

RADIATED AND LINE CONDUCTED EMISSIONS REPORT

I. GENERAL INFORMATION

Requirement: Federal Communications Commission
U-NII Certification Application

Test Requirements: 15.205, 15.207, 15.209, 15.401

Applicant: eXS Inc.
1900 Alameda de las Pulgas
Suite 110
San Mateo, CA 94403-1222

Product ID: FCC ID: **TTFN01A1206**
Model No. 5001A

II. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

eXS model 5001A is a dual-band dual radio 802.11 AP.

RF Specifications

RF Frequency Band	2412-2462 MHz (DTS) 5745-5805 MHz (DTS) 5180-5320 MHz (U-NII)
Modulation Type	802.11 b: DQPSK, CCK (DTS) 802.11 g: OFDM (DTS) 802.11 a OFDM (U-NII, 5.8 GHz DTS)
Transmitter Output Power	5180 - 5240 MHz: 0.0383 watts (15.8dBm) 5260 - 5320 MHz: 0.0356 watts (15.5dBm)
TX Antenna:	2.4/5 GHz Wenizen model W4E-WO-32

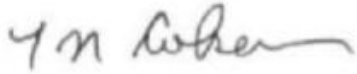
III. TEST LOCATION

All emissions tests were performed at:

Compliance Certification Services
571F Monterey Road
Morgan Hill, CA 95037

FCC ID: **TTFN01A1206**

Testing performed 3-4 November 2005.

A handwritten signature in dark ink, appearing to read "T.N. Cokenias", with a stylized flourish at the end.

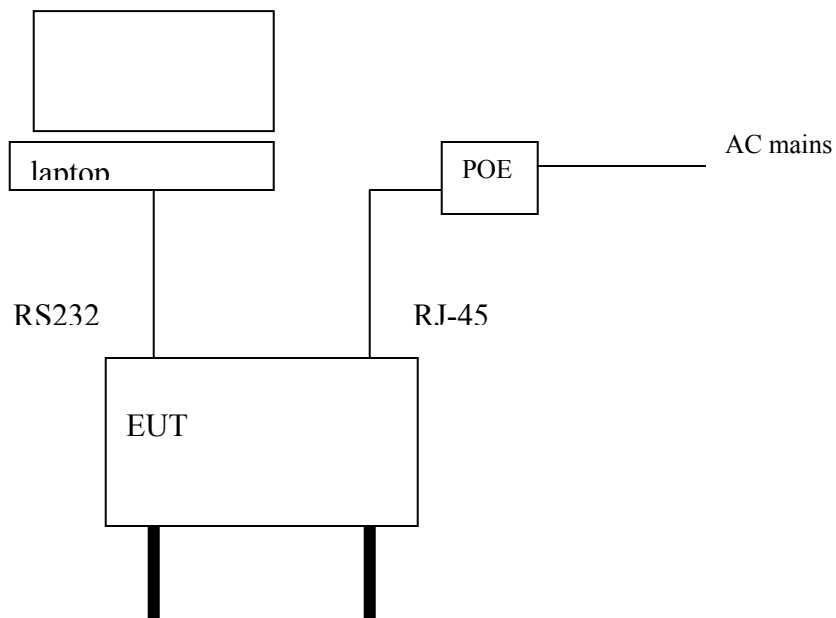
T.N. Cokenias
Agent for eXS Inc.

12 December 2005

Test Equipment List

TEST EQUIPMENT LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
EMI Receiver, 9 kHz ~ 2.9 GHz	HP	8542E	3942A00286	3/29/06
RF Filter Section	HP	85420E	3705A00256	3/29/06
Antenna, Bilog 30MHz ~ 2Ghz	Sunol Sciences	JB1	A121003	3/3/06
Antenna, Horn, 18-26 GHz	ARA	MWH-1826/B	1049	9/12/06
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	2238	4/22/06
Pre-amplifier	MITEQ	NSP2600-SP	92342	8/15/06
Peak Power Meter	Agilent	E4416A	GB41291160	2/9/06
Peak / Average Power Sensor	Agilent	E9327A	US40440755	2/10/06
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent	E4446A	US42070220	1/1/06
High Pass Filter 7.6 GHz	IFI	n/a	2682	3/15/06
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/06
LISN, 10 kHz ~ 30 MHz	Solar	8012-50-R-24-BNC	8379443	10/21/06

Test Configuration



TEST PROCEDURES

Radiated emissions testing per the methods of ANSI C63.4.

