Exhibit 6: Test Report

TEST REPORT FROM:

COMMUNICATION CERTIFICATION LABORATORY
1940 W. Alexander Street
Salt Lake City, Utah
84119-2039

Type of Report: Certification

TEST OF: 3CRWE50194

FCC ID: DF63CRWE50194

To FCC PART 15.247, Subpart C

Test Report Serial No: 73-7325

Applicant:

3Com Corporation
5400 Bayfront Plaza
Santa Clara, CA 94024

Date(s) of Test: October 12 – 13, 2000

Issue Date: October 20, 2000

Equipment Receipt Date: October 12, 2000

CERTIFICATION OF ENGINEERING REPORT

This report has been prepared by Communication Certification Laboratory to determine compliance of the device described below with the requirements of FCC PART 15.247, Subpart C. This report may be reproduced in full, partial reproduction may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

- Applicant: 3Com Corporation
- Manufacturer: Accton Technology Corporation
- Brand Name: 3Com
- Model Number: 3CRWE50194
- FCC ID: DF63CRWE50194

On this 20th day of October 2000, I, individually, and for Communication Certification Laboratory, certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge, and are made in good faith.

COMMUNICATION CERTIFICATION LABORATORY

William S. Hurst

Checked by: William S. Hurst, P.E.
Vice President

Roger J. Midgley

Tested by: Roger J. Midgley
EMC Engineering Manager

SECTION 1. CLIENT INFORMATION AND RESPONSIBLE PARTY:

1.1 Applicant:

Company Name: 3Com Corporation
5400 Bayfront Plaza
Santa Clara, CA 94024

Contact Name: Daniel Lawless
Title: Project Manger, Regulatory Affairs and Approvals

1.2 Manufacturer:

Company Name: Accton Technology Corporation
No. 1 Creation Rd. III
Science-based Industrial Park
Hsinchu 300
Taiwan, R.O.C.

Contact Name: Steven Chang
Title: Director R&D

SECTION 2. EQUIPMENT UNDER TEST (EUT)

2.1 Identification of EUT:

Trade Name:	3Com
Model Name or Number:	3CRWE50194
Serial Number:	N/A
Country of Manufacture:	Taiwan

2.2 Description of EUT:

The 3CRWE50194 (DAFFY) is a direct sequence spread spectrum radio designed as a residential gateway product with wireless LAN IEEE802.11b, 10/100Mbps Ethernet LAN connectivity and an Ethernet WAN interface. DAFFY1.0 allows the LAN users, either connecting through Ethernet network or wireless LAN, to be connected to the Internet via an Ethernet port through any xDSL TA or Cable modem. The device also supports network allocation translation (NAT), dynamic host connectivity protocol (DHCP), advanced packet filtering with hacker attack monitoring, logging and stateful packet inspection (Firewall) and wireless to wired Ethernet bridging (AP).

The 3CRWE50194 operates on 6 VDC supplied via a 120 VAC to 6 VDC power supply. The 3CRWE50194 was tested with two different power supplies; a Motorola Model M15-060100-30 and a Kentek Electronic Co., Ltd. Model WA15-065.

This report covers the transmitter portion of the device only the receiver/computer peripheral is covered under a separate declaration of conformity report.

2.3 Modification Incorporated/Special Accessories on EUT:

The following modifications were made to the 3CRWE50194 by the Client during testing to comply with the specification. These modifications will be implemented during manufacturing.

1. The grounding to the PC board on the 5 VDC side was improved.
2. The screw on the front side of the PC board was removed.

Signature: ______________________________

Typed Name: Dan Lawless

2.4 EUT and Support Equipment:

The FCC ID numbers for all the EUT and support equipment used during the test (including inserted cards) are listed below:

Brand Name Model Number Serial No.	FCC ID Number	Description	Name of Interface Ports / Interface Cables
BN: 3Com MN: 3CRWE50194 (1)	DF63CRWE50194	LAN Gateway	See Sec 2.5.
BN: 3Com MN: 3CRWE50194	DF63CRWE50194	LAN Gateway (used to terminate LAN ports)	2X (2) / 8 pin Ethernet cable. 3X (2) / 8 pin Ethernet cable.
BN: Gateway MN: ATX Tower TB3 Essential 550	DOC	Personal Computer	Cable/DSL (2) / 8 pin Ethernet cable.
BN: HP MN: Thinkjet	BS46XU2225C	Parallel Printer	Shielded interface cable.
BN: Logitech MN: CC-93-9F	DZL6QBC	Serial Mouse	Unshielded interface cable (3).
BN: Gateway2000 MN: EV500A	BEJCB575B	Monitor	Shielded interface cable (4).
BN: Twinhead MN: P90	DOC	Laptop Computer	1X (2) / 8 pin Shielded Ethernet cable.

Note: (1) EUT.
(2) Interface port connected to EUT (See Section 2.4)
(3) Mouse cable permanently attached.
(4) Monitor’s attached video cable includes manufacturer-supplied ferrite.

The support equipment listed above was not modified in order to achieve compliance with this standard.

2.5 Interface Ports on EUT:

Name of Port	No. of Ports Fitted to EUT.	Cable Descriptions/Length
Cable/DSL	1	8 pin Ethernet cable / 1 to > 10 Meters.
1X/2X/3X LAN	3	8 pin Ethernet cable / 1 to > 10 Meters.

2.6 Channels of Operation:

The 3CRWE50194 operates on the following channels:

Channel	Frequency (MHz)
1	2412.0
2	2417.0
3	2422.0
4	2427.0
5	2432.0
6	2437.0
7	2442.0
8	2447.0
9	2452.0
10	2457.0
11	2462.0

SECTION 3. TEST SPECIFICATION, METHODS & PROCEDURES

3.1 Test Specification:

Title: FCC PART 15.247, Subpart C (47 CFR 15).

Limits and methods of measurement of radio interference characteristics of radio frequency devices. Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.

Purpose of Test: The tests were performed to demonstrate Initial compliance.

3.2 Methods & Procedures:

3.2.1 § 15.247

(a) Operation under the provisions of this section is limited to frequency hopping and direct sequence spread spectrum intentional radiators that comply with the following provisions:

(1) Frequency hoping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The system shall hop to channel frequencies that are selected at the system-hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitting signals.

(i) For frequency hopping systems operating in the 902 - 928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

(ii) Frequency hopping systems operating in the 2400 – 2483.5 MHz and the 5725 – 5850 MHz bands shall use at least 75 hopping frequencies. The maximum allowed 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

(2) For direct sequence systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

(b) The maximum peak output power of the intentional radiator shall not exceed the following:

(1) For frequency hopping systems operating in the 2400 – 2483.5 MHz or 5725 – 5850 MHz band and for all direct sequence systems: 1 watt.

(2) For frequency hopping systems operating in the 902 - 928 MHz band: 1 watt for systems employing at least 50 hopping channels; and 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

(3) Except as show in paragraphs (b)(3)(i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(i) Systems operating in the 2400 – 2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

(ii) Systems operating in the 5725 – 5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

(iii) Fixed, point-to-point operation, as used in paragraphs (b)(3)(i) and (b)(3)(ii) of this section, excludes the use of point-to-multipoint systems, omnidirectional applications, and multiple co-located intentional radiators transmitting the same information. The operator of the spread spectrum intentional radiator or, if the equipment is professionally installed, the installer is responsible for ensuring that the system is used exclusively for fixed, point-to-point operations. The instruction manual furnished with the intentional radiator shall contain language in the installation instructions informing the operator and the installer of the responsibility.

(4) Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission’s guidelines. See Sec. 1.1307(b)(1) of this chapter.

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

(d) For direct sequence systems, the peak power density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

(e) The processing gain of a direct sequence system shall be at least 10 dB. The processing gain represents the improvement to the received signal-to-noise ratio, after filtering to the information bandwidth, from the spreading/despreading function. The processing gain may be determined using one of the following methods:

(1) As measured at the demodulated output of the receiver: the ratio in dB of the signal-to-noise ratio with the system spreading code turned off to the signal-to-noise ratio with the system spreading code turned on.

(2) As measured using the CW jamming margin method: a signal generator is stepped in 50 kHz increments across the passband of the system, recording at each pint the generator level required to produce the recommended Bit Error Rate (BER). This level is the jammer level. The output power of the intentional radiator is measured at the same point. This jammer to signal ratio (J/S) is than calculated, discarding the worst 20% of the J/S data points. The lowest remaining J/S ratio is used to calculate the

processing gain, as follows: Gp = (S/N)o+Mj+Lsys, where Gp = processing gain of the system, (S/N)o = signal to noise ratio required for the chosen BER, Mj = J/S ratio, and Lsys = system losses. Note that total losses in a system, including intentional radiator and receiver, should be assumed to be no more than 2 dB.

(f) Hybrid systems that employ a combination of both direct sequence and frequency hopping modulation techniques shall achieve a processing gain of at least 17 dB from the combined techniques. The frequency hopping operation of the hybrid system, with the direct sequence operation turned off, shall have an average time of occupancy on any frequency not to exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4. The direct sequence operation of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

(g) Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be deigned to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmission over the minimum number of hopping channels specified in this section.

(h) The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopset to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters in not permitted.

NOTE: Spread spectrum systems are sharing these bands on a non-interference basis with systems supporting critical Government requirements that have been allocated the usage of these bands, secondary only to ISM equipment operated under the provisions of part 18 of this chapter. Many of these Government systems are airborne radiolocation systems that emit a high EIRP, which can cause interference to other users. Also, investigations of the effect of spread spectrum interference to U.S. Government operations in the 902-928 MHz band may require a future decrease in the power limits allowed for spread spectrum operation.

3.2.2 § 15.207 Conducted Limits

(a) For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 450 kHz to 30 MHz shall not exceed 250 microvolts. Compliance with the provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

(b) The following option may be employed if the conducted emissions exceed the limits in paragraph (a) of this section when measured using instrumentation employing a quasi-peak detector function: If the level of the emission measured using the quasi-peak instrumentation is 6 dB, or more, higher than the level of the same emission measured with instrumentation having an average detector and a 9 kHz minimum bandwidth, that emission is considered broadband and the level obtained with the quasi-peak detector may be reduced by 13 dB for comparison to the limits. When employing this option, the following conditions shall be observed:

(1) The measuring instrumentation with the average detector shall employ a linear IF amplifier.

(2) Care must be taken not to exceed the dynamic range of the measuring instrument when measuring an emission with a low duty cycle.

(3) The test report required for verification of for an application for a grant of equipment authorization shall contain all details supporting the use of this option.

(c) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operation as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current systems containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μV within the frequency band 535-1705 kHz.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §§ 15.205, 15.209, 15.221, 15.223, 15.225 or 15.227, as appropriate.

