



DATE: 21 July 2013

I.T.L. (PRODUCT TESTING) LTD.
FCC Radio Test Report
for
AeroScout Ltd.

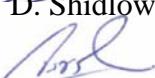
Equipment under test:
Multi Sensor Tag

TAG-5400

Written by:

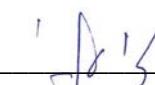

D. Shidlowsky, Documentation

Approved by:



A. Sharabi, Test Engineer

Approved by:


I. Raz

I. Raz, EMC Laboratory Manager

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This report relates only to items tested.



Measurement/Technical Report for AeroScout Ltd.

Multi Sensor Tag

TAG-5400

FCC ID: Q3HTAG2000

IC No.: 5115A-TAG2000

Limits used:

Measurement procedure used is KDB 558074 D01 18 January 2012 and ANSI C63.4-2003

Application for Certification
prepared by:
Ishaishou Raz
ITL (Product Testing) Ltd.
Kfar Bin Nun
D.N. Shimshon 99780
Israel
e-mail: Sraz@itl.co.il

Applicant for this device:
(different from "prepared by")
Reuven Amsalem
AeroScout Ltd.
3 Pekeris St.
Einstein Entrance 4th Floor
Rechovot 76702
Israel
Tel: +972-8-936-3136
Fax: +972-8-936-5977
e-mail: reuven.amsalem@aeroscout.com



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1. General Information

1.1 Administrative Information

| | |
|--------------------------------|---|
| Manufacturer: | AeroScout Ltd. |
| Manufacturer's Address: | 3 Pekeris St. Einstein Entrance 4th Floor Rechovot 76702 Israel Tel: +972-8-9369393 Fax: +972-8-9365977 |
| Manufacturer's Representative: | Dadi Matza Doron Lilo |
| Equipment Under Test (E.U.T.): | Multi Sensor Tag |
| Equipment Model No.: | TAG-5400 |
| Equipment Serial No.: | Not Designated |
| Date of Receipt of E.U.T.: | 23.06.13 |
| Start of Test: | 24.06.13 |
| End of Test: | 24.06.13 |
| Test Laboratory Location: | I.T.L (Product Testing) Ltd. Kfar Bin Nun, ISRAEL 9978000 |
| Test Specifications: | See Section 2 |



1.2 ***List of Accreditations***

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), Registration No. 90715.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) (Japan), Registration Numbers: C-1350, R-1285.
5. Industry Canada (Canada), IC File No.: 46405-4025; Site No. IC 4025B-1.
6. TUV Product Services, England, ASLLAS No. 97201.

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.



1.3 *Product Description*

The AeroScout T5m-v Multi-Sensor Tag is a key component of the AeroScout Condition Monitoring Solution. The T5m-v Tag is a Wi-Fi and active RFID device that leverages the wireless network infrastructure to report changes in temperature, humidity, and voltage using internal sensors. The tag can be attached to stationary or mobile equipment that require continuous humidity, temperature and/or voltage monitoring.

The tag addresses the needs of long-term storage of emergency vehicles in variety of industries such as defense and public safety. The tag will help to ensure the vehicles are stored in optimal conditions and are always in full readiness. The tag monitors the ambient temperature and humidity of the area where the vehicle is stored and the vehicle's battery power level.

1.4 *Test Methodology*

Radiated testing was performed according to the procedures in KDB 558074 D01 18 January 2012 and ANSI C63.4: 2003. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 *Test Facility*

The radiated emissions tests were performed at I.T.L.'s testing facility at Kfar Bin-Nun, Israel. This site is a FCC listed test laboratory (FCC Registration No. 90715, date of listing November 21, 2012). I.T.L.'s EMC Laboratory is also accredited by A2LA, certificate No. 1152.01.

1.6 *Measurement Uncertainty*

Radiated Emission

The Open Site complies with the ± 4.98 dB Normalized Site Attenuation requirements of ANSI C63.4-2003. In accordance with Paragraph 5.4.6.1 of this standard, this tolerance includes instrumentation calibration errors, measurement technique errors, and errors due to site anomalies.



2. System Test Configuration

2.1 Justification

The product was originally authorized for both FCC and IC certification under FCC ID: Q3HTAG2000 and IC: 5115A-TAG2000.

The following changes were made to the product:

1. A new balcony was added which supports
 - 1.1. External voltage measurement capability
 - 1.2. External humidity and temperature measurements
2. Hole in front cover to let the tag to measure the environment temperature and humidity

Due to the above changes an application for a C2PC for both FCC and Industry Canada is being submitted.

The following tests were performed, maximum transmitted peak power output, band edge, spurious radiated emission.

2.2 Special Accessories

No special accessories were needed to achieve compliance.

2.3 Equipment Modifications

No modifications were needed to achieve compliance.

