125 Technology Parkway
Norcross, Georgia, US 30092

Test Report

LXE Model: 6726

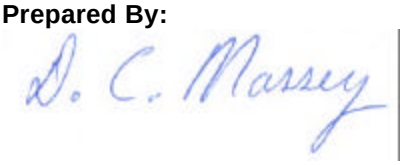
FCC ID: KDZLXE6726M

Direct Sequence Spread Spectrum Transmitter

Mobile Equipment Certification

Applicant:	LXE Inc. 125 Technology Parkway Norcross, GA 30092
Purpose of Testing:	To demonstrate compliance with FCC Part 15 Subpart C

Prepared By:



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Issue Date: October 18, 2001

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1.0 GENERAL

1.1 Introduction

The purpose of this report is to demonstrate compliance with Part 15, Subpart C of the FCC's Code of Federal Regulations.

1.2 Product Description

1.2.1 General

The Equipment Under Test(EUT) is the LXE Model 6726, 2.4GHz Spread Spectrum transceiver. It is offered with 128 bit Wired Equivalent Privacy(WEP). The LXE part number for this radio model is 480631-5010; this part number will appear on the radio and on the host device labels, identifying the transceiver used in the host.

The LXE 6726 is an OEM Direct Sequence Spread Spectrum product manufactured by Cisco Systems. It is IEEE 802.11b compliant and operates in the band of 2400-2483.5 GHz. The radio is capable of 4 data rates and self adjusts to the most appropriate rate depending on the performance required. The data rates are 11, 5.5, 2 and 1 Mbps, where 11 Mbps gives the maximum throughput for data transfer, and 1 Mbps gives the best coverage where only small data packets are sent.

The radio has 2 ports, each capable of TX/RX. The card can be used either with a single antenna scheme in one port, or a diverse antenna scheme using both ports. The radio is housed in a PCMCIA Type II card.

1.2.2 Intended Use

The LXE 6726 transceiver will be integrated into LXE wireless LAN products defined as mobile and portable hosts according to section 2.1091 and 2.1093 respectively of the FCC rules. Portable hosts identified in this report are for hand-held use only and are not intended to be used on the body. Users instructions inform the user of the correct way to use these devices in such a manner as to maintain a distance of 20cm from the rest of the body. Detailed operating configurations and exposure conditions are included in the RF safety submittal of this filing.

A separate certification has been obtained for this same radio for LXE devices defined as portable that are intended to be used within 20 cm of the operators body. The FCC ID for this certification is KDZLXE6726P.

LXE host products currently targeted for integration of the 6726 radio card are the MX1, MX2, 2325, VX1, VX2, VX4, 6720, 6721, and 6724. These products are LXE PC based mini-computers equipped with PCMCIA slots to accommodate the various radio cards offered, or they can be used as batch terminals with no radio card at all. For batch operations, the PCMCIA slots are utilized as memory or storage space enhancements. The 6720, 6721, and 6724 are Access Points for the WLAN system.

All hosts have been evaluated to, and found to comply with, FCC Part 15, Subpart B, Class A, and in some cases Class B emission requirements.

1.2.3 Technical Specifications

Table 1: Specifications

Frequency Band	2400-2483.5 MHz
Number of Channels	11
Modulation Technique	BPSK 1 Mbps QPSK 2 Mbps CCK 5.5 and 11 Mbps
Interface	PC Card Type II Size
Dimensions	85.0 mm X 53.95 mm X 5.0 mm (PC Card)
Output power	14 dBm nominal
Power Consumption PC Card	Doze mode 10 mA
	Receive mode 280 mA
	Transit mode 400 mA at max output power
Temperature Range (operational)	0-70ºC 95% max. humidity (non condensing)
Operating Systems	DOS Windows 95 Windows 98 Windows NT® Windows 2000
Standards	IEEE 802.11b
Regulations	FCC Part 15 Subpart C
	RSS 139 & RSS 102
	ETS 300 328 & 300 826

1.2.4 Antennas

Table 1 below gives the antennas we wish to include with this filing. In addition it identifies the terminal devices in which each antenna will be used with the transmitter. These terminal devices are further described in section 1.2.4 and in the RF safety submittal of this filing.

