



STC Test Report

Date : 2009-05-11
No. : HM161169

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Applicant (ATS001):

Atech Scientific Measurement Limited.
Room A-C, 18 Floor, Luk Hop Ind. Bldg, 8 Luk Hop Street,
Kowloon

Manufacturer:

Atech Scientific Measurement Limited.
Room A-C, 18 Floor, Luk Hop Ind. Bldg, 8 Luk Hop Street,
Kowloon

Description of Samples:

Product: Wireless Cycle Computer
Brand Name: Atech
Model Number: NT-TX
FCC ID: UWW-KSS

Date Samples Received: 2008-02-20

Date Tested: 2009-05-08

Investigation Requested: Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2008 and ANSI C63.4:2003 for FCC Certification.

Conclusions:

The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

Remarks:

Dr. LEE Kam Chuen,
ElectroMagnetic Compatibility Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd.

The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Taipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: www.hkstc.org E-mail: hkstc@hkstc.org



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1.0 General Details

1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd.
EMC Laboratory
10 Dai Wang Street, Taipo Industrial Estate
New Territories, Hong Kong

1.2 Applicant Details

Applicant

Atech Scientific Measurement Limited.
Room A-C, 18 Floor, Luk Hop Ind. Bldg, 8 Luk Hop Street, Kowloon

Manufacturer

Atech Scientific Measurement Limited.
Room A-C, 18 Floor, Luk Hop Ind. Bldg, 8 Luk Hop Street, Kowloon

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1.3 Equipment Under Test [EUT]

Description of Sample

Model Name:	Wireless Cycle Computer
Manufacturer:	Atech Scientific Measurement Limited.
Brand Name:	Atech
Model Number:	NT-TX
Input Voltage:	3Vd.c ("CR2032" size battery x 1)

1.3.1 Description of EUT Operation

The Equipment Under Test (EUT) is an Atech Scientific Measurement Limited., Wireless Cycle Computer. The transmitter is a switch transmitter. The EUT continues to transmit while the switch changes from off to on, It is switch transmitter, Modulation by switch, and type is pulse modulation.

1.4 Date of Order

2008-02-20

1.5 Submitted Sample(s):

1 Sample

1.6 Test Duration

2009-05-08

1.7 Country of Origin

China

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2.0 Technical Details

2.1 Investigations Requested

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2008 and ANSI C63.4:2003 for FCC Certification.

2.2 Test Standards and Results Summary Tables

EMISSION Results Summary				
Test Condition	Test Requirement	Test Method	Class / Severity	
			Pass	Failed
Field Strength of Fundamental Emissions & Spurious Emissions	FCC 47CFR 15.209	ANSI C63.4:2003	N/A	<input checked="" type="checkbox"/> <input type="checkbox"/>
Radiated Emissions, 30MHz to 1GHz	FCC 47CFR 15.209	ANSI C63.4:2003	N/A	<input checked="" type="checkbox"/> <input type="checkbox"/>

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3.0 Test Results

3.1 Emission

3.1.1 Radiated Emissions (0.009 – 1000MHz)

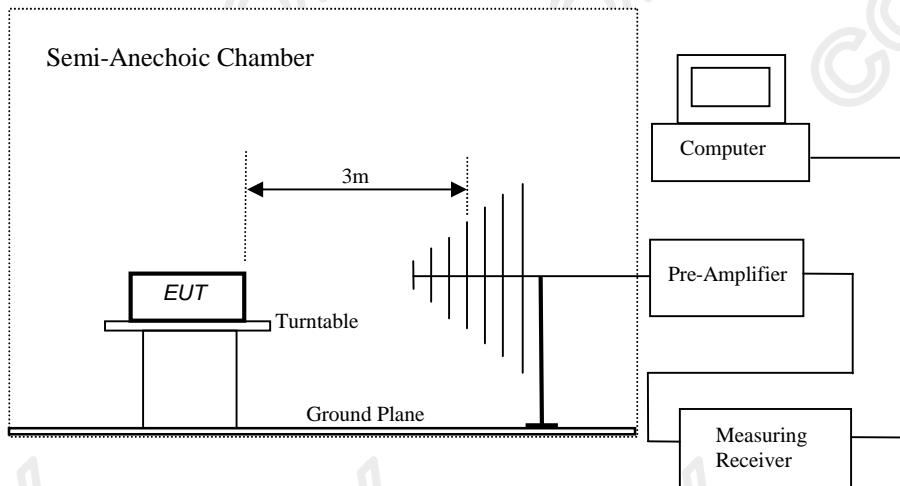
Test Requirement: FCC 47CFR 15.209
Test Method: ANSI C63.4:2003
Test Date: 2009-05-08
Mode of Operation: Tx mode

Test Method:

The sample was placed 0.8m above the ground plane of Semi-Anechoic Chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

