

**Application for Certification
For a RF Transmitter**

ConectiSys Corp.
24307 Magic Mountain Parkway
Valencia, CA 91355

Wireless Power Usage Monitoring System
M/N: HNET 5.0

FCC ID: SNKHNET50

REPORT # RV58029A-001

This report was prepared in accordance with the requirements of the FCC Rules and Regulations Part 2, Subpart J, 2.1033, Part 15.247, and other applicable sections of the rules as indicated herein.

Prepared By:

DNB Engineering, Inc.
5969 Robinson Avenue
Riverside, CA 92503

25 Oct 2004

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Paragraph numbers in this report follow the application section numbers found in the FEDERAL COMMUNICATIONS COMMISSION Rules and Regulations, Part 2, Subpart J for Certification of electronic equipment.

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1.0 ADMINISTRATIVE DATA

1.1 Certifications and Qualifications

I certify that DNB Engineering, Inc conducted the tests performed in order to obtain the technical data presented in this application. Also, based on the results of the enclosed data, I have concluded that the equipment tested meets or exceeds the requirements of the Rules and Regulations governing this application.

1.2 Measurement Repeatability Information

The test data presented in this report has been acquired using the guidelines set forth in FCC Part 2.1031 through 2.1057, Part 15. The test results presented in this document are valid only for the equipment identified herein under the test conditions described. Repeatability of these test results will only be achieved with identical measurement conditions. These conditions include: The same test distance, EUT Height, Measurement Site Characteristics, and the same EUT System Components. The system must have the same Interconnecting Cables arranged in identical placement to that in the test set-up, with the system and/or EUT functioning in the identical mode of operation (i.e. software and so on) as on the date of the test. Any deviation from the test conditions and the environment on the date of the test may result in measurement repeatability difficulties.

All changes made to the EUT during the course of testing as identified in this test report must be incorporated into the EUT or identical models to ensure compliance with the FCC regulations.



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2.1033 (b) (1) Application for Certification

Name of Applicant: ConectiSys Corp.
24307 Magic Mountain Parkway
Valencia, CA 91355

FRN Number: 0009559063

Applicant is: Manufacturer
Vendor
Licensee
Prospective Licensee
Other

Name of Manufacturer ConectiSys Corp.

Description: Wireless Power Usage Monitoring System

Part Number: HNET 5.0

Anticipated Production Quantity: Multiple Units

Frequency Band: 900-928 MHz

Rated Power: 160mW (22dBm)

Type of Signal: FHSS

Hopping Channels: 64 minimum

Max Data Rate: 9.2 kbps

2.1033 (b) (2) FCC Identifier

FCC ID: SNKHNET50

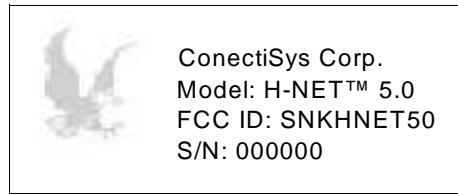


Figure 1 - Label

2.1033 (b) (3) Installation and Operating Instructions



Applied Innovative Sciences, Inc.

ConectiSys HNET 5.0 Installation and Operations Manual

Sections:

- I. Radio and antenna installation into power meter.
- II. Meter installation.
- III. Meter unit operation.
- IV. Reference Figures.

I. Radio and antenna installation into power meter

Introduction: HNET 5.0's radio system was designed to be integrated into a Siemens Altimus 240v 60Hz Solid State Electricity Meter or equivalent for wireless power usage monitoring. The radio module consists of three PCB assemblies (power supply, controller module and RF module) and an antenna. The power supply consists of a 240VAC to 3.3VDC converter with external wire interfaces to the power meter (for AC input) and to the controller module (for DC output). The controller module and RF modules interface together via PCB mounted headers. The controller is interfaced to the meter PCB via optically coupled serial data lines. The dipole antenna is mounted inside of the meter along the bottom side of the meter faceplate.

Installation:

Note: Before radio installation has begun, it is assumed the radio module (consisting of power supply, controller module and RF module) has already been assembled and testing in accordance with the manufacturer's acceptance test procedure. See Figure 1.