Table 1: Antennas

Manufacturer	Mfr. P/N	LXE P/N	LXE Model used on	Type	Gain (dbi)	Antenna Scheme
Cushcraft	**RTN2400SXR**	153180-0001	VX Series	Omni	0	Non-Diverse
Maxrad	**MQWS2400RPC**					
Huber & Suner	**9090.16.0001**	990004-0027	2325	Omni	1.8	Non-Diverse
LXE	**155522-0001**	155522-0001	MX1	Omni	0	Diverse
	155814-0001	155814-0001		Patch		
Toko	**DAC2450CT1**	NONE	MX2	Omni	2.15	Non-Diverse
Maxrad	**MHWS2400RPC**	480429-0400	MCWS	Omni	2.0	Non-Diverse
Cushcraft	**S2400XXXX ****	153179-0001	Access Points 6720, 6721	Omni	0	Both
		153325-0001		Omni	0	
		480424-0400		Omni	0	
	S2403XXXX **	153599-0001		Omni	3	
		153600-0001		Omni	3	
		480424-3404		Omni	3	
	S2406XXXX **	480424-1702		Directional	6	
		480424-3402		Patch	6	
		481246-2400		Patch	6	
	PC2415XXXX **	460601-3020		YAGI	15	
		460602-3020		YAGI	15	
	S2401290P 12RTN	480429-2703		90° Directional	12	
Hypergain	**HG2415P**	480429-0415		Omni	15	
LXE	**Spire**	155846-0001		Omni	3	
		155845-0001		Omni	6	
Mobile Mark	**OD9-2400**	480424-0411		Omni	9	
	OD12-2400	480429-0411		Omni	12	
Xertex	**245BD5W-XXXX ****	155311-0001		Patch	6	
		480424-3411		Patch	6	

Notes: Only the highest gain of each antenna type was tested.

** Manufacturer model number s given for convenience. Antennas are electrically and functionally equivalent, and differ only in connector type and length. LXE numbers given for all variations.

1.2.5 Radio Hosts

The 480631-5010 radio will be used in a variety of hosts products. All hosts have been evaluated to, and found to comply with, FCC Part 15, Subpart B, Class A, and in some cases, Class B emission requirements. The radio interfaces with the host unit through a PCMCIA card slot.

Vehicle Mounted Computers : VX1, VX2, VX4

The LXE VX product family is a series of rugged, vehicle mounted computers (VMC's), whose primary application is to provide data exchange with an application host via a wireless LAN network. The typical application is a VMC mounted on a lift truck in a warehouse or port environment, equipped with a laser barcode scanner, used as an inventory tracking tool. Communications from the VMC to application server is via an RF link to LXE Access Points, devices used to connect the wireless LAN to a wired LAN.

Handheld Computers : MX1, MX2, 2325
The LXE MX product family is a series of rugged, handheld computers (HHC's). As with the VX series, these products are used typically in warehouse or port environments. All are battery powered and are very similar in function. The models differ in features such as display and keyboard size and configuration, CPU speed, memory, mass storage, etc. Communications from the HHC to application server is via an RF link to LXE Access Points, devices used to connect the wireless LAN to a wired LAN.

Access Points : 6720, 6721, 6722, 6723, 6724
The LXE 67xx product family are the Access Points providing the bi-directional routing of data traffic between the wireless LAN (the VX and MX computers) and the wired LAN backbone in an installation.

The LXE model 6720 is a tabletop or wall mounted unit.
The LXE model 6721 provides a UL50, Type 4 (NEMA 4) rated weatherproof enclosure for the 6720 AP.
The LXE model 6722 provides a plenum-rated enclosure designed for installation in standard drop-ceilings for the 6720 AP. The 6722 AP is designed to appear like part of the HVAC system and is aesthetically pleasing. This AP is generally used in office or healthcare environments, and is used in conjunction with the LXE Mobile Clinical Workstations, described below.

Mobile Clinical Workstation : MCWS
The LXE model MCWS is a multi-purpose, mobile computer workstation. It is a medical-grade cart equipped with a rechargeable battery, power supply / charger, a fully functional Intel Pentium based computer and display, and associated peripherals. The MCWS is typically used by healthcare professionals in hospital environments, who require mobile, full-featured computers for inputting and retrieving patient information. It is typically used with the 6720 or 6722 AP.

2.0 LOCATION OF TEST FACILTY

The LXE test facility is located at the following address:

LXE, Inc.
An Electromagnetic Sciences Company
125 Technology Parkway
Norcross, GA US 30092-2993

2.1 DESCRIPTION OF OPEN AREA TEST SITE

All tests were conducted at the manufacture's test facility at a location specifically prepared for this testing. The radiated emissions test site meets the characteristics of ANSI C63.4:1992, CISPR 16 and EN 55022:1998-. This site has been fully described and submitted to the FCC, and accepted in their letter marked 31040/SIT, 1300F2.

