

Marstech Limited

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Authorized by:
Professional Engineers
Ontario


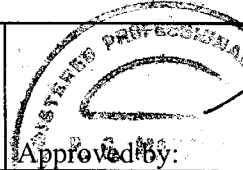
Engineering &
Administrative



Testing For FCC
Submissions/Verifications

Industry Canada
Industry Canada
Approved Test Facility



| TEST REPORT | | | |
|---|--|--|--|
| REPORT DATE: | | 25 November 2003 | |
| REPORT NO: | | 23376D | |
| CONTENTS: | | See Table of Contents | |
| SUBMITTOR: | | ATLINKS USA, Inc. 101 West 103 rd Street Indianapolis, IN 46290-1102 USA | |
| SUBJECT: | | Model No: 21008XXX-A [Alternate Construction - to cover alternate RF module parts] | |
| | | FCC ID: G9H2-1008A | |
| TEST SPECIFICATION | | CFR 47 FCC Part 15 Class "II" Permissive Change FCC DA 00-705 "Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems." NOTE: Tests Conducted Are "Type" Tests. | |
| DATE SAMPLE RECEIVED: | | 03 November 2003 | DATE TESTED: 12, 13 & 20 November 2003 |
| RESULTS: | | Equipment tested complies with referenced specifications. | |
| ALTERATIONS | | None | |
| Tested by: | |  | |
| | | Edward Chang | |
| | |  | |
| | | Approved by: Robert G. Marshall, P. Eng. Date: 10 Dec 2003 | |
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MARSTECH LIMITED

TECHNICAL REPORT - FCC 2.1033(b)

Applicant

ATLINKS USA, Inc.
101 West 103rd Street
Indianapolis, IN
46290-1102 USA

FCC Identifier

G9H2-1008A

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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15.205(c)/15.209 Spurious Radiated Emissions in Restricted
Bands and Field Strength of Emissions
Test Setup Photos

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.

Conducted 2.5m Anechoic Chamber

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

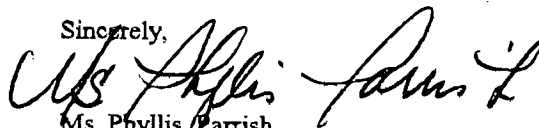
Rc: Measurement facility located at Roseville
3 meter site
Date of Renewal: August 22, 2003

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 under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,



Ms. Phyllis Parrish
Information Technician

15.205(c)/15.209

SPURIOUS RADIATED EMISSIONS IN RESTRICTED BANDS

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%.

Requirements:

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

Test Data:

Refer to Exhibit D(3)-2 to D(3)-4

15.205(c)/15.209 FIELD STRENGTH OF RADIATED EMISSIONS INCLUDING RESTRICTED BANDS**BASE UNIT - ANT0**

| Frequency Band MHz | Meter Reading (Peak) @3m dBμV/M | Meter Reading (Average) @3m dBμV/M | Antenna and Polarization | Cable & Antenna Factor | Peak F. S. dBμV/M | Average F. S. dBμV/M | Average FCC Limit | Margin dB |
|--------------------|---------------------------------|------------------------------------|--------------------------|------------------------|-------------------|----------------------|-------------------|-----------|
| Channel 1 | | | | | | | | |
| 2401.808 | 80.00 | — | Horn V | 33.08 | 113.08 | — | — | — |
| 4803.616 | 25.00 | 6.00 | Horn H | 38.28 | 63.28 | 44.28 | 54 | -9.72 |
| 7205.424 | 24.00 | 3.00 | Horn V | 43.94 | 67.94 | 46.94 | 54 | -7.06 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Channel 37 | | | | | | | | |
| 2440.158 | 78.00 | — | Horn V | 33.20 | 111.20 | — | — | — |
| 4880.316 | 26.00 | 6.00 | Horn H | 38.47 | 64.47 | 44.47 | 54 | -9.53 |
| 7320.474 | 24.00 | 3.00 | Horn V | 44.06 | 68.06 | 47.06 | 54 | -6.94 |
| | | | | | | | | |
| | | | | | | | | |
| Channel 75 | | | | | | | | |
| 2479.401 | 77.00 | — | Horn V | 33.23 | 110.23 | — | — | — |
| 2483.5 | 24.00 | 5.00 | Horn V | 33.89 | 57.89 | 38.89 | 54 | -15.11 |
| 4958.802 | 28.00 | 5.00 | Horn H | 40.30 | 68.30 | 45.30 | 54 | -8.70 |
| 7438.703 | 22.00 | 1.00 | Horn V | 44.38 | 66.38 | 45.38 | 54 | -8.62 |
| 12397.005 | 19.00 | 2.00 | Horn V | 47.62 | 66.62 | 49.62 | 54 | -4.38 |
| | | | | | | | | |

1. If the peak meets the average limit, nothing further is required.
2. If the peak exceeds the average limit, then an average measurement is required (may be calculated) and must be below the average limit and also;
3. The peak measurement cannot exceed the average limit +20dB.