(d) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operation while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

3.2.3 Test Procedure

The testing was performed according to the procedures in ANSI C63.4 (1992). Testing was performed at CCL's anechoic chamber located in Salt Lake City, Utah. This site has been fully described in a report submitted to the FCC, and was accepted in a letter dated March 1, 1999 (31040/SIT).

CCL participates in the National Voluntary Laboratory Accreditation Program (NVLAP) and has been accepted under NVLAP Lab Code:100272-0, which is effective until September 30,2001.

For radiated emissions testing that is performed at distances closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

SECTION 4. OPERATION OF EUT DURING TESTING.

4.1 Operating Environment:

Power Supply: 6 VDC
AC Mains Frequency: N/A

4.2 Operating Modes:

Each mode of operation was exercised to produce worst case emissions. The worst case emissions were with the 3CRWE50194 running in the following mode. The 3CRWE50194 was placed in the transmit mode with the same type of modulation that would normally be used during normal operation.

4.3 EUT Exercise Software:

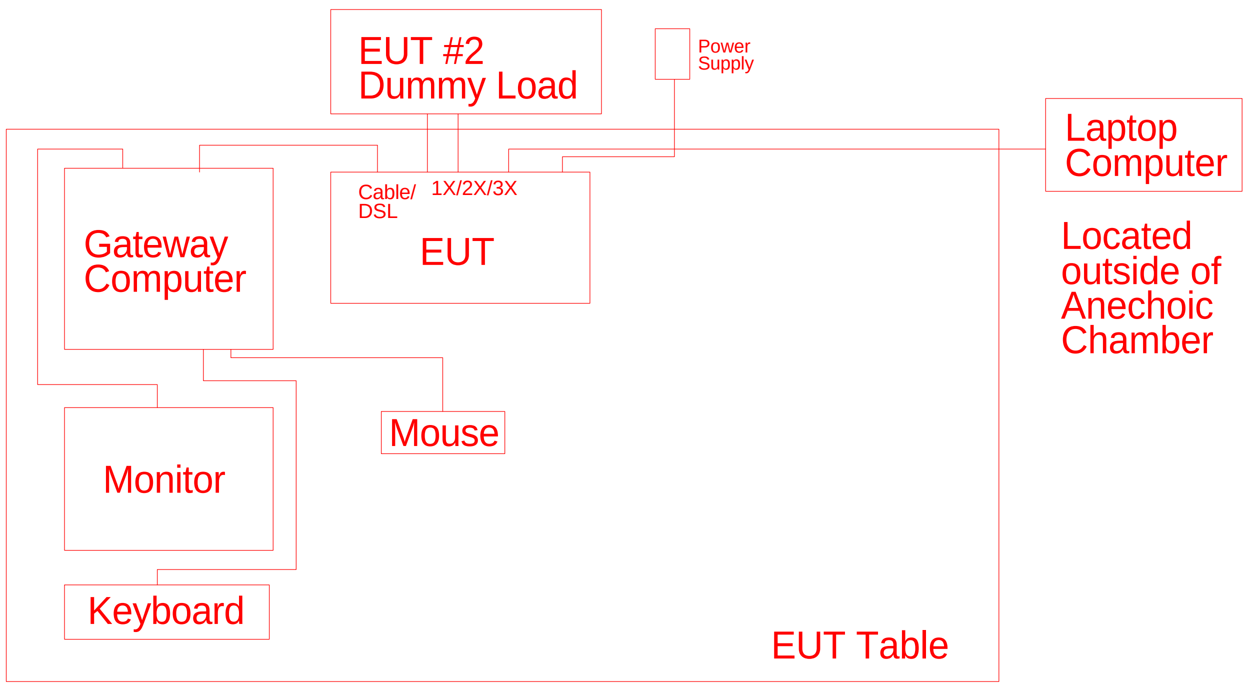
The Gateway computer was running a program that would ping the laptop computer to produce activity on the Ethernet ports and place the 3CRWE50194 in the transmit mode.

4.4 Configuration & Peripherals:

The 3CRWE50194 was placed on the table and connected to the support equipment listed in Section 2.3 via each port listed in Section 2.4. Shown in Section 4.5 is a block diagram of the test configuration.

The 3CRWE50194 was placed on the table and connected to the Ethernet port of the Gateway computer (Cable/DSL port) and to the Ethernet port of the laptop computer (1X port). The additional ports (2X and 3X) were cabled and terminated into a second 3CRWE50194 that was used as a dummy load.

4.5 Block Diagram of Test Configuration:



SECTION 5. SUMMARY OF TEST RESULTS:

5.1 FCC PART 15.247, Subpart C

5.1.1 Summary of Tests:

Section	Test Performed	Frequency Range (MHz)	Result
15.247 (a)(2)	Emission Bandwidth	2400 to 2483.5	Complied
15.247 (b)(1)	Peak Output Power	2400 to 2483.5	Complied
15.247 (C)	Antenna Conducted Spurious Emissions	10 to 25,000	Complied
15.247 (C)	Radiated Spurious Emissions	10 to 25,000	Complied
15.247 (d)	Power Spectral Density	2400 to 2483.5	Complied
15.247 (e)	Processing Gain	2400 to 2483.5	Complied
15.207	Line Conducted Emissions (Hot Lead to Ground)	0.45 to 30	Complied
15.207	Line Conducted Emissions (Neutral Lead to Ground)	0.45 to 30	Complied

5.2 Result

In the configuration tested, the EUT complied with the requirements of the specification.

SECTION 6. MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS:

6.1 General Comments:

This section contains the test results only. Details of the test methods used, etc., can be found in Appendix 1 of this report.

The 3CRWE50194 can operate on eleven channels from 2412.0 MHz to 2462.0 MHz; therefore, the 3CRWE50194 was tested on three different channels (2412.0 MHz, 2437.0 MHz and 2462.0 MHz), the results for each channel are shown below.

6.2 Test Results

6.2.1 § 15.247 (a) (2)

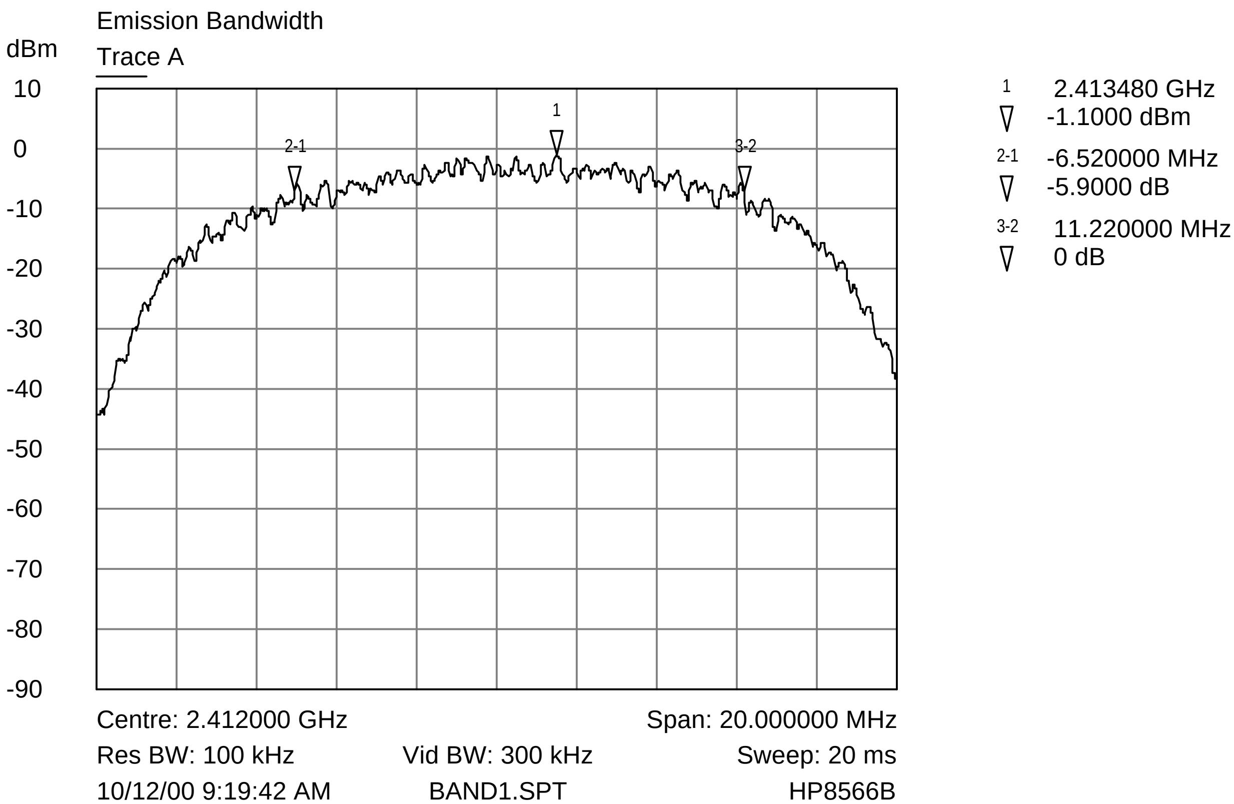
Measurement Data Emission Bandwidth:

A diagram of the test configuration and the test equipment used is enclosed in Appendix 1.

