Prüfbericht - Nr.: *Test Report No.*	**14012275 002**	**Seite 1 von 10** *Page 1 of 10*
Auftraggeber: *Client:*	**Schneider Electric India Private Limited** **Global Technology Centre** **#88(P),ii Floor, "Sahasra Shree" EPIP Indl. Area** **Whitefield Road, -Bangalore-560066** **India**	
Gegenstand der Prüfung: *Test item*	**Wireless Temperature Maintenance Service - Receiver**	
Bezeichnung: Identification	**WTMS0105**	**Serien-Nr.:** Serial No. **Engineering sample**
Wareneingangs-Nr.: Receipt No.	**060303002-060303011**	**Eingangsdatum:** Date of receipt **03.03.2006**
Prüfort: *Testing location:*	**TÜV Rheinland Hong Kong Ltd.** Unit 8, 25th Floor, Skyline Tower, 39 Wang Kwong Road, Kowloon Bay Kowloon, Hong Kong **Hong Kong Productivity Council** HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong	
Prüfgrundlage: *Test specification*	**FCC Part 15, Subpart B**	
Prüfergebnis: *Test Result:*	**Der vorstehend beschriebene Prüfgegenstand wurde geprüft und entspricht oben genannter Prüfgrundlage.** *The a. m. test item passed the test specification.*	
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland Hong Kong Ltd.** Unit 8, 25th Floor, Skyline Tower, 39 Wang Kwong Road, Kowloon Bay, Kowloon, Hong Kong.	

geprüft / *tested by:*

Datum *Date*	**Name** *Name*	**Unterschrift** *Signature*
16.08.2006	Derek Leung Project Manager	

kontrolliert / *checked by:*

Datum *Date*	**Name** *Name*	**Unterschrift** *Signature*
16.08.2006	Thomas Berns Manager	

Sonstiges: **FCC ID: UBGGTCI0106R**
Other Aspects

Abkürzungen:			**Abbreviations:**		
	OK, Pass, P	**= entspricht Prüfgrundlage**		**OK, Pass, P**	**= passed**
	Fail, F	**= entspricht nicht Prüfgrundlage**		**Fail, F**	**= failed**
	N/A	**= nicht anwendbar**		**N/A**	**= not applicable**
	N/T	**= nicht getestet**		**N/T**	**= not tested**

Test Summary

Conducted Emissions

Result: Pass

Spurious Radiated Emissions

Result: Pass

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Appendix 1: Test Setup

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Appendix 3: EUT Internal Photo

Appendix 4: FCCID Label and Label Location

Appendix 5: Block Diagram and Operating Description

Appendix 6: Specification of EUT

Appendix 7: User Manual

Appendix 8: Schematic Diagrams and Bill of Material

List of Test and Measurement Instruments

Kind of Equipment	Manufacturer	Type	S/N
Test Receiver	Rohde & Schwarz	ESVS30	842807/009
Biconical Antenna	Rohde & Schwarz	HK116	841489/015
Log.-Periodic Antenna	Rohde & Schwarz	HL223	841516/017
Double Ridge Horn Antenna	EMCO	3115	9002-3347
Spectrum Analyzer	Rohde & Schwarz	FSP30	1093.4495K30

General Product Information

Product Function and Intended Use

The EUT is a receiver of the Wireless Temperature Maintenance Service (WTMS) system. WTMS includes a number of degreeSense Sensors (Transmitter), a Receiver Module and Application software running in a PC connected to the Receiver. Application software receives the data transferred to the PC through Ethernet port by the WTMS Receiver Module, analyses and records the data in MS Access Database that can be viewed by the Graphical User Interface (GUI) of the WTMS Application Software.

Ratings and System Details:

FCCID	:	UBGGTCI0106R
Nominal Operating Frequency	:	909.96MHz
Number of channel	:	1
Type of antenna	:	External antenna (with antenna connector)
Power supply	:	110Volt a.c.
Port	:	(i) Ethernet (ii) RS485 female 9-pin port (iii) DC power input port (iv) Antenna port

AD/DC adapter provided by client for testing:

Brand: GRE
Model: SPS-01-C45-0.5
Input:100-240V 50/60Hz 100mA
Output:4.5VDC 0.5A

Independent Operation Modes

The basic operation mode:

-receives data signal from the associated transmitter.

For further information refer to User Manual

Submitted Documents

- Block diagram
- User manual
- Parts list
- Schematic circuit diagram

Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The test was performed under normal operating mode to obtain the maximum emission.

Test Operation and Test Software

Test operation should refer to test methodology.

- There was no special software to exercise the device.

Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

- none

Countermeasures to achieve EMC Compliance

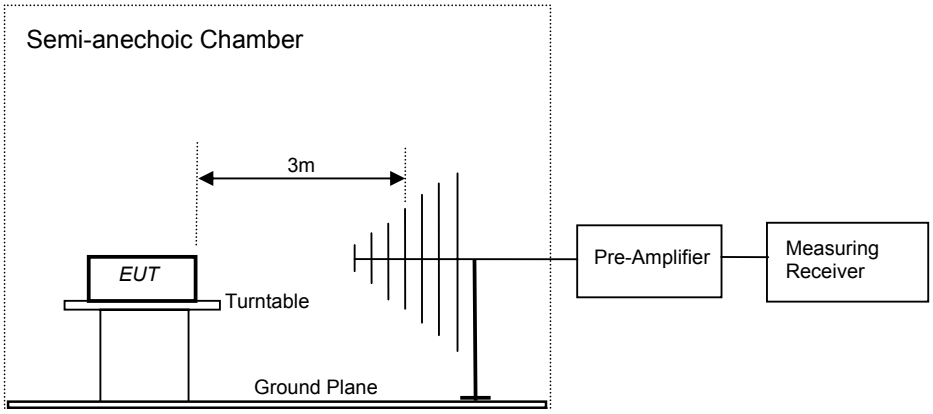
- none

Test Methodology

Radiated Emission

The radiated emission measurements were performed according to the procedures in ANSI C63.4-2003. The equipment under test (EUT) was placed at the middle of the 80 cm height turntable, and the turntable is 3 meters far from the measuring antenna. The EUT was tested in three orthogonal planes and the turntable was rotated 360° for obtaining the maximum emission. The antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.

