



**ADDENDUM TO FC03-054**

**FOR THE**  
**WIRELESS CABLE MODEM, SBG900**

**FCC PART 15 SUBPART B SECTIONS 15.107 AND 15.109 CLASS B,  
FCC PART 15 SUBPART C SECTIONS 15.207, 15.209, 15.247 & RSS 210**

**COMPLIANCE**

**DATE OF ISSUE: SEPTEMBER 11, 2003**

**PREPARED FOR:**

Motorola BCS  
6450 Sequence Drive  
San Diego, CA 92121

P.O. No.: 4109866  
W.O. No.: 80377

**PREPARED BY:**

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Date of test: March 26 - August 13, 2003

**Report No.: FC03-054A**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:**

March 26 - August 13, 2003

**DATE OF RECEIPT:**

March 26, 2003

**PURPOSE OF TEST:**

To demonstrate the compliance of the Wireless Cable Modem, SBG900, with the requirements for FCC Part 15 Subpart B Sections 15.107 and 15.109, FCC Part 15 Subpart C Sections 15.207, 15.209, 15.247 & RSS 210 devices.

**Addendum A** is to revise the bandedge plots, the 15.247(c) OATS data sheet and the frequency range tested on the data sheets.

**TEST METHOD:**

ANSI C63.4 (1992)

**MANUFACTURER:**

Motorola BCS  
6450 Sequence Drive  
San Diego, CA 92121

**REPRESENTATIVE:**

Mike Harris

**TEST LOCATION:**

CKC Laboratories, Inc.  
110 Olinda Place  
Brea, CA 92621

## SUMMARY OF RESULTS

As received, the Motorola BCS Wireless Cable Modem, SBG900 was found to be fully compliant with the following standards and specifications:

United States	Canada
Part 15.107 Class B	IEC-003 Class B
Part 15.109 Class B	IEC-003 Class B
<b>Part 15.247</b>	<b>RSS 210</b>
15.203	6.2.2(o)(e)(2)
15.207	6.6
15.209	6.2.1
15.247(a)(2)	NA
15.247(b)(3)	6.2.2(o)(a3)/ 6.2.2(o)(b)
15.247(b)(4)	NA
15.247(c)	6.2.2(o)(e)(1)
15.247(d)	6.2.2(o)(b)
2.1093	NA
ANSI C63.4 (1992) method	RSS 212 test method
FCC Site No. 90473	Industry of Canada File No. IC 3171-D

## CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

## APPROVALS

Steve Behm, Director of Engineering Services

### QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative Manager



Septimiu Apahidean, Lab Manager

### TEST PERSONNEL:



Eddie Wong, EMC Engineer



Stuart Yamamoto, EMC Engineer

## EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT tested by CKC Laboratories was a production unit. Wireless cable modem.

### FCC 15.31(e) Voltage Variations

Equipment setup: The EUT is a wireless cable modem. The EUT's USB port is connected to a laptop computer via a shielded cable. The EUT's ethernet port is connected to a laptop computer via an unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through ms dos. The local computer is running the Motorola software to interface with the EUT via the ethernet port. Antenna terminal measurement.

Channel	Power at Nominal Voltage (dBm)	Power at 85% Nominal Voltage (dBm)	Power at 115% Nominal Voltage (dBm)
1	15.7	15.7	15.7
6	15.4	15.4	15.4
11	15.8	15.8	15.8

### FCC 15.31(m) Number Of Channels

This device was tested on three channels.

### FCC 15.33(a) Frequency Ranges Tested

15.109 Radiated Emissions: 9 kHz – 1000 MHz

15.107/15.207 Conducted: 150 kHz – 30 MHz

15.209/15.247 Radiated: 9 kHz – 25 GHz

FCC SECTION 15.35: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	25 GHz	1 MHz

### FCC 15.203 Antenna Requirements

This device uses a plug-in type Hirohsa connector that is permanently attached and therefore the EUT complies with Section 15.203 of the FCC rules.

### **FCC 15.205 Restricted Bands**

The fundamental operating frequency lies outside the restricted bands and therefore complies with the requirements of Section 15.205 of the FCC rules. Any spurious emission coming from the EUT was investigated to determine if any portion lies inside the restricted band. If any portion of a spurious emissions signal was found to be within a restricted band, investigation was performed to ensure compliance with Section 15.209.

### **Eut Operating Frequency**

The EUT was operating at 2412 MHz – 2462 MHz.

The Eut is a direct sequencing device operating in the 2400 – 2483.5 MHz band.

### **MEASUREMENT UNCERTAINTY**

<b>TEST</b>	<b>HIGHEST UNCERTAINTY</b>
Radiated Emissions	+/- 2.94 dB
Conducted Emissions	+/- 1.56 dB

Note: Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Statements of compliance are based on the nominal values only.

## EQUIPMENT UNDER TEST

### Wireless Cable Modem

Manuf: Motorola BCS  
 Model: SBG 900 Rev. 3  
 Serial: 00B066682DC  
 FCC ID: pending

### AC to 12VDC Adapter

Manuf: Liteon  
 Model: PA-1090-1  
 Serial: NA  
 FCC ID: NA

### AC to 12VDC Adapter

Manuf: Liteon  
 Model: PB-1090-1L1  
 Serial: NA  
 FCC ID: NA

### AC to 12VDC Adapter

Manuf: Delta Electronics, Inc.  
 Model: ADP-15ZB  
 Serial: RHT0315094322  
 FCC ID: NA

### Wireless Cable Modem

Manuf: Motorola BCS  
 Model: SBG 900 Rev. 2  
 Serial: NA  
 FCC ID: NA

## PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

### Head End

Manuf: Cisco  
 Model: uBR-MC11C  
 Serial: CN1ISS0AA  
 FCC ID: DoC

### Mouse

Manuf: Logitech  
 Model: M-S35  
 Serial: LZB73905320  
 FCC ID: DoC

### C6U Converter

Manuf: General Instruments  
 Model: C6U  
 Serial: J5M7000101358  
 FCC ID: DoC

### Keyboard

Manuf: HP  
 Model: A2840 6020  
 Serial: NA  
 FCC ID: DoC

### Laptop

Manuf: Toshiba  
 Model: Satelite Pro 415CS  
 Serial: 04694236  
 FCC ID: DoC

### Monitor

Manuf: Sampo  
 Model: KM-400A  
 Serial: 81970632B0812  
 FCC ID: DoC

**Monitor**

Manuf: NEC  
 Model: JC-1538VMA  
 Serial: 2X78256  
 FCC ID: DoC

**Parallel Printer**

Manuf: SII  
 Model: DPU-414  
 Serial: 1033083A  
 FCC ID: DoC

**Mouse**

Manuf: Gateway  
 Model: MOSXK  
 Serial: NA  
 FCC ID: NA

**Keyboard**

Manuf: Dell  
 Model: SK1000RS  
 Serial: M940111179  
 FCC ID: NA

**Ethernet Hub**

Manuf: Netgear  
 Model: DS104  
 Serial: DS141408355155  
 FCC ID: DoC

**Mouse**

Manuf: Logitech  
 Model: M-S35  
 Serial: LZB73905320  
 FCC ID: DoC

**Computer**

Manuf: CompuDeX  
 Model: Pentium  
 Serial: NA  
 FCC ID: DoC

**Computer**

Manuf: Gateway  
 Model: LP Mini Tower TBRE-4200 500  
 Serial: 0017726793  
 FCC ID: DoC

**Computer**

Manuf: Gateway  
 Model: 366C  
 Serial: 0013638083A  
 FCC ID: NA

**Computer**

Manuf: Dell  
 Model: MM8  
 Serial: 76ZZQ  
 FCC ID: DoC

**Laptop Computer**

Manuf: Dell  
 Model: Inspiron 500M  
 Serial: 0932RY  
 FCC ID: DoC

**Laptop Computer**

Manuf: Toshiba  
 Model: PP05L  
 Serial: CN-04V21248643-349-0330  
 FCC ID: DoC

## REPORT OF MEASUREMENTS

The following tables report the six highest worst case levels recorded during the tests performed on the EUT. All readings taken are peak readings unless otherwise noted. The data sheets from which these tables were compiled are contained in Appendix C.

<b>Table 1: FCC 15.109 - Six Highest Radiated Emission Levels</b>									
FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS			CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN dB	NOTES	
		Ant dB	Amp dB	Cable dB					
400.001	50.1	16.0	-27.0	4.6		43.7	46.0	-2.3	VQ
449.994	47.4	16.9	-27.1	4.9		42.1	46.0	-3.9	VQ
1150.034	44.9	39.1	-40.6	6.5		49.9	54.0	-4.1	V
1728.059	40.5	40.5	-39.5	7.8		49.3	54.0	-4.7	H
1745.000	40.5	40.6	-39.4	7.8		49.5	54.0	-4.5	V
1745.001	40.2	40.6	-39.4	7.8		49.2	54.0	-4.8	H

Test Method: ANSI C63.4 (1992) NOTES:  
 Spec Limit: FCC Part 15 Subpart B Section 15.109 Class B H = Horizontal Polarization  
 Test Distance: 3 Meters V = Vertical Polarization  
Q = Quasi Peak Reading

**COMMENTS:** The EUT is a cable modem. The EUT's USB port is connected to the local desktop computer via shielded cable. The EUT's ethernet port is connected to the local desktop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. 12VDC via AC-DC Adapter (110VAc 60Hz), 15.6°C, 52% relative humidity. Frequency range tested: 30-1000 MHz.

**Table 2: FCC 15.107/15.207 - Six Highest Conducted Emission Levels**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS			CORRECTED READING dB $\mu$ V	SPEC LIMIT dB $\mu$ V	MARGIN dB	NOTES
		Lisn dB	dB	dB				
1.187000	40.7	0.0			40.7	46.0	-5.3	WA
1.192000	39.7	0.0			39.7	46.0	-6.3	BA
2.301755	37.1	0.0			37.1	46.0	-8.9	W
3.811570	36.9	0.0			36.9	46.0	-9.1	W
3.913642	37.0	0.0			37.0	46.0	-9.0	W
4.011461	36.7	0.0			36.7	46.0	-9.3	W

Test Method:

ANSI C63.4 (1992)

NOTES:

W = White Lead

Spec Limit:

FCC Part 15 Subpart C Section 15.107/15.207

A = Average Reading

**COMMENTS:** The EUT is a cable modem. The EUT's USB port is connected to the local laptop computer via shielded cable. The EUT's ethernet port is connected to the local laptop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The remotely located Toshiba laptop computer is running hyperterminal and is pinging the ethernet through MS DOS. The EUT is transmitting. Tx = Ch1= 2.412 GHz. 12 VDC to EUT via AC-DC Adapter, Temperature: 29°C, Humidity: 40%, Pressure: 100kPa.

**Table 3: FCC 15.209 - Six Highest Radiated Emission Levels (OATS)**

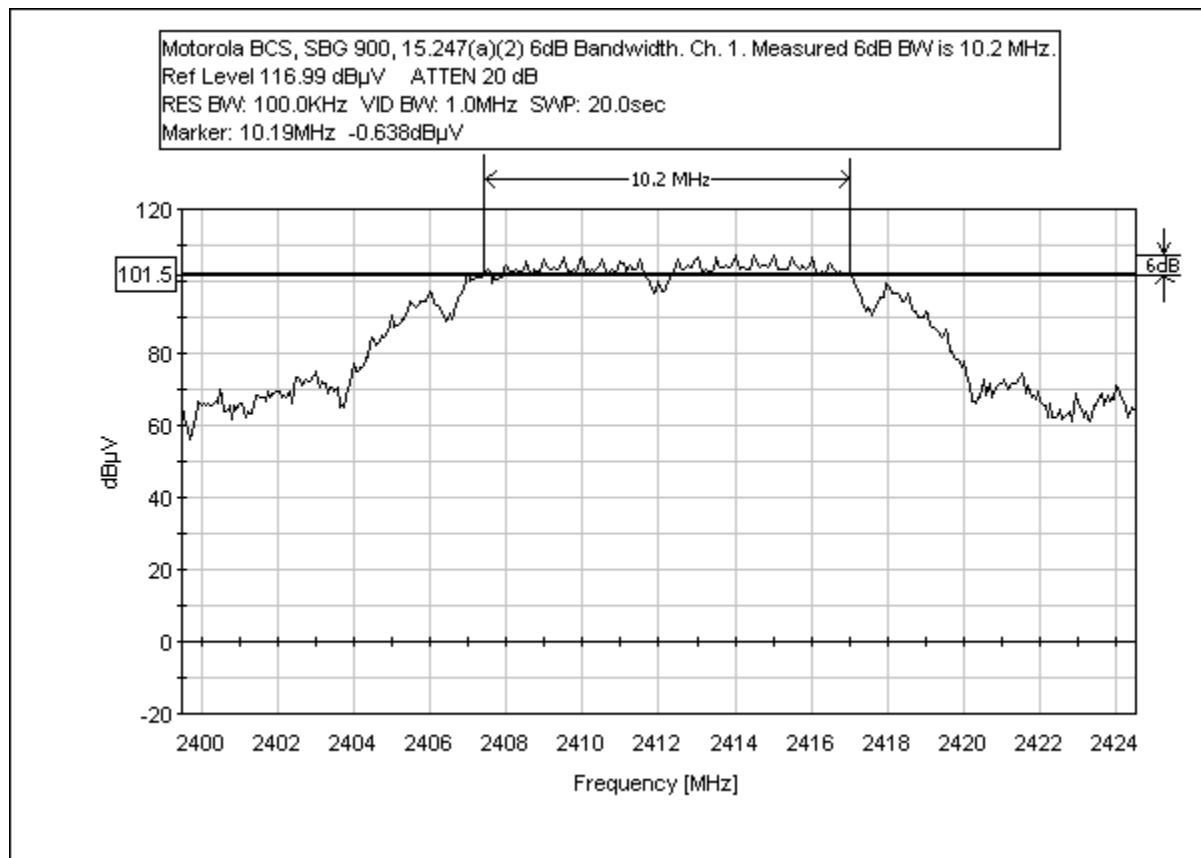
FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
1250.040	55.5	25.3	-39.4	5.2		46.6	54.0	-7.4	V
1608.046	55.3	25.8	-37.9	5.8		49.0	54.0	-5.0	H
1624.657	54.9	25.9	-37.9	6.0		48.9	54.0	-5.1	H
4873.996	40.4	33.4	-38.5	10.5		45.8	54.0	-8.2	HA
7310.950	35.8	35.7	-39.0	13.4		45.9	54.0	-8.1	HA
7386.019	35.6	35.9	-39.0	13.5		46.0	54.0	-8.0	HA

Test Method: ANSI C63.4 (1992)  
 Spec Limit: FCC Part 15 Subpart C Section 15.209  
 Test Distance: 3 Meters