The open area test site(OATS) is located in the center of the rooftop of the building. The roof is located at a height of approximately 8 meters above the ground. The 3 meter radiated emissions test site is an open, flat area approximately 6.2m x 9.2m in dimension. All reflecting objects including test personnel lie outside the perimeter of the ellipse. The site has a ground plane which extends 2 meters past the mast and equipment under test(EUT). Material of the ground plane, comprised of individual 1/4" metal screen mesh rolls, were soldered at the seams with gaps smaller than 1/10 of the wavelength at 1000MHz. The ground plane is connected to the earth ground by ground rods. All wiring is done at floor level around the test site periphery.

A nonconductive remotely controlled turntable approximately 0.91m x 1.2m x 0.8m was used to measure radiated emissions from all sides of the EUT. The turntable has a center opening that allows cabling to be routed directly down to the conducting ground plane.

The radiated emissions test setup is shown in figure 1.

2.2 Radiated Emissions Testing Facility Drawing

All dimensions are in meters(m)

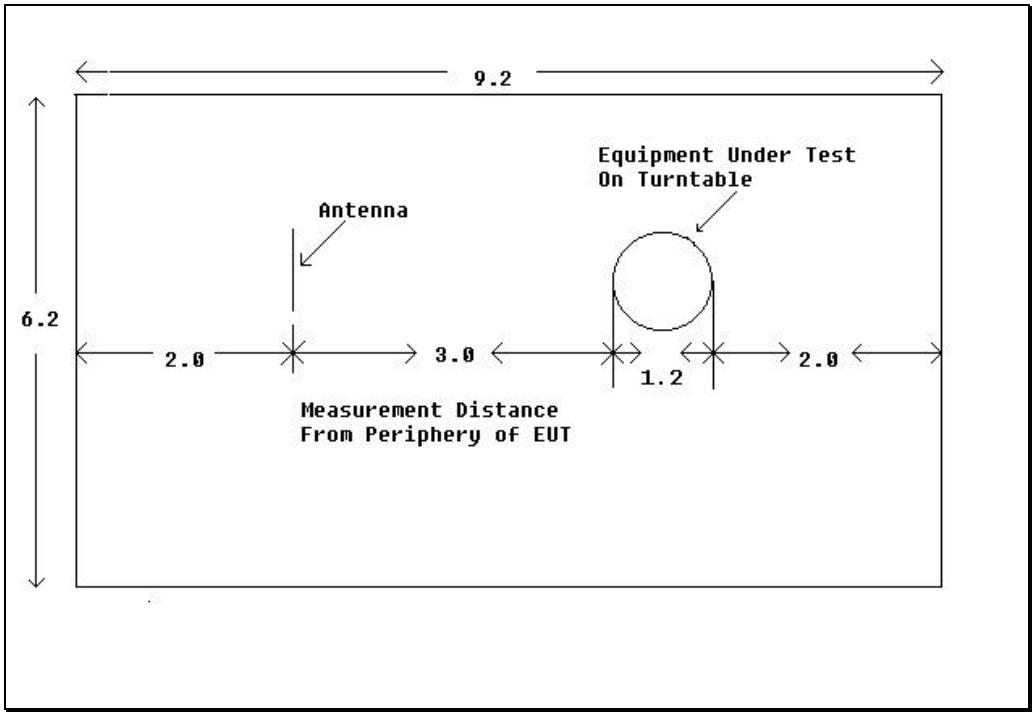

Figure 1: Open Area Test Site(OATS)

3.0 APPLICABLE STANDARD REFERENCES

The following standards were used:

1 - ANSI C63.4-1992: Method of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the 9KHz to 40GHz

2 - US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators (October 1997)

3 - FCC Bulletin 97-114 Appendix C - Guidance on Measurements for Direct Sequence Spread Spectrum Systems

4 - FCC OET Bulletin 65 Appendix C - Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields

4.0 LIST OF TEST EQUIPMENT

All test equipment used for regulatory testing is calibrated yearly or according to manufacturers specifications. The equipment shown below in table 2 was used during this testing.

