



DATE: 14 October 2013

**I.T.L. (PRODUCT TESTING) LTD.
FCC Radio Test Report**

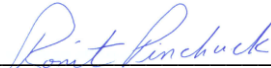
for


AeroScout Ltd.

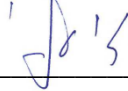
Equipment under test:

Tag 6000

TAG-6000-BP-X1, TAG-6000-XP-X1*

Written by: 
R. Pinchuck, Documentation

Approved by: 
A. Sharabi, Test Engineer

Approved by: 
I. Raz, EMC Laboratory Manager

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This report relates only to items tested.

*See Customer's Declaration on Page 6



Measurement/Technical Report for AeroScout Ltd.

Tag 6000

TAG-6000-BP-X1, TAG-6000-XP-X1

FCC ID: Q3HTAG6000

IC: 5115A-TAG6000

14 October 2013

This report concerns:

Original Grant: X

Class I Change:

Class II Change:

Equipment type:

Spread Spectrum/Digital Device
2400-2483.5 MH

Limits used:

47CFR15 Section 15.247, Section 15.209

Measurement procedure used is KDB 558074 D01 April 9, 2013 and ANSI C63.4-2003.

Application for Certification
prepared by:

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ITL (Product Testing) Ltd.
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Applicant for this device:

(different from "prepared by")

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1. General Information

1.1 Administrative Information

Manufacturer:	AeroScout Ltd.
Manufacturer's Address:	3 Pekeris St. Einstein Entrance 4 th Floor Rehovot 76702 Tel: +972-8-9369393 Fax: +972-8-9365977
Manufacturer's Representative:	Doron Lilo
Equipment Under Test (E.U.T):	Tag 6000
Equipment Model No.:	TAG-6000-BP-X1, TAG-6000-XP-X1
Equipment Serial No.:	Not designated
Date of Receipt of E.U.T:	01.10.13
Start of Test:	01.10.13
End of Test:	02.10.13; 27.11.13*
Test Laboratory Location:	I.T.L (Product Testing) Ltd. Kfar Bin Nun, ISRAEL 99780
Test Specifications:	FCC Part 15, Subpart C RSS-210, Issue 8, 2010

*Note: Conducted Emission from AC Mains testing was performed on 27.11.13



Date: 10/10/2013

Declaration

To whom it may concern

We hereby declare that tag M/N: TAG-6000-BP-X1 is electrically identical to tag M/N: TAG-6000-XP-X1, the only difference between the two units is M/N: TAG-6000-BP-X1 use internal power (batteries) and M/N: TAG-6000-XP-X1 use an external power, which supply all internal circuits inside the tag instead of the internal battery, this allows the user to extend the usage of the tag without worry to replace batteries.

Please relate to them all (from an EMC point of view) as the same product.

Sincerely,

Signature:

Doron Lilo
HW Project Team Leader
AeroScout Ltd.



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 TAG-6000 is an intrinsically safe active RFID tracking tag combining Wi-Fi and GPS to provide location data in a sparse deployment.

The intrinsically safe TAG-6000 is available in two variants:

The TAG-6000-BP-X1 is a battery powered unit containing battery pack for long life operation.

The TAG-6000-XP-X1 is an external powered tag with an intrinsically safe DC input.

1.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in KDB 558074 D01 April 9, 2013 and ANSI 63-4: 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 September 3, 2009).

I.T.L.'s EMC Laboratory is also accredited by A2LA, certificate No. 1152.01.

1.6 Measurement Uncertainty

Conducted Emission

Conducted Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) 0.15 – 30 MHz:

Expanded Uncertainty (95% Confidence, K=2):

± 3.6 dB

Note: See ITL Procedure No. PM 198.

Radiated Emission

Radiated Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) for open site 30-1000MHz:

Expanded Uncertainty (95% Confidence, K=2):

± 5.2 dB

Note: See ITL Procedure No. PM 198.



2. System Test Configuration

2.1 *Justification*

Radiated emission screening was performed in 3 orthogonal orientations. The worst case orientation was the vertical position as wall mounted.

Radiated tests were performed with the E.U.T. operating from its internal battery pack only. The typical AC/DC adapter, not supplied by the manufacturer, only serves to extend the battery life.

2.2 *EUT Exercise Software*

No special exercise software was used.

2.3 *Special Accessories*

No special accessories were needed to achieve compliance.

2.4 *Equipment Modifications*

No modifications were necessary in order to achieve compliance.