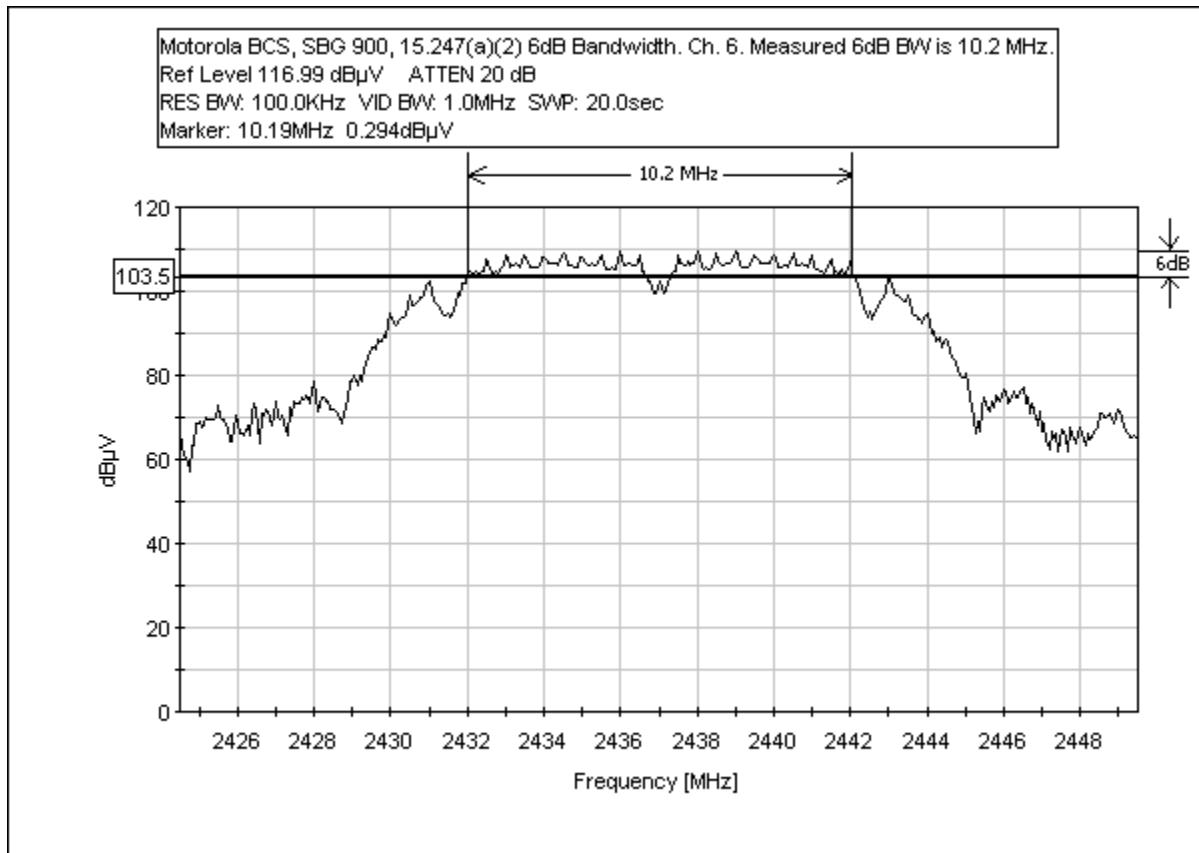
NOTES:  
 H = Horizontal Polarization  
 V = Vertical Polarization  
 A = Average Reading

**COMMENTS:** The EUT is a cable modem. The EUT's USB port is connected to the local desktop computer via shielded cable. The EUT's ethernet port is connected to the local desktop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Data sheet represents from EUT transmitting on channels 1, 6, and 11. Frequency range of measurement = 9 kHz - 25 GHz. 12VDC via AC-DC Adapter (110VAC 60Hz), 26°C, 42% relative humidity.

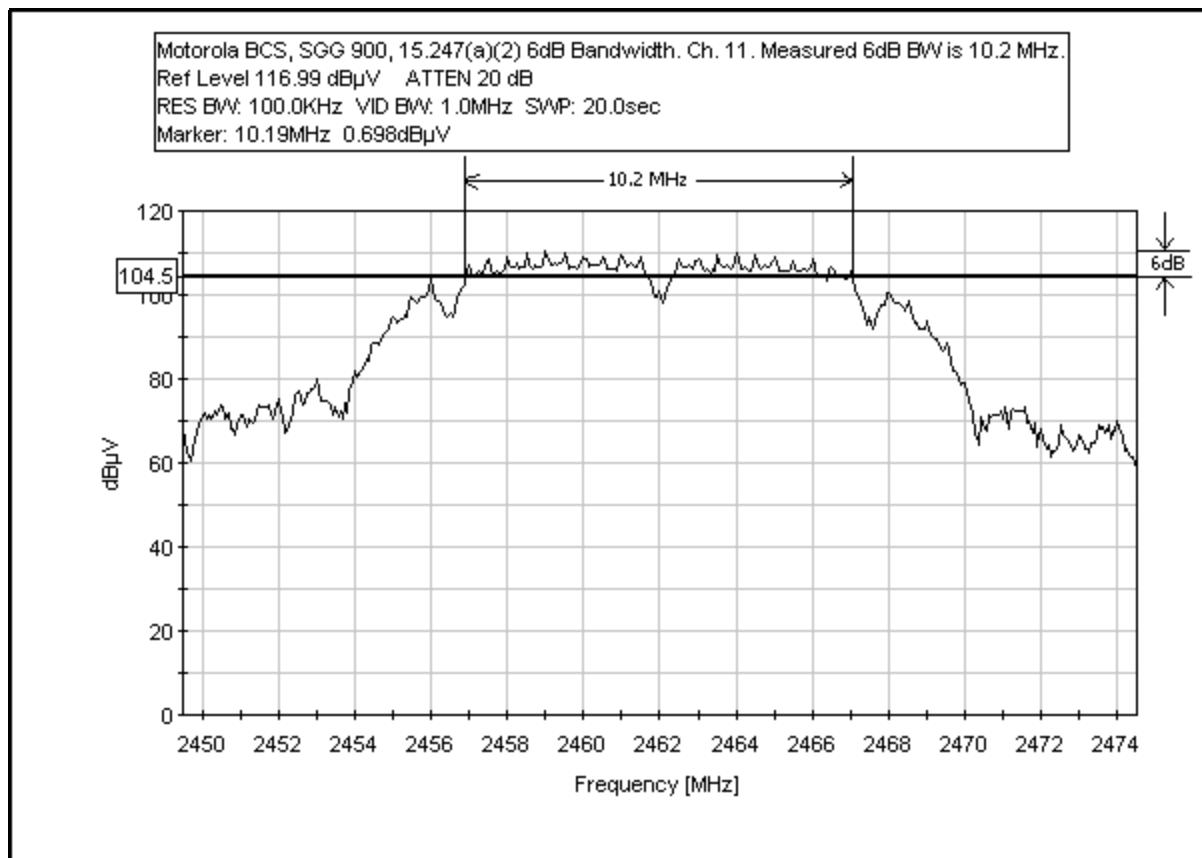
**FCC 15.247(a)(2) BANDWIDTH CHANNEL 1**



**FCC 15.247(a)(2) BANDWIDTH CHANNEL 6**



**FCC 15.247(a)(2) BANDWIDTH CHANNEL 11**



### FCC 15.247(b)(3) PEAK OUTPUT POWER (OATS) (ERP)

Equipment Setup: The EUT is a wireless cable modem. The EUT's USB port is connected to a laptop computer via a shielded cable. The EUT's ethernet port is connected to a laptop computer via an unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through MS DOS. The local computer is running the Motorola software to interface with the EUT via the ethernet port. OATS measurement at three meters = r.

Channel	Frequency (GHz)	Spectrum analyzer Measurement = Electric field (V) (V/m)	Measured Power $Pt=V^2/3.3$ (Watts)	Limit (Watts)	Result Pass/Fail
1	2.412	0.351	0.037	1	Pass
6	2.437	0.376	0.043	1	Pass
11	2.462	0.394	0.047	1	Pass

$$Pd = Pt / (4 * \pi * r^2)$$

Pd = Electric Field/R, where R=377

### FCC 15.247(b)(3) PEAK OUTPUT POWER (ANTENNA TERMINAL) (ERP)

Equipment Setup: The EUT is a wireless cable modem. The EUT's USB port is connected to a laptop computer via a shielded cable. The EUT's ethernet port is connected to a laptop computer via an unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through MS DOS. The local computer is running the Motorola software to interface with the EUT via the ethernet port. Antenna terminal measurement.

Channel	Frequency (GHz)	Measured Peak Output Power (dBm)	Measured Peak Output Power (Watts)	Limit (Watts)	Result Pass/Fail
1	2.412	15.7	0.037	1	Pass
6	2.437	15.4	0.035	1	Pass
11	2.462	15.8	0.038	1	Pass

### FCC 15.247(b)(4) PEAK OUTPUT POWER (OATS) (EIRP)

Equipment Setup: The EUT is a wireless cable modem. The EUT's USB port is connected to a laptop computer via a shielded cable. The EUT's ethernet port is connected to a laptop computer via an unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through MS DOS. The local computer is running the Motorola software to interface with the EUT via the ethernet port. OATS measurement at three meters.

Channel	Frequency (GHz)	Measured Peak Power (Watts)	Measured Peak Power (dBm)	Antenna Gain (dBi) (isotropic)	Measured Peak Power (EIRP) (Watts)	EIRP Limit (Watts)	Result Pass/Fail
1	2.412	0.037	15.7	2.5	0.066	1	Pass
6	2.437	0.043	16.3	2.5	0.076	1	Pass
11	2.462	0.047	16.7	2.5	0.083	1	Pass

### FCC 15.247(b)(4) PEAK OUTPUT POWER (ANTENNA TERMINAL) (EIRP)

Equipment Setup: The EUT is a wireless cable modem. The EUT's USB port is connected to a laptop computer via a shielded cable. The EUT's ethernet port is connected to a laptop computer via an unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through MS DOS. The local computer is running the Motorola software to interface with the EUT via the ethernet port. Antenna terminal measurement.

Channel	Frequency (GHz)	Measured Peak Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (Watts)	EIRP Limit (Watts)	Result Pass/Fail
1	2.412	15.7	2.5	18.2	0.066	1	Pass
6	2.437	15.4	2.5	17.9	0.062	1	Pass
11	2.462	15.8	2.5	18.3	0.068	1	Pass

**Table 4: FCC 15.247(c) - Six Highest Radiated Emission Levels (OATS)**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS			CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN dB	NOTES	
		Ant dB	Amp dB	Cable dB					
1641.310	56.4	26.0	-37.9	6.0		50.5	90.9	-40.4	H
1641.319	61.0	26.0	-37.9	6.0		55.1	90.9	-35.8	V
9648.018	43.7	38.1	-36.4	15.5		60.9	90.9	-30.0	V
9648.034	43.5	38.1	-36.4	15.5		60.7	90.9	-30.2	H
9747.958	43.6	38.5	-36.5	15.7		61.3	90.9	-29.6	H
9847.983	43.7	38.9	-36.5	15.8		61.9	90.9	-29.0	H

Test Method: ANSI C63.4 (1992)  
 Spec Limit: FCC Part 15 Subpart C Section 15.247(c)  
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
 V = Vertical Polarization

**COMMENTS:** The EUT is a cable modem. The EUT's USB port is connected to the local desktop computer via shielded cable. The EUT's ethernet ports is connected to the local desktop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Data sheet represents from EUT transmitting on channel 1, 6, and 11. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25 MHz; RBW=1 MHz, VBW=1 MHz. 12VDC via AC-DC Adaptor (110VAC 60Hz), 26°C, 42% relative humidity.

**Table 5: FCC 15.247(c) - Six Highest Radiated Emission Levels (AntennaTerminal)**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN dB	NOTES
		Ant dB	dB	dB	dB				
2520.599	62.7	0.0				62.7	94.0	-31.3	N-1
2532.442	61.6	0.0				61.6	93.9	-32.3	N-6
2548.994	60.8	0.0				60.8	94.1	-33.3	N-11
4824.178	58.6	0.0				58.6	94.0	-35.4	N-1
7311.085	59.2	0.0				59.2	93.9	-34.7	N-6
7385.723	60.4	0.0				60.4	94.1	-33.7	N-11

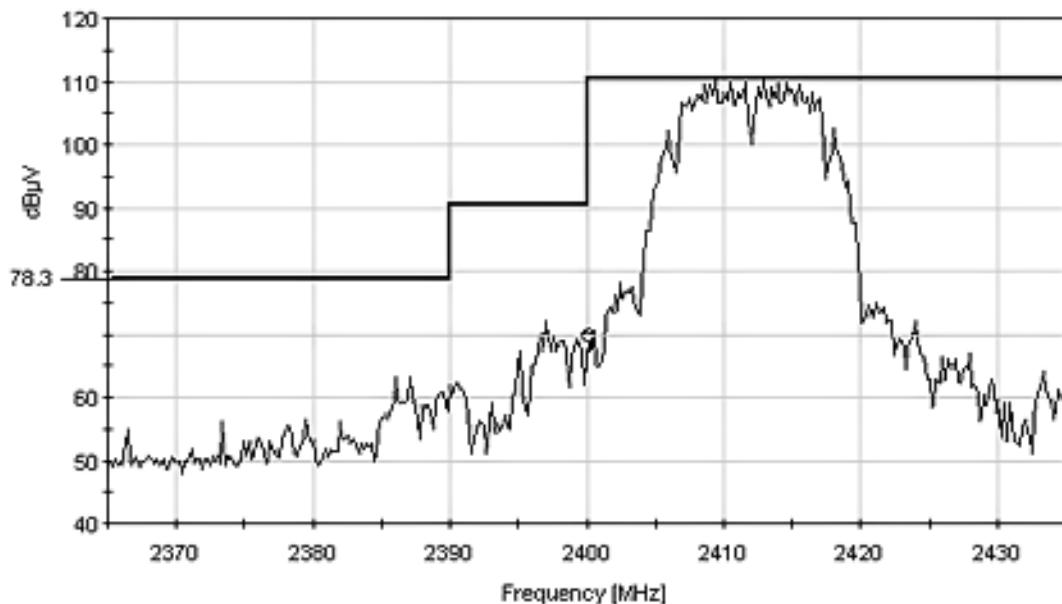
Test Method: ANSI C63.4 (1992)  
 Spec Limit: FCC Part 15 Subpart C Section 15.247(c)  
 Test Distance: No Distance

NOTES:  
 N = No Polarization  
 1 = Channel 1  
 6 = Channel 6  
 11 = Channel 11

**COMMENTS:** The EUT is a cable modem. The EUT's USB port is connected to the local laptop computer via shielded USB cable. The EUT's ethernet port is connected to the local laptop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Tx = Ch1= 2.412 GHz. Frequency range of measurement = 9 kHz to 25 GHz. Voltage to EUT is 12 VDC via AC-DC Adapter (110VAC 60Hz). Temperature: 22°C, Humidity: 48%, Pressure: 100kPa.