Table 2: Test Equipment

Cal #	MFG Name	Item Name	Model #:	Serial #	Recal Date:
53	Hewlett Packard	Spectrum Analyzer	8563E	3304A00657	6/1/02
134	Hewlett Packard	Power Meter	436A	1803A03368	2/9/02
202	Hewlett Packard	Amp, .01-26.5 GHz	83006A	3104A00543	11/30/01
228	Electro-Metrics	Antenna	RGA-60	6165	8/3/02
234	EMCO	Antenna, Log Periodic	3146	9011-2946	7/5/02
238	Hewlett Packard	Spectrum Analyzer	8591A	3131A02254	5/23/02
239	LXE	Pre-Amp	20-1000GHz	001	4/30/02
333	Hewlett Packard	Power Sensor	8482H	2704A03933	2/9/02
404	Microwave Circuits	High-Pass Filter	H04G18G2	0002	1/12/2002
450	LXE	RF Cables (High Freq. Short)	none	Copper	11/17/01
451	LXE	RF Cables (High Freq. Double)	7015/6986	MFR-57500	11/17/01
452	EMCO	Mast, Antenna, Mini	2075	PN399235	N/A
453	EMCO	Turntable	2065	PN399230	N/A
515	Tensor	Antenna, Biconical	4104	2157	5/10/02
99998	Lindgren Enclosure	RF Enclosure	14-2/2-0	8147	N/A

5.0 SUPPORT EQUIPMENT

Table 3: Support Equipment

Manufacturer	Equipment Type	Model Number	Serial Number	FCC ID
Gateway2000	LapTop Computer	DX4-100	950300865	EF7J2P

6.0 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM

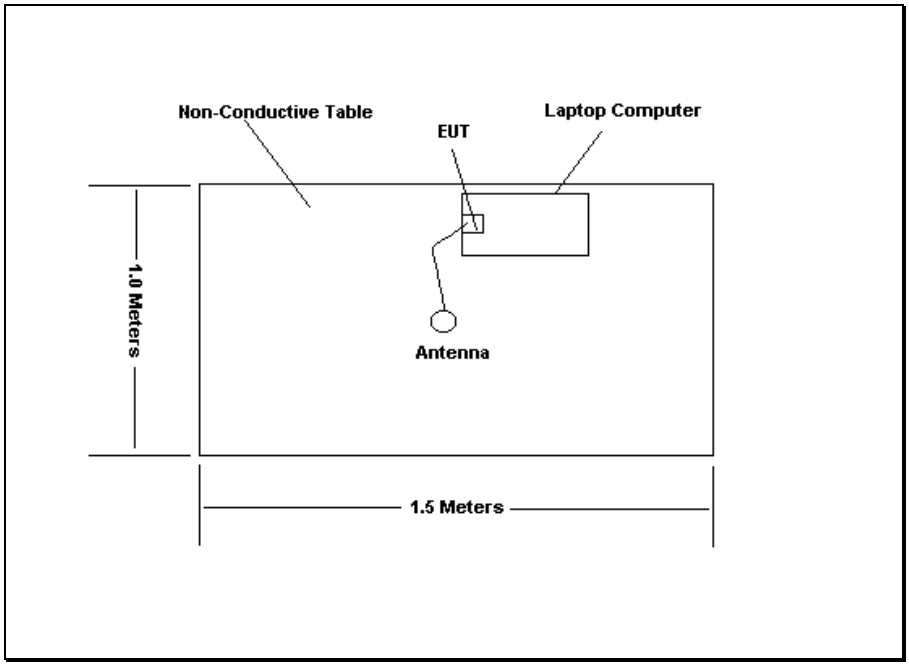

Figure 2: EUT Test Setup

7.0 SUMMARY OF TESTS

Along with the tabular data shown below, plots were taken of all signals deemed important enough to document.

7.1 Antenna Requirement - FCC Section 15.203

The antennas described in section 1.2.3 are designed with a unique and/or proprietary connectors and are not interchangeable with standard antennas without electrical and mechanical modification of the radio card or host unit.

7.2 Power Line Conducted Emissions - FCC Section 15.207

The EUT is powered by a PCMCIA bus of host device supplying 3.3 or 5VDC, and has no connection to the AC Mains. Conducted emissions are not required.

7.3 Radiated Emissions - FCC Section 15.209

Radiated emissions tests were attempted over the frequency range of 30MHz to 25GHz, 10 times the highest fundamental frequency. Measurements of the radiated field strength were made at a distance of 3m from the boundary of the equipment under test (EUT)and the receiving antenna. The antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. Radiated measurements were made with the Spectrum Analyzer's resolution bandwidth set to 120KHz for measurements above 30MHz.

The EUT was caused to go into a "Receive Only" mode of operation for this test. No emissions attributed to the EUT could be detected in the band.