2.4 Configuration of Tested System

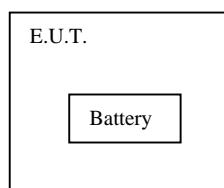


Figure 1. Configuration of Tested System



3. Test Setup Photos



Figure 2 Radiated Emission 9kHz -30 MHz



Figure 3 Radiated Emission 30 -1000 MHz



Figure 4 Radiated Emission Above 1- GHz MHz



4. Maximum Transmitted Peak Power Output

4.1 Test Specification

FCC Part 15 Section 15.247(b)

4.2 Test procedure

The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator (2 x 8 dB) and an appropriate coaxial cable (cable loss = 1 dB). The Spectrum Analyzer was set to 3.0 MHz resolution BW. Peak power level was measured at selected operation frequencies.

The E.U.T. was tested at 2412, 2437, and 2462 MHz.

4.3 Test Results

| Operation Frequency (MHz) | Power (dBm) | Specification (dBm) | Margin (dB) |
|---------------------------|-------------|---------------------|-------------|
| 2412 | 16.63 | 30.0 | -13.37 |
| 2437 | 17.99 | 30.0 | -12.01 |
| 2462 | 17.48 | 30.0 | -12.52 |

Figure 5 Maximum Peak Power Output

See additional details in *Figure 6* to *Figure 8*.

JUDGEMENT: Passed by 13.4 dB

TEST PERSONNEL:

Tester Signature:

Date: 21.07.13

Typed/Printed Name: A. Sharabi

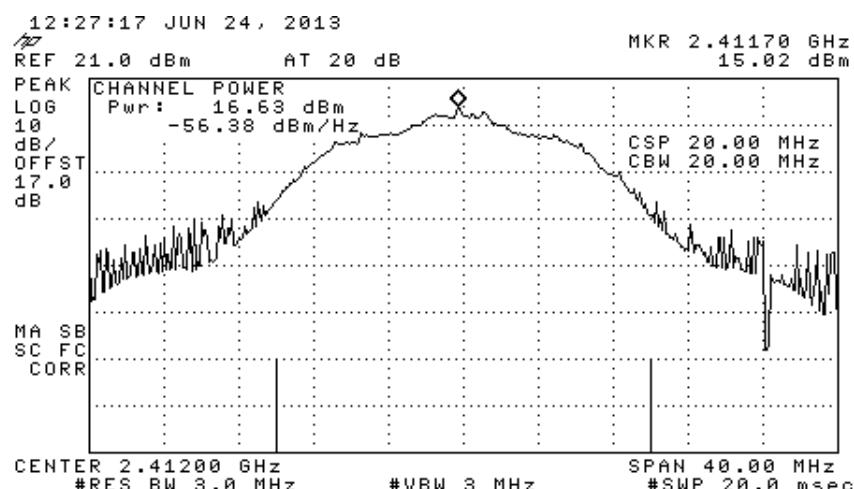


Figure 6 2412 MHz

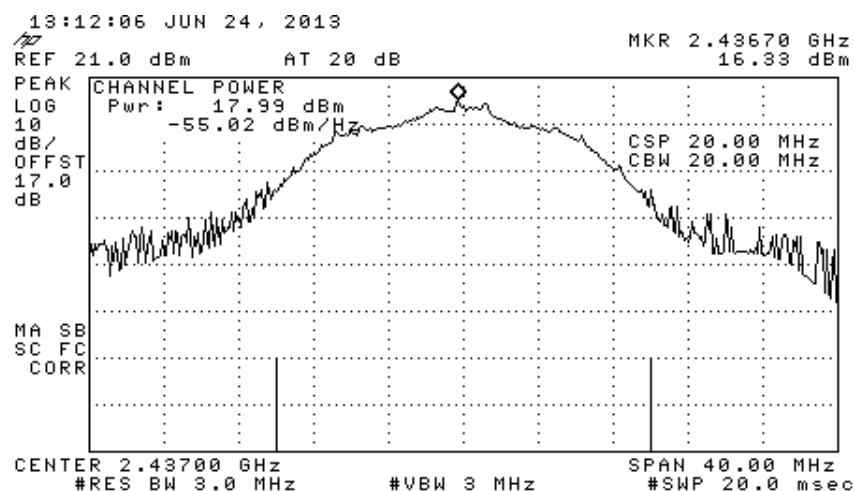


Figure 7 2437 MHz

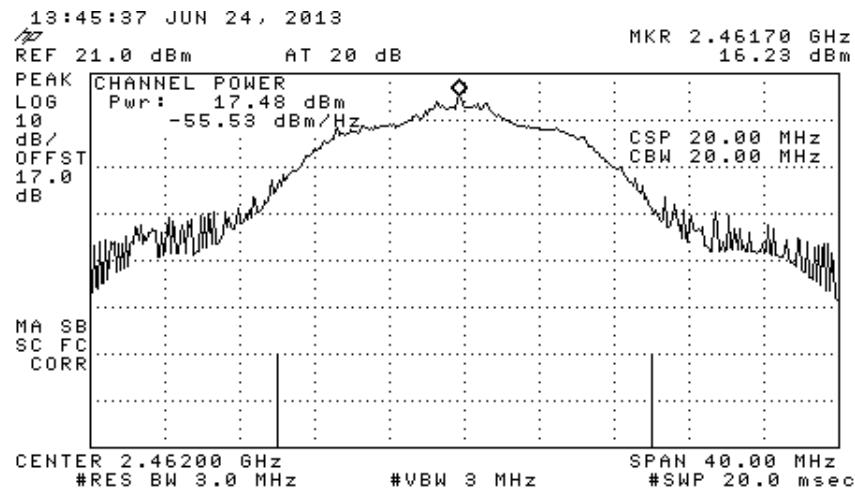


Figure 8 2462 MHz

4.4 Maximum Transmitted Peak Power Output Test Equipment Used.

| Instrument | Manufacturer | Model | Serial/Part Number | Calibration | |
|-------------------|--------------|--------------|--------------------|-----------------------|---------|
| | | | | Last Calibration Date | Period |
| Spectrum Analyzer | HP | 8592L | 3826A01204 | February 28, 2013 | 1 year |
| Attenuator | Macom | M3933/25-74N | 4106-0050 | August 8, 2012 | 2 years |
| Attenuator | Macom | M3933/25-74N | 4106-0211 | August 8, 2012 | 2 years |
| Cable | Mini-circuit | DCB | N/A | April 3, 2013 | 1 year |

Figure 9 Maximum Transmitted Peak Power Output Test Equipment Used



5. Band Edge Spectrum

5.1 ***Test Specification***

FCC Part 15 Subpart C Section 15.247(c)

5.2 ***Test procedure***

The E.U.T. antenna terminal was connected to the spectrum analyzer through an external attenuator (10 dB) and an appropriate coaxial cable (cable loss = 1.2 dB). The spectrum analyzer was set to 100 kHz resolution BW. Maximum power level below 2400 MHz and above 2483.5 MHz was measured relative to power level at 2412 MHz, and 2462 MHz correspondingly.

5.3 ***Test Results***

| Operation Frequency (MHz) | Band Edge Frequency (MHz) | Spectrum Level (dBc) | Specification (dBc) | Margin (dB) |
|---------------------------|---------------------------|----------------------|---------------------|-------------|
| 2412 | 2400 | -23.84 | 16.5 | -7.34 |
| 2462 | 2483.5 | -24.69 | 16.0 | -8.69 |

Figure 10 Band Edge Spectrum

See additional details in Figure 11 to Figure 12.

JUDGEMENT: Passed by 7.3 dB

TEST PERSONNEL:

Tester Signature: 

Date: 21.07.13

Typed/Printed Name: A. Sharabi

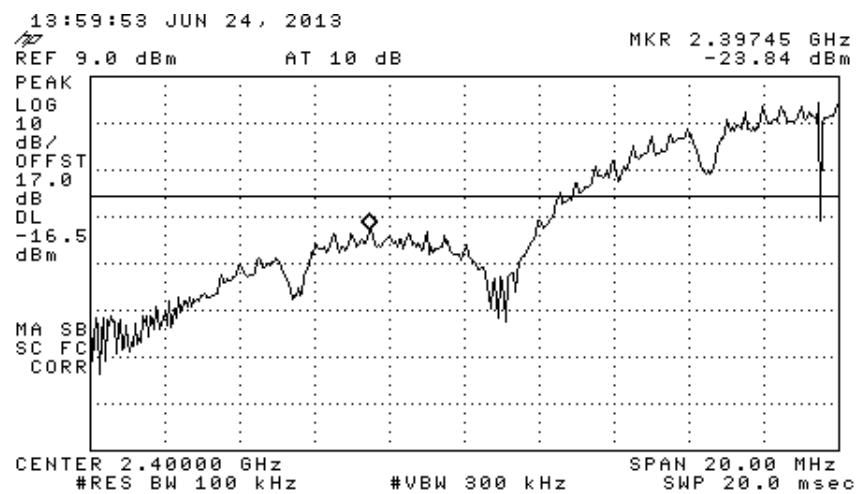


Figure 11 — 2412 MHz

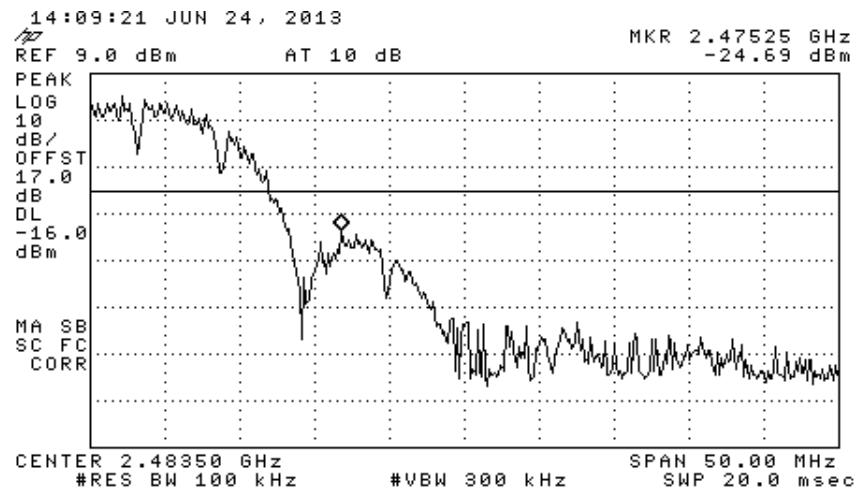


Figure 12 — 2462 MHz



5.4 **Band Edge Spectrum Test Equipment Used.**

| Instrument | Manufacturer | Model | Serial/Part Number | Calibration | |
|-------------------|--------------|--------------|--------------------|-----------------------|---------|
| | | | | Last Calibration Date | Period |
| Spectrum Analyzer | HP | 8592L | 3826A01204 | February 28, 2013 | 1 year |
| Attenuator | Macom | M3933/25-74N | 4106-0050 | August 8, 2012 | 2 years |
| Attenuator | Macom | M3933/25-74N | 4106-0211 | August 8, 2012 | 2 years |
| Cable | Mini-circuit | DCB | N/A | April 3, 2013 | 1 year |

