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

FCC PART 15.407 SUBPART C
TEST REPORT

for

the

WIFI MODULE

MODEL: BLUEFIN 5G

Prepared for

Tropos Networks, Inc.
555 Del Rey Avenue
Sunnyvale, CA, 94085

Prepared by: George Hsu
GEORGE HSU

Approved by:
KEVIN BOTHMANN

ELECTRO MAGNETIC TEST, INC.
1547 PLYMOUTH STREET
MOUNTAIN VIEW, CALIFORNIA 94043
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DATE: October 18, 2015

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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: WIFI Module
Model: Bluefin 5G
S/N: N/A

Product Description: The EUT is a 802.11 b/g/n RF module that operates in the 5 GHz band.

Modifications: The EUT was not modified during the testing.

Manufacturer: Tropos Networks, Inc.
555 Del Rey Avenue
Sunnyvale, CA 94085

Test Date(s): Septemeber 15, October 7, and 8, 2015

Test Specifications: EMI requirements
Limits: FCC Title 47, Part 15 Subpart C
Test Procedure: ANSI C63.4: 2009

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

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	FCC STANDARD	REMARKS	RESULTS
7.1	Radiated Emissions (General Requirements and Emissions in Restricted Freqeuency Bands)	15.209	Radiated**	**PASS****
7.2	Conducted Emissions	15.207(a)	N/A*	**N/A***
7.3	Occupied Bandwidth	15.407(e)	Conducted	**PASS**
7.4	Maximum Average Output Power	15.407 (a)(1)(i), 15.407 (a)(3)	Conducted	**PASS**
7.5	Maximum Average Power Spectral Density	15.407(a)(1)(i), 15.407(a)(3)	Conducted	**PASS**
7.6	Emissions in Non-Restricted Frequency Bands	15.407(b)(1, 4)	Conducted	**PASS**
7.7	Bandedge	15.407(b)(1, 4)	Conducted	**PASS**
7.8	Antenna Requirement	15.203	N/A	**PASS**

*No hardware changes were made in this permissive change, that would effect conducted emissions

**The worst case modes where chosen for radiated emissions

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TECHNICAL DESCRIPTION OF THE EUT

Manufacturer:	Tropos Networks, Inc.
Manufacturer Address:	298 S. Sunnyvale Ave, Ste 205, Sunnyvale, CA 94086
EUT Name:	WIFI Module
Model No:	Bluefin 5G
Operation frequency:	5180 to 5240 MHz and 5745 to 5825
Channel Number:	30
Modulation Technology:	DSSS
Antenna Type:	Patch Antenna
Antenna Gain:	8.0 dBi @ 5 GHz
Maximum Output Power:	25.334 dBm

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Description of Channel					
802.11a, 5 MHz					
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
36	5180	46	5230	156	5780
37	5185	47	5235	157	5785
38	5190	48	5240	158	5790
39	5195	149	5745	159	5795
40	5200	150	5750	160	5800
41	5205	151	5755	161	5805
42	5210	152	5760	162	5810
43	5215	153	5765	163	5815
44	5220	154	5770	164	5820
45	5225	155	5775	165	5825
802.11a, 10 MHz					
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
36	5180	48	5240	159	5795
38	5190	149	5745	161	5805
40	5200	151	5755	163	5815
42	5210	153	5765	165	5825
44	5220	155	5775		
46	5230	157	5785		

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1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the WIFI MODULE Model: BLUEFIN 5G. 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

Tropos Networks, Inc.

Maxim Bakaleynik	Senior Director , Hardware Engineering

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 September 9, 2015.

2.5 Disposition of the Test Sample

The test sample has not yet been returned Tropos Networks, Inc.

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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.

SPEC	TITLE
FCC Title 47, Part 15, Subpart C	FCC Rules - Radio frequency devices (including digital devices).
FCC Publication KDB789033	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E, June 6 2014
ANSI C63.4 2009	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz.

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4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – EMI

The EUT was connected to the remote Ethernet switch and remote laptop computer via its Ethernet port and Ethernet POE port, respectively. The remote Ethernet switch and remote laptop computer were located outside the test site. During the testing process, traffic was running at its maximum workload at the network interfaces and the intentional radiator was transmitting constantly.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The cables were moved to maximize the emissions. The final conducted as well as radiated data was taken in this mode of operation. All initial investigations were performed with the EMI receiver in manual mode scanning the frequency range continuously. The cables were bundled and routed as shown in the photographs in Appendix B.

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4.1.1 Cable Construction and Termination

Cable #1

This is a 10 foot shielded CAT 5 Ethernet cable connecting the EUT to the POE adapter. They have metallic RJ45 plastic connectors at both ends of the cables. The shields of the connectors were grounded to the chassis via the connectors. The cable was bundled to a length of 4 feet.

Cable #2

This is a 50 foot shielded CAT 5 Ethernet cable connecting the EUT to the ethernet switch. They have metallic RJ45 plastic connectors at both ends of the cables. The shields of the connectors were grounded to the chassis via the connectors.

Cable #3

This is a 50 foot shielded CAT 5 Ethernet cable connecting the EUT to the remote laptop computer. They have metallic RJ45 plastic connectors at both ends of the cables. The shields of the connectors were grounded to the chassis via the connectors.

Cables #4

This is a 6 foot unshielded power cables connecting the POE to the AC outlet.

