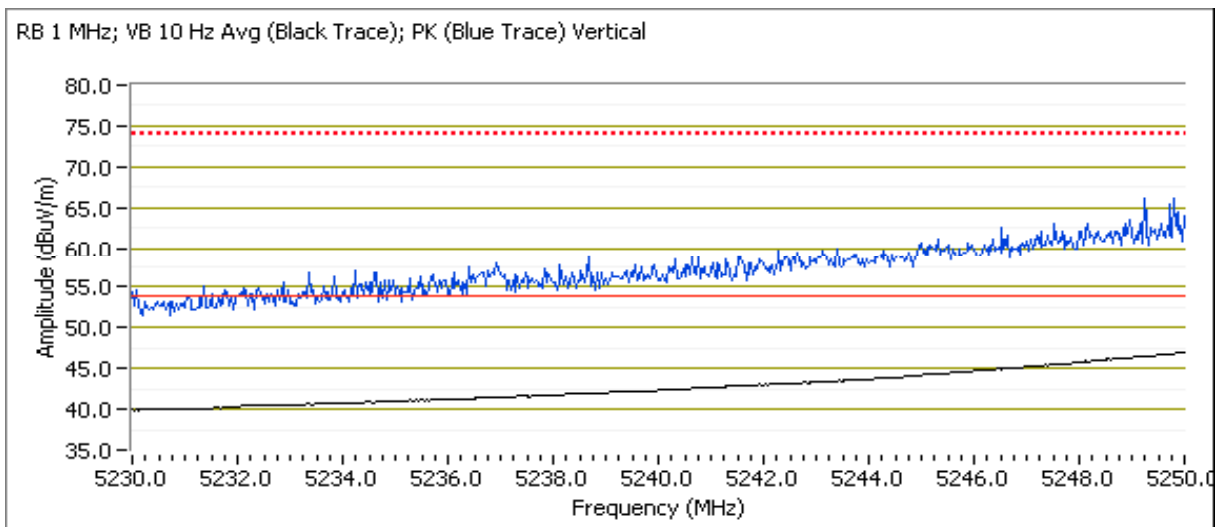
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 1b, EUT on Channel #56 5280MHz - 802.11a, Chain A

For Taiwan Only

**5250MHz Band Edge Signal Radiated Field Strength**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	LP0002		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5250.000	49.6	V	54.0	-4.4	AVG	320	1.7	RB 1 MHz;VB 10 Hz;Pk
5248.420	63.6	V	74.0	-10.4	PK	320	1.7	RB 1 MHz;VB 3 MHz;Pk
5250.000	48.6	H	54.0	-5.4	AVG	327	1.2	RB 1 MHz;VB 10 Hz;Pk
5248.230	63.4	H	74.0	-10.6	PK	327	1.2	RB 1 MHz;VB 3 MHz;Pk





Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

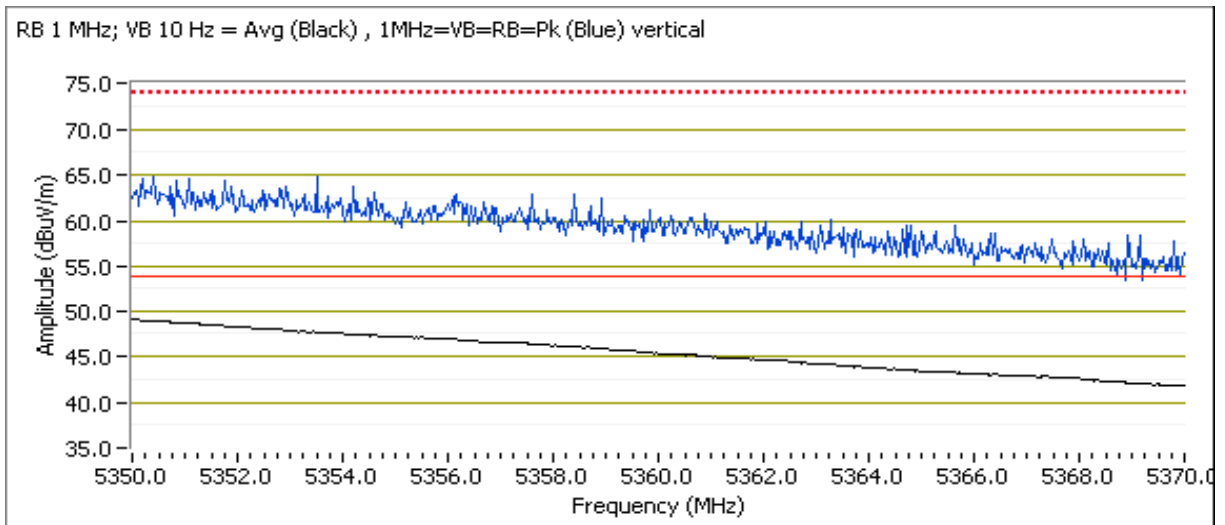
**Run # 1c, EUT on Channel #64 5320MHz - 802.11a, Chain A**

Date of Test: 8/16/2011  
Test Engineer: Joseph Cadigal

Test Location: FT Chamber#5  
Config Change: none

**Direct Measurement of Field Strength at the bandedge**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
5350.400	51.7	V	54.0	-2.3	AVG	308	1.5	RB 1 MHz;VB 10 Hz;Pk
5353.400	63.7	V	74.0	-10.3	PK	308	1.5	RB 1 MHz;VB 3 MHz;Pk
5350.170	50.4	H	54.0	-3.6	AVG	323	1.0	RB 1 MHz;VB 10 Hz;Pk
5350.630	64.1	H	74.0	-9.9	PK	323	1.0	RB 1 MHz;VB 3 MHz;Pk

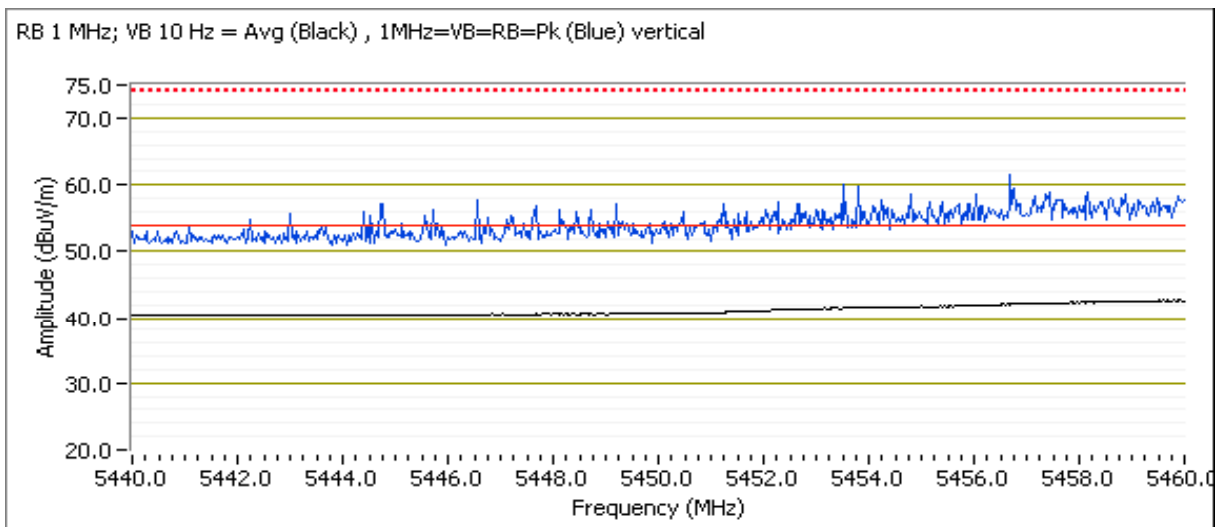


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 1d, EUT on Channel #100 5500MHz - 802.11a, Chain A

*Direct Measurement of Field Strength at the bandedge @ 5460 MHz*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
5459.500	45.6	V	54.0	-8.4	AVG	311	2.5	RB 1 MHz;VB 10 Hz;Pk
5453.130	58.3	V	74.0	-15.7	PK	311	2.5	RB 1 MHz;VB 3 MHz;Pk
5459.430	45.5	H	54.0	-8.5	AVG	43	1.1	RB 1 MHz;VB 10 Hz;Pk
5455.170	58.4	H	74.0	-15.6	PK	43	1.1	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run # 2, Band Edge Field Strength - 802.11n20, Chain A**

**Run # 2a, EUT on Channel #36 5180MHz - 802.11n20, Chain A**

Date of Test: 8/16/2011

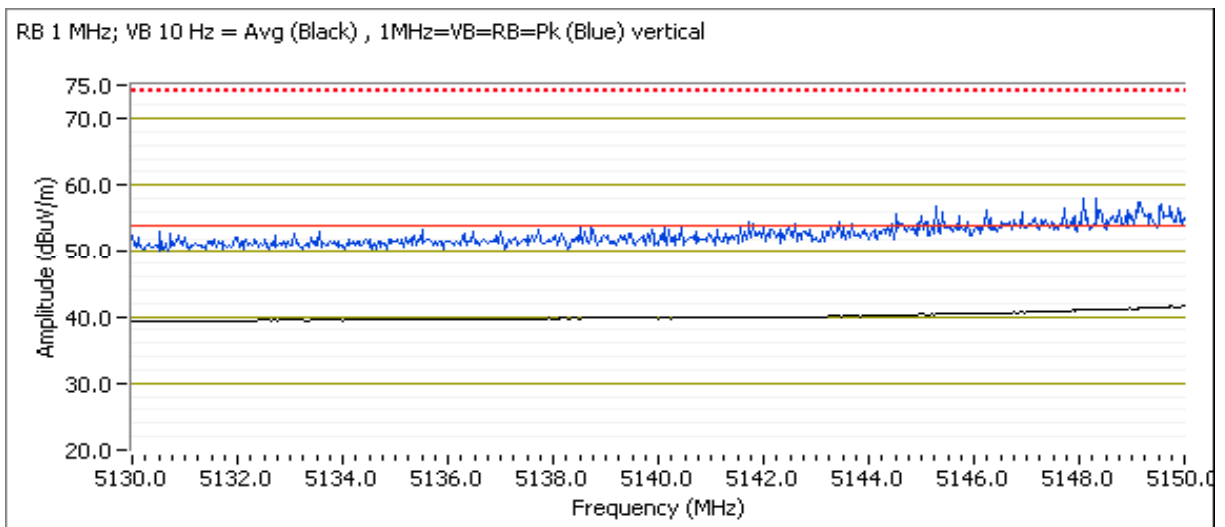
Test Location: FT Chamber#5

Test Engineer: Joseph Cadigal

Config Change: none

**Direct Measurement of Field Strength at the bandedge**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.800	43.7	V	54.0	-10.3	AVG	320	2.2	RB 1 MHz;VB 10 Hz;Pk
5147.200	56.0	V	74.0	-18.0	PK	320	2.2	RB 1 MHz;VB 3 MHz;Pk
5151.410	41.6	H	54.0	-12.4	AVG	285	1.0	RB 1 MHz;VB 10 Hz;Pk
5151.440	54.5	H	74.0	-19.5	PK	285	1.0	RB 1 MHz;VB 3 MHz;Pk