Frequency (MHz)	Emission Bandwidth (MHz)
2412.0	11.22
2437.0	11.22
2462.0	11.32

RESULT

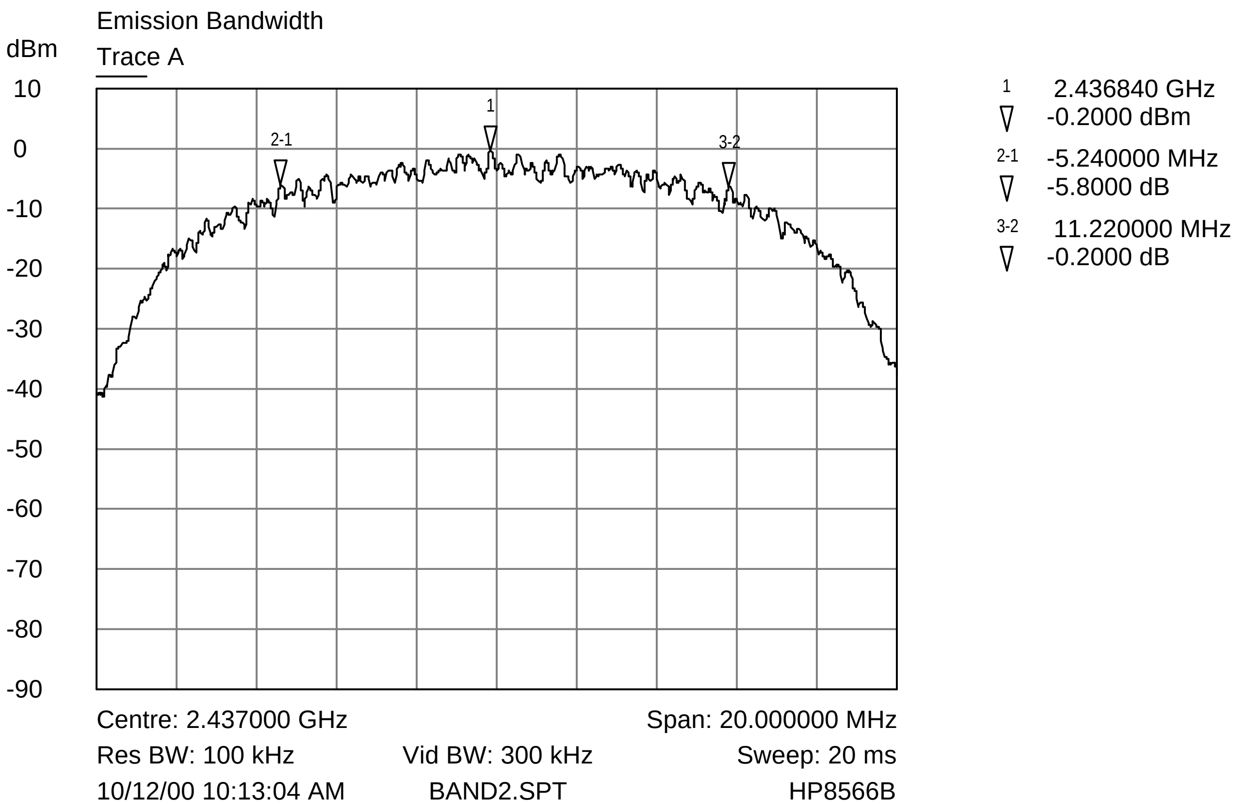
In the configuration tested, the 6 dB bandwidth was greater than 500 kHz; therefore, the EUT complied with the requirements of the specification (see spectrum analyzer plots below).



Emission Bandwidth (Low End of Band)

Trace A Limit 6 dB bandwith > 500 kHz

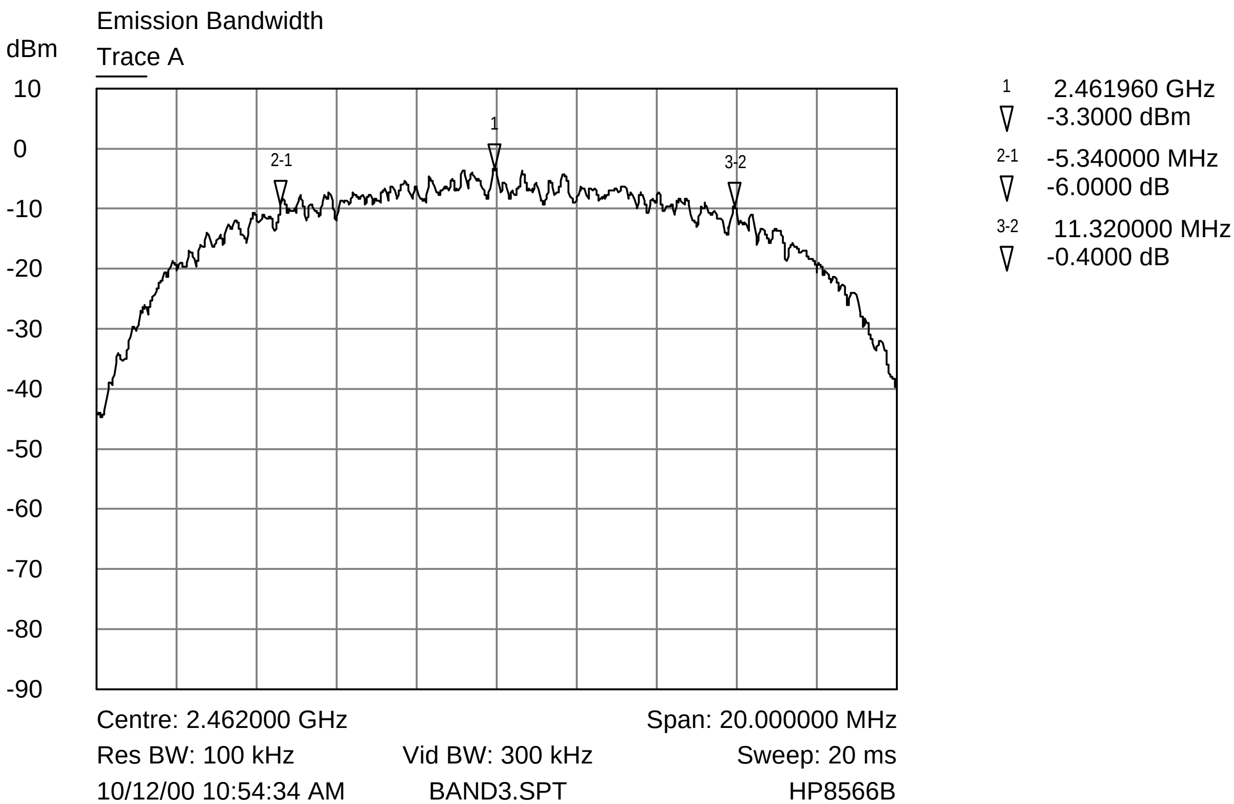
Emission Bandwidth Plot - (Low Channel)



Emission Bandwidth (Middle of Band)

Trace A Limit 6 dB bandwith > 500 kHz

Emission Bandwidth Plot - (Middle Channel)



Emission Bandwidth (High End of Band)

Trace A Limit 6 dB bandwith > 500 kHz

Emission Bandwidth Plot - (High Channel)

6.2.2 § 15.247 (b) Peak Output Power:

Measurement Data:

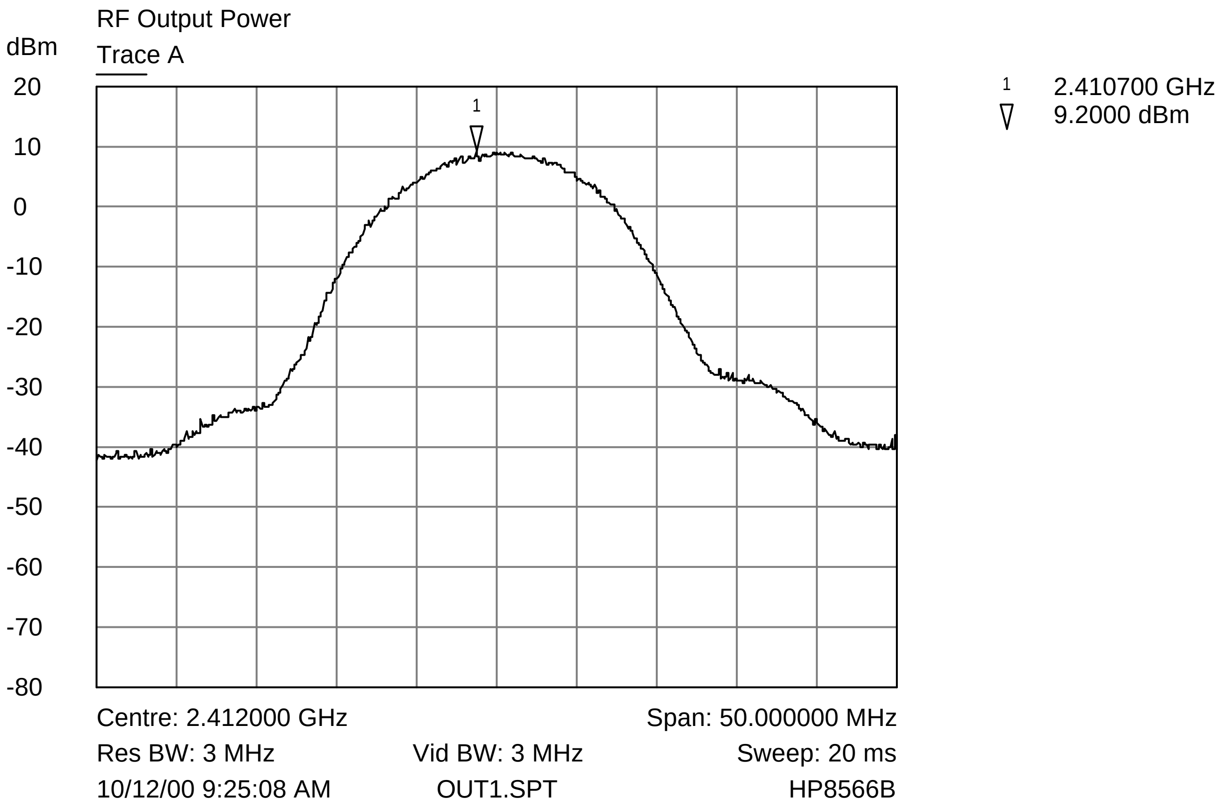
The maximum peak RF Conducted output power measured for this device was 12.0 mW or 10.8 dBm. The maximum antenna gain is 3.0 dBi; therefore, the maximum peak radiated (EIRP) for this device is 24.0 mW or 13.8 dBm. Shown below is the measured peak output power. The maximum directional gain of the antenna is less than 6 dBi; therefore, the maximum output power is not required to be reduced from the value measured.

A diagram of the test configuration and the test equipment used is enclosed in Appendix 1.