Figure 13 Band Edge Spectrum Test Equipment Used



6. Radiated Emission, 9 kHz – 30 MHz

6.1 Test Specification

9 kHz-30 MHz, FCC, Part 15, Subpart C, Section 209

6.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 2.

A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in Figure 1.

The frequency range 9 kHz-30 MHz was scanned.

The emissions were measured using a computerized EMI receiver complying to CISPR 16 requirements. The specification limits and applicable correction factors are loaded to the receiver via a 3.5" floppy disk.

In the frequency range 9 kHz-30MHz, the loop antenna was rotated on its vertical axis. The antenna height (center of loop) was 1 meter at a distance of 3 meters.

The E.U.T. was tested at the operating frequencies of 2412, 2437, and 2462 MHz.

6.3 Measured Data

JUDGEMENT: Passed

The EUT met the requirements of the F.C.C. Part 15, Subpart C, Section 209 specification.

The results for all three operating frequencies were the same.

The signals in the band 9 kHz – 30 MHz were below the spectrum analyzer noise level, at least 20 dB below the specification limit.

TEST PERSONNEL:

Tester Signature: 

Date: 21.07.13

Typed/Printed Name: A. Sharabi



6.4 Radiated Emission, 9 kHz – 30 MHz Test Equipment Used

| Instrument | Manufacturer | Model | Serial Number | Calibration | Period |
|-------------------------|--------------|---------------|---------------|-------------------|--------|
| EMI Receiver | HP | 85420E | 3906A00276 | February 26, 2013 | 1 year |
| RF Section | HP | 85420E | 3705A00248 | February 26, 2013 | 1 year |
| Active Loop Antenna | EMCO | 6502 | 9506-2950 | October 21, 2012 | 1 year |
| Antenna Mast | ARA | AAM-4A | 1001 | N/A | N/A |
| Turntable | ARA | ART-1001/4 | 1001 | N/A | N/A |
| Mast & Table Controller | ARA | ACU-2/5 | 1001 | N/A | N/A |
| Printer | HP | LaserJet 2200 | JPKGC19982 | N/A | N/A |

Figure 14 6. Radiated Emission, 9 kHz – 30 MHz Test Equipment Used

6.5 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$FS = RA + AF + CF$$

FS: Field Strength [dB μ V/m]
RA: Receiver Amplitude [dB μ V]
AF: Receiving Antenna Correction Factor [dB/m]
CF: Cable Attenuation Factor [dB]

Example: FS = 30.7 dB μ V (RA) + 14.0 dB (AF) + 0.9 dB (CF) = 45.6 dB μ V

No external pre-amplifiers are used.



7. Spurious Radiated Emission 30 – 25000 MHz

7.1 ***Test Specification***

30 MHz-2500 MHz, F.C.C., Part 15, Subpart C

7.2 ***Test Procedure***

The E.U.T operation mode and test set-up are as described in Section 2.

A preliminary measurement to characterize the E.U.T was performed inside the shielded room, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in Figure 1.

The levels of the emissions within the frequency ranges of the restricted bands (Section 15.205 of FCC Part 15) were compared to the limits of the table in Section 15.209 (a), General Requirements.

In the frequency range 1-2.9 GHz, a computerized EMI receiver complying with CISPR 16 requirements was used.

In the frequency range 2.9-25.0 GHz, a spectrum analyzer including a low noise amplifier was used. During average measurements, the IF bandwidth was 1 MHz and the video bandwidth was 100Hz. During peak measurements, the IF bandwidth was 1 MHz and the video bandwidth was 3 MHz.

The test distance was 3 meters.

The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization.

Verification of the E.U.T emissions was based on the following methods: turning the E.U.T on and off; using a frequency span less than 10 MHz; observation of the signal level during turntable rotation. (Background noise is not affected by the rotation of the E.U.T.)

The E.U.T. was tested at the operating frequencies of 2412, 2437, and 2462 MHz.



7.3 **Test Data**

JUDGEMENT: Passed

The EUT met the requirements of the F.C.C. Part 15, Subpart C, specification.

The signals in the band 30 MHz – 1.0 GHz were below the spectrum analyzer noise level, at least 20 dB below the specification limit. The results for all three operating frequencies were the same.

For the operation frequency of 2412 MHz, the margin between the emission level and the specification limit is in the worst case 8.7 dB at the frequency of 2390.00 MHz, vertical polarization.