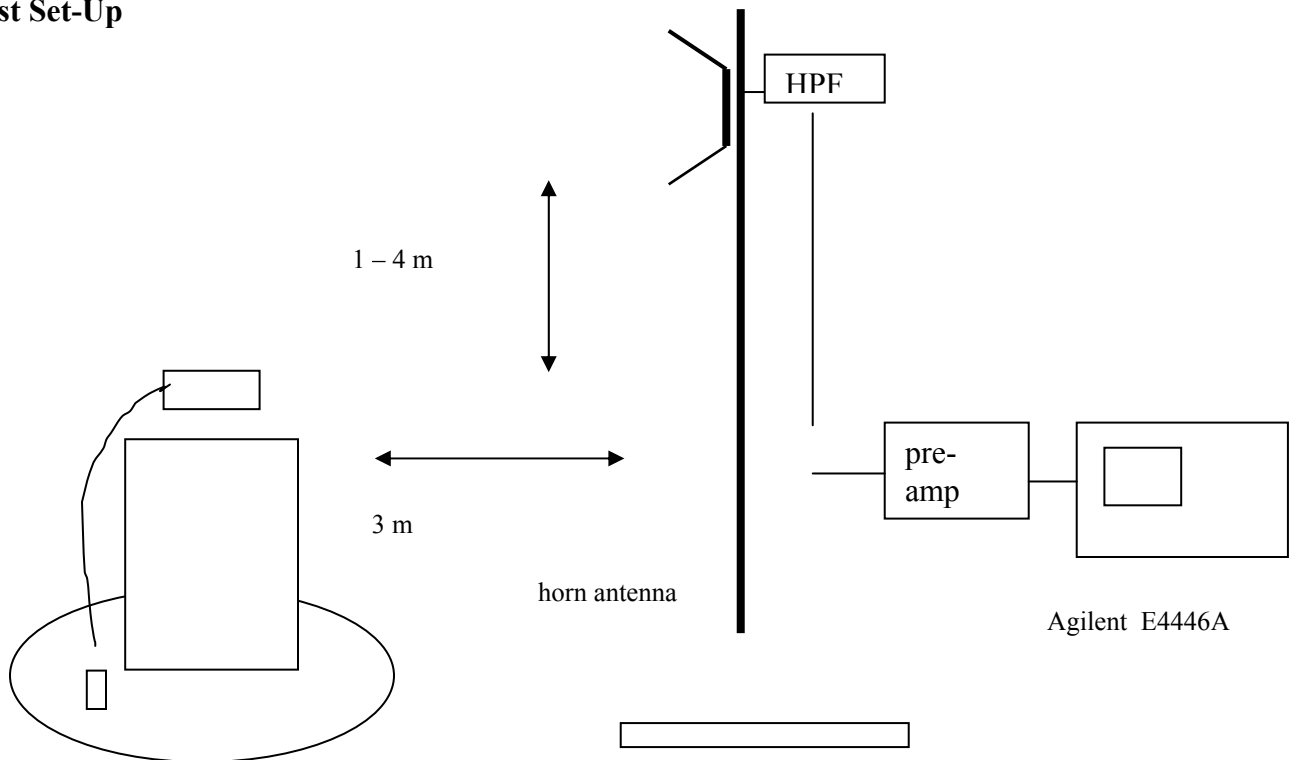
Measurement Equipment Used:

Spectrum analyzer
Hi pass filter, 7.6 GHz
Pre-amplifier, 1 – 26.5 GHz
Horn antenna, 1-18 GHz
Horn 18-26 GHz

Radiated Emissions Above 1 GHz

Test Requirement: 15.205, 15.209, 15.247

Test Set-Up



Test Procedures, 1- 26 GHz:

1. The EUT was placed on a wooden table resting on a turntable on the Site A 10m open area test site. The search antenna was placed 3m from the EUT. The EUT antenna was mounted vertically as per normal installation.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. Radiated emissions were investigated for a LOW channel, MID channel, and HIGH channel in the 5180-5320 MHz band.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

Radiated emissions were performed at each frequency for the following antenna:

Antenna Type	Frequency range	Gain	Antenna Mfr.	Model
Omni monopole	5.1-5.3 GHz 2.4 GHz	6dBi 3.5 dBi	Wenizen.	W4E-WO-32

Test Results: PASS. Worst case results are presented. Refer to data below.