7.4 6dB Bandwidth Requirement - FCC Section 15.247(a)(2)

For the 6dB bandwidth test, the EUT was caused to generate a continuous carrier on the high, middle and low channels at all available data rates. Tabulated data is shown below in table 4 and a plot of the worst case is shown in figure 3 below. The plot is of the mid channel(2442 MHz) at a data rate of 11Mbps.

Table 4: 6dB Bandwidth

Data Rate (Mbps)	Channel 1 – 2412MHz (MHz)	Channel 7 – 2442MHz (MHz)	Channel 11 – 2462MHz (MHz)
1	9.79	9.96	8.37
2	9.83	9.42	9.25
5.5	9.00	9.54	8.74
11	10.29	8.00	8.96

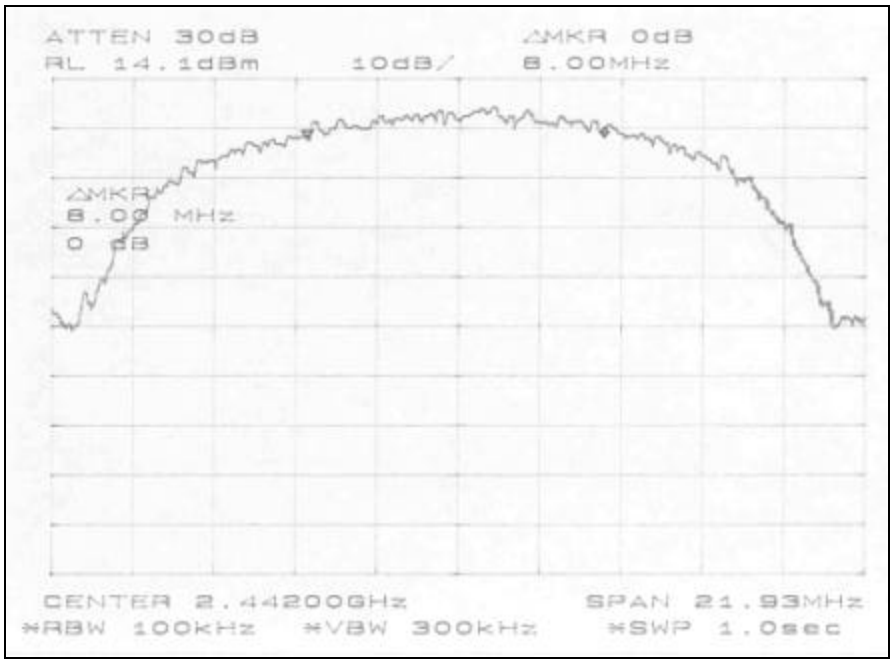

Figure 3: Worst Case 6dB Bandwidth

7.5 Peak Output Power Requirement - FCC Section 15.247(b)

The peak output power of the EUT was made at the antenna connector using an HP436A power meter and an HP8482H power sensor. The EUT was caused to generate a constant carrier on high, mid and low channels of the device. On each channel the EUT was then cycled through each of it's data rates. Table 5 below shows the results of this test.

Table 5: Peak Output Power

Data Rate (Mbps)	Channel 1 - 2412 MHz (dBm)	Channel 7 - 2442 MHz (dBm)	Channel 11 - 2462 MHz (dBm)
1	16.57	16.98	17.17
2	16.43	16.99	17.15
5.5	15.33	15.68	16.05
11	15.09	15.60	15.89

7.6 Spurious Emissions - FCC Section 15.247(c)

7.6.1 RF Conducted Spurious Emissions

The EUT was investigated for conducted spurious emissions from 30MHz to 25GHz, 10 times the highest fundamental frequency. For each measurement, the spectrum analyzer's VBW was set to 100kHz and the RBW was set to 1MHz.

The RF conducted spurious emissions found in the band of 30MHz to 25GHz are reported in Table 6 below. Each emission was compared to the fundamental reference level, also reported in the table below, to determine if they were at least 20dB below the reference level. Plots of the emissions were taken and filed separately as Appendix A

Table 6: Conducted Spurious Emissions

Channel	Fundamental Frequency (MHz)	Fundamental Reference Level (dBm)	Frequency of Spurious Emissions (MHz)	Level (dBm)	D (dB)
1	2412	7.10	457	-45.50	52.60
			1663	-49.50	56.60
			4824	-53.67	60.77
7	2442	7.90	487	-53.83	61.73
			1708	-46.00	53.9
			4884	-53.33	61.23
11	2462	7.83	507	-47.50	55.33
			1738	-44.00	51.83
			4924	-54.00	61.83

7.6.2 Radiated Spurious Emissions(Restricted Bands) - FCC Section 15.205

Radiated emissions tests were made over the frequency range of 30MHz to 25GHz, 10 times the highest fundamental frequency. For convenience, peak measurements were taken and compared to the average limits. If the peak measurement did not meet the average limit, then an average measurement was made and compared to the average limit.

