Exhibit B: Test Report
Xanboo
XWT380 Thermostat Transmitter

Project Number: 04044-10

Prepared for:
Xanboo
1626 Vineyard
Grand Praire , TX 75052

By

Professional Testing (EMI), Inc.
1601 FM 1460, Suite B
Round Rock, Texas 78664

July 2003

CERTIFICATION
Electromagnetic Interference Test Report
Xanboo
Thermostat System Transmitter, Model XWT380
(Intentional Radiator Portion)

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Certificate of Compliance

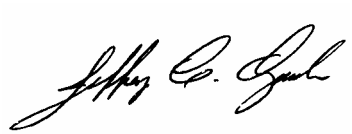
Applicant:	Xanboo
Applicant's Address:	1626 Vineyard Grand Praire, TX 75052
FCC ID:	OU4-XWT380
Project Number:	04044-10
Test Dates:	July 7, 2003

I, Jeffrey A. Lenk, for Professional Testing (EMI), Inc., being familiar with the FCC rules and test procedures have reviewed the test setup, measured data and this report. I believe them to be true and accurate.

The **Xanboo, Thermostat System Transmitter, Model XWT380** was tested to and found to be in compliance with FCC Part 15 Subpart C for an Intentional Radiator.

The highest emissions generated by the above equipment are listed below:

	Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Fundamental	418	91.3	80.3	-2.4
Spurious	1672	40.5	63.5	-23.0
	1254	50.0	63.5	-13.5
Conducted	150 KHz	60	66 QP.	-6dB
	150 KHz	17	56 Avg.	-29dB
	180 KHz	23	56 Avg.	-23dB
Occupied Bandwidth	150 KHz			



Jeffrey A. Lenk
President

This report has been reviewed and accepted by Xanboo. The undersigned is responsible for ensuring that **Xanboo, Thermostat System Transmitter, Model XWT380** will continue to comply with the FCC rules.

1.0 EUT Description

The Equipment under Test (EUT) is the **Xanboo, Thermostat System Transmitter, Model XWT380**. The **Thermostat System Transmitter, Model XWT380** is a wall mounted home thermostat which transmits an alarm signal to the home security system if the temperature cannot be controlled. The EUT operates at 418 MHz and is designed for compliance with 47 CFR 15.231 of the FCC rules. Specific test requirements for this device include the following:

47 CFR 15.209 & 15.231	Fundamental Transmit Power
47 CFR 15.231 & 15.205	Spurious Radiated Power
47 CFR 15.231	Occupied Bandwidth
47 CFR 15.203	Antenna Requirement
47 CFR 15.207	Conducted Emissions

The system tested consisted of the following:

Manufacturer & Model	**Serial #**	**FCC ID #**	**Description**
Xanboo, Thermostat System Transmitter, Model XWT380	N/A		Home Thermostat

System Peripherals:

Teac -41-240300U	Class II Power Supply Class II Power Transformer

1.1 EUT Operation

The **Xanboo Thermostat System Transmitter, Model XWT380** was tested using internal batteries with the exception of conducted emissions testing.

2.0 Electromagnetic Emissions Testing

Professional Testing (EMI), Inc. (PTI), follows the guidelines of NIST for all uncertainty calculations, estimates and expressions thereof for EMC testing.

2.1 Conducted Emissions Measurements

Conducted emissions measurements were made on the mains terminals of the **Xanboo Thermostat System Transmitter, Model XWT380** to determine the line-to-ground radio noise emitted from each power-input terminal. Conducted emissions measurements on the mains terminals were performed at Professional Testing, located in Round Rock, Texas.

2.1.1 Test Procedure

The EUT was configured and operated in a continuously transmitting mode, which is an atypical mode used for the purpose of testing. The EUT power cord in excess of one meter was folded back and forth forming a bundle 30 to 40 cm long in the approximate center of the cable. Power supply cords for the peripheral equipment were powered from an auxiliary LISN. Excess interface cable lengths were separately bundled in a non-inductive arrangement at the approximate center of the cable with the bundle 30 to 40 centimeters in length. The conducted emissions were maximized, by varying the operating states and configuration of the EUT.

