



ADDENDUM TO FC02-046

FOR THE

WIRELESS ETHERNET BRIDGE, AWE 120-58 MKIII

FCC PART 15 SUBPART C SECTIONS 15.207 AND 15.247

COMPLIANCE

DATE OF ISSUE: MAY 17, 2002

PREPARED FOR:

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Date of test: April 17-24, 2002

Report No.: FC02-046A

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A2LA (USA); BSMI (Taiwan); Nemko (Norway); and GOST (Russia).

CKC Laboratories, Inc has received test site Registration Acceptance from the following agencies:

FCC (USA); VCCI (Japan); and Industry Canada.

CKC Laboratories, Inc. has received Letters of Acceptance through an MRA for the following agencies:

ACA/NATA (Australia); SABS (South Africa); SWEDAC (Sweden); Radio Communications Agency (RA); HOKLAS (Hong Kong); Bakom (Swiss); BIPT (Belgium); Denmark Telestyrelsen; RvA (Netherlands); SEE (Luxembourg) SITTEL (Bolivia); and UKAS (UK).

ADMINISTRATIVE INFORMATION

DATE OF TEST:

April 17-24, 2002

DATE OF RECEIPT:

April 17, 2002

PURPOSE OF TEST:

To demonstrate the compliance of the Wireless Ethernet Bridge, AWE 120-58 MKIII, with the requirements for FCC Part 15 Subpart C Sections 15.207 and 15.247 devices. The purpose of this addendum is to add a wider bandedge plot and clarify the radiated bandwidth during testing.

TEST METHOD:

ANSI C63.4 (1992)

MANUFACTURER:

Wi-LAN Inc.
300-801 Manning Rd., N.E.
Calgary AB T2E 8J5 Canada

REPRESENTATIVE:

Ian Guldberg

TEST LOCATION:

CKC Laboratories, Inc.
5473A Clouds Rest
Mariposa, CA 95338

SUMMARY OF RESULTS

As received, the Wi-LAN Inc. Wireless Ethernet Bridge, AWE 120-58 MKIII was found to be fully compliant with the following standards and specifications:

United States	Canada
➤ FCC Part 15 Subpart C Section 15.207 and 15.247 ➤ ANSI C63.4 (1992) method	RSS-210 using the matrix below: ➤ ANSI C63.4 (1992) method Industry of Canada File No. IC 3082-D
15.247(b)(1) 15.247(b)(3) 15.247(b)(3)(i) 15.247(b)(3)(ii) 15.247(b)(3)(iii) 15.247(d)	6.2.2(o)(a3)
15.247(b)(1) 15.247(b)(3) 15.247(b)(3)(i) 15.247(b)(3)(ii) 15.247(b)(3)(iii) 15.247(d) 15.247(e)	6.2.2(o)(b)
15.247(c)	6.2.2(o)(e)(1)
15.203	6.2.2(o)(e)(2)
NA	6.2.2(d)
15.207	6.6
15.247(a)(2)	NA

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

QUALITY ASSURANCE:



Steve Behm, Manager of Engineering Services



Joyce Walker, Quality Assurance Administrative Manager



Chuck Kendall, EMC/Lab Manager

TEST PERSONNEL:



Conan T. Boyle, EMC Engineer



Randy Clark, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT tested by CKC Laboratories was a production unit. The EUT is a wireless ethernet bridge transceiver.

15.31(e) Voltage Variations

See Table 3.

15.31(m) Number Of Channels

The EUT operates in the range of 5.741 - 5.833 MHz. In accordance with 15.31(m) the frequencies tested were: Channel 1 - 5741 MHz, Channel 4 – 5783 MHz and Channel 7 – 5833 MHz.

15.33(a) Frequency Ranges Tested

15.207 Conducted Emissions: 450 kHz – 30 MHz

15.247/15.209 Radiated Emissions: 9 kHz – 40 GHz

15.203 Antenna Requirements

The antenna is an integral part of the EUT and is non-removable; therefore the EUT complies with Section 15.203 of the FCC rules.

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 is a direct sequencing device operating in the 5725.0 – 5850.0 MHz band.

EQUIPMENT UNDER TEST

Wireless Ethernet Bridge

Manuf: Wi-LAN Inc.
Model: AWE 120-58 MKIII
Serial: NA
FCC ID: (pending)

Power Inserter Unit

Manuf: Wi-LAN Inc.
Model: NA
Serial: NA
FCC ID: DoC

AC Adapter

Manuf: ENG
Model: 57-24-1000D
Serial: None
FCC ID: DoC

PERIPHERAL DEVICES

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

Computer, Notebook

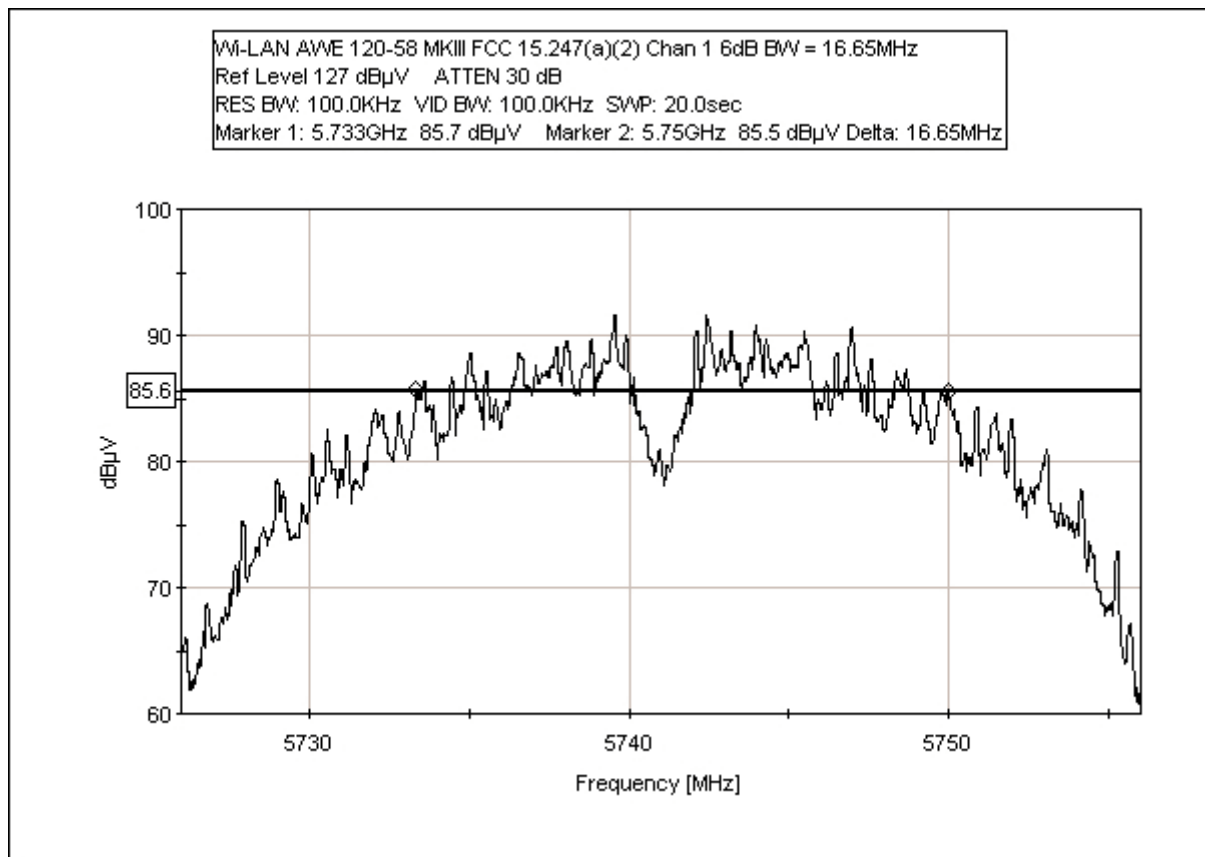
Manuf: Toshiba
Model: PR1273U
Serial: 98060506A
FCC ID: DoC

AC Adapter

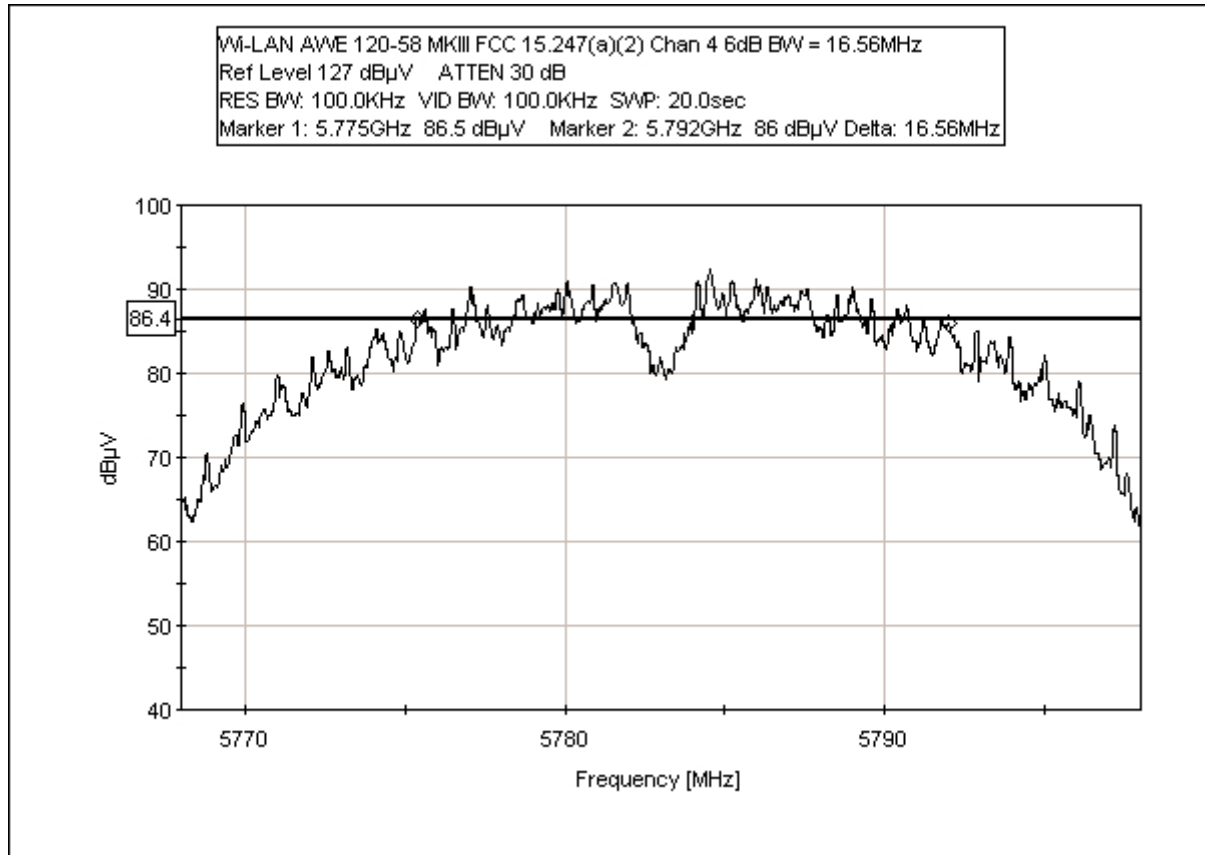
Manuf: Toshiba
Model: PA2450U
Serial: 0295362
FCC ID: DoC

REPORT OF MEASUREMENTS

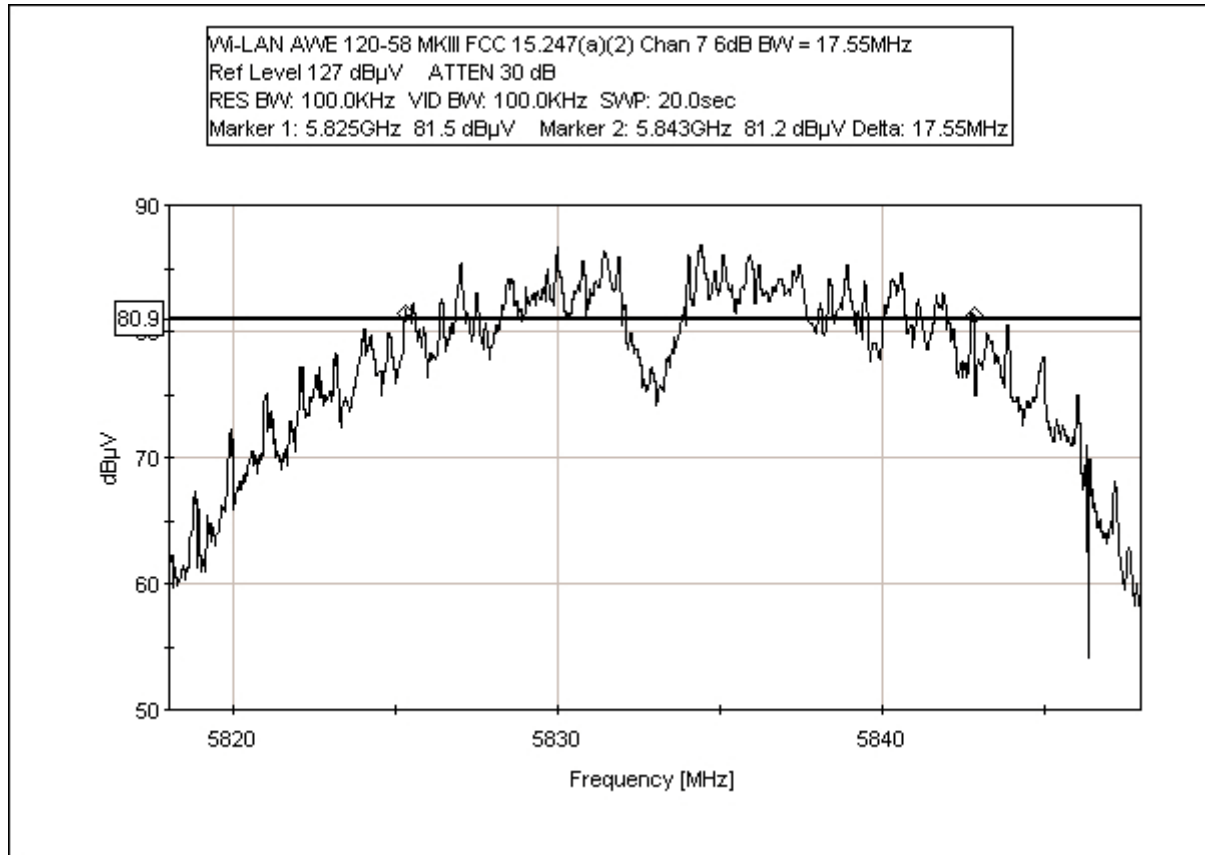
15.247(a)(2) 6dB Bandwidth - Channel 1



15.247(a)(2) 6dB Bandwidth - Channel 4



15.247(a)(2) 6dB Bandwidth - Channel 7



The following tables report the six highest worst case levels recorded during the tests performed on the Wireless Ethernet Bridge, AWE 120-58 MKIII. All readings taken are peak readings unless otherwise noted. The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: 15.247(b)(1) Highest Peak Output: EIRP									
FREQUENCY MHz	METER READING dBμV	CORRECTION FACTORS				CORRECTED READING dBμV/m	SPEC LIMIT dBμV/m	MARGIN dB	NOTES
		Att	Corr.	Cable	EUT Corr.				
		dB	dB	dB	dB				
5781.920	90.6	24.0	7.4	0.5	17.0	139.5	143.0	-3.5	N
5472.120	89.1	24.3	7.4	0.6	17.0	138.4	143.0	-4.6	N
5831.900	88.0	23.9	7.7	0.5	17.0	137.1	143.0	-5.9	N

Test Method: ANSI C63.4 (1992)
 Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(1)
 Test Distance: No Distance

NOTES: N = No Polarization

COMMENTS: 143dBμV = 36 dBm EIRP.

