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FCC PART 15.249, IC PART RSS-210

CLASS II PERMISSIVE CHANGE

Applicant	SIEMENS BUILDING TECHNOLOGIES, INC.
Address	1000 DEERFIELD PARKWAY
	BUFFALO GROVE IL 60089 USA
FCC ID	TKD550660-001
Model Number	550660-001
Product Description	WIRELESS STAT TX
Date Sample Received	4/4/2007
Date Tested	4/12/2007
Tested By	NAM NGUYEN
Approved By	MARIO DE ARANZETA
Report Number	S\SIEMENS_TKD\823UT7\823UT7TestReport.doc
Total Pages	8
Test Results	☒ PASS ☐ FAIL

ACCREDITED
Certificate # 0955-01

TABLE OF CONTENT

STATEMENT OF COMPLIANCE

This equipment has been tested in accordance with the standards identified in the referenced test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report and demonstrate that the equipment complies with the appropriate standards. No modifications were made to the equipment during testing in order to demonstrate compliance with these standards.

I attest that the necessary measurements were made by me or under my supervision, at TIMCO ENGINEERING, INC. located at 849 N.W. State Road 45, Newberry, Florida 32669.

Authorized by: Mario de Aranzeta

Signature: <*Mario de Aranzeta*>

Function: Engineer

Date: April 24, 2007

GENERAL INFORMATION

DUT Specification

The test results relate only to the items tested.		
Applicable Standard	Part 15.249 and RSS-210	
DUT Description	WIRELESS STAT TX	
FCC ID IC Cert	TKD550660-001 267AS-550660	
Model Number	550660-001	
Serial Number	N/A	
Frequency Range	904.1-909.8	

Test Facility: The test sites used by Timco Engineering Inc. for radiated and conducted emissions data are located at 849 NW State Road 45 Newberry, FL 32669 USA.

Test Condition: The DUT was tested in the laboratory in an environment with normal temperature and humidity. The temperature was 26ºC with a relative humidity of 50%.

Test Exercise (e.g software description, test signal, etc.): The DUT was placed in continuous transmit mode of operation.

Test Standards: ANSI C63.4 - 2003

EMC EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/20/07	3/19/10
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/06	1/10/09
Antenna: Biconnical	Eaton	94455-1	1057	CAL 12/12/05	12/12/07
Antenna: Biconnical	Eaton	94455-1	1096	CAL 10/11/06	10/11/08
Antenna: Biconnical	Electro-Metrics	BIA-25	1171	CAL 4/29/05	4/29/07
Analyzer Tan Tower Quasi-Peak Adapter	HP	85650A	3303A01690	CAL 12/8/05	12/8/07
Analyzer Tan Tower RF Preselector	HP	85685A	3221A01400	CAL 12/7/05	12/7/08
Analyzer Tan Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	CAL 12/7/05	12/7/08
LISN	Electro-Metrics	ANS-25/2	2604	CAL 10/5/06	10/5/08
LISN	Electro-Metrics	EM-7820	2682	CAL 4/28/05	4/28/07
Antenna: Log-Periodic	Eaton	96005	1243	CAL 12/14/05	12/14/07

TEST PROCEDURE

Radiation Interference: ANSI C63.4-2003 using a spectrum analyzer, a pre-selector, a quasi-peak adapter, and an appropriate antenna. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100kHz with an appropriate sweep speed and the video bandwidth was 300kHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.

Formula Of Conversion Factors: The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the pre-selector was accounted for in the spectrum analyzer meter reading.

Example:			
Freq (MHz)	Meter Reading	+ ACF	+ CL = FS
33	20 dBuV	+ 10.36 dB	+ 0.5 = 30.86 dBuV/m @ 3m

Power Line Conducted Interference: The procedure used was ANSI C63.4-2003 using a 50uH LISN. Both lines were observed. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The spectrum was scanned from 0.15 to 30 MHz.

Occupied Bandwidth: A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. The vertical scale is set to -10 dBm per division.

ANSI C63.4-2003 10.1 Measurement Procedures: The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The UUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

RADIATION INTERFERENCE

Rules Part No.: 15.249, 15.209

Requirements:

Frequency	Limits
Part 15.209	
9 to 490 kHz	2400/F (kHz) µV/m @ 300 meters
490 to 1705 kHz	24000/F (kHz) µV/m @ 30 meters
1705 kHz to 30 MHz	29.54 dBµV/m @ 30 meters
30 – 88	40.0 dBµV/m @ 3 meters
80 – 216	43.5 dBµV/m @ 3 meters
216 – 960	46.0 dBµV/m @ 3 meters
Above 960	54.0 dBµV/m @ 3 meters
Part 15.249	
Fundamental 902 – 928 MHz	94.0 dBµV/m @ 3 meters
Fundamental 2.4 – 2.4835 MHz	94.0 dBµV/m @ 3 meters
Harmonics	54.0 dBµV/m @ 3 meters

Test Data:

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
30.42	8.4	V	0.4	12.24	21.04	18.96
48.51	4.3	V	0.49	10.8	15.59	24.41
49.1	3.5	H	0.5	11.2	15.2	24.8
63.48	5.1	V	0.54	10.04	15.68	24.32
64	3	H	0.55	10.38	13.93	26.07
80.53	6.7	V	0.6	6.82	14.12	25.88
122	3.5	H	0.67	13.44	17.61	25.89
162.1	3.6	H	0.75	14.21	18.56	24.94
187.66	3.4	V	0.85	17.35	21.6	21.9
217.39	4.4	V	0.93	11.33	16.66	29.34
218.44	4.5	H	0.94	11.56	17	29
247.9	5.6	H	1	12.4	19	27
249.07	4.1	V	1	12.44	17.54	28.46
343.23	5.5	V	1.14	14.6	21.24	24.76
343.23	6.5	H	1.14	14.86	22.5	23.5

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
352.76	5.7	H	1.15	15	21.85	24.15
352.77	4.8	V	1.15	14.66	20.61	25.39
381.36	7.1	H	1.18	15.45	23.73	22.27
381.37	7.2	V	1.18	15.34	23.72	22.28
419.5	6.5	H	1.22	16.2	23.92	22.08
419.52	6.5	V	1.22	16	23.72	22.28