

Test of: ActionTec Electronics Inc WEB5500

To: FCC CFR 47 Part 15 Subpart B

Test Report Serial No.: ATEC11-U2 Rev B



Report

from



Test of: ActionTec Electronics Inc WEB5500

To: FCC CFR 47 Part 15 Subpart B

Test Report Serial No.: ATEC11-U2 Rev B

This report supersedes ATEC11-U2 Rev A

Manufacturer: ActionTec Electronic Inc
760 N Mary Avenue
Sunnyvale California 94085
USA

Product Function: 802.11ac Wireless Network
Extender

Copy No: pdf **Issue Date:** 27th April 2017

This Test Report is Issued Under the Authority of;

MiCOM Labs, Inc.
575 Boulder Court
Pleasanton, CA 94566 USA
Phone: +1 (925) 462-0304
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MiCOM Labs is an ISO 17025 Accredited Testing Laboratory



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ACCREDITATION, LISTINGS & RECOGNITION

TESTING ACCREDITATION

MiCOM Labs, Inc. an accredited laboratory complies with the international standard EN ISO/IEC 17025. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; <http://www.a2la.org/scopepdf/2381-01.pdf>



Accredited Laboratory

A2LA has accredited

MICOM LABS

Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 4th day of February 2016.

Senior Director of Quality & Communications
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2017

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

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RECOGNITION

MiCOM Labs, Inc has widely recognized Electrical testing capabilities. Our international recognition includes Conformity Assessment Body designation by APEC MRA** countries. Our test reports are widely accepted for global type approvals.

Country	Recognition Body	Status	Phase	Identification No.
model	Federal Communications Commission (FCC)	TCB	-	US0159 Listing #: 102167
Canada	Industry Canada (IC)	FCB	APEC MRA 2	US0159 Listing #: 4143A-2 4143A-3
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	APEC MRA 2	RCB 210
	VCCI	--	--	A-0012
Europe	European Commission	NB	EU MRA	NB 2280
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)	CAB	APEC MRA 1	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	CAB	APEC MRA 1	
Singapore	Infocomm Development Authority (IDA)	CAB	APEC MRA 1	
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)	CAB	APEC MRA 1	
Vietnam	Ministry of Communication (MIC)	CAB	APEC MRA 1	

**APEC MRA – Asia Pacific Economic Community Mutual Recognition Agreement.

Is a recognition agreement under which test lab is accredited to regulatory standards of the APEC member countries.

Phase I - recognition for product testing

Phase II – recognition for both product testing and certification

N/A – Not Applicable

**EU MRA – European Union Mutual Recognition Agreement.

Is a recognition agreement under which test lab is accredited to regulatory standards of the EU member countries.

**NB – Notified Body

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PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard ISO/IEC 17065. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; <http://www.a2la.org/scopepdf/2381-02.pdf>



Accredited Product Certification Body

A2LA has accredited

MICOM LABS

Pleasanton, CA

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC 17065:2012 *Requirements for bodies certifying products, processes and services*. This accreditation demonstrates technical competence for a defined scope and the operation of a management system.



Presented this 4th day of February 2016.

Senior Director of Quality & Communications
For the Accreditation Council
Certificate Number 2381.02
Valid to November 30, 2017

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

United States of America – Telecommunication Certification Body (TCB)

TCB Identifier – US0159

Industry Canada – Certification Body

CAB Identifier – US0159

Europe – Notified Body

Notified Body Identifier - 2280

Japan – Recognized Certification Body (RCB)

RCB Identifier – 210

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DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft	23 rd November 2015	
Rev A	10 th January 2016	Initial Release
Rev B	27 th April 2017	Removed Product Photographs

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1. TEST RESULT CERTIFICATE

Manufacturer: ActionTec Electronic Inc 760 N Mary Avenue Sunnyvale California 94085 USA EUT: 802.11ac Wireless Network Extender Model: WEB5500 S/N: F18 Test Date(s): 3rd - 17th November 2015	Tested By: MiCOM Labs, Inc. 575 Boulder Court, Pleasanton California 94566 USA Tel: +1 925 462 0304 Fax: +1 925 462 0306 Website: www.micomlabs.com
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STANDARD(S) FCC CFR 47 Part 15 Subpart B	TEST RESULTS EQUIPMENT COMPLIES
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MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

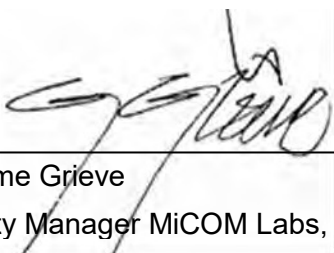
Notes:

1. This document reports conditions under which testing was conducted and the results of testing performed.
2. Details of test methods used have been recorded and kept on file by the laboratory.
3. Test results apply only to the item(s) tested.