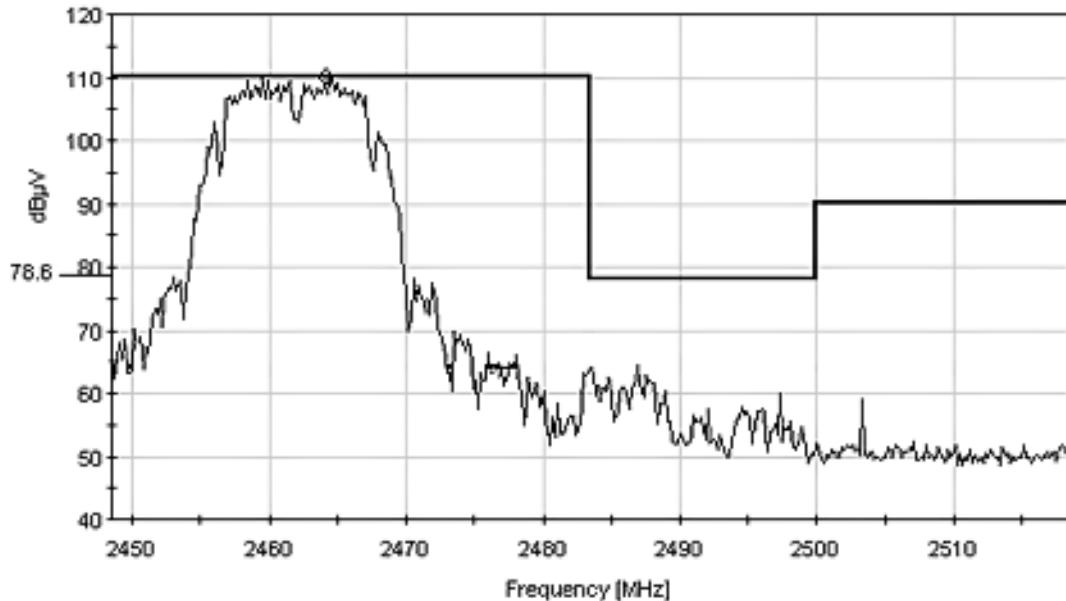
**FCC 15.247(c) BANDEDGE CHANNEL 1**

FCC 15.247(c) Band Edge Compliance. Channel 1. Band Edge is 40.7 dB down from peak.  
Ref Level 116.99 dB $\mu$ V ATTEN 20 dB  
RES BW: 100.0KHz VID BW: 100.0KHz SWP: 20.0sec  
Marker: 2.4GHz 69.7597dB $\mu$ V



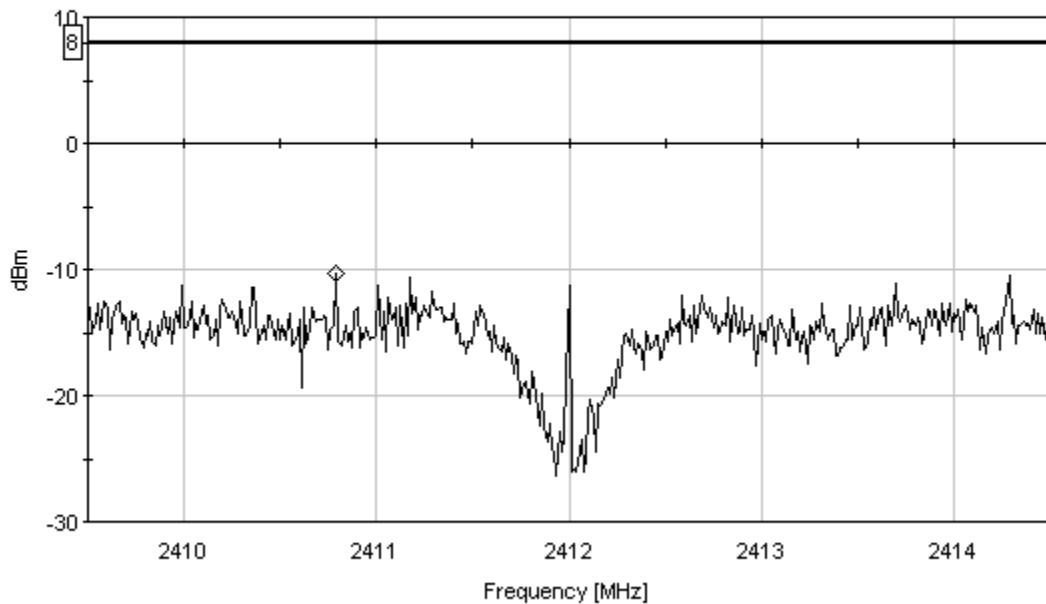
**FCC 15.247(c) BANDEDGE CHANNEL 11**

FCC 15.247(c) Band Edge Compliance. Channel 11. Band Edge is 46.0 dB down from peak.  
Ref Level 116.99 dB $\mu$ V ATTEN 20 dB  
RES BW: 100.0KHz VID BW: 100.0KHz SWP: 20.0sec  
Marker: 2.464GHz 110.246dB $\mu$ V



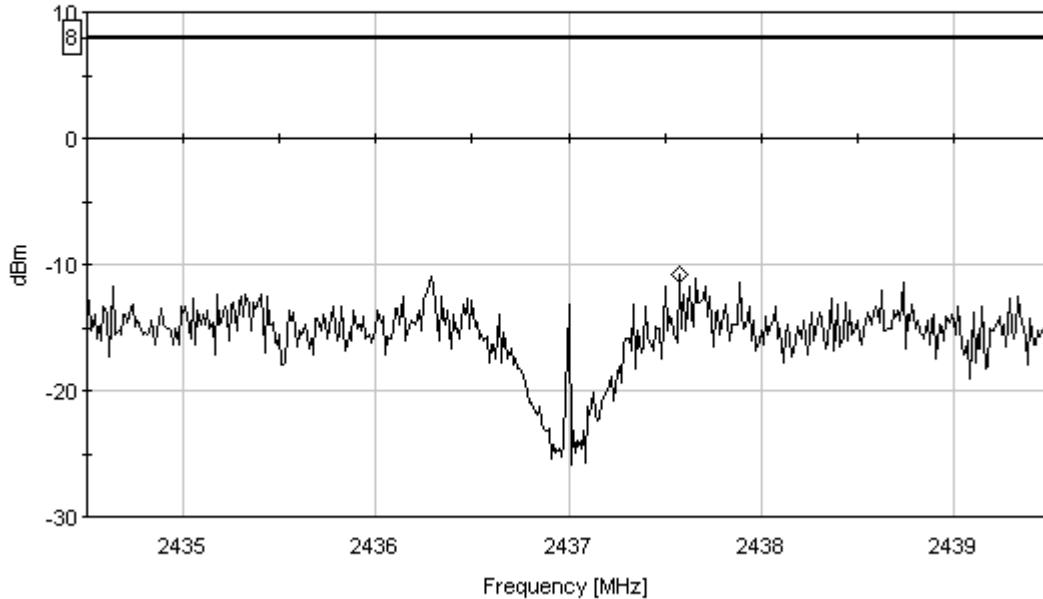
**FCC 15.247(d) POWER SPECTRAL DENSITY CHANNEL 1**

FCC 15.247(d) Power Spectral Density, Channel 1. Limit is +8.0 dBm. Max reading is -10.3 dBm.  
Ref Level 10 dBm ATTEN 20 dB  
RES BW: 3.0KHz VID BW: 10.0KHz SWP: 167.0sec  
Marker: 2.411GHz -10.278dBm



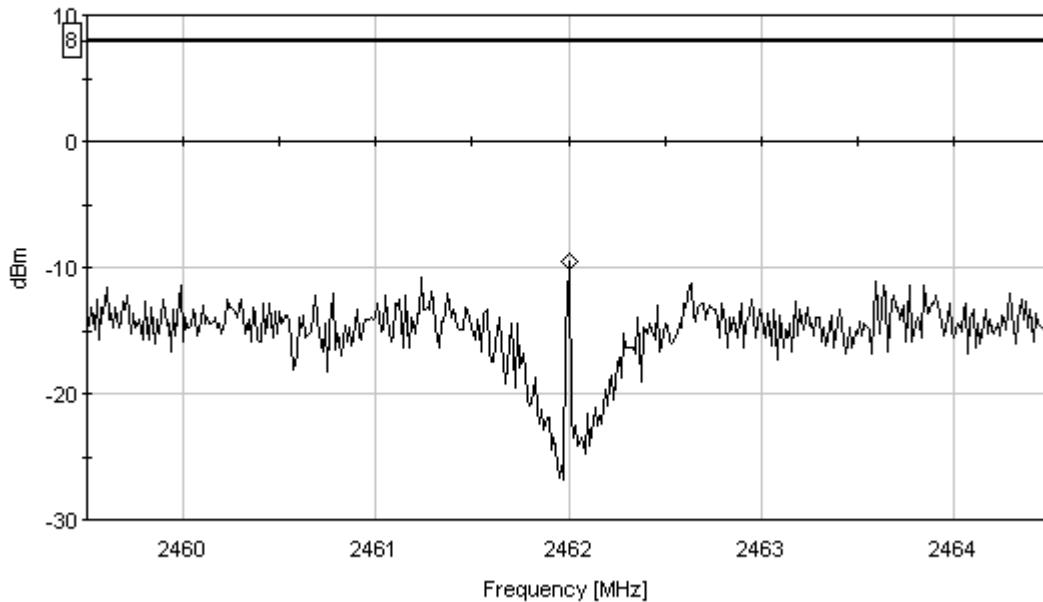
**FCC 15.247(d) POWER SPECTRAL DENSITY CHANNEL 6**

FCC 15.247(d) Power Spectral Density, Channel 6. Limit is +8.0 dBm. Max reading is -10.8 dBm.  
Ref Level 10 dBm ATTEN 20 dB  
RES BW: 3.0KHz VID BW: 10.0KHz SWP: 167.0sec  
Marker: 2.438GHz -10.807dBm



**FCC 15.247(d) POWER SPECTRAL DENSITY CHANNEL 11**

FCC 15.247(d) Power Spectral Density, Channel 11. Limit is +8.0 dBm. Max reading is -9.5 dBm.  
Ref Level 10 dBm ATTEN 20 dB  
RES BW: 3.0KHz VID BW: 10.0KHz SWP: 167.0sec  
Marker: 2.462GHz -9.568dBm



## FCC 2.1093 MAXIMUM PERMISSIBLE EXPOSURE CALCULATIONS

Calculations prepared for:  
 Motorola BCS  
 6450 Sequence Drive  
 San Diego, Ca 92121

Calculations prepared by:  
 Stuart Yamamoto  
 110 N. Olinda Place  
 Brea, Ca 92823

Model Number: **SBG 900 Rev. 3**  
 FCC Identification:

Fundamental Operating Frequency: **2412 MHz to 2462 MHz**

Maximum Rated Output Power: **0.032 Watts (15.05 dBm)**  
 Measured Maximum Output Power: **0.038 Watts (15.80 dBm)**  
 (Antenna terminal, 2412 MHz)

MPE limit in accordance with FCC part 1.1311, table 1

EIRP = Maximum Rated Output Power (dBm) + Antenna Gain (dBi)  
 EIRP = 15.05 dBm + 2.5 dBi = 17.55 dBm (56.89 mWatt)

EIRP = Maximum Measured Output Power (dBm) + Antenna Gain (dBi)  
 EIRP = 15.80 dBm + 2.5 dBi = 17.85 dBm (60.95 mWatt)

*Limit for Maximum permissible exposure: (B) Limit for General population/uncontrolled Exposure:*

*For the frequency range of 1500-100,000 MHz, the MPE is 1 (mW/cm<sup>2</sup>)*

EIRP (mW)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
56.89	20	0.0113	1.0000	PASS
60.95	20	0.0121	1.0000	PASS

$$\text{Power Density (mW/cm}^2\text{)} = \frac{\text{EIRP}}{4\pi d^2}$$

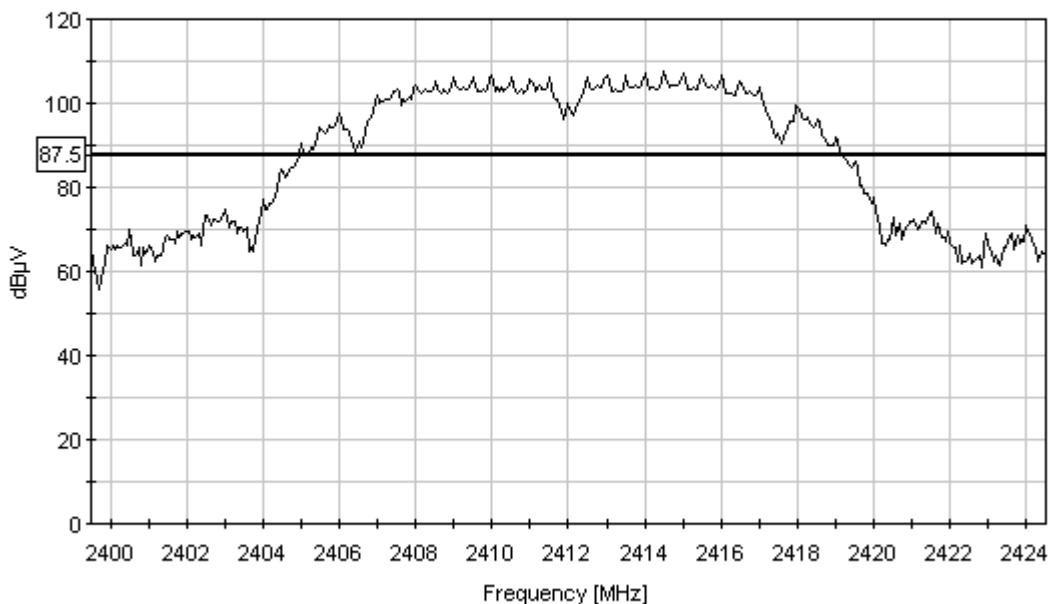
EIRP is given in mW

Distance (d) is given in centimeters

Under normal operating conditions, the antenna is designed to maintain a separation distance of 20 cm from all persons. As shown in the MPE results above, this device passes the limits specified in 1.1311 at a distance of 20 cm and at the rated output power of 0.032 Watts (32 mW). For the measured output power at the antenna terminal of 0.038 Watts (38.0 mW), the EUT satisfies the requirement in the 1500 to 100000 MHz frequency range.

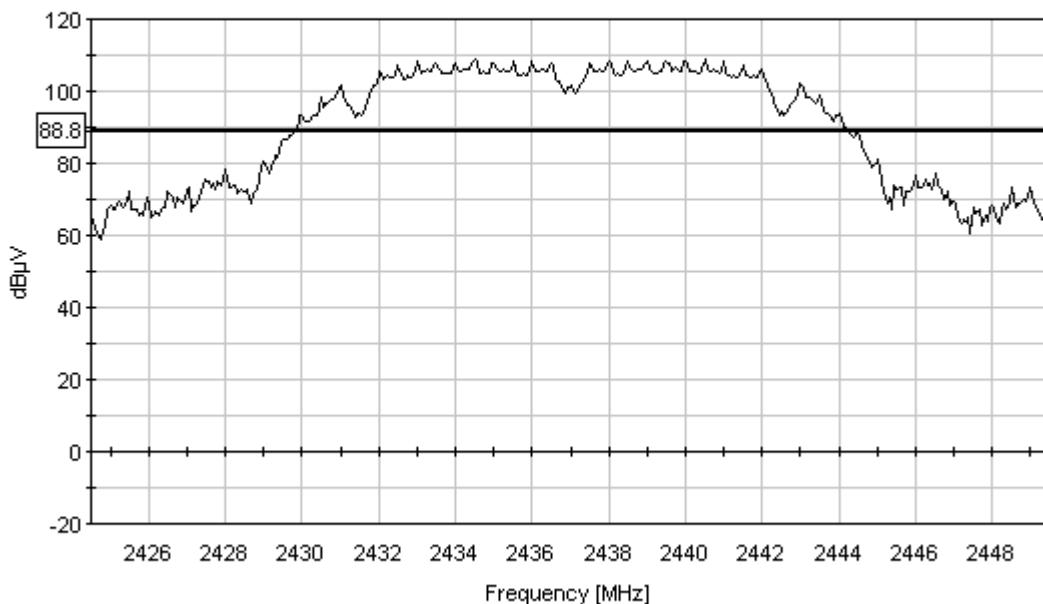
**RSS 210 99% BANDWIDTH CHANNEL 1**

Motorola BCS, SBG 900, RSS-210 99% Bandwidth. Ch. 1. Measured 99% dB BW is 14.4 MHz.  
Ref Level 116.99 dB $\mu$ V ATTEN 20 dB  
RES BW: 100.0KHz VID BW: 1.0MHz SWP: 20.0sec  
Marker: 14.38MHz 0.608dB $\mu$ V