2.5 Configuration of Tested System

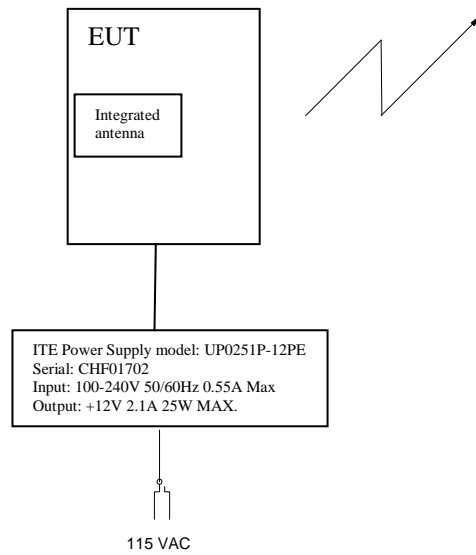


Figure 1. Configuration of Tested System- Conducted Emission

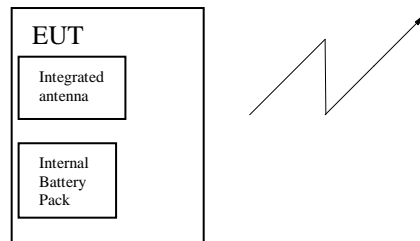


Figure 2. Configuration of Tested System- Radiated Emission

3. Conducted and Radiated Measurement Test Set-up Photo



Figure 3. Conducted Emission From AC Mains Test



Figure 4. Radiated Emission Test



Figure 5. Radiated Emission Test

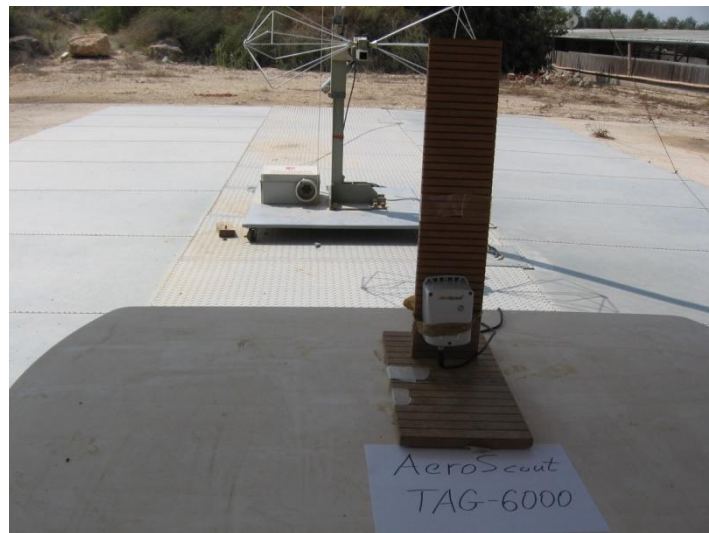


Figure 6. Radiated Emission Test

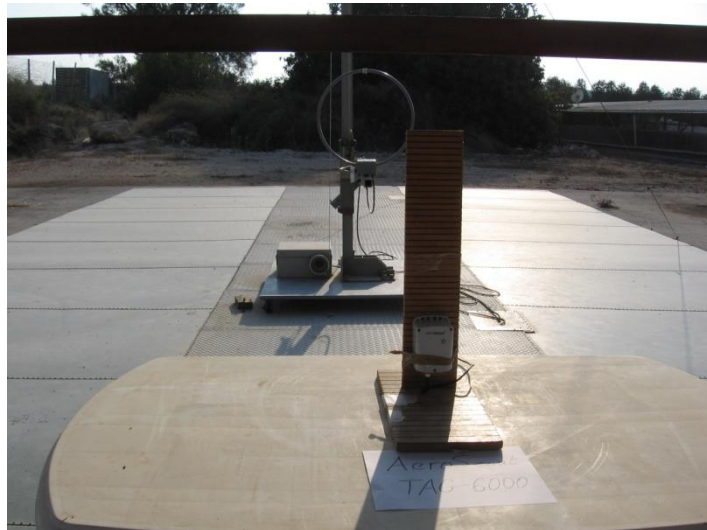


Figure 7. Radiated Emission Test



4. Conducted Emission from AC Mains

4.1 Test Specification

F.C.C., Part 15, Subpart C

4.2 Test Procedure

The E.U.T operation mode and test set-up are as described in Section 3.1. In order to minimize background noise interference, the conducted emission testing was performed inside a shielded room, with the E.U.T placed on a 0.8 meter high wooden table, 0.4 meter from the room's vertical wall.

The E.U.T was powered from 115 V AC via a 50 Ohm / 50 μ Hn Line Impedance Stabilization Network (LISN) on the phase and neutral lines. The LISN's were grounded to the shielded room ground plane (floor), and were kept at least 0.8 meters from the nearest boundary of the E.U.T

The center of the E.U.T AC cable was folded back and forth, in order to form a bundle less than 0.40 meters and a total cable length of 1 meter.

The emission voltages at the LISN's outputs were measured using a computerized receiver, complying with CISPR 16 requirements. The specification limits are loaded to the receiver via a 3.5" floppy disk and are displayed on the receiver's spectrum display.

A frequency scan between 0.15 and 30 MHz was performed at 9 kHz I.F. band width, and using peak detection.

The spectral components having the highest level on each line were measured using a quasi-peak and average detector.

4.3 Measured Data

JUDGEMENT: Passed by 19.75 dB

The margin between the emission levels and the specification limit is, in the worst case, 20.17 dB for the phase line at 0.846 MHz and 19.75 dB at 24.014 MHz for the neutral line.

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

The details of the highest emissions are given in *Figure 8* to *Figure 11*.

TEST PERSONNEL:

Tester Signature:  Date: 27.11.13

Typed/Printed Name: A. Yizhak



Conducted Emission

E.U.T Description Tag 6000
Type TAG-6000-BP-X1, TAG-6000-XP-X1
Serial Number: Not designated

Specification: FCC Part 15, Subpart C
Lead: Phase
Detectors: Quasi-peak, Average

EMIT PEAK LIST (Final Measurement Results)			
TRACE	FREQUENCY	LEVEL dBuV	DELTA LIMIT dB
Trace1:	CE22BQP		
Trace2:	CE22BAP		
Trace3:	---		
1 Quasi Peak	154 kHz	33.58	-32.20
2 Average	254 kHz	15.16	-36.45
1 Quasi Peak	410 kHz	24.56	-33.08
2 Average	410 kHz	22.73	-24.90
1 Quasi Peak	590 kHz	28.25	-27.74
2 Average	590 kHz	20.00	-26.00
1 Quasi Peak	838 kHz	33.12	-22.87
2 Average	846 kHz	25.82	-20.17
1 Quasi Peak	1.766 MHz	19.52	-36.47
2 Average	1.77 MHz	15.48	-30.51
2 Average	2.546 MHz	13.82	-32.18
1 Quasi Peak	2.558 MHz	21.33	-34.66
2 Average	3.958 MHz	15.59	-30.40
1 Quasi Peak	4.186 MHz	23.48	-32.51
2 Average	6.31 MHz	8.39	-41.60
1 Quasi Peak	8.202 MHz	12.40	-47.59
2 Average	17.234 MHz	15.68	-34.32
1 Quasi Peak	17.306 MHz	17.67	-42.33
1 Quasi Peak	20.858 MHz	22.14	-37.85
2 Average	24.014 MHz	27.44	-22.55

Date: 27.NOV.2013 11:48:48

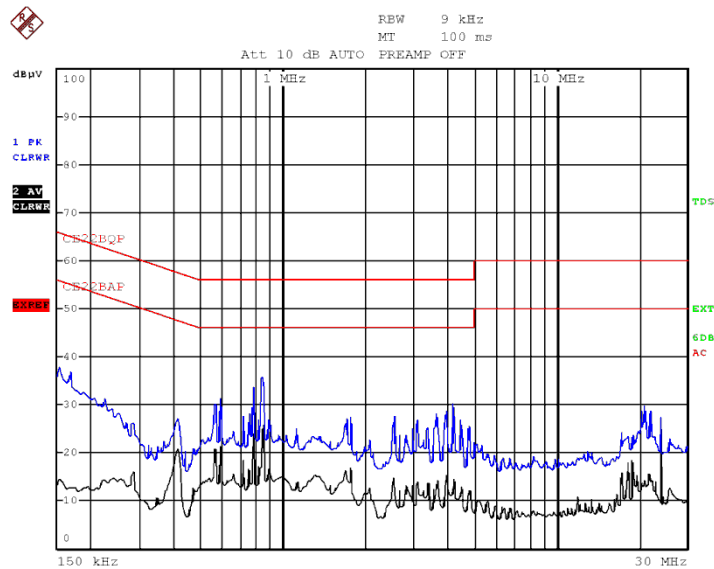
Figure 8. Detectors: Quasi-Peak, AVERAGE

Note: QP Delta/Av Delta 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.