* Semi-Anechoic Chamber located on the G/F of HKSTC with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

Test Setup:



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Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Field Strength Limits [microvolts/meter]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Results:

Radiated Emissions Quasi-Peak						
Frequency kHz	Measured Level @3m dB μ V	Correction Factor dB/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit dB μ V/m	E-Field Polarity
112.80	50.7	10.7	61.4	1174.9	2138.0	Horizontal

Remarks:

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 0.009MHz to 30MHz 1.8dB
: 30MHz to 1GHz 5.2dB
: 1GHz to 18GHz 5.1dB

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3.2 20dB Bandwidth of Fundamental Emission

Test Requirement:	FCC 47 CFR 15.209
Test Method:	ANSI C63.4:2003 (Section 13.1.7)
Test Date:	2009-05-08
Mode of Operation:	On mode

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

Test Setup:

As Test Setup of clause 3.1.1 in this test report.

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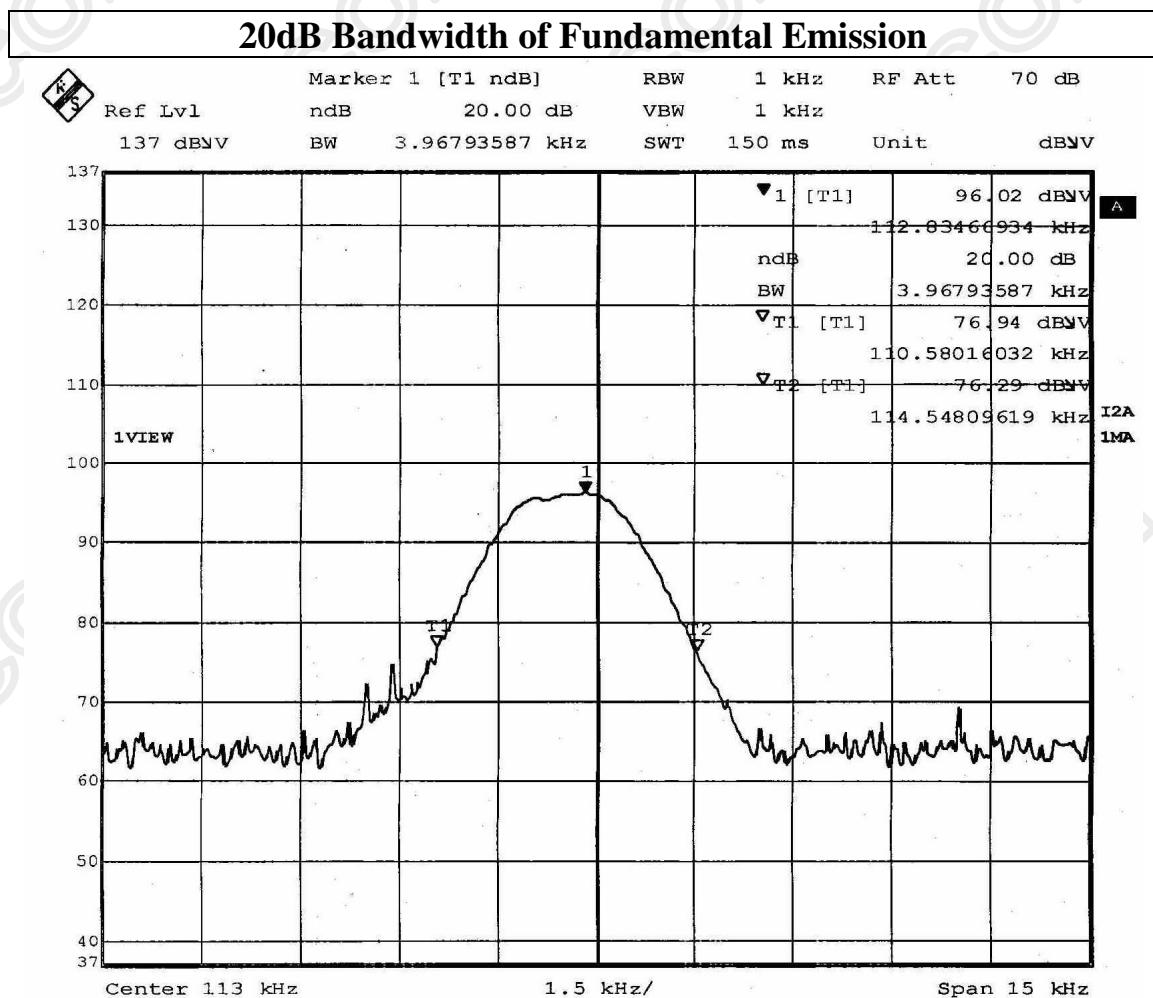
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Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [kHz]	20dB Bandwidth [KHz]
112.8	3.97