Due to high ambient noise levels and small EUT size, radiated emission measurements were made at a distance of 1 meter. An inverse proportionality factor of 20 dB per decade was used to normalize the measured data to the specified distance to determine compliance. The formula used to calculate an inverse proportionality factor is 20 log (D1/D2), where D1 is the distance used and D2 is the specified distance. A correction factor of 9.54dB applied to the measurements.

The antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. The spectrum analyzer's video and resolution bandwidths were set to 1MHz.

The EUT was caused to generate a constant carrier on the high, mid and low channels of operation at each of the data rates available. Table 7 below shows the results of all detectable points in the band of evaluation. Plots of each significant signal were taken and were filed separately as Appendix B(1) through B(4).

Table 7a: Peak Measurements Compared to Average Limits

Antenna : LXE P/N 460602-3020, 15db YAGI

Frequency (MHz)	Antenna Distance (m)	Level (dBm)	Detector Function (P/A)	Correction Factors (dB)	Corrected Level (dBm)	Corrected Level (uV/m)	Limit (uV/m)	Margin (dB)	Final Result (Pass/Fail)
Bit Rate 1 Mb/s									
4824	1	-65.83	P	5.67	-60.16	219.77	500	280.23	**PASS**
4884	1	-65.50	P	5.80	-59.70	231.81	500	268.19	**PASS**
4924	1	-64.00	P	5.89	-58.11	278.33	500	221.67	**PASS**
Bit Rate 2 Mb/s									
4824	1	-68.17	P	5.67	-62.50	167.87	500	332.13	**PASS**
4884	1	-65.83	P	5.80	-60.03	223.16	500	276.84	**PASS**
4924	1	-64.50	P	5.89	-58.61	262.76	500	237.24	**PASS**
Bit Rate 5.5 Mb/s									
4829	1	-66.83	P	5.68	-61.15	196.12	500	303.88	**PASS**
4878	1	-67.17	P	5.79	-61.38	190.97	500	309.03	**PASS**
4918	1	-65.50	P	5.88	-59.62	233.83	500	266.17	**PASS**
Bit Rate 11 Mb/s									
4824	1	-66.17	P	5.67	-60.50	211.33	500	288.67	**PASS**
4884	1	-66.33	P	5.80	-60.53	210.68	500	289.32	**PASS**
4924	1	-65.50	P	5.89	-59.61	234.19	500	265.81	**PASS**
Peak values found at antenna hieght 158cm, vertical polarity, turntable at 8 degrees.									

Table 7b: Peak Measurements Compared to Average Limits

Antenna : LXE P/N 480429-0415, 15db Omni-directional

Frequency (MHz)	Antenna Distance (m)	Level (dBm)	Detector Function (P/A)	Correction Factors (dB)	Corrected Level (dBm)	Corrected Level (uV/m)	Limit (uV/m)	Margin (dB)	Final Result (Pass/Fail)
Bit Rate 1 Mb/s									
4824	1	-65.67	P	5.67	-60.00	223.85	500	276.15	**PASS**
4884	1	-60.17	P	5.80	-54.37	428.18	500	71.82	**PASS**
4924	1	-64.50	P	5.89	-58.61	262.76	500	237.24	**PASS**
Bit Rate 2 Mb/s									
4824	1	-64.83	P	5.67	-59.16	246.58	500	253.42	**PASS**
4884	1	-60.33	P	5.80	-54.53	420.36	500	79.64	**PASS**
4924	1	-64.17	P	5.89	-58.28	272.94	500	227.06	**PASS**
Bit Rate 5.5 Mb/s									
4829	1	-66.50	P	5.68	-60.82	203.71	500	296.29	**PASS**
4878	1	-62.00	P	5.79	-56.21	346.30	500	153.70	**PASS**
4918	1	-60.67	P	5.88	-54.79	407.75	500	92.25	**PASS**
Bit Rate 11 Mb/s									
4824	1	-66.17	P	5.67	-60.50	211.33	500	288.67	**PASS**
4884	1	-62.50	P	5.80	-56.70	327.43	500	172.57	**PASS**
4924	1	-63.00	P	5.89	-57.11	312.29	500	187.71	**PASS**
Peak values found at antenna hieght 135cm, vertical polarity, turntable at 167 degrees.									