Table 2: 15.247(b)(1) Highest Peak Output: Antenna Terminal & 15.247(b)(3) Directional Gain Antenna

FREQUENCY MHz	METER READING dBμV	CORRECTION FACTORS				CORRECTED READING dBμV/m	SPEC LIMIT dBμV/m	MARGIN dB	NOTES
		Att dB	Corr. dB	Cable dB	Dist dB				
5743.240	74.4	24.3	7.4	0.6		106.7	126.0	-19.3	NA
5779.500	74.6	24.0	7.4	0.5		106.5	126.0	-19.5	NA
5828.660	74.4	23.9	7.7	0.5		106.5	126.0	-19.5	NA

Test Method: ANSI C63.4 (1992)

Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(1) & 15.247(b)(3)

Test Distance: No Distance

NOTES: N = No Polarization
A = Average Reading

COMMENTS: EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation and is directly connected to the spectrum analyzer. Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz Spectrum analyzer settings- RBW=3MHz, VBW=3MHz, SWEEP=20mS. 6-dB Bandwidth Measurement Correction Factors derived from 15.247(a)(2) added to measurements. Correction factors computed according to the following formula: $10\log(BW1/BW2)$ where BW = frequency (MHz). BW1 is frequency span between 6-dB points, BW2 is spectrum analyzer Resolution BW setting (3MHz). Channel 1 6dB Bandwidth = 16.65MHz Bandwidth Correction Factor Formula: $10\log(BW1/BW2)$ $10\log(16.65/3)$ $10\log(5.55) = 7.44\text{dB}$ Channel 4 6dB Bandwidth = 16.56MHz Bandwidth Correction Factor Formula: $10\log(BW1/BW2)$ $10\log(16.56/3)$ $10\log(5.52) = 7.42\text{dB}$ Channel 7 6dB Bandwidth = 17.55MHz Bandwidth Correction Factor Formula: $10\log(BW1/BW2)$ $10\log(17.55/3)$ $10\log(5.85) = 7.67\text{dB}$. Antenna is 17dBi per 15.247(b)3 which states that for every dB in excess of 6 dBi, the power should be lowered by the amount that it exceeds 6dBi.

Table 3: 15.247(b)(1)/15.31(e) Voltage Variation on Peak Power

FREQUENCY MHz	CORRECTED READING dBμV/m	85%	115%	SPEC LIMIT dBμV/m
5781.9	122.5	122.6	122.5	126.0
5743.1	121.4	121.4	121.4	126.0
5831.9	120.1	120.1	120.2	126.0

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(1)/15.31(e)
Test Distance: No Distance

COMMENTS: EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation and is directly connected to the spectrum analyzer. The EUT AC adapter is plugged into a variable AC autotransformer. The supply voltage to the AC adapter is monitored by a DVM. Each channel output power will be checked at three ac voltages-- 102vac (85%), 120vac (100%), and 138vac (115%). Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz. Actual data was measured in a 3MHz RBW=VBW and was integrated into the 6 dB BW using 10 log BW1/BW2.

Table 4: 15.247(c)/15.209 OATS Highest Emission Levels: 10 MHz - 40 GHz

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB					
266.300	45.1	18.2	-26.1	3.4		40.6	46.0	-5.4	V
401.600	51.5	15.7	-26.8	4.3		44.7	46.0	-1.3	V
401.787	49.2	15.7	-26.8	4.3		42.4	46.0	-3.6	VQ
402.400	49.1	15.8	-26.8	4.3		42.4	46.0	-3.6	H
5723.200	51.7	25.4	0.0	11.0		88.1	90.9	-2.8	V
5852.700	50.7	25.5	0.0	11.3		87.5	90.9	-3.4	V

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)/15.209
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization
Q = Quasi Peak Reading

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz. Data are representative of readings taken from all channels. Frequency Range Investigated: 10MHz – 40GHz. 15.247(c) Limit Calculation: The corrected reading from fundamental 110.9dBuV. The 20dBc limit at the band edges is 90.9dBuV. Readings taken in 15.205 restricted bands are compared to the limit specified in 15.209 (see test notes), all other readings are compared to the 20dBc limit. For Channel 4 testing no spurious emissions within 20dB of the limit found in the frequency range of 1 to 40 GHz. Spectrum analyzer settings for frequency range of 10-30 MHz – RBW=9kHz, VBW=9kHz, Sweep=20mS. Spectrum analyzer settings for frequency range of 30-1000 MHz – RBW=120kHz, VBQ=120kHz, Sweep=2-mS. Spectrum analyzer settings for frequency range of 1-40 GHz – RBW=1MHz, VBW=1MHz, Sweep=50mS.

Table 5: 15.247(c) Highest Antenna Terminal Emission Levels: 9kHz - 40GHz

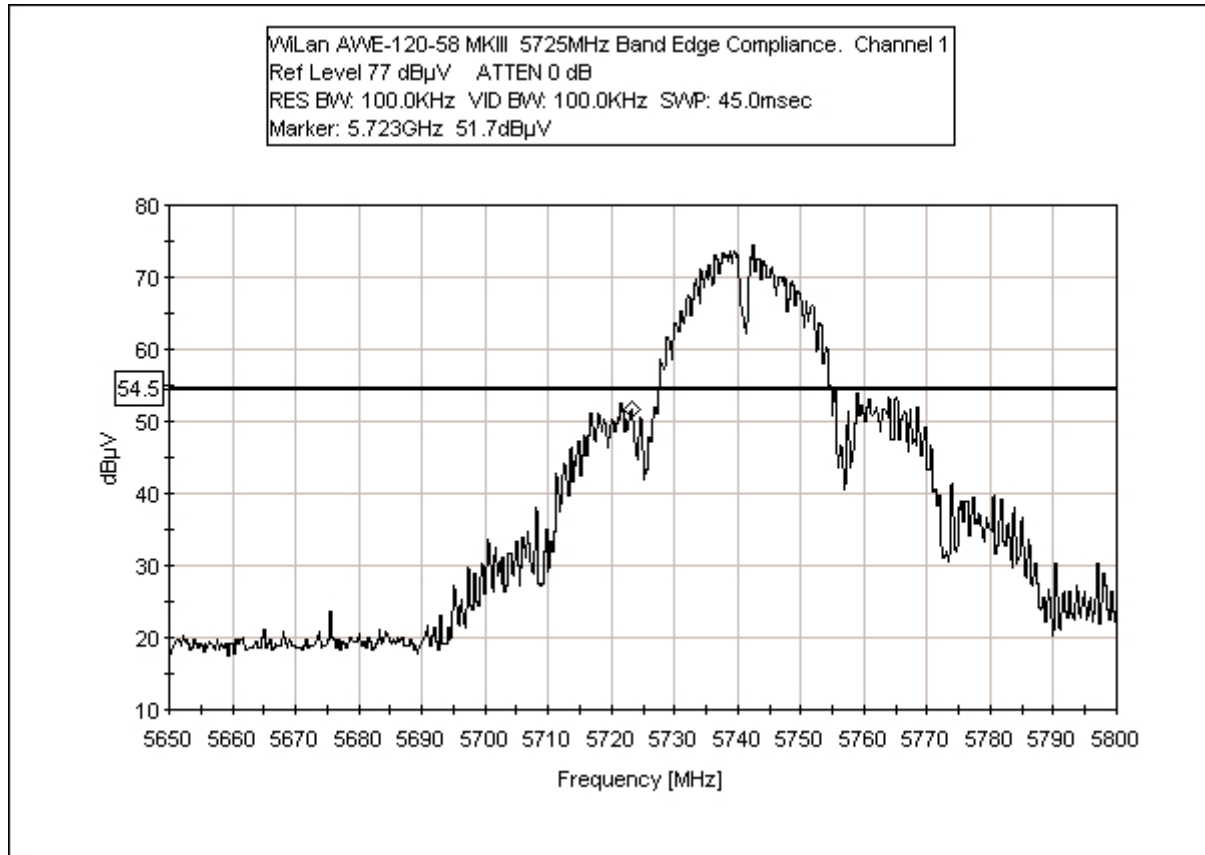
FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Att dB		Cable dB					
11482.000	37.4	25.0		1.0		63.4	94.5	-31.1	N-1
11566.010	39.1	25.0		1.1		65.2	94.5	-29.3	N-4
11666.010	38.1	25.0		1.3		64.4	94.5	-30.1	N-7
17223.200	39.7	25.0		0.9		65.6	94.5	-28.9	N-1
17349.010	37.5	25.0		0.9		63.4	94.5	-31.1	N-4
17499.000	38.4	25.0		1.0		64.4	94.5	-30.1	N-7

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

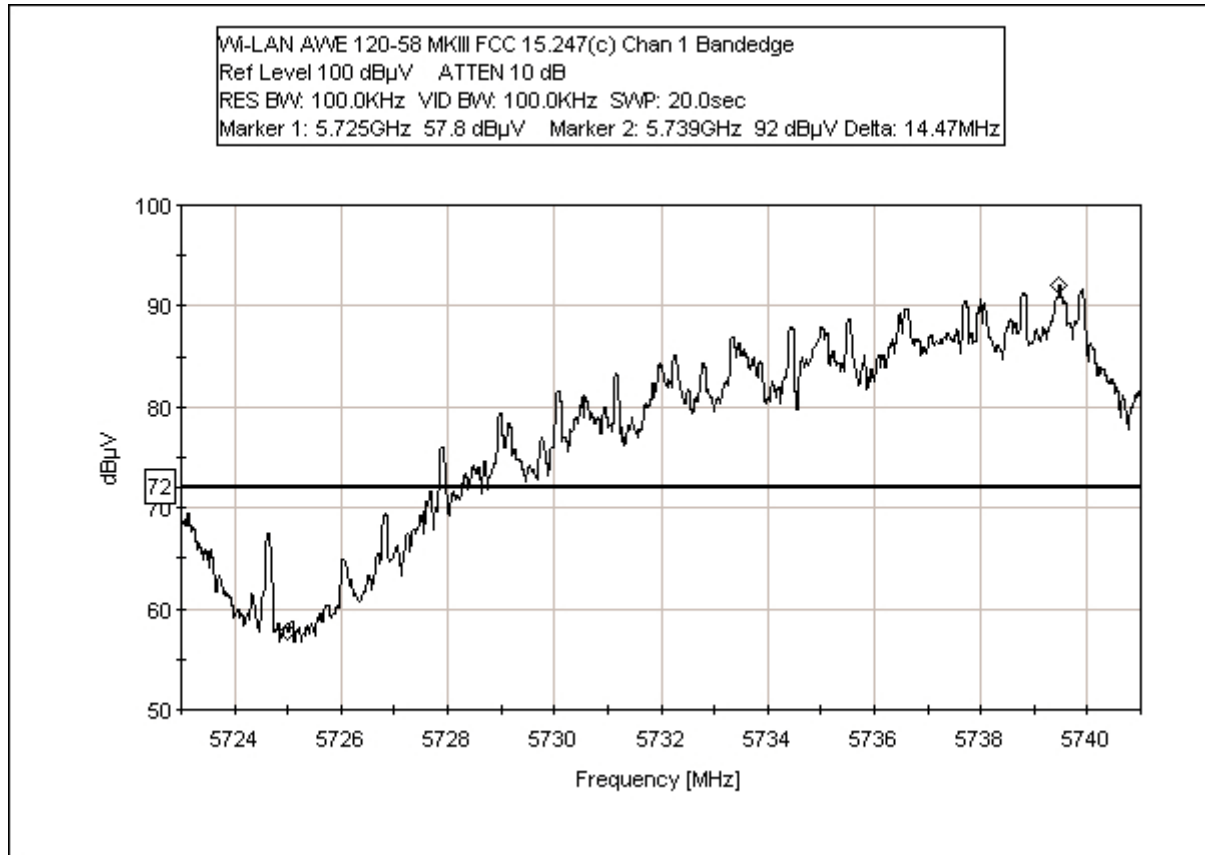
NOTES:
N = No Polarization
1 = Channel 1
4 = Channel 4
7 = Channel 7

COMMENTS: EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation on Channel 1 and is directly connected to the spectrum analyzer. Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz. Spectrum analyzer settings- RBW=100kHz, VBW=300kHz, SWEEP=20mS. 15.247(c) limit is derived from peak power output on channel 4 (worst case): 114.5dBuV - 20dBc = 94.5dBuV.