Conducted Emission

E.U.T Description Tag 6000
 Type TAG-6000-BP-X1, TAG-6000-XP-X1
 Serial Number: Not designated

Specification: FCC Part 15, Subpart C
 Lead: Phase
 Detectors: Quasi-peak, Average



Date: 27.NOV.2013 11:47:43

Figure 9. Detectors: Quasi-peak, Average

Note: Fail indication on the spectral plot results from peak detector level reading above the limit. This indication is for information only and it should not be interpreted as a test failure.



Conducted Emission

E.U.T Description Tag 6000
Type TAG-6000-BP-X1, TAG-6000-XP-X1
Serial Number: Not designated

Specification: FCC Part 15, Subpart C
Lead: Neutral
Detectors: Quasi-peak, Average

EDIT PEAK LIST (Final Measurement Results)			
TRACE	FREQUENCY	LEVEL dBuV	DELTA LIMIT dB
Trace1: CE22BQP			
Trace2: CE22BAP			
Trace3: ---			
1 Quasi Peak	166 kHz	31.65	-33.50
2 Average	226 kHz	19.06	-33.52
1 Quasi Peak	406 kHz	27.47	-30.25
2 Average	410 kHz	26.82	-20.82
1 Quasi Peak	594 kHz	27.71	-28.28
2 Average	594 kHz	21.00	-25.00
1 Quasi Peak	842 kHz	33.55	-22.44
2 Average	846 kHz	26.00	-19.99
1 Quasi Peak	1.778 MHz	25.25	-30.74
2 Average	1.782 MHz	15.37	-30.62
1 Quasi Peak	3.102 MHz	25.85	-30.14
2 Average	3.274 MHz	14.86	-31.13
2 Average	3.962 MHz	18.16	-27.83
1 Quasi Peak	4.206 MHz	27.39	-28.60
2 Average	6.298 MHz	9.77	-40.22
1 Quasi Peak	6.586 MHz	16.24	-43.76
1 Quasi Peak	14.538 MHz	22.96	-37.03
2 Average	14.61 MHz	23.07	-26.92
1 Quasi Peak	21.73 MHz	22.10	-37.90
2 Average	24.014 MHz	30.24	-19.75

Date: 27.NOV.2013 11:42:48

Figure 10. Detectors: Peak, AVERAGE

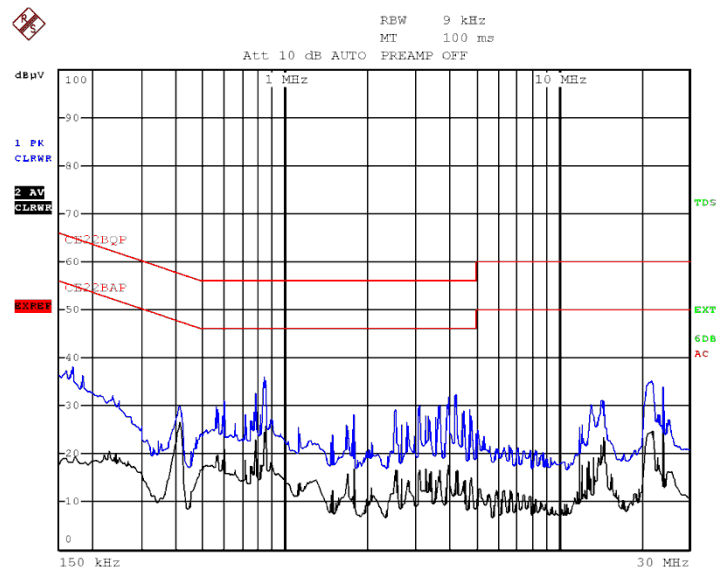
Note: QP Delta/Av Delta refer to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.



Conducted Emission

E.U.T Description Tag 6000
Type TAG-6000-BP-X1, TAG-6000-XP-X1
Serial Number: Not designated

Specification: FCC Part 15, Subpart C
Lead: Neutral
Detectors: Peak, Quasi-peak, Average



Date: 27.NOV.2013 11:41:23

Figure 11 Detectors: Quasi-peak, Average

Note: Fail indication on the spectral plot results from peak detector level reading above the limit. This indication is for information only and it should not be interpreted as a test failure.

4.4 Test Instrumentation Used, Conducted Measurement

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Period
LISN	EMCO	3810/2BR	1297	December 16, 2012	1 Year
Transient Limiter	HP	11947A	3107A03041	February 25, 2013	1 Year
EMI Receiver	Rohde & Schwarz	ESCI7	100724	December 27, 2012	1 Year

6. 6 dB Minimum Bandwidth

6.1 Test procedure

The E.U.T operation mode and test set-up are as described in Section 3.

See Section 3.1 Justification of the System Test Configuration concerning the E.U.T. orientation for this test.

The E.U.T was tested at 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 2.

The spectrum bandwidth of the E.U.T. at the point of 6 dB below maximum peak power was measured and recorded.