Radiated Emissions, 1-18 GHz

11/03/05 High Frequency Measurement

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Ninous Davoudi

Project #: 05U3800

Company: EXS

EUT Descrip.: AP dual band 2.4 & 5 GHz

EUT M/N:5001A

Test Target:FCC15.209

Mode Oper: Testing mode

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
a mode L 5180															
10.360	3.0	42.4	35.0	37.9	4.0	-33.9	0.0	0.8	51.1	43.8	74.0	54.0	-22.9	-10.2	V
10.360	3.0	41.5	29.9	37.9	4.0	-33.9	0.0	0.8	50.2	38.7	74.0	54.0	-23.8	-15.3	H
15.540	3.0	42.6	29.9	39.6	5.2	-32.7	0.0	0.7	55.4	42.8	74.0	54.0	-18.6	-11.2	H
15.540	3.0	41.7	29.9	39.6	5.2	-32.7	0.0	0.7	54.5	42.8	74.0	54.0	-19.5	-11.2	V
a mode M 5260															
10.520	3.0	47.3	30.1	37.9	4.0	-33.9	0.0	0.8	56.2	39.0	74.0	54.0	-17.8	-15.0	V
10.520	3.0	50.5	30.3	37.9	4.0	-33.9	0.0	0.8	59.4	39.2	74.0	54.0	-14.6	-14.8	H
15.780	3.0	42.1	30.5	39.2	5.3	-32.7	0.0	0.7	54.6	43.0	74.0	54.0	-19.4	-11.0	H
15.780	3.0	42.0	30.5	39.2	5.3	-32.7	0.0	0.7	54.5	43.0	74.0	54.0	-19.5	-11.0	V
a mode H 5320															
10.640	3.0	43.0	35.0	38.0	4.0	-33.8	0.0	0.8	51.9	43.9	74.0	54.0	-22.1	-10.1	V
10.640	3.0	41.7	30.1	38.0	4.0	-33.8	0.0	0.8	50.7	39.0	74.0	54.0	-23.3	-15.0	H
15.960	3.0	42.1	30.5	38.9	5.3	-32.7	0.0	0.7	54.3	42.8	74.0	54.0	-19.7	-11.2	H
15.960	3.0	42.5	30.5	38.9	5.3	-32.7	0.0	0.7	54.8	42.8	74.0	54.0	-19.2	-11.2	V