Frequency (MHz)	Measured Output Power (dBm)	Measured Output Power (mW)
2412.0	9.2	8.3
2437.0	10.8	12.0
2462.0	7.2	5.3

RESULT

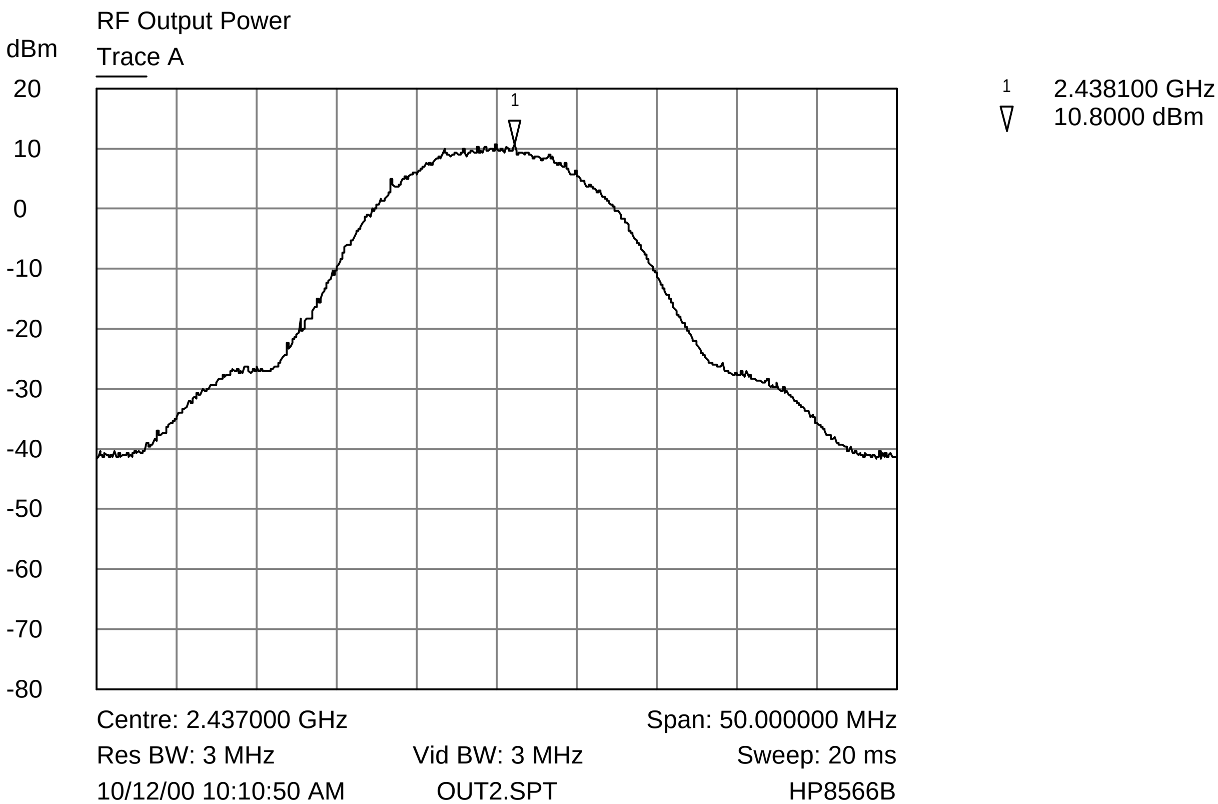
In the configuration tested, the peak conducted power output was less than 1 W (30 dBm); therefore, the EUT complied with the requirements of the specification (see spectrum analyzer plots below).



RF Output Power (Low End of Band)

Trace A Limit Maximum 1 Watt (30 dBm)

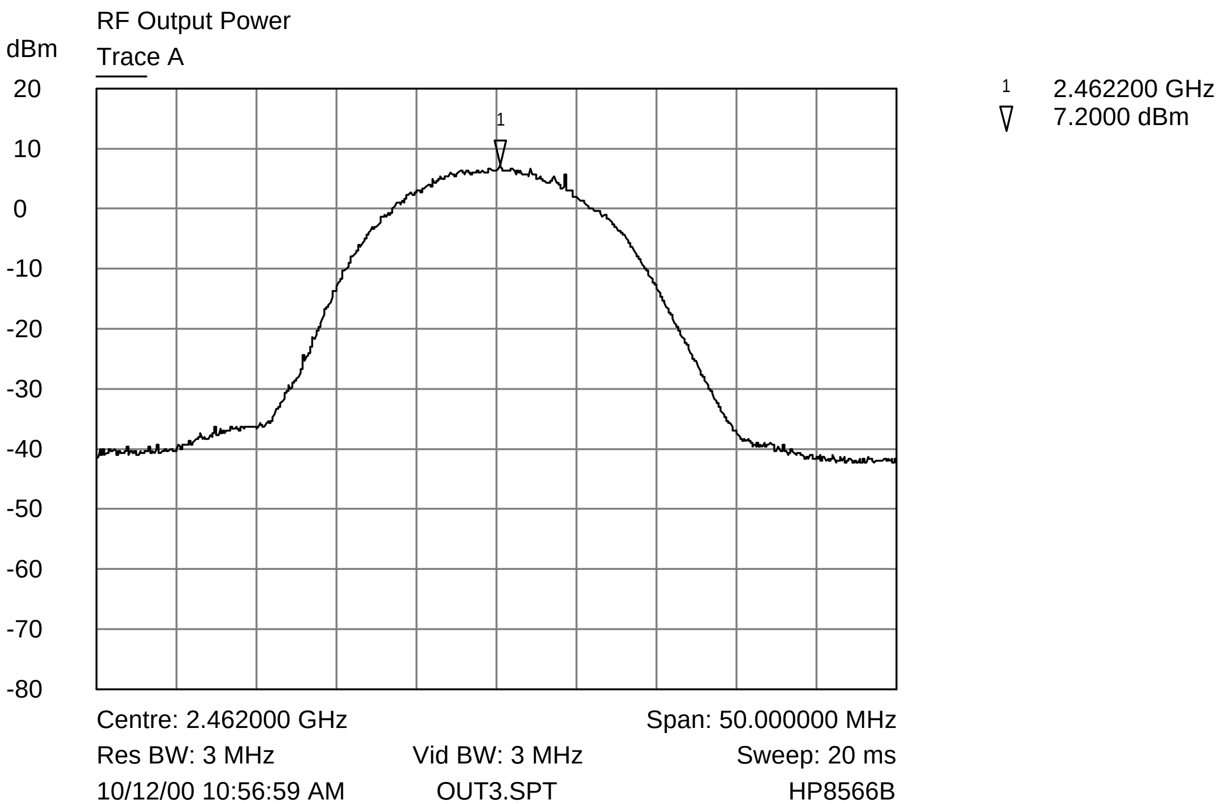
RF Power Output Plot - (Low Channel)



RF Output Power (Middle of Band)

Trace A Limit Maximum 1 Watt (30 dBm)

RF Power Output Plot - (Middle Channel)



RF Output Power (High End of Band)

Trace A Limit Maximum 1 Watt (30 dBm)

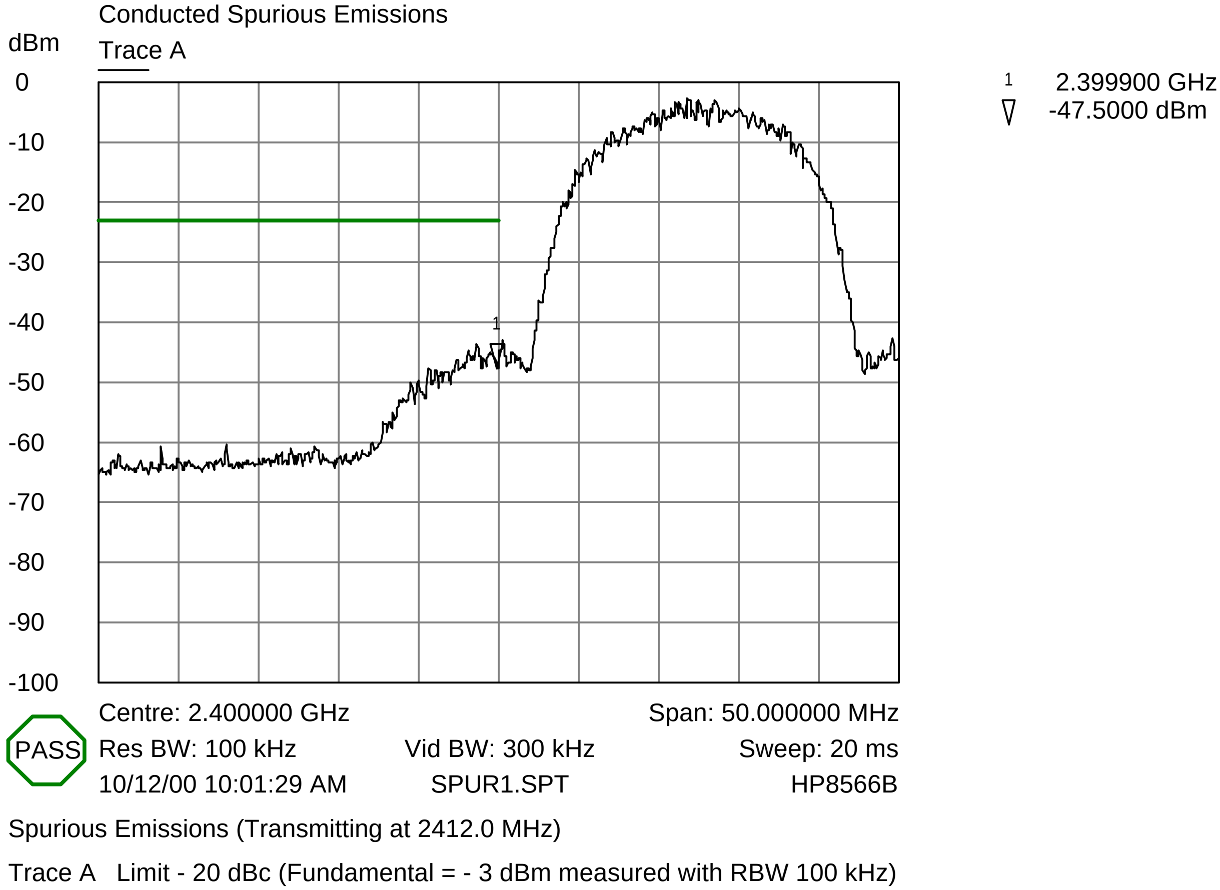
RF Power Output Plot - (High Channel)

6.2.3 § 15.247 (c) Spurious Emissions:

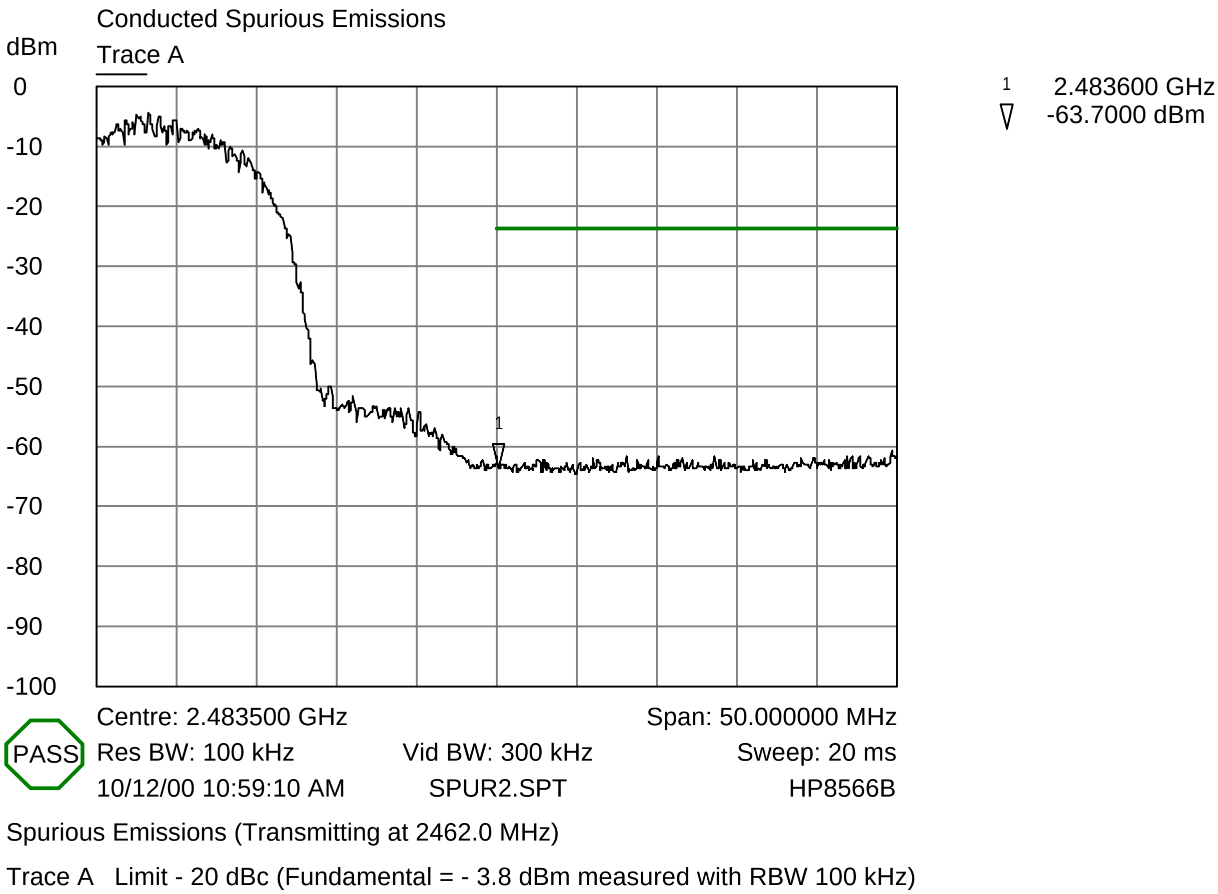
Measurement Data Antenna Conducted Emissions:

The frequency range from 10 MHz to the tenth harmonic of the highest fundamental frequency was investigated to measure any antenna-conducted emissions. Shown below are plots with the 3CRWE50194 tuned to the upper and lower band edges. These demonstrate compliance with the provisions of this section.

A diagram of the test configuration and the test equipment used is enclosed in Appendix 1.



Spurious emissions plot (Transmitting at 2412.0 MHz)



Spurious emissions plot (Transmitting at 2462.0 MHz)

The emissions must be attenuated 20 dB below the highest power level measured within the authorized band as measured with a 100 kHz RBW; the highest level measured with a 100 kHz RBW was –3.0 dBm therefore, the criteria is –3.0 – 20.0 = -23.0 dBm.

Transmitting at 2412.0 MHz			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
10 - 30	11.0	-53.4	-23.0
30 - 200	88.0	-49.1	-23.0
200 - 500	220.0	-59.2	-23.0
500 – 1000	602.0	-61.7	-23.0
1000 - 2000	1809.0	-50.3	-23.0
2000 – 2399.9	2399.9	-45.8	-23.0
2483.6 - 4000	2547.6	-55.7	-23.0
4000 - 6000	4824.0	-59.6	-23.0
6000 - 8000	7236.0	-60.2	-23.0
8000 – 10,000	9648.0	-68.4 *	-23.0
10,000 – 13,000	12,060.0	-67.5 *	-23.0
13,000 – 15,000	14,472.0	-62.4 *	-23.0
15,000 – 18,000	16,884.0	-62.6 *	-23.0
18,000 – 21,000	19,296.0	-57.1 *	-23.0
21,000 – 23,000	21,708.0	-56.3 *	-23.0
23,000 – 25,000	24,120.0	-55.2 *	-23.0
* Noise Floor			

The emissions must be attenuated 20 dB below the highest power level measured within the authorized band as measured with a 100 kHz RBW; the highest level measured with a 100 kHz RBW was –3.0 dBm therefore, the criteria is –0.3 – 20.0 = -20.3 dBm.

Transmitting at 2437.0 MHz			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
10 - 30	11.0	-51.6	-20.3
30 - 200	88.0	-48.8	-23.3
200 - 500	220.0	-59.6	-20.3
500 – 1000	625.5	-56.7	-20.3
1000 - 2000	1846.6	-44.8	-20.3
2000 – 2399.9	2399.9	-61.4	-20.3
2483.6 - 4000	2552.3	-55.0	-20.3
4000 - 6000	4874.0	-59.2	-20.3
6000 - 8000	7311.0	-60.3	-20.3
8000 – 10,000	9748.0	-68.4 *	-20.3
10,000 – 13,000	12,185.0	-67.5 *	-20.3
13,000 – 15,000	14,622.0	-62.4 *	-20.3
15,000 – 18,000	17,059.0	-62.6 *	-20.3
18,000 – 21,000	19,496.0	-57.1 *	-20.3
21,000 – 23,000	21,933.0	-56.3 *	-20.3
23,000 – 25,000	24,370.0	-55.2 *	-20.3
* Noise Floor			

The emissions must be attenuated 20 dB below the highest power level measured within the authorized band as measured with a 100 kHz RBW; the highest level measured with a 100 kHz RBW was –3.0 dBm therefore, the criteria is –3.8 – 20.0 = -23.0 dBm.

Transmitting at 2462.0 MHz			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
10 - 30	11.0	-54.9	-23.8
30 - 200	88.0	-48.9	-23.8
200 - 500	220.0	-59.2	-23.8
500 – 1000	650.6	-61.0	-23.8
1000 - 2000	1884.6	-55.4	-23.8
2000 – 2399.9	2399.9	-53.8	-23.8
2483.6 - 4000	2552.1	-54.4	-23.8
4000 - 6000	4924.0	-60.2	-23.8
6000 - 8000	7386.0	-62.1	-23.8
8000 – 10,000	9848.0	-68.4 *	-23.8
10,000 – 13,000	12,310.0	-67.5 *	-23.8
13,000 – 15,000	14,772.0	-62.4 *	-23.8
15,000 – 18,000	17,234.0	-62.6 *	-23.8
18,000 – 21,000	19,696.0	-57.1 *	-23.8
21,000 – 23,000	22,158.0	-56.3 *	-23.8
23,000 – 25,000	24,620.0	-55.2 *	-23.8
* Noise Floor			

Measurement Data Radiated Emissions Restricted Bands § 15.205:

The frequency range from 10 MHz to 25 GHz was investigated to measure any radiated emissions in the restricted bands.

A diagram of the test configuration and the test equipment used is enclosed in Appendix 1.

AVERAGE FACTOR

The 3CRWE50194 transmits continuously therefore, there is not an average factor for this device.

Vertical Polarity

Transmitting at 2412.0 MHz						
Frequency MHz	Receiver Reading dBμV	Correction Factor dB	Average Factor dB	Corrected Reading dBμV/m	Limit dBμV/m	Margin dB
2483.5 P*	11.4	36.7	0.0	48.1	74.0	-25.9
2483.5 A*	-0.3	36.7	0.0	36.4	54.0	-17.6
4824.0 P*	9.1	44.0	0.0	53.1	74.0	-20.9
4824.0 A*	-0.6	44.0	0.0	43.4	54.0	-10.6
12,060.0 P*	12.9	43.0	0.0	55.9	74.0	-18.1
12,060.0 A*	-1.5	43.0	0.0	41.5	54.0	-12.5
14,472.0 P*	14.5	45.1	0.0	59.6	74.0	-14.4
14,472.0 A*	-0.5	45.1	0.0	44.6	54.0	-9.4
19,296.0 P*	17.4	48.6	0.0	66.0	74.0	-8.0
19,296.0 A*	2.0	48.6	0.0	50.6	54.0	-3.4

P = Peak Detection

A = Average Detection

Note 1: * = No emissions were detected with the antenna 1 meter from the EUT, the indicated readings are the noise floor measurements from the spectrum analyzer

Note 2: There were not any emissions detected in the restricted bands from 10 MHz to the first harmonic.

Transmitting at 2437.0 MHz						
Frequency MHz	Receiver Reading dBμV	Correction Factor dB	Average Factor dB	Corrected Reading dBμV/m	Limit dBμV/m	Margin dB
2483.5 P*	11.4	36.7	0.0	48.1	74.0	-25.9
2483.5 A*	-0.3	36.7	0.0	36.4	54.0	-17.6
4874.0 P*	9.5	44.2	0.0	53.7	74.0	-20.3
4874.0 A*	-0.2	44.2	0.0	44.0	54.0	-10.0
7311.0 P*	12.9	45.6	0.0	58.5	74.0	-15.5
7311.0 A*	1.6	45.6	0.0	47.2	54.0	-6.8
12,185.0 P*	12.9	43.0	0.0	55.9	74.0	-18.1
12,185.0 A*	-1.5	43.0	0.0	41.5	54.0	-12.5
19,496.0 P*	17.4	48.6	0.0	66.0	74.0	-8.0
19,496.0 A*	2.0	48.6	0.0	50.6	54.0	-3.4

P = Peak Detection

A = Average Detection

Note 1: * = No emissions were detected with the antenna 1 meter from the EUT, the indicated readings are the noise floor measurements from the spectrum analyzer

Note 2: There were not any emissions detected in the restricted bands from 10 MHz to the first harmonic.

Transmitting at 2462.0 MHz						
Frequency MHz	Receiver Reading dBμV	Correction Factor dB	Average Factor dB	Corrected Reading dBμV/m	Limit dBμV/m	Margin dB
2483.5 P*	11.4	36.7	0.0	48.1	74.0	-25.9
2483.5 A*	-0.3	36.7	0.0	36.4	54.0	-17.6
4924.0 P*	9.5	44.4	0.0	53.9	74.0	-20.1
4924.0 A*	-0.5	44.4	0.0	43.9	54.0	-10.1
7386.0 P*	12.8	46.0	0.0	58.8	74.0	-15.2
7386.0 A*	1.3	46.0	0.0	47.3	54.0	-6.7
12,310.0 P*	12.9	43.0	0.0	55.9	74.0	-18.1
12,310.0 A*	-1.5	43.0	0.0	41.5	54.0	-12.5
19,696.0 P*	17.4	48.6	0.0	66.0	74.0	-8.0
19,696.0 A*	2.0	48.6	0.0	50.6	54.0	-3.4
22,158.0 P*	16.8	47.2	0.0	64.0	74.0	-10.0
22,158.0 A*	1.8	47.2	0.0	49.0	54.0	-5.0

P = Peak Detection

A = Average Detection

Note 1: * = No emissions were detected with the antenna 1 meter from the EUT, the indicated readings are the noise floor measurements from the spectrum analyzer

Note 2: There were not any emissions detected in the restricted bands from 10 MHz to the first harmonic.