1. Connect the AC input cable between power supply and meter PCB. (See Figure 2a and 2b.)
2. Connect controller module data interface cable to meter PCB. (See Figure 2a.)
3. Set radio into meter housing and install mounting screws. Ensure that no cables are crimped or physically interfering with the meter PCB or radio modules. (See Figure 3.)
4. Connect controller module data interface cable to controller module. (See Figure 3.)
5. Mount antenna along bottom side of meter faceplate. Antenna elements should be flat up against meter faceplate. (See Figure 4.)
6. Connect antenna coax cable from MMCX connector on antenna PCB to MMCX connector on RF module. Cable should be run on the right side of the meter and between the RF and controller modules.
7. Install meter assembly onto meter back-plate and insert locking tabs. Ensure coax and cables are not crimped or physically interfering with meter assembly.



II. Meter Installation:

Assembled meter unit is to be installed on an appropriate meter box by authorized utility company personnel in accordance with all safety precautions and procedures.

III. Meter Unit Operation:

Meter assemblies with installed radio modules are non-user controlled wireless monitoring devices and need no direct end-user setup or intervention. Wireless meter units are remotely controlled by a base-station not described in this document.

IV. Reference Figures:

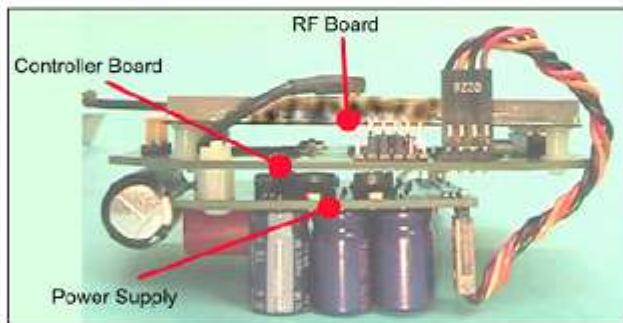


Figure 1 – Radio Module



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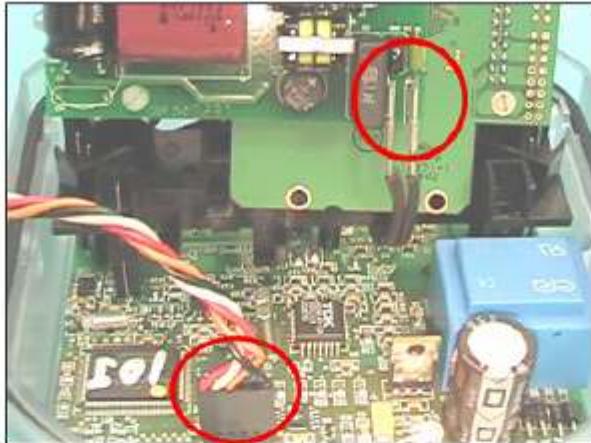


Figure 2a – AC and Data Input Cables



Figure 2b – AC Input Cable



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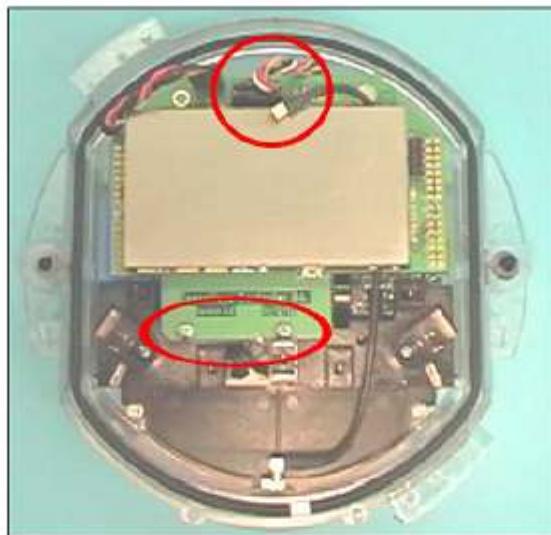


