

**ELECTRO MAGNETIC TEST, INC.**1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

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*FCC PART 90 Subpart Y**for**the*

POINT TO MULTIPOINT DEVICE

MODEL: B5C

Prepared for

Mimosa Networks  
469 El Camino Real, Suite 100  
Santa Clara, CA, 95050Prepared by:   
GEORGE HSUApproved by:   
KEVIN BOTHMANNELECTRO MAGNETIC TEST, INC.  
1547 PLYMOUTH STREET  
MOUNTAIN VIEW, CALIFORNIA 94043  
(650) 965-4000

DATE: April 23, 2016

	REPORT	APPENDICES				TOTAL
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**LIST OF APPENDICES**

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A	Radiated and Conducted Data Sheets <ul style="list-style-type: none"><li>• Radiated Emissions Test Data (General Requirements, and Restricted Bands)</li><li>• Emissions in Non-Restricted Frequency Bands Test Data</li><li>• Occupied Bandwidth Test Data</li><li>• Maximum Average Output Power Test Data</li><li>• Maximum Average Power Spectral Density Test Data</li><li>• Band Edge Test Data</li></ul>
B	Test Setup Diagrams
C	Modifications To The EUT
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1	Conducted Emissions Test Setup
2	Plot Map And Layout of Test Site
3	Layout of 5 Meter Semi-Anechoic Chamber


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### GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Electro Magnetic Test, Inc., which is an independent testing and consulting firm. The test report is based on testing performed Electro Magnetic Test, Inc. personnel according to the measurement procedure described in the test specification given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Federal Government.

The measurement data and conclusions contained in this test report are deemed satisfactory evidence of compliance with Industry Canada Interference-Causing Equipment Standard ICES-003, Issue 5, August 2012.

Electro Magnetic Test, Inc. is recognized by the following agencies for performing EMI/EMC testing:

COUNTRY	AGENCY	IDENTIFYING #
USA	Federal Communications Commission (FCC) (EMT's test site is recognized by the FCC)	Registration Number: 90576
USA, Canada, Taiwan, Australia/New Zealand, European Community	National Voluntary Lab Accreditation Program (NVLAP) (EMT is accredited by NVLAP. A copy of the NVLAP Scope Of Accreditation is available upon request.)	Lab Code: 200147-0
Canada	Industry Canada	File No.: IC 2804
Japan	Voluntary Control Council For Interference (VCCI)	A-0118
	Open Field Test Site "A"	-
	Mains Conducted Emissions Test Site "A"	-
	Telecom Conducted Emissions Test Site "A"	-
	3 Meter Semi-Anechoic Chamber Site "E"	-
	3 Meter Semi-Anechoic Chamber Site "E" (1GHz – 6GHz)	-
	Mains Conducted Emissions Test Site "E"	-
	Telecom Conducted Emissions Test Site "E"	-
Korea	Ministry of Information and Communication's Radio Research Laboratory (RRL) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (A copy of the Scope Of Accreditation is available upon request)	US0036
Taiwan	Bureau Of Standards, Metrology and Inspection (BSMI)	Reference Number: SL2-IN-E-1024
Australia / New Zealand	Australian Communications Authority (AUSTEL)	*

\*These agencies do not issue an identifying number to test labs.


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**GENERAL REPORT SUMMARY (CONTINUED)**

Device Tested: Point to Multipoint Device  
 Model: B5C  
 S/N: N/A

Product Description: The EUT is a wireless router that operates in the 5 GHz bands.

Modifications: The EUT was not modified during the testing.

Manufacturer: Mimosa Networks  
 469 El Camino Real, Suite 100  
 Santa Clara, CA, 95050

Test Date(s): N/A

Test Specifications: EMI requirements  
 Limits: FCC Title 47, Part 90 Subpart Y  
 Test Procedure: ANSI C63.10 2013

Test Deviations: The test procedure was not deviated from during the testing.

