

# Marstech Limited

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Authorized By:  
Professional Engineers  
Ontario



Engineering &  
Administrative  
Certified  
UL  
GENERAL

Testing For FCC  
Submissions/Verifications

Industry Canada  
Approved Test Facility



## TEST REPORT

REPORT DATE:	22 January 2004		REPORT NO: 24005D1
CONTENTS:	See Table of Contents		
SUBMITTOR:	ATLINKS USA, Inc. 101 West 103 <sup>rd</sup> Street Indianapolis, IN 46290-1102 USA		
SUBJECT:	Model No: <b>25838XXX-A (Handset Unit)</b>		
	FCC ID: <b>G9H2-5838AH</b>		
TEST SPECIFICATION	FCC CFR 47 Part 15 NOTE: Tests Conducted Are "Type" Tests.		
DATE SAMPLE RECEIVED:	13 January 2004	DATE TESTED:	15, 21 & 22 January 2004
RESULTS:	Equipment tested complies with referenced specification.		
ALTERATIONS	None		
Tested by:		Approved by:	Robert G. Marshall, P. Eng.
		Edward Chang	Date:

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***MARSTECH LIMITED***

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**TECHNICAL REPORT - FCC 2.1033(b)**

**Applicant**

ATLINKS USA, Inc.  
101 West 103<sup>rd</sup> Street  
Indianapolis, IN  
46290-1102 USA

**FCC Identifier**

G9H2-5838AH

**Manufacturer**

Huiyang CCT Telecommunications Products Co. Ltd.  
CCT Technology Park, San He Economic Experimental Zone  
Huiyang City, Guangdong Province  
P. R. of China

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**EXHIBIT D**

[FCC Ref. 2.1033(b)(6)]

"Report of Measurements"

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TEST REPORT CONTAINING:

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Exhibit D(3)-1 to -2	15.249(a), (b) and (c) Field Strength of Emissions
Exhibit D(3)-3	15.249(d) Band Edges
Exhibit D(3)-4	2.202 Bandwidth
Exhibit D(4)-1 to -2	Test Equipment List and Facility
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Exhibit D(6)	Frequency List Table
Exhibit D(7)	Test Setup Photo
Appendix 1 to 2	Plots for Band Edge
Appendix 3 to 4	Plots for 20 dB Bandwidth

**PRODUCT DESCRIPTION**

The Model 25838XXX-A (handset unit) is a 5.8GHz single-line cordless telephone with caller ID that operates from 5789 MHz to 5796 MHz. The antenna used for the handset is permanently attached to the EUT.

Refer to Exhibit D(6) for complete frequency list.

**15.249 (a), (b) and (c) FIELD STRENGTH OF EMISSIONS****Requirements:**

Fundamental Frequency	Field Strength of Harmonics	15.209	
94dB $\mu$ V	54 dB $\mu$ V/m@ 3m	30-88 MHz 88-216 MHz 216-960 MHz Above 960 MHz	40 dB $\mu$ V/m@ 3m 43.5 46 54

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in 15.209, whichever is the lesser attenuation.

Emissions that fall in the restricted bands (15.205) must be less than 54dB $\mu$ V/m

**Procedure**

The test procedure used was ANSI STANDARD C63.4-1992 and DA-00-705 using an appropriate spectrum analyzer, as listed in the Test Equipment List. The bandwidth (RBW) of the spectrum analyzer was 100KHz/120KHz up to 1GHz with an appropriate sweep speed. The RBW above 1.0GHz was = 1.0MHz. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the EUT was 24°C with a humidity of 60%.

**Test Data:**

Refer to Exhibit D(3)-2

FIELD STRENGTH OF EMISSIONS

## HANDSET UNIT

Emission Frequency MHz	Meter Reading @3m dB $\mu$ V	Antenna	Cable and ACF dB	Field Strength dB $\mu$ V/M	FCC Limit dB $\mu$ V/M	Margin dB	Detector & BW KHz
<u>Channel 1</u>							
5788.660	53.00	Horn V	39.57	92.57	94	-1.43	PK 1000
11577.320	—						
<u>Channel 40</u>							
5795.610	54.00	Horn V	39.57	93.57	94	-0.43	PK 1000
11591.220	—						

**15.249 (d) BAND EDGES**

**Requirements:**

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

**Measurement:**

The handset was attenuated by 50 dB.

**Test Data:**

The Bandedge was measured at the Low and High end of the band. See Plots [Appendix 1 and 2].

**2.202 BANDWIDTH**

**Measurement:**

The measurements were made with the spectrum analyzer's resolution bandwidth (RBW) = 30KHz (Handset) and the video bandwidth (VBW) = NONE and the span set as shown on plot.

**Test Data:**

**Handset:**

Channel 1: **0.341 MHz** [Refer to Appendix 3]  
Channel 40: **0.349 MHz** [Refer to Appendix 4]

BANDWIDTH = **0.349 MHz**

**TEST FACILITY AND EQUIPMENT LIST**

**FACILITIES:**

Radiated      ANSI C63.4 (FCC OET/55) open field 3 metre test range. This test range is protected from the cold and moisture by a non-conductive enclosure.