Figure 3 – Radio Mounting



Figure 4 – Antenna Mounting

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2.1033 (b) (4) Brief Description of Circuit Function

Introduction: HNET 5.0's radio system was designed to be integrated into a Siemens Altimus 240v 60Hz Solid State Electricity Meter or equivalent for wireless power usage monitoring. The radio module consists of three PCB assemblies (power supply, controller module and RF module) and an antenna. The power supply consists of a 240VAC to 3.3VDC converter with external wire interfaces to the power meter (for AC input) and to the controller module (for DC output). The controller module and RF modules interface together via PCB mounted headers. The controller is interfaced to the meter PCB via optically coupled serial data lines. The dipole antenna is mounted inside of the meter along the bottom side of the meter faceplate.

2.1033 (b) (5) Block Diagram

Supplied separately for confidentiality.

2.1033 (b) (6) Report of Measurements

Test Procedure:

To measure conducted emissions, the EUT was set upon a wooden table in the shielded enclosure. AC power was fed into the EUT from the Artificial Mains Network. With the Artificial Mains Network connected to an HP 8568B Spectrum Analyzer, and using the HP 9825 Computer/Controller and the HP 85864B EMI Measurement Software, the spectrum was searched from 0.15 - 30 MHz for emissions emanating from the EUT.

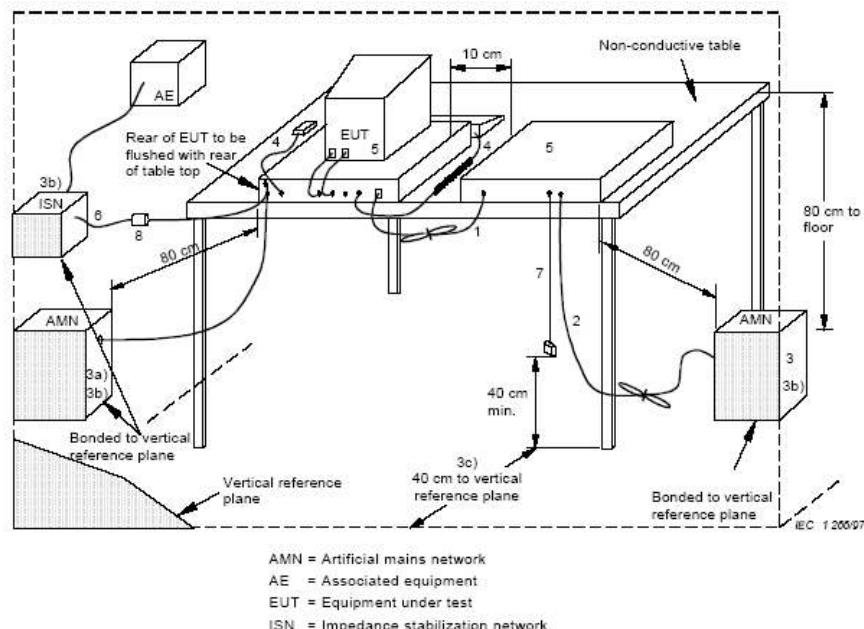
Frequency of emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

EUT operating conditions:

The software provided by the client to enable the EUT to transmit continuously.

Test Set Up:





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Conducted Emissions

DNB Job Number:	58029	Date:	24 Sep 2004	Specification [X] 15.207
Customer:	ConectiSys Corp.			
Model Number:	HNET 5.0 WLAN card	Serial Number:		
Description:	RF Transmitter			
	Set Up			