**SUMMARY OF TEST RESULTS**

TEST	DESCRIPTION	FCC STANDARD	REMARKS	RESULTS
7.1	Occupied Bandwidth and Emission Mask	2.1049, 90.210	N/A	N/A*
7.2	Peak Output Power	2.1046, 90.1215a	N/A	N/A*
7.3	Power Spectral Density	2.1046, 90.1215a	N/A	N/A*
7.4	Peak Excursion	90.1215	N/A	N/A*
7.5	Conducted Spurious Emissions at the Antenna Terminals	90.210	N/A	N/A*
7.6	Radiated Spurious Emission	2.1053, 90.210	N/A	N/A*
7.7	Frequency Stability	2.1055, 90.213	N/A	N/A*

\*Operation in point to multipoint, with no change in power levels, hardware, and antenna gain  
 Does not affect the limits in these tests. In addition the antenna gain of 25 dBi is less than the 26 dBi  
 limit that requires a reduction in power levels

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**TECHNICAL DESCRIPTION OF THE EUT**

<b>Manufacturer:</b>	Mimosa Networks
<b>EUT Name:</b>	Point to Multipoint Device
<b>Model No:</b>	B5C
<b>Antenna Gain:</b>	0 dBi, 25 dBi

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## **1. PURPOSE**

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the POINT TO MULTIPOINT DEVICE Model: B5C. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2009. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the specification limits defined in FCC Title 47, Part 15, Subpart C.

## **2. ADMINISTRATIVE DATA**

### **2.1 Location of Testing**

The EMI tests described herein were performed at the test facility of Electro Magnetic Test, Inc., 1547 Plymouth Street, Mountain View, California, 94043.

### **2.2 Traceability Statement**

The calibration certificates of all test equipment used during the test are on file at the location of the test. The measurement results in this report and the calibration of the test equipment are traceable to the National Institute of Standards and Technology (NIST).

### **2.3 Cognizant Personnel**

#### Mimosa Networks

Omer Ileri                      Product Manager

#### Electro Magnetic Test, Inc.

David Vivanco	Test Technician
George Hsu	Test Technician
Kevin Bothmann	Lab Manager

### **2.4 Date Test Sample was Received**

The test sample was received on March 31, 2016.

### **2.5 Disposition of the Test Sample**

The test sample has not yet been returned Mimosa Networks

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## **2.6 Abbreviations and Acronyms**

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
CISPR	International Special Committee On Radio Interference
FCC	Federal Communications Commission



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**3. APPLICABLE DOCUMENTS**

The following documents are referenced or used in the preparation of this EMI Test Report.

<b>SPEC</b>	<b>TITLE</b>
FCC Title 47, Part 90 Subpart Y	FCC Rules - Radio frequency devices (including digital devices).
ANSI C63.10 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices



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**4. DESCRIPTION OF TEST CONFIGURATION**

**4.1 Description of Test Configuration – EMI**

Not Applicable



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#### **4.1.1 Cable Construction and Termination**

Not Applicable

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**5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT****5.1 EUT and Accessory List**

<b>EQUIPMENT TYPE</b>	<b>MANUFACTURER</b>	<b>MODEL</b>	<b>SERIAL NUMBER</b>	<b>FCC ID</b>
Wireless Access Point (EUT)	Mimosa Networks	B5c	N/A	2ABZJ-100-00014
POE Adapter	Mimosa Networks	402-00002	N/A	DoC
<b>THE FOLLOWING WERE LOCATED OUTSIDE THE TEST SITE:</b>				
Laptop Computer	Dell	D630	34793879869	DoC
Laptop Power Supply	Dell	PA-1900-02D	CN-09T215-71615-42I-6739	DoC