Approved & Released for MiCOM Labs, Inc. by:



TESTING CERT # 2381.01



Graeme Grieve
Quality Manager MiCOM Labs, Inc.



Gordon Hurst
President & CEO MiCOM Labs, Inc.

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2. REFERENCES AND MEASUREMENT UNCERTAINTY

2.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	FCC 47 CFR Part 15, Subpart B	2014	Unintentional Radiators
II	ICES-003	Issue 5 August 2012	Information Technology Equipment (ITE) – Limits and Methods of Measurement
III	A2LA	June 2015	R105 - Requirement's When Making Reference to A2LA Accreditation Status
IV	ANSI C63.4	2014	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
V	ETSI TR 100 028	2001-12	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
VI	M 3003	Edition 3 Nov. 2012	Expression of Uncertainty and Confidence in Measurements

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2.2. Test and Uncertainty Procedures

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

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3. PRODUCT DETAILS AND TEST CONFIGURATIONS

3.1. Technical Details

Details	Description
Purpose:	Verification test of the ActionTec Electronics WEB5500 to FCC CFR 47, Part 15, Subpart B
Applicant:	As Manufacturer
Manufacturer:	ActionTec Electronic Inc 760 N Mary Avenue, Sunnyvale California 94085 USA
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton, California 94566 USA
Test report reference number:	ATEC11-U2 Rev B
Date EUT received:	3 rd November 2015
Test Date:	3 rd - 17 th November 2015
Standard(s) applied:	FCC CFR 47 Part 15 Subpart B
No of Units Tested:	One
Type of Equipment:	Wireless Network Extender
Product Family Name:	802.11ac Wireless Network Extender
Models:	WEB5500
Serial Number	F18
Internal Clocks	Not Provided
Construction/Location for Use:	Indoor Use Only
Operating Temperature Range:	Declared Range 0°C to 45°C
Rated Input Voltage and Current:	AC/ DC adaptor (adaptor sold with unit) Input: 115 Vac 0.6A 60 Hz Output: 12Vdc, 1.5 A
Equipment Dimensions:	4.75" (W) x 7.00" (H) x 2.25" (D)
Weight:	0.75 lb
Hardware Rev:	AM2
Software Rev:	V.3.1.9.3c

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3.2. Scope of Test Program

The scope of the test program was to test the ActionTec Electronics Inc WEB5500 for verification to FCC CFR 47, part 15, Subpart B radiated emissions 30 – 6000 MHz and AC wireline emissions.

3.3. Equipment Model(s) and Serial Number(s)

Type (EUT/Support)	Equipment Description (Including Brand Name)	Mfr	Model No.	Serial No.
EUT	Wireless Router	Actiontec	WEB 5500	F18
EUT	Power Adapter 100 - 240Vac 50/60Hz 0.6A 12 Vdc 1.5 A	Actiontec	NBS24J120150VU	Unknown
Support	Laptop PC	IBM	Thinkpad	None

3.4. Antenna Details

Details provided for information only

Type	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
integral	Galtronics	Custom PCB	Dipole	3.5	2.3	--	V-Pol	5150 - 5250
integral	Galtronics	Custom PCB	Dipole	3.5	0.9	--	H-Pol	5150 - 5250
integral	Galtronics	Custom PCB	Dipole	4.3	2.4	--	V-Pol	5725 - 5850
integral	Galtronics	Custom PCB	Dipole	3.9	0.2	--	H-Pol	5725 - 5850

BF Gain - Beamforming Gain

Dir BW - Directional BeamWidth

X-Pol - Cross Polarization

3.5. Cabling and I/O Ports

Port Type	Max Cable Length	# Of Ports	Screened	Conn Type	Data Type
Ethernet	100m	2	N	RJ-45	Packet Data