15.247(c) Bandedge - Channel 1



15.247(c) Bandedge - Channel 1



15.247(c) Bandedge - Channel 7

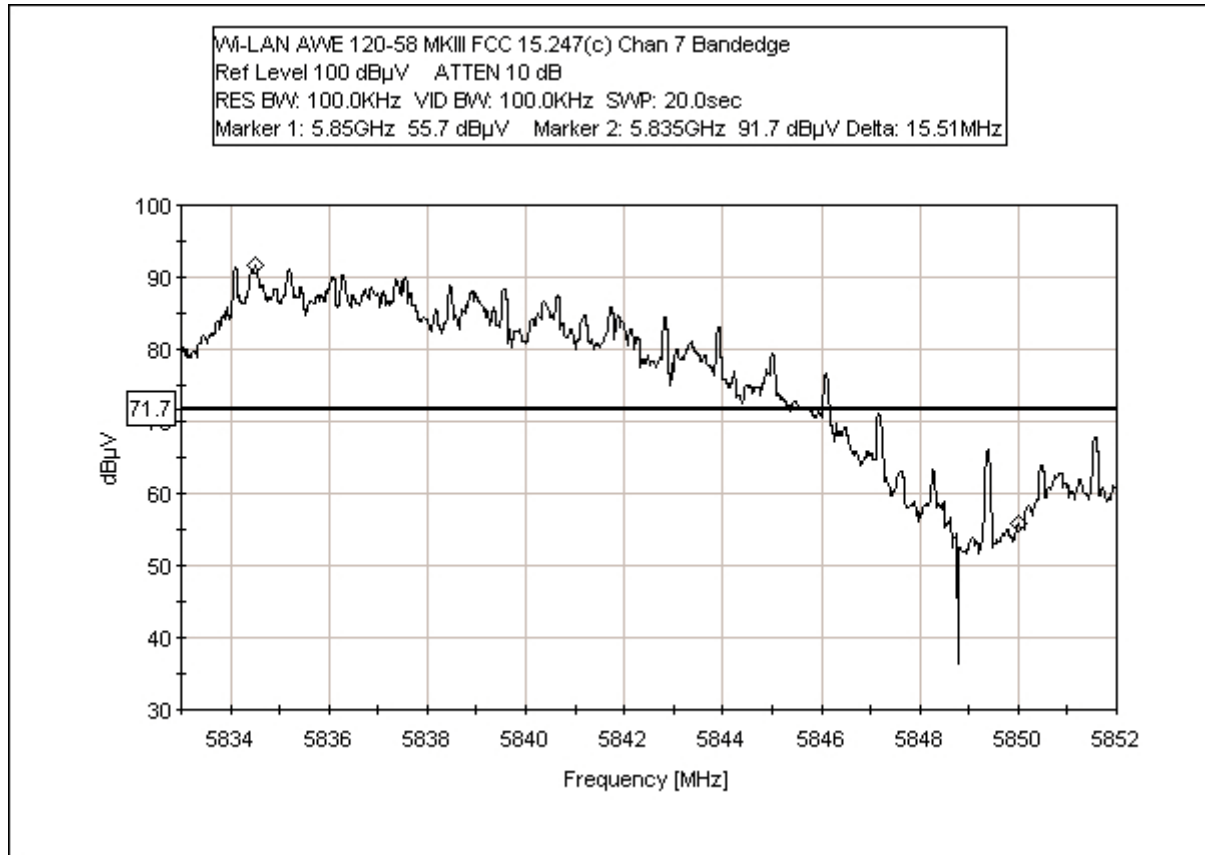


Table 6: 15.247(d) Power Spectral Density

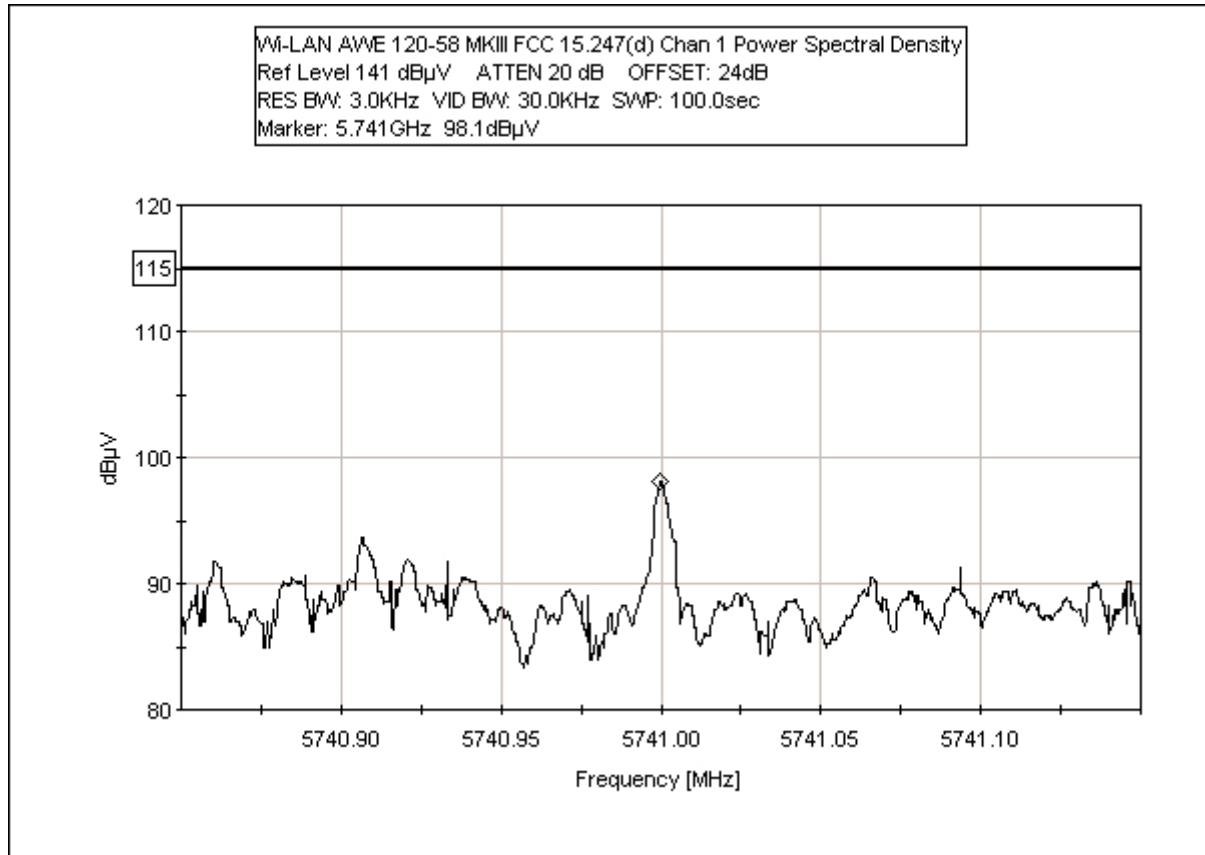
FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Ant dB		Cable dB					
5740.999	73.2	24.3		0.6		98.1	115.0	-16.9	N-1
5783.000	75.6	24.0		0.5		100.1	115.0	-14.9	N-4
5833.000	72.2	23.9		0.5		96.6	115.0	-18.4	N-7

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

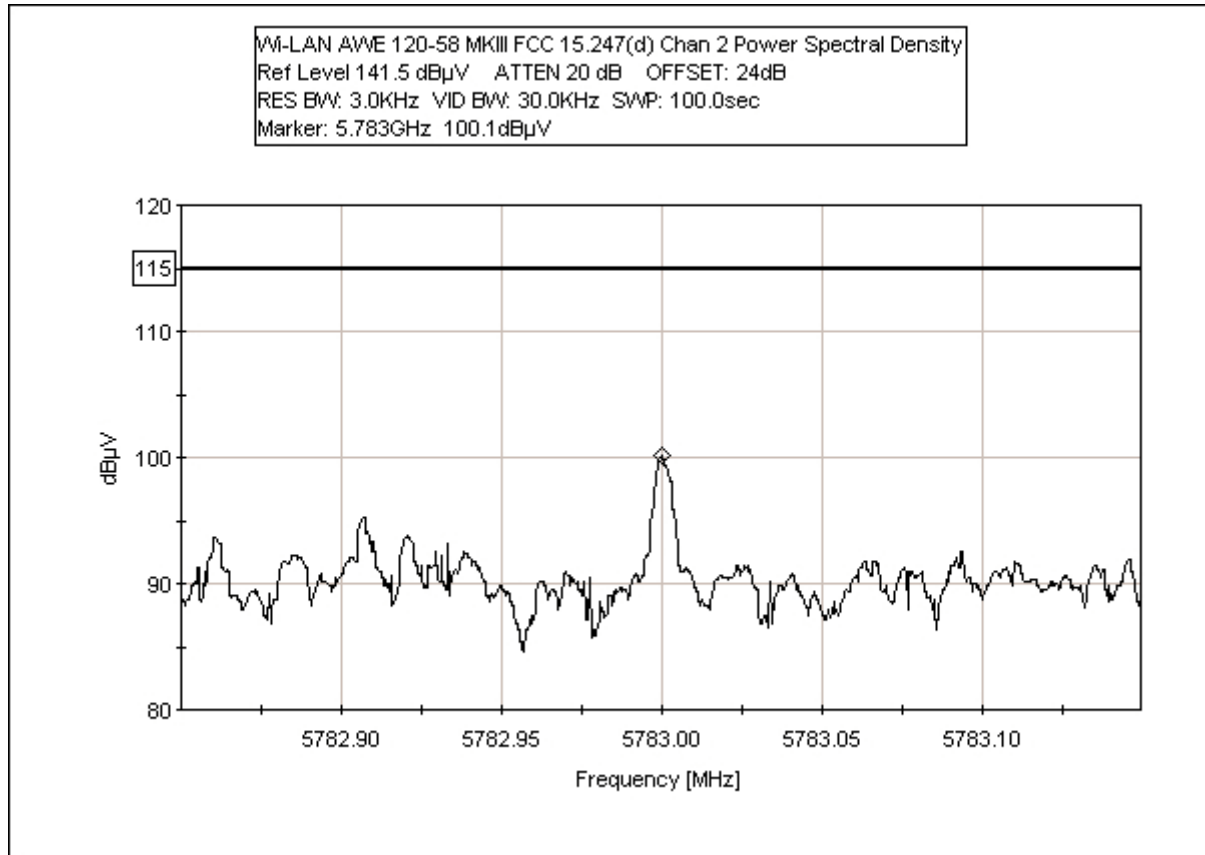
NOTES:
N = No Polarization
1 = Channel 1
4 = Channel 4
7 = Channel 7

COMMENTS: EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a one-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a two-meter DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation and is directly connected to the spectrum analyzer. Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz Spectrum analyzer settings- RBW=3kHz, VBW=30kHz, SWEEP=100S. Plot created for each channel. Note: All channels transmitting less than maximum allowable peak level spectral density for DSSS transmitters (115dBuV = 8dBm).

15.247(d) Power Spectral Density - Channel 1



15.247(d) Power Spectral Density - Channel 4



15.247(d) Power Spectral Density - Channel 7

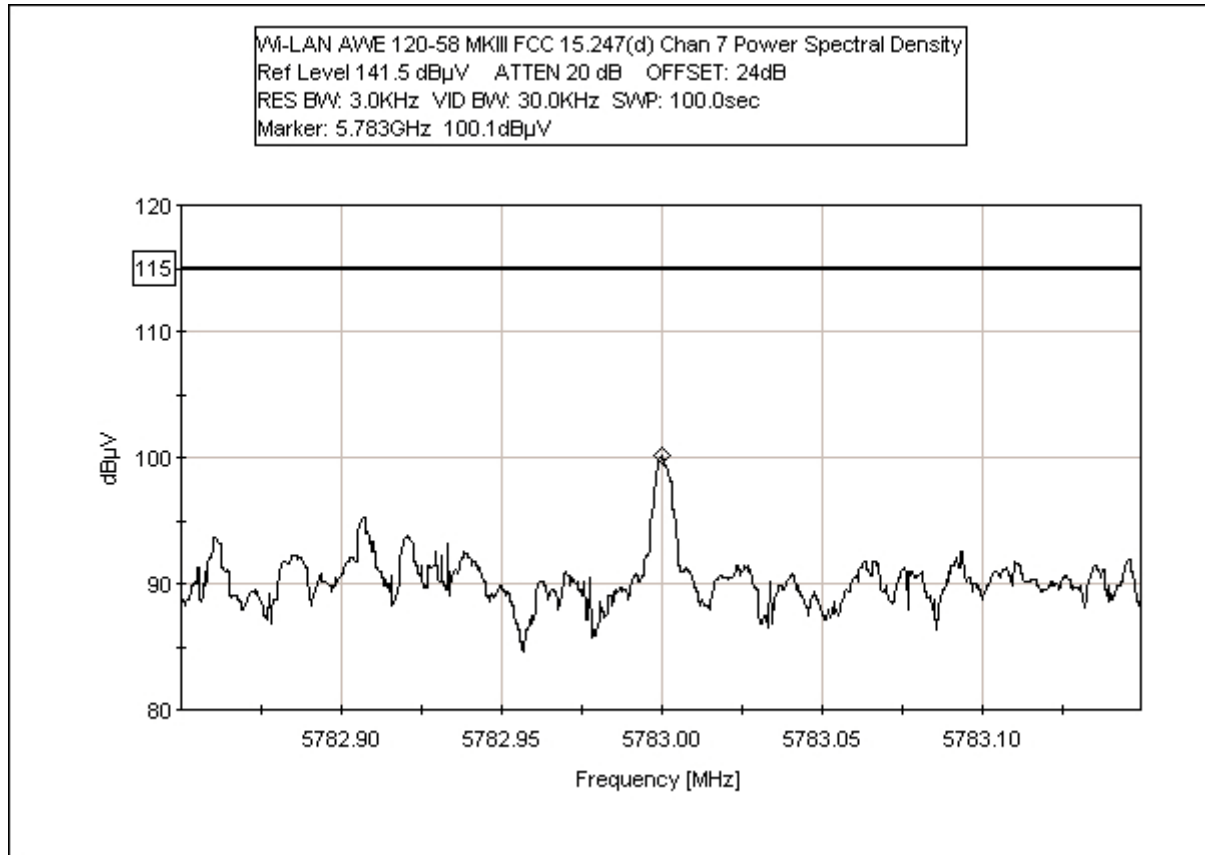


Table 7: 15.207 Highest Conducted Emission Levels

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V	SPEC LIMIT dB μ V	MARGIN dB	NOTES
		Lisn dB		Cable dB					
1.300328	43.2	0.3		0.1		43.6	48.0	-4.4	B
2.349430	42.0	0.3		0.2		42.5	48.0	-5.5	BQ
2.351420	41.6	0.3		0.2		42.1	48.0	-5.9	WQ
2.609140	43.1	0.4		0.2		43.7	48.0	-4.3	BQ
2.609300	43.6	0.4		0.2		44.2	48.0	-3.8	BQ
2.611610	42.4	0.4		0.2		43.0	48.0	-5.0	WQ

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.207

NOTES: Q = Quasi Peak Reading
B = Black Lead
W = White Lead

COMMENTS: EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna EUT transmitting on Channel 1 = 5741.0MHz, which represents the worst case. Spectrum analyzer settings- RBW=1MHz, VBW=1MHz, SWEEP=50mS. Data are representative of readings taken from all channels. Frequency Range Investigated: 450kHz - 30MHz Data taken at 450kHz with an average detector is 21.9 dB lower than data taken with a CISPR Quasi-Peak Adapter. Therefore, the quasi peak data has been reduced by 13dB for comparison with the 15.207 limit. Average measurement obtained using video averaging.