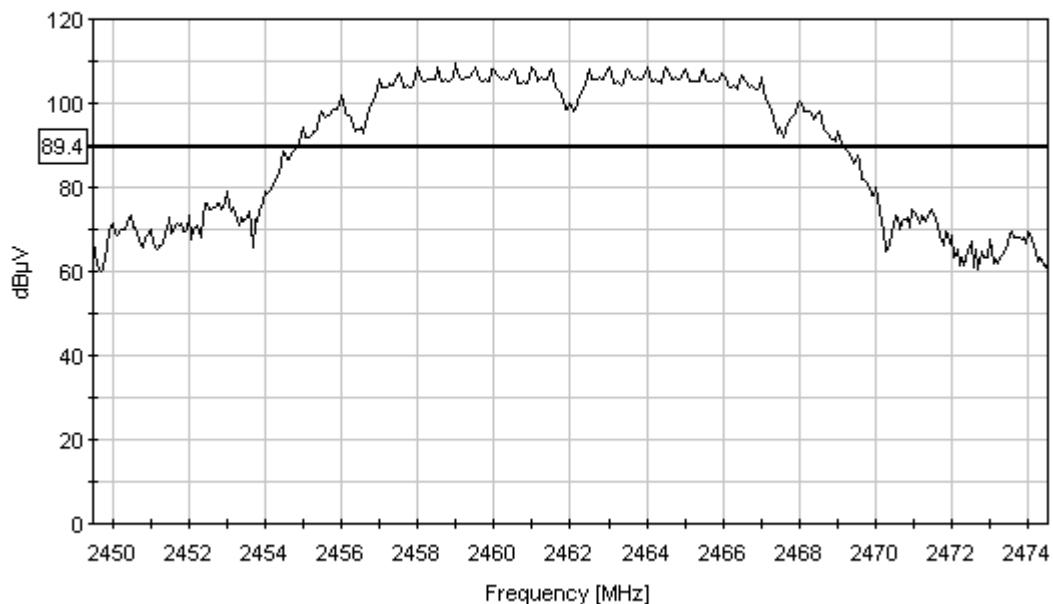
**RSS 210 99% BANDWIDTH CHANNEL 6**

Motorola BCS, SBG 900, RSS-210 99% Bandwidth. Ch. 6. Measured 99% dB BW is 14.8 MHz.  
Ref Level 116.99 dB $\mu$ V ATTEN 20 dB  
RES BW: 100.0KHz VID BW: 1.0MHz SWP: 20.0sec  
Marker: 14.81MHz -0.871dB $\mu$ V



**RSS 210 99% BANDWIDTH CHANNEL 11**

Motorola BCS, SBG 900, RSS-210 99% Bandwidth. Ch. 11. Measured 99% dB BW is 14.6 MHz.  
Ref Level 116.99 dB $\mu$ V ATTEN 20 dB  
RES BW: 100.0KHz VID BW: 1.0MHz SWP: 20.0sec  
Marker: 14.56MHz 0.223dB $\mu$ V



## TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C. The relative humidity was between 20% and 75%.

## EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The radiated and conducted emissions data of the EUT was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

## CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dB $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ V was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

**TABLE A: SAMPLE CALCULATIONS**

Meter reading	(dB $\mu$ V)
+ Antenna Factor	(dB)
+ Cable Loss	(dB)
- Distance Correction	(dB)
- Preamplifier Gain	(dB)
= Corrected Reading	(dB $\mu$ V/m)

## TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the EUT. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For radiated measurements below 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. The horn antenna was used for frequencies above 1000 MHz. All antennas were located at a distance of 3 meters from the edge of the EUT. Conducted emissions tests required the use of the FCC type LISNs.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dB $\mu$ V, and a vertical scale of 10 dB per division.

## SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

### Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

### Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

### Average

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

## EUT TESTING

### Mains Conducted Emissions

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT was located has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

The LISNs used were 50  $\mu$ H-/+50 ohms. Above 150 kHz, a 0.15  $\mu$ F series capacitor was added in-line prior to connecting the analyzer to restore the proper impedance for the range. A 30 to 50 second sweep time was used for automated measurements in the frequency bands of 150 kHz to 500 kHz, and 500 kHz to 30 MHz. All readings within 20 dB of the limit were recorded, and those within 6 dB of the limit were examined with additional measurements using a slower sweep time.

### Antenna Conducted Emissions

For measuring the signal strength on the RF output port of the EUT, the spectrum analyzer was connected directly to the EUT. The sweep time of the analyzer was adjusted so that the spectrum analyzer readings were always in a calibrated range. All readings within 20 dB of the limit were recorded.

### Radiated Emissions

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz to 1000 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. A scan of the FM band from 88 to 110 MHz was then made using a reduced resolution bandwidth and frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. For frequencies exceeding 1000 MHz, the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable as needed. The test engineer maximized the readings with respect to the table rotation and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

## **TRANSMITTER CHARACTERISTICS**

### **FCC 15.247(a)(2) Bandwidth Measurements (Direct Sequence)**

The fundamental frequency was kept within the permitted band 2400-2483.5 MHz. The minimum 6dB bandwidth was at least 500 kHz. Refer to the following occupied bandwidth plots.

### **FCC 15.247(b) Peak Output Power**

Frequency of Transmitter: 2400-2483.5 MHz

The RF conducted test was measured using a direct connection between the antenna port of the transmitter and the spectrum analyzer, through suitable attenuation. The resolution bandwidth was adjusted to greater than the 6 dB bandwidth of the emissions.

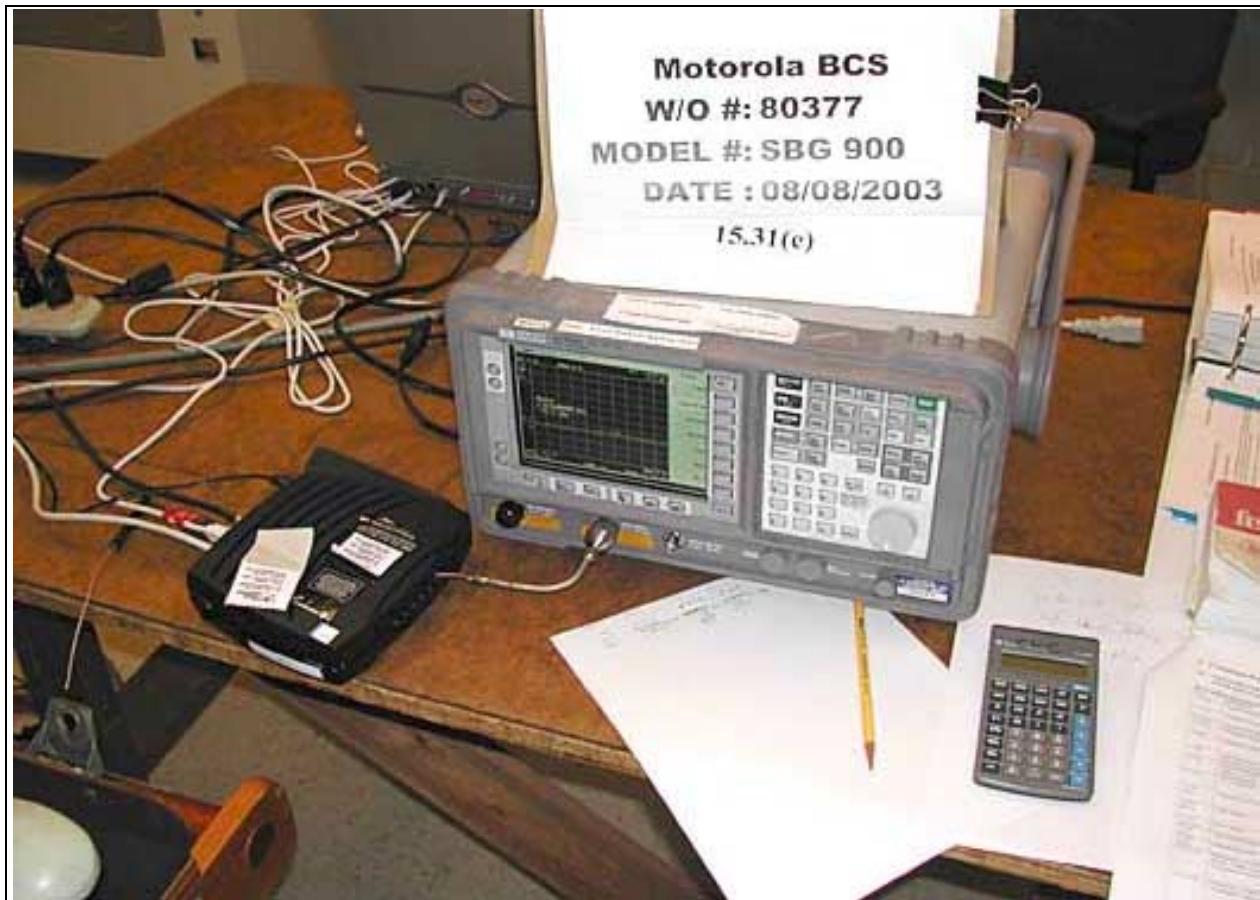
- ♦ **FCC 15.247(b)(3)** If the transmitting antenna of directional gain greater than 6 dBi was used, except as shown in sections 15.247(b)(3)(i), (ii) & (iii), the peak output power was reduced below the stated values in paragraphs (b)(1) or (b)(2) of section 15.247, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### **FCC 15.247(d) Peak Power Spectral Density**

The peak power spectral density conducted from the EUT to the antenna was not greater than 8 dm in any 3 kHz band during any time interval of continuous transmission.

**APPENDIX A**  
**TEST SETUP PHOTOGRAPHS**

**PHOTOGRAPH SHOWING VOLTAGE VARIATION**



15.31(e)

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



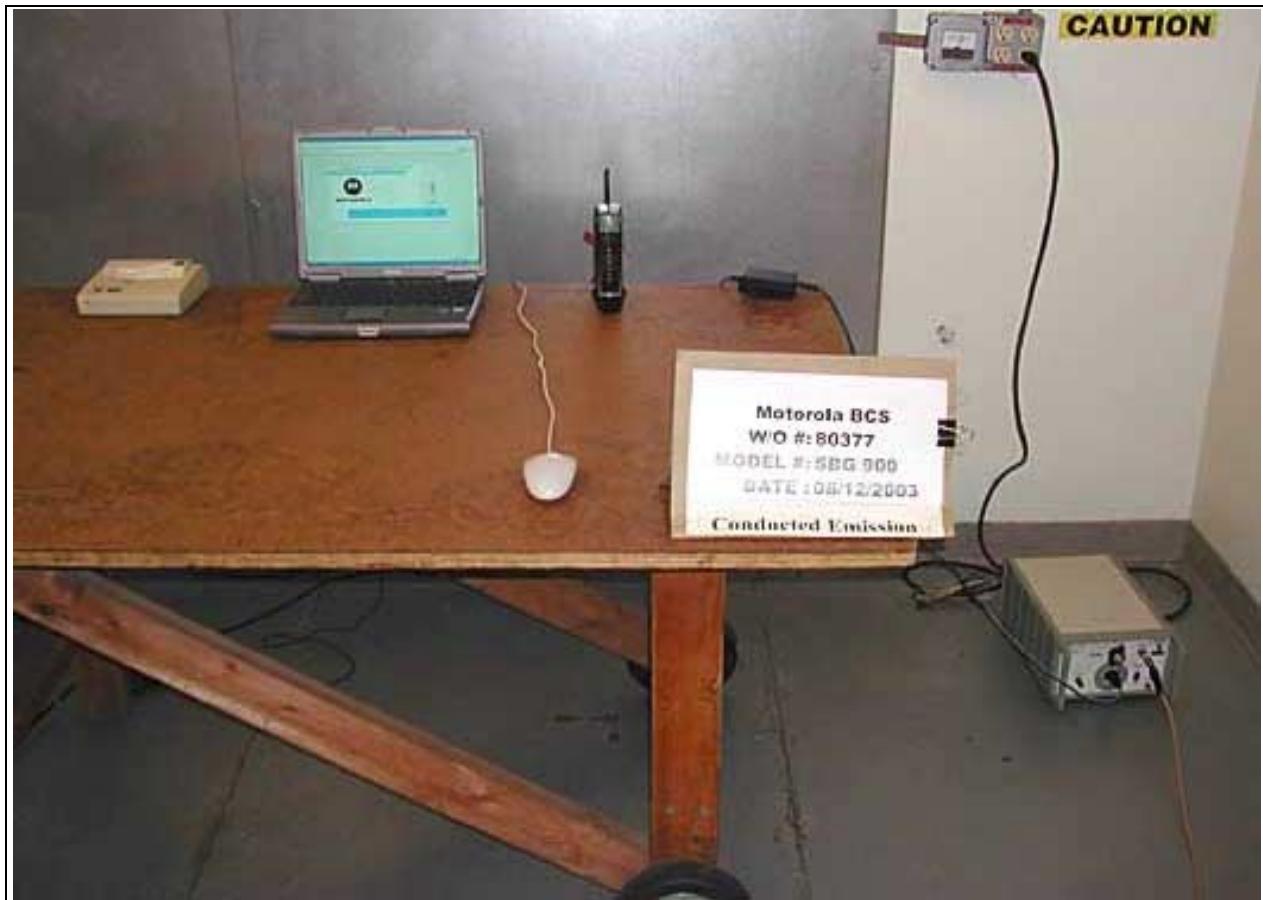
15.109 - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



15.109 - Back View

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



15.207 - Front View

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



15.207 - Back View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



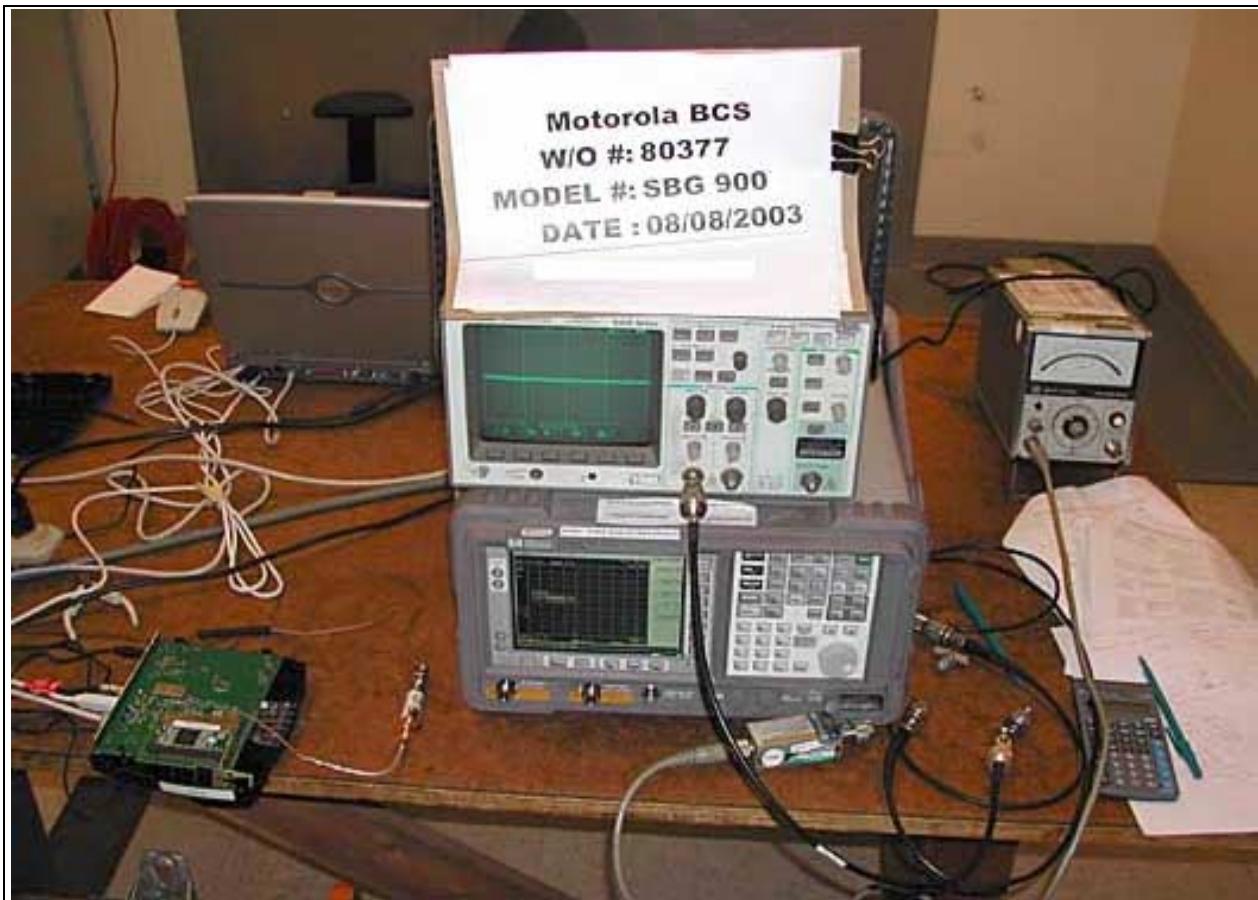
15.209 Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