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**5.2 EMI Test Equipment**

<b>EQUIPMENT TYPE</b>	<b>MANU- FACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>CAL. DATE</b>	<b>CAL. CYCLE</b>
Spectrum Analyzer	Hewlett Packard	8566B	3024A20115	March 24, 2016	1 Year
RF Preselector	Hewlett Packard	85685A	3010A01157	March 24, 2016	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00451	March 24, 2016	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 11, 2015	1 Year
Radiated EMI Software	Sector Design	N/A	Ver.1.4.6	N/A	N/A
Conducted EMI Software	ETS-Lindgren	Tile!	Rev. 7.0.12.697	N/A	N/A
Preamplifier	Com Power	PA-102	1482	March 4, 2016	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 11, 2015	1 Year
LISN	Solar Electronics	Type 21107- 50-TS-50-N	21107150701	July 16, 2015	1 Year
LISN	Solar Electronics	Type 21107- 50-TS-50-N	21107150702	July 16, 2015	1 Year
LISN	Solar Electronics	Type 21107- 50-TS-50-N	21107150703	July 16, 2015	1 Year
LISN	Solar Electronics	Type 21107- 50-TS-50-N	21107150704	July 16, 2015	1 Year
Biconical Antenna	Com Power	AB-900	15026	June 17, 2015	1 Year
Log Periodic Antenna	Com Power	AL-100	16037	June 17, 2015	1 Year
Horn Antenna	Com Power	AHA-118	711054	December 11, 2015	1 Year
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Dell, Inc.	DHS	DNSV641	N/A	N/A
Printer	Hewlett Packard	C8124A	CN39A220ZD	N/A	N/A


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**5.2 EMI Test Equipment (Continued)**

<b>EQUIPMENT TYPE</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>CAL. DATE</b>	<b>CAL. CYCLE</b>
EMI Receiver	Rohde & Schwarz	ESU40	100127	January 16, 2016	1 Year
EMI Test Software	Rohde & Schwarz	EMC32	V8.40.0	N/A	N/A
MXA Signal Analyzer	Agilent	N9020A	MY53420778	September 4, 2015	1 Year
Passive Loop Antenna (9kHz – 30MHz)	ETS-Lindgren	6512	00128210	April 23, 2015	2 Years
BiConiLog Antenna (30 MHz – 1 GHz)	ETS-Lindgren	3142D	00109337	July 8, 2015	1 Year
Horn Antenna (1 GHz – 18 GHz)	ETS-Lindgren	3117	00109294	July 8, 2015	1 Year
Preamplifier (1 GHz – 18 GHz)	Rohde & Schwarz	TS-PR18	100056	December 12, 2015	1 Year
Horn Antenna (18-26.5GHz)	ETS-Lindgren	3160-09	102646	June 19, 2015	1 Year
Preamplifier (18-26.5GHz)	Rohde & Schwarz	TS-PR26	100034	June 18, 2015	1 Year
Horn Antenna (26.5-40GHz)	ETS-Lindgren	3160-10	109153	June 19, 2015	1 Year
Preamplifier (26.5-40GHz)	Rohde & Schwarz	TS-PR40	100030	June 18, 2015	1 Year
Antenna Mast	ETS-Lindgren	2175	00095727	N/A	N/A
Turntable	ETS-Lindgren	2187-3.0	00118231	N/A	N/A
Computer	Dell, Inc.	OPTIPLEX 745	4T50WC1	N/A	N/A
Multi-Function Controller	ETS-Lindgren	2090	00102270	N/A	N/A

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## **6. TEST SITE DESCRIPTION**

### **6.1 Test Facility Description**

Please refer to the table below and section 7 of this report for the details of which sites were used for testing. All sites are located at 1547 Plymouth Street, Mountain View, California 94043.

<b>Site Used For Test</b>	<b>Site Description</b>
	Open Field Test Site "A"
X	Mains Conducted Emissions Test Site "A"
	Telecom Conducted Emissions Test Site "A"
X	3 Meter Semi-Anechoic Chamber Site "E"
	Mains Conducted Emissions Test Site "E"
	Telecom Conducted Emissions Test Site "E"

### **6.2 EUT Mounting, Bonding and Grounding**

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 1.5 meters above the ground plane.

The EUT was grounded only through the shield in its ethernet cable.

### **6.3 Facility Environmental Characteristics**

All tests were performed in a climate controlled building. The temperature was 22° C, humidity 45%, and barometric pressure 102.6 kPa.



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**8. CONCLUSIONS / COMPLIANCE STATEMENT**

Based upon the results contained in this report, Electro Magnetic Test, Inc. has determined that the Point-To-Multipoint device, Model: B5C meets all of the specification limits defined in FCC Title 47, Part 90, Subpart Y, please see summary of tests on page 5 for more details.