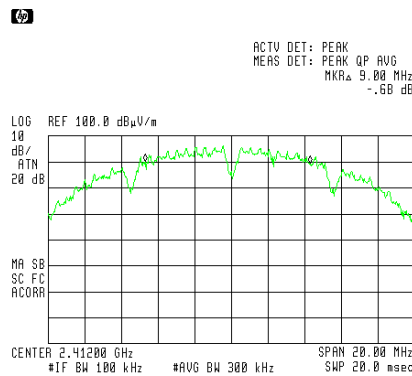


Figure 12 — Low Channel

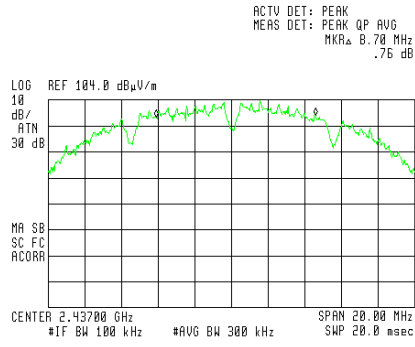


Figure 13 — Mid Channel

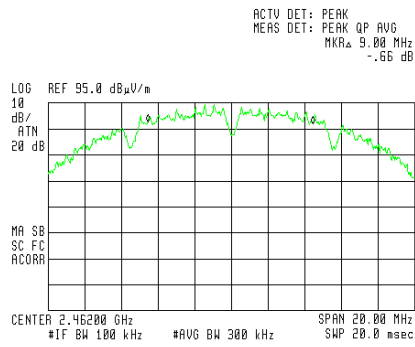


Figure 14 — High Channel



6.2 Results table

E.U.T Description: Tag 6000

Model No.: TAG-6000-BP-X1, TAG-6000-XP-X1

Serial Number: Not designated


Specification: F.C.C. Part 15, Subpart C: (15.247-a2)

Operation Frequency (MHz)	Modulation Mbps	Reading (MHz)	Specification (MHz)
2412.00	6	9.0	0.5
2437.00	6	8.7	0.5
2462.00	6	9.0	0.5

Figure 15 6 dB Minimum Bandwidth

JUDGEMENT: Passed

TEST PERSONNEL:

Tester Signature: 

Date: 17.11.13

Typed/Printed Name: A. Sharabi



6.3 Test Equipment Used.

6 dB Minimum Bandwidth

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, 2013	1 Year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	1 Year
Horn Antenna	ETS	3115	29845	March 14, 2012	2 Years
Horn Antenna	ARA	SWH-28	1007	January 26, 2011	3 Years
Low Noise Amplifier	Narda	LNA-DBS-0411N313	013	August 21, 2013	1 Year
Low Noise Amplifier	Sophia Wireless	LNA 28-B	232	August 28, 2013	1 Year
Spectrum Analyzer	HP	8592L	3826A01204	February 28, 2013	1 Year
Spectrum Analyzer	HP	8564E	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
Printer	HP	LaserJet 2200	JPKG19982	N/A	N/A

Figure 16 Test Equipment Used

7. 26 dB Minimum Bandwidth

7.1 Test procedure

The E.U.T operation mode and test set-up are as described in Section 3.

See Section 3.1 Justification of the System Test Configuration concerning the E.U.T. orientation for this test.

The E.U.T was tested at 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 2.

The spectrum bandwidth of the E.U.T. at the point of 26 dB below maximum peak power was measured and recorded.

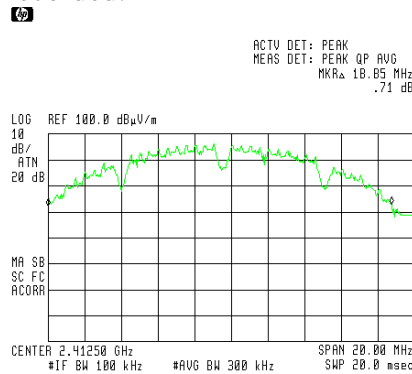


Figure 17 — Low Channel

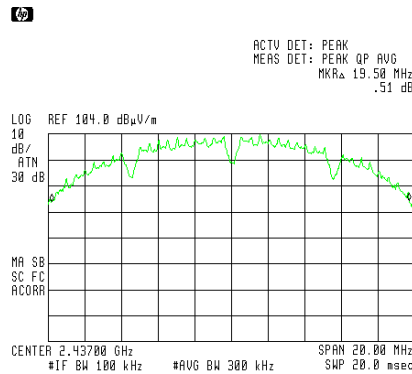


Figure 18 — Mid Channel

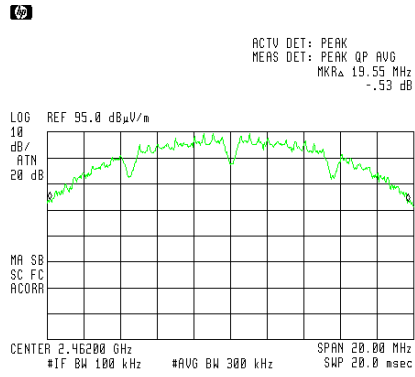


Figure 19 — High Channel



7.2 Results table

E.U.T Description: Tag 6000

Model No.: TAG-6000-BP-X1, TAG-6000-XP-X1

Serial Number: Not designated

Specification: F.C.C. Part 15, Subpart C: (15.247-a2)

Operation Frequency (MHz)	Modulation Mbps	Reading (MHz)	Specification (MHz)
2412.00	6	18.85	N/A
2437.00	6	19.50	N/A
2462.00	6	19.55	N/A

Figure 20 26 dB Minimum Bandwidth

JUDGEMENT: Passed

TEST PERSONNEL:

Tester Signature: 

Date: 17.11.13

Typed/Printed Name: A. Sharabi



7.3 Test Equipment Used.

26 dB Minimum Bandwidth

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, 2013	1 Year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	1 Year
Horn Antenna	ETS	3115	29845	March 14, 2012	2 Years
Horn Antenna	ARA	SWH-28	1007	January 26, 2011	3 Years
Low Noise Amplifier	Narda	LNA-DBS-0411N313	013	August 21, 2013	1 Year
Low Noise Amplifier	Sophia Wireless	LNA 28-B	232	August 28, 2013	1 Year
Spectrum Analyzer	HP	8592L	3826A01204	February 28, 2013	1 Year
Spectrum Analyzer	HP	8564E	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
Printer	HP	LaserJet 2200	JPKG19982	N/A	N/A

Figure 21 Test Equipment Used



8. Maximum Transmitted Peak Power Output

8.1 Test procedure

The E.U.T operation mode and test set-up are as described in Section 3.

See Section 3.1 Justification of the System Test Configuration concerning the E.U.T. orientation for this test.

The E.U.T was tested at 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 2.

The E.U.T. was tested at low, mid and high channels at 20MHz with the following modulations: BPSK (6Mbps).