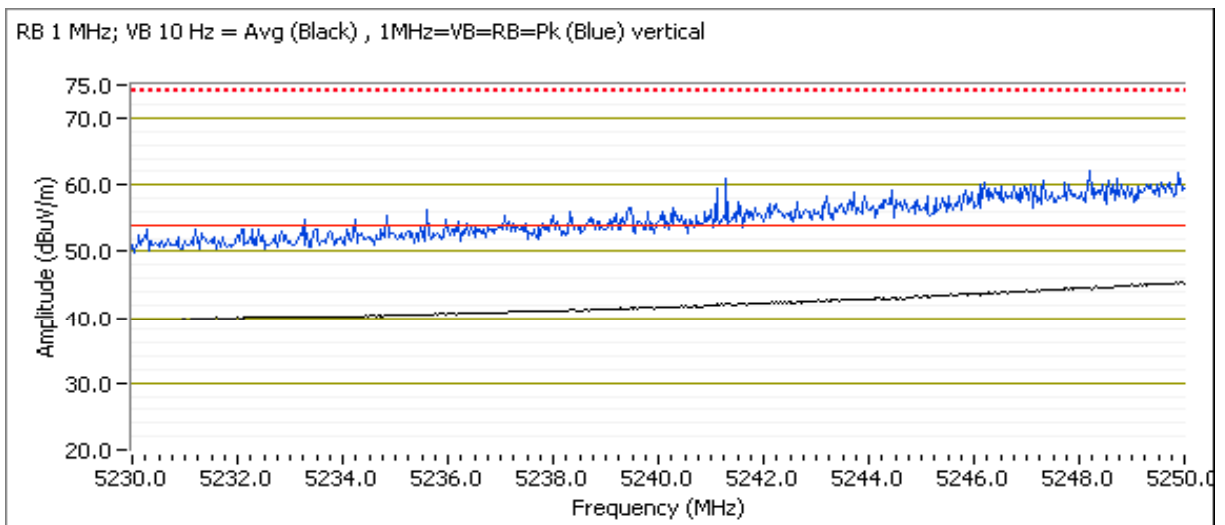
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 2b, EUT on Channel #56 5280MHz - 802.11n20, Chain A

For Taiwan Only

**5250MHz Band Edge Signal Radiated Field Strength**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	LP0002		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5249.500	48.4	V	54.0	-5.6	AVG	305	2.0	RB 1 MHz;VB 10 Hz;Pk
5249.430	60.0	V	74.0	-14.0	PK	305	2.0	RB 1 MHz;VB 3 MHz;Pk
5250.000	46.2	H	54.0	-7.8	AVG	46	1.6	RB 1 MHz;VB 10 Hz;Pk
5248.170	58.4	H	74.0	-15.6	PK	46	1.6	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

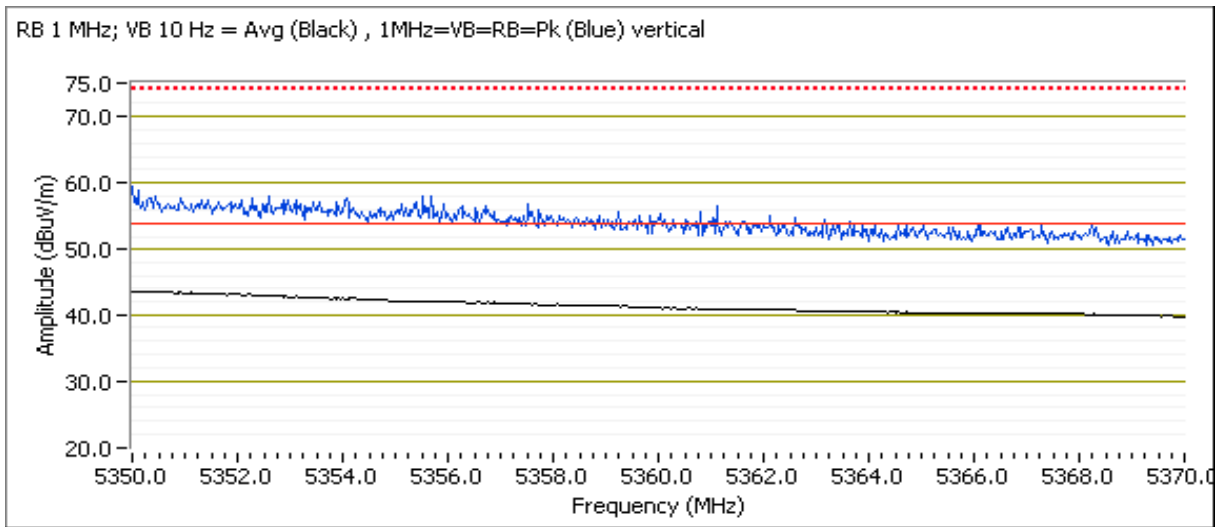
**Run # 2c, EUT on Channel #64 5320MHz - 802.11n20, Chain A**

Date of Test: 8/16/2011  
Test Engineer: Joseph Cadigal

Test Location: FT Chamber#5  
Config Change: none

**Direct Measurement of Field Strength at the bandedge**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
5350.070	51.5	V	54.0	-2.5	AVG	0	1.0	RB 1 MHz;VB 10 Hz;Pk
5350.330	62.9	V	74.0	-11.1	PK	0	1.0	RB 1 MHz;VB 3 MHz;Pk
5350.070	51.8	H	54.0	-2.2	AVG	44	1.6	RB 1 MHz;VB 10 Hz;Pk
5350.630	65.1	H	74.0	-8.9	PK	44	1.6	RB 1 MHz;VB 3 MHz;Pk

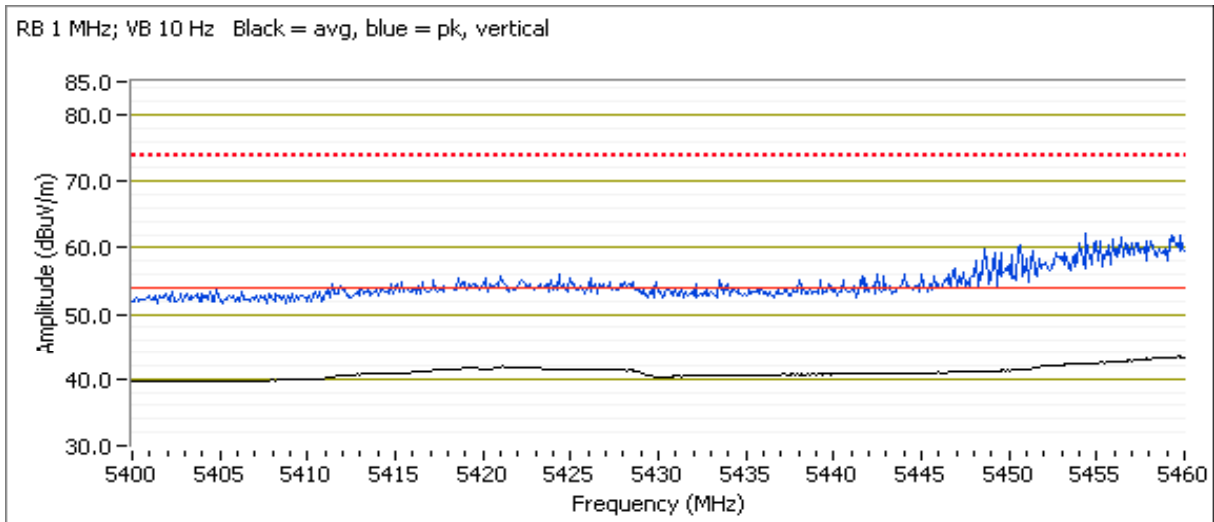


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run # 2d, EUT on Channel #100, 5500MHz - 802.11n20, Chain A

*Direct Measurement of Field Strength at the bandedge @ 5460 MHz*

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
5459.700	46.1	H	54.0	-7.9	AVG	47	1.01	
5457.800	58.0	H	74.0	-16.0	PK	47	1.01	
5459.900	46.4	V	54.0	-7.6	AVG	333	1.22	
5459.300	58.7	V	74.0	-15.3	PK	333	1.22	



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions (H&S)**

**Summary of Results**

**New Module #2011-1296, Laptop #2011-2312, Linux Shell**

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin	
Scans on center channel in both OFDM modes to determine the worst case.								
Run #1 (5150-5250MHz Band)	802.11a Chain A	#40 5200MHz	H&S	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	35.3dBµV/m @ 1189.1MHz (-18.7dB)	
	n20 Chain A	#40 5200MHz	H&S	100%			44.3dBµV/m @ 1189.1MHz (-9.7dB)	
	Worst case mode top and bottom channels.							
	n20 Chain A	#36 5180MHz	H&S	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	42.0dBµV/m @ 1188.9MHz (-12.0dB)	
	#48 5240MHz	H&S	100%	46.8dBµV/m @ 1188.0MHz (-7.2dB)				
Run #2 (5250-5350MHz Band)	802.11a Chain A	#60 5300MHz	H&S	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	50.7dBµV/m @ 5459.1MHz (-3.3dB)	
	n20 Chain A	#60 5300MHz	H&S	100%			48.5dBµV/m @ 5458.4MHz (-5.5dB)	
	Worst case mode (802.11a) - top and bottom channels.							
	802.11a Chain A	#52 5260MHz	H&S	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	43.8dBµV/m @ 1189.0MHz (-10.2dB)	
	#64 5320MHz	H&S	100%	40.5dBµV/m @ 10640.2MHz (-13.5dB)				