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## **APPENDIX A**

### ***RADIATED AND CONDUCTED DATA SHEETS***



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No test data was taken



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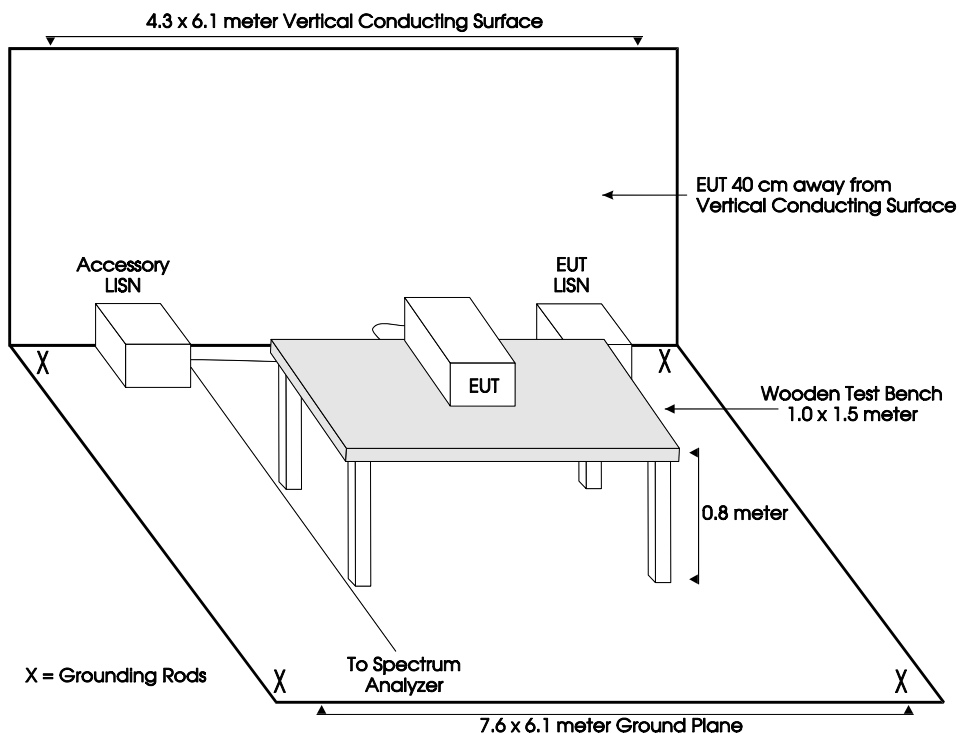
## **APPENDIX B**