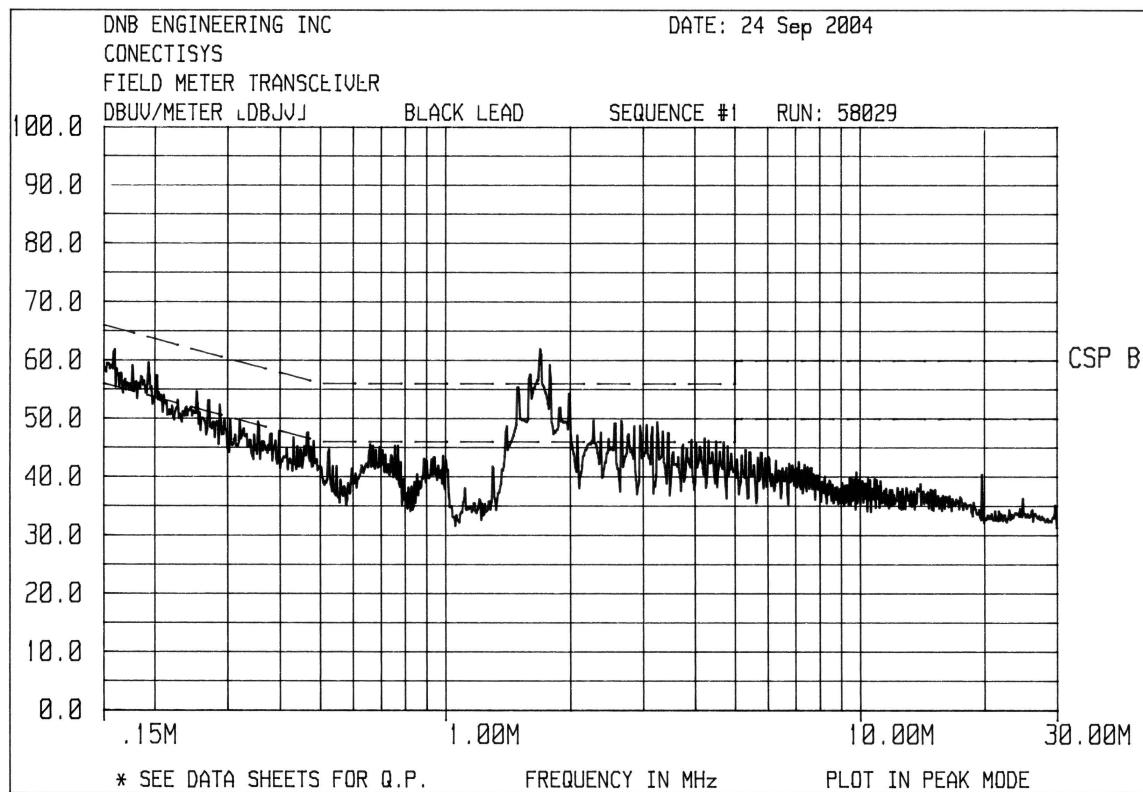




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Conducted Emissions

DNB Job Number:	58029	Date:	24 Sep 2004	Specification [X] 15.207
Customer:	ConectiSys Corp.			
Model Number:	HNET 5.0 WLAN card	Serial Number:		
Description:	RF Transmitter			
	Line - Peak			