15.209 Back View

**PHOTOGRAPH SHOWING ANTENNA CONDUCTED EMISSIONS**



15.247(b)

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



15.247(c) Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



15.247(c) Back View

**PHOTOGRAPH SHOWING BANDEDGE AND POWER SPECTRAL DENSITY**



15.247(c)(d) & RSS 210

## APPENDIX B

### TEST EQUIPMENT LIST

#### Radiated Emissions

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	00312	HP	8568A	2106A02107	073102	073104
Spectrum Analyzer Display	00312	HP	8568A	2049A01287	073102	073104
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	033103	033104
Magnetic Loop Antenna	00314	Emco	6502	2014	072302	072304
Bilog Antenna	00851	Schaffner-Chase EMC	CBL6111C	2629	062603	062605
Horn Antenna	01646	EMCO	3115	9603-4683	042503	042505
Standard Gain Horn Antenna	1413	HP	RA42-K-F-4B-C	942126-003	070103	070105
Pre-amp	02320	HP	8447D	2443A03665	010403	010404
Microwave Pre-amp	00787	HP	83017A	3123A00282	042303	042305
Antenna cable from bulkhead to antenna	N/A	Belden	9268	Cable #6	051203	051204
Antenna cable (3 meter site D)	NA	Andrew	LDF1-50	Cable#19	091102	091103
Antenna cable (10 meter site D)	NA	Andrew	LDF1-50	Cable#17	091102	091103
Preamp to SA Cable (3 feet)	NA	Pasternack	E100316-I	Cable #22	100702	100703
13' Coaxial Cable	P01510	GoreTex	3825510-10	244910	012103	012104
High Pass Filter	01440	K & L	91H31-3000		022003	022004

#### Conducted Emissions

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	033103	033104
Spectrum Analyzer (Site C)	00312	HP	8568A	2106A02107	073102	073104
Spectrum Analyzer Display (Site C)	00312	HP	8568A	2049A01287	073102	073104
Spectrum Analyzer		Agilent	E4440A	US41421223	050903	050904
LISN	00848	EMCO	3816/2	1102	010403	010404
LISN	00847	EMCO	3816/2NM	1104	010403	010404

**15.247 Emissions**

<b>Equipment</b>	<b>Asset #</b>	<b>Manufacturer</b>	<b>Model #</b>	<b>Serial #</b>	<b>Cal Date</b>	<b>Cal Due</b>
Spectrum Analyzer	00312	HP	8568A	2106A02107	073102	073104
Spectrum Analyzer Display	00312	HP	8568A	2049A01287	073102	073104
Bilog Antenna	00851	Schaffner-Chase EMC	CBL6111C	2629	061403	061403
Pre-amp	02320	HP	8447D	2443A03665	010403	010404
Antenna cable from bulkhead to antenna	N/A	Belden	9268	Cable #6	051203	051204
Antenna cable (10 meter site D)	NA	Andrew	LDF1-50	Cable#17	091102	091103
Preamp to SA Cable (3 feet)	NA	Pasternack	E100316-I	Cable #22	100702	100703
Antenna cable (from bulkhead to antenna, high frequency hardline) (70ft)	NA	Andrew	LDF1-50	Cable#18	091102	091103
Antenna cable (3 meter site D)	NA	Andrew	LDF1-50	Cable#19	091102	091103
12' SMA Cable	01337	W.L.Gore	NA	244922	121602	121603
Horn Antenna	01646	EMCO	3115	9603-4683	042503	042505
Microwave Pre-amp	00787	HP	83017A	3123A00282	042303	042305

**APPENDIX C**  
**MEASUREMENT DATA SHEETS**

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**  
 Specification: **FCC 15.109 Class B**  
 Work Order #: **80377** Date: 05/28/2003  
 Test Type: **Maximized emission** Time: 11:47:06  
 Equipment: **Wireless Cable Modem** Sequence#: 1  
 Manufacturer: Motorola BCS Tested By: Eddie Wong  
 Model: SBG 900 Rev. 2  
 S/N: NA

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
AC to 12VDC Adapter	Liteon	PB-1090-1L1	
Wireless Cable Modem*	Motorola BCS	SBG 900 Rev. 2	NA

***Support Devices:***

Function	Manufacturer	Model #	S/N
Head End	Cisco	uBR-MC11C	CN1ISS0AA
C6U Converter	General Instruments	C6U	J5M7000101358
Keyboard	HP	A2840 6020	NA
Laptop	Toshiba	Satelite Pro 415CS	04694236
Monitor	Sampo	KM-400A	81970632B0812
Wireless Cable Modem	Motorola BCS	SBG 900 Rev. 2	NA
Power Supply	Liteon	PB-1090-ILI	01401207
Monitor	NEC	JC-1538VMA	2X78256
Computer	Gateway	366C	0013638083A
Parallel Printer	SII	DPU-414	1033083A
Mouse	Gateway	MOSXK	NA
Keyboard	Dell	SK1000RS	M940111179
Ethernet Hub	Netgear	DS104	DS141408355155

***Test Conditions / Notes:***

The EUT is a cable modem. The EUT's USB port is connected to the local desktop computer via shielded cable. The EUT's ethernet port is connected to the local desktop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. 12VDC via AC-DC Adapter (110VAC 60Hz), 15.6°C, 52% relative humidity. Frequency range tested: 30-1000 MHz.

***Transducer Legend:***

T1=Bilog #00851 061403	T2=Cable Heliax #17 84ft(10 meter)
T3=Cable#22 BNC (preamp to SA)	T4=Cable #6 (Ant to Bulkhead) 050603
T5=Preamp 8447D 02320 (site D) 010404	T6=Horn AN 01646 1-18 GHz (Brea)
T7=HF Preamp Cal. HP-83017A,S/N- 3123A00282	T8=Cable #19 54ft Heliax 091103
T9=12' SMA Gore cable #1337 121603	T10=10dB Attenuator
T11=3dB Attenuator	T12=HPF 3.5 GHz High Pass

<b>Measurement Data:</b>			Reading listed by margin.				Test Distance: 3 Meters				
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
	MHz	dB $\mu$ V	dB	dB	dB	dB	Table	dB $\mu$ V/m	dB $\mu$ V/m	dB	Ant
1	400.001M	50.1	+16.0	+1.9	+0.5	+2.2	+0.0	43.7	46.0	-2.3	Vert
	QP		-27.0								
^	400.001M	50.9	+16.0	+1.9	+0.5	+2.2	+0.0	44.5	46.0	-1.5	Vert
			-27.0								
3	449.994M	47.4	+16.9	+2.1	+0.5	+2.3	+0.0	42.1	46.0	-3.9	Vert
	QP		-27.1								
^	449.989M	48.9	+16.9	+2.1	+0.5	+2.3	+0.0	43.6	46.0	-2.4	Vert
			-27.1								
5	1150.034M	44.9	+0.0	+3.9	+0.0	+0.0	+0.0	49.9	54.0	-4.1	Vert
			+0.0	+24.5	-40.6	+2.6					
			+1.6	+10.0	+3.0	+0.0					
6	1745.000M	40.5	+0.0	+4.7	+0.0	+0.0	+0.0	49.5	54.0	-4.5	Vert
			+0.0	+25.9	-39.4	+3.1					
			+1.7	+10.0	+3.0	+0.0					
7	1728.059M	40.5	+0.0	+4.7	+0.0	+0.0	+0.0	49.3	54.0	-4.7	Horiz
			+0.0	+25.8	-39.5	+3.1					
			+1.7	+10.0	+3.0	+0.0					
8	1745.001M	40.2	+0.0	+4.7	+0.0	+0.0	+0.0	49.2	54.0	-4.8	Horiz
			+0.0	+25.9	-39.4	+3.1					
			+1.7	+10.0	+3.0	+0.0					
9	900.016M	36.1	+23.0	+3.2	+1.2	+3.5	+0.0	40.9	46.0	-5.1	Vert
			-26.1								
10	550.001M	42.9	+18.7	+2.6	+0.6	+2.5	+0.0	40.1	46.0	-5.9	Vert
			-27.2								
11	900.033M	35.2	+23.0	+3.2	+1.2	+3.5	+0.0	40.0	46.0	-6.0	Horiz
			-26.1								
12	449.995M	45.2	+17.0	+2.1	+0.5	+2.3	+0.0	40.0	46.0	-6.0	Horiz
			-27.1								
13	143.158M	50.2	+11.4	+1.3	+0.3	+1.3	+0.0	37.4	43.5	-6.1	Vert
			-27.1								
14	1150.041M	42.7	+0.0	+3.9	+0.0	+0.0	+0.0	47.7	54.0	-6.3	Horiz
			+0.0	+24.5	-40.6	+2.6					
			+1.6	+10.0	+3.0	+0.0					
15	760.272M	37.5	+21.1	+3.0	+0.8	+3.1	+0.0	39.5	46.0	-6.5	Horiz
			-26.0								

16	399.998M	45.6	+16.0 -27.0	+1.9	+0.5	+2.2	+0.0	39.2	46.0	-6.8	Horiz
17	499.996M	42.3	+17.8 -26.9	+2.7	+0.6	+2.5	+0.0	39.0	46.0	-7.0	Horiz
18	499.992M	42.2	+17.8 -26.9	+2.7	+0.6	+2.5	+0.0	38.9	46.0	-7.1	Vert
19	650.011M	39.1	+20.0 -26.6	+2.8	+0.6	+2.9	+0.0	38.8	46.0	-7.2	Vert
20	68.497M	51.4	+6.4 -27.0	+0.9	+0.1	+1.0	+0.0	32.8	40.0	-7.2	Vert
21	665.232M	37.9	+20.1 -26.5	+2.8	+0.7	+2.9	+0.0	37.9	46.0	-8.1	Horiz
22	665.220M	37.2	+20.1 -26.5	+2.8	+0.7	+2.9	+0.0	37.2	46.0	-8.8	Vert
23	109.426M	48.6	+10.9 -27.1	+1.1	+0.1	+1.1	+0.0	34.7	43.5	-8.8	Vert
24	404.175M	43.2	+16.1 -27.0	+1.9	+0.5	+2.2	+0.0	36.9	46.0	-9.1	Vert
25	550.001M	39.6	+18.7 -27.2	+2.6	+0.6	+2.5	+0.0	36.8	46.0	-9.2	Horiz
26	904.172M	32.0	+23.0 -26.1	+3.2	+1.2	+3.5	+0.0	36.8	46.0	-9.2	Vert
27	161.181M	47.7	+10.6 -27.1	+1.3	+0.3	+1.4	+0.0	34.2	43.5	-9.3	Horiz
28	950.044M	31.1	+23.5 -26.1	+3.4	+1.2	+3.5	+0.0	36.6	46.0	-9.4	Vert
29	850.019M	32.5	+22.3 -25.5	+3.2	+0.8	+3.3	+0.0	36.6	46.0	-9.4	Vert
30	113.086M	47.2	+11.1 -27.1	+1.2	+0.2	+1.1	+0.0	33.7	43.5	-9.8	Vert
31	285.110M	45.6	+13.2 -26.8	+1.8	+0.4	+1.8	+0.0	36.0	46.0	-10.0	Vert
32	999.993M	36.4	+23.9 -26.3	+3.9	+1.2	+3.8	+0.0	42.9	54.0	-11.1	Horiz

33	404.162M	40.6	+16.1 -27.0	+1.9	+0.5	+2.2	+0.0	34.3	46.0	-11.7	Horiz
34	360.001M	41.7	+15.0 -26.8	+2.0	+0.4	+2.0	+0.0	34.3	46.0	-11.7	Horiz
35	999.998M	35.8	+23.9 -26.3	+3.9	+1.2	+3.8	+0.0	42.3	54.0	-11.7	Vert
36	272.071M	43.8	+13.0 -26.8	+1.8	+0.4	+1.8	+0.0	34.0	46.0	-12.0	Vert
37	350.006M	41.5	+14.8 -26.8	+2.0	+0.4	+2.0	+0.0	33.9	46.0	-12.1	Horiz
38	349.988M	41.3	+14.8 -26.8	+2.0	+0.4	+2.0	+0.0	33.7	46.0	-12.3	Vert
39	1728.053M	32.7	+0.0 Ave	+4.7 +0.0 +1.7	+0.0 +25.8 +10.0	+0.0 -39.5 +3.0	+0.0 +3.1 +0.0	41.5	54.0	-12.5	Vert
^	1728.053M	41.8	+0.0 +0.0 +1.7	+4.7 +25.8 +10.0	+0.0 -39.5 +3.0	+0.0 +3.1 +0.0	+0.0	50.6	54.0	-3.4	Vert
41	282.640M	43.1	+13.2 -26.8	+1.8	+0.4	+1.8	+0.0	33.5	46.0	-12.5	Vert
42	359.999M	40.8	+15.0 -26.8	+2.0	+0.4	+2.0	+0.0	33.4	46.0	-12.6	Vert
43	139.204M	43.5	+11.5 -27.1	+1.3	+0.3	+1.3	+0.0	30.8	43.5	-12.7	Vert
44	143.171M	43.5	+11.4 -27.1	+1.3	+0.3	+1.3	+0.0	30.7	43.5	-12.8	Horiz
45	137.179M	43.4	+11.5 -27.1	+1.3	+0.3	+1.3	+0.0	30.7	43.5	-12.8	Vert
46	517.750M	36.2	+18.1 -27.0	+2.7	+0.6	+2.5	+0.0	33.1	46.0	-12.9	Horiz
47	172.805M	44.9	+9.7 -27.1	+1.4	+0.3	+1.3	+0.0	30.5	43.5	-13.0	Vert
48	432.009M	38.5	+16.6 -27.1	+2.0	+0.5	+2.3	+0.0	32.8	46.0	-13.2	Vert
49	232.203M	44.7	+11.5 -27.0	+1.6	+0.3	+1.6	+0.0	32.7	46.0	-13.3	Vert