TEMPERATURE AND HUMIDITY DURING TESTING

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

MEASUREMENT UNCERTAINTY

Measurement uncertainty associated with data in this report is a $\pm 2.94\text{dB}$ for radiated and $\pm 1.56\text{dB}$ for conducted emissions.

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 interval between different pieces of equipment was approximately 10 centimeters. All excessive interconnecting cable was bundled in 30-40 centimeter lengths.

The radiated and conducted emissions data of the Wireless Ethernet Bridge, AWE 120-58 MKIII, 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 μ V/m, the spectrum analyzer reading in dB μ 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 μ V)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dB μ 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 Wireless Ethernet Bridge, AWE 120-58 MKIII. 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 μ 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 for the Wireless Ethernet Bridge, AWE 120-58 MKIII.

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

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 host PC was powered up and operating in its defined test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz - 88 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. Lastly, a scan of the FM band from 88 - 110 MHz was made, using a reduced resolution bandwidth and frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. After changing to the log periodic antenna in the horizontal configuration, the frequency range of 300 - 1000 MHz was scanned. The log periodic antenna was changed to the vertical polarity and the frequency range of 300 - 1000 MHz was again scanned. . The horn antenna was used to scan for frequencies above 1000 MHz. 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. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

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.

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 450 kHz to 1.705 MHz, 1.705 MHz to 3 MHz, and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

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.

TRANSMITTER CHARACTERISTICS

15.247(a)(2) Bandwidth Measurements (Direct Sequence)

The fundamental frequency was kept within the permitted band 5725-5850 MHz. The minimum 6dB bandwidth shall be at least 500 kHz. Refer to the following occupied bandwidth plots.

15.247(b) Peak Output Power

Frequency of Transmitter: 5725-5850 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.

- **15.247(b)(1)** The maximum peak output power of frequency hopping systems operating in the 5725-5850 band and for all direct sequences, shall not exceed 1 watt.
- **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 shall be 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.

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

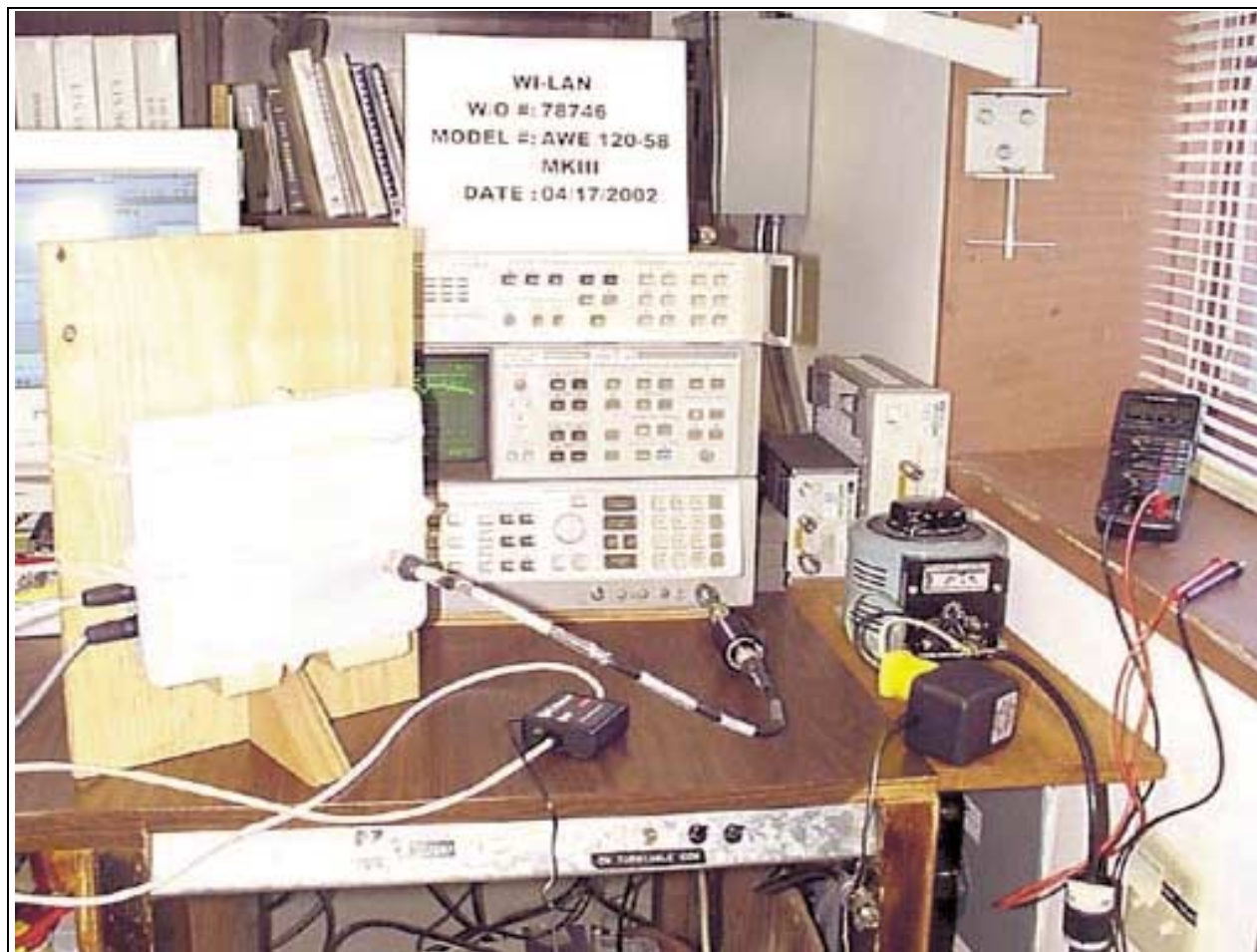
TEST SETUP DIAGRAM AND PHOTOGRAPHS

PHOTOGRAPH SHOWING ANTENNA CONDUCTED POWER



Antenna Conducted Power

PHOTOGRAPH SHOWING ANTENNA CONDUCTED VOLTAGE VARIATION



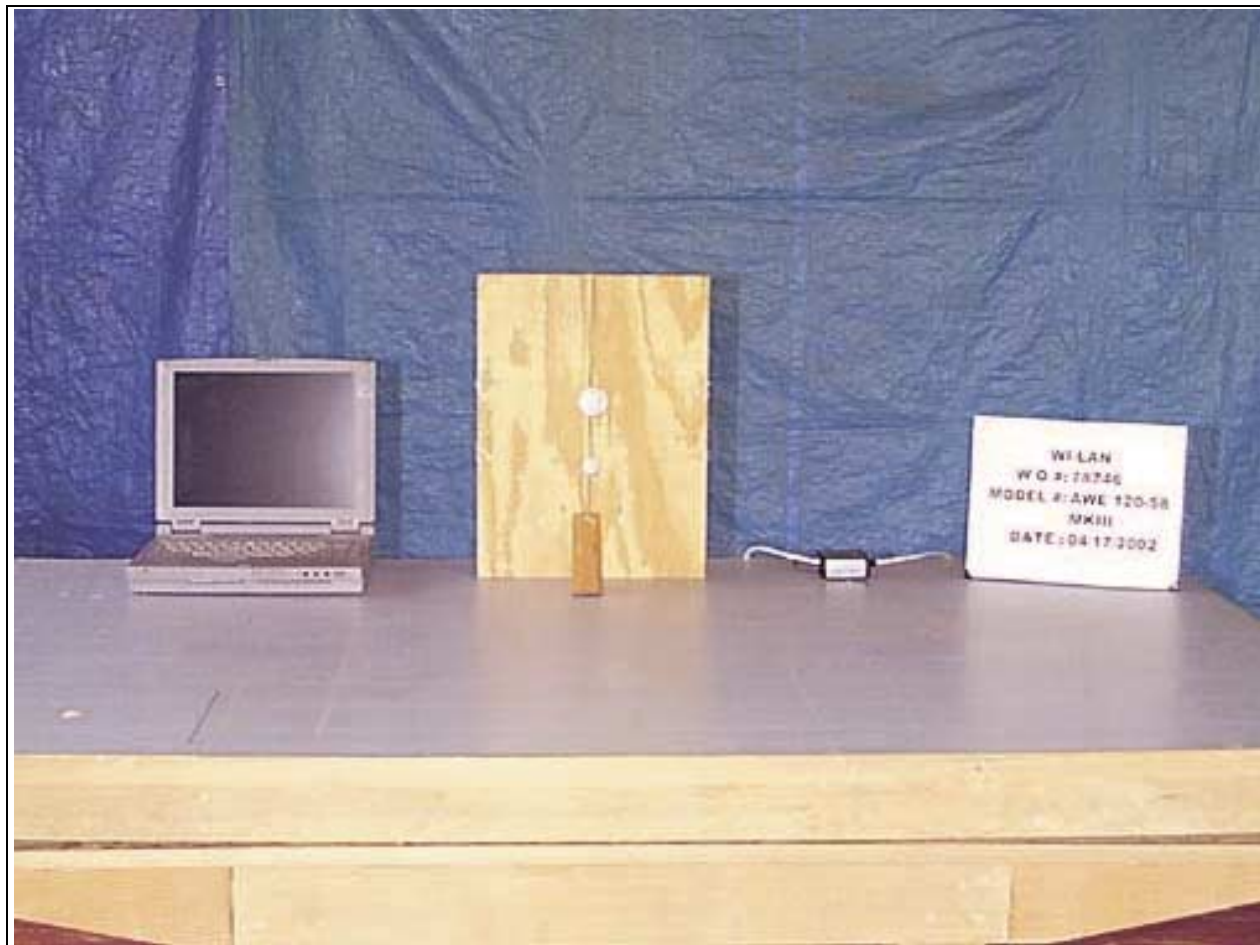
Antenna Conducted Voltage Variation

PHOTOGRAPH SHOWING ANTENNA CONDUCTED SPURS



Antenna Conducted Spurs

PHOTOGRAPH SHOWING RADIATED EMISSIONS



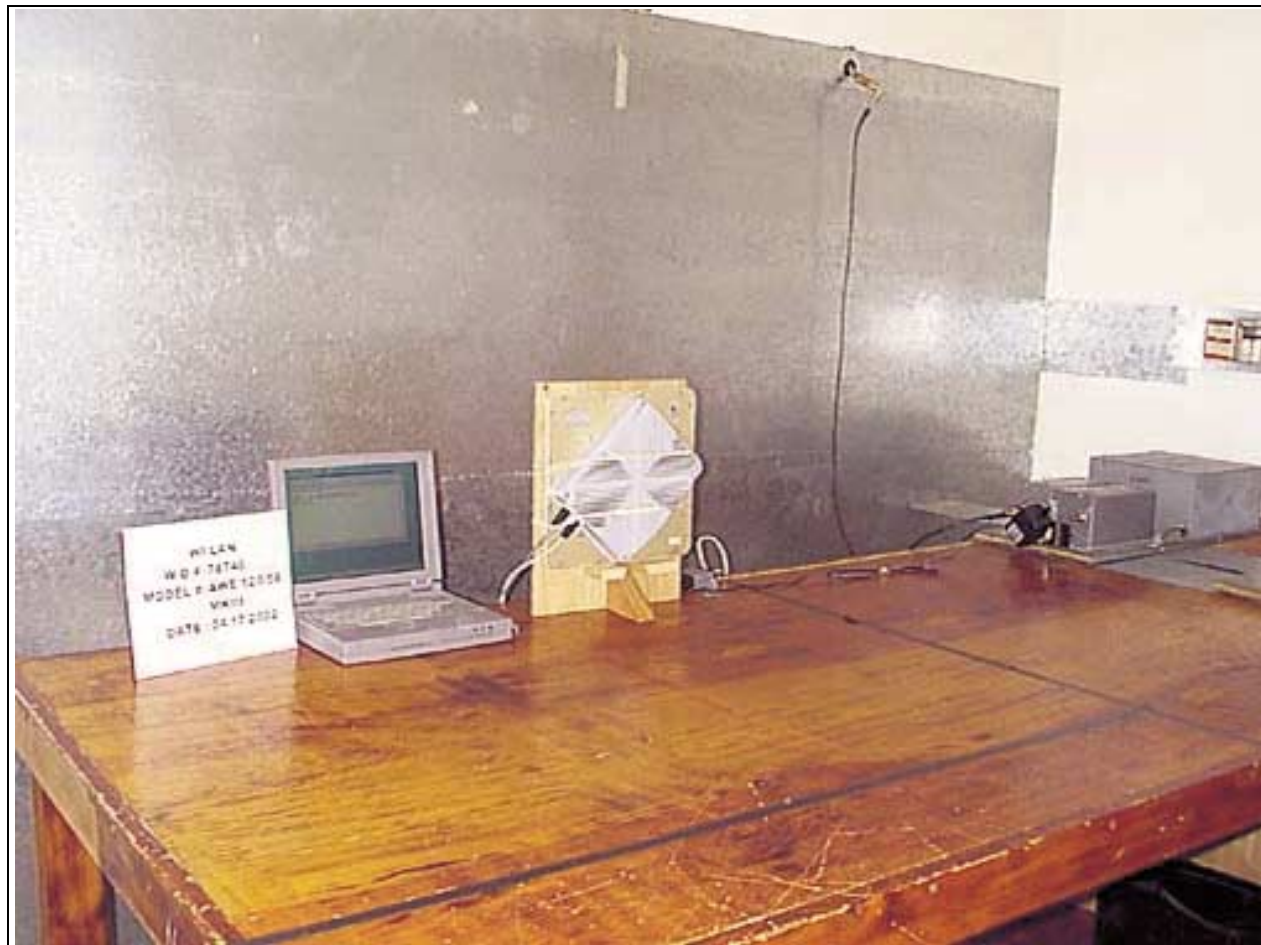
Oats Test Setup - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Oats Test Setup - Back View