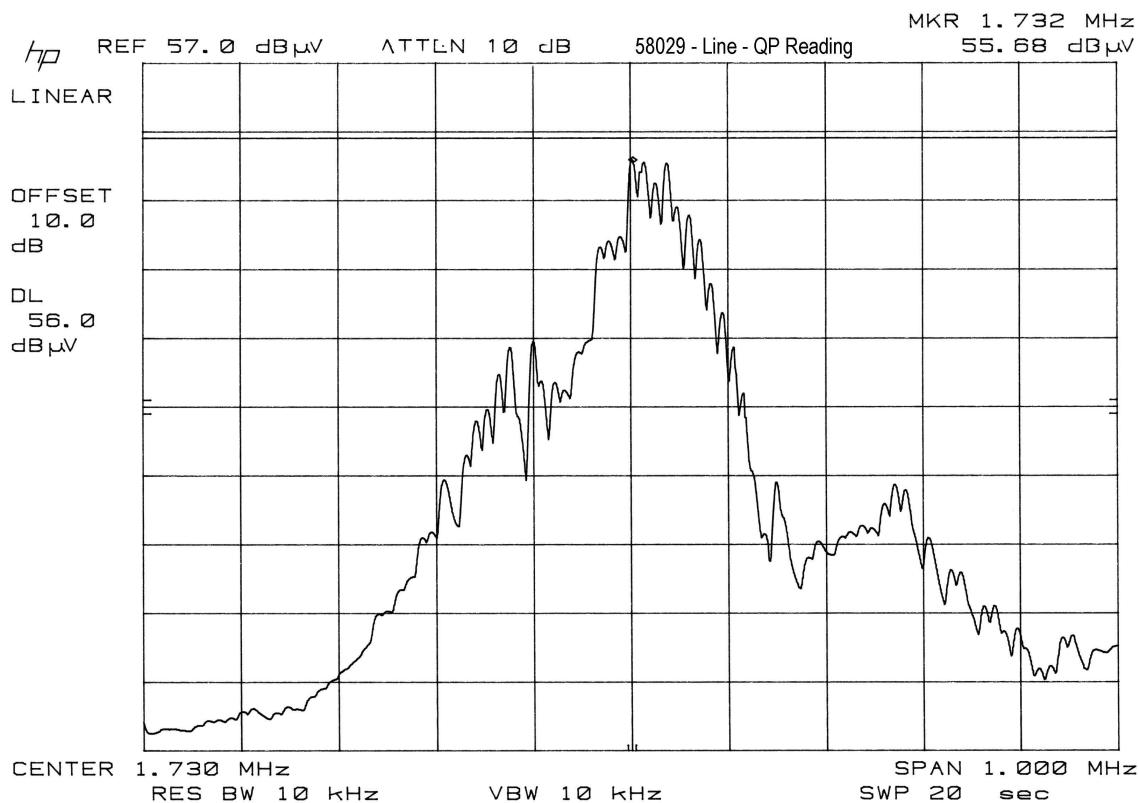




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Conducted Emissions

DNB Job Number:	58029	Date:	24 Sep 2004	Specification [X] 15.207
Customer:	ConectiSys Corp.			
Model Number:	HNET 5.0 WLAN card	Serial Number:		
Description:	Wireless Power Usage Monitoring System Line - Quai-Peak			