50	270.336M	42.3	+13.0 -26.8	+1.8	+0.4	+1.8	+0.0	32.5	46.0	-13.5	Vert
51	299.989M	41.3	+13.4 -26.7	+1.9	+0.4	+1.9	+0.0	32.2	46.0	-13.8	Horiz
52	169.211M	43.9	+9.9 -27.1	+1.4	+0.3	+1.3	+0.0	29.7	43.5	-13.8	Horiz
53	370.262M	39.4	+15.3 -26.9	+1.9	+0.4	+2.1	+0.0	32.2	46.0	-13.8	Vert
54	315.033M	40.8	+13.8 -26.7	+1.9	+0.4	+1.9	+0.0	32.1	46.0	-13.9	Vert
55	125.006M	42.4	+11.6 -27.0	+1.2	+0.2	+1.2	+0.0	29.6	43.5	-13.9	Vert
56	380.130M	38.8	+15.5 -26.9	+1.9	+0.5	+2.1	+0.0	31.9	46.0	-14.1	Horiz
57	246.246M	42.3	+12.5 -26.9	+1.7	+0.4	+1.7	+0.0	31.7	46.0	-14.3	Vert
58	214.795M	42.5	+10.3 -27.0	+1.6	+0.3	+1.5	+0.0	29.2	43.5	-14.3	Vert
59	265.679M	41.5	+12.9 -26.8	+1.8	+0.4	+1.8	+0.0	31.6	46.0	-14.4	Horiz
60	475.183M	35.3	+17.4 -27.0	+2.5	+0.6	+2.4	+0.0	31.2	46.0	-14.8	Horiz
61	249.993M	41.6	+12.7 -26.9	+1.7	+0.4	+1.7	+0.0	31.2	46.0	-14.8	Horiz
62	395.884M	37.7	+15.9 -27.0	+1.9	+0.5	+2.2	+0.0	31.2	46.0	-14.8	Vert
63	147.188M	41.0	+11.4 -27.1	+1.3	+0.3	+1.4	+0.0	28.3	43.5	-15.2	Horiz
64	304.134M	39.8	+13.5 -26.7	+1.9	+0.4	+1.9	+0.0	30.8	46.0	-15.2	Vert
65	475.215M	34.8	+17.4 -27.0	+2.5	+0.6	+2.4	+0.0	30.7	46.0	-15.3	Vert
66	153.188M	41.1	+11.1 -27.1	+1.3	+0.3	+1.4	+0.0	28.1	43.5	-15.4	Horiz

67	233.799M	42.4	+11.6 -27.0	+1.6	+0.3	+1.6	+0.0	30.5	46.0	-15.5	Vert
68	362.714M	37.8	+15.1 -26.9	+1.9	+0.4	+2.1	+0.0	30.4	46.0	-15.6	Horiz
69	395.891M	36.8	+15.9 -27.0	+1.9	+0.5	+2.2	+0.0	30.3	46.0	-15.7	Horiz
70	534.523M	33.2	+18.5 -27.1	+2.6	+0.6	+2.5	+0.0	30.3	46.0	-15.7	Vert
71	286.388M	39.8	+13.2 -26.8	+1.8	+0.4	+1.8	+0.0	30.2	46.0	-15.8	Vert
72	141.212M	40.3	+11.5 -27.1	+1.3	+0.3	+1.3	+0.0	27.6	43.5	-15.9	Horiz
73	248.753M	40.6	+12.6 -26.9	+1.7	+0.4	+1.7	+0.0	30.1	46.0	-15.9	Vert
74	503.843M	32.8	+17.9 -26.9	+2.7	+0.6	+2.5	+0.0	29.6	46.0	-16.4	Horiz
75	199.996M	41.6	+9.1 -26.9	+1.6	+0.3	+1.4	+0.0	27.1	43.5	-16.4	Vert
76	168.809M	41.1	+10.0 -27.1	+1.4	+0.3	+1.3	+0.0	27.0	43.5	-16.5	Vert
77	579.995M	31.1	+19.3 -26.9	+2.6	+0.6	+2.7	+0.0	29.4	46.0	-16.6	Vert
78	365.098M	36.7	+15.2 -26.9	+1.9	+0.4	+2.1	+0.0	29.4	46.0	-16.6	Vert
79	81.205M	40.4	+7.9 -27.1	+1.0	+0.1	+1.0	+0.0	23.3	40.0	-16.7	Horiz
80	139.229M	39.4	+11.5 -27.1	+1.3	+0.3	+1.3	+0.0	26.7	43.5	-16.8	Horiz
81	236.238M	40.5	+11.8 -27.0	+1.6	+0.3	+1.6	+0.0	28.8	46.0	-17.2	Vert
82	282.634M	37.9	+13.2 -26.8	+1.8	+0.4	+1.8	+0.0	28.3	46.0	-17.7	Horiz
83	668.190M	28.0	+20.2 -26.5	+2.8	+0.7	+2.9	+0.0	28.1	46.0	-17.9	Vert

84	377.718M	35.0	+15.5 -26.9	+1.9	+0.5	+2.1	+0.0	28.1	46.0	-17.9	Vert
85	300.002M	37.2	+13.4 -26.7	+1.9	+0.4	+1.9	+0.0	28.1	46.0	-17.9	Vert
86	239.998M	39.1	+12.0 -26.9	+1.7	+0.4	+1.7	+0.0	28.0	46.0	-18.0	Vert
87	194.980M	40.0	+9.1 -26.9	+1.6	+0.3	+1.4	+0.0	25.5	43.5	-18.0	Vert
88	434.272M	33.3	+16.7 -27.1	+2.0	+0.5	+2.3	+0.0	27.7	46.0	-18.3	Horiz
89	307.214M	36.4	+13.6 -26.7	+1.9	+0.4	+1.9	+0.0	27.5	46.0	-18.5	Vert
90	285.088M	37.0	+13.2 -26.8	+1.8	+0.4	+1.8	+0.0	27.4	46.0	-18.6	Horiz
91	524.984M	30.5	+18.3 -27.1	+2.6	+0.6	+2.5	+0.0	27.4	46.0	-18.6	Vert
92	169.198M	39.0	+9.9 -27.1	+1.4	+0.3	+1.3	+0.0	24.8	43.5	-18.7	Vert
93	406.403M	33.3	+16.1 -27.0	+1.9	+0.5	+2.2	+0.0	27.0	46.0	-19.0	Horiz
94	356.379M	34.3	+15.0 -26.8	+2.0	+0.4	+2.0	+0.0	26.9	46.0	-19.1	Vert
95	310.201M	35.5	+13.7 -26.7	+1.9	+0.4	+1.9	+0.0	26.7	46.0	-19.3	Horiz
96	336.131M	34.7	+14.4 -26.8	+1.9	+0.4	+2.0	+0.0	26.6	46.0	-19.4	Vert
97	242.210M	37.4	+12.2 -26.9	+1.7	+0.4	+1.7	+0.0	26.5	46.0	-19.5	Horiz
98	319.525M	34.7	+14.0 -26.7	+1.9	+0.4	+1.9	+0.0	26.2	46.0	-19.8	Vert
99	408.974M	32.3	+16.2 -27.0	+1.9	+0.5	+2.2	+0.0	26.1	46.0	-19.9	Horiz
100	240.041M	37.2	+12.0 -26.9	+1.7	+0.4	+1.7	+0.0	26.1	46.0	-19.9	Horiz

101	183.191M	38.3	+9.1 -27.0	+1.5	+0.3	+1.3	+0.0	23.5	43.5	-20.0	Horiz
102	128.929M	36.2	+11.6 -27.0	+1.2	+0.2	+1.2	+0.0	23.4	43.5	-20.1	Horiz
103	171.569M	37.6	+9.8 -27.1	+1.4	+0.3	+1.3	+0.0	23.3	43.5	-20.2	Vert
104	144.711M	35.9	+11.4 -27.1	+1.3	+0.3	+1.4	+0.0	23.2	43.5	-20.3	Vert
105	117.958M	36.1	+11.5 -27.1	+1.2	+0.2	+1.1	+0.0	23.0	43.5	-20.5	Horiz
106	288.986M	34.6	+13.3 -26.7	+1.9	+0.4	+1.9	+0.0	25.4	46.0	-20.6	Horiz
107	324.317M	33.8	+14.1 -26.8	+1.9	+0.4	+2.0	+0.0	25.4	46.0	-20.6	Vert
108	294.934M	34.6	+13.3 -26.7	+1.9	+0.4	+1.9	+0.0	25.4	46.0	-20.6	Vert
109	228.750M	37.6	+11.3 -27.0	+1.6	+0.3	+1.6	+0.0	25.4	46.0	-20.6	Vert
110	126.209M	35.4	+11.6 -27.0	+1.2	+0.2	+1.2	+0.0	22.6	43.5	-20.9	Horiz
111	114.925M	35.6	+11.3 -27.1	+1.2	+0.2	+1.1	+0.0	22.3	43.5	-21.2	Horiz
112	130.274M	35.1	+11.5 -27.0	+1.2	+0.2	+1.2	+0.0	22.2	43.5	-21.3	Horiz
113	207.615M	35.8	+9.7 -26.9	+1.6	+0.3	+1.5	+0.0	22.0	43.5	-21.5	Horiz
114	254.401M	34.7	+12.8 -26.9	+1.7	+0.4	+1.7	+0.0	24.4	46.0	-21.6	Horiz
115	272.065M	33.8	+13.0 -26.8	+1.8	+0.4	+1.8	+0.0	24.0	46.0	-22.0	Horiz
116	186.154M	36.3	+9.1 -27.0	+1.5	+0.3	+1.3	+0.0	21.5	43.5	-22.0	Horiz

117	312.008M	32.0	+13.8 -26.7	+1.9	+0.4	+1.9	+0.0	23.3	46.0	-22.7	Vert
118	221.849M	35.9	+10.8 -27.0	+1.6	+0.3	+1.6	+0.0	23.2	46.0	-22.8	Horiz
119	231.258M	35.2	+11.4 -27.0	+1.6	+0.3	+1.6	+0.0	23.1	46.0	-22.9	Vert

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**  
 Specification: **FCC 15.107/15.207 COND [AVE]**  
 Work Order #: **80377** Date: 08/12/2003  
 Test Type: **Conducted Emissions** Time: 18:27:06  
 Equipment: **Wireless Cable Modem** Sequence #: 1  
 Manufacturer: Motorola BCS Tested By: Stuart Yamamoto  
 Model: SBG 900 Rev. 3 110V 60Hz  
 S/N: 00B066682DC

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
AC to 12VDC Adapter	Liteon	PB-1090-1L1	
Wireless Cable Modem*	Motorola BCS	SBG 900 Rev. 3	00B066682DC

***Support Devices:***

Function	Manufacturer	Model #	S/N
Head End	Cisco	uBR-MC11C	CN1ISS0AA
C6U Converter	General Instruments	C6U	J5M7000101358
Parallel Printer	SII	DPU-414	1033083A
Ethernet Hub	Netgear	DS104	DS141408355155
Laptop Computer	Dell	DPU-414	1033083A
Laptop Computer	Toshiba	PP05L	CN-04V21248643-349-0330
Mouse	Logitech	M-S35	LZB73905320

***Test Conditions / Notes:***

The EUT is a cable modem. The EUT's USB port is connected to the local laptop computer via shielded cable. The EUT's ethernet port is connected to the local laptop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The remotely located Toshiba laptop computer is running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Tx = Ch1 = 2.412 GHz. 12 VDC to EUT via AC-DC Adapter, Temperature: 29°C, Humidity: 40%, Pressure: 100kPa.

***Transducer Legend:***

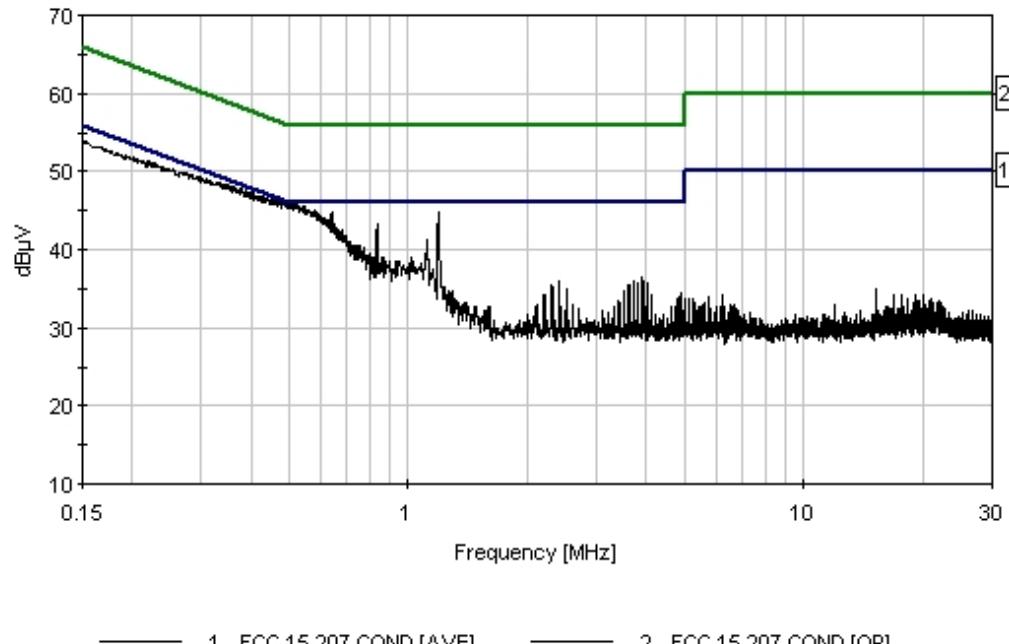
<b><i>Measurement Data:</i></b>			Reading listed by margin.								Test Lead: Black		
#	Freq MHz	Rdng dB $\mu$ V	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant						
1	1.192M Ave	39.7		+0.0	39.7	46.0	-6.3	Black					
^	1.192M	44.9		+0.0	44.9	46.0	-1.1	Black	See Average Data Above				
3	3.914M	36.5		+0.0	36.5	46.0	-9.5	Black					
4	2.412M	35.9		+0.0	35.9	46.0	-10.1	Black					
5	3.714M	35.9		+0.0	35.9	46.0	-10.1	Black					
6	3.812M	35.7		+0.0	35.7	46.0	-10.3	Black					

7	4.016M	35.6	+0.0	35.6	46.0	-10.4	Black
8	2.306M	35.4	+0.0	35.4	46.0	-10.6	Black
9	3.612M	35.4	+0.0	35.4	46.0	-10.6	Black
10	831.000k Ave	35.1	+0.0	35.1	46.0	-10.9	Black
^	835.750k	43.4	+0.0	43.4	46.0	-2.6	Black
						See Average Data Above	
^	830.659k	41.9	+0.0	41.9	46.0	-4.1	Black
						See Average Data Above	
13	2.510M	34.9	+0.0	34.9	46.0	-11.1	Black
14	3.514M	34.6	+0.0	34.6	46.0	-11.4	Black
15	4.922M	34.4	+0.0	34.4	46.0	-11.6	Black
16	4.118M	34.1	+0.0	34.1	46.0	-11.9	Black
17	4.820M	34.0	+0.0	34.0	46.0	-12.0	Black
18	3.412M	33.4	+0.0	33.4	46.0	-12.6	Black
19	2.612M	32.9	+0.0	32.9	46.0	-13.1	Black
20	4.620M	32.7	+0.0	32.7	46.0	-13.3	Black
21	4.717M	32.7	+0.0	32.7	46.0	-13.3	Black
22	3.310M	32.6	+0.0	32.6	46.0	-13.4	Black
23	2.714M	32.4	+0.0	32.4	46.0	-13.6	Black
24	15.175M	35.0	+0.0	35.0	50.0	-15.0	Black
25	16.968M	34.3	+0.0	34.3	50.0	-15.7	Black
26	17.653M	34.3	+0.0	34.3	50.0	-15.7	Black
27	6.238M	34.2	+0.0	34.2	50.0	-15.8	Black
28	19.184M	34.2	+0.0	34.2	50.0	-15.8	Black
29	20.058M	34.2	+0.0	34.2	50.0	-15.8	Black
30	5.734M	33.9	+0.0	33.9	50.0	-16.1	Black