The tests were performed in a 12' x 16' RayProof modular shielded room. The EUT was placed on a non-metallic table 0.4 meters from a vertical metal reference plane and 0.8 meters from a horizontal metal reference plane.

The measurements were taken using a Line Impedance Stabilization Network (LISN). A Spectrum Analyzer with a measurement bandwidth of 10 kHz was used to record the conducted emissions measurements. The configuration of the shielded room showing the location of the EUT and the measurement equipment is given as Figure 1.

2.1.2 Test Criteria

The FCC Part 15.207 B conducted emissions limits are given below.

Frequency (MHz)	Limits (dBµV) Average	Limits (dBµV) Quasi-Peak
0.15 – .50	56 - 46	66 to 56
.50 - 5	46	56
5 – 30	50	60

The lower limit shall apply at the transition frequency.

2.1.3 Test Results

The conducted emissions data is included as Appendix A. The conducted emissions generated by the **Xanboo Thermostat System Transmitter, Model XWT380** as measured on the mains terminals were found to be below FCC 15.207 maximum emissions criteria.

2.2 Radiated Emissions Measurements

Radiated emission measurements were made of the Fundamental and Spurious Emission levels for the **Xanboo Thermostat System Transmitter, Model XWT380.** Measurements of the occupied bandwidth were also made for the XWT380 Transmitter.

Measurements of the maximum emission levels for the fundamental and the spurious/harmonic emissions of the **Xanboo Thermostat System Transmitter, Model XWT380** were made at the Professional Testing "Open Field" Site 3, located in Round Rock, Texas to determine the radio noise radiated from the EUT. A "Description of Measurement Facilities" has been submitted to the FCC and approved pursuant to Section 2.948 of CFR 47 of the FCC rules.

Tests of the fundamental for the device were performed to determine the worst case polarization of the devices.

2.2.1 Test Procedure

The EUT was placed on a non-conductive table 0.8 meters above the ground plane. The table was centered on a motorized turntable which allows 360 degree rotation. For measurements of the fundamental signal, a measurement antenna was positioned at a distance of 3 meters as measured from the closest point of the EUT. For spurious/harmonic measurements above 1 GHz, the measurement antenna was placed 1 meter from the EUT. The radiated emissions were maximized by rotating the EUT.

A Spectrum Analyzer with peak detection was used to find the maximums of the radiated emissions during the variability testing. A drawing showing the test setup is given as Figure 2.

2.2.2 Test Criteria

The table below shows FCC Part 15.231 radiated limits for an intentional radiator operating at 418 MHz band. FCC Part 15.231 allows the use of its spurious limit which is higher than the 15.209 limit normally associated with the restricted bands outlined in 15.205. The spurious measurements of the harmonic were performed to the 3rd harmonic of the fundamental. The reference distance for each limit is also shown in this table.

	Test Distance	Field Strength	
Signal Type	(Meters)	(μV/m)	(dBμV/m)
Fundamental 418 MHz	3	10351	80.3
Harmonics (through 3rd)	3	1500	63.5

Note: Radiated emissions above 1000 MHz were measured at 1 meter and the limit was increased by 9.5 dB.

2.2.3 Test Results

The radiated test data for the fundamental is included in Appendix A. Peak detection was used during the test and the corrected signal level was then averaged to account for the duty cycle of the pulsed transmission of the 418 MHz transmitter. The radiated emission test data for the harmonics is included in Appendix A. The emissions were maximized at each frequency and the highest emissions identified were measured using peak detection. The radiated emissions generated by the **Xanboo Thermostat System Transmitter, Model XWT380** are below the FCC Part 15.231 maximum emission criteria.

3.0 Occupied Bandwidth Measurements

Measurements of the occupied bandwidth for the fundamental signals of the FCC Part 15.231 were made at the Professional Testing's Round Rock, Texas site. All measurements were made in a controlled indoor environment in a configuration which did not present measurement distortion or ambient interference.

3.1 Test Procedure

The EUT was placed on a non-conductive table 0.8 meters above the floor. The table was rotated to an angle which presented the highest signal level. The occupied bandwidth was measured on the device. The occupied bandwidth was based on a 20 dB criteria (20 dB down either side of the emission from the peak emission).