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #	Mode	Channel	Antenna	Power Setting	Test Performed	Limit	Result / Margin	
Run #3 (5470-5725MHz Band)	802.11a Chain A	#116 5580MHz	H&S	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	48.0dBµV/m @ 1188.9MHz (-6.0dB)	
	n20 Chain A	#116 5580MHz	H&S	100%			45.7dBµV/m @ 1188.9MHz (-8.3dB)	
	Worst case mode (802.11a) - top and bottom channels.							
	802.11a Chain A	#100 5500MHz	H&S	100%	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	39.8dBµV/m @ 10999.2MHz (-14.2dB)	
	#140 5700MHz	H&S	100%	46.0dBµV/m @ 1188.9MHz (-8.0dB)				

**Receive mode**

Run #4	Receive	#40 5200MHz	H&S	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	48.0dBµV/m @ 2994.7MHz (-6.0dB)
		#60 5300MHz	H&S	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	48.5dBµV/m @ 1188.9MHz (-5.5dB)
		#116 5580MHz	H&S	-	Radiated Emissions, 1 - 18 GHz	RSS-GEN	46.2dBµV/m @ 2994.7MHz (-7.8dB)

### 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.

### General Test Configuration

The EUT was installed into a test fixture such that the EUT was exposed (i.e. outside of a host PC). For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

### Ambient Conditions:

Rel. Humidity: 15 - 55 %  
Temperature: 18 - 25 °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.

### Notes:

No radio related emissions were observed below 1GHz and above 18GHz in preliminary measurements.



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #1, Radiated Spurious Emissions, 1-40GHz, Center Channel, 5150-5250MHz - 802.11a, n20**

Date of Test: 8/17/2011  
 Test Engineer: John Caizzi

Test Location: FT5  
 Config Change: none

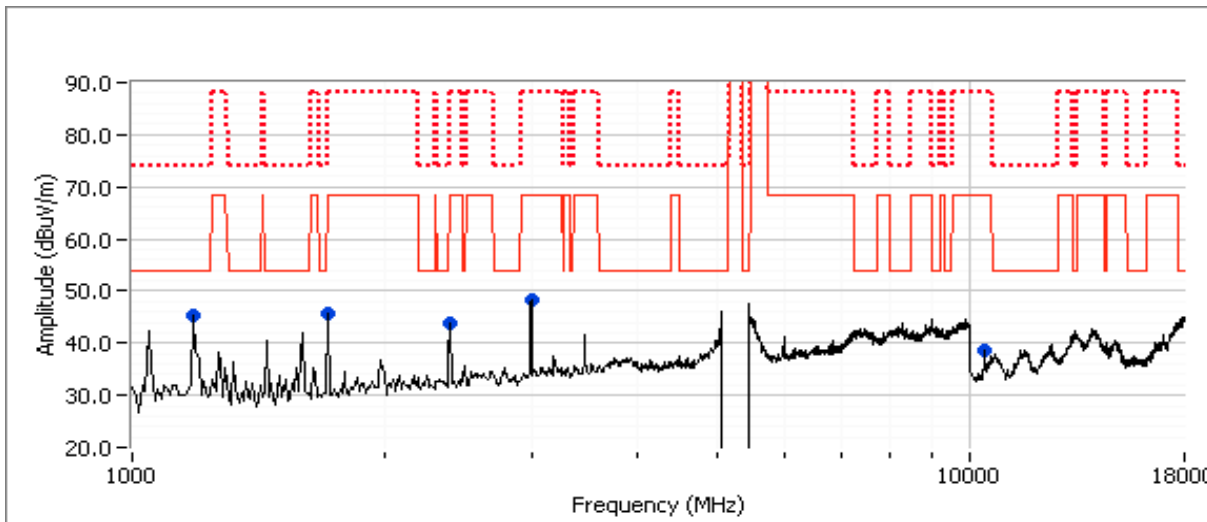
For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -27dBm eirp (68.3dBuV/m @ 3m).

**Run #1a: Channel #40, 5200MHz - 802.11a, Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dBuV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1189.060	35.3	V	54.0	-18.7	AVG	261	1.03	
1199.200	45.0	V	74.0	-29.0	PK	261	1.03	
2390.000	31.8	V	54.0	-22.2	AVG	347	1.00	
2389.470	50.7	V	74.0	-23.3	PK	347	1.00	
2998.330	48.3	V	68.3	-20.0	Peak	146	1.0	Note 1
1715.000	45.6	V	68.3	-22.7	Peak	293	1.0	Note 1
10400.000	38.6	H	68.3	-29.7	Peak	49	1.0	Note 1

Note 1: Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



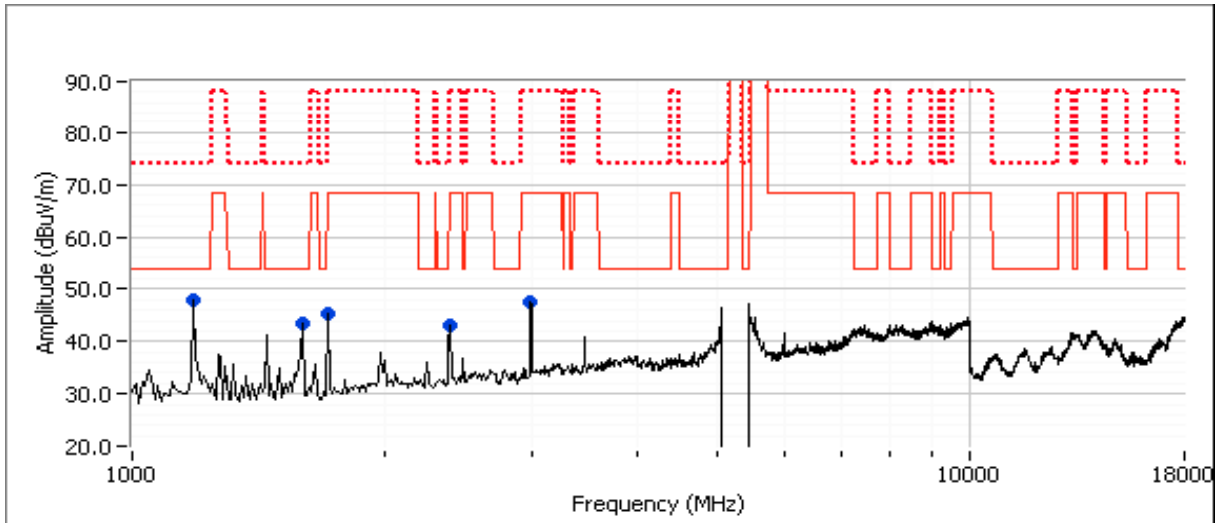
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #1b: Channel #40 5200MHz - 802.11n20, Chain A

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1189.060	44.3	H	54.0	-9.7	AVG	139	1.19	
1199.130	47.3	H	74.0	-26.7	PK	139	1.19	
1715.000	45.4	V	68.3	-22.9	Peak	171	1.59	Note 1
2989.170	47.7	V	68.3	-20.6	Peak	144	0.99	Note 1
2393.330	43.1	V	68.3	-25.2	Peak	343	1.29	Note 1
1595.830	43.6	V	54.0	-10.4	Peak	158	0.99	

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #1c: Channel #36 5180MHz - 802.11n20**

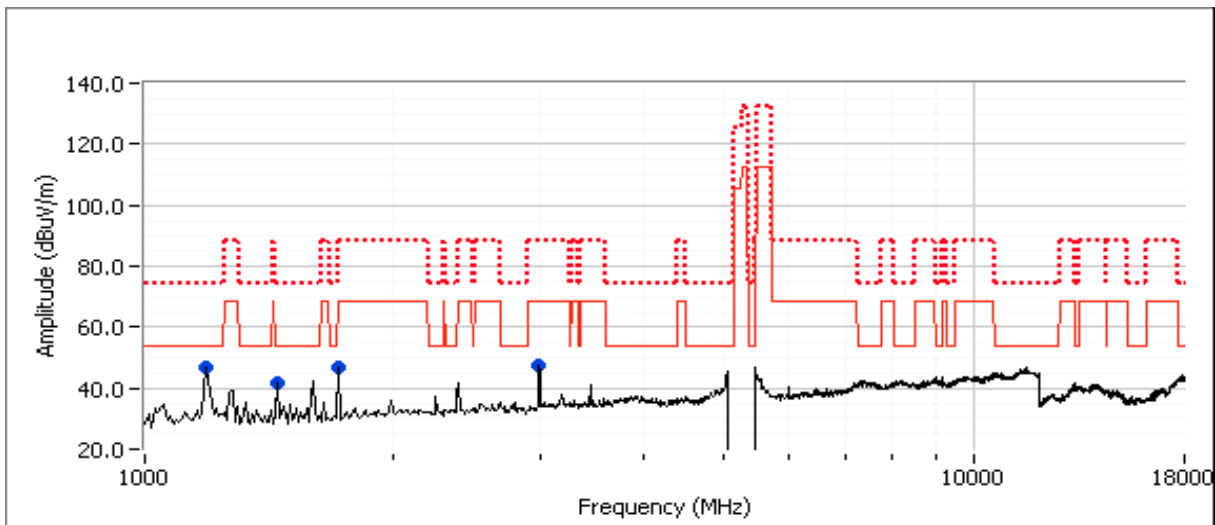
Date of Test: 8/17/2011  
Test Engineer: Rafael Varelas

Test Location: FT5  
Config Change: none

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1188.890	42.0	V	54.0	-12.0	AVG	331	1.0	RB 1 MHz;VB 10 Hz;Pk
1190.280	43.7	V	74.0	-30.3	PK	331	1.0	RB 1 MHz;VB 3 MHz;Pk
1472.380	29.6	V	54.0	-24.4	AVG	141	1.1	RB 1 MHz;VB 10 Hz;Pk
1470.080	39.5	V	74.0	-34.5	PK	141	1.1	RB 1 MHz;VB 3 MHz;Pk
1717.460	46.9	V	68.3	-21.4	Peak	136	1.9	Note 1
2994.830	47.2	V	68.3	-21.1	Peak	157	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