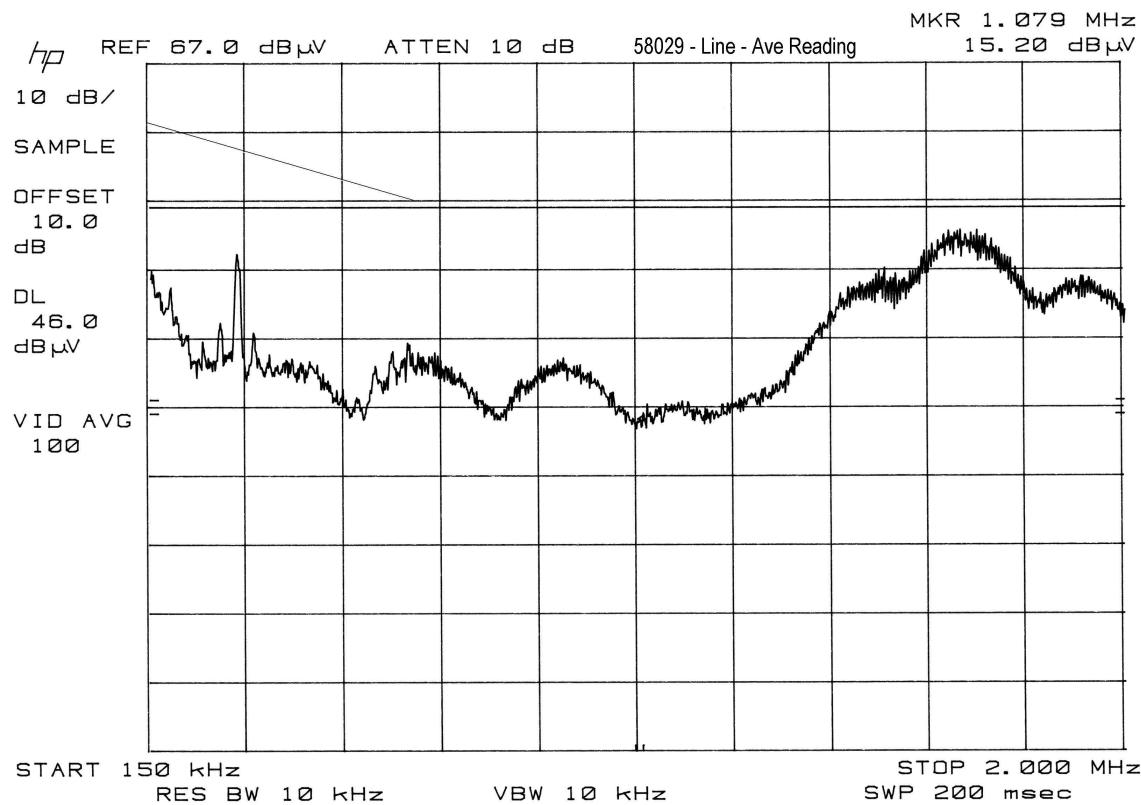




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Conducted Emissions

DNB Job Number:	58029	Date:	24 Sep 2004	Specification [X] 15.207
Customer:	ConectiSys Corp.			
Model Number:	HNET 5.0 WLAN card	Serial Number:		
Description:	Wireless Power Usage Monitoring System Line - Average			

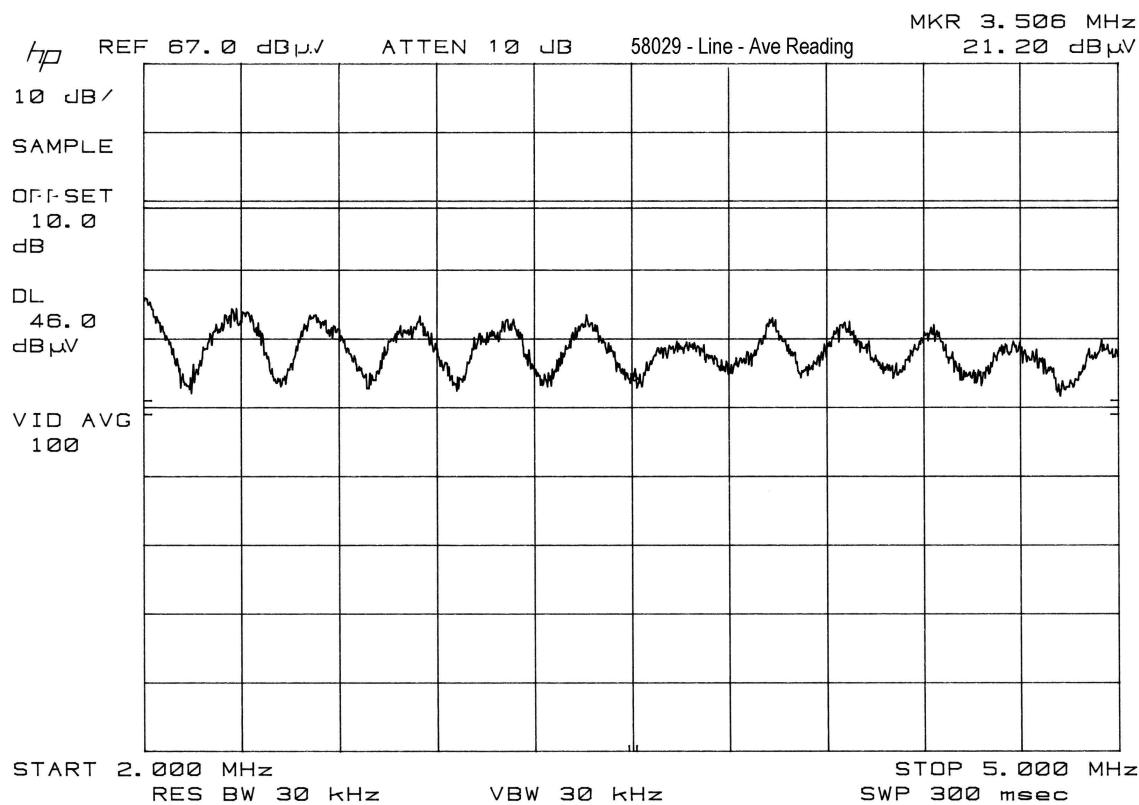




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Conducted Emissions

DNB Job Number:	58029	Date:	24 Sep 2004	Specification [X] 15.207
Customer:	ConectiSys Corp.			
Model Number:	HNET 5.0 WLAN card	Serial Number:		
Description:	Wireless Power Usage Monitoring System			
	Line - Average			