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Front View

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Side View

APPENDIX B

TEST EQUIPMENT LIST

15.247(b)(1), 15.247/15.209, 15.247(c)

Function	S/N	Calibration Date	Cal Due Date	Asset #
High Pass Filter, 8.2GHz 3643A00026 10/17/2001	10/17/2002			1417
Cable, HF 10-ft. 2.4mm HOL_HF_010_purple_1-40GHz	65474	01/14/2002	01/14/2003	0
S.A. HP 8564E	01984	12/17/2001	12/17/2002	1406
Ant., Horn 18-26.5GHz	942126-003	07/09/2001	07/09/2002	1413
Ant., Horn 26.5-40GHz	951559-008	05/22/2001	05/22/2002	1414
Preamplifier, HF, HP-83051A	3331A00238	03/05/2002	03/05/2003	0

15.247 (b)(i) Antenna Terminal & (b) (iii): Power Output

Function	S/N	Calibration Date	Cal Due Date	Asset #
S/A HP-8566B Display	2209A01404	01/30/2002	01/30/2003	490
S/A HP-8566B RF Section	2403A08241	01/30/2002	01/30/2003	489
Cable, HF 2-ft.	HC_HF_02	05/17/2001	05/17/2002	0

15.31(e) Voltage Variation

Function	S/N	Calibration Date	Cal Due Date	Asset #
S/A HP-8566B Display	2209A01404	01/30/2002	01/30/2003	490
S/A HP-8566B RF Section	2403A08241	01/30/2002	01/30/2003	489
Cable, HF 2-ft.	HC_HF_02	05/17/2001	05/17/2002	0
DVM	602110980A	08/30/2001	08/30/2002	1241
Variable AC Transformer	BP124201	04/19/2002	04/19/2003	2037

15.247/15.209

Function	S/N	Calibration Date	Cal Due Date	Asset #
High Pass Filter, 8.2GHz 3643A00026 10/17/2001	10/17/2002			1417
Cable, HF 10-ft. 2.4mm HOL_HF_010_purple_1-40GHz	65474	01/14/2002	01/14/2003	0
S.A. HP 8564E	01984	12/17/2001	12/17/2002	1406
Ant., Horn 18-26.5GHz	942126-003	07/09/2001	07/09/2002	1413
Ant., Horn 26.5-40GHz	951559-008	05/22/2001	05/22/2002	1414
Preamplifier, HF, HP-83051A	3331A00238	03/05/2002	03/05/2003	0

15.247(c) -20dBc limit

Function	S/N	Calibration Date	Cal Due Date	Asset #
S/A HP-8566B Display	2209A01404	01/30/2002	01/30/2003	490
S/A HP-8566B RF Section	2403A08241	01/30/2002	01/30/2003	489
Cable, HF 2-ft.	HC_HF_02	05/17/2001	05/17/2002	0
S.A. HP 8564E	01984	12/17/2001	12/17/2002	1406
QP Adapter	2811A01267	01/30/2002	01/30/2003	478

15.247(d)

Function	S/N	Calibration Date	Cal Due Date	Asset #
S/A HP-8566B Display	2209A01404	01/30/2002	01/30/2003	490
S/A HP-8566B RF Section	2403A08241	01/30/2002	01/30/2003	489
Cable, HF 2-ft.	HC_HF_02	05/17/2001	05/17/2002	0

15.247(b)(i) - Oats

Function	S/N	Calibration Date	Cal Due	Asset #
Antenna, Bicon SAS-200/542	156	12/06/01	12/6/02	00225
Antenna, Log SAS-200/510	154	05/07/01	5/7/02	01330
Antenna, Loop 6502	1074	5/31/01	5/31/02	00226
Preamp 8447D	1937A02604	3/21/02	3/21/03	00099
Preamp 8449B	3008A00301	10/19/01	10/19/02	02010
QP Adapter 85650A	2811A01267	1/30/02	1/30/03	00478
S/A Display 8566B	2403A08241	1/30/02	1/30/03	00489
Spectrum Analyzer 8566B	2209A01404	1/30/02	1/30/03	00490
Preamp 83051A	3331A00238			NA
8.2 GHz High Pass Filter 84300-80039	3643A00026	10/17/01	10/17/02	01417
Antenna, Horn 18-26GHz 84125-80008	942126-003	7/9/01	7/9/02	01413
Antenna, Horn 26-40GHz RA28-K-F-4B-C	951559-008	5/22/01	5/22/02	01414
Cable #2 (2') FSJ1-50A	N/A	4/16/02	4/16/03	N/A
Cable #4 (50') FSJ1-50A	N/A	4/16/02	4/16/03	N/A
Cable #7 (25') FSJ1-50A	N/A	4/16/02	4/16/03	N/A
Spectrum Analyzer 8564E	3623A00539	12/12/01	12/12/02	01406

15.207

Function	S/N	Calibration Date	Cal Due	Asset #
QP Adapter 85650A	2811A01267	1/30/02	1/30/03	00478
S/A Display 8566B	2403A08241	1/30/02	1/30/03	00489
Spectrum Analyzer 8566B	2209A01404	1/30/02	1/30/03	00490
LISN Set 8028-50-TS-24-BNC	814493, 474	5/22/01	5/22/02	02056

APPENDIX C

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **15.247(b)(1)**
 Work Order #: **78746**
 Test Type: **Maximized Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/23/2002
 Time: 14:01:33
 Sequence#: 19
 Tested By: Randal Clark

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna. Transmit antenna is in the vertical orientation. Channel 1 = 5741.0MHz. Spectrum analyzer settings- RBW=3MHz, VBW=3MHz, SWEEP=50mS. 6-dB Bandwidth Measurement Correction Factors derived from 15.247(a)(2) added to measurements. Correction factors computed according to the following formula: $10\log(BW1/BW2)$ where BW = frequency (MHz). BW1 is frequency span between 6-dB points, BW2 is spectrum analyzer Resolution BW setting (3MHz). Channel 1 6dB Bandwidth = 16.65MHz Bandwidth Correction Factor Formula: $10\log(BW1/BW2) 10\log(16.65/3) 10\log(5.55) = 7.44\text{dB}$.

Transducer Legend:

T1=15.247(a)(2) 6-dB BW CF for Wi-LAN 78746	T2=Cable GHz #4
T3=Cable GHz #7	T4=Horn 1-18 GHz (Mariposa)

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	5737.200M	80.0	+7.4	+7.8	+3.2	+25.4	+0.0	123.8	127.0	-3.2	Vert
2	5739.400M	59.8	+7.4	+7.8	+3.2	+25.4	+0.0	103.6	127.0	-23.4	Horiz

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **15.247(b)(1)**
 Work Order #: **78746**
 Test Type: **Maximized Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/23/2002
 Time: 13:50:39
 Sequence#: 20
 Tested By: Randal Clark

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna Channel 4 = 5783.0MHz. Spectrum analyzer settings- RBW=3MHz, VBW=3MHz, SWEEP=50mS. 6-dB Bandwidth Measurement Correction Factors derived from 15.247(a)(2) added to measurements. Correction factors computed according to the following formula: $10\log(BW1/BW2)$ where BW = frequency (MHz). BW1 is frequency span between 6-dB points, BW2 is spectrum analyzer Resolution BW setting (3MHz). Channel 4 6dB Bandwidth = 16.56MHz. Bandwidth Correction Factor Formula: $10\log(BW1/BW2)$ $10\log(16.56/3)$ $10\log(5.52) = 7.42\text{dB}$.

Transducer Legend:

T1=15.247(a)(2) 6-dB BW CF for Wi-LAN 78746	T2=Horn 1-18 GHz (Mariposa)
T3=Cable GHz #4	T4=Cable GHz #7

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	5785.000M	75.5	+7.4	+25.4	+7.9	+3.3	+0.0	119.5	127.0	-7.5	Vert
2	5784.600M	53.7	+7.4	+25.4	+7.9	+3.3	+0.0	97.7	127.0	-29.3	Horiz

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **15.247(b)(1)**
 Work Order #: **78746**
 Test Type: **Maximized Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/23/2002
 Time: 13:59:18
 Sequence#: 21
 Tested By: Randal Clark

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna Channel 7 = 5833.0MHz. Spectrum analyzer settings- RBW=3MHz, VBW=3MHz, SWEEP=50mS. 6-dB Bandwidth Measurement Correction Factors derived from 15.247(a)(2) added to measurements. Correction factors computed according to the following formula: $10\log(BW1/BW2)$ where BW = frequency (MHz). BW1 is frequency span between 6-dB points, BW2 is spectrum analyzer Resolution BW setting (3MHz). Channel 7 6dB Bandwidth = 17.55MHz. Bandwidth Correction Factor Formula: $10\log(BW1/BW2)$ $10\log(17.55/3)$ $10\log(5.85) = 7.67\text{dB}$.

Transducer Legend:

T1=15.247(a)(2) 6-dB BW CF for Wi-LAN 78746	T2=Horn 1-18 GHz (Mariposa)
T3=Cable GHz #4	T4=Cable GHz #7

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	5834.400M	74.5	+7.7	+25.5	+8.0	+3.3	+0.0	119.0	127.0	-8.0	Vert
2	5830.400M	53.6	+7.7	+25.5	+8.0	+3.3	+0.0	98.1	127.0	-28.9	Horiz

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **15.247(b)(1) & (b)(3)**
 Work Order #: **78746**
 Test Type: **Power Out**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/18/2002
 Time: 15:41:02
 Sequence#: 2
 Tested By: Conan Boyle

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation and is directly connected to the spectrum analyzer. Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz Spectrum analyzer settings- RBW=3MHz, VBW=3MHz, SWEEP=20mS. 6-dB Bandwidth Measurement Correction Factors derived from 15.247(a)(2) added to measurements. Correction factors computed according to the following formula: $10\log(BW1/BW2)$ where BW = frequency (MHz). BW1 is frequency span between 6-dB points, BW2 is spectrum analyzer Resolution BW setting (3MHz). Channel 1 6dB Bandwidth = 16.65MHz Bandwidth Correction Factor Formula: $10\log(BW1/BW2)$ $10\log(16.65/3)$ $10\log(5.55)$ =7.44dB Channel 4 6dB Bandwidth = 16.56MHz. Bandwidth Correction Factor Formula: $10\log(BW1/BW2)$ $10\log(16.56/3)$ $10\log(5.52)$ =7.42dB Channel 7 6dB Bandwidth = 17.55MHz. Bandwidth Correction Factor Formula: $10\log(BW1/BW2)$ $10\log(17.55/3)$ $10\log(5.85)$ =7.67dB. Antenna is 17dBi per 15.247(b)3 which states that for every dB in excess of 6 dBi, the power should be lowered by the amount that it exceeds 6dBi.

Transducer Legend:

T1=26dB Attenuation	T2=HC_HF_02
T3=15.247(a)(2) 6-dB BW CF for Wi-LAN 78746	

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	5743.240M Ave	74.4	+24.3	+0.6	+7.4		+0.0	106.7	126.0 Channel 1	-19.3	None
2	5828.660M Ave	74.4	+23.9	+0.5	+7.7		+0.0	106.5	126.0 Channel 7	-19.5	None
3	5779.500M Ave	74.6	+24.0	+0.5	+7.4		+0.0	106.5	126.0 Channel 4	-19.5	None

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **15.247(b)(1) & 15.31(e)**
 Work Order #: **78746**
 Test Type: **Volt Variation on Pwr**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/19/2002
 Time: 17:48:10
 Sequence#: 8
 Tested By: Conan Boyle

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation and is directly connected to the spectrum analyzer. The EUT AC adapter is plugged into a variable AC autotransformer. The supply voltage to the AC adapter is monitored by a DVM. Each channel output power will be checked at three ac voltages-- 102vac (85%), 120vac (100%), and 138vac (115%). Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz. Actual data was measured in a 3MHz RBW=VBW and was integrated into the 6 dB BW using 10 log BW1/BW2.