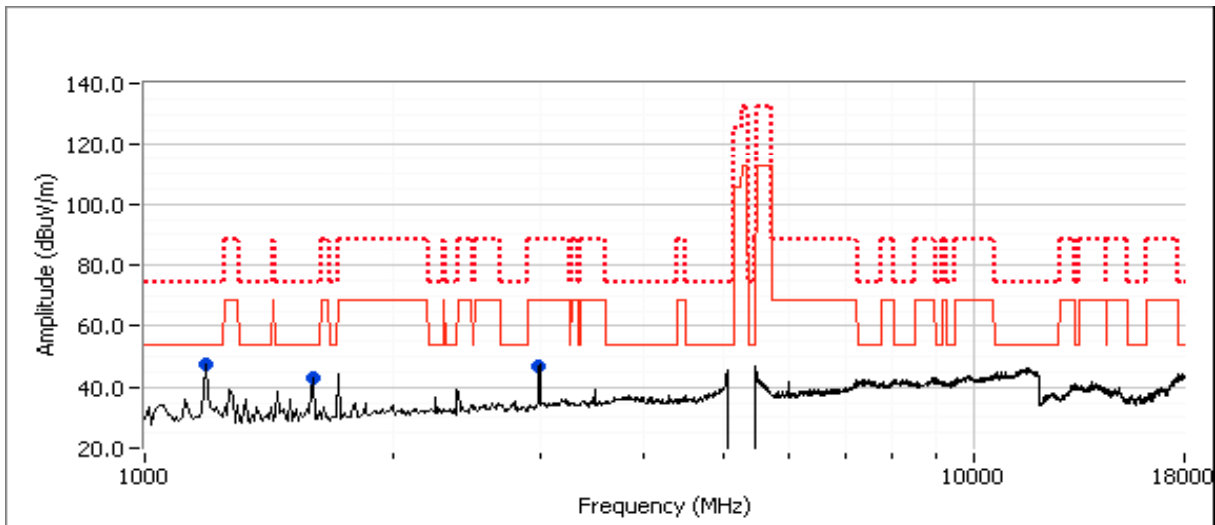
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #1d: Channel #48 5240MHz - 802.11n20

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1187.990	46.8	V	54.0	-7.2	AVG	138	1.0	RB 1 MHz;VB 10 Hz;Pk
1192.450	48.6	V	74.0	-25.4	PK	138	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.230	30.7	V	54.0	-23.3	AVG	138	1.0	RB 1 MHz;VB 10 Hz;Pk
1595.330	49.2	V	74.0	-24.8	PK	138	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.830	46.9	V	68.3	-21.4	Peak	148	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #2, Radiated Spurious Emissions, 1-40GHz, Center Channel 5250-5350MHz - 802.11a, n20**

Date of Test: 8/17/2011      Test Location: FT5  
 Test Engineer: Rafael Varelas      Config Change: none

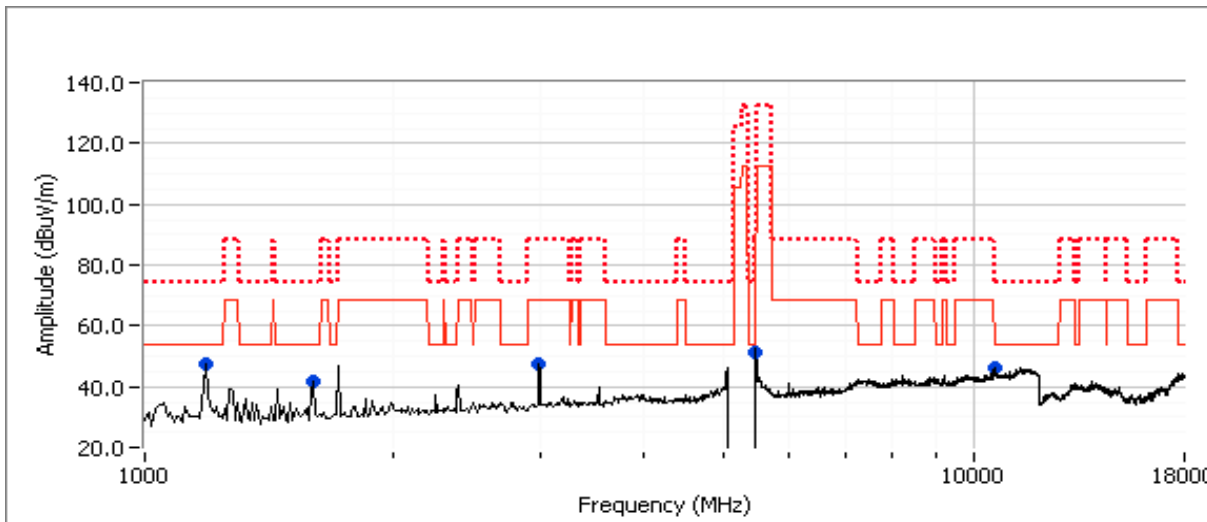
For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -27dBm eirp (68.3dBuV/m @3m).

**Run #2a: Channel #60 5300MHz - 802.11a,Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dBuV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5459.110	50.7	V	54.0	-3.3	AVG	309	1.2	RB 1 MHz;VB 10 Hz;Pk
5459.380	60.2	V	74.0	-13.8	PK	309	1.2	RB 1 MHz;VB 3 MHz;Pk
10600.160	39.3	V	54.0	-14.7	AVG	132	1.0	RB 1 MHz;VB 10 Hz;Pk
10600.600	49.6	V	74.0	-24.4	PK	132	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.110	30.5	V	54.0	-23.5	AVG	186	1.0	RB 1 MHz;VB 10 Hz;Pk
1596.380	52.6	V	74.0	-21.4	PK	186	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.740	41.2	V	54.0	-12.8	AVG	331	1.0	RB 1 MHz;VB 10 Hz;Pk
1195.230	41.5	V	74.0	-32.5	PK	331	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.830	47.7	V	68.3	-20.6	Peak	151	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



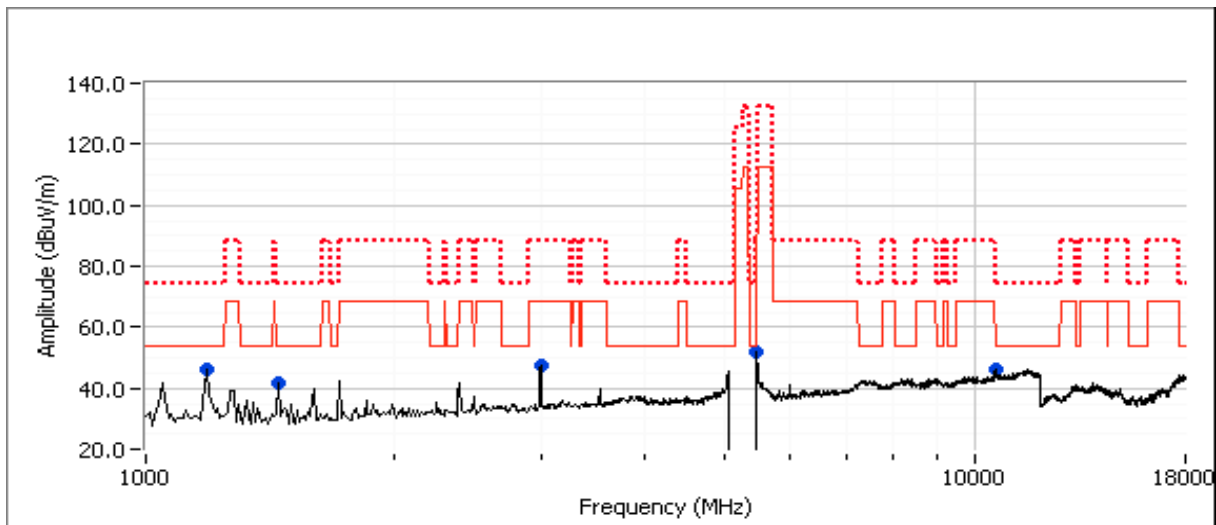
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2b: Channel #60 5300MHz - 802.11n20,Chain A

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
5458.380	48.5	V	54.0	-5.5	AVG	340	1.4	RB 1 MHz;VB 10 Hz;Pk
5459.180	58.8	V	74.0	-15.2	PK	340	1.4	RB 1 MHz;VB 3 MHz;Pk
1452.630	37.5	V	54.0	-16.5	AVG	11	1.0	RB 1 MHz;VB 10 Hz;Pk
1458.800	38.1	V	74.0	-35.9	PK	11	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.530	43.9	V	54.0	-10.1	AVG	79	1.0	RB 1 MHz;VB 10 Hz;Pk
1198.960	40.7	V	74.0	-33.3	PK	79	1.0	RB 1 MHz;VB 3 MHz;Pk
10601.190	41.2	H	54.0	-12.8	AVG	351	1.0	RB 1 MHz;VB 10 Hz;Pk
10598.560	52.6	H	88.3	-35.7	PK	351	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.810	47.5	V	68.3	-20.8	Peak	153	1.0	Note 1