For the operation frequency of 2437 MHz, the margin between the emission level and the specification limit is in the worst case 14.2 dB at the frequency of 4875.00 MHz, horizontal polarization.

For the operation frequency of 2462 MHz, the margin between the emission level and the specification limit is 11.3 dB in the worst case at the frequency of 2483.50 MHz, vertical polarization.

TEST PERSONNEL:

Tester Signature: 

Date: 21.07.13

Typed/Printed Name: A. Sharabi



Radiated Emission Above 1 GHz

E.U.T Description Multi Sensor Tag
Type TAG-5400
Serial Number: Not Designated

Specification: FCC, Part 15, Subpart C

Antenna Polarization: Horizontal/Vertical Frequency range: 1.0 GHz to 25.0 GHz
Test Distance: 3 meters Detector: Peak
Operation Frequency: 2412 MHz

| Frequency (MHz) | Polarity (H/V) | Peak Amp (dB μ V/m) | Peak Specification (dB μ V/m) | Peak Margin (dB) |
|--------------------|-------------------|-------------------------------|---|------------------------|
| 2390.00 | H | 52.6* | 74.0 | -21.4 |
| 2390.00 | V | 65.3* | 74.0 | -8.7 |
| 4822.00 | H | 58.0** | 74.0 | -16.0 |
| 4822.00 | V | 57.4** | 74.0 | -16.6 |

**Figure 15. Radiated Emission. Antenna Polarization: HORIZONTAL / VERTICAL.
Detector: Peak**

Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

“Peak Amp” includes correction factor.

* “Correction Factor” = Antenna Factor + Cable Loss- Low Noise Amplifier Gain

** “Correction Factor” = Antenna Factor + Cable Loss- Low Noise Amplifier Gain + Band Pass Filter



Radiated Emission Above 1 GHz

E.U.T Description Multi Sensor Tag
Type TAG-5400
Serial Number: Not Designated

Specification: FCC, Part 15, Subpart C

Antenna Polarization: Horizontal/Vertical Frequency range: 1.0 GHz to 25.0 GHz
Test Distance: 3 meters Detector: Average
Operation Frequency: 2412 MHz

| Frequency (MHz) | Polarity (H/V) | Average Amp (dB μ V/m) | Average Specification (dB μ V/m) | Average Margin (dB) |
|--------------------|-------------------|----------------------------------|--|---------------------------|
| 2390.00 | H | 43.9* | 54.0 | -10.1 |
| 2390.00 | V | 41.8* | 54.0 | -12.2 |
| 4822.00 | H | 35.6** | 54.0 | -18.4 |
| 4822.00 | V | 37.8** | 54.0 | -16.2 |

**Figure 16. Radiated Emission. Antenna Polarization: HORIZONTAL / VERTICAL.
Detector: Average**

Notes:

Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

“Average Amp” includes correction factor.

* “Correction Factor” = Antenna Factor + Cable Loss- Low Noise Amplifier Gain

** “Correction Factor” = Antenna Factor + Cable Loss- Low Noise Amplifier Gain + Band Pass Filter



Radiated Emission Above 1 GHz

E.U.T Description Multi Sensor Tag
Type TAG-5400
Serial Number: Not Designated

Specification: FCC, Part 15, Subpart C

Antenna Polarization: Horizontal/Vertical Frequency range: 1.0 GHz to 25.0 GHz
Test Distance: 3 meters Detector: Peak
Operation Frequency: 2437 MHz

| Frequency (MHz) | Polarity (H/V) | Peak Amp (dB μ V/m) | Peak Specification (dB μ V/m) | Peak Margin (dB) |
|--------------------|-------------------|-------------------------------|---|------------------------|
| 4875.00 | H | 59.8 | 74.0 | -14.2 |
| 4875.00 | V | 57.9 | 74.0 | -16.1 |

**Figure 17. Radiated Emission. Antenna Polarization: HORIZONTAL / VERTICAL.
Detector: Peak**

Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

“Peak Amp” includes correction factor.

“Correction Factor” = Antenna Factor + Cable Loss- Low Noise Amplifier Gain + Band Pass Filter



Radiated Emission Above 1 GHz

E.U.T Description Multi Sensor Tag
Type TAG-5400
Serial Number: Not Designated

Specification: FCC, Part 15, Subpart C

Antenna Polarization: Horizontal/Vertical Frequency range: 1.0 GHz to 25.0 GHz
Test Distance: 3 meters Detector: Average
Operation Frequency: 2437 MHz

| Frequency (MHz) | Polarity (H/V) | Average Amp (dB μ V/m) | Average Specification (dB μ V/m) | Average Margin (dB) |
|--------------------|-------------------|----------------------------------|--|---------------------------|
| 4875.00 | H | 36.4 | 54.0 | -17.6 |
| 4875.00 | V | 37.9 | 54.0 | -16.1 |

**Figure 18. Radiated Emission. Antenna Polarization: HORIZONTAL / VERTICAL.
Detector: Average**

Notes:

Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

“Average Amp” includes correction factor.