Transducer Legend:

T1=26dB Attenuation	T2=HC_HF_02
T3=15.247(a)(2) 6-dB BW CF for Wi-LAN 78746	

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	5781.940M	90.7	+24.0	+0.5	+7.4		+0.0	122.6	126.0	-3.4	None
									Channel 4 85%		
2	5781.920M	90.6	+24.0	+0.5	+7.4		+0.0	122.5	126.0	-3.5	None
									Channel 4 100%		
3	5781.920M	90.6	+24.0	+0.5	+7.4		+0.0	122.5	126.0	-3.5	None
									Channel 4 115%		
4	5743.220M	89.1	+24.3	+0.6	+7.4		+0.0	121.4	126.0	-4.6	None
									Channel 1 115%		
5	5742.120M	89.1	+24.3	+0.6	+7.4		+0.0	121.4	126.0	-4.6	None
									Channel 1 100%		
6	5743.180M	89.1	+24.3	+0.6	+7.4		+0.0	121.4	126.0	-4.6	None
									Channel 1 85%		

7	5831.880M	88.1	+23.9	+0.5	+7.7	+0.0	120.2	126.0	-5.8	None
Channel 7 115%										
8	5831.900M	88.0	+23.9	+0.5	+7.7	+0.0	120.1	126.0	-5.9	None
Channel 7 100%										
9	5831.920M	88.0	+23.9	+0.5	+7.7	+0.0	120.1	126.0	-5.9	None
Channel 7 85%										

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **FCC 15.247 / 15.209**
 Work Order #: **78746**
 Test Type: **Radiated Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/23/2002
 Time: 14:16:57
 Sequence#: 9
 Tested By: Conan Boyle

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna Channel 1 = 5741.0MHz. Spectrum analyzer settings- RBW=1MHz, VBW=1MHz, SWEEP=50mS. The corrected reading from fundamental 110.9dBuV. The 20dBc limit at the band edges is 90.9dBuV. Readings at the band edges are compared to this limit, all other readings are compared to the 15.209 limit.

Transducer Legend:

T1=Cable GHz #4	T2=Cable GHz #7
T3=Horn 1-18 GHz (Mariposa)	T4=Amp - S/N 604
T5=Bicon 156	T6=Log s/n 154
T7=Cable - 10 Meter	

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5	T6	T7						
			dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	5723.200M	51.7	+7.8	+3.2	+25.4		+0.0	88.1	90.9	-2.8	Vert
2	5700.600M	33.7	+7.8	+3.2	+25.4		+0.0	70.1	90.9	-20.8	Vert
									Fundamental		
									Measurement		

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **FCC 15.247 / 15.209**
 Work Order #: **78746**
 Test Type: **Radiated Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/22/2002
 Time: 17:06:53
 Sequence#: 10
 Tested By: Conan Boyle

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna Channel 4 = 5783.0MHz. Spectrum analyzer settings- RBW=1MHz, VBW=1MHz, SWEEP=50mS. No spurious emissions within 20dB of the limit found in the frequency range of 1 to 40 GHz.

Transducer Legend:

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Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	dB	dB	dB	dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
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Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **FCC 15.247 / 15.209**
 Work Order #: **78746**
 Test Type: **Radiated Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/23/2002
 Time: 14:56:28
 Sequence#: 11
 Tested By: Conan Boyle

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna Channel 7 = 5833.0MHz. Spectrum analyzer settings- RBW=1MHz, VBW=1MHz, SWEEP=50mS. The corrected reading from fundamental 110.9dBuV. The 20dBc limit at the band edges is 90.9dBuV. Readings at the band edges are compared to this limit, all other readings are compared to the 15.209 limit.

Transducer Legend:

T1=Horn 1-18 GHz (Mariposa)	T2=Cable GHz #4
T3=Cable GHz #7	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB		Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	5852.700M	50.7	+25.5	+8.0	+3.3		+0.0	87.5	90.9	-3.4	Vert
2	5869.200M	40.7	+25.5	+8.0	+3.3		+0.0	77.5	90.9	-13.4	Vert

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **FCC 15.247(c)**
 Work Order #: **78746**
 Test Type: **Radiated Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**

Date: 04/24/2002
 Time: 10:44:08
 Sequence#: 13
 Tested By: Conan Boyle
 S/N:

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz. Spectrum analyzer settings for frequency range of 10-30 MHz – RBW=9kHz, VBW=9kHz, Sweep=20mS. Spectrum analyzer settings for frequency range of 30-1000 MHz – RBW=120kHz, VBQ=120kHz, Sweep=2-mS. Data are representative of readings taken from all channels. Frequency Range Investigated: 10 - 1000 MHz 15.247(c) Limit Calculation: The corrected reading from fundamental 110.9dBuV. The 20dBc limit at the band edges is 90.9dBuV. Readings taken in 15205 restricted bands are compared to the limit specified in 15.209 (see test notes), all other readings are compared to the 20dBc limit.

Transducer Legend:

T1=Amp - S/N 604	T2=Bicon 156
T3=Log s/n 154	T4=Cable - 10 Meter

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	401.600M	51.5	-26.8	+0.0	+15.7	+4.3	+0.0	44.7	46.0 15.209	-1.3	Vert
2	402.400M	49.1	-26.8	+0.0	+15.8	+4.3	+0.0	42.4	46.0 15.209	-3.6	Horiz
3	401.787M QP	49.2	-26.8	+0.0	+15.7	+4.3	+0.0	42.4	46.0 15.209	-3.6	Vert
4	266.300M	45.1	-26.1	+18.2	+0.0	+3.4	+0.0	40.6	46.0 15.209	-5.4	Vert
5	331.800M	42.8	-26.3	+0.0	+19.3	+3.9	+0.0	39.7	46.0 15.209	-6.3	Vert
6	263.800M	43.7	-26.1	+17.8	+0.0	+3.4	+0.0	38.8	46.0 15.209	-7.2	Vert

7	331.400M	41.4	-26.3	+0.0	+19.4	+3.9	+0.0	38.4	46.0 15.209	-7.6	Horiz
8	264.700M	42.1	-26.1	+18.0	+0.0	+3.4	+0.0	37.4	46.0 15.209	-8.6	Horiz
9	323.600M	40.0	-26.3	+0.0	+19.8	+3.8	+0.0	37.3	46.0 15.209	-8.7	Vert
10	266.300M	41.2	-26.1	+18.2	+0.0	+3.4	+0.0	36.7	46.0 15.209	-9.3	Horiz
11	281.400M	37.6	-26.1	+20.4	+0.0	+3.6	+0.0	35.5	46.0 15.209	-10.5	Vert
12	408.400M	42.1	-26.9	+0.0	+15.9	+4.4	+0.0	35.5	46.0 15.209	-10.5	Horiz
13	105.343M	44.4	-26.7	+13.0	+0.0	+2.0	+0.0	32.7	43.5 15.209	-10.8	Horiz
14	281.500M	37.3	-26.1	+20.4	+0.0	+3.6	+0.0	35.2	46.0 15.209	-10.8	Horiz
15	106.644M	43.9	-26.7	+13.1	+0.0	+2.1	+0.0	32.4	43.5 15.209	-11.1	Horiz
16	251.300M	41.7	-26.1	+15.9	+0.0	+3.2	+0.0	34.7	46.0 15.209	-11.3	Vert
17	250.300M	41.3	-26.1	+15.7	+0.0	+3.2	+0.0	34.1	46.0 15.209	-11.9	Vert
18	257.900M	39.4	-26.1	+16.9	+0.0	+3.3	+0.0	33.5	46.0 15.209	-12.5	Vert
19	251.100M	39.6	-26.1	+15.9	+0.0	+3.2	+0.0	32.6	46.0 15.209	-13.4	Horiz
20	257.400M	38.5	-26.1	+16.9	+0.0	+3.3	+0.0	32.6	46.0 15.209	-13.4	Horiz
21	108.560M	41.2	-26.7	+13.3	+0.0	+2.1	+0.0	29.9	43.5 15.209	-13.6	Horiz
22	255.800M	38.1	-26.1	+16.6	+0.0	+3.3	+0.0	31.9	46.0 15.209	-14.1	Vert
23	104.497M	40.6	-26.7	+12.9	+0.0	+2.0	+0.0	28.8	43.5 15.209	-14.7	Horiz
24	112.130M	39.7	-26.6	+13.6	+0.0	+2.1	+0.0	28.8	43.5 15.209	-14.7	Horiz
25	112.860M	39.4	-26.6	+13.6	+0.0	+2.1	+0.0	28.5	43.5 15.209	-15.0	Horiz
26	113.640M	39.2	-26.6	+13.7	+0.0	+2.1	+0.0	28.4	43.5 15.209	-15.1	Horiz
27	108.990M	39.7	-26.7	+13.3	+0.0	+2.1	+0.0	28.4	43.5 15.209	-15.1	Horiz
28	110.030M	39.5	-26.7	+13.4	+0.0	+2.1	+0.0	28.3	43.5 15.209	-15.2	Horiz
29	114.440M	38.7	-26.6	+13.8	+0.0	+2.1	+0.0	28.0	43.5 15.209	-15.5	Horiz
30	113.100M	38.8	-26.6	+13.6	+0.0	+2.1	+0.0	27.9	43.5 15.209	-15.6	Horiz
31	111.880M	38.8	-26.6	+13.5	+0.0	+2.1	+0.0	27.8	43.5 15.209	-15.7	Horiz

32	114.730M	38.4	-26.6	+13.8	+0.0	+2.1	+0.0	27.7	43.5 15.209	-15.8	Horiz
33	244.800M	37.1	-26.1	+15.9	+0.0	+3.2	+0.0	30.1	46.0 15.209	-15.9	Horiz
34	112.645M	38.4	-26.6	+13.6	+0.0	+2.1	+0.0	27.5	43.5 15.209	-16.0	Vert
35	109.510M	38.7	-26.7	+13.3	+0.0	+2.1	+0.0	27.4	43.5 15.209	-16.1	Horiz
36	111.610M	38.4	-26.7	+13.5	+0.0	+2.1	+0.0	27.3	43.5 15.209	-16.2	Horiz
37	111.100M	38.4	-26.7	+13.5	+0.0	+2.1	+0.0	27.3	43.5 15.209	-16.2	Horiz
38	112.120M	38.1	-26.6	+13.6	+0.0	+2.1	+0.0	27.2	43.5 15.209	-16.3	Vert
39	112.930M	38.0	-26.6	+13.6	+0.0	+2.1	+0.0	27.1	43.5 15.209	-16.4	Vert
40	115.190M	37.7	-26.6	+13.8	+0.0	+2.1	+0.0	27.0	43.5 15.209	-16.5	Horiz
41	110.500M	38.2	-26.7	+13.4	+0.0	+2.1	+0.0	27.0	43.5 15.209	-16.5	Horiz
42	111.615M	38.0	-26.7	+13.5	+0.0	+2.1	+0.0	26.9	43.5 15.209	-16.6	Vert
43	243.600M	36.3	-26.1	+16.0	+0.0	+3.2	+0.0	29.4	46.0 15.209	-16.6	Vert
44	111.890M	37.8	-26.6	+13.5	+0.0	+2.1	+0.0	26.8	43.5 15.209	-16.7	Vert
45	111.335M	37.4	-26.7	+13.5	+0.0	+2.1	+0.0	26.3	43.5 15.209	-17.2	Vert
46	113.145M	37.0	-26.6	+13.7	+0.0	+2.1	+0.0	26.2	43.5 15.209	-17.3	Vert
47	115.510M	36.9	-26.6	+13.8	+0.0	+2.1	+0.0	26.2	43.5 15.209	-17.3	Horiz
48	113.825M	36.8	-26.6	+13.7	+0.0	+2.1	+0.0	26.0	43.5 15.209	-17.5	Vert
49	110.795M	37.1	-26.7	+13.5	+0.0	+2.1	+0.0	26.0	43.5 15.209	-17.5	Vert
50	113.665M	36.6	-26.6	+13.7	+0.0	+2.1	+0.0	25.8	43.5 15.209	-17.7	Vert
51	113.385M	36.6	-26.6	+13.7	+0.0	+2.1	+0.0	25.8	43.5 15.209	-17.7	Vert
52	110.570M	37.0	-26.7	+13.4	+0.0	+2.1	+0.0	25.8	43.5 15.209	-17.7	Vert
53	114.195M	36.3	-26.6	+13.7	+0.0	+2.1	+0.0	25.5	43.5 15.209	-18.0	Vert
54	111.095M	36.6	-26.7	+13.5	+0.0	+2.1	+0.0	25.5	43.5 15.209	-18.0	Vert
55	241.100M	34.6	-26.1	+16.1	+0.0	+3.2	+0.0	27.8	46.0 15.209	-18.2	Horiz
56	114.700M	35.6	-26.6	+13.8	+0.0	+2.1	+0.0	24.9	43.5 15.209	-18.6	Vert