Note 1 Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



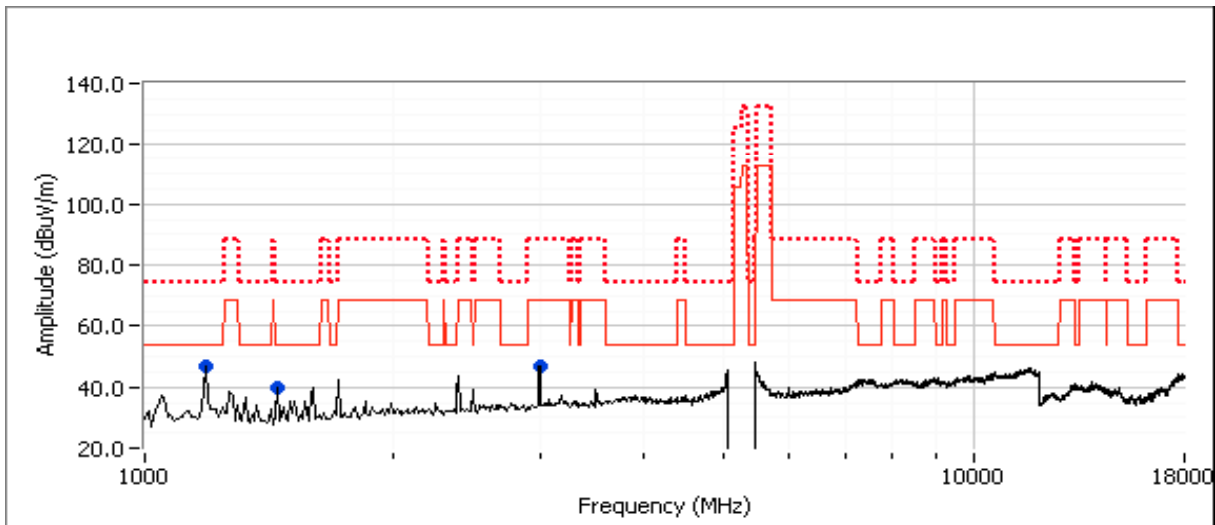
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2c: Channel #52 5260MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1188.990	43.8	V	54.0	-10.2	AVG	158	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.730	36.4	V	74.0	-37.6	PK	158	1.0	RB 1 MHz;VB 3 MHz;Pk
1453.080	37.6	H	54.0	-16.4	AVG	355	1.0	RB 1 MHz;VB 10 Hz;Pk
1440.720	34.1	H	74.0	-39.9	PK	355	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.810	47.0	V	68.3	-21.3	Peak	155	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



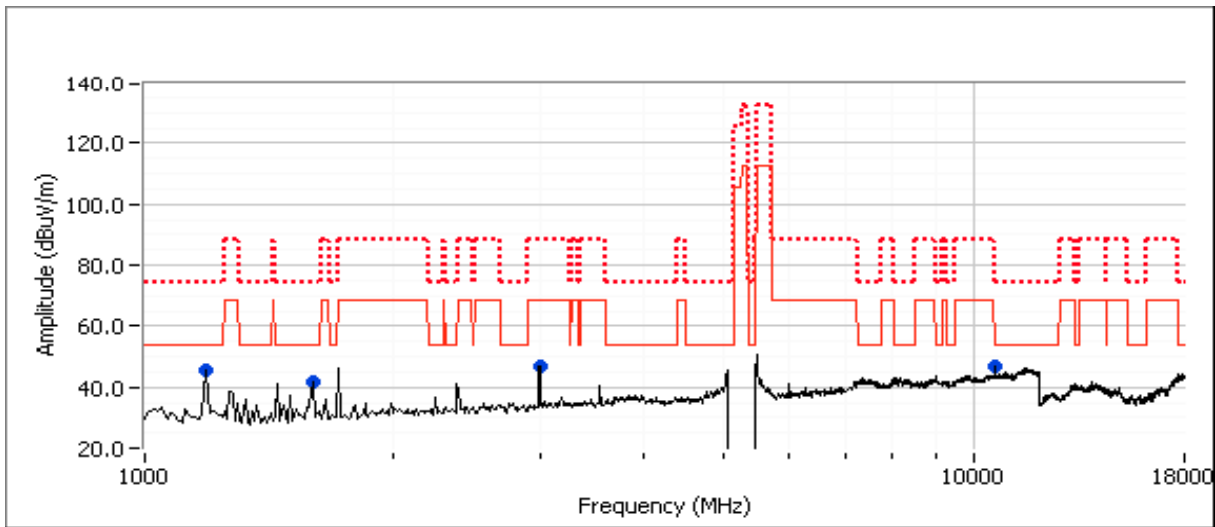
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #2d: Channel #64 5320MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
10640.160	40.5	V	54.0	-13.5	AVG	36	1.5	RB 1 MHz;VB 10 Hz;Pk
10641.230	51.6	V	74.0	-22.4	PK	36	1.5	RB 1 MHz;VB 3 MHz;Pk
1585.600	30.1	V	54.0	-23.9	AVG	3	1.0	RB 1 MHz;VB 10 Hz;Pk
1597.400	48.2	V	74.0	-25.8	PK	3	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.420	40.5	H	54.0	-13.5	AVG	195	1.0	RB 1 MHz;VB 10 Hz;Pk
1181.120	36.0	H	74.0	-38.0	PK	195	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.810	46.8	V	68.3	-21.5	Peak	148	1.3	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)





Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #3, Radiated Spurious Emissions, 1-40GHz, Center Channel 5470-5725MHz - 802.11a, n20**

Date of Test: 8/17/2011      Test Location: FT5  
 Test Engineer: Rafael Varelas      Config Change: none

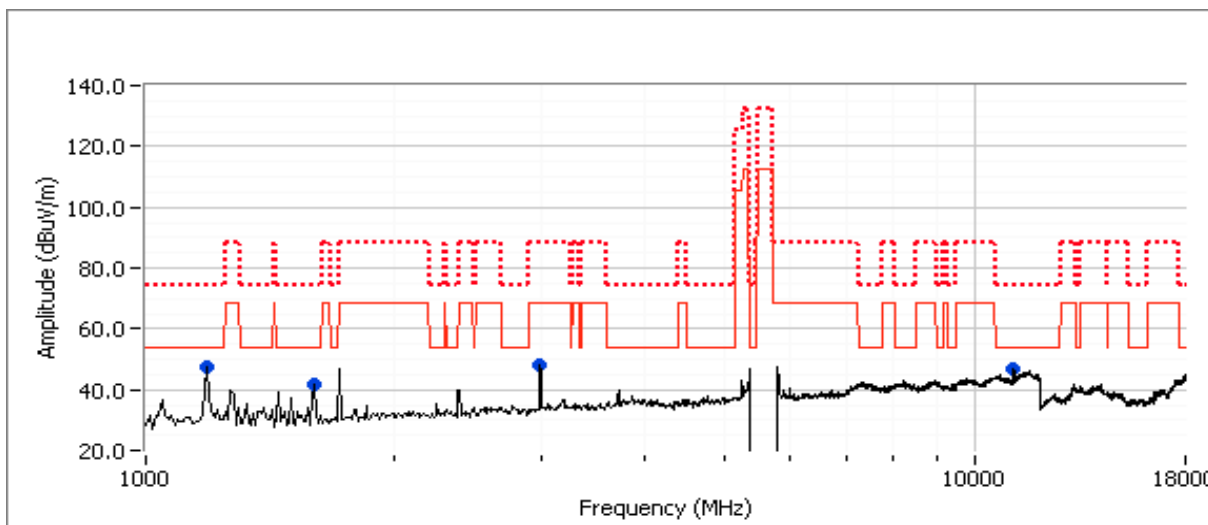
For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit is -27dBm eirp (68.3dBuV/m @3m).

**Run #3a: Channel #116 5580MHz - 802.11a,Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dBuV/m	Pol v/h	15.209 / 15E		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1188.900	48.0	V	54.0	-6.0	AVG	132	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.500	50.1	V	74.0	-23.9	PK	132	1.0	RB 1 MHz;VB 3 MHz;Pk
1597.110	31.1	V	54.0	-22.9	AVG	182	1.0	RB 1 MHz;VB 10 Hz;Pk
1598.720	54.1	V	74.0	-19.9	PK	182	1.0	RB 1 MHz;VB 3 MHz;Pk
11159.180	39.3	H	54.0	-14.7	AVG	8	1.4	RB 1 MHz;VB 10 Hz;Pk
11162.480	50.9	H	74.0	-23.1	PK	8	1.4	RB 1 MHz;VB 3 MHz;Pk
2994.830	47.8	V	68.3	-20.5	Peak	152	1.0	Note 1

Note 1: Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



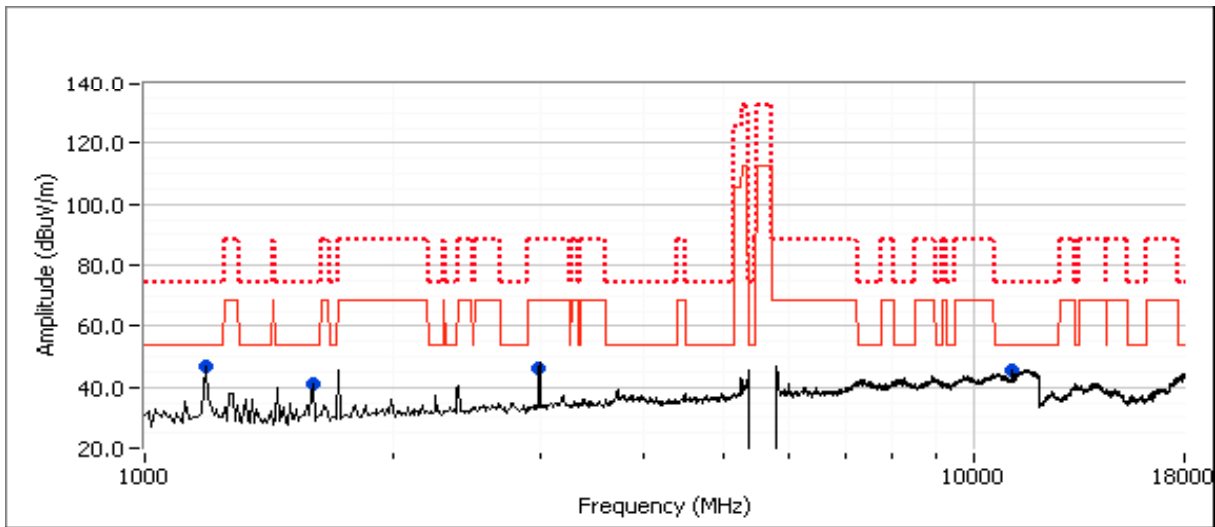
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3b: Channel #116 5580MHz - 802.11n20, Chain A