Horizontal Polarity

Transmitting at 2412.0 MHz						
Frequency MHz	Receiver Reading dBμV	Correction Factor dB	Average Factor dB	Corrected Reading dBμV/m	Limit dBμV/m	Margin dB
2483.5 P*	11.4	36.7	0.0	48.1	74.0	-25.9
2483.5 A*	-0.3	36.7	0.0	36.4	54.0	-17.6
4824.0 P*	9.1	44.0	0.0	53.1	74.0	-20.9
4824.0 A*	-0.6	44.0	0.0	43.4	54.0	-10.6
12,060.0 P*	12.9	43.0	0.0	55.9	74.0	-18.1
12,060.0 A*	-1.5	43.0	0.0	41.5	54.0	-12.5
14,472.0 P*	14.5	45.1	0.0	59.6	74.0	-14.4
14,472.0 A*	-0.5	45.1	0.0	44.6	54.0	-9.4
19,296.0 P*	17.4	48.6	0.0	66.0	74.0	-8.0
19,296.0 A*	2.0	48.6	0.0	50.6	54.0	-3.4

P = Peak Detection

A = Average Detection

Note 1: * = No emissions were detected with the antenna 1 meter from the EUT, the indicated readings are the noise floor measurements from the spectrum analyzer

Note 2: There were not any emissions detected in the restricted bands from 10 MHz to the first harmonic.

Transmitting at 2437.0 MHz						
Frequency MHz	Receiver Reading dBμV	Correction Factor dB	Average Factor dB	Corrected Reading dBμV/m	Limit dBμV/m	Margin dB
2483.5 P*	11.4	36.7	0.0	48.1	74.0	-25.9
2483.5 A*	-0.3	36.7	0.0	36.4	54.0	-17.6
4874.0 P*	9.5	44.2	0.0	53.7	74.0	-20.3
4874.0 A*	-0.2	44.2	0.0	44.0	54.0	-10.0
7311.0 P*	12.9	45.6	0.0	58.5	74.0	-15.5
7311.0 A*	1.6	45.6	0.0	47.2	54.0	-6.8
12,185.0 P*	12.9	43.0	0.0	55.9	74.0	-18.1
12,185.0 A*	-1.5	43.0	0.0	41.5	54.0	-12.5
19,496.0 P*	17.4	48.6	0.0	66.0	74.0	-8.0
19,496.0 A*	2.0	48.6	0.0	50.6	54.0	-3.4

P = Peak Detection

A = Average Detection

Note 1: * = No emissions were detected with the antenna 1 meter from the EUT, the indicated readings are the noise floor measurements from the spectrum analyzer

Note 2: There were not any emissions detected in the restricted bands from 10 MHz to the first harmonic.

Transmitting at 2462.0 MHz						
Frequency MHz	Receiver Reading dBμV	Correction Factor dB	Average Factor dB	Corrected Reading dBμV/m	Limit dBμV/m	Margin dB
2483.5 P*	11.4	36.7	0.0	48.1	74.0	-25.9
2483.5 A*	-0.3	36.7	0.0	36.4	54.0	-17.6
4924.0 P*	9.5	44.4	0.0	53.9	74.0	-20.1
4924.0 A*	-0.5	44.4	0.0	43.9	54.0	-10.1
7386.0 P*	12.8	46.0	0.0	58.8	74.0	-15.2
7386.0 A*	1.3	46.0	0.0	47.3	54.0	-6.7
12,310.0 P*	12.9	43.0	0.0	55.9	74.0	-18.1
12,310.0 A*	-1.5	43.0	0.0	41.5	54.0	-12.5
19,696.0 P*	17.4	48.6	0.0	66.0	74.0	-8.0
19,696.0 A*	2.0	48.6	0.0	50.6	54.0	-3.4
22,158.0 P*	16.8	47.2	0.0	64.0	74.0	-10.0
22,158.0 A*	1.8	47.2	0.0	49.0	54.0	-5.0

P = Peak Detection

A = Average Detection

Note 1: * = No emissions were detected with the antenna 1 meter from the EUT, the indicated readings are the noise floor measurements from the spectrum analyzer

Note 2: There were not any emissions detected in the restricted bands from 10 MHz to the first harmonic.

Sample Field Strength Calculation:

The field strength is calculated by adding the Correction Factor (Antenna Factor + Cable Factor), to the measured level from the receiver. The basic equation with a sample calculation is shown below:

FS = RA + CF - AF Where
FS = Field Strength
RA = Receiver Amplitude (Receiver Reading - Amplifier Gain)
CF = Correction Factor (Antenna Factor + Cable Factor)
AF = Average Factor

RESULT

In the configuration tested, the EUT complied with the requirements of the specification.

6.2.4 § 15.247 (d) Power Spectral Density:

Measurement Data:

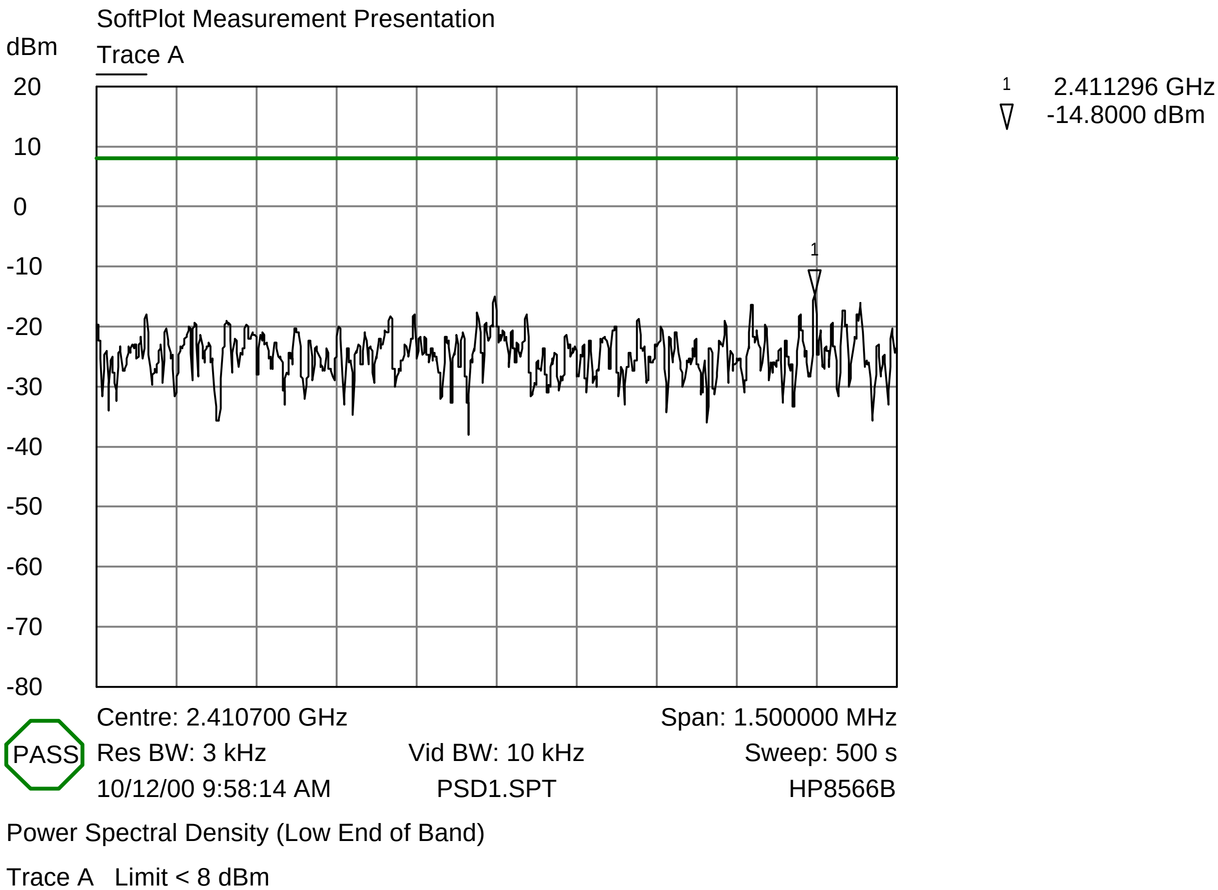
The maximum power spectral density measured for this device was –13.3 dBm. Shown below is the measured power spectral density.

A diagram of the test configuration and the test equipment used is enclosed in Appendix 1.

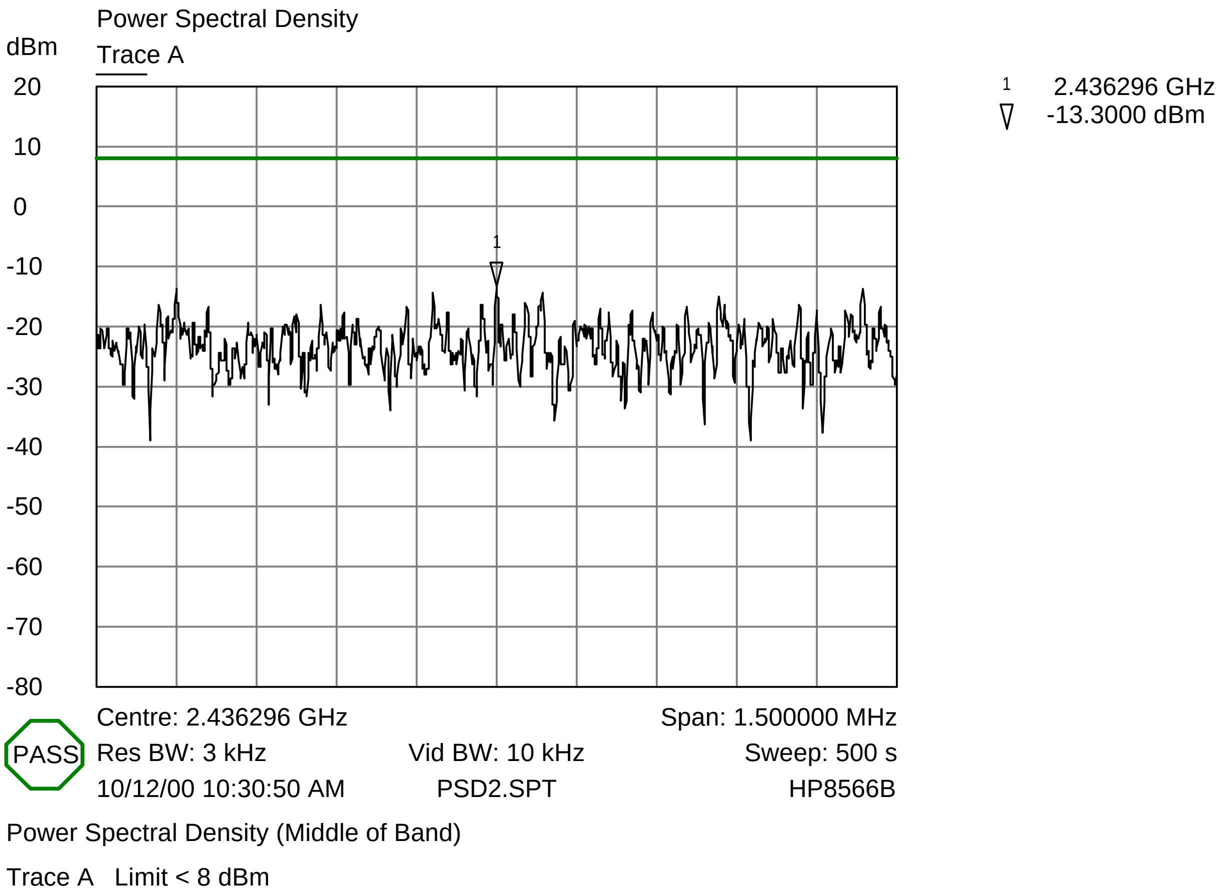
Frequency (MHz)	Measured Power Spectral Density (dBm)
2412.0	-14.8
2437.0	-13.3
2462.0	-16.7