3.2 Test Criteria

According to FCC Part 15.231, the bandwidth of the emission shall not be wider than 0.25 % of the center frequency for the devices operating above 70 MHz and below 900 MHz. The limit is 1.045 MHz for the transmitter working at 418 MHz.

Measurement of the occupied bandwidth was performed to verify that the emission bandwidth from the EUT did not exceed 1.045 MHz. The typical occupied bandwidth for the module is 170 kHz.

FCC Part 15.249 deals with frequency bands. No occupied bandwidth criteria is set forth.

3.3 Test Results

The occupied bandwidth test data is included in Appendix B. The occupied bandwidth for the fundamental frequency 418MHz is 150 KHz. The figure is typical for the **Thermostat System Transmitter, Model XWT380** This occupied bandwidth complies with the FCC Part 15.231 requirement.

4.0 Antenna Requirement

An analysis of the **Xanboo Thermostat System Transmitter, Model XWT380** was performed to determine compliance with Section 15.203 of the Rules. This section requires specific handling and control of antennas used for devices subject to regulations under the Intentional Radiator portions of Part 15.

4.1 Evaluation Procedure

The structure and application of the **Xanboo Thermostat System Transmitter, Model XWT380** were analyzed with respect to the rules.

The EUT has an external antenna permanently screwed in and glued to the EUT. The antenna is not accessible to the user. No auxiliary antenna port is present.

4.2 Evaluation Criteria

Section 15.203 of the rules states that the subject device must meet at least one of the following criteria:

(a) Antenna be permanently attached to the unit.

(b) Antenna must use a unique type of connector to attach to the EUT.

(c) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

4.3 Evaluation Results

The **Thermostat System Transmitter, Model XWT380** meets the criteria of this rule by virtue of having an external antenna permanently attached to the unit and an internal antenna not accessible to the user. The EUT is therefore compliant with §15.203.

5.0 Modifications to Equipment

There were no modifications made on the **Thermostat System Transmitter, Model XWT380** during the performance of the test program in order to meet the FCC criteria.

6.0 List of Test Equipment

A list of the test equipment utilized to perform the testing is given below. The date of calibration is given for each.

Device	Description	Calibration Due
Electromagnetic Emissions Test Equipment		
EMCO 3146	Log Periodic Antenna	December 2004
EMCO 3115	Ridge Guide Antenna	June 2004
HP 85650	Quasi-Peak Adapter	November 2004
HP 8447D	Preamplifier	November 2004
HP 8566B	Spectrum Analyzer	November 2004
Tektronix 2706	RF Preselctor	January 2005
MITEQ	18GHz 20dB Preamplifier	December 2003
Compliance Design B-100	Biconical Antenna	December 2004
Site Cables 30 – 1000 MHz		December 2003
Armored 10 meter		June 2004
Microwave Cable		