Radiated output power levels were measured at selected operation frequencies and the results were converted to power level according to the formula as shown below:

$$P = \frac{(E_{v/m} \times d)^2}{(30 \times G)} \quad [\text{W}] -$$

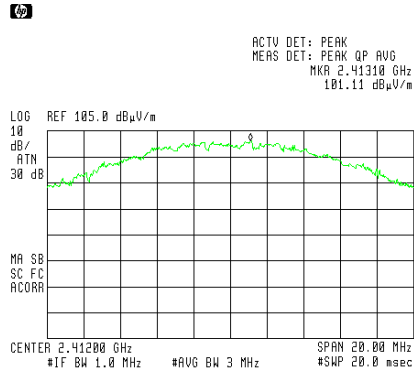


Figure 22 , Low channel , Vertical

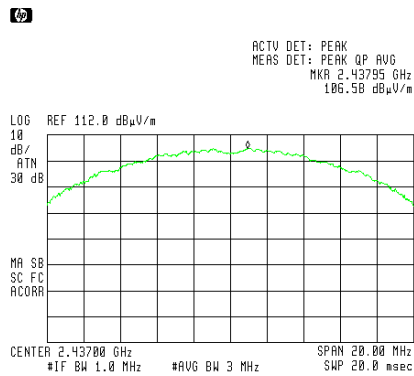


Figure 23, Mid channel , Vertical

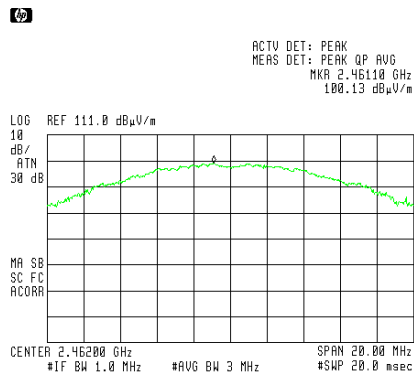


Figure 24 , High Channel, Vertical



8.2 Results table


E.U.T. Description: Tag 6000
Model No.: TAG-6000-BP-X1, TAG-6000-XP-X1
Serial Number: Not designated
Specification: F.C.C. Part 15, Subpart C Section 15.247(b)

Operation Frequency (MHz)	Modulation Mbps	Power (dBuV/m)	Power (mW)	Specification (mW)	Margin (mW)
2412.00	6	101.11	2.0	1000	-998.0
2437.00	6	106.58	7.4	1000	-992.6
2462.00	6	100.13	1.7	1000	-998.3

Figure 25 Maximum Peak Power Output

JUDGEMENT: Passed by 992.6 mW

TEST PERSONNEL:

Tester Signature: 

Date: 17.11.13

Typed/Printed Name: A. Sharabi



8.3 Test Equipment Used.

Peak Power Output

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, 2013	1 Year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	1 Year
Horn Antenna	ETS	3115	29845	March 14, 2012	2 Years
Horn Antenna	ARA	SWH-28	1007	January 26, 2011	3 Years
Low Noise Amplifier	Narda	LNA-DBS-0411N313	013	August 21, 2013	1 Year
Low Noise Amplifier	Sophia Wireless	LNA 28-B	232	August 28, 2013	1 Year
Spectrum Analyzer	HP	8592L	3826A01204	February 28, 2013	1 Year
Spectrum Analyzer	HP	8564E	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
Printer	HP	LaserJet 2200	JPKG19982	N/A	N/A

Figure 26 Test Equipment Used

10. Band Edge Spectrum

[In Accordance with section 15.247(c)]

10.1 Test procedure

The E.U.T operation mode and test set-up are as described in Section 3.

See Section 3.1 Justification of the System Test Configuration concerning the E.U.T. orientation for this test.

The E.U.T was tested at 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 2.

The E.U.T. was tested at low, mid and high channels at 20MHz with the following modulations: BPSK (6Mbps).

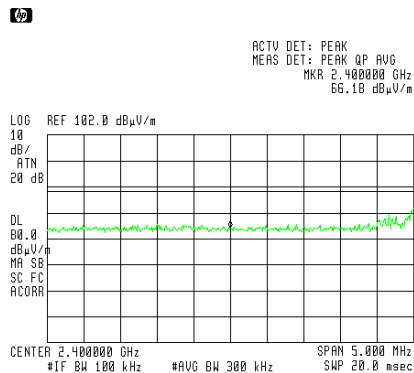


Figure 27 —Lower Band Edge

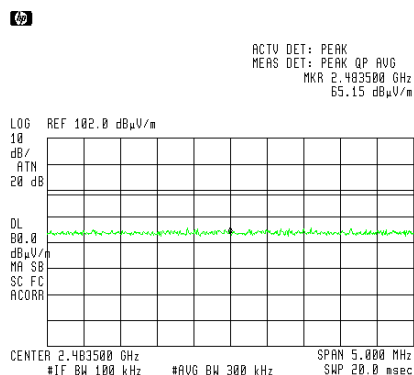


Figure 28 —Upper Band Edge



10.2 Results table

E.U.T. Description: Tag 6000
Model No.: TAG-6000-BP-X1, TAG-6000-XP-X1
Serial Number: Not designated
Specification: F.C.C. Part 15, Subpart C (15.247)

Operation Frequency (MHz)	Modulation Mbps	Band Edge Frequency (MHz)	Spectrum Level (dBc)	Specification (dBc)	Margin (dB)
2412	6	2400	66.18	75.5	-9.32
2462	6	2483.5	65.15	73.5	-8.35

Figure 29 Band Edge Spectrum

JUDGEMENT: Passed by 8.35 dB

TEST PERSONNEL:

Tester Signature: 

Date: 17.11.13

Typed/Printed Name: A. Sharabi



10.3 Test Equipment Used.

Band edge Spectrum

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, 2013	1 Year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	1 Year
Horn Antenna	ETS	3115	29845	March 14, 2012	2 Years
Horn Antenna	ARA	SWH-28	1007	January 26, 2011	3 Years
Low Noise Amplifier	Narda	LNA-DBS-0411N313	013	August 21, 2013	1 Year
Low Noise Amplifier	Sophia Wireless	LNA 28-B	232	August 28, 2013	1 Year
Spectrum Analyzer	HP	8592L	3826A01204	February 28, 2013	1 Year
Spectrum Analyzer	HP	8564E	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
Printer	HP	LaserJet 2200	JPKG19982	N/A	N/A

Figure 30 Test Equipment Used



11. Radiated Emission, 9 kHz – 30 MHz

11.1 Test Specification

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

11.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 3.