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3.6. Equipment Modifications

The following modifications were required to bring the equipment into compliance:

1. NONE

3.7. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE

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4. TEST SUMMARY / SETUP

List of Measurements

The following table represent the list of measurements required under the FCC CFR 47 part 15 standards;

TABLE OF REQUIRED TESTS – Emissions

Test Standard	Phenomenon/ Description	Limits	Compliance
FCC Part 15B	Radiated Emissions	Class B	Complies
FCC Part 15B	Conducted Emissions - ac power	Class B	Complies

Note 1: Test results reported in this document relate only to the items tested

Note 2: *The required tests demonstrated compliance as per client declaration of test configuration, monitoring methodology and associated pass/fail criteria*

Note 3: *Section 3.6 Equipment Modifications highlights the equipment modifications that were required to bring the product into compliance with the above test matrix*

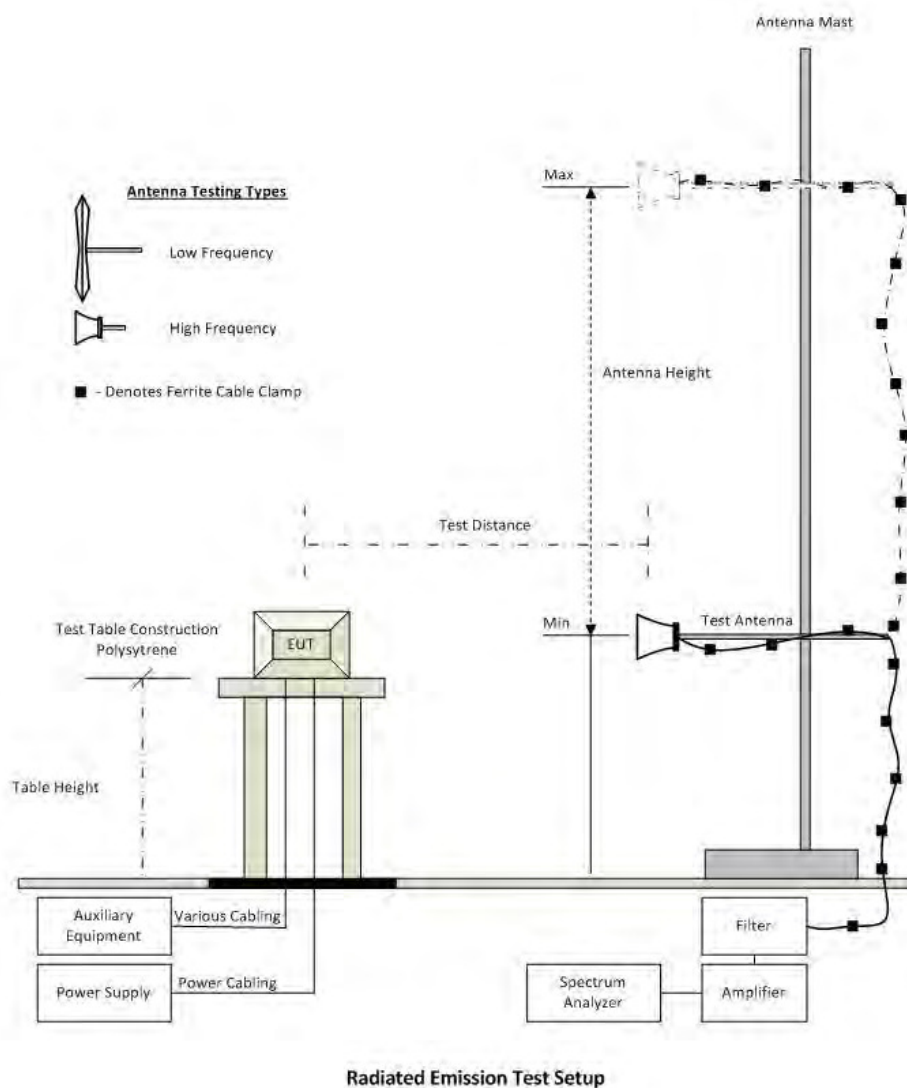
5. TEST EQUIPMENT CONFIGURATION(S)

5.1. Radiated Emissions

A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.