“Correction Factor” = Antenna Factor + Cable Loss- Low Noise Amplifier Gain + Band Pass Filter



Radiated Emission Above 1 GHz

E.U.T Description Multi Sensor Tag
Type TAG-5400
Serial Number: Not Designated

Specification: FCC, Part 15, Subpart C

Antenna Polarization: Horizontal/Vertical Frequency range: 1.0 GHz to 25.0 GHz
Test Distance: 3 meters Detector: Peak
Operation Frequency: 2462 MHz

| Frequency (MHz) | Polarity (H/V) | Peak Amp (dB μ V/m) | Peak Specification (dB μ V/m) | Peak. Margin (dB) |
|--------------------|-------------------|-------------------------------|---|-------------------------|
| 2483.50 | H | 54.6* | 74.0 | -19.4 |
| 2483.50 | V | 62.7* | 74.0 | -11.3 |
| 4923.00 | H | 59.0** | 74.0 | -15.0 |
| 4923.00 | V | 58.9** | 74.0 | -15.1 |

**Figure 19. Radiated Emission. Antenna Polarization: HORIZONTAL / VERTICAL.
Detector: Peak**

Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

“Peak Amp” includes correction factor.

* “Correction Factor” = Antenna Factor + Cable Loss- Low Noise
Amplifier Gain

** “Correction Factor” = Antenna Factor + Cable Loss- Low Noise
Amplifier Gain + Band Pass Filter



Radiated Emission Above 1 GHz

E.U.T Description Multi Sensor Tag
Type TAG-5400
Serial Number: Not Designated

Specification: FCC, Part 15, Subpart C

Antenna Polarization: Horizontal/Vertical Frequency range: 1.0 GHz to 25.0 GHz
Test Distance: 3 meters Detector: Average
Operation Frequency: 2462 MHz

| Frequency (MHz) | Polarity (H/V) | Average Amp (dB μ V/m) | Average Specification (dB μ V/m) | Average Margin (dB) |
|--------------------|-------------------|----------------------------------|--|---------------------------|
| 2483.50 | H | 41.4* | 54.0 | -12.6 |
| 2483.50 | V | 39.6* | 54.0 | -14.4 |
| 4923.00 | H | 35.4** | 54.0 | -18.6 |
| 4923.00 | V | 33.7** | 54.0 | -20.3 |

**Figure 20. Radiated Emission. Antenna Polarization: HORIZONTAL / VERTICAL.
Detector: Average**

Notes:

Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

“Average Amp” includes correction factor.

* “Correction Factor” = Antenna Factor + Cable Loss- Low Noise Amplifier Gain

** “Correction Factor” = Antenna Factor + Cable Loss- Low Noise Amplifier Gain + Band Pass Filter



7.4 Spurious Radiated Emission 30 – 25000 MHz Test Equipment Used

| Instrument | Manufacturer | Model | Serial No. | Last Calibration Date | Period |
|--------------------------------------|-----------------|------------------|------------|-----------------------|---------|
| EMI Receiver | HP | 85422E | 3906A00276 | February 26, 2013 | 1 Year |
| RF Filter Section | HP | 85420E | 3705A00248 | February 26, 2013 | 1 Year |
| Antenna Biconical | EMCO | 3104 | 2606 | August 30, 2012 | 1 Year |
| Antenna Log Periodic | ARA | LPD-2010/A | 1038 | April 2, 2013 | 1 Year |
| Double Ridged Waveguide Horn Antenna | EMCO | 3115 | 29845 | March 14, 2012 | 2 Years |
| Horn Antenna | ARA | SWH-28 | 1008 | January 26, 2011 | 3 Years |
| Low Noise Amplifier | DBS MICROWAVE | LNA-DBS-0411N313 | 013 | August 21, 2012 | 1 Year |
| Low Noise Amplifier | Sophia Wireless | LNA 28-B | 232 | August 28, 2012 | 1 Year |
| Spectrum Analyzer | HP | 8592L | 3826A01204 | February 28, 2013 | 1 Year |
| Spectrum Analyzer | HP | 8546E | 3442A00275 | February 28, 2013 | 1 Year |
| Antenna Mast | ARA | AAM-4A | 1001 | N/A | N/A |
| Turntable | ARA | ART-1001/4 | 1001 | N/A | N/A |
| Mast & Table Controller | ARA | ACU-2/5 | 1001 | N/A | N/A |

Figure 21 Spurious Radiated Emission 30 – 25000 MHz Test Equipment Used



7.5 **Field Strength Calculation**

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$[\text{dB}\mu\text{v}/\text{m}] \text{ FS} = \text{RA} + \text{AF} + \text{CF}$$

FS: Field Strength [dB μ v/m]

RA: Receiver Amplitude [dB μ v]

AF: Receiving Antenna Correction Factor [dB/m]

CF: Cable Attenuation Factor [dB]

Example: FS = 30.7 dB μ V (RA) + 14.0 dB (AF) + 0.9 dB (CF) = 45.6 dB μ V

No external pre-amplifiers are used.