**EQUIPMENT**

Anritsu 2601A Spectrum Analyzer  
Advantest R3261A Spectrum Analyzer  
Hewlett-Packard RF generator # 8640 B with an 002 doubler  
A.H. Systems biconical antenna; ..... 20 MHz to 330 MHz  
A.H. Systems log periodic antenna; ..... 300 MHz to 1.8 GHz  
Compliance Design P950 Preamp (16 dB) ... 25 MHz to 1.0 GHz

**NOTE:**

The Anritsu 2601A Spectrum Analyzer and the Advantest R3261A Spectrum Analyzer are calibrated annually, and that calibration is directly traceable to the National Research Council of Canada. (NRC) This equipment is only used by qualified technicians and only for the purpose of EMI measurements. The three metre test range has been carefully evaluated to the ANSI document C63.4 and will be remeasured for reflections and losses every three years.

**ADDITIONAL TEST EQUIPMENT LIST**

1. Spectrum Analyzer: HP 8591EM, S/N 3639A00995, (9KHz - 1.8GHz), Calibrated April 2003
2. Spectrum Analyzer: ANRITSU 2601A, S/N MT64544, (10KHz - 2.2GHz), Calibrated May 2003
3. Spectrum Analyzer: IFR AN940, S/N 635001039, (9KHz - 26.5GHz), Calibrated March 2003
4. Preamp: HP 8449B, S/N 3008A00378, (1 - 26.5GHz), Calibrated August 2003
5. Horn Antenna: Q-PAR 6878/24, S/N 1721, (1.5-18GHz)
6. Horn Antenna: A. H. Systems SAS 572, S/N 164 (18 - 26.5GHz)
7. Line Impedance Stabilization Network.: Marstech, Cal. July 2003

**FEDERAL COMMUNICATIONS COMMISSION**

Laboratory Division  
7435 Oakland Mills Road  
Columbia, MD 21046

August 22, 2003

Registration Number: 90578

Electrohome Electronics Ltd.  
809 Wellington St. N.

Kitchener, Ontario, N2G 4J6  
Canada

Attention: Tuat Huynh

Re: Measurement facility located at Roseville  
3 meter site  
Date of Renewal: August 22, 2003

Dear Sir or Madam:

Your request for renewal of the registration of the subject measurement facility has been received. The information submitted has been placed in your file and the registration has been renewed. The name of your organization will remain on the list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that the file must be updated for any changes made to the facility and the registration must be renewed at least every three years.

Measurement facilities that have indicated that they are available to the public to perform measurement services on a fee basis may be found on the FCC website [www.fcc.gov](http://www.fcc.gov) under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,  
  
Ms. Phyllis Parrish  
Information Technician

FCC ID: G9H2-5838AH  
Marstech Report No. 24005D1  
EXHIBIT D(5)

TOTAL P.02

**B. Handset Unit**

Ch. No	Hs Tx Freq	Hs Tx Vco Freq	Hs Rx Freq	Hs Rx Vco Freq
1	5788656640	826950948.6	924575072	456937536
2	5788834972	826976424.6	924626024	456963012
3	5789013304	827001900.6	924676976	456988488
4	5789191636	827027376.6	924727928	457013964
5	5789369968	827052852.6	924778880	457039440
6	5789548300	827078328.6	924829832	457064916
7	5789726632	827103804.6	924880784	457090392
8	5789904964	827129280.6	924931736	457115868
9	5790083296	827154756.6	924982688	457141344
10	5790261628	827180232.6	925033640	457166820
11	5790439960	827205708.6	925084592	457192296
12	5790618292	827231184.6	925135544	457217772
13	5790796624	827256660.6	925186496	457243248
14	5790974956	827282136.6	925237448	457268724
15	5791153288	827307612.6	925288400	457294200
16	5791331620	827333088.6	925339352	457319676
17	5791509952	827358564.6	925390304	457345152
18	5791688284	827384040.6	925441256	457370628
19	5791866616	827409516.6	925492208	457396104
20	5792044948	827434992.6	925543160	457421580
21	5792223280	827460468.6	925594112	457447056
22	5792401612	827485944.6	925645064	457472532
23	5792579944	827511420.6	925696016	457498008
24	5792758276	827536896.6	925746968	457523484
25	5792936608	827562372.6	925797920	457548960
26	5793114940	827587848.6	925848872	457574436
27	5793293272	827613324.6	925899824	457599912
28	5793471604	827638800.6	925950776	457625388
29	5793649936	827664276.6	926001728	457650864
30	5793828268	827689752.6	926052680	457676340
31	5794006600	827715228.6	926103632	457701816
32	5794184932	827740704.6	926154584	457727292
33	5794363264	827766180.6	926205536	457752768
34	5794541596	827791656.6	926256488	457778244
35	5794719928	827817132.6	926307440	457803720
36	5794898260	827842608.6	926358392	457829196
37	5795076592	827868084.6	926409344	457854672
38	5795254924	827893560.6	926460296	457880148
39	5795433256	827919036.6	926511248	457905624
40	5795611588	827944512.6	926562200	457931100