The following tests were performed using the conducted test set-up shown in the diagram below.

1. Spurious Emissions
2. Restricted Band-Edge Emissions
3. Radiated Digital Emissions (0.03 – 1 GHz)



A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.

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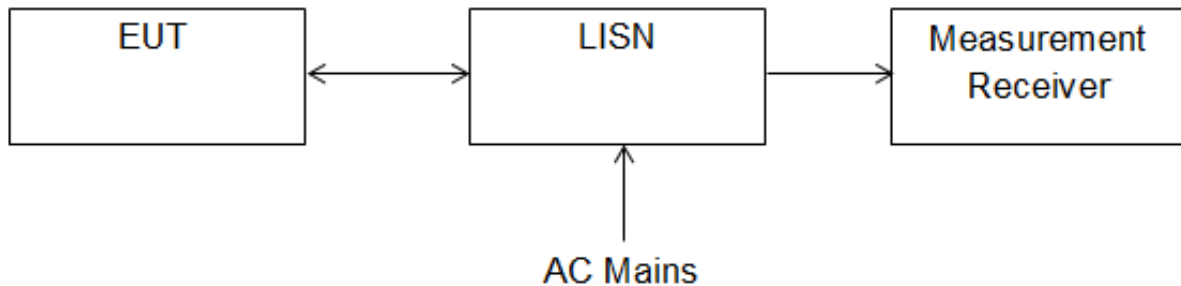


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Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
158	Barometer/Thermometer	Control Company	4196	E2846	04 Dec 2015
170	Video System Controller for Semi Anechoic Chamber	Panasonic	WV-CY101	04R08507	Not Required
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	27 Aug 2016
396	2.4 GHz Notch Filter	Microtronics	BRM50701	001	18 Aug 2016
399	ETS 1-18 GHz Horn Antenna	ETS	3117	00154575	10 Nov 2016
406	Amplifier for Radiated Emissions	MiCOM Labs	40dB 1 to 18GHz Amp	0406	28 May 2016
410	Desktop Computer	Dell	Inspiron 620	WS38	Not Required
411	Mast/Turntable Controller	Sunol Sciences	SC98V	060199-1D	Not Required
412	USB to GPIB Interface	National Instruments	GPIB-USB HS	11B8DC2	Not Required
413	Mast Controller	Sunol Science	TWR95-4	030801-3	Not Required
415	Turntable Controller	Sunol Sciences	Turntable Controller	None	Not Required
416	Gigabit ethernet filter	ETS-Lingren	Gigafoil 260366	None	Not Required
447	Rad Emissions Test Software	MiCOM	Rad Emissions Test Software Version 1.0.73	447	Not Required
480	Cable - Bulkhead to Amp	SRC Haverhill	157-157-3050360	480	11 Aug 2016
481	Cable - Bulkhead to Receiver	SRC Haverhill	151-151-3050787	481	11 Aug 2016
482	Cable - Amp to Antenna	SRC Haverhill	157-157-3051574	482	11 Aug 2016

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5.2. Conducted Emissions



A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
158	Barometer/Thermometer	Control Company	4196	E2846	04 Dec 2015
184	Pulse Limiter	Rhode & Schwarz	ESH3Z2	357.8810.52	07 Jan 2016
190	LISN (two-line V-network)	Rhode & Schwarz	ESH3Z5	836679/006	29 Oct 2016
193	Receiver 20 Hz to 7 GHz	Rhode & Schwarz	ESI 7	838496/007	14 Jan 2016
307	BNC-CABLE	Megaphase	1689 1GVT4	15F50B002	07 Jan 2016
316	Dell desktop computer workstation with Vasona	Dell	Desktop	WS04	Not Required
351	Data Impedance Stabilization Network	Teseq	ISN T800	24809	14 Dec 2015
372	AC Variable PS	California Instruments	1251P	L06951	Cal when used
378	Rohde & Schwarz 40 GHz Receiver with Generator	Rhode & Schwarz	ESIB40	100107/040	07 Jul 2016
389	LISN (3 Phase) 9kHz - 30MHz	Rohde & Schwarz	ESH2-Z5	892107/022	23 Sep 2016
ADAPT SMA#1	SMA Cable	Megaphase	SMA Cable #1	None	Cal when used

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5. TEST RESULTS

5.1. EMC EMISSIONS TEST RESULTS

5.1.1. Radiated Emissions

Test Procedure

Testing 30 – 6,000 MHz was performed in a anechoic chamber using a CISPR compliant receiver. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. To further maximize emissions the receive antenna was varied between 1 and 4 meters. The emissions are recorded with receiver in peak hold mode.