Correction Factors

AF = Antenna Factor
CA = Cable Attenuation
AG = Amplifier Gain
RL = Receiver Level
RC = Range Correction = 20Log(D1/D2) Where D1 is the specified distance used and D2 is the distance used to make measurements = [20Log(3/1)] = 9.54 dB

Therefore:

CF_T = Total Correction Factor = RL+AF+CA -AG-RC

Sample Calculations

Corrected Level(dBm) = RL+ CF_T

Conversion from dBm to uV/m = Antilog(dBm + 107)/20)

Table 7c: Peak Measurements Compared to Average Limits

Antenna : LXE P/N 480429-2703, 12db 90° Directional

Frequency (MHz)	Antenna Distance (m)	Level (dBm)	Detector Function (P/A)	Correction Factors (dB)	Corrected Level (dBm)	Corrected Level (uV/m)	Limit (uV/m)	Margin (dB)	Final Result (Pass/Fail)
Bit Rate 1 Mb/s									
4824	1	-67.50	P	5.67	-61.83	181.33	500	318.67	**PASS**
4884	1	-63.67	P	5.80	-57.87	286.17	500	213.83	**PASS**
4924	1	-61.50	P	5.89	-55.61	371.16	500	128.84	**PASS**
Bit Rate 2 Mb/s									
4824	1	-68.00	P	5.67	-62.33	171.18	500	328.82	**PASS**
4884	1	-63.33	P	5.80	-57.53	297.59	500	202.41	**PASS**
4924	1	-61.33	P	5.89	-55.44	378.50	500	121.50	**PASS**
Bit Rate 5.5 Mb/s									
4829	1	-69.83	P	5.68	-64.15	138.84	500	361.16	**PASS**
4878	1	-65.50	P	5.79	-59.71	231.45	500	268.55	**PASS**
4918	1	-63.50	P	5.88	-57.62	294.37	500	205.63	**PASS**
Bit Rate 11 Mb/s									
4824	1	-69.33	P	5.67	-63.66	146.88	500	353.12	**PASS**
4884	1	-64.67	P	5.80	-59.87	255.05	500	244.95	**PASS**
4924	1	-62.83	P	5.89	-59.64	318.47	500	181.53	**PASS**
Peak values found at antenna hieght 135cm, vertical polarity, turntable at 86 degrees.									

Table 7d: Peak Measurements Compared to Average Limits

Antenna : LXE P/N 480424-2411, 6db Patch

Frequency (MHz)	Antenna Distance (m)	Level (dBm)	Detector Function (P/A)	Correction Factors (dB)	Corrected Level (dBm)	Corrected Level (uV/m)	Limit (uV/m)	Margin (dB)	Final Result (Pass/Fail)
Bit Rate 1 Mb/s									
4824	1	-66.17	P	5.67	-60.50	211.33	500	288.67	**PASS**
4884	1	-61.17	P	5.80	-55.37	381.61	500	118.39	**PASS**
4924	1	-63.00	P	5.89	-57.11	312.29	500	187.71	**PASS**
Bit Rate 2 Mb/s									
4824	1	-66.33	P	5.67	-60.66	207.47	500	292.53	**PASS**
4884	1	-62.67	P	5.80	-56.87	321.09	500	178.91	**PASS**
4924	1	-62.33	P	5.89	-56.44	337.34	500	162.66	**PASS**
Bit Rate 5.5 Mb/s									
4824	1	-67.50	P	5.67	-61.83	181.33	500	318.67	**PASS**
4879	1	-64.83	P	5.79	-59.04	250.07	500	249.93	**PASS**
4918	1	-65.17	P	5.88	-59.29	242.88	500	257.12	**PASS**
Bit Rate 11 Mb/s									
4824	1	-67.17	P	5.67	-61.50	188.35	500	311.65	**PASS**
4884	1	-64.00	P	5.80	-58.20	275.50	500	224.50	**PASS**
4924	1	-64.33	P	5.89	-58.44	267.96	500	232.04	**PASS**
Peak values found at antenna hieght 147cm, vertical polarity, turntable at 357 degrees.									