FIGURE 1: Conducted Emissions Mains Terminal Measurements

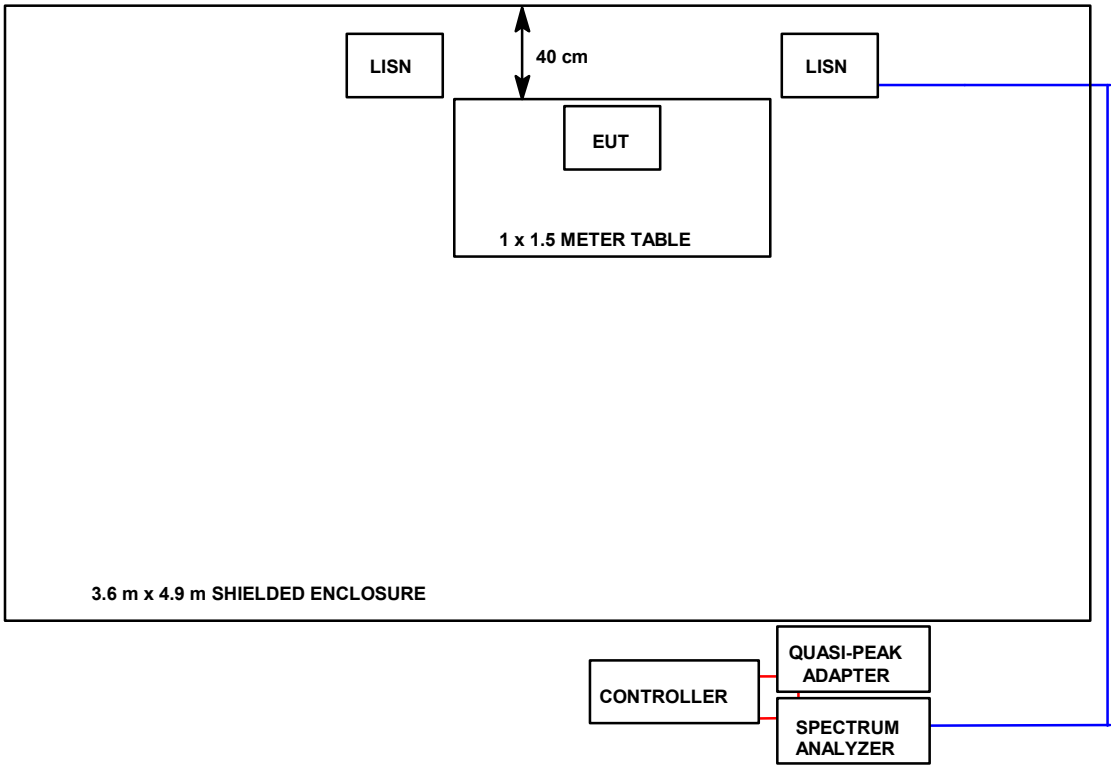
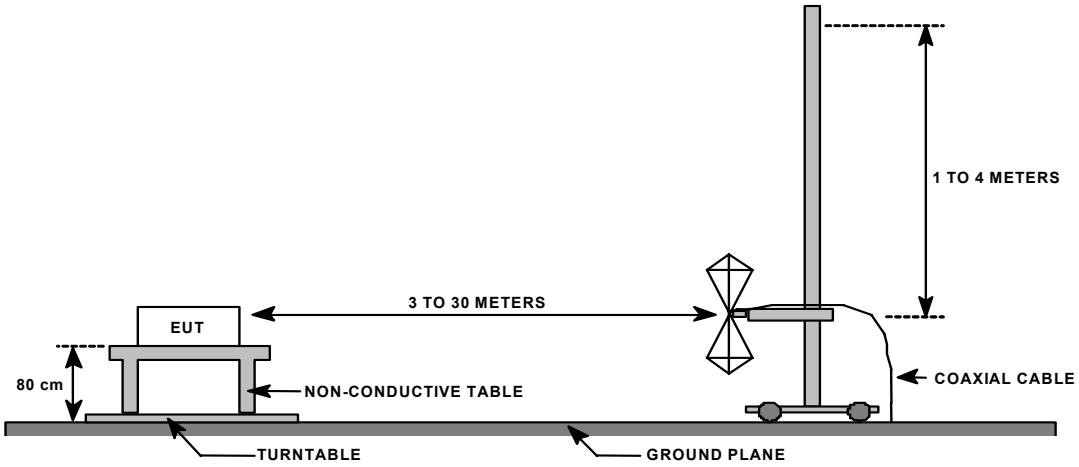