57	116.210M	35.2	-26.6	+13.9	+0.0	+2.1	+0.0	24.6	43.5 15.209	-18.9	Horiz
58	114.400M	35.2	-26.6	+13.8	+0.0	+2.1	+0.0	24.5	43.5 15.209	-19.0	Vert
59	118.150M	34.5	-26.6	+14.1	+0.0	+2.1	+0.0	24.1	43.5 15.209	-19.4	Horiz
60	117.240M	34.1	-26.6	+14.0	+0.0	+2.1	+0.0	23.6	43.5 15.209	-19.9	Horiz
61	100.516M	34.8	-26.7	+12.5	+0.0	+2.0	+0.0	22.6	43.5 15.209	-20.9	Horiz
62	501.910M QP	52.1	-27.3	+0.0	+17.8	+5.1	+0.0	47.7	90.9	-43.2	Vert
^	501.900M	54.1	-27.3	+0.0	+17.8	+5.1	+0.0	49.7	90.9	-41.2	Vert
64	294.800M	47.6	-26.2	+22.2	+0.0	+3.7	+0.0	47.3	90.9	-43.6	Horiz
65	502.400M	51.0	-27.3	+0.0	+17.8	+5.1	+0.0	46.6	90.9	-44.3	Horiz
66	298.200M	46.2	-26.2	+22.7	+0.0	+3.7	+0.0	46.4	90.9	-44.5	Vert
67	300.600M	46.9	-26.2	+0.0	+21.3	+3.7	+0.0	45.7	90.9	-45.2	Horiz
68	345.800M	49.6	-26.4	+0.0	+18.5	+4.0	+0.0	45.7	90.9	-45.2	Vert
69	497.000M	49.3	-27.3	+0.0	+17.7	+5.1	+0.0	44.8	90.9	-46.1	Horiz
70	495.981M QP	49.2	-27.3	+0.0	+17.7	+5.1	+0.0	44.7	90.9	-46.2	Vert
^	495.900M	51.0	-27.3	+0.0	+17.7	+5.1	+0.0	46.5	90.9	-44.4	Vert
72	293.600M	44.1	-26.2	+22.0	+0.0	+3.7	+0.0	43.6	90.9	-47.3	Vert
73	352.400M	47.3	-26.4	+0.0	+18.2	+4.0	+0.0	43.1	90.9	-47.8	Vert
74	396.600M	49.7	-26.8	+0.0	+15.9	+4.3	+0.0	43.1	90.9	-47.8	Vert
75	318.000M	45.0	-26.3	+0.0	+20.2	+3.8	+0.0	42.7	90.9	-48.2	Horiz
76	397.000M	48.7	-26.8	+0.0	+15.8	+4.3	+0.0	42.0	90.9	-48.9	Horiz
77	301.200M	42.7	-26.2	+0.0	+21.2	+3.7	+0.0	41.4	90.9	-49.5	Vert
78	447.800M	46.7	-27.2	+0.0	+16.8	+4.6	+0.0	40.9	90.9	-50.0	Horiz
79	540.800M	44.4	-27.5	+0.0	+18.4	+5.2	+0.0	40.5	90.9	-50.4	Horiz
80	336.600M	43.8	-26.3	+0.0	+19.1	+3.9	+0.0	40.5	90.9	-50.4	Vert
81	346.200M	44.1	-26.4	+0.0	+18.5	+4.0	+0.0	40.2	90.9	-50.7	Horiz

82	305.400M	41.5	-26.2	+0.0	+21.0	+3.7	+0.0	40.0	90.9	-50.9	Vert
83	510.100M	43.7	-27.3	+0.0	+18.0	+5.1	+0.0	39.5	90.9	-51.4	Vert
84	352.000M	43.5	-26.4	+0.0	+18.2	+4.0	+0.0	39.3	90.9	-51.6	Horiz
85	484.100M	44.2	-27.3	+0.0	+17.5	+4.9	+0.0	39.3	90.9	-51.6	Vert
86	602.600M	41.9	-27.5	+0.0	+19.4	+5.4	+0.0	39.2	90.9	-51.7	Horiz
87	487.400M	43.9	-27.3	+0.0	+17.6	+5.0	+0.0	39.2	90.9	-51.7	Vert
88	316.800M	41.3	-26.3	+0.0	+20.2	+3.8	+0.0	39.0	90.9	-51.9	Vert
89	309.400M	40.6	-26.2	+0.0	+20.7	+3.8	+0.0	38.9	90.9	-52.0	Vert
90	598.000M	41.4	-27.5	+0.0	+19.3	+5.4	+0.0	38.6	90.9	-52.3	Horiz
91	538.000M	41.9	-27.5	+0.0	+18.4	+5.2	+0.0	38.0	90.9	-52.9	Horiz
92	380.400M	43.3	-26.6	+0.0	+16.7	+4.2	+0.0	37.6	90.9	-53.3	Horiz
93	552.000M	41.0	-27.5	+0.0	+18.6	+5.2	+0.0	37.3	90.9	-53.6	Horiz
94	457.400M	42.5	-27.2	+0.0	+17.0	+4.7	+0.0	37.0	90.9	-53.9	Vert
95	366.600M	41.9	-26.5	+0.0	+17.4	+4.1	+0.0	36.9	90.9	-54.0	Horiz
96	481.200M	41.9	-27.3	+0.0	+17.4	+4.9	+0.0	36.9	90.9	-54.0	Vert
97	367.200M	41.9	-26.5	+0.0	+17.4	+4.1	+0.0	36.9	90.9	-54.0	Vert
98	515.900M	40.9	-27.4	+0.0	+18.1	+5.1	+0.0	36.7	90.9	-54.2	Vert
99	597.200M	39.4	-27.5	+0.0	+19.3	+5.4	+0.0	36.6	90.9	-54.3	Horiz
100	285.300M	38.0	-26.1	+20.9	+0.0	+3.6	+0.0	36.4	90.9	-54.5	Horiz
101	450.700M	42.2	-27.2	+0.0	+16.8	+4.6	+0.0	36.4	90.9	-54.5	Vert
102	568.400M	39.6	-27.5	+0.0	+18.9	+5.3	+0.0	36.3	90.9	-54.6	Horiz
103	580.800M	38.3	-27.5	+0.0	+19.0	+5.3	+0.0	35.1	90.9	-55.8	Horiz
104	645.770M	35.9	-27.6	+0.0	+20.2	+6.0	+0.0	34.5	90.9	-56.4	Horiz
105	458.800M	40.0	-27.2	+0.0	+17.0	+4.7	+0.0	34.5	90.9	-56.4	Horiz
106	537.000M	38.0	-27.4	+0.0	+18.4	+5.2	+0.0	34.2	90.9	-56.7	Vert

107	417.000M	40.5	-26.9	+0.0	+16.1	+4.4	+0.0	34.1	90.9	-56.8	Horiz
108	644.830M	35.6	-27.6	+0.0	+20.1	+5.9	+0.0	34.0	90.9	-56.9	Horiz
109	431.200M	40.2	-27.1	+0.0	+16.4	+4.5	+0.0	34.0	90.9	-56.9	Horiz
110	575.400M	36.8	-27.5	+0.0	+19.0	+5.3	+0.0	33.6	90.9	-57.3	Horiz
111	523.800M	37.7	-27.4	+0.0	+18.2	+5.1	+0.0	33.6	90.9	-57.3	Vert
112	647.850M	34.4	-27.6	+0.0	+20.2	+6.0	+0.0	33.0	90.9	-57.9	Horiz
113	468.500M	37.9	-27.2	+0.0	+17.2	+4.8	+0.0	32.7	90.9	-58.2	Vert
114	597.450M	34.4	-27.5	+0.0	+19.3	+5.4	+0.0	31.6	90.9	-59.3	Vert
115	601.300M	32.5	-27.5	+0.0	+19.3	+5.4	+0.0	29.7	90.9	-61.2	Vert
116	85.850M	40.9	-26.7	+8.3	+0.0	+1.8	+0.0	24.3	90.9	-66.6	Vert
117	86.900M	40.0	-26.7	+8.6	+0.0	+1.8	+0.0	23.7	90.9	-67.2	Vert
118	84.090M	40.4	-26.8	+7.9	+0.0	+1.8	+0.0	23.3	90.9	-67.6	Vert
119	83.040M	40.2	-26.8	+7.6	+0.0	+1.8	+0.0	22.8	90.9	-68.1	Vert
120	83.780M	40.0	-26.8	+7.8	+0.0	+1.8	+0.0	22.8	90.9	-68.1	Vert
121	82.280M	40.0	-26.8	+7.4	+0.0	+1.8	+0.0	22.4	90.9	-68.5	Vert
122	82.770M	39.8	-26.8	+7.5	+0.0	+1.8	+0.0	22.3	90.9	-68.6	Vert
123	86.150M	38.3	-26.7	+8.4	+0.0	+1.8	+0.0	21.8	90.9	-69.1	Vert
124	80.920M	39.7	-26.8	+7.0	+0.0	+1.8	+0.0	21.7	90.9	-69.2	Vert
125	81.650M	39.4	-26.8	+7.2	+0.0	+1.8	+0.0	21.6	90.9	-69.3	Vert
126	80.090M	38.5	-26.8	+6.8	+0.0	+1.8	+0.0	20.3	90.9	-70.6	Vert
127	86.940M	36.2	-26.7	+8.6	+0.0	+1.8	+0.0	19.9	90.9	-71.0	Horiz
128	80.380M	37.9	-26.8	+6.9	+0.0	+1.8	+0.0	19.8	90.9	-71.1	Vert
129	85.410M	36.4	-26.7	+8.2	+0.0	+1.8	+0.0	19.7	90.9	-71.2	Horiz
130	80.100M	36.7	-26.8	+6.8	+0.0	+1.8	+0.0	18.5	90.9	-72.4	Horiz
131	85.080M	35.3	-26.7	+8.1	+0.0	+1.8	+0.0	18.5	90.9	-72.4	Horiz

132	76.810M	35.6	-26.8	+7.2	+0.0	+1.7	+0.0	17.7	90.9	-73.2	Horiz
133	79.140M	35.7	-26.8	+6.9	+0.0	+1.8	+0.0	17.6	90.9	-73.3	Horiz
134	78.080M	35.4	-26.8	+7.0	+0.0	+1.8	+0.0	17.4	90.9	-73.5	Horiz
135	79.640M	33.9	-26.8	+6.8	+0.0	+1.8	+0.0	15.7	90.9	-75.2	Horiz

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **15.247(c) -20dBc Limit**
 Work Order #: **78746**
 Test Type: **-20dBc Limit**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/19/2002
 Time: 12:15:37
 Sequence#: 4
 Tested By: Conan Boyle

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation on Channel 1 and is directly connected to the spectrum analyzer. Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz. Spectrum analyzer settings- RBW=100kHz, VBW=300kHz, SWEEP=20mS. 15.247(c) limit is derived from peak power output on channel 4 (worst case): 114.5dBuV - 20dBc = 94.5dBuV.

Transducer Legend:

T1=26dB Attenuation	T2=HC_HF_02
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Measurement Data: Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	5739.560M	89.4	+24.4	+0.6			+0.0	114.4	94.5	+19.9	None
Channel 1 Fundamental											
2	17223.200M	39.7	+25.0	+0.9			+0.0	65.6	94.5	-28.9	None
3rd Harmonic											
3	11482.000M	37.4	+25.0	+1.0			+0.0	63.4	94.5	-31.1	None
2nd Harmonic											
4	40.000M	27.9	+25.7	+0.0			+0.0	53.6	94.5	-40.9	None
40MHz Clock											
5	10.000M	23.4	+25.8	+0.0			+0.0	49.2	94.5	-45.3	None
10MHz Clock											
6	20.000M	22.7	+25.8	+0.0			+0.0	48.5	94.5	-46.0	None
20MHz Clock											

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362
 Customer: **Wi-LAN**
 Specification: **15.247(c) -20dBc Limit**
 Work Order #: **78746**
 Test Type: **-20dBc Limit**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**

Date: 04/19/2002
 Time: 12:08:54
 Sequence#: 5
 Tested By: Conan Boyle
 S/N:

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation on Channel 4 and is directly connected to the spectrum analyzer. Channel 4 = 5783.0MHz. Spectrum analyzer settings- RBW=100kHz, VBW=300kHz, SWEEP=20mS. 15.247(c) limit is derived from peak power output on channel 4 (worst case): 114.5dBuV - 20dBc = 94.5dBuV.

Transducer Legend:

T1=26dB Attenuation	T2=HC_HF_02
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Measurement Data: Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	5781.560M	90.0	+24.0	+0.5			+0.0	114.5	94.5	+20.0	None
									Channel 4 Fundamental		
2	11566.010M	39.1	+25.0	+1.1			+0.0	65.2	94.5	-29.3	None
									2nd Harmonic		
3	17349.010M	37.5	+25.0	+0.9			+0.0	63.4	94.5	-31.1	None
									3rd Harmonic		
4	914.996M	30.2	+25.7	+0.0			+0.0	55.9	94.5	-38.6	None
									LO		
5	40.000M	29.7	+25.7	+0.0			+0.0	55.4	94.5	-39.1	None
									40MHz Clock		
6	10.000M	24.0	+25.8	+0.0			+0.0	49.8	94.5	-44.7	None
									10MHz Clock		
7	20.000M	23.1	+25.8	+0.0			+0.0	48.9	94.5	-45.6	None
									20MHz Clock		

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362
 Customer: **Wi-LAN**
 Specification: **15.247(c) -20dBc Limit**
 Work Order #: **78746**
 Test Type: **-20dBc Limit**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**

Date: 04/19/2002
 Time: 12:01:32
 Sequence#: 6
 Tested By: Conan Boyle
 S/N:

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation on Channel 7 and is directly connected to the spectrum analyzer. Channel 7 = 5833.0MHz. Spectrum analyzer settings- RBW=100kHz, VBW=300kHz, SWEEP=20mS. 15.247(c) limit is derived from peak power output on channel 4 (worst case): 114.5dBuV - 20dBc = 94.5dBuV.

Transducer Legend:

T1=26dB Attenuation	T2=HC_HF_02
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Measurement Data: Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	5833.475M	85.3	+23.9	+0.5			+0.0	109.7	90.0	+19.7	None
									Channel 7 Fundamental		
2	11666.010M	38.1	+25.0	+1.3			+0.0	64.4	94.5	-30.1	None
									2nd Harmonic		
3	17499.000M	38.4	+25.0	+1.0			+0.0	64.4	94.5	-30.1	None
									3rd Harmonic		
4	915.000M	30.3	+25.7	+0.0			+0.0	56.0	94.5	-38.5	None
									LO		
5	40.000M	28.7	+25.7	+0.0			+0.0	54.4	94.5	-40.1	None
									40MHz Clock		
6	10.000M	23.9	+25.8	+0.0			+0.0	49.7	94.5	-44.8	None
									10MHz Clock		
7	20.000M	23.9	+25.8	+0.0			+0.0	49.7	94.5	-44.8	None
									20MHz Clock		

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **15.247(d) Peak Power Spectral Density**
 Work Order #: **78746**
 Test Type: **Power Spectral Density**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/18/2002
 Time: 17:48:30
 Sequence#: 3
 Tested By: Conan Boyle

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Three cables are attached to the EUT. One is a one-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a two-meter DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The third cable is an RF-shielded semi-rigid cable attached to a Type N connector used as the RF port. The EUT is powered by an external 24vdc AC adapter powered by 120v, 60Hz. The EUT is transmitting in full test operation and is directly connected to the spectrum analyzer. Channel 1 = 5741.0MHz Channel 4 = 5783.0MHz Channel 7 = 5833.0MHz. Spectrum analyzer settings- RBW=3kHz, VBW=30kHz, SWEEP=100S. Plot created for each channel. Note: All channels transmitting less than maximum allowable peak level spectral density for DSSS transmitters (115dBuV = 8dBm).