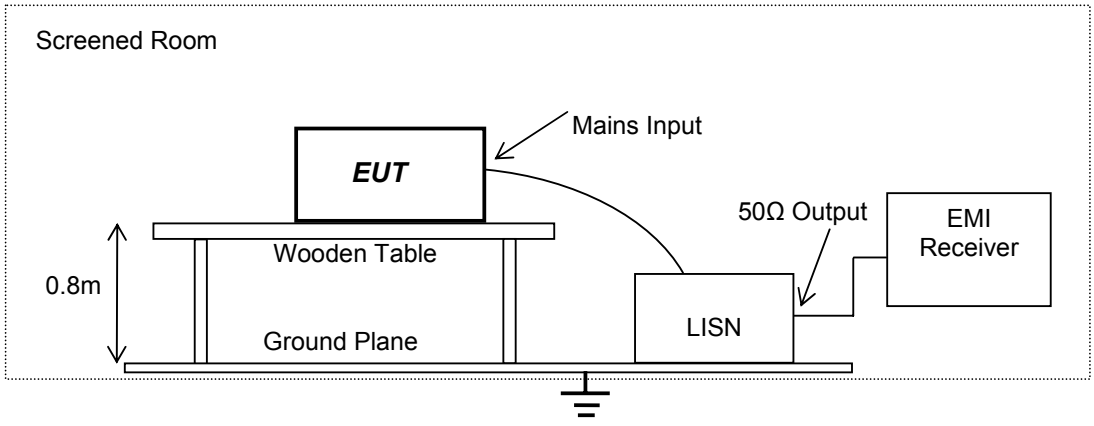
Test Setup:



Conducted Emission

The conducted emission measurements were performed according to the procedures in ANSI C63.4-2003. Initial measurements were performed in peak and average detection modes on the live line. Any emission(s) recorded within 30dB below the relevant limit lines were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

Test Setup:



Test Results

Conducted Emissions — Section 15.107

RESULT: **Pass**

Test Specification : FCC Part 15 Section 15.107
Test Method : ANSI C63.4-2003
Measurement Location : Semi Anechoic Chamber
Detector Function : QP
Supply Voltage : 110Volt
Measuring Frequency Range : 0.15MHz – 30MHz

Conductor	Frequency (MHz)	Quasi Peak Value (dBµV)	Average Value (dBµV)
L	0.180	40.9	32.7
	1.170	33.6	21.7
N	0.180	41.3	33.3
	1.260	33.6	22.8

Limit for conducted emission test under Section 15.107:

Frequency Range (MHz)	dBµV	
	QP	Average
0.15 – 0.5	*66 to 56	*56 to 46
0.50 – 5.0	56	46
5.0 – 30	60	50
Remark: The lower limit shall apply at the transition frequencies. *The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

Spurious Radiated Emissions — Section 15.109

RESULT: **Pass**

Test Specification	:	FCC Part 15 Section 15.109
Test Method	:	ANSI C63.4-2003
Measurement Location	:	Semi Anechoic Chamber
Detector Function	:	QP for <1000MHz, Average for >1000MHz.
Supply Voltage	:	Battery operated
Measuring Frequency Range	:	9kHz – 5GHz (Internal oscillator frequency of the EUT: 32.768kHz)
Measuring Distance	:	3m

Fundamental Carrier Signal	Spurious Emission	Antenna Polarization	Field Strength	Limit	Margin
(MHz)	(MHz)		(dBµV/m)	(dBµV/m)	(dB)
909.936	47.48	Vertical	19.7	40.00	-20.30
	58.94	Vertical	24.5	40.00	-15.50
	88.88	Vertical	28.3	43.52	-15.22
	133.94	Vertical	38.7	43.52	-4.82
	226.453	Vertical	27.8	46.02	-18.22
	414.485	Vertical	32.3	46.02	-13.72
	809.319	Vertical	32.9	46.02	-13.12
	907.43	Vertical	35.4	46.02	-10.62
	923.481	Vertical	35.7	46.02	-10.32
	64.34	Horizontal	17.1	40.00	-22.90
	87.74	Horizontal	22.9	40.00	-17.10
	131.0586	Horizontal	32.2	43.52	-11.32
	226.453	Horizontal	32.4	46.02	-13.62
	236.722	Horizontal	26.4	46.02	-19.62
	268.851	Horizontal	38.3	46.02	-7.72
	283.204	Horizontal	35.0	46.02	-11.02
	907.43	Horizontal	39.6	46.02	-6.42

Limit for radiated emission test under Section 15.109:

Frequency (MHz)	Field strength (µV/m) at 3m	Field strength (dBµV/m) at 3m
30-88	100	40.00
88-216	150	43.52
216-960	200	46.02
Above 960	500	53.98