15.205(c)/15.209 FIELD STRENGTH OF RADIATED EMISSIONS INCLUDING RESTRICTED BANDS**BASE UNIT - ANT1**

| Frequency Band MHz | Meter Reading (Peak) @3m dBμV/M | Meter Reading (Average) @3m dBμV/M | Antenna and Polarization | Cable & Antenna Factor | Peak F. S. dBμV/M | Average F. S. dBμV/M | Average FCC Limit | Margin dB |
|--------------------|---------------------------------|------------------------------------|--------------------------|------------------------|-------------------|----------------------|-------------------|-----------|
| Channel 1 | | | | | | | | |
| 2401.808 | 79.00 | — | Horn V | 33.08 | 112.08 | — | — | — |
| 4803.616 | 25.00 | 6.00 | Horn H | 38.28 | 63.28 | 44.28 | 54 | -9.72 |
| 7205.424 | 24.00 | 3.00 | Horn H | 43.94 | 67.94 | 46.94 | 54 | -7.06 |
| | | | | | | | | |
| | | | | | | | | |
| Channel 37 | | | | | | | | |
| 2440.158 | 79.00 | — | Horn V | 33.2 | 112.20 | — | — | — |
| 4880.316 | 26.00 | 6.00 | Horn H | 38.47 | 64.47 | 44.47 | 54 | -9.53 |
| 7320.474 | 24.00 | 3.00 | Horn H | 44.06 | 68.06 | 47.06 | 54 | -6.94 |
| | | | | | | | | |
| | | | | | | | | |
| Channel 75 | | | | | | | | |
| 2479.401 | 77.00 | — | Horn V | 33.23 | 110.23 | — | — | — |
| 2483.5 | 24.00 | 5.00 | Horn V | 33.89 | 57.89 | 38.89 | 54 | -15.11 |
| 4958.802 | 28.00 | 5.00 | Horn H | 40.30 | 68.30 | 45.30 | 54 | -8.70 |
| 7438.703 | 23.00 | 1.00 | Horn H | 44.38 | 67.38 | 45.38 | 54 | -8.62 |
| 12397.005 | 19.00 | 2.00 | Horn V | 47.62 | 66.62 | 49.62 | 54 | -4.38 |
| | | | | | | | | |
| | | | | | | | | |

1. If the peak meets the average limit, nothing further is required.
2. If the peak exceeds the average limit, then an average measurement is required (may be calculated) and must be below the average limit and also;
3. The peak measurement cannot exceed the average limit +20dB.

15.205(c)/15.209 FIELD STRENGTH OF RADIATED EMISSIONS INCLUDING RESTRICTED BANDS**HANDSET UNIT**

| Frequency Band MHz | Meter Reading (Peak) @3m dBμV/M | Meter Reading (Average) @3m dBμV/M | Antenna and Polarization | Cable & Antenna Factor | Peak F. S. dBμV/M | Average F. S. dBμV/M | Average FCC Limit | Margin dB |
|--------------------|---------------------------------|------------------------------------|--------------------------|------------------------|-------------------|----------------------|-------------------|-----------|
| Channel 1 | | | | | | | | |
| 2401.808 | 77.00 | — | Horn V | 33.08 | 110.08 | — | — | — |
| 4803.616 | 29.00 | 5.00 | Horn V | 38.28 | 67.28 | 43.28 | 54 | -10.72 |
| 7205.424 | 18.00 | 3.00 | Horn H | 43.94 | 61.94 | 46.94 | 54 | -7.06 |
| | | | | | | | | |
| | | | | | | | | |
| Channel 37 | | | | | | | | |
| 2440.158 | 79.00 | — | Horn V | 33.20 | 112.20 | — | — | — |
| 4880.316 | 28.00 | 4.00 | Horn H | 38.47 | 66.47 | 42.47 | 54 | -11.53 |
| 7320.474 | 19.00 | 2.00 | Horn H | 44.06 | 63.06 | 46.06 | 54 | -7.94 |
| | | | | | | | | |
| | | | | | | | | |
| Channel 75 | | | | | | | | |
| 2479.401 | 81.00 | — | Horn V | 33.23 | 114.23 | — | — | — |
| 2483.5 | 28.00 | 6.00 | Horn V | 33.89 | 61.89 | 39.89 | 54 | -14.11 |
| 4958.802 | 26.00 | 4.00 | Horn H | 40.30 | 66.30 | 44.30 | 54 | -9.70 |
| 7438.703 | 21.00 | 3.00 | Horn H | 44.38 | 65.38 | 47.38 | 54 | -6.62 |
| | | | | | | | | |
| | | | | | | | | |

1. If the peak meets the average limit, nothing further is required.
2. If the peak exceeds the average limit, then an average measurement is required (may be calculated) and must be below the average limit and also:
3. The peak measurement cannot exceed the average limit +20dB.