Emissions nearest the limits were chosen for maximization and formal measurement using a CISPR Compliant receiver. Emissions from 30 MHz – 1000 MHz are measured utilizing a CISPR compliant quasi-peak detector with a tuned receiver, using a bandwidth of 120 kHz. Emissions above 1000 MHz are measured utilizing a CISPR compliant average detector with a tuned receiver, using a bandwidth of 1 MHz. Only the highest emissions relative to the limit are listed.

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Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

$$FS = R + AF + CORR - FO$$

FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor

$$CORR = \text{Correction Factor} = CL - AG + NFL$$

CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss or Waveguide Loss

Field Strength Calculation Example:

Given receiver input reading of 51.5 dB μ V; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength of the measured emission is:

$$FS = 51.5 + 8.5 + 1.3 - 26.0 + 1 = 36.3 \text{ dB}\mu\text{V/m}$$

Conversion between dB μ V/m (or dB μ V) and μ V/m (or μ V) are done as:

$$\text{Level (dB}\mu\text{V/m)} = 20 * \text{Log (level (\mu\text{V/m}))}$$

40 dB μ V/m = 100 μ V/m
48 dB μ V/m = 250 μ V/m



FCC Spurious Emissions Limits

Limits below 1 GHz:

Class A limits

Frequency(MHz)	Quasi-peak Limit (dB μ V/m)	Measurement Distance (meters)	Quasi-peak Limit (dB μ V/m)	Measurement Distance (meters)
30 to 88	40	10	49.5	3
88-216	43.5	10	54	3
216-960	46.4	10	56.5	3
960-1000	49.5	10	60	3

Class B limits

Frequency(MHz)	Quasi-peak Limit (dB μ V/m)	Measurement Distance (meters)	Quasi-peak Limit (dB μ V/m)	Measurement Distance (meters)
30 to 88	29.5	10	40	3
88-216	33	10	43.5	3
216-960	35.6	10	46	3
960-1000	43.5	10	54	3

Limits above 1GHz:

Frequency(MHz)	Average Limit (dB μ V/m)	Peak Limit (dB μ V/m)	Measurement Distance (meters)	Class (A/B)
1 000 to 6000	54	74	3	Class B

Frequency(MHz)	Average Limit (dB μ V/m)	Peak Limit (dB μ V/m)	Measurement Distance (meters)	Class (A/B)
1 000 to 6000	60	80	3	Class A