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15E		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1188.940	45.7	V	54.0	-8.3	AVG	140	1.0	RB 1 MHz;VB 10 Hz;Pk
1187.730	35.9	V	74.0	-38.1	PK	140	1.0	RB 1 MHz;VB 3 MHz;Pk
11158.660	40.1	H	54.0	-13.9	AVG	15	1.3	RB 1 MHz;VB 10 Hz;Pk
11159.930	53.3	H	74.0	-20.7	PK	15	1.3	RB 1 MHz;VB 3 MHz;Pk
1597.110	28.1	V	54.0	-25.9	AVG	332	1.3	RB 1 MHz;VB 10 Hz;Pk
1597.680	44.0	V	74.0	-30.0	PK	332	1.3	RB 1 MHz;VB 3 MHz;Pk
2994.830	46.3	V	68.3	-22.0	Peak	151	1.3	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



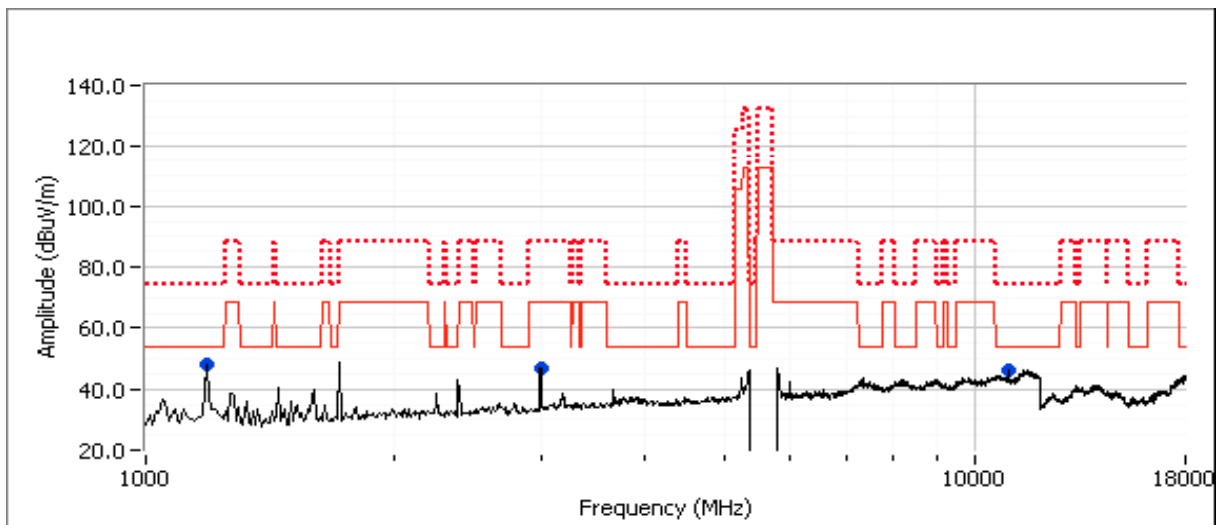
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3c: Channel #100 5500 MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
10999.160	39.8	V	54.0	-14.2	AVG	331	1.4	RB 1 MHz;VB 10 Hz;Pk
11006.990	51.6	V	74.0	-22.4	PK	331	1.4	RB 1 MHz;VB 3 MHz;Pk
2994.810	46.9	V	68.3	-21.4	Peak	149	1.0	Note 1
1189.020	38.6	V	54.0	-15.4	AVG	350	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.420	40.4	V	74.0	-33.6	PK	350	1.0	RB 1 MHz;VB 3 MHz;Pk

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



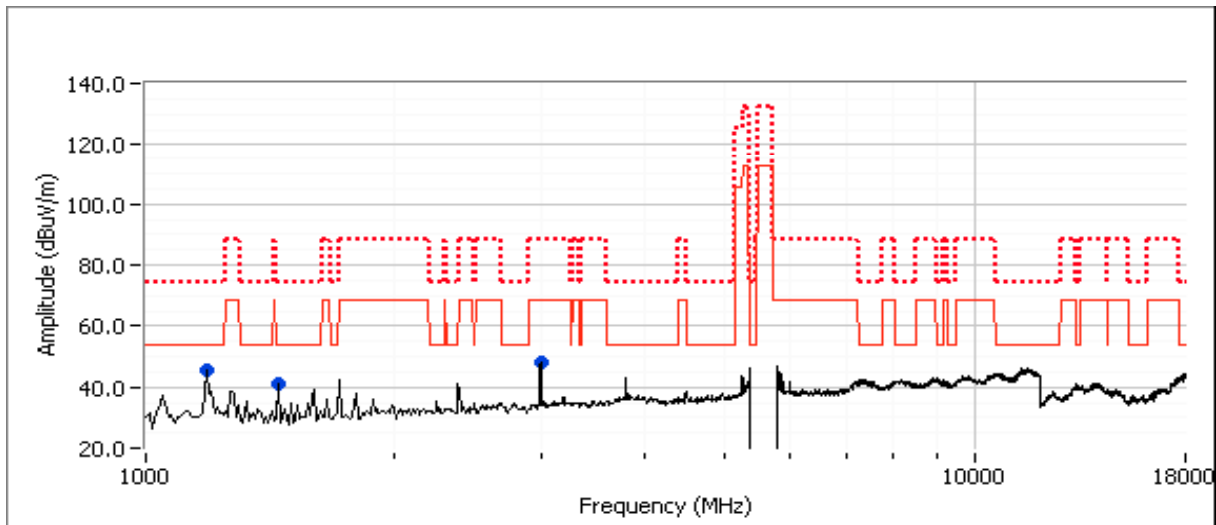
Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #3d: Channel #140 5700 MHz - 802.11a

**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
1188.860	46.0	H	54.0	-8.0	AVG	191	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.480	35.7	H	74.0	-38.3	PK	191	1.0	RB 1 MHz;VB 3 MHz;Pk
1453.160	39.1	H	54.0	-14.9	AVG	14	1.0	RB 1 MHz;VB 10 Hz;Pk
1454.320	42.4	H	74.0	-31.6	PK	14	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.810	47.9	V	68.3	-20.4	Peak	148	1.0	Note 1

Note 1 | Emission in non restricted band. Peak measurement compared to non-restricted band limit of -27dBm/MHz eirp (68.3dBuV/m)



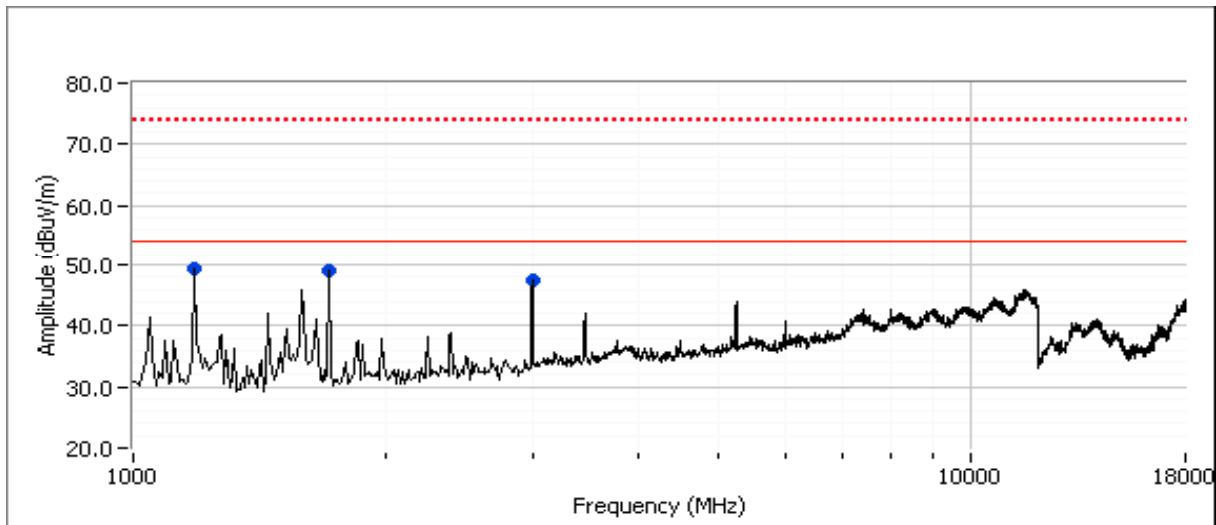


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	FCC 15.E/RSS-210	Class:	N/A

Run #4b: EUT on Channel #60 5300MHz - Receive, Chain A

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	RSS-GEN		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1188.940	48.5	H	54.0	-5.5	AVG	125	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.900	48.4	H	74.0	-25.6	PK	125	1.0	RB 1 MHz;VB 3 MHz;Pk
1717.460	46.3	V	54.0	-7.7	AVG	310	1.0	RB 1 MHz;VB 10 Hz;Pk
1716.930	35.4	V	74.0	-38.6	PK	310	1.0	RB 1 MHz;VB 3 MHz;Pk
2994.670	48.1	V	54.0	-5.9	AVG	147	1.0	RB 1 MHz;VB 10 Hz;Pk
2994.640	51.2	V	74.0	-22.8	PK	147	1.0	RB 1 MHz;VB 3 MHz;Pk

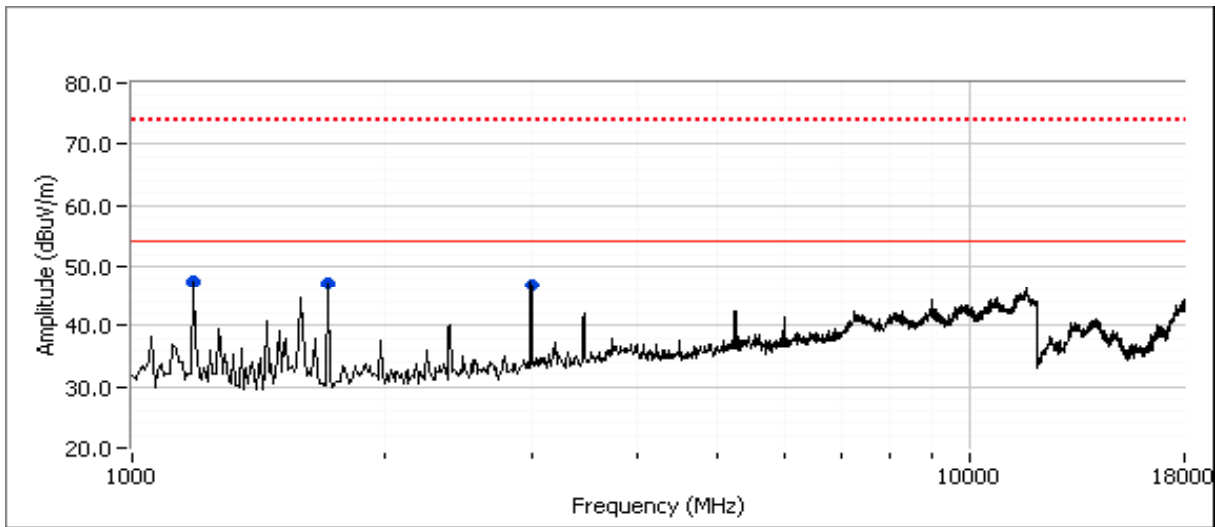


Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 (1x1 802.11abg + BT 2.1)	T-Log Number:	T80880
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	FCC 15.E/RSS-210	Class:	N/A