31	5.019M	33.8	+0.0	33.8	50.0	-16.2	Black
32	5.130M	33.8	+0.0	33.8	50.0	-16.2	Black
33	20.932M	33.8	+0.0	33.8	50.0	-16.2	Black
34	18.328M	33.7	+0.0	33.7	50.0	-16.3	Black
35	5.117M	33.6	+0.0	33.6	50.0	-16.4	Black
36	5.229M	33.6	+0.0	33.6	50.0	-16.4	Black
37	19.716M	33.5	+0.0	33.5	50.0	-16.5	Black
38	19.283M	33.4	+0.0	33.4	50.0	-16.6	Black
39	22.094M	33.4	+0.0	33.4	50.0	-16.6	Black
40	22.337M	33.3	+0.0	33.3	50.0	-16.7	Black
41	5.635M	33.2	+0.0	33.2	50.0	-16.8	Black
42	5.328M	33.1	+0.0	33.1	50.0	-16.9	Black
43	19.004M	33.1	+0.0	33.1	50.0	-16.9	Black
44	21.382M	33.1	+0.0	33.1	50.0	-16.9	Black
45	21.806M	33.1	+0.0	33.1	50.0	-16.9	Black
46	5.535M	33.0	+0.0	33.0	50.0	-17.0	Black
47	6.535M	33.0	+0.0	33.0	50.0	-17.0	Black
48	6.644M	33.0	+0.0	33.0	50.0	-17.0	Black
49	11.977M	32.9	+0.0	32.9	50.0	-17.1	Black
50	22.400M	32.8	+0.0	32.8	50.0	-17.2	Black
51	1.115M	25.0	+0.0	25.0	46.0	-21.0	Black
	Ave						
^	1.115M	41.3	+0.0	41.3	46.0	-4.7	Black
							See Average Data
							Above
53	836.000k	21.7	+0.0	21.7	46.0	-24.3	Black
	Ave						

54	836.000k	21.4	+0.0	21.4	46.0	-24.6	Black
Ave							
55	152.000k	22.2	+0.0	22.2	55.9	-33.7	Black
Ave							
^	152.182k	53.9	+0.0	53.9	55.9	-2.0	Black
							See Average Data
							Above

CKC Laboratories, Inc. Date: 08/12/2003 Time: 18:27:06 Motorola BCS WO#: 80377  
 FCC 15.207 COND [AVE] Test Lead: Black 110V 60Hz Sequence#: 1  
 MOTOROLA BCS, SBG 900



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**  
 Specification: **FCC 15.107/15.207 COND [AVE]**  
 Work Order #: **80377** Date: 08/12/2003  
 Test Type: **Conducted Emissions** Time: 18:33:08  
 Equipment: **Wireless Cable Modem** Sequence #: 2  
 Manufacturer: Motorola BCS Tested By: Stuart Yamamoto  
 Model: SBG 900 Rev. 3 110V 60Hz  
 S/N: 00B066682DC

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
AC to 12VDC Adapter	Liteon	PB-1090-1L1	
Wireless Cable Modem*	Motorola BCS	SBG 900 Rev. 3	00B066682DC

***Support Devices:***

Function	Manufacturer	Model #	S/N
Head End	Cisco	uBR-MC11C	CN1ISS0AA
C6U Converter	General Instruments	C6U	J5M7000101358
Parallel Printer	SII	DPU-414	1033083A
Ethernet Hub	Netgear	DS104	DS141408355155
Laptop Computer	Dell	DPU-414	1033083A
Laptop Computer	Toshiba	PP05L	CN-04V21248643-349-0330
Mouse	Logitech	M-S35	LZB73905320

***Test Conditions / Notes:***

The EUT is a cable modem. The EUT's USB port is connected to the local laptop computer via shielded cable. The EUT's ethernet port is connected to the local laptop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The remotely located Toshiba laptop computer is running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Tx = Ch1 = 2.412 GHz. 12 VDC to EUT via AC-DC Adapter, Temperature: 29°C, Humidity: 40%, Pressure: 100kPa.

***Transducer Legend:***

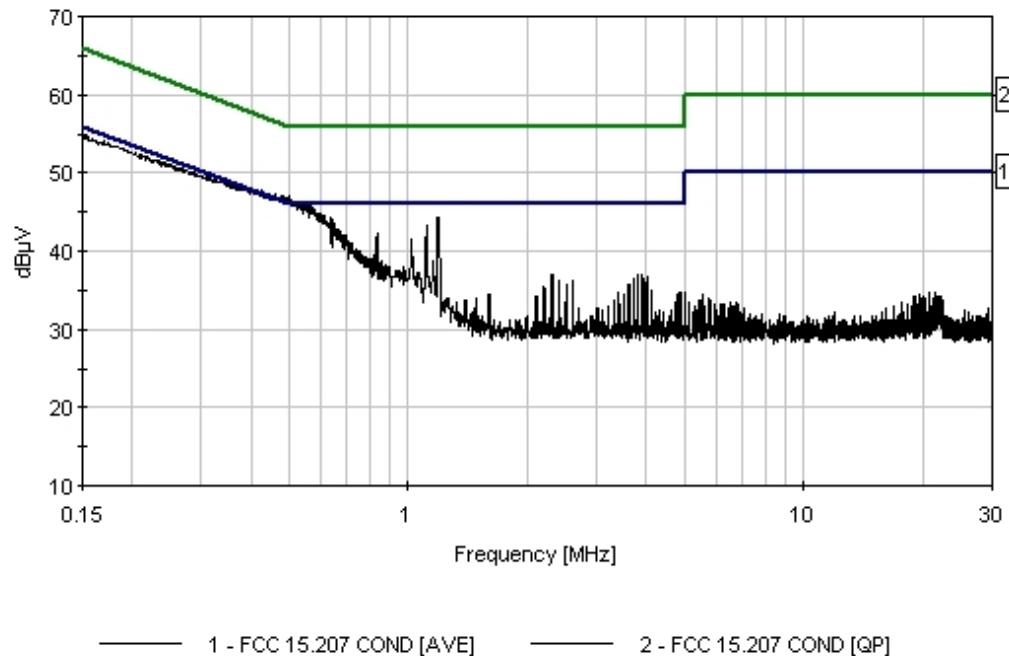
<b><i>Measurement Data:</i></b>			Reading listed by margin.							
#	Freq MHz	Rdng dB $\mu$ V	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant			
1	1.187M Ave	40.7	+0.0	40.7	46.0	-5.3	White			
^	1.187M	44.4	+0.0	44.4	46.0	-1.6	White			
					See Average Data Above					
3	2.302M	37.1	+0.0	37.1	46.0	-8.9	White			
4	3.914M	37.0	+0.0	37.0	46.0	-9.0	White			
5	3.812M	36.9	+0.0	36.9	46.0	-9.1	White			
6	4.011M	36.7	+0.0	36.7	46.0	-9.3	White			

7	1.111M	36.5	+0.0	36.5	46.0	-9.5	White
Ave							
^	1.111M	43.4	+0.0	43.4	46.0	-2.6	White
					See Average Data		
					Above		
9	3.714M	36.4	+0.0	36.4	46.0	-9.6	White
10	2.408M	36.3	+0.0	36.3	46.0	-9.7	White
11	2.612M	36.3	+0.0	36.3	46.0	-9.7	White
12	2.506M	35.7	+0.0	35.7	46.0	-10.3	White
13	3.612M	35.7	+0.0	35.7	46.0	-10.3	White
14	2.204M	35.4	+0.0	35.4	46.0	-10.6	White
15	4.114M	35.0	+0.0	35.0	46.0	-11.0	White
16	3.408M	34.8	+0.0	34.8	46.0	-11.2	White
17	4.820M	34.7	+0.0	34.7	46.0	-11.3	White
18	4.913M	34.6	+0.0	34.6	46.0	-11.4	White
19	1.596M	34.5	+0.0	34.5	46.0	-11.5	White
20	3.510M	34.5	+0.0	34.5	46.0	-11.5	White
21	2.106M	34.2	+0.0	34.2	46.0	-11.8	White
22	4.713M	33.4	+0.0	33.4	46.0	-12.6	White
23	1.022M	33.2	+0.0	33.2	46.0	-12.9	White
Ave							
^	1.022M	41.4	+0.0	41.4	46.0	-4.6	White
					See Average Data		
					Above		
25	3.212M	33.0	+0.0	33.0	46.0	-13.0	White
26	2.710M	32.7	+0.0	32.7	46.0	-13.3	White
27	3.008M	32.6	+0.0	32.6	46.0	-13.4	White
28	3.110M	32.5	+0.0	32.5	46.0	-13.5	White
29	641.000k	31.6	+0.0	31.6	46.0	-14.4	White
Ave							
30	5.015M	34.7	+0.0	34.7	50.0	-15.3	White

31	20.698M	34.6	+0.0	34.6	50.0	-15.4	White
32	21.562M	34.6	+0.0	34.6	50.0	-15.4	White
33	5.535M	34.4	+0.0	34.4	50.0	-15.6	White
34	19.725M	34.4	+0.0	34.4	50.0	-15.6	White
35	19.076M	34.3	+0.0	34.3	50.0	-15.7	White
36	20.058M	34.2	+0.0	34.2	50.0	-15.8	White
37	21.797M	34.1	+0.0	34.1	50.0	-15.9	White
38	22.049M	34.1	+0.0	34.1	50.0	-15.9	White
39	22.184M	34.1	+0.0	34.1	50.0	-15.9	White
40	20.382M	34.0	+0.0	34.0	50.0	-16.0	White
41	5.734M	33.9	+0.0	33.9	50.0	-16.1	White
42	21.157M	33.9	+0.0	33.9	50.0	-16.1	White
43	5.427M	33.7	+0.0	33.7	50.0	-16.3	White
44	5.130M	33.4	+0.0	33.4	50.0	-16.6	White
45	6.535M	33.4	+0.0	33.4	50.0	-16.6	White
46	6.743M	33.4	+0.0	33.4	50.0	-16.6	White
47	17.653M	33.4	+0.0	33.4	50.0	-16.6	White
48	5.113M	33.3	+0.0	33.3	50.0	-16.7	White
49	6.842M	33.3	+0.0	33.3	50.0	-16.7	White
50	644.000k Ave	25.1	+0.0	25.1	46.0	-20.9	White
^	640.860k	44.1	+0.0	44.1	46.0	-1.9	White
						See Average Data Above	
52	837.000k Ave	20.6	+0.0	20.6	46.0	-25.5	White
^	837.204k	42.3	+0.0	42.3	46.0	-3.7	White
						See Average Data Above	

54	647.000k	20.2	+0.0	20.2	46.0	-25.8	White
Ave							
^	643.769k	43.8	+0.0	43.8	46.0	-2.2	White
					See Average Data		
					Above		
^	647.405k	43.6	+0.0	43.6	46.0	-2.4	White
					See Average Data		
					Above		
57	150.000k	21.4	+0.0	21.4	56.0	-34.6	White
Ave							
^	150.000k	54.6	+0.0	54.6	56.0	-1.4	White
					See Average Data		
					Above		

CKC Laboratories, Inc. Date: 08/12/2003 Time: 18:33:08 Motorola BCS WO#: 80377  
 FCC 15.207 COND [AVE] Test Lead: VWhite 110V 60Hz Sequence#: 2  
 MOTOROLA BCS, SBG 900



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**  
 Specification: **FCC 15.209**  
 Work Order #: **80377** Date: 08/12/2003  
 Test Type: **Maximized emission** Time: 14:52:44  
 Equipment: **Wireless Cable Modem** Sequence#: 7  
 Manufacturer: Motorola BCS Tested By: Stuart Yamamoto  
 Model: SBG 900 Rev. 3  
 S/N: 00B066682DC

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
AC to 12VDC Adapter	Liteon	PB-1090-1L1	
Wireless Cable Modem*	Motorola BCS	SBG 900 Rev. 3	00B066682DC

***Support Devices:***

Function	Manufacturer	Model #	S/N
Head End	Cisco	uBR-MC11C	CN1ISS0AA
C6U Converter	General Instruments	C6U	J5M7000101358
Parallel Printer	SII	DPU-414	1033083A
Ethernet Hub	Netgear	DS104	DS141408355155
Laptop Computer	Dell	PP05L	CN-04V21248643-349-0330
Laptop Computer	Toshiba	Tecra 730 CDT	12638047-3
Mouse	Logitech	M-S35	LZB73905320

***Test Conditions / Notes:***

The EUT is a cable modem. The EUT's USB port is connected to the local desktop computer via shielded cable. The EUT's ethernet port is connected to the local desktop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Data sheet represents from EUT transmitting on channels 1, 6, and 11. Frequency range of measurement = 9 kHz - 25 GHz. 12VDC via AC-DC Adapter (110VAC 60Hz), 26°C, 42% relative humidity.

***Transducer Legend:***

T1=Cable P1510 13' GoreTex SMA	T2=Cable#20 Heliax 48ft
T3=Horn 6246_091003	T4=HP83017A Preamp 091103

***Measurement Data:***

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	1608.046M	55.3	+1.3	+4.5	+25.8	-37.9	+0.0	49.0	54.0	-5.0	Horiz
2	1624.657M	54.9	+1.4	+4.6	+25.9	-37.9	+0.0	48.9	54.0	-5.1	Horiz
3	1250.040M	55.5	+1.2	+4.0	+25.3	-39.4	+0.0	46.6	54.0	-7.4	Vert
4	7386.019M Ave	35.6	+3.1	+10.4	+35.9	-39.0	+0.0	46.0	54.0	-8.0	Horiz
^	7386.019M	47.6	+3.1	+10.4	+35.9	-39.0	+0.0	58.0	54.0	+4.0	Horiz

6	7310.950M	35.8	+3.0	+10.4	+35.7	-39.0	+0.0	45.9	54.0	-8.1	Horiz
^	7310.950M	47.8	+3.0	+10.4	+35.7	-39.0	+0.0	57.9	54.0	+3.9	Horiz
8	4873.996M	40.4	+2.4	+8.1	+33.4	-38.5	+0.0	45.8	54.0	-8.2	Horiz
^	4873.996M	52.4	+2.4	+8.1	+33.4	-38.5	+0.0	57.8	54.0	+3.8	Horiz
10	4923.961M	40.1	+2.4	+8.2	+33.4	-38.3	+0.0	45.8	54.0	-8.2	Vert
^	4923.961M	52.1	+2.4	+8.2	+33.4	-38.3	+0.0	57.8	54.0	+3.8	Vert
12	4924.007M	40.0	+2.4	+8.2	+33.4	-38.3	+0.0	45.7	54.0	-8.3	Horiz
^	4924.007M	51.1	+2.4	+8.2	+33.4	-38.3	+0.0	56.8	54.0	+2.8	Horiz
14	4823.952M	40.5	+2.4	+8.1	+33.3	-38.7	+0.0	45.6	54.0	-8.4	Horiz
^	4823.952M	52.5	+2.4	+8.1	+33.3	-38.7	+0.0	57.6	54.0	+3.6	Horiz
^	4823.900M	38.2	+2.4	+8.1	+33.3	-38.7	+0.0	43.3	54.0	-10.7	Horiz
17	7385.970M	34.3	+3.1	+10.4	+35.9	-39.0	+0.0	44.7	54.0	-9.3	Vert
^	7385.970M	46.3	+3.1	+10.4	+35.9	-39.0	+0.0	56.7	54.0	+2.7	Vert
19	4824.010M	39.6	+2.4	+8.1	+33.3	-38.7	+0.0	44.7	54.0	-9.3	Vert
^	4824.010M	51.4	+2.4	+8.1	+33.3	-38.7	+0.0	56.5	54.0	+2.5	Vert
^	4823.988M	36.0	+2.4	+8.1	+33.3	-38.7	+0.0	41.1	54.0	-12.9	Vert
22	7311.038M	34.6	+3.0	+10.4	+35.7	-39.0	+0.0	44.7	54.0	-9.3	Vert
^	7311.038M	46.6	+3.0	+10.4	+35.7	-39.0	+0.0	56.7	54.0	+2.7	Vert
24	1624.675M	47.2	+1.4	+4.6	+25.9	-37.9	+0.0	41.2	54.0	-12.8	Vert
^	1624.675M	59.2	+1.4	+4.6	+25.9	-37.9	+0.0	53.2	54.0	-0.8	Vert
26	1150.034M	44.9	+1.2	+3.9	+25.4	-39.9	+0.0	35.5	54.0	-18.5	Vert
27	1608.014M	41.7	+1.3	+4.5	+25.8	-37.9	+0.0	35.4	54.0	-18.6	Horiz
28	4874.013M	28.2	+2.4	+8.1	+33.4	-38.5	+0.0	33.6	54.0	-20.4	Vert
^	4873.995M	52.5	+2.4	+8.1	+33.4	-38.5	+0.0	57.9	54.0	+3.9	Vert