Laboratory Measurement Uncertainty for Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB
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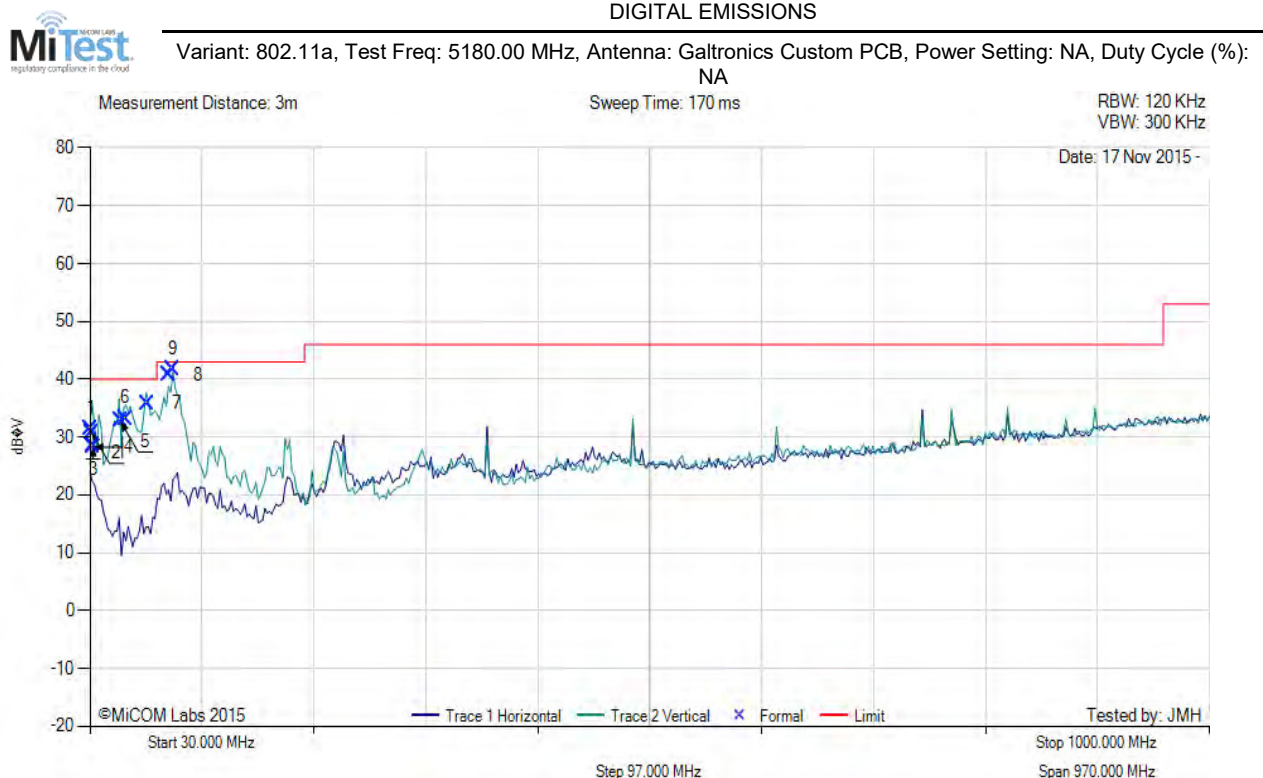
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Measurement Results: Radiated Emissions; 30-1000MHz,

Equipment Configuration for Digital Emissions

Antenna:	Galtronics Custom PCB	Variant:	802.11a
Antenna Gain (dBi):	Not Applicable	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	NA
Channel Frequency (MHz):	5180.00	Data Rate:	6.00 MBit/s
Power Setting:	NA	Tested By:	JMH

Test Measurement Results



Num	Frequency MHz	Raw dBµV	Cable Loss	AF dB	Level dBµV/m	Measurement Type	PoI	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	30.58	38.57	3.43	-10.61	31.39	MaxQP	Vertical	101	7	40.0	-8.6	Pass
2	31.42	38.00	3.43	-10.61	30.82	MaxQP	Vertical	111	50	40.0	-9.2	Pass
3	32.75	37.20	3.44	-12.09	28.55	MaxQP	Vertical	100	106	40.0	-11.5	Pass
4	32.75	36.93	3.44	-12.09	28.28	MaxQP	Vertical	100	97	40.0	-11.7	Pass
5	56.20	53.35	3.61	-24.13	32.83	MaxQP	Vertical	100	5	40.0	-7.2	Pass
6	60.83	53.48	3.65	-23.92	33.21	MaxQP	Vertical	118	54	40.0	-6.8	Pass
7	79.29	55.54	3.77	-23.47	35.84	MaxQP	Vertical	100	6	40.0	-4.2	Pass
8	98.47	58.79	3.87	-21.84	40.82	MaxQP	Vertical	100	360	43.0	-2.2	Pass
9	101.89	58.51	3.89	-20.63	41.77	MaxQP	Vertical	100	94	43.0	-1.2	Pass

Test Notes: EUT on table connected to laptop and hub outside chamber. Laptop pinging EUT and data file transfer. Actiontec PS NB524J120150VU