Radiated Emissions, Restricted Bands 4.5-5.15/5.35-5.46 GHz

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Radiated Emissions

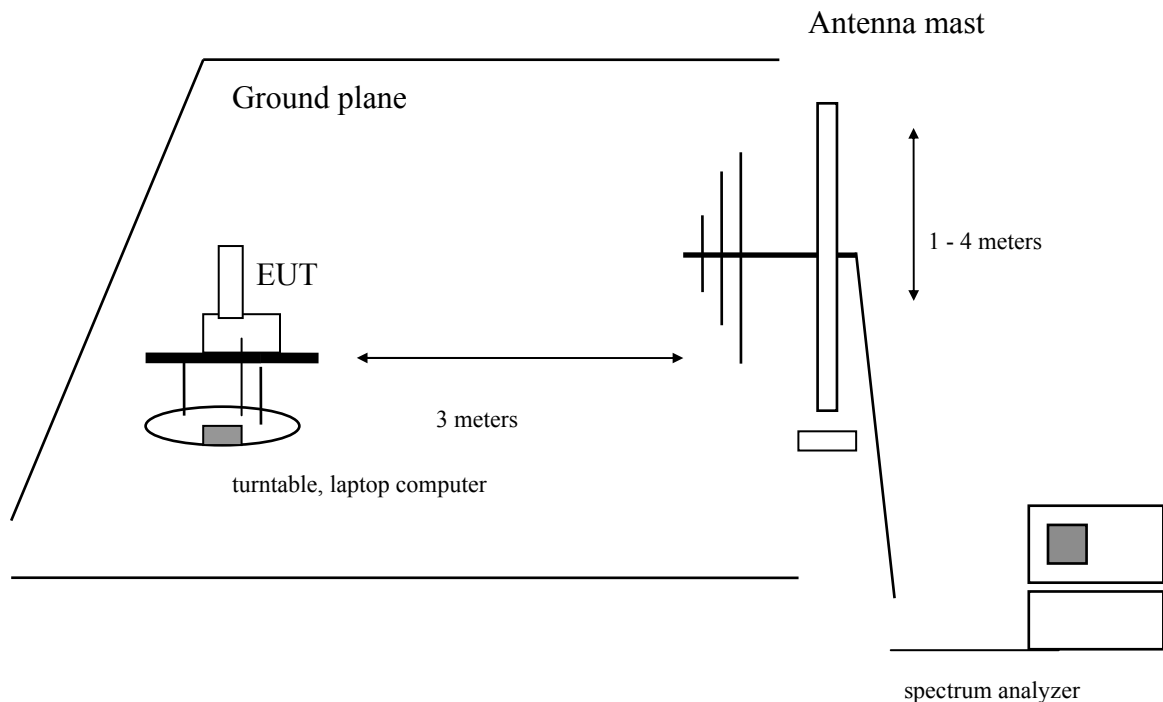
Test Requirement: 15.109

Measurement Equipment Used:

Receiver, 9 kHz - 2.9 GHz

Biconolog Antenna

Radiated Test Set-up, 30 - 1000 MHz



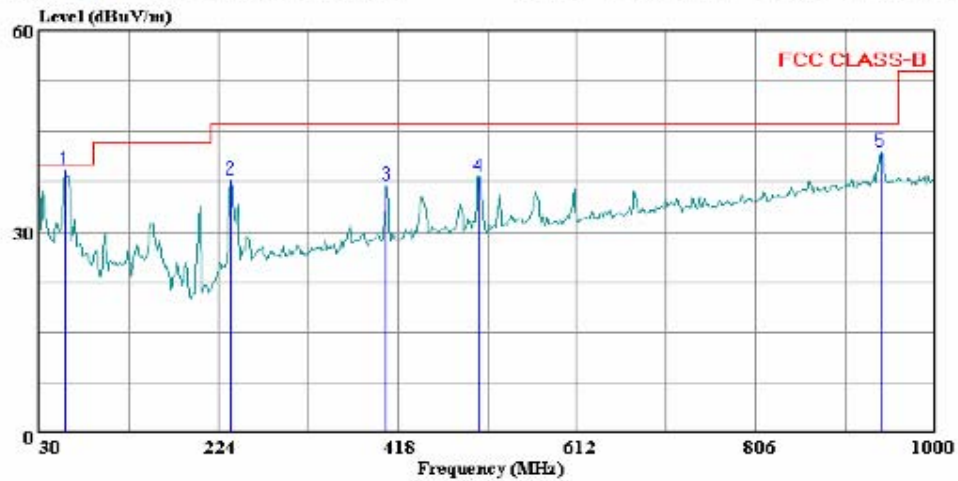
Test Procedures

1. The EUT was placed on a wooden table resting on a turntable on the open air test site. The search antenna was placed 3m from the EUT. The EUT antenna was mounted vertically as per normal installation. The EUT was set to transmit continuously on the MID channel.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.



561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 10 File#: sprious.EMI Date: 11-03-2005 Time: 15:04:58

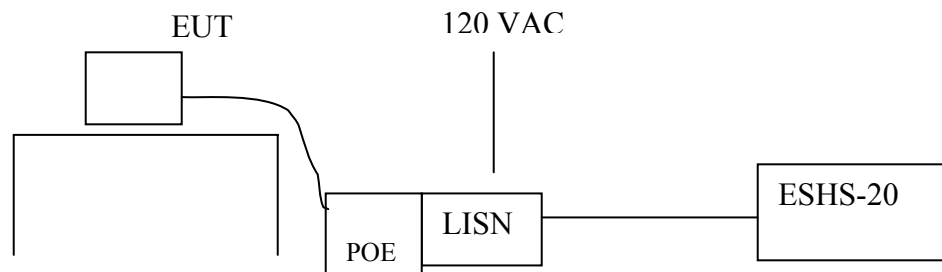


AC Line Conducted Emissions
Test Requirement: 15.107, 15.207

Measurement Equipment Used:

Rhode & Schwarz EMI Receiver ESHS-20
Fischer Custom Communication LISN, FCC-LISN-50/250-25-2

