

**Prüfbericht - Nr.:** 14017151 001

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Test Report No.

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<b>Auftraggeber:</b> <i>Client:</i>	Electronics Tomorrow Ltd. Unit 903-7, 9/F., Tower 1, Harbour Centre, 1 Hok Cheung St. Hung Hom Hong Kong				
<b>Gegenstand der Prüfung:</b> <i>Test item:</i>	Wireless Indoor and Outdoor Thermometer				
<b>Bezeichnung:</b> <i>Identification:</i>	261NU, 261NC, 261BC, 261BU	<b>Serien-Nr.:</b> <i>Serial No.</i>	Engineering sample		
<b>Wareneingangs-Nr.:</b> <i>Receipt No.:</i>	070919028	<b>Eingangsdatum:</b> <i>Date of receipt:</i>	19.09.2007		
<b>Prüfort:</b> <i>Testing location:</i>	TÜV Rheinland Hong Kong Ltd. 9/F Oriental News Building, No. 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong Hong Kong Productivity Council HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong				
<b>Prüfgrundlage:</b> <i>Test specification:</i>	FCC Part 15, Subpart B				
<b>Prüfergebnis:</b> <i>Test Result:</i>	Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). The test item passed the test specification(s).				
<b>Prüflaboratorium:</b> <i>Testing Laboratory:</i>	TÜV Rheinland Hong Kong Ltd.				
geprüft / tested by:	kontrolliert / reviewed by:				
22.10.2007	Derek Leung		22.10.2007	Thomas Berns	
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
<b>Sonstiges /Other Aspects:</b> FCCID: PEQ941090807					
<b>Abkürzungen:</b>		<b>Abbreviations:</b>			
P(pass) = entspricht Prüfgrundlage F(fail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet				P(pass) = passed F(fail) = failed N/A = not applicable N/T = not tested	
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p> <p><i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i></p>					

## Test Summary

### **Spurious Radiated Emissions Test**

*Result: Pass*

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**Appendix 1: Test Setup Photo**

**Appendix 2: EUT External Photo**

**Appendix 3: EUT Internal Photo**

**Appendix 4: Block Diagram and Operating Description**

**Appendix 5: Schematic Diagram**

**Appendix 6: FCC Label and Label Location Diagram**

**Appendix 7: User Manual**

## List of Test and Measurement Instruments

Kind of Equipment	Manufacturer	Model	Serial Number	Calibration Due Date
Test Receiver	Rohde & Schwarz	ESU26	100050	6 Aug 2008
Biconical Antenna	Rohde & Schwarz	HK116	841489/015	8 Feb 2008
Log-periodic Antenna	Rohde & Schwarz	HL223	841516/017	3 Feb 2008
Active Loop Antenna	EMCO	6502	9107-2651	11 Dec 2007

## General Product Information

### Product Function and Intended Use

The equipment under test (EUT) – model: NE261NU is a weather station receiver operating at 433MHz. It senses and displays the temperature. It also receives RF signal which contains the information about temperature and displays the value.

Client declared models: 261NC, 261BC and 261BU are identical on circuit design, PCB, shielding and interface with 261NU, the only difference is on the cosmetic part.

### Ratings and System Details

FCCID	:	PEQ941090807
Operated Frequencies	:	433.9MHz
Number of channel	:	One ( the user may select to receive different time frames from associated transmitter in one frequency channel)
Type of antenna	:	Integral antenna
Power supply	:	Battery operated, AA battery x 2 ( 3.0 volt)

## Independent Operation Modes

The basic operation modes:

- senses and display the temperature.
- receives temperature information from the associated transmitter (433.9MHz) and displays the value.

For further information refer to User Manual

## Submitted Documents

The submitted documents are listed as follow:

- Circuit diagram
- Block diagram
- User manual

## **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 tests in this report were performed with the associated wireless weather station transmitter model 9450 provided by the client.

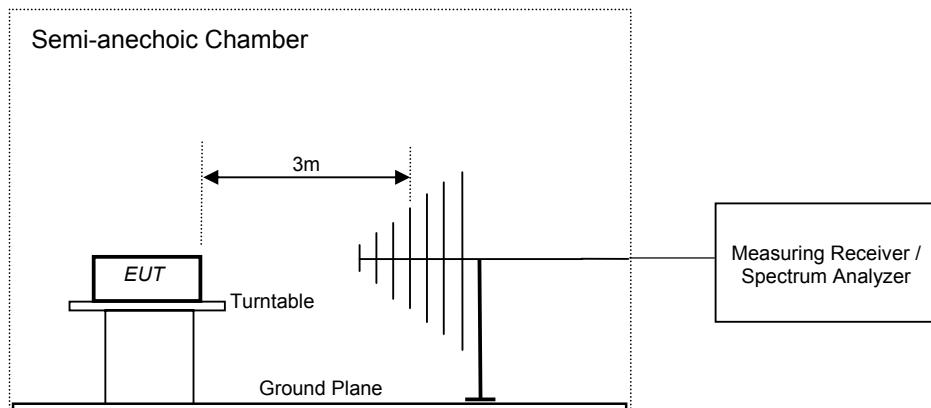
### **Countermeasures to achieve EMC Compliance**

- 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. The measurement below 30MHz was performed by loop antenna, maximum emission was obtained by two antenna polarizations of loop faced and sided to the EUT.



## Test Results

### 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
Supply Voltage	:	Battery operated 3.0 Volt
Measuring Frequency Range	:	30kHz – 2000MHz (lowest internal oscillator frequency of EUT:32.768kHz)
Measuring Distance	:	3m

Operating Frequency (MHz)	Operating Mode	Frequency of Emission (MHz)	Antenna Polarization	Field Strength at 3m (dB $\mu$ V/m)
433.9	Standby	*	All	*
	Receiving	*	All	*

\* All emissions are at least 20dB below the limits. And there is no any spurious emission was found between 30kHz and 30MHz.

#### Section 15.109

Radiated emissions, which fall in the restricted bands, as defined in Section 15.205(a), was also comply with the radiated emission limits specified in Section 15.109.

#### Limit for Radiated Emission under Section 15.109:

Frequency (MHz)	Field strength ( $\mu$ V/m) at 3m range	Field strength (dB $\mu$ V/m) at 3m range
30-88	100	$20 \log(100) = 40.00$
88-216	150	$20 \log(150) = 43.52$
216-960	200	$20 \log(200) = 46.02$
Above 960	500	$20 \log(500) = 53.98$

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector and above 1000 MHz are based on the measurements employing an average detector.