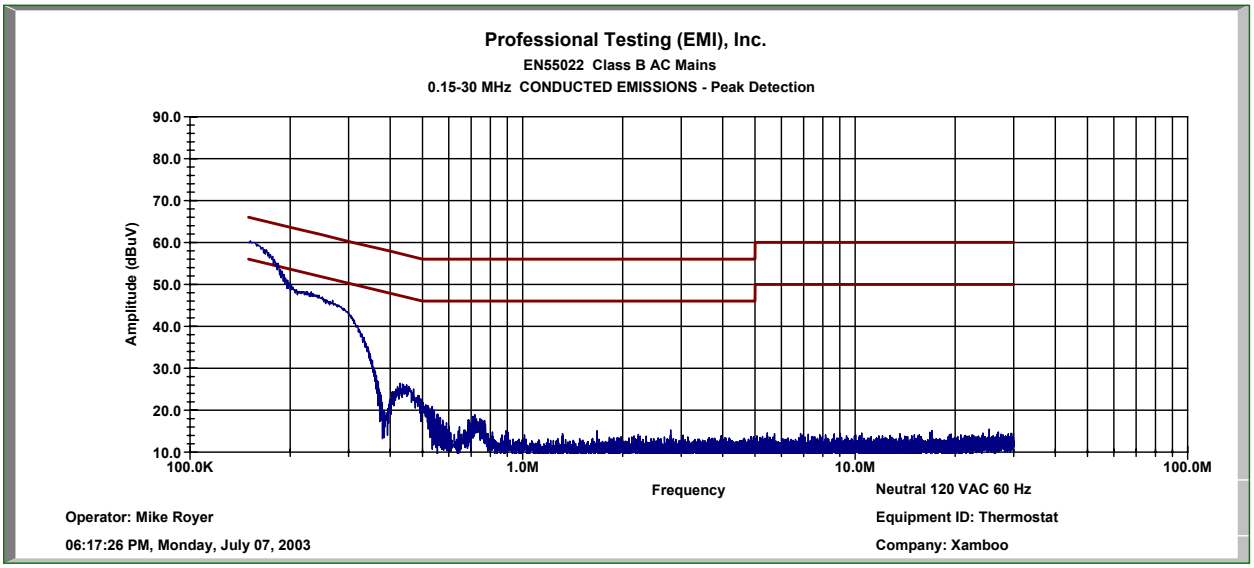
FIGURE 2: Radiated Emissions Test Setup

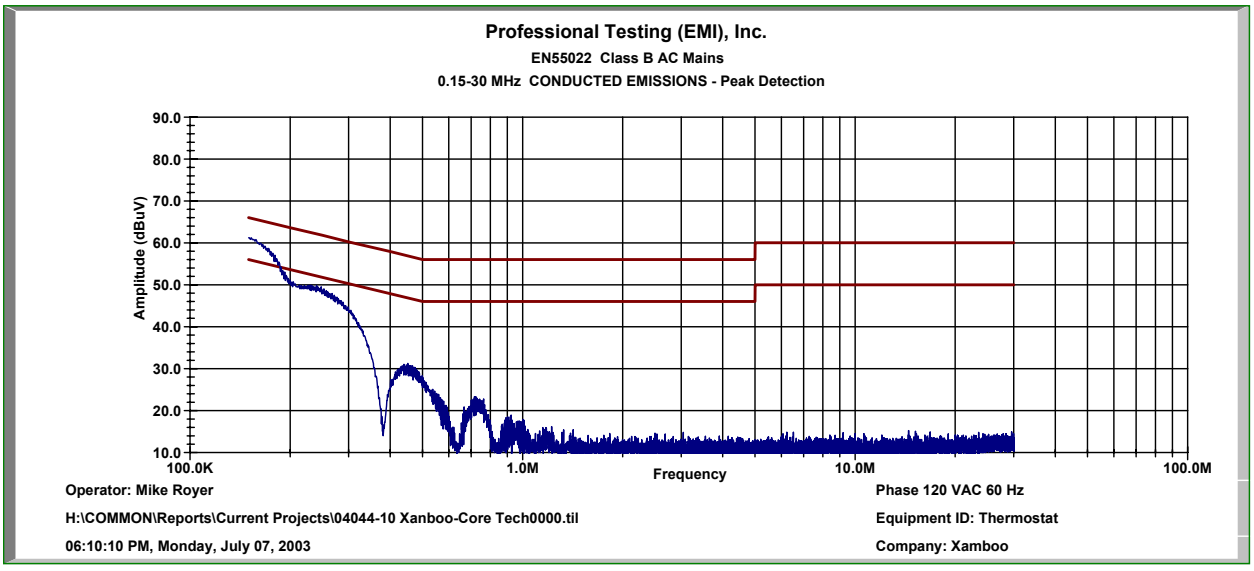


Appendix A Emissions Data Sheet