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 3.1.

The frequency range 9 kHz-30 MHz was scanned.

The emissions were measured using a computerized EMI receiver complying with 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 operated at the low, mid and high channels using a peak detector.

11.3 Measured Data

JUDGEMENT: Passed by more than 20dB.

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

TEST PERSONNEL:

Tester Signature: 

Date: 17.11. 13

Typed/Printed Name: A. Sharabi



11.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	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	JPKG19982	N/A	N/A



11.5 **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: $FS = 30.7 \text{ dB}\mu\text{V (RA)} + 14.0 \text{ dB (AF)} + 0.9 \text{ dB (CF)} = 45.6 \text{ dB}\mu\text{V}$

No external pre-amplifiers are used.

12. Spurious Radiated Emission 30 – 25000 MHz

12.1 Radiated Emission 30-25000 MHz

The E.U.T operation mode and test set-up are as described in Section 3.

See Section 3.1 Justification of the System Test Configuration concerning the E.U.T. orientation for this test.

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 2*.

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 operated at the low, mid and high channels using a peak detector.



12.2 Test Data

JUDGEMENT: Passed by 3.4dB

For the operation frequency of 2412 MHz, the margin between the emission level and the specification limit is in the worst case 3.4dB at the frequency of 4826 MHz, horizontal polarization.

For the operation frequency of 2437 MHz, the margin between the emission level and the specification limit is in the worst case 15.8dB at the frequency of 4874 MHz, vertical polarization.


For the operation frequency of 2462 MHz, the margin between the emission level and the specification limit is 16.0dB in the worst case at the frequency of 2483.5 MHz, horizontal polarization.

The results for all modulations were the same.

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

The details of the highest emissions are given in *Figure 31* to *Figure 36*.

TEST PERSONNEL:

Tester Signature: 

Date: 17.11. 13

Typed/Printed Name: A. Sharabi



Radiated Emission Above 1 GHz

E.U.T Description Tag 6000
Type TAG-6000-BP-X1, TAG-6000-XP-X1
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

Freq.	Polarity	Peak Amp	Peak. Specification	Peak. Margin
(MHz)	(H/V)	(dB μ V/m)	(dB μ V/m)	(dB)
2390.0	H	55.5	74.0	-18.5
2390.0	V	53.7	74.0	-20.3
4826.0	H	57.8	74.0	-16.2
4826.0	V	53.1	74.0	-20.9

Figure 31. 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



Radiated Emission Above 1 GHz

E.U.T Description Tag 6000
Type TAG-6000-BP-X1, TAG-6000-XP-X1
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

Freq.	Polarity	Average Amp	Average Specification	Peak. Margin
(MHz)	(H/V)	(dB μ V/m)	(dB μ V/m)	(dB)
2390.0	H	46.9	54.0	-7.1
2390.0	V	45.6	54.0	-8.4
4826.0	H	50.6	54.0	-3.4
4826.0	V	39.4	54.0	-14.6

Figure 32. 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



Radiated Emission Above 1 GHz

E.U.T Description Tag 6000
 Type TAG-6000-BP-X1, TAG-6000-XP-X1
 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

Freq.	Polarity	Peak Amp	Peak. Specification	Peak. Margin
(MHz)	(H/V)	(dB μ V/m)	(dB μ V/m)	(dB)
4874.0	H	56.7	74.0	-17.3
4874.0	V	53.0	74.0	-21.0

Figure 33. 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



Radiated Emission Above 1 GHz

E.U.T Description Tag 6000
 Type TAG-6000-BP-X1, TAG-6000-XP-X1
 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

Freq.	Polarity	Average Amp	Average Specification	Peak. Margin
(MHz)	(H/V)	(dBμV/m)	(dB μV/m)	(dB)
4874.0	H	38.0	54.0	-16.0
4874.0	V	38.2	54.0	-15.8

Figure 34. 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



Radiated Emission Above 1 GHz

E.U.T Description Tag 6000
Type TAG-6000-BP-X1, TAG-6000-XP-X1
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

Freq.	Polarity	Peak Amp	Peak. Specification	Peak. Margin
(MHz)	(H/V)	(dB μ V/m)	(dB μ V/m)	(dB)
2483.50	H	45.9	74.0	-28.1
2483.50	V	43.7	74.0	-30.3
4924.00	H	55.7	74.0	-18.3
4924.00	V	53.4	74.0	-20.6

Figure 35. 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



Radiated Emission Above 1 GHz

E.U.T Description Tag 6000
Type TAG-6000-BP-X1, TAG-6000-XP-X1
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

Freq.	Polarity	Average Amp	Average Specification	Peak. Margin
(MHz)	(H/V)	(dBμV/m)	(dB μV/m)	(dB)
2483.50	H	38.0	54.0	-16.0
2483.50	V	37.9	54.0	-16.1
4924.00	H	37.9	54.0	-16.1
4924.00	V	35.7	54.0	-18.3

Figure 36. 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



12.3 Test Instrumentation Used, Radiated Measurements Above 1 GHz

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, 2013	1 Year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	1 Year
Horn Antenna	ETS	3115	29845	March 14, 2012	2 Years
Horn Antenna	ARA	SWH-28	1007	January 26, 2011	3 Years
Low Noise Amplifier	Narda	LNA-DBS-0411N313	013	August 21, 2013	1 Year
Low Noise Amplifier	Sophia Wireless	LNA 28-B	232	August 28, 2013	1 Year
Spectrum Analyzer	HP	8592L	3826A01204	February 28, 2013	1 Year
Spectrum Analyzer	HP	8564E	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
Printer	HP	LaserJet 2200	JPKG19982	N/A	N/A

13. Transmitted Power Density

[In accordance with section 15.247(d)]

13.1 Test procedure

The E.U.T operation mode and test set-up are as described in Section 3.

See Section 3.1 Justification of the System Test Configuration concerning the E.U.T. orientation for this test.

The E.U.T was tested at 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 2.