Transducer Legend:

T1=26dB Attenuation	T2=HC_HF_02
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Measurement Data:		Reading listed by margin.				Test Distance: None					
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	5783.000M	75.6	+24.0	+0.5			+0.0	100.1	115.0	-14.9	None
									Channel 4		
2	5740.999M	73.2	+24.3	+0.6			+0.0	98.1	115.0	-16.9	None
									Channel 1		
3	5833.000M	72.2	+23.9	+0.5			+0.0	96.6	115.0	-18.4	None
									Channel 7		

Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **FCC 15.207**
 Work Order #: **78746**
 Test Type: **Conducted Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/24/2002
 Time: 15:08:54
 Sequence#: 15
 Tested By: Randal Clark
 120V 60Hz

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna EUT transmitting on Channel 1 = 5741.0MHz, which represents the worst case. Spectrum analyzer settings- RBW=1MHz, VBW=1MHz, SWEEP=50mS. Data are representative of readings taken from all channels. Frequency Range Investigated: 450kHz - 30MHz. Data taken at 450kHz with an average detector is 21.9 dB lower than data taken with a CISPR Quasi-Peak Adapter. Therefore, the quasi peak data has been reduced by 13dB for comparison with the 15.207 limit. Average measurement obtained using video averaging.

Transducer Legend:

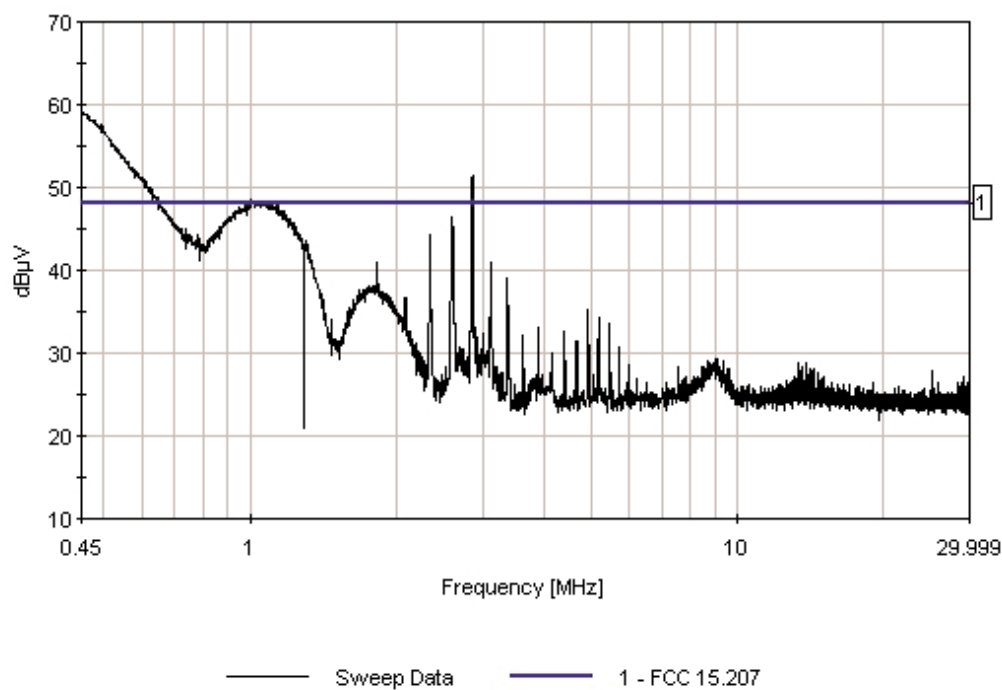
T1=Cable & Cap (Bench)	T2=LISN Insertion Loss s/n474
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Measurement Data:			Reading listed by margin.				Test Lead: Black				
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2.609M	43.6	+0.2	+0.4			+0.0	44.2	48.0	-3.8	Black
QP											
2	2.609M	43.1	+0.2	+0.4			+0.0	43.7	48.0	-4.3	Black
QP											
^	2.609M	45.9	+0.2	+0.4			+0.0	46.5	48.0	-1.5	Black
4	1.300M	43.2	+0.1	+0.3			+0.0	43.6	48.0	-4.4	Black
5	2.349M	42.0	+0.2	+0.3			+0.0	42.5	48.0	-5.5	Black
QP											
^	2.341M	43.9	+0.2	+0.3			+0.0	44.4	48.0	-3.6	Black

7	1.819M	40.5	+0.2	+0.3	+0.0	41.0	48.0	-7.0	Black
8	3.115M	40.4	+0.2	+0.4	+0.0	41.0	48.0	-7.0	Black
9	1.004M	40.5	+0.1	+0.3	+0.0	40.9	48.0	-7.1	Black
^	1.004M	48.1	+0.1	+0.3	+0.0	48.5	48.0	+0.5	Black
11	450.835k	39.3	+0.1	+0.4	+0.0	39.8	48.0	-8.2	Black
^	450.836k	58.6	+0.1	+0.4	+0.0	59.1	48.0	+11.1	Black
13	2.860M	39.1	+0.2	+0.4	+0.0	39.7	48.0	-8.3	Black
^	2.860M	50.9	+0.2	+0.4	+0.0	51.5	48.0	+3.5	Black
15	3.376M	38.4	+0.3	+0.4	+0.0	39.1	48.0	-8.9	Black
16	4.936M	34.2	+0.3	+0.7	+0.0	35.2	48.0	-12.8	Black
17	5.196M	33.3	+0.3	+0.8	+0.0	34.4	48.0	-13.6	Black
18	1.472M	33.6	+0.1	+0.3	+0.0	34.0	48.0	-14.0	Black
19	5.455M	32.5	+0.3	+0.8	+0.0	33.6	48.0	-14.4	Black
20	3.906M	32.3	+0.3	+0.4	+0.0	33.0	48.0	-15.0	Black
21	4.418M	31.9	+0.3	+0.5	+0.0	32.7	48.0	-15.3	Black
22	3.003M	31.8	+0.2	+0.4	+0.0	32.4	48.0	-15.6	Black
23	3.633M	31.5	+0.3	+0.4	+0.0	32.2	48.0	-15.8	Black
24	4.684M	30.6	+0.3	+0.6	+0.0	31.5	48.0	-16.5	Black
25	5.721M	29.5	+0.3	+0.9	+0.0	30.7	48.0	-17.3	Black
26	2.934M	29.8	+0.2	+0.4	+0.0	30.4	48.0	-17.6	Black
27	4.159M	29.1	+0.3	+0.5	+0.0	29.9	48.0	-18.1	Black
28	8.990M	23.9	+0.2	+5.1	+0.0	29.2	48.0	-18.8	Black
29	13.399M	27.3	+0.3	+1.1	+0.0	28.7	48.0	-19.3	Black
30	5.974M	27.3	+0.3	+1.0	+0.0	28.6	48.0	-19.4	Black
31	7.564M	26.6	+0.2	+1.6	+0.0	28.4	48.0	-19.6	Black

32	3.664M	27.5	+0.3	+0.4	+0.0	28.2	48.0	-19.8	Black
33	14.309M	26.7	+0.3	+1.0	+0.0	28.0	48.0	-20.0	Black
34	25.048M	26.8	+0.4	+0.6	+0.0	27.8	48.0	-20.2	Black
35	14.588M	26.4	+0.3	+1.0	+0.0	27.7	48.0	-20.3	Black
36	5.482M	26.4	+0.3	+0.9	+0.0	27.6	48.0	-20.4	Black
37	450.835k	20.8	+0.1	+0.4	+0.0	21.3	48.0	-26.7	Black
Ave									

CKC Laboratories, Inc. Date: 03/13/2001 Time: 12:31:53 WFO#: 76093
15.247(b)(1) Test Distance: None Sequence#: 2



Test Location: CKC Laboratories, Inc., Site B • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Wi-LAN**
 Specification: **FCC 15.207**
 Work Order #: **78746**
 Test Type: **Conducted Emissions**
 Equipment: **Wireless LAN**
 Manufacturer: **Wi-LAN**
 Model: **AWE 120-58 MKIII**
 S/N:

Date: 04/24/2002
 Time: 15:05:54
 Sequence#: 16
 Tested By: Randal Clark
 120V 60Hz

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Wireless LAN*	Wi-LAN	AWE 120-58 MKIII	
Power Inserter Unit	Wi-LAN		
AC Adapter	ENG	57-24-1000D	None

Support Devices:

Function	Manufacturer	Model #	S/N
Computer, Notebook	Toshiba	PR1273U	98060506A
AC Adapter	Toshiba	PA2450U	0295362

Test Conditions / Notes:

EUT is an Ethernet bridge transceiver operating on 5725.0 - 5850.0 MHz. The host notebook PC is not a necessary part of the EUT. 15.247(b)(1) Limit is 1-watt for DSSS systems. Two cables are attached to the EUT. One is a 1-meter Cat 5 connected between an Ethernet port on the host notebook PC and the Power Inserter Unit. The second is a DB-9 serial cable connected from the COM1 serial port on the host notebook PC to the EUT. The EUT is powered by an external 24VDC adapter powered by 120VAC 60Hz. The EUT is transmitting in full test operation and is connected to its transmit antenna. EUT transmitting on Channel 1 = 5741.0MHz, which represents the worst case. Spectrum analyzer settings- RBW=1MHz, VBW=1MHz, SWEEP=50mS. Data are representative of readings taken from all channels. Frequency Range Investigated: 450kHz - 30MHz. Data taken at 450kHz with an average detector is 31.3 dB lower than data taken with a CISPR Quasi-Peak Adapter. Therefore, the quasi peak data has been reduced by 13dB for comparison with the 15.207 limit. Average measurement obtained using video averaging.

Transducer Legend:

T1=Cable & Cap (Bench)	T2=LISN Insertion Loss s/n493
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Measurement Data:		Reading listed by margin.				Test Lead: White					
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	2.612M	42.4	+0.2	+0.4			+0.0	43.0	48.0	-5.0	White
QP											
^	2.607M	46.0	+0.2	+0.4			+0.0	46.6	48.0	-1.4	White
3	2.351M	41.6	+0.2	+0.3			+0.0	42.1	48.0	-5.9	White
QP											
^	2.346M	43.8	+0.2	+0.3			+0.0	44.3	48.0	-3.7	White
5	3.122M	39.5	+0.2	+0.4			+0.0	40.1	48.0	-7.9	White

6	2.872M	39.1	+0.2	+0.4	+0.0	39.7	48.0	-8.3	White
QP									
^	2.867M	50.6	+0.2	+0.4	+0.0	51.2	48.0	+3.2	White
8	1.305M	38.5	+0.1	+0.3	+0.0	38.9	48.0	-9.1	White
9	1.826M	38.4	+0.2	+0.3	+0.0	38.9	48.0	-9.1	White
10	2.088M	36.5	+0.2	+0.3	+0.0	37.0	48.0	-11.0	White
11	980.620k	36.4	+0.1	+0.3	+0.0	36.8	48.0	-11.2	White
QP									
^	981.569k	43.8	+0.1	+0.3	+0.0	44.2	48.0	-3.8	White
13	3.385M	36.0	+0.3	+0.4	+0.0	36.7	48.0	-11.3	White
14	4.957M	33.3	+0.3	+1.9	+0.0	35.5	48.0	-12.5	White
15	451.672k	34.2	+0.1	+0.6	+0.0	34.9	48.0	-13.1	White
QP							Reduced by 13dB		
16	2.642M	33.5	+0.2	+0.4	+0.0	34.1	48.0	-13.9	White
17	2.704M	33.2	+0.2	+0.4	+0.0	33.8	48.0	-14.2	White
18	5.216M	31.4	+0.3	+1.8	+0.0	33.5	48.0	-14.5	White
19	2.676M	32.6	+0.2	+0.4	+0.0	33.2	48.0	-14.8	White
20	4.438M	31.5	+0.3	+1.2	+0.0	33.0	48.0	-15.0	White
21	29.940M	30.8	+0.4	+0.8	+0.0	32.0	48.0	-16.0	White
22	2.110M	31.4	+0.2	+0.3	+0.0	31.9	48.0	-16.1	White
23	5.476M	30.1	+0.3	+1.5	+0.0	31.9	48.0	-16.1	White
24	4.698M	29.9	+0.3	+1.6	+0.0	31.8	48.0	-16.2	White
25	3.920M	30.8	+0.3	+0.5	+0.0	31.6	48.0	-16.4	White
26	13.849M	30.4	+0.3	+0.6	+0.0	31.3	48.0	-16.7	White
27	3.645M	29.7	+0.3	+0.5	+0.0	30.5	48.0	-17.5	White
28	2.232M	29.1	+0.2	+0.3	+0.0	29.6	48.0	-18.4	White
29	5.735M	27.9	+0.3	+1.2	+0.0	29.4	48.0	-18.6	White
30	4.179M	28.1	+0.3	+0.8	+0.0	29.2	48.0	-18.8	White

31	6.950M	24.9	+0.3	+3.8	+0.0	29.0	48.0	-19.0	White
32	17.804M	28.0	+0.4	+0.5	+0.0	28.9	48.0	-19.1	White
33	13.606M	27.6	+0.3	+0.6	+0.0	28.5	48.0	-19.5	White
34	451.671k	15.9	+0.1	+0.6	+0.0	16.6	48.0	-31.4	White
Ave									
^	451.672k	53.2	+0.1	+0.6	+0.0	53.9	48.0	+5.9	White

CKC Laboratories, Inc. Date: 03/13/2001 Time: 12:31:53 WO#: 76093
15.247(b)(1) Test Distance: None Sequence#: 2