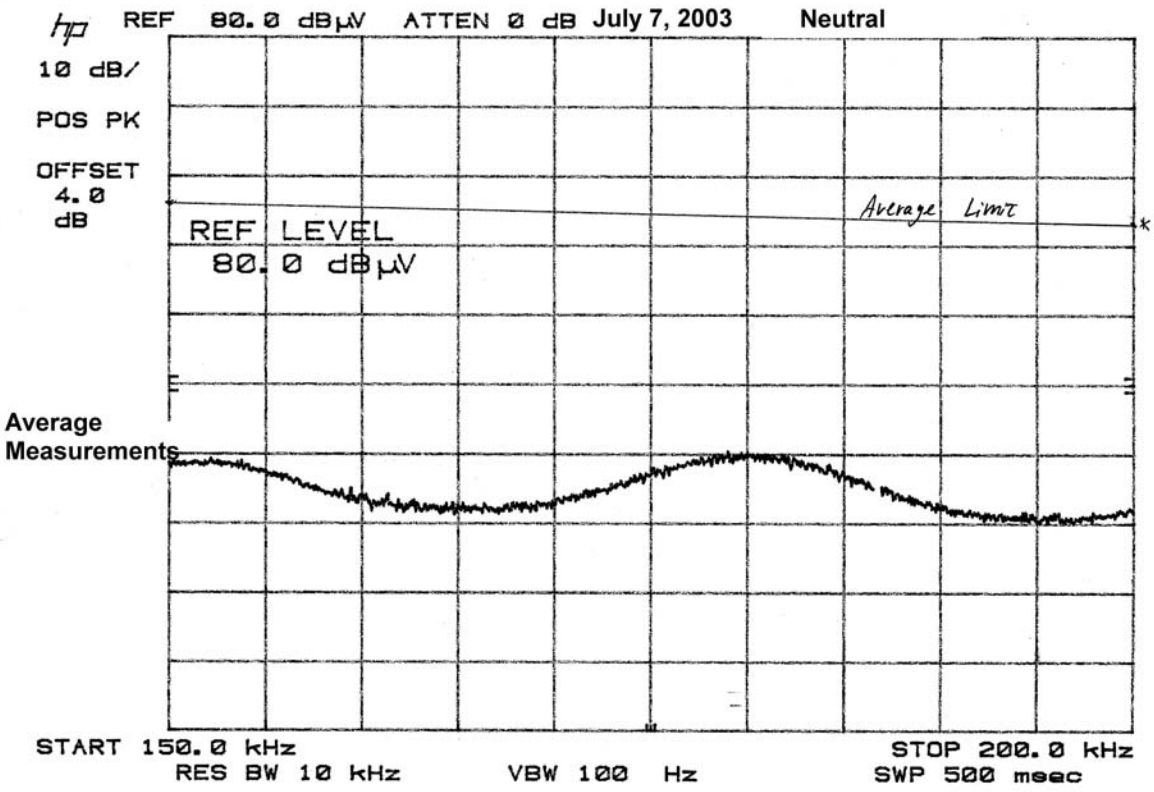
Conducted Data Sheet
Xanboo
Thermostat System Transmitter, Model XWT380
Transmitter