The spectrum analyzer was set to 3 kHz resolution BW. and sweep time of 1 second for each 3 kHz “window”. The spectrum peaks were located at each of the 3 operating frequencies.

$$P = \frac{(E_{v/m} \times d)^2}{(30 \times G)} \quad [\text{W}]$$

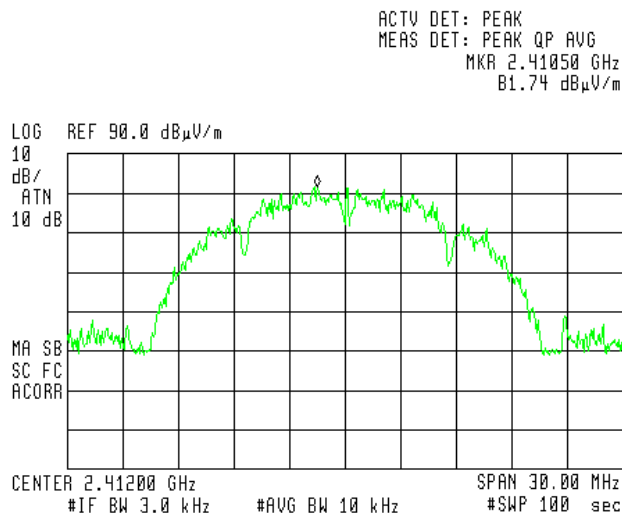


Figure 37 — Low Channel



ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.43775 GHz
87.91 dB μ V/m

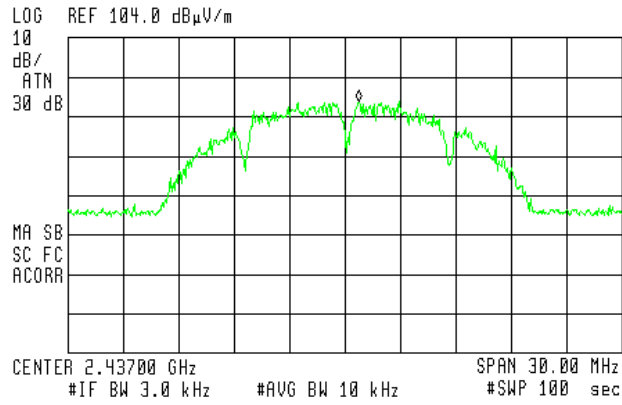


Figure 38 — Mid channel



ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.46275 GHz
79.19 dB μ V/m

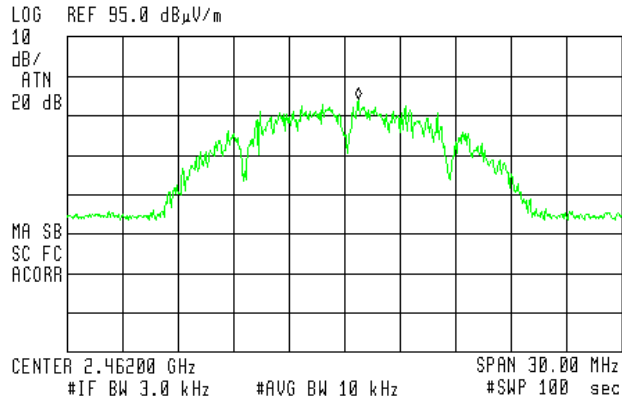


Figure 39 — High channel



13.2 Results table


E.U.T. Description: Tag 6000
 Model No.: TAG-6000-BP-X1, TAG-6000-XP-X1
 Serial Number: Not designated
 Specification: F.C.C. Part 15, Subpart C (15.247)

Operation Frequency (MHz)	Modulation Mbps	Reading Spectrum Analyzer (dB μ V/m)	Reading Spectrum Analyzer (mW)	Specification (mW)	Margin (mW)
2412	6	81.74	0.1	6.3	-6.2
2437	6	87.91	0.2	6.3	-6.1
2462	6	79.19	0.1	6.3	-6.2

Figure 40 Transmitted Power Density Test Results

JUDGEMENT: Passed by 6.1 dB

TEST PERSONNEL:

Tester Signature: 

Date: 17.11.13

Typed/Printed Name: A. Sharabi



13.3 Test Equipment Used.

Transmitted Power Density

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, 2013	1 Year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	1 Year
Horn Antenna	ETS	3115	29845	March 14, 2012	2 Years
Horn Antenna	ARA	SWH-28	1007	January 26, 2011	3 Years
Low Noise Amplifier	Narda	LNA-DBS-0411N313	013	August 21, 2013	1 Year
Low Noise Amplifier	Sophia Wireless	LNA 28-B	232	August 28, 2013	1 Year
Spectrum Analyzer	HP	8592L	3826A01204	February 28, 2013	1 Year
Spectrum Analyzer	HP	8564E	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
Printer	HP	LaserJet 2200	JPKG19982	N/A	N/A

Figure 41 Test Equipment Used



14. Antenna Gain/Information

The antenna gain is 2.5 dBi.

the antenna solutions provider

Specification

taoglas

SECTRON
WIRELESS TECHNOLOGIES



SPECIFICATION

FXP73 Blue Diamond 2.4GHz Band Antenna

Part No.	:	FXP73.07.0100A
Product Name	:	FXP73 Blue Diamond 2.4GHz Multi Standard Antenna
Feature	:	2.5dBi Gain IPEX MHFII Connector (U.FL compatible) 100 mm Cable 47*7*0.1 mm RoHS Compliant

15. R.F Exposure/Safety

Typical use of the E.U.T. is in a Tag designed to be used for real time location systems. The typical placement of the E.U.T. is in inside a variety of equipment, such as medical devices, containers, manufacturing equipment and vehicles. The typical distance between the E.U.T. and the user in the worst case application, is 20 cm.

Calculation of Maximum Permissible Exposure (MPE) Based on Section 1.1310 Requirements

(a) FCC limits at 2437 MHz is: $1 \frac{mW}{cm^2}$

Using table 1 of Section 1.1310 limit for general population/uncontrolled exposures, the above level is an average over 30 minutes.

(b) The power density produced by the E.U.T. is

$$S = \frac{P_t G_t}{4\pi R^2}$$

P_t - Transmitted Power 106.5 dBm (Peak) = 7.4 mW

G_t - Antenna Gain, 2.5dBi = 1.8 numeric

R- Distance from Transmitter using 20cm worst case

(c) The peak power density is:

$$S_p = \frac{7.4 \times 1.8}{4\pi(20)^2} = 0.003 \frac{mW}{cm^2}$$

(e) This is below the FCC limit.