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Appendix A

List of Measurement Equipment

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	 DUE CAL
EM020	HORN ANTENNA	EMCO	3115	4032	2006/07/11	2009/07/11
EM215	MULTIDEVICE CONTROLER	EMCO	2090	00024676	N/A	N/A
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-Linggren	FACT-3	--	2008/12/01	2011/12/01
EM174	BICONILOG ANTENNA	EMCO	3142B	1671	2008/01/24	2010/01/24
EM181	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB7	100072	2008/06/16	2009/06/16
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	2006/07/26	2009/07/26

Remarks:-

CM Corrective Maintenance

N/A Not Applicable or Not Available

TBD To Be Determined

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Appendix B

Photographs of EUT

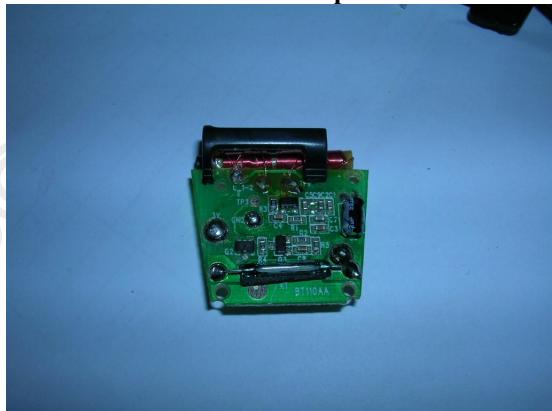
Front View of the product



Rear View of the product



Inner Circuit Top View



Inner Circuit Bottom View



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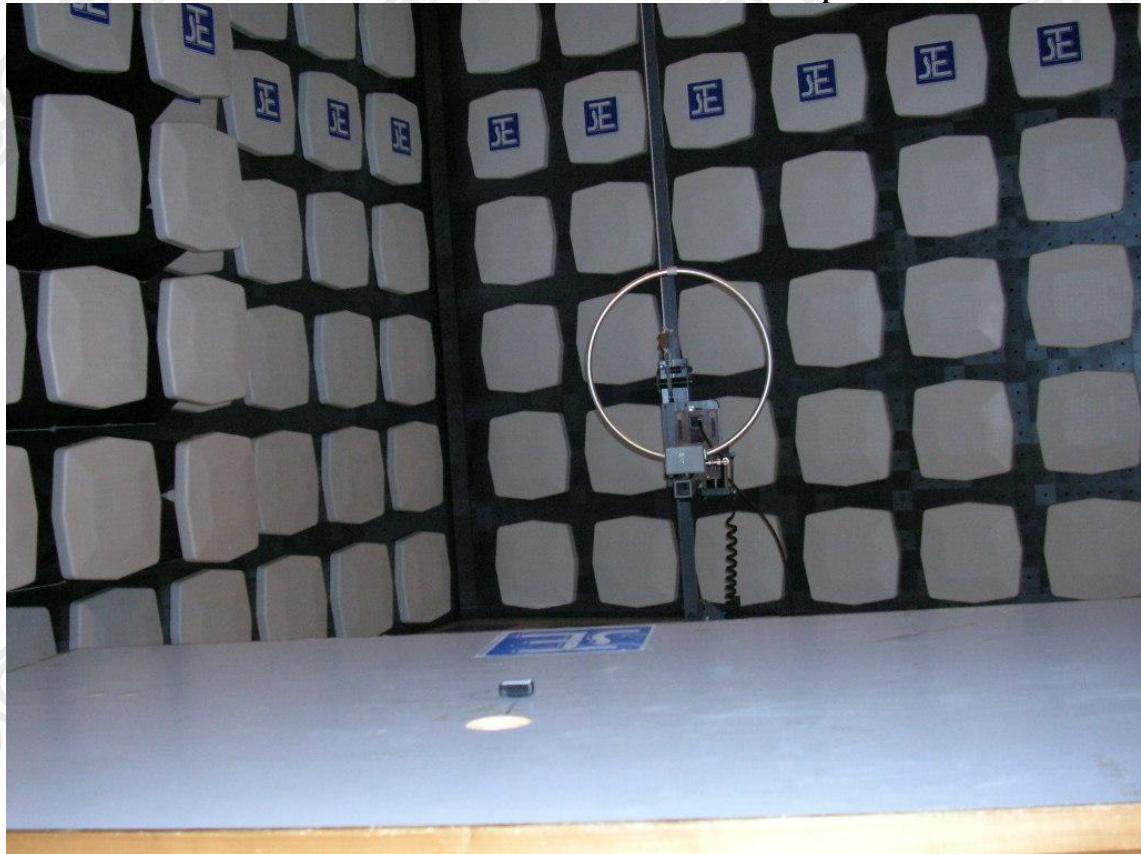
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Photographs of EUT

Measurement of Radiated Emission Test Set Up



***** End of Test Report *****

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