RESULT

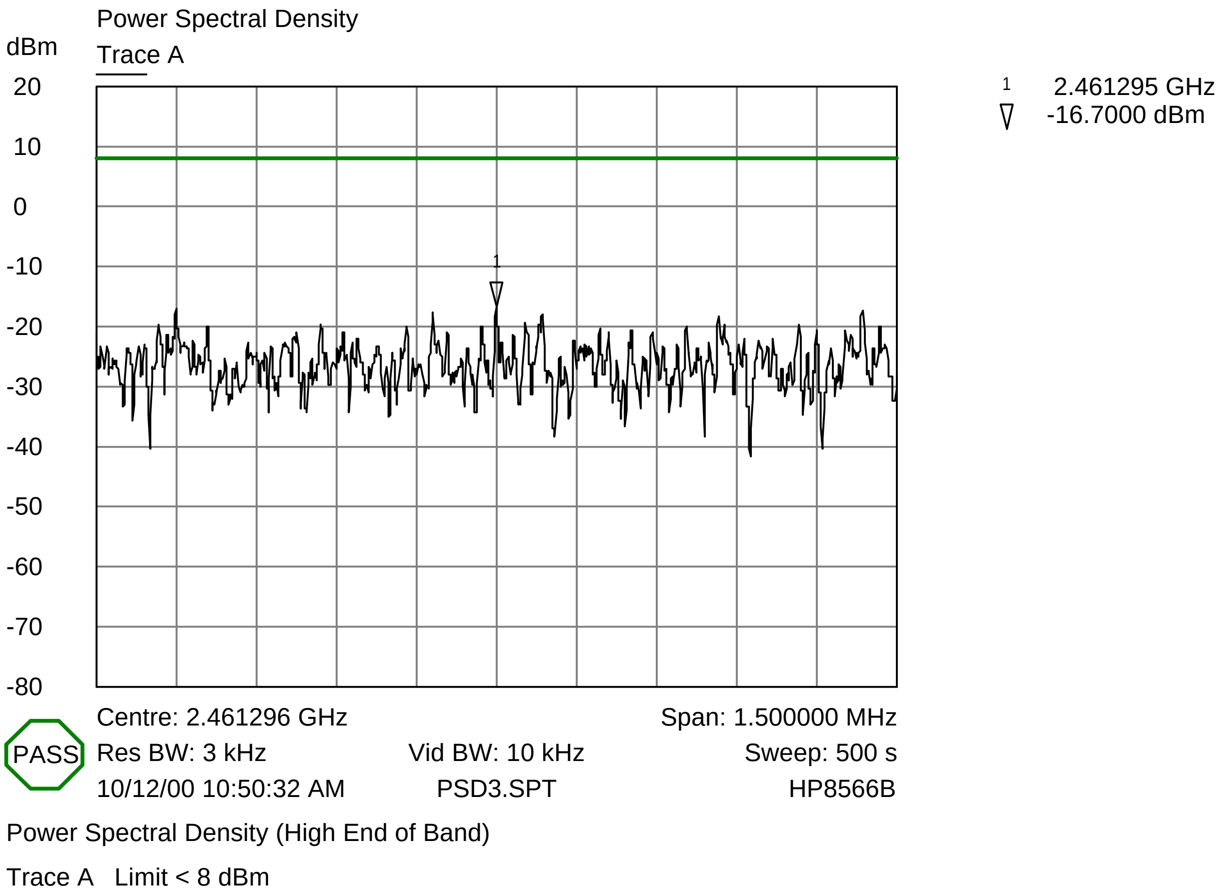
In the configuration tested, the peak power spectral density was less than 8 dBm; therefore, the EUT complied with the requirements of the specification (see spectrum analyzer plots below).



Power Spectral Density Plot (Low Channel)



Power Spectral Density Plot (Middle Channel)



Power Spectral Density Plot (High Channel)

6.2.5 § 15.247 (e) Processing Gain:

The minimum processing gain measured for this device was 11.2 dB.

The 3CRWE50194 uses a Intersil HFA3861B base band chip. The processing gain was measured on an Intersil HWB3163 Rev B WLAN PCMCIA direct sequence transceiver. This transceiver contains the Intersil HFA3861B base band chip; therefore, these measurements are representative of the processing gain for the 3CRWE50194. The processing gain results have been uploaded as a separate pdf file.

6.2.6 § 15.207 Line Conducted Emissions:

The frequency range from 450 kHz to 30 MHz was investigated to measure any AC line conducted emissions. The line-conducted emissions were performed with both the Motorola and Kentek power supplies data for each is shown below.

A diagram of the test configuration and the test equipment used is enclosed in Appendix 1.

Line Conducted Data - (Hot Lead) (Motorola Power Supply)

Frequency MHz	Detector	Measured Level dBμV	Limit dBμV
0.52	Quasi-Peak	47.1	48.0
0.67	Quasi-Peak	47.8	48.0
0.87	Quasi-Peak	45.4	48.0
1.19	Quasi-Peak	45.8	48.0
1.41	Quasi-Peak	43.9	48.0
1.74	Quasi-Peak	43.3	48.0
3.19	Quasi-Peak	43.7	48.0
24.96	Quasi-Peak	39.1	48.0
25.69	Quasi-Peak	39.6	48.0
26.66	Quasi-Peak	41.6	48.0

Frequency MHz	Detector	Measured Level dBμV	Limit dBμV
27.32	Quasi-Peak	41.2	48.0
27.55	Quasi-Peak	40.0	48.0
27.93	Quasi-Peak	39.4	48.0
28.34	Quasi-Peak	38.5	48.0

Line Conducted Data - (Neutral Lead) (Motorola Power Supply)

Frequency MHz	Detector	Measured Level dBμV	Limit dBμV
0.52	Quasi-Peak	44.6	48.0
0.65	Quasi-Peak	47.3	48.0
0.97	Quasi-Peak	45.5	48.0
1.19	Quasi-Peak	45.6	48.0
1.53	Quasi-Peak	45.3	48.0
1.74	Quasi-Peak	44.9	48.0
2.08	Quasi-Peak	43.1	48.0
3.17	Quasi-Peak	45.0	48.0
3.42	Quasi-Peak	42.9	48.0
25.04	Quasi-Peak	38.2	48.0
26.64	Quasi-Peak	41.6	48.0
27.02	Quasi-Peak	41.8	48.0
27.41	Quasi-Peak	40.8	48.0
27.63	Quasi-Peak	40.1	48.0
27.99	Quasi-Peak	39.5	48.0
28.34	Quasi-Peak	38.5	48.0

Line Conducted Data - (Hot Lead) (Kentek Power Supply)

Frequency MHz	Detector	Measured Level dBμV	Limit dBμV
0.46	Peak	40.7	48.0
0.86	Peak	39.5	48.0
2.04	Peak	40.3	48.0
2.27	Peak	39.3	48.0
3.26	Peak	33.1	48.0
12.08	Peak	32.4	48.0
13.89	Peak	35.1	48.0
16.08	Peak	29.2	48.0
18.69	Peak	27.2	48.0
23.84	Peak	33.1	48.0
24.96	Peak	28.5	48.0
28.38	Peak	28.2	48.0

Line Conducted Data - (Neutral Lead) (Kentek Power Supply)

Frequency MHz	Detector	Measured Level dBμV	Limit dBμV
0.46	Quasi-Peak	42.6	48.0
0.96	Peak	40.0	48.0
1.82	Peak	39.3	48.0
2.27	Peak	38.7	48.0
3.42	Peak	32.2	48.0
6.08	Peak	29.5	48.0
12.09	Peak	31.7	48.0
13.94	Peak	33.0	48.0

APPENDIX 1 TEST PROCEDURES AND TEST EQUIPMENT

FCC Sections 15.247 (a)(1)(ii) Emission Bandwidth

The EUT was directly connected to the spectrum analyzer via the antenna output port as shown in the block diagram below.

The measurements were performed on three channels, as per 47 CFR 15.31(m), one near the bottom of the spectrum, one near the middle of the spectrum and one near the top of the spectrum.

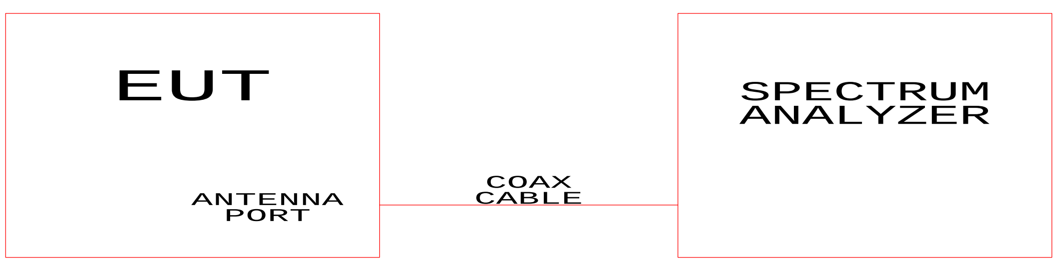
The spectrum analyzer's resolution bandwidth and video bandwidth were set as follows:

RBW = 10 kHz
VBW = 30 kHz

Type of Equipment	Manufacturer	Model Number	Serial Number
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
Low Loss Cable (1 dB)	N/A	N/A	N/A

All the equipment listed above is calibrated every 12 months by an independent calibration laboratory or by CCL personal following outlined calibration procedures.