16. APPENDIX A - CORRECTION FACTORS

16.1 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".



16.2 Correction factors for CABLE
from EMI receiver
to test antenna
at 3 meter range.

FREQUENCY (GHz)	CORRECTION FACTOR (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.*



16.3 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.*



16.4 Correction factors for CABLE
from EMI receiver
to test antenna
at 10 meter range.

FREQUENCY (MHz)	CORRECTION FACTOR (dB)	FREQUENCY (MHz)	CORRECTION FACTOR (dB)
10.0	0.3	1200.0	9.8
20.0	0.8	1400.0	10.0
30.0	0.9	1600.0	11.3
40.0	1.2	1800.0	12.2
50.0	1.4	2000.0	13.1
60.0	1.6	2300.0	14.5
70.0	1.8	2600.0	15.9
80.0	1.9	2900.0	16.4
90.0	2.0		
100.0	2.1		
150.0	2.6		
200.0	3.2		
250.0	3.8		
300.0	4.2		
350.0	4.6		
400.0	5.1		
450.0	5.3		
500.0	5.6		
600.0	6.3		
700.0	7.0		
800.0	7.6		
900.0	8.0		
1000.0	8.7		

NOTES:

- 1. The cable type is RG-214.*
- 2. The overall length of the cable is 34 meters.*
- 3. The above data is located in file 34M10MO.CBL on the disk marked "Radiated Emissions Tests EMI Receiver".*



**14.5 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".*



**16.5 Correction factors for LOG PERIODIC ANTENNA
Type SAS-200/511
at 3 meter range.**

FREQUENCY (GHz)	ANTENNA FACTOR (dB)
1.0	24.9
1.5	27.8
2.0	29.9
2.5	31.2
3.0	32.8
3.5	33.6
4.0	34.3
4.5	35.2
5.0	36.2
5.5	36.7
6.0	37.2
6.5	38.1

FREQUENCY (GHz)	ANTENNA FACTOR (dB)
7.0	38.6
7.5	39.2
8.0	39.9
8.5	40.4
9.0	40.8
9.5	41.1
10.0	41.7
10.5	42.4
11.0	42.5
11.5	43.1
12.0	43.4
12.5	44.4
13.0	44.6

NOTES:

- 1. Antenna serial number is 253.*
- 2. The above lists are located in file number SAS3M0.ANT for a 3 meter range.*
- 3. The files mentioned above are located on the disk marked "Antenna Factors".*



**16.6 Correction factors for BICONICAL ANTENNA
Type BCD-235/B,
at 3 meter range**

FREQUENCY (MHz)	AFF (dB/m)
20.0	19.4
30.0	14.8
40.0	11.9
50.0	10.2
60.0	9.1
70.0	8.5
80.0	8.9
90.0	9.6
100.0	10.3
110.0	11.0
120.0	11.5
130.0	11.7
140.0	12.1
150.0	12.6
160.0	12.8
170.0	13.0
180.0	13.5
190.0	14.0
200.0	14.8
210.0	15.3
220.0	15.8
230.0	16.2
240.0	16.6
250.0	17.6
260.0	18.2
270.0	18.4
280.0	18.7
290.0	19.2
300.0	19.9
310	20.7
320	21.9
330	23.4
340	25.1
350	27.0

NOTES:

- 1. Antenna serial number is 1041.*
- 2. The above list is located in file 19BC10M1.ANT on the disk marked "Radiated Emissions Tests EMI Receiver".*



**16.7 Correction factors for BICONICAL ANTENNA
Type BCD-235/B,
10 meter range**

FREQUENCY (MHz)	AFE (dB/m)
30.0	12.1
40.0	10.6
50.0	10.6
60.0	8.9
70.0	8.5
80.0	9.6
90.0	9.4
100.0	9.6
110.0	10.3
120.0	10.7
130.0	12.6
140.0	12.7
150.0	12.7
160.0	13.8
170.0	13.7
180.0	14.9
190.0	13.4
200.0	13.1
210.0	14.0
220.0	14.5
230.0	15.8
240.0	16.0
250.0	16.6
260.0	16.7
270.0	18.3
280.0	18.5
290.0	19.3
300.0	20.9

NOTES:

- 1. Antenna serial number is 1041.*
- 2. The above list is located in file 41BC10M1.ANT on the disk marked "Radiated Emissions Tests EMI Receiver".*



16.8 Correction factors for Horn

Double-Ridged Waveguide

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

FREQUENCY (GHz)	ANTENNA FACTOR (dB 1/m)	ANTENNA 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			



16.9 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



16.10 Correction factors for

**Horn Antenna
Model: V637**

FREQUENCY (GHz)	AFE (dB /m)	Gain (dB1)
26.0	43.6	14.9
27.0	43.7	15.1
28.0	43.8	15.3
29.0	43.9	15.5
30.0	43.9	15.8
31.0	44.0	16.0
32.0	44.1	16.2
33.0	44.1	16.4
34.0	44.1	16.7
35.0	44.2	16.9
36.0	44.2	17.1
37.0	44.2	17.4
38.0	44.2	17.6
39.0	44.2	17.8
40.0	44.2	18.0



16.11 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



17. Comparison Industry Canada Requirements With FCC

AeroScout Tag6000

M/N: TAG-6000-XP-X1, TAG-6000-BP-X1

IC: 5115A-TAG6000 FCC ID: Q3HTAG6000

Test	FCC	IC
<input type="checkbox"/> Radiated Emission	15.209	RSS 210 Issue 8 Clause 2.5
<input type="checkbox"/> Max power / Peak power	15.247(b)(3)	RSS 210 Issue 8 A8.4(4)
<input type="checkbox"/> 6dB BW	15.247(a)2	RSS 210 Issue 8 A8.2a
<input type="checkbox"/> Power density	15.247(e)	RSS 210 Issue 8 A8.2b
<input type="checkbox"/> Spurious radiated emission in the restricted band	15.205(c)	RSS 210 Issue 8 2.5 RSS Gen 7.2.2 (Table 1)
<input type="checkbox"/> Band edge spectrum	15.247(d)	RSS 210 Issue 8 A8.5
<input type="checkbox"/> RF Exposure Limits	1.1310	RSS 102 4.4