### ***TEST SETUP DIAGRAMS***

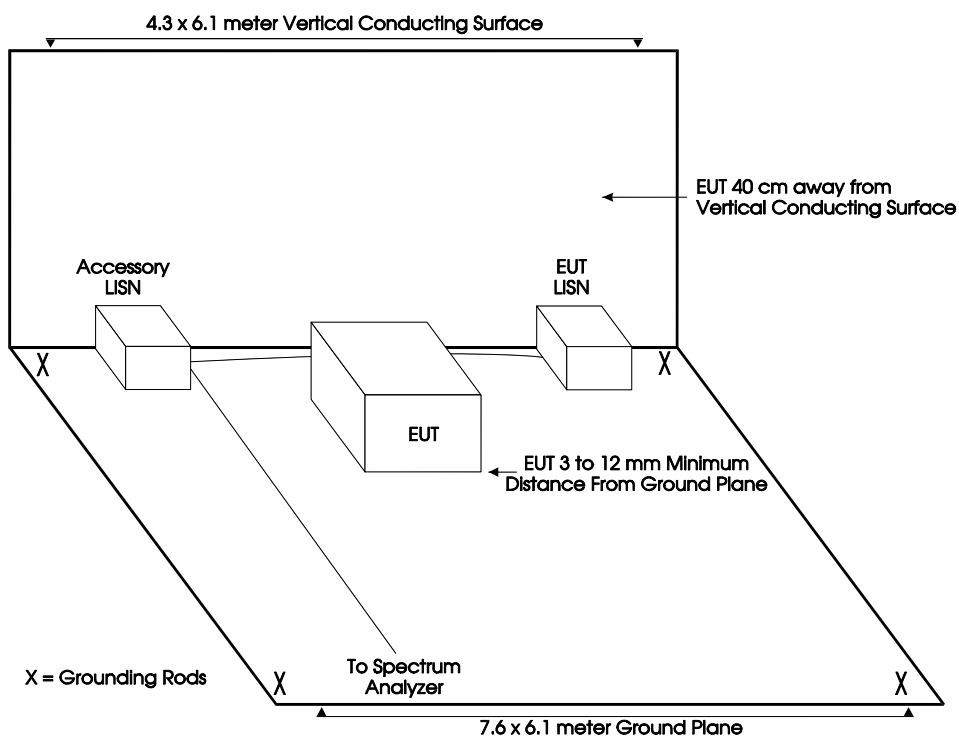


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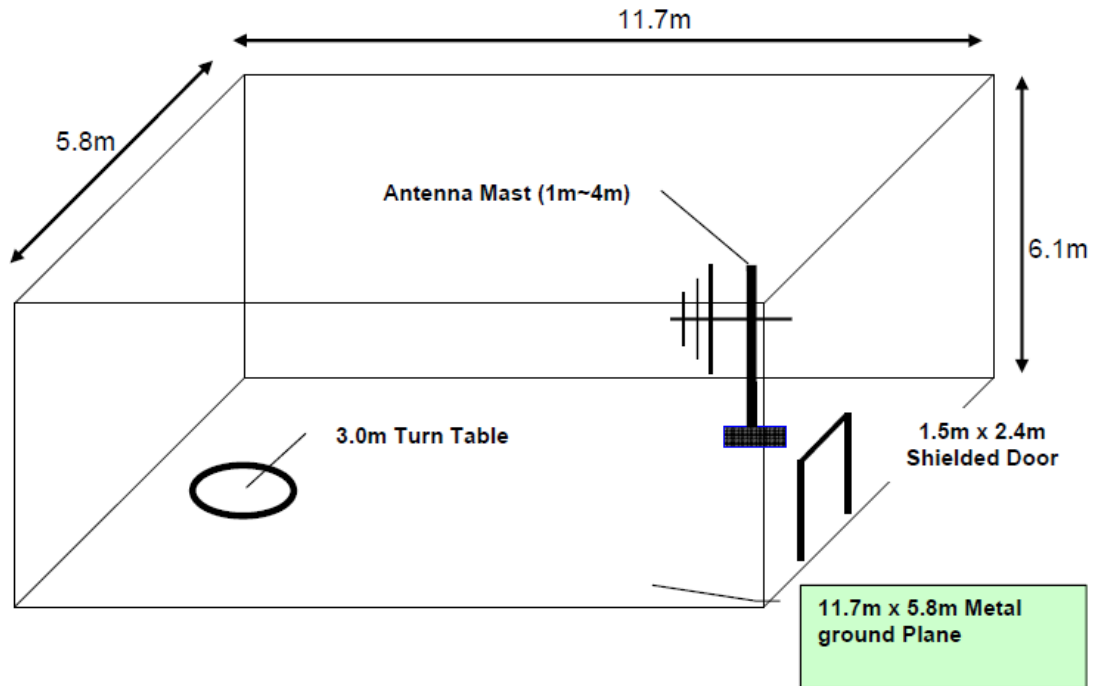
**FIGURE 1 – TABLETOP CONDUCTED EMISSIONS TEST SETUP – SITE “A”**



**FIGURE 1a – FLOORSTANDING CONDUCTED EMISSIONS TEST SETUP – SITE “A”**

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**FIGURE 3 - LAYOUT OF 5 METER SEMI-ANECHOIC CHAMBER**



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## **APPENDIX C**

### ***MODIFICATIONS TO THE EUT***



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## **MODIFICATIONS TO THE EUT**

No modifications were made to the EUT by Electro Magnetic Test, Inc. personnel during the testing.



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## **APPENDIX D**

### ***ADDITIONAL MODELS COVERED UNDER THIS REPORT***





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## **ADDITIONAL MODELS COVERED UNDER THIS REPORT**

There are no additional models covered under this report.