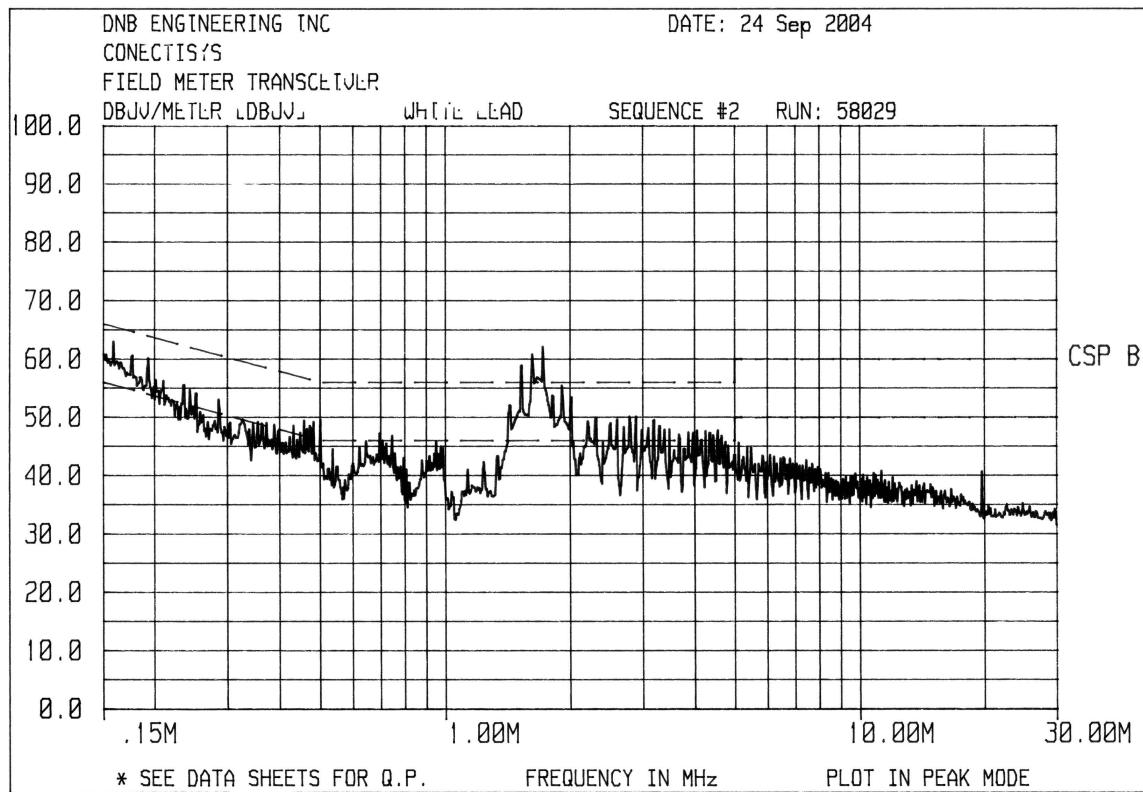




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Conducted Emissions

DNB Job Number:	58029	Date:	24 Sep 2004	Specification [X] 15.207
Customer:	ConectiSys Corp.			
Model Number:	HNET 5.0 WLAN card	Serial Number:		
Description:	Wireless Power Usage Monitoring System			
	Neutral - Peak			





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Conducted Emissions

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Customer:	ConectiSys Corp.			
Model Number:	HNET 5.0 WLAN card	Serial Number:		
Description:	Wireless Power Usage Monitoring System			
	Neutral - Quasi-Peak			