30	1150.041M	42.7	+1.2	+3.9	+25.4	-39.9	+0.0	33.3	54.0	-20.7	Horiz
31	1607.986M	32.6	+1.3	+4.5	+25.8	-37.9	+0.0	26.3	54.0	-27.7	Vert
Ave											
^	1607.995M	59.6	+1.3	+4.5	+25.8	-37.9	+0.0	53.3	54.0	-0.7	Vert
^	1607.986M	42.7	+1.3	+4.5	+25.8	-37.9	+0.0	36.4	54.0	-17.6	Vert

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**  
 Specification: **FCC 15.247(c) OATS -20dBc**  
 Work Order #: **80377** Date: 08/12/2003  
 Test Type: **Maximized emission** Time: 14:52:44  
 Equipment: **Wireless Cable Modem** Sequence #: 7  
 Manufacturer: Motorola BCS Tested By: Stuart Yamamoto  
 Model: SBG 900i Rev. 3  
 S/N: 00B066682DC

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
AC to 12VDC Adaptor	Liteon	PB-1090-1L1	
Wireless Cable Modem*	Motorola BCS	SBG 900i Rev. 3	00B066682DC

***Support Devices:***

Function	Manufacturer	Model #	S/N
Head End	Cisco	uBR-MC11C	CN1ISS0AA
C6U Converter	General Instruments	C6U	J5M7000101358
Wireless Cable Modem	Motorola BCS	SBG 900 Rev. 2	NA
Parallel Printer	SII	DPU-414	1033083A
Ethernet Hub	Netgear	DS104	DS141408355155
Laptop Computer	Dell	PP05L	CN-04V21248643-349-0330
Laptop Computer	Toshiba	Tecra 730 CDT	12638047-3
Mouse	Logitech	M-S35	LZB73905320

***Test Conditions / Notes:***

The EUT is a cable modem. The EUT's USB port is connected to the local desktop computer via shielded cable. The EUT's ethernet ports is connected to the local desktop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The desktop computer and one laptop computer are running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Data sheet represents from EUT transmitting on channel 1, 6, and 11. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 3 0 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25 MHz; RBW=1 MHz, VBW=1 MHz. 12VDC via AC-DC Adaptor (110VAC 60Hz), 26°C, 42% relative humidity.

***Transducer Legend:***

T1=Cable Heliax #17 84ft(10 meter)	T2=Horn AN 01646 1-18 GHz (Brea)
T3=HF Preamp Cal. HP-83017A,S/N- 3123A00282	T4=Cable #19 54ft Heliax 091103
T5=12' SMA Gore cable #1337 121603	T6=10dB Attenuator
T7=3dB Attenuator	T8=HPF 3.5 GHz High Pass
T9=HPF_AN02117_3.5GHz_060605	T10=Cable P1510 13' GoreTex SMA
T11=Cable#20 Heliax 48ft	T12=Horn 6246_091003
T13=HP83017A Preamp 091103	

<b>Measurement Data:</b>			Reading listed by margin.				Test Distance: 3 Meters				
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11	T12					
			T13								
	MHz	dB $\mu$ V	dB	dB	dB	dB	Table	dB $\mu$ V/m	dB $\mu$ V/m	dB	Ant
1	9847.983M	43.7	+0.0	+0.0	+0.0	+0.0	+0.0	61.9	90.9	-29.0	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.6	+12.2	+38.9					
			-36.5								
2	9747.958M	43.6	+0.0	+0.0	+0.0	+0.0	+0.0	61.3	90.9	-29.6	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.6	+12.1	+38.5					
			-36.5								
3	9648.018M	43.7	+0.0	+0.0	+0.0	+0.0	+0.0	60.9	90.9	-30.0	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.5	+12.0	+38.1					
			-36.4								
4	9648.034M	43.5	+0.0	+0.0	+0.0	+0.0	+0.0	60.7	90.9	-30.2	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.5	+12.0	+38.1					
			-36.4								
5	1641.319M	61.0	+0.0	+0.0	+0.0	+0.0	+0.0	55.1	90.9	-35.8	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+1.4	+4.6	+26.0					
			-37.9								
6	1641.310M	56.4	+0.0	+0.0	+0.0	+0.0	+0.0	50.5	90.9	-40.4	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+1.4	+4.6	+26.0					
			-37.9								
7	1745.000M	40.5	+0.0	+0.0	+0.0	+0.0	+0.0	49.5	90.9	-41.4	Vert
			+0.0	+0.0	+0.0	+0.0					
8	1728.059M	40.5	+4.7	+25.8	-39.5	+3.1	+0.0	49.3	90.9	-41.6	Horiz
			+1.7	+10.0	+3.0						
9	1745.001M	40.2	+4.7	+25.9	-39.4	+3.1	+0.0	49.2	90.9	-41.7	Horiz
			+1.7	+10.0	+3.0						
10	1250.040M	55.5	+0.0	+0.0	+0.0	+0.0	+0.0	46.6	90.9	-44.3	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+1.2	+4.0	+25.3					
			-39.4								

11	9848.023M	26.1	+0.0	+0.0	+0.0	+0.0	+0.0	44.3	90.9	-46.6	Vert
	Ave		+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.6	+12.2	+38.9					
			-36.5								
^	9848.004M	48.7	+0.0	+0.0	+0.0	+0.0	+0.0	66.9	90.9	-24.0	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.6	+12.2	+38.9					
			-36.5								
13	9748.031M	26.3	+0.0	+0.0	+0.0	+0.0	+0.0	44.0	90.9	-46.9	Vert
	Ave		+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.6	+12.1	+38.5					
			-36.5								
^	9747.950M	45.9	+0.0	+0.0	+0.0	+0.0	+0.0	63.6	90.9	-27.3	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.6	+12.1	+38.5					
			-36.5								
15	1728.053M	32.7	+0.0	+0.0	+0.0	+0.0	+0.0	41.5	90.9	-49.4	Vert
	Ave		+0.0	+0.0	+0.0	+0.0					
^	1728.053M	41.8	+0.0	+0.0	+0.0	+0.0	+0.0	50.6	90.9	-40.3	Vert
			+0.0	+0.0	+0.0	+0.0					
17	7236.000M	21.0	+0.0	+0.0	+0.0	+0.0	+0.0	21.0	90.9	-69.9	Vert
	Ave		+0.0	+0.0	+0.0	+0.0					
^	7236.035M	47.4	+0.0	+0.0	+0.0	+0.0	+0.0	57.3	90.9	-33.6	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.0	+10.5	+35.5					
			-39.1								
^	7236.000M	33.0	+0.0	+0.0	+0.0	+0.0	+0.0	33.0	90.9	-57.9	Vert
			+0.0	+0.0	+0.0	+0.0					
20	7236.000M	20.9	+0.0	+0.0	+0.0	+0.0	+0.0	20.9	90.9	-70.0	Horiz
	Ave		+0.0	+0.0	+0.0	+0.0					
^	7236.034M	46.3	+0.0	+0.0	+0.0	+0.0	+0.0	56.2	90.9	-34.7	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+3.0	+10.5	+35.5					
			-39.1								
^	7235.950M	34.0	+0.0	+0.0	+0.0	+0.0	+0.0	34.0	90.9	-56.9	Horiz
			+0.0	+0.0	+0.0	+0.0					

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**  
 Specification: **FCC 15.247 Antenna Conducted**  
 Work Order #: **80377** Date: 08/08/2003  
 Test Type: **Maximized emission** Time: 16:37:31  
 Equipment: **Wireless Cable Modem** Sequence#: 4  
 Manufacturer: Motorola BCS Tested By: Stuart Yamamoto  
 Model: SBG 900 Rev. 3  
 S/N: 00B066682DC

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
Wireless Cable Modem*	Motorola BCS	SBG 900 Rev. 3	00B066682DC
AC to 12Vdc Adapter	Lite-ON	PA-1090-1L1	

***Support Devices:***

Function	Manufacturer	Model #	S/N
Head End	Cisco	uBR-MC11C	CN1ISS0AA
C6U Converter	General Instruments	C6U	J5M7000101358
Parallel Printer	SII	DPU-414	1033083A
Ethernet Hub	Netgear	DS104	DS141408355155
Mouse	Logitech	M-S35	LZB73905320
Laptop Computer	Toshiba	Tecra 730 CDT	12638047-3
Laptop Computer	Dell	PP05L	CN-04V21248643-349-0330
Parallel Printer	SII	DPU-414	1033083A

***Test Conditions / Notes:***

The EUT is a cable modem. The EUT's USB port is connected to the local laptop computer via shielded USB cable. The EUT's ethernet port is connected to the local laptop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Tx = Ch1 = 2.412 GHz. Frequency range of measurement = 9 kHz to 25 GHz. Voltage to EUT is 12 VDC via AC-DC Adapter (110VAC 60Hz). Temperature: 22°C, Humidity: 48%, Pressure: 100kPa.

***Transducer Legend:***

<b><i>Measurement Data:</i></b>			Reading listed by margin.								Test Distance: None			
#	Freq MHz	Rdng dB $\mu$ V	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant							
1	2520.599M	62.7	+0.0	62.7	94.0	-31.3	None							
2	4824.178M	58.6	+0.0	58.6	94.0	-35.4	None							
3	7237.056M	57.5	+0.0	57.5	94.0	-36.5	None							
4	10519.620M	55.2	+0.0	55.2	94.0	-38.8	None							
5	3215.842M	52.6	+0.0	52.6	94.0	-41.4	None							
6	1607.907M	52.4	+0.0	52.4	94.0	-41.6	None							

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**  
 Specification: **FCC 15.247 Antenna Conducted**  
 Work Order #: **80377** Date: 08/08/2003  
 Test Type: **Maximized emission** Time: 16:46:58  
 Equipment: **Wireless Cable Modem** Sequence#: 5  
 Manufacturer: Motorola BCS Tested By: Stuart Yamamoto  
 Model: SBG 900 Rev. 3  
 S/N: 00B066682DC

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
Wireless Cable Modem*	Motorola BCS	SBG 900 Rev. 3	00B066682DC
AC to 12VDC Adapter	Lite-ON	PA-1090-1L1	

***Support Devices:***

Function	Manufacturer	Model #	S/N
Head End	Cisco	uBR-MC11C	CN1ISS0AA
C6U Converter	General Instruments	C6U	J5M7000101358
Parallel Printer	SII	DPU-414	1033083A
Ethernet Hub	Netgear	DS104	DS141408355155
Mouse	Logitech	M-S35	LZB73905320
Laptop Computer	Toshiba	Tecra 730 CDT	12638047-3
Laptop Computer	Dell	PP05L	CN-04V21248643-349-0330
Parallel Printer	SII	DPU-414	1033083A

***Test Conditions / Notes:***

The EUT is a cable modem. The EUT's USB port is connected to the local laptop computer via shielded USB cable. The EUT's ethernet port is connected to the local laptop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Tx = Ch6= 2.437 GHz. Frequency range of measurement = 9 kHz to 25 GHz. Voltage to EUT is 12 VDC via AC-DC Adapter (110VAC 60Hz) Temperature: 22°C, Humidity: 48%, Pressure: 100kPa.

***Transducer Legend:***


<b><i>Measurement Data:</i></b>			Reading listed by margin.								Test Distance: None			
#	Freq MHz	Rdng dB $\mu$ V	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant							
1	2532.442M	61.6	+0.0	61.6	93.9	-32.3	None							
2	7311.085M	59.2	+0.0	59.2	93.9	-34.7	None							
3	4874.042M	58.4	+0.0	58.4	93.9	-35.5	None							
4	10519.600M	54.9	+0.0	54.9	93.9	-39.0	None							
5	9747.918M	53.4	+0.0	53.4	93.9	-40.5	None							
6	1624.661M	51.7	+0.0	51.7	93.9	-42.2	None							

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Motorola BCS**  
 Specification: **FCC 15.247 Antenna Conducted**  
 Work Order #: **80377** Date: 08/08/2003  
 Test Type: **Maximized emission** Time: 16:55:49  
 Equipment: **Wireless Cable Modem** Sequence#: 6  
 Manufacturer: Motorola BCS Tested By: Stuart Yamamoto  
 Model: SBG 900 Rev. 3  
 S/N: 00B066682DC

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
AC to 12Vdc Adapter	Lite-ON	PA-1090-1	
Wireless Cable Modem*	Motorola BCS	SBG 900 Rev. 3	00B066682DC

***Support Devices:***

Function	Manufacturer	Model #	S/N
Head End	Cisco	uBR-MC11C	CN1ISS0AA
C6U Converter	General Instruments	C6U	J5M7000101358
Parallel Printer	SII	DPU-414	1033083A
Ethernet Hub	Netgear	DS104	DS141408355155
Mouse	Logitech	M-S35	LZB73905320
Laptop Computer	Toshiba	Tecra 730 CDT	12638047-3
Laptop Computer	Dell	PP05L	CN-04V21248643-349-0330
Parallel Printer	SII	DPU-414	1033083A

***Test Conditions / Notes:***

The EUT is a cable modem. The EUT's USB port is connected to the local laptop computer via shielded USB cable. The EUT's ethernet port is connected to the local laptop computer via unshielded cat. 5 cable. The F connector port is connected to the remotely located support equipment. The laptop computers are running hyperterminal and are pinging the ethernet through MS DOS. The EUT is transmitting. Tx = Ch11= 2.462 GHz. Frequency range of measurement = 9 kHz to 25 GHz. Voltage to EUT is 12 VDC via AC-DC Adapter (110VAC 60Hz). Temperature: 22°C, Humidity: 48%, Pressure: 100kPa.

***Transducer Legend:***

<b><i>Measurement Data:</i></b>			Reading listed by margin.								Test Distance: None			
#	Freq MHz	Rdng dB $\mu$ V	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant							
1	2548.994M	60.8	+0.0	60.8	94.1	-33.3	None							
2	7385.723M	60.4	+0.0	60.4	94.1	-33.7	None							
3	4923.979M	58.4	+0.0	58.4	94.1	-35.7	None							
4	10519.540M	55.2	+0.0	55.2	94.1	-38.9	None							
5	9847.476M	52.5	+0.0	52.5	94.1	-41.6	None							
6	1641.316M	51.2	+0.0	51.2	94.1	-42.9	None							