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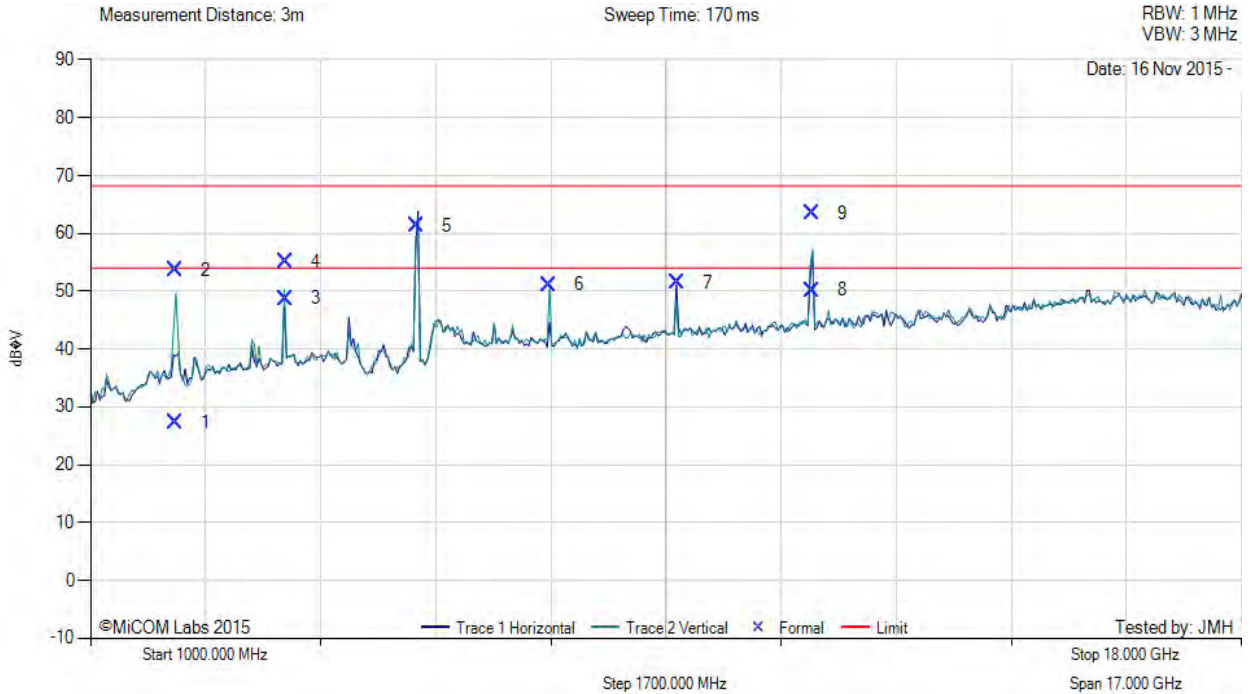


Measurement Results: Radiated Emissions; 1-18 GHz,

RADIATED SPURIOUS - RESTRICTED BAND EMISSIONS



Variant: 802.11a, Test Freq: 5825.00 MHz, Antenna: Galtronics Custom PCB, Power Setting: 23, Duty Cycle (%): 100



Num	Frequency MHz	Raw dBµV	Cable Loss	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2250.86	36.81	2.63	-12.10	27.34	Max Avg	Vertical	100	186	54.0	-26.7	Pass
2	2250.86	63.18	2.63	-12.10	53.71	Max Peak	Vertical	100	186	74.0	-20.3	Pass
3	3883.33	56.22	3.25	-10.76	48.71	Max Avg	Vertical	189	307	54.0	-5.3	Pass
4	3883.33	62.66	3.25	-10.76	55.15	Max Peak	Vertical	189	307	74.0	-18.9	Pass
5	5819.88	67.75	3.83	-10.26	61.32	Fundamental	Horizontal	151	243	--	--	
6	7766.56	53.41	4.43	-6.71	51.13	Peak (NRB)	Vertical	151	243	--	--	Pass
7	9667.86	52.28	5.27	-6.13	51.42	Peak (NRB)	Horizontal	151	243	--	--	Pass
8	11651.67	49.16	5.48	-4.46	50.18	Max Avg	Vertical	185	313	54.0	-3.8	Pass
9	11651.67	62.48	5.48	-4.46	63.50	Max Peak	Vertical	185	313	74.0	-10.5	Pass

Test Notes: EUT at 150cm powered by Actiontec PS NB524J120150VU

NRB – Non-Restricted Band

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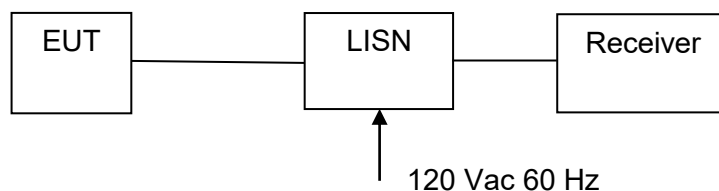
5.1.1. AC Mains Conducted Emissions

Scope

This test assesses the ability of the EUT to limit its internal noise from being present on the AC mains power input/output ports.