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5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID
Bluefin 5G (EUT)	Tropos Networks, Inc.	Bluefin 5G	301304	P9J-642401
POE Adapter	Cincon Electronics	TR60A-POE-L	006516	DoC
Laptop Computer	Dell	Lattitude E5430	100PYW1	DoC
Laptop Powersupply	Dell	LA90PE1-01	CN-0J62H3-71615-09K-7D70-A01	DoC
Ethernet Switch	Linksys	EZXS55W	R9160KS13148	DoC
Ethernet Switch AC Adapter	N/A	SJ-0510-U	N/A	DoC

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5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
Spectrum Analyzer	Hewlett Packard	8566B	3024A20115	September 2, 2015	1 Year
RF Preselector	Hewlett Packard	85685A	3010A01157	September 2, 2015	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00451	September 2, 2015	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 11, 2014	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, 2015	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 11, 2014	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, 2014	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)

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESU40	100127	January 16, 2015	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, 2014	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.

Site Used For Test	Site Description
	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 safety ground in its power cable(s).

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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7. TEST PROCEDURES

7.1 Radiated Emissions Test – Semi-Anechoic Chamber

7.1.1 General Requirements Limit (FCC PART 15 Section 15.209(a)(1))

Frequency of Emission (MHz)	Field Strength		Measurement Distance (Meters)
	µV/m	dBµV/m	
0.009-0.49	2400/F(kHz)		300
0.49-1.705	24000/F(kHz)		30
1.705-30	30		30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

7.1.2 Emissions in Restricted Bands Limit (FCC PART 15 Section 15.407(a)(6,7)])

15.407(a)(6,7)

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

Limit
See General Limits Requirement In Above Chart

7.1.3 Test Procedure

The Rohde & Schwarz ESU40 EMI receiver was used as a measuring meter while under software control by the Rohde & Schwarz EMC32 software. To increase the sensitivity of the instrument, the built in preamplifier was used from 9 KHz to 1 GHz and an external preamplifier was used from 1 GHz to 40 GHz. The EMI receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI receiver records the highest measured reading over all the sweeps. The built in quasi-peak or average detector was used only for those readings which are marked accordingly on the data sheets. The

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7.1.3 Test Procedure (Continued)

effective measurement bandwidth used for the radiated emissions test was 100 kHz from 9 kHz to to 40 GHz.

The Loop Antenna, Broadband BiConiLog and horn antennas were used as transducers during the measurement. The Loop antenna was used from 9 KHz to 30 MHz, the BiConiLog antenna was used from 30 MHz to 1000 MHz and horn antennas were used from 1GHz – 26.5 GHz. The frequency spans were wide (9 kHz to 150 kHz, 150 kHz to 30 MHz, 30 MHz to 88 MHz, 88 MHz to 216 MHz, 216 to 300 MHz, 300 MHz to 1 GHz, 1 GHz to 18 GHz 18 GHz to 26.5 GHz, and 26.5 GHz to 40 GHz) during preliminary investigations. The final data was taken with a frequency span of 1 MHz. Furthermore, the frequency span was reduced during the preliminary investigations as deemed necessary.

The 5 meter semi-anechoic chamber of Electro Magnetic Test, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2009. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. The EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength).

The presence of non EUT signals was verified by turning the EUT off. In case a non EUT signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the other signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance from 9 kHz to 26.5 GHz. to obtain final test data.

Calculation Of Radiated Emission Test Data:

Amplitude - Gain + Antenna Factor + Cable Loss = Corrected Amplitude

Corrected Amplitude - Limit = Margin

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7.2 Conducted Emissions Test – Mains Ports

7.2.1 Limit (FCC PART 15 Section 15.207(a))

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

*Note: Decreases with the logarithm of the frequency

7.2.2 Test Procedure

The HP 8566B spectrum analyzer was used as a measuring meter along with the HP 85650A quasi-peak adapter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak detector was used only where indicated in the data sheets. A 10 dB attenuation pad was used for the protection of the spectrum analyzer input stage, and the spectrum analyzer offset was adjusted accordingly to read the actual data measured. The LISN output was read by the HP 8566B spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for the conducted emissions test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 2009. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The initial test data was taken in manual mode while scanning the frequency ranges of 0.15 MHz to 1.6 MHz, 1.6 MHz to 5 MHz and 5 MHz to 30 MHz. The conducted emissions from the EUT were maximized for operating mode as well as cable and peripheral placement. Once a predominant frequency (within 12 dB of the limit) was found, it was more closely examined with the spectrum analyzer span adjusted to 1 MHz.

The final data was collected under program control by the HP 85869PC software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave.

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7.3 Occupied Bandwidth

7.3.1 Limit (FCC PART 15 Section 15.407(e))

15.407(e)

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz

Limit
6 dB Bandwidth ≥ 500 kHz

7.3.2 Test Procedure

Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator, set the Spectrum Analyzer as below:

RBW: 1% of Emission Bandwidth
VBW: ≥ RBW
Detector: Peak
Trace Mode: Max Hold

(1) Measure the 26db bandwidth using Xdb down function, If this does not encompass the full bandwidth, then "Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission"

(2) Remeasure to ensure the RBW is around 1% of the emission bandwidth

For band 5.725-5.85 GHz :

RBW: 100 KHz
VBW: ≥ 3 x RBW
Detector: Peak
Trace Mode: Max Hold

(1) Measure the 6db bandwidth using Xdb down function, If this does not encompass the full bandwidth, then "Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission"

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7.3.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.4 Maximum Average Output Power

7.4.1 Limit (FCC PART 15 Section 15.407 (a)(1)(i), 15.407 (a)(3))

15.407 (a)(1)(i)

For outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain freater than 6 dBi are used, both the maximum conducte output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degreees as measured from the horizon must not exceed 125 mW (21 dBm)

Limit
Maximum Average Output Power (Digital Modulation) ≤ 1Watt or 30 dBm and Maximum e.i.r.p. above 30 degrees measured from the horizon ≤ 125 mW (21 dBm)

15.407 (a)(3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

Limit
Maximum Average Output Power (Digital Modulation) ≤ 1Watt or 30 dBm

7.4.2 