Test Configuration Block Diagram



FCC Sections 15.247 (b)(1) Peak Output Power

The EUT was directly connected to the spectrum analyzer via the antenna output port as shown in the block diagram below.

The measurements were performed on three channels, as per 47 CFR 15.31(m), one near the bottom of the spectrum, one near the middle of the spectrum and one near the top of the spectrum.

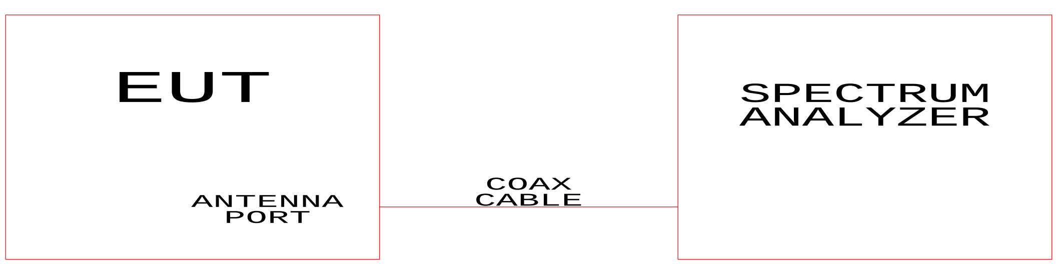
The spectrum analyzer's resolution bandwidth and video bandwidth were set as follows:

RBW = 3 MHz
VBW = 3 MHz

Type of Equipment	Manufacturer	Model Number	Serial Number
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
Low Loss Cable (1 dB)	N/A	N/A	N/A

All the equipment listed above is calibrated every 12 months by an independent calibration laboratory or by CCL personal following outlined calibration procedures.

Test Configuration Block Diagram



FCC Sections 15.247 (c) Spurious Emissions

Conducted Spurious Emissions

The EUT was directly connected to the spectrum analyzer via the antenna output port as shown in the block diagram below.

The measurements were performed on three channels, as per 47 CFR 15.31(m), one near the bottom of the spectrum, one near the middle of the spectrum and one near the top of the spectrum.

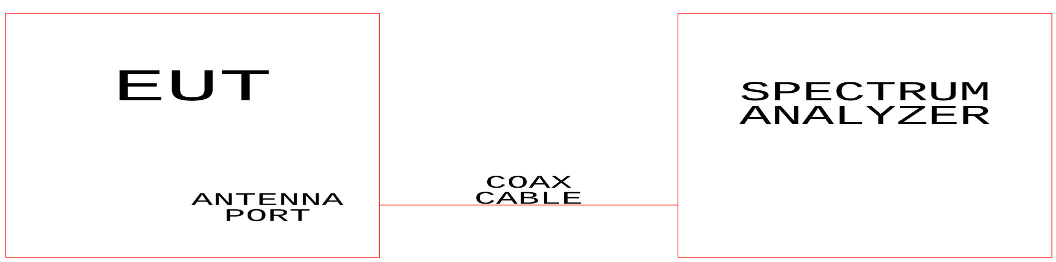
The spectrum analyzer's resolution bandwidth and video bandwidth were set as follows:

RBW = 100 kHz
VBW = 300 kHz

Type of Equipment	Manufacturer	Model Number	Serial Number
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
Low Loss Cable (1 dB)	N/A	N/A	N/A

All the equipment listed above is calibrated every 12 months by an independent calibration laboratory or by CCL personal following outlined calibration procedures.

Test Configuration Block Diagram



Radiated Spurious Emissions in Restricted Bands:

The radiated emission from the intentional radiator was measured using a spectrum analyzer with a quasi-peak adapter for peak and quasi-peak readings. A preamplifier with a fixed gain of 26 dB and a power amplifier with a fixed gain of 22 dB were used to increase the sensitivity of the measuring instrumentation. The quasi-peak adapter uses a bandwidth of 120 kHz, with the spectrum analyzer's resolution bandwidth set at 1 MHz, for readings in the 30 to 1000 MHz frequency ranges. For peak emissions above 1000 MHz the spectrum analyzer’s resolution bandwidth was set to 1 MHz and the video bandwidth was set to 3 MHz. For average emissions above 1000 MHz the spectrum analyzer’s resolution bandwidth was set to 1 MHz and the video bandwidth was set to 10 Hz.

A biconilog antenna was used to measure the frequency range of 30 to 1000 MHz and a Double Ridge Guide Horn antenna was used to measure the frequency range 1 GHz to 10 GHz, at a distance of 3 meters from the EUT. The readings obtained by these antennas are correlated to the levels obtained with a tuned dipole antenna by adding antenna factors.

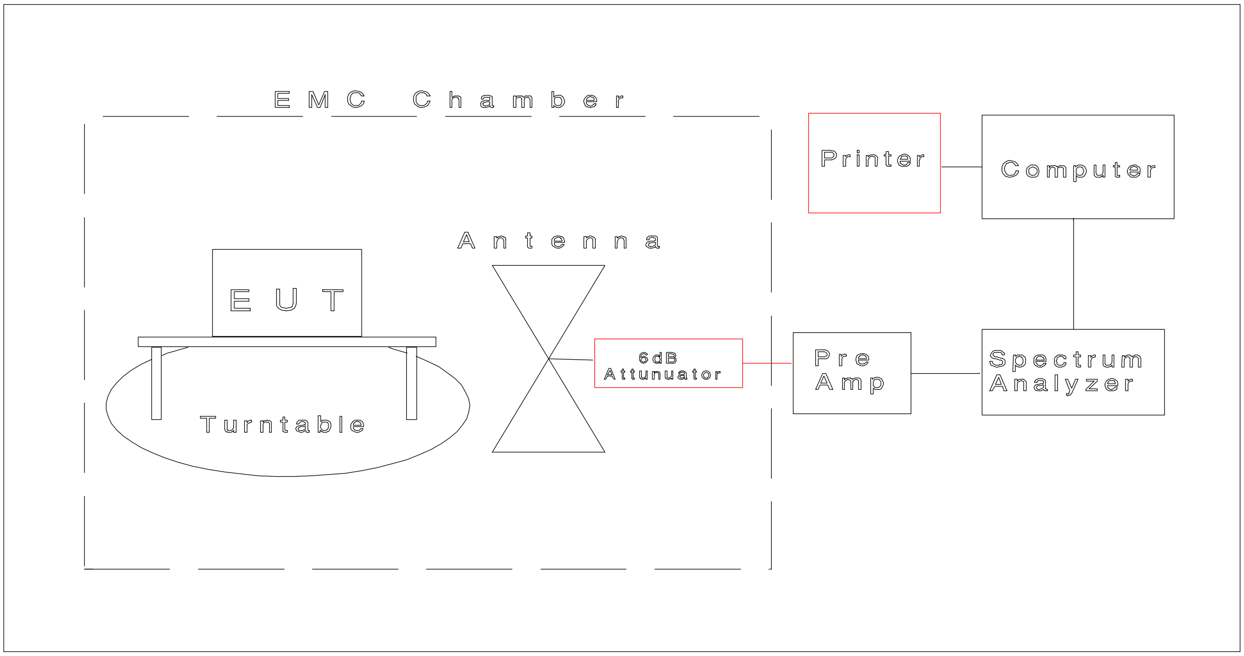
The configuration of the intentional radiator was varied to find the maximum radiated emission. The EUT was connected to the peripherals listed in Section 2.4 via the interconnecting cables listed in Section 2.5. These interconnecting cable were manipulated manually by a technician to obtain worst case radiated emissions. The intentional radiator was rotated 360 degrees, and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission. Where there were multiple interface ports all of the same type, cables are either placed on all of the ports or cables added to these ports until the emissions do not increase by more than 2 dB.

Desktop intentional radiator is measured on a non-conducting table one meter above the ground plane. The table is placed on a turntable which is level with the ground plane. The turntable has slip rings, which supply AC power to the intentional radiator. For equipment normally placed on floors, the equipment shall be placed directly on the turntable.

Type of Equipment	Manufacturer	Model Number	Serial Number
Anechoic Chamber	CCL	N/A	N/A
Test Software	CCL	Radiated Emissions	Revision 1.3
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
Biconilog Antenna	EMCO	3141	1045
Double Ridged Guide Antenna	EMCO	3115	9409-4355
Radiated Emissions Cable Anechoic Chamber	CCL	Cable B	N/A
Pre-Amplifier	Hewlett Packard	8447D	1937A03151
Power-Amplifier	Hewlett Packard	8447E	2434A01975
6 dB Attenuator	Hewlett Packard	8491A	32835

All the equipment listed above is calibrated every 12 months by an independent calibration laboratory or by CCL personal following outlined calibration procedures.

Radiated Emissions Test



FCC Sections 15.207 AC Line Conducted Emissions:

The conducted disturbance at mains ports from the ITE was measured using a spectrum analyzer with a quasi-peak adapter for peak, quasi-peak and average readings. The quasi-peak adapter uses a bandwidth of 9 kHz, with the spectrum analyzer's resolution bandwidth set at 100 kHz, for readings in the 450 kHz to 30 MHz frequency ranges.

The conducted disturbance at mains ports measurements are performed in a screen room using a (50 Ω/50 μH) Line Impedance Stabilization Network (LISN).

Where mains flexible power cords are longer than 1 m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

Where the EUT is a collection of ITE with each ITE having its own power cord, the point of connection for the LISN is determined from the following rules:

a) Each power cord, which is terminated in a mains supply plug, shall be tested separately.
b) Power cords, which are not specified by the manufacturer to be connected via a host unit, shall be tested separately.

c) Power cords which are specified by the manufacturer to be connected via a host unit or other power supplying equipment shall be connected to that host unit and the power cords of that host unit connected to the LISN and tested.
d) Where a special connection is specified, the necessary hardware to effect the connection is supplied by the manufacturer for the testing purpose.
e) When testing equipment with multiple mains cords, those cords not under test are connected to an artificial mains network (AMN) different than the AMN used for the mains cord under test.

Desktop ITE are placed on a non-conducting table at least 0.8 meters from the metallic floor. The equipment is placed a minimum of 40 cm from all walls. Floor standing equipment is placed directly on the earth grounded floor.

Type of Equipment	Manufacturer	Model Number	Serial Number
Anechoic Chamber Test Site #2	CCL	N/A	N/A
Test Software	CCL	Conducted Emissions	Revision 1.2
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
LISN	EMCO	3825/2	9307-1893
Conductance Cable Anechoic Chamber	CCL	Cable A	N/A
Transient Limiter	Hewlett Packard	11947A	3107A00895

An independent calibration laboratory or CCL personal calibrates all the equipment listed above every 12 months following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

Line Conducted Emissions Test