8. APPENDIX A - CORRECTION FACTORS

8.1 Correction factors for CABLE

from EMI receiver
to test antenna
at 3 meter range.

| FREQUENCY (MHz) | CORRECTION FACTOR (dB) | FREQUENCY (MHz) | CORRECTION FACTOR (dB) |
|--------------------|------------------------------|--------------------|------------------------------|
| 10.0 | 0.3 | 1200.0 | 7.3 |
| 20.0 | 0.6 | 1400.0 | 7.8 |
| 30.0 | 0.8 | 1600.0 | 8.4 |
| 40.0 | 0.9 | 1800.0 | 9.1 |
| 50.0 | 1.1 | 2000.0 | 9.9 |
| 60.0 | 1.2 | 2300.0 | 11.2 |
| 70.0 | 1.3 | 2600.0 | 12.2 |
| 80.0 | 1.4 | 2900.0 | 13.0 |
| 90.0 | 1.6 | | |
| 100.0 | 1.7 | | |
| 150.0 | 2.0 | | |
| 200.0 | 2.3 | | |
| 250.0 | 2.7 | | |
| 300.0 | 3.1 | | |
| 350.0 | 3.4 | | |
| 400.0 | 3.7 | | |
| 450.0 | 4.0 | | |
| 500.0 | 4.3 | | |
| 600.0 | 4.7 | | |
| 700.0 | 5.3 | | |
| 800.0 | 5.9 | | |
| 900.0 | 6.3 | | |
| 1000.0 | 6.7 | | |

NOTES:

1. The cable type is RG-214.
2. The overall length of the cable is 27 meters.
3. The above data is located in file 27MO3MO.CBL on the disk marked "Radiated Emission Tests EMI Receiver".



8.2 Correction factors for CABLE

from EMI receiver
to test antenna
at 3 meter range.

| FREQUENCY CORRECTION FACTOR | |
|--------------------------------|------|
| (GHz) | (dB) |
| 1.0 | 1.2 |
| 2.0 | 1.6 |
| 3.0 | 2.0 |
| 4.0 | 2.4 |
| 5.0 | 3.0 |
| 6.0 | 3.4 |
| 7.0 | 3.8 |
| 8.0 | 4.2 |
| 9.0 | 4.6 |
| 10.0 | 5.0 |
| 12.0 | 5.8 |

NOTES:

1. The cable type is RG-8.
2. The overall length of the cable is 10 meters.



8.3 Correction factors for CABLE

from spectrum analyzer
to test antenna above 2.9 GHz

| FREQUENCY (GHz) | CORRECTION FACTOR (dB) | FREQUENCY (GHz) | CORRECTION FACTOR (dB) |
|--------------------|------------------------------|--------------------|------------------------------|
| 1.0 | 1.9 | 14.0 | 9.1 |
| 2.0 | 2.7 | 15.0 | 9.5 |
| 3.0 | 3.5 | 16.0 | 9.9 |
| 4.0 | 4.2 | 17.0 | 10.2 |
| 5.0 | 4.9 | 18.0 | 10.4 |
| 6.0 | 5.5 | 19.0 | 10.7 |
| 7.0 | 6.0 | 20.0 | 10.9 |
| 8.0 | 6.5 | 21.0 | 11.2 |
| 9.0 | 7.0 | 22.0 | 11.6 |
| 10.0 | 7.5 | 23.0 | 11.9 |
| 11.0 | 7.9 | 24.0 | 12.3 |
| 12.0 | 8.3 | 25.0 | 12.6 |
| 13.0 | 8.7 | 26.0 | 13.0 |

NOTES:

1. The cable type is SUCOFLEX 104 E manufactured by SUHNER.
2. The cable is used for measurements above 2.9 GHz.
3. The overall length of the cable is 10 meters.



12.6 Correction factors for LOG PERIODIC ANTENNA

Type LPD 2010/A
at 3 and 10 meter ranges.

Distance of 3 meters

| FREQUENCY (MHz) | AFE (dB/m) |
|--------------------|---------------|
| 200.0 | 9.1 |
| 250.0 | 10.2 |
| 300.0 | 12.5 |
| 400.0 | 15.4 |
| 500.0 | 16.1 |
| 600.0 | 19.2 |
| 700.0 | 19.4 |
| 800.0 | 19.9 |
| 900.0 | 21.2 |
| 1000.0 | 23.5 |

Distance of 10 meters

| FREQUENCY (MHz) | AFE (dB/m) |
|--------------------|---------------|
| 200.0 | 9.0 |
| 250.0 | 10.1 |
| 300.0 | 11.8 |
| 400.0 | 15.3 |
| 500.0 | 15.6 |
| 600.0 | 18.7 |
| 700.0 | 19.1 |
| 800.0 | 20.2 |
| 900.0 | 21.1 |
| 1000.0 | 23.2 |

NOTES:

1. Antenna serial number is 1038.
2. The above lists are located in file number 38M30.ANT for a 3 meter range, and file number 38M100.ANT for a 10 meter range.
3. The files mentioned above are located on the disk marked "Radiated Emission Test EMI Receiver".



