TIMCO ENGINEERING, Inc.

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# FCC PART 15 SUB PART B

| | |
|---|---|
| Applicant | AUTOSTART |
| Address | 5764 PARE |
| | MONTREAL, QUEBEC<br>CANADA H4P 2M2 |
| FCC ID: | NAHSHL101 |
| Product Description | SECURITY RECEIVER |
| Date Sample Received | 12/14/2006 |
| Date Tested | 1/5/2007 |
| Tested By | JOSEPH SCOGLIO |
| Approved By | MARIO DE ARANZETA |
| Report Number | 3386AUT6TestReport.doc |
| Total Pages | 9 |
| Test Results | ☒ PASS ☐ FAIL |



ACCREDITED
Certificate # 0955-01

**TABLE OF CONTENTS**

**STATEMENT OF COMPLIANCE**

This equipment has been tested in accordance with the standards identified in the referenced test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report and demonstrate that the equipment complies with the appropriate standards.

I attest that the necessary measurements were made by me or under my supervision, at TIMCO ENGINEERING, INC. located at 849 N.W. State Road 45, Newberry, Florida 32669 USA.

**Authorized by:** Mario de Aranzeta

**Signature:** <*Mario de Aranzeta*>

**Function:** Engineer

**Date:** 1/30/2007

## GENERAL INFORMATION

| The test results relate only to the items tested. | |
|---|---|
| **DUT Description** | SECURITY RECEIVER |
| **FCC ID** | NAHSHL101 |
| **DUT Power Source** | ☐ 110–120Vac/50– 60Hz |
| | ☐ DC Power |
| | ☒ Battery Operated Exclusively |
| **Test Item** | ☐ Prototype |
| | ☒ Pre-Production |
| | ☐ Production |
| **Modifications to DUT** | None |
| **Test Standards** | FCC Part 15, Subpart B, ANSI C63.4-2003 |

## TEST EQUIPMENT LIST

| Device | Manufacturer | Model | Serial Number | Cal/Char Date | Due Date |
|---|---|---|---|---|---|
| 3-Meter OATS | TEI | N/A | N/A | Listed 1/11/06 | 1/10/09 |
| 3/10-Meter OATS | TEI | N/A | N/A | Listed 3/27/04 | 3/26/07 |
| Analyzer Tan Tower Spectrum Analyzer | HP | 8566B Opt 462 | 3138A07786<br>3144A20661 | CAL 12/7/05 | 12/7/07 |
| Analyzer Tan Tower RF Preselector | HP | 85685A | 3221A01400 | CAL 12/7/05 | 12/7/07 |
| Analyzer Tan Tower Quasi-Peak Adapter | HP | 85650A | 3303A01690 | CAL 12/8/05 | 12/8/07 |
| Analyzer Tan Tower Preamplifier | HP | 8449B-H02 | 3008A00372 | CAL 12/8/05 | 12/8/07 |
| Analyzer Blue Tower Spectrum Analyzer | HP | 8568B | 2928A04729<br>2848A18049 | CAL 4/13/05 | 4/13/07 |
| Analyzer Blue Tower RF Preselector | HP | 85685A | 2926A00983 | CAL 9/5/05 | 9/5/07 |
| Analyzer Blue Tower Quasi-Peak Adapter | HP | 85650A | 2811A01279 | CAL 4/13/05 | 4/13/07 |
| Analyzer Silver Tower Spectrum Analyzer | HP | 8566B Opt 462 | 3552A22064<br>3638A08608 | CAL 10/30/06 | 10/30/08 |
| Analyzer Silver Tower RF Preselector | HP | 85685A | 2620A00294 | CAL 10/30/06 | 10/30/08 |
| Analyzer Silver Tower Quasi-Peak Adapter | HP | 85650A | 3303A01844 | CAL 10/30/06 | 10/30/08 |
| Analyzer Open-Frame Tower Preamplifier | HP | 8449B | 3008A01075 | CAL 8/8/05 | 8/8/07 |
| Antenna: Biconnical | Electro-Metrics | BIA-25 | 1171 | CAL 4/29/05 | 4/29/07 |
| Antenna: Biconnical | Eaton | 94455-1 | 1096 | CAL 10/11/06 | 10/11/08 |
| Antenna: Biconnical | Eaton | 94455-1 | 1057 | CAL 12/12/05 | 12/12/07 |

## TEST PROCEDURE

**General:** This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

**Radiation Interference:** The test procedure used was ANSI Standard C63.4-2003 using a spectrum analyzer with a pre-selector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The video bandwidth was always greater than or equal to the RBW.

**Formula Of Conversion Factors:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

**Example:**

| Freq (MHz) | Meter Reading | + ACF | +CL | = FS |
|---|---|---|---|---|
| 33 | 20 dBuV | + 10.36 dB/m | +0.40 dB | =30.36 dBuV/m @ 3m |

**ANSI C63.4-2003 Section 10.1.7 Measurement Procedures:** The unit under test was placed on a table 80 cm high and with dimensions of 1mby 1.5m. The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and verticals planes.

If powerline conducted testing was required for this device, the situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI C63.4-2003 with the EUT 40 cm from the vertical ground wall.

## RADIATED SPURIOUS EMISSIONS

**Rules Part No.:** 15.109

**Requirements:**

| Frequency | Limits |
|---|---|
| 30 – 88 | 40.0 dBµV/m measured @ 3 meters |
| 80 – 216 | 43.5 dBµV/m measured @ 3 meters |
| 216 – 960 | 46.0 dBµV/m measured @ 3 meters |
| Above 960 | 54.0 dBµV/m measured @ 3 meters |

**Test Procedure:** The procedure used was ANSI C63.4-2003. The frequency was scanned from 30 MHz to 1.0 GHz. When an emission was found, the table was rotated to produce the maximum signal strength.

**Test Data:**

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBuV | Ant Pol | Coax Loss dB | Correction Factor dB | Field Strength dBuV/m | Margin dB |
|---|---|---|---|---|---|---|---|
| 433.9 | 433.50 | 24.7 | H | 1.23 | 16.61 | 42.54 | 3.46 |
| 433.9 | 433.50 | 25.0 | V | 1.23 | 16.17 | 42.40 | 3.60 |
| 433.9 | 867.10 | 3.5 | H | 1.93 | 22.94 | 28.37 | 17.63 |
| 433.9 | 867.10 | 4.8 | V | 1.93 | 22.40 | 29.13 | 16.87 |

## POWER LINE CONDUCTED INTERFERENCE

**Rules Part No.:** Part 15.107

**Requirements:**

| Frequency (MHz) | Quasi Peak Limits (dBuv) | Average Limits (dBuV) |
|---|---|---|
| 0.15 – 0.5 | 66 – 56 | 56 – 46 |
| 0.5 – 5.0 | 56 | 46 |
| 5.0 – 30 | 60 | 50 |

**Test Procedure**: ANSI Standard C63.4-2003. The spectrum was scanned from 0.15 to 30 MHz.

**Test Data:** Not applicable.

## RADIATED EMISSIONS TEST SETUP PHOTO