DATE: July 7, 2003
PROJECT: 04044-10

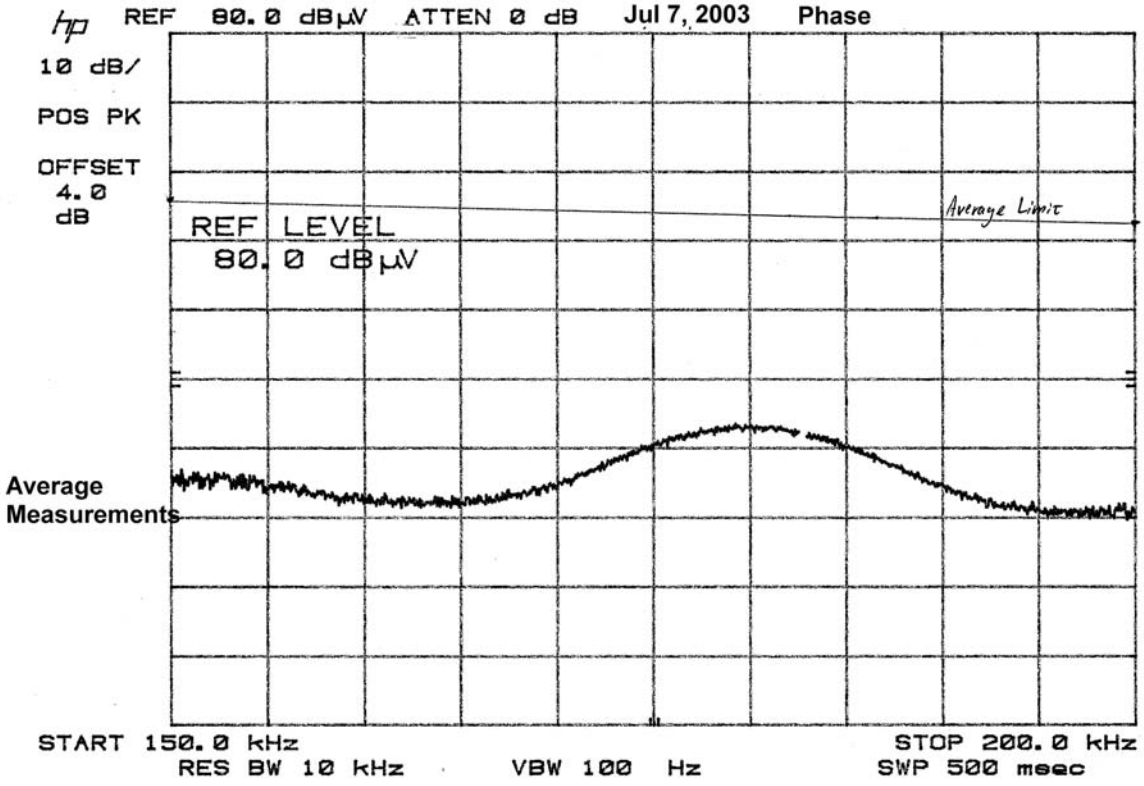




Conducted Data Sheet
Xanboo
Thermostat System Transmitter, Model XWT380
Transmitter



Conducted Data Sheet
Xanboo
Thermostat System Transmitter, Model XWT380
Transmitter



Fundamental Radiated Data Sheet
Xanboo
Thermostat System Transmitter, Model XWT380
Transmitter

DATE: July 7, 2003 MEASUREMENT DISTANCE (m): 3
PROJECT: 04044-10 DETECTOR FUNCTION: Average
Transmitter On 27 ms Transmitter Off 100 ms

Freq. (MHz)	EUT Orient.	Test Distance Meters	Peak Corr Level (dBuV/m)	Averaging Factor (dB)	Average Corr Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
418	vertical	3.0	91.3	-13.4	77.9	80.3	-2.4

Corrected Level = Recorded Level - Amplifier Gain + Antenna Factor + Cable Loss

*Averaging Factor = 20 * Log (T on / (T on + T off)) which in this case = -13.4 dB*

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Comment: This measurement is the worst case result of testing of this product in three orthogonal axes.

TEST ENGINEER: Mike Royer

Radiated Data Sheet
Spurious
Thermostat System Transmitter, Model XWT380
Motion Sensor

DATE: July 7, 2003
PROJECT: 04044-10

MEASUREMENT DISTANCE (m): 3
DETECTOR FUNCTION: Peak

Antenna Vertical

Freq. (MHz)	Recorded Level (dBuV)	Amplifier Gain (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
60	37.2	26.4	9.1	3.0	22.9	40	-17.1
100	35	26.6	11.9	3.7	24.0	43	-19.0

Corrected Level = Recorded Level - Amplifier Gain + Antenna Factor + Cable Loss

TEST ENGINEER: Mike Royer

Microwave Radiated Data Sheet
Harmonics
Xanboo
Thermostat System Transmitter, Model XWT380
Motion Sensor