Test Procedure

The EUT is configured in accordance with ANSI C63.4. The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.



Measurement Setup for Conducted Emissions Test



Limits

The equipment shall meet the class B limits given in FCC Part 15: 207. Alternatively, for equipment intended to be used in non-residential environments, the class A limits given in FCC Part 15: 207 may be used.

Class B Emissions

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency

Class A Emissions

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

Traceability

All conducted emission measurements are traceable to national standards. The uncertainty of measurement at a confidence level of not less than 95 %, with a coverage factor of k=2, in the range 9 kHz – 30 MHz (Average & Quasi-peak) is ± 2.64 dB.

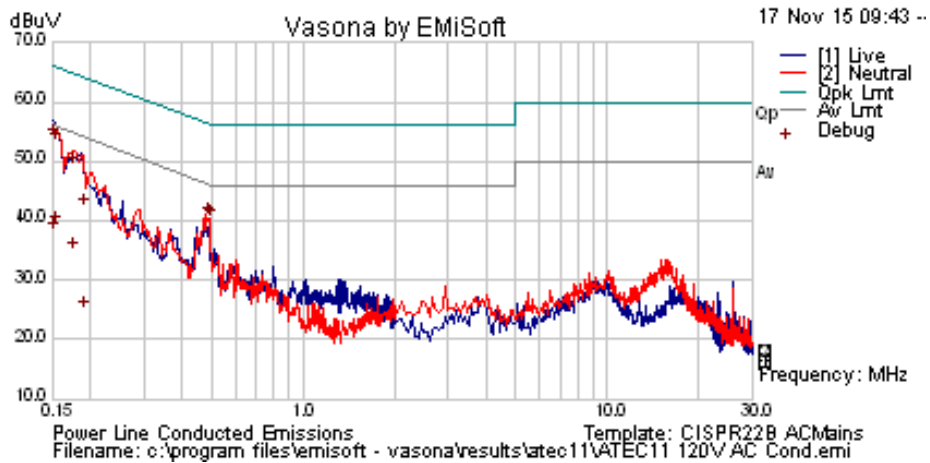
Laboratory Measurement Uncertainty	
Measurement uncertainty	± 2.64 dB

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Measurement Results
ac/dc Adaptor Wireline Emissions

Model Number	WEB5500	Engineer	JMH
Variant	AC Wireline 120V	Temp (°C)	15
Freq. Range	0.150 MHz - 30 MHz	Rel. Hum.(%)	37
Power Setting	N/A	Press. (mBars)	1005
Antenna	Integral		
Test Notes 1	WEB5500 SN# ATEC11-1 ActionTec PS NB524J120150VU		
Test Notes 2	Class B Limits		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
0.151	43.9	9.8	0.080	53.740	Quasi Peak	Live	65.94	-12.21	Pass	
0.151	28.2	9.8	0.080	38.130	Average	Live	55.94	-17.81	Pass	
0.153	29.1	9.8	0.080	38.960	Average	Live	55.84	-16.87	Pass	
0.153	43.0	9.8	0.1	52.9	Quasi Peak	Live	65.84	-12.9	Pass	
0.175	39.2	9.8	0.1	49.1	Quasi Peak	Neutral	64.72	-15.6	Pass	
0.175	24.9	9.8	0.1	34.8	Average	Neutral	54.72	-19.9	Pass	
0.188	14.9	9.8	0.1	24.8	Average	Live	54.12	-29.3	Pass	
0.188	32.1	9.8	0.1	42.0	Quasi Peak	Live	64.12	-22.1	Pass	
0.481	30.8	9.8	0.1	40.7	Peak [Scan]	Neutral	46.32	-5.7	Pass	
0.491	30.4	9.8	0.1	40.2	Peak [Scan]	Neutral	46.15	-5.9	Pass	

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