AC Conducted Set-up



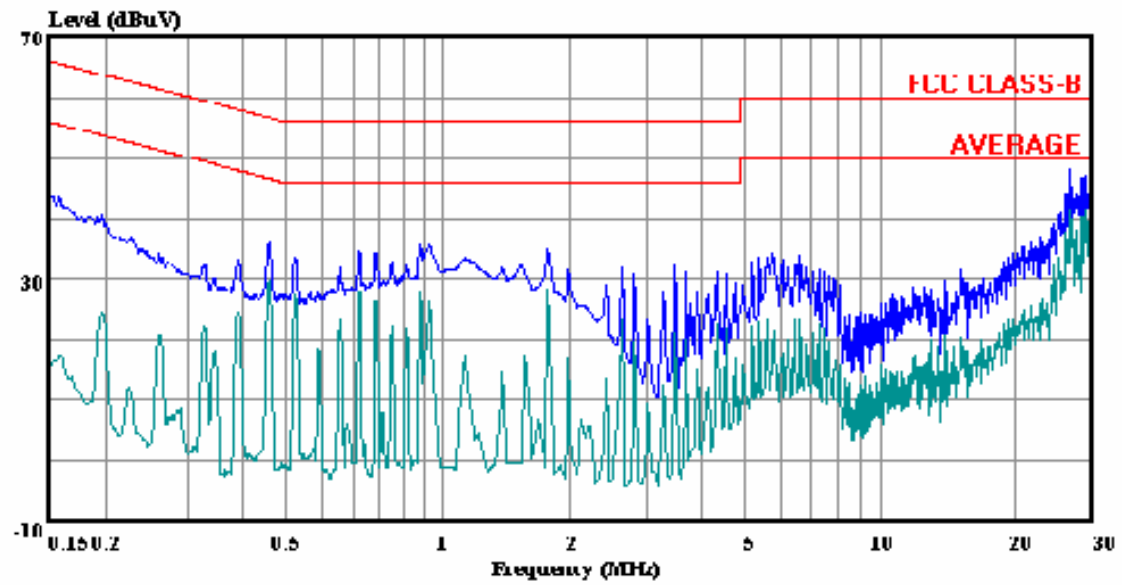
Test Procedure

1. The EUT was placed on a wooden table 40 cm from a vertical ground plane and approximately 80 cm above the horizontal ground plane on the floor. The EUT was set to transmit in normally.
2. Line conducted data was recorded for both NEUTRAL and HOT lines.

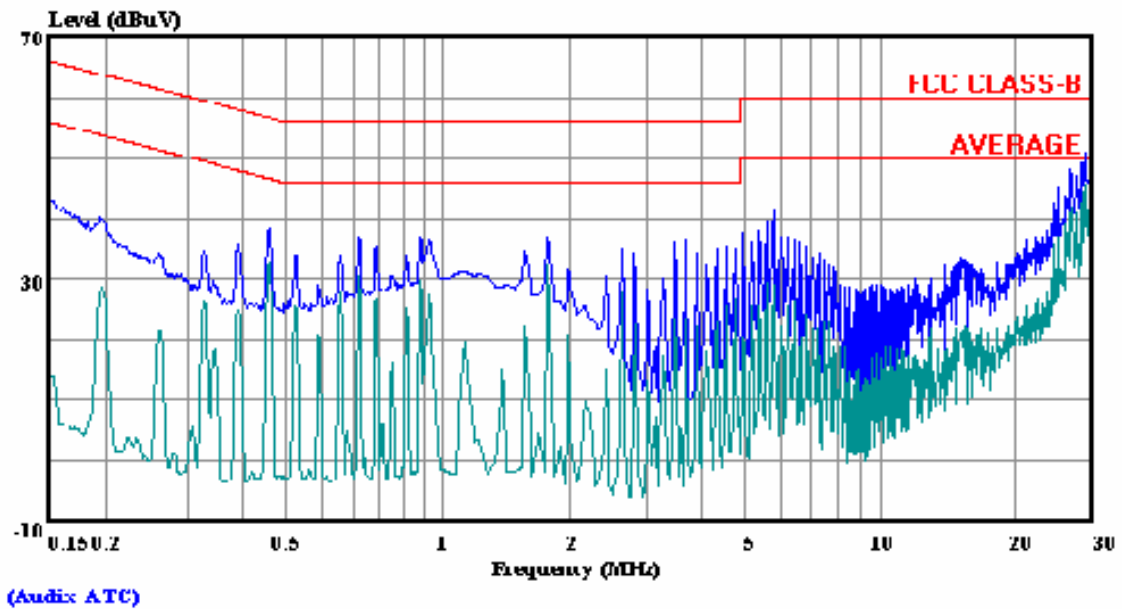
Test Results

PASS. Refer to attached plots and tabulated data.

Line 1



Line 2



Blue trace: PEAK detector
Green trace: AVERAGE detector