DATE: July 7, 2003
PROJECT: 04044-10

MEASUREMENT DISTANCE (m): 1
DETECTOR FUNCTION: Peak

Antenna Horizontal

Freq. (MHz)	Antenna Elevation (Meters)	Recorded Level (dBuV)	Amplifier Gain (dB)	Antenna Factor (dB/M)	Cable Loss (dB)	Corrected Level (dBuV/M)	Limit (dBuV/M)	Margin (dB)
1254	1	44.6	23.3	24.4	2.0	47.7	63.5	-15.8
1672	1	34	23.0	26.0	2.3	39.3	63.5	-24.2

Antenna Vertical

Freq. (MHz)	Antenna Elevation (Meters)	Recorded Level (dBuV)	Amplifier Gain (dB)	Antenna Factor (dB/M)	Cable Loss (dB)	Corrected Level (dBuV/M)	Limit (dBuV/M)	Margin (dB)
1254		46.9	23.3	24.4	2.0	50.0	63.5	-13.5
1672	1	35.2	23.0	26.0	2.3	40.5	63.5	-23.0

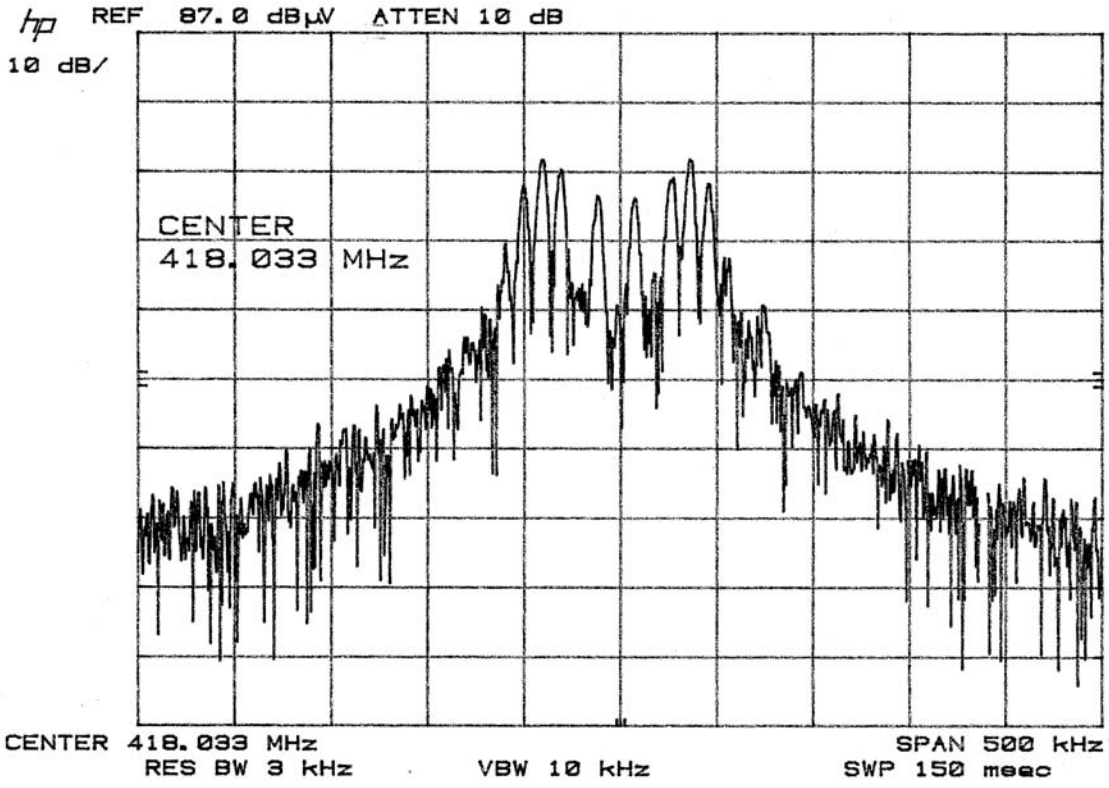
Corrected Level = Recorded Level - Amplifier Gain + Antenna Factor + Cable Loss

TEST ENGINEER: Mike Royer

Appendix B Occupied Bandwidth Data Sheets

Occupied Bandwidth Datasheet
Xanboo
Thermostat System Transmitter, Model XWT380

418 MHz Trasmitter



Xanboo
Thermostat System Transmitter, Model XWT380
Timing Measurement