**Run #4c: EUT on Channel #116 5580MHz - Receive, Chain A**

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	RSS-GEN		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2994.670	46.2	V	54.0	-7.8	AVG	180	1.0	RB 1 MHz;VB 10 Hz;Pk
2994.730	51.1	V	74.0	-22.9	PK	180	1.0	RB 1 MHz;VB 3 MHz;Pk
1188.870	40.5	V	54.0	-13.5	AVG	3	1.0	RB 1 MHz;VB 10 Hz;Pk
1188.200	43.6	V	74.0	-30.4	PK	3	1.0	RB 1 MHz;VB 3 MHz;Pk
1717.330	39.3	V	54.0	-14.7	AVG	140	1.0	RB 1 MHz;VB 10 Hz;Pk
1717.250	44.3	V	74.0	-29.7	PK	140	1.0	RB 1 MHz;VB 3 MHz;Pk



Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)	T-Log Number:	T83198
Contact:	Ron Seide	Account Manager:	Christine Krebill
Emissions Standard(s):	EN 301 489-1 V1.8.1/ FCC Part 15B	Class:	B
Immunity Standard(s):	EN 301 489-1 V1.8.1	Environment:	-

## EMC Test Data

For The

### Summit Data Communications

Model

SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)

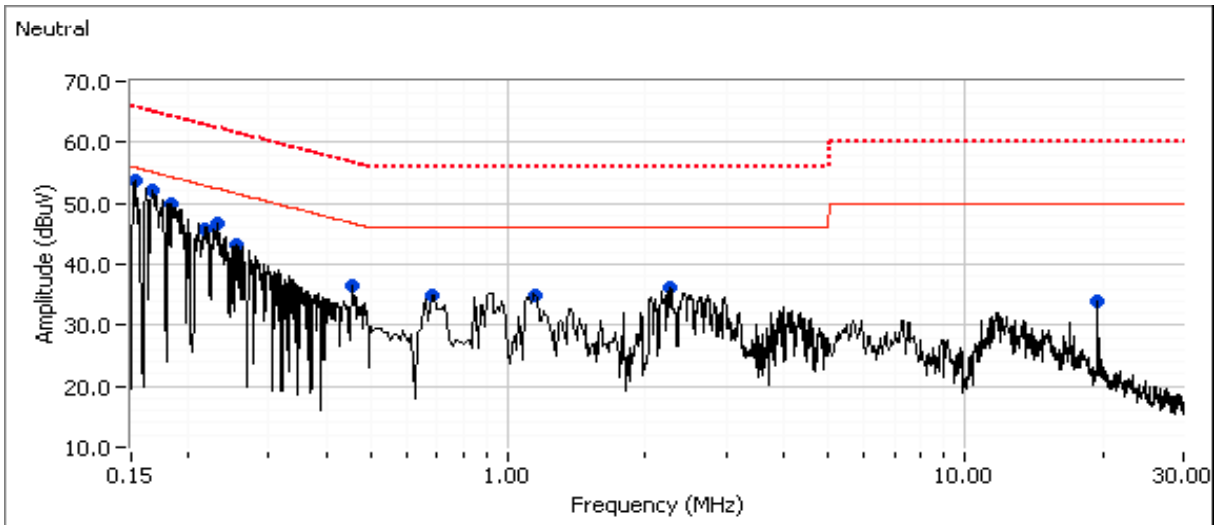
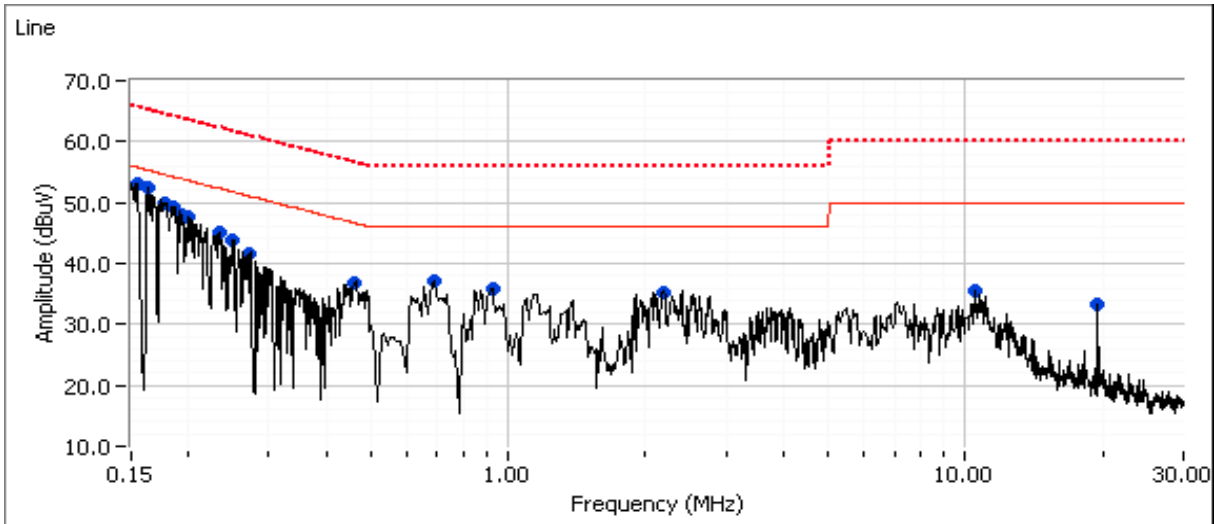
Date of Last Test: 12/16/2011





Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)	T-Log Number:	T83198
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	EN 301 489-1 V1.8.1/ FCC Part 15B	Class:	B

Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 230V/50Hz





# EMC Test Data

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)	T-Log Number:	T83198
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	EN 301 489-1 V1.8.1/ FCC Part 15B	Class:	B

**Preliminary peak readings captured during pre-scan (peak readings vs. average limit)**

Frequency MHz	Level dB $\mu$ V	AC Line	Class B		Detector QP/Ave	Comments
			Limit	Margin		
0.153	53.0	Line	55.8	-2.8	Peak	
0.163	52.3	Line	55.3	-3.0	Peak	
0.178	49.8	Line	54.6	-4.8	Peak	
0.185	49.1	Line	54.3	-5.2	Peak	
0.195	48.1	Line	53.9	-5.8	Peak	
0.202	47.6	Line	53.6	-6.0	Peak	
0.234	45.1	Line	52.3	-7.2	Peak	
0.250	43.9	Line	51.7	-7.8	Peak	
0.687	37.0	Line	46.0	-9.0	Peak	
0.271	41.5	Line	51.1	-9.6	Peak	
0.464	36.9	Line	46.6	-9.7	Peak	
0.916	35.9	Line	46.0	-10.1	Peak	
2.173	35.2	Line	46.0	-10.8	Peak	
10.533	35.6	Line	50.0	-14.4	Peak	
19.501	33.3	Line	50.0	-16.7	Peak	
0.153	53.7	Neutral	55.8	-2.1	Peak	
0.167	52.1	Neutral	55.1	-3.0	Peak	
0.185	49.8	Neutral	54.3	-4.5	Peak	
0.232	46.7	Neutral	52.4	-5.7	Peak	
0.217	45.8	Neutral	52.9	-7.1	Peak	
0.255	43.2	Neutral	51.6	-8.4	Peak	
2.279	36.3	Neutral	46.0	-9.7	Peak	
0.458	36.6	Neutral	46.7	-10.1	Peak	
0.685	35.0	Neutral	46.0	-11.0	Peak	
1.141	34.8	Neutral	46.0	-11.2	Peak	
19.502	34.0	Neutral	50.0	-16.0	Peak	

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)	T-Log Number:	T83198
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	EN 301 489-1 V1.8.1/ FCC Part 15B	Class:	B