Correction Factors

AF = Antenna Factor
CA = Cable Attenuation
AG = Amplifier Gain
RL = Receiver Level
RC = Range Correction = 20Log(D1/D2) Where D1 is the specified distance used and D2 is the distance used to make measurements = [20Log(3/1)] = 9.54 dB

Therefore:

CF_T = Total Correction Factor = RL+AF+CA -AG-RC

Sample Calculations

Corrected Level(dBm) = RL+ CF_T

Conversion from dBm to uV/m = Antilog(dBm + 107)/20)

7.7 Power Spectral Density - FCC Section 15.247(d)

The spectral density was measured in accordance with OET bulletin 97-114, appendix C. The EUT was caused to generate a constant carrier on a high, middle and low channels at all the available data rates. The results are recorded in Table 8 below. A plot of the worst case measurement was taken of each of the emissions and is shown in figure 4 below.

Table 8: Spectral Density

Channel	Data Rate (Mbps)	Receiver Level (dBm)	Limit (dBm)	Margin (dB)
1 (2412 MHz)	1	-9.47	8	17.47
	2	-5.47	8	13.47
	5.5	-5.97	8	13.97
	11	-6.13	8	14.13
7 (2442 MHz)	1	-10.70	8	18.70
	2	-4.53	8	12.53
	5.5	-5.53	8	13.53
	11	-5.37	8	13.57
11 (2462 MHz)	1	-10.70	8	18.70
	2	-4.37	8	12.37
	5.5	-5.20	8	13.20
	11	-5.03	8	13.03

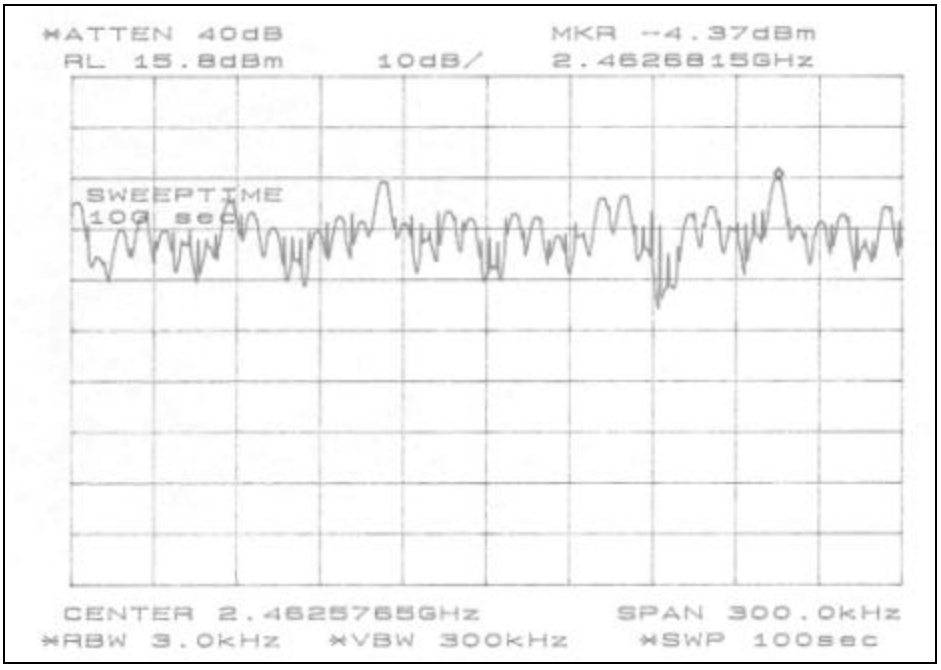

Figure 4: Worst Case Spectral Density Measurement

9.0 Processing Gain – FCC Section 15.247(e)

The processing gain of this device is greater than the 10db requirement. The test report can be found in Appendix C of this report.

10.0 Sample Label

The label shown below will be placed directly on the EUT and on the exterior of the host device.

11.0 RF Safety Notice

One of the following RF Safety Notices appears in the beginning of the Operator's Guide for each host considered to be a mobile device incorporating this radio.

For vehicle mounted hosts, and Access Point hosts mounted on walls or ceilings, the following statement appears:

Caution 	***This device is intended to transmit RF energy. For protection against excessive RF exposure to humans and in accordance with FCC rules and Industry Canada rules , this transmitter should be installed such that a minimum separation distance of at least 20cm is maintained between the antenna and the general population***

For handheld hosts, the following statement appears:

Caution 	***This device transmits RF energy and is designed for hand-held operation only. Use of this device in a manner not consistent with the users instructions can increase the risk of excessive RF exposure.***

Detailed operating configurations and exposure conditions are included in Appendix D, the RF safety submittal of this filing.