8.4 Correction factors for

**Antenna Bio-conical
Type 3104
at 3 meter range.**

| FREQUENCY (GHz) | ANTENNA FACTOR (dB) |
|--------------------|---------------------------|
| 30 | 14.8 |
| 40 | 13.4 |
| 50 | 11.8 |
| 60 | 11.0 |
| 70 | 9.1 |
| 80 | 8.1 |
| 90 | 12.4 |
| 100 | 13.9 |
| 120 | 13.7 |
| 140 | 12.5 |
| 160 | 15.1 |
| 180 | 16.5 |
| 200 | 16.4 |
| 250 | 18.6 |
| 300 | 20.6 |

NOTE:

Antenna serial number is 2606.



8.5

8.6 Correction factors for Double-Ridged Waveguide Horn

**Model: 3115, S/N 29845
at 3 meter range.**

| FREQUENCY (GHz) | ANTENNA FACTOR (dB 1/m) | ANTENN A Gain (dBi) | FREQUENCY (GHz) | ANTENNA FACTOR (dB 1/m) | ANTENNA Gain (dBi) |
|--------------------|-------------------------------|---------------------------|--------------------|-------------------------------|--------------------------|
| 1.0 | 24.8 | 5.4 | 10.0 | 38.8 | 11.4 |
| 1.5 | 26.1 | 7.6 | 10.5 | 38.9 | 11.8 |
| 2.0 | 28.6 | 7.7 | 11.0 | 39.0 | 12.1 |
| 2.5 | 29.8 | 8.4 | 11.5 | 39.6 | 11.8 |
| 3.0 | 31.4 | 8.4 | 12.0 | 39.8 | 12.0 |
| 3.5 | 32.4 | 8.7 | 12.5 | 39.6 | 12.5 |
| 4.0 | 33.7 | 8.6 | 13.0 | 40.0 | 12.5 |
| 4.5 | 33.4 | 9.9 | 13.5 | 39.8 | 13.0 |
| 5.0 | 34.5 | 9.7 | 14.0 | 40.2 | 13.0 |
| 5.5 | 35.1 | 9.9 | 14.5 | 40.6 | 12.9 |
| 6.0 | 35.4 | 10.4 | 15.0 | 41.3 | 12.4 |
| 6.5 | 35.6 | 10.8 | 15.5 | 39.5 | 14.6 |
| 7.0 | 36.2 | 10.9 | 16.0 | 38.8 | 15.5 |
| 7.5 | 37.3 | 10.4 | 16.5 | 40.0 | 14.6 |
| 8.0 | 37.7 | 10.6 | 17.0 | 41.4 | 13.4 |
| 8.5 | 38.3 | 10.5 | 17.5 | 44.8 | 10.3 |
| 9.0 | 38.5 | 10.8 | 18.0 | 47.2 | 8.1 |
| 9.5 | 38.7 | 11.1 | | | |



8.7 Correction factors for

Horn Antenna
Model: SWH-28
at 1 meter range.

| FREQUENCY (GHz) | AFE (dB /m) | Gain (dB1) |
|---------------------------|-----------------------|----------------------|
| 18.0 | 40.3 | 16.1 |
| 19.0 | 40.3 | 16.3 |
| 20.0 | 40.3 | 16.1 |
| 21.0 | 40.3 | 16.3 |
| 22.0 | 40.4 | 16.8 |
| 23.0 | 40.5 | 16.4 |
| 24.0 | 40.5 | 16.6 |
| 25.0 | 40.5 | 16.7 |
| 26.0 | 40.6 | 16.4 |



**8.8 Correction factors for ACTIVE LOOP ANTENNA
Model 6502
S/N 9506-2950**

| FREQUENCY (MHz) | Magnetic Antenna Factor (dB) | Electric Antenna Factor (dB) |
|--------------------|---------------------------------------|---------------------------------------|
| .009 | -35.1 | 16.4 |
| .010 | -35.7 | 15.8 |
| .020 | -38.5 | 13.0 |
| .050 | -39.6 | 11.9 |
| .075 | -39.8 | 11.8 |
| .100 | -40.0 | 11.6 |
| .150 | -40.0 | 11.5 |
| .250 | -40.0 | 11.6 |
| .500 | -40.0 | 11.5 |
| .750 | -40.1 | 11.5 |
| 1.000 | -39.9 | 11.7 |
| 2.000 | -39.5 | 12.0 |
| 3.000 | -39.4 | 12.1 |
| 4.000 | -39.7 | 11.9 |
| 5.000 | -39.7 | 11.8 |
| 10.000 | 40.2 | 11.3 |
| 15.000 | -40.7 | 10.8 |
| 20.000 | -40.5 | 11.0 |
| 25.000 | -41.3 | 10.2 |
| 30.000 | 42.3 | 9.2 |



9. Comparison Industry Canada Requirements With FCC

AeroScout T2 Tag

M/N : TAG-2000

IC: 5115A-TAG2000 FCC ID: Q3HTAG2000

| Test | FCC | IC |
|--|--------------|--------------------------|
| <input type="checkbox"/> Max power / Peak power | 15.247(b)(3) | RSS 210 Issue 8, A8.4(4) |
| <input type="checkbox"/> Spurious radiated emission in the restricted band | 15.205(c) | RSS 210 Issue 8, 2.5 |
| <input type="checkbox"/> Band edge spectrum | 15.247(d) | RSS 210 Issue 8, A8.5 |