**Final quasi-peak and average readings**

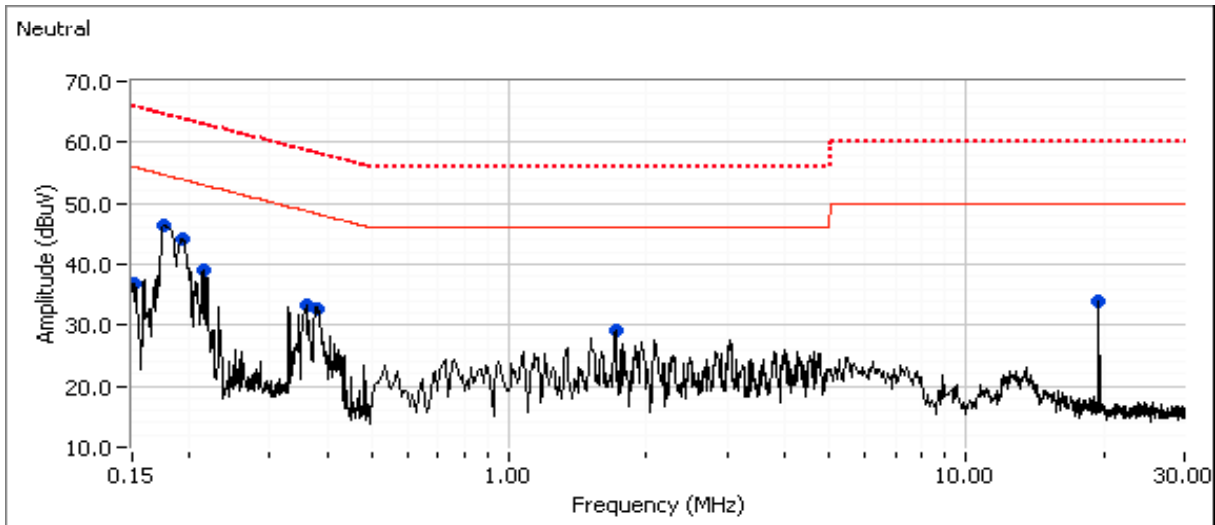
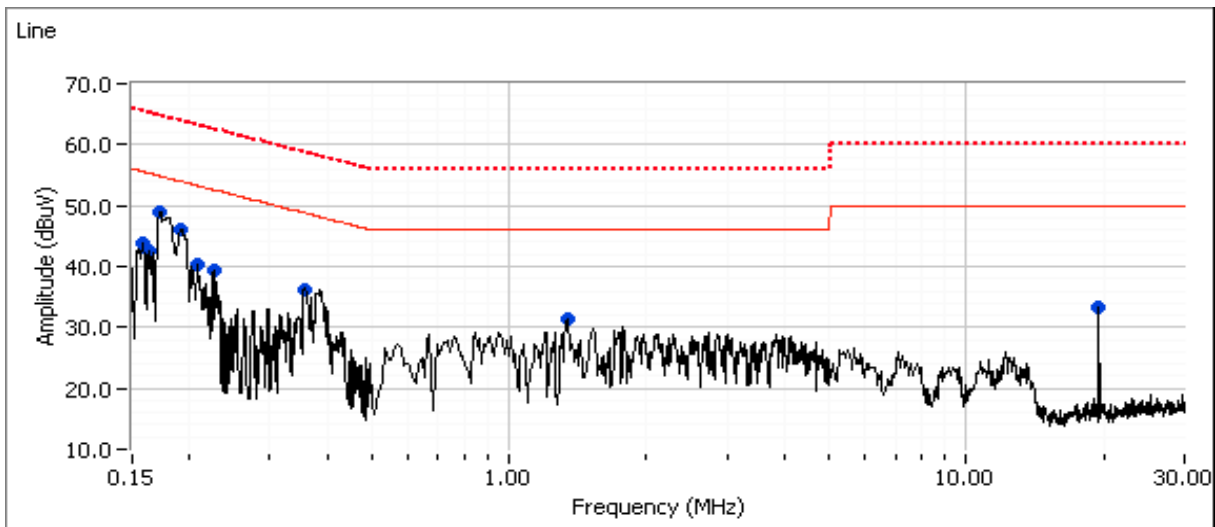
Frequency MHz	Level dB $\mu$ V	AC Line	Class B		Detector QP/Ave	Comments
			Limit	Margin		
0.153	17.5	Line	55.8	-38.3	AVG	
0.153	46.1	Line	65.8	-19.7	QP	
0.163	16.8	Line	55.3	-38.5	AVG	
0.163	44.7	Line	65.3	-20.6	QP	
0.178	16.1	Line	54.6	-38.5	AVG	
0.178	42.8	Line	64.6	-21.8	QP	
0.185	15.9	Line	54.3	-38.4	AVG	
0.185	41.8	Line	64.3	-22.5	QP	
0.195	15.7	Line	53.8	-38.1	AVG	
0.195	40.8	Line	63.8	-23.0	QP	
0.202	15.4	Line	53.5	-38.1	AVG	
0.202	40.1	Line	63.5	-23.4	QP	
0.687	31.0	Line	46.0	-15.0	AVG	
0.687	36.5	Line	56.0	-19.5	QP	
0.463	25.5	Line	46.6	-21.1	AVG	
0.463	34.1	Line	56.6	-22.5	QP	
0.916	28.9	Line	46.0	-17.1	AVG	
0.916	34.9	Line	56.0	-21.1	QP	
2.173	7.9	Line	46.0	-38.1	AVG	
2.173	33.6	Line	56.0	-22.4	QP	
10.533	20.5	Line	50.0	-29.5	AVG	
10.533	30.6	Line	60.0	-29.4	QP	
19.501	31.1	Line	50.0	-18.9	AVG	
19.501	32.0	Line	60.0	-28.0	QP	
0.153	17.6	Neutral	55.8	-38.2	AVG	
0.153	46.2	Neutral	65.8	-19.6	QP	
0.167	16.5	Neutral	55.1	-38.6	AVG	
0.167	44.3	Neutral	65.1	-20.8	QP	
0.185	15.8	Neutral	54.3	-38.5	AVG	
0.185	42.1	Neutral	64.3	-22.2	QP	
0.232	21.4	Neutral	52.4	-31.0	AVG	
0.232	37.5	Neutral	62.4	-24.9	QP	
0.216	14.6	Neutral	53.0	-38.4	AVG	
0.216	39.2	Neutral	63.0	-23.8	QP	
2.279	25.1	Neutral	46.0	-20.9	AVG	
2.279	32.6	Neutral	56.0	-23.4	QP	
0.458	28.8	Neutral	46.7	-17.9	AVG	
0.458	33.8	Neutral	56.7	-22.9	QP	

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)	T-Log Number:	T83198
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	EN 301 489-1 V1.8.1/ FCC Part 15B	Class:	B

Frequency MHz	Level dB $\mu$ V	AC Line	Class B		Detector QP/Ave	Comments
			Limit	Margin		
0.685	29.4	Neutral	46.0	-16.6	AVG	
0.685	34.8	Neutral	56.0	-21.2	QP	
1.141	27.7	Neutral	46.0	-18.3	AVG	
1.141	34.5	Neutral	56.0	-21.5	QP	
19.502	30.2	Neutral	50.0	-19.8	AVG	
19.502	31.3	Neutral	60.0	-28.7	QP	

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)	T-Log Number:	T83198
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	EN 301 489-1 V1.8.1/ FCC Part 15B	Class:	B

Run #2: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz





# EMC Test Data

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)	T-Log Number:	T83198
		Account Manager:	Christine Krebill
Contact:	Ron Seide		
Standard:	EN 301 489-1 V1.8.1/ FCC Part 15B	Class:	B

**Preliminary peak readings captured during pre-scan (peak readings vs. average limit)**

Frequency MHz	Level dB $\mu$ V	AC Line	Class B		Detector QP/Ave	Comments
			Limit	Margin		
0.173	48.8	Line	54.8	-6.0	Peak	
0.190	46.2	Line	53.9	-7.7	Peak	
0.158	43.8	Line	55.5	-11.7	Peak	
0.357	36.3	Line	48.8	-12.5	Peak	
0.164	42.5	Line	55.3	-12.8	Peak	
0.208	40.4	Line	53.3	-12.9	Peak	
0.225	39.3	Line	52.6	-13.3	Peak	
1.337	31.4	Line	46.0	-14.6	Peak	
19.502	33.2	Line	50.0	-16.8	Peak	
0.176	46.4	Neutral	54.7	-8.3	Peak	
0.192	44.0	Neutral	53.9	-9.9	Peak	
0.213	39.1	Neutral	53.0	-13.9	Peak	
0.379	32.8	Neutral	48.3	-15.5	Peak	
0.360	33.2	Neutral	48.7	-15.5	Peak	
19.501	34.0	Neutral	50.0	-16.0	Peak	
1.717	29.2	Neutral	46.0	-16.8	Peak	
0.152	36.9	Neutral	55.9	-19.0	Peak	



# EMC Test Data

Client:	Summit Data Communications	Job Number:	J78403
Model:	SDC-WB40 and SDC-MSD40NBT (1x1 802.11abg + BT 2.1)	T-Log Number:	T83198
Contact:	Ron Seide	Account Manager:	Christine Krebill
Standard:	EN 301 489-1 V1.8.1/ FCC Part 15B	Class:	B

## Final quasi-peak and average readings

Frequency MHz	Level dB $\mu$ V	AC Line	Class B		Detector QP/Ave	Comments
			Limit	Margin		
0.173	14.0	Line	54.8	-40.8	AVG	
0.173	44.3	Line	64.8	-20.5	QP	
0.190	33.5	Line	54.0	-20.5	AVG	
0.190	44.4	Line	64.0	-19.6	QP	
0.158	12.7	Line	55.6	-42.9	AVG	
0.158	31.5	Line	65.6	-34.1	QP	
0.357	10.7	Line	48.8	-38.1	AVG	
0.357	32.2	Line	58.8	-26.6	QP	
0.164	14.3	Line	55.3	-41.0	AVG	
0.164	41.0	Line	65.3	-24.3	QP	
0.208	16.0	Line	53.3	-37.3	AVG	
0.208	34.6	Line	63.3	-28.7	QP	
0.225	11.7	Line	52.6	-40.9	AVG	
0.225	23.9	Line	62.6	-38.7	QP	
1.337	21.3	Line	46.0	-24.7	AVG	
1.337	29.5	Line	56.0	-26.5	QP	
19.502	29.8	Line	50.0	-20.2	AVG	
19.502	30.4	Line	60.0	-29.6	QP	
0.176	16.4	Neutral	54.7	-38.3	AVG	
0.176	44.4	Neutral	64.7	-20.3	QP	
0.192	27.9	Neutral	53.9	-26.0	AVG	
0.192	42.6	Neutral	63.9	-21.3	QP	
0.213	12.2	Neutral	53.1	-40.9	AVG	
0.213	33.1	Neutral	63.1	-30.0	QP	
0.379	23.7	Neutral	48.3	-24.6	AVG	
0.379	30.7	Neutral	58.3	-27.6	QP	
0.360	17.3	Neutral	48.7	-31.4	AVG	
0.360	29.3	Neutral	58.7	-29.4	QP	
19.501	31.9	Neutral	50.0	-18.1	AVG	
19.501	32.6	Neutral	60.0	-27.4	QP	
1.717	10.7	Neutral	46.0	-35.3	AVG	
1.717	18.8	Neutral	56.0	-37.2	QP	
0.152	11.4	Neutral	55.9	-44.5	AVG	
0.152	30.6	Neutral	65.9	-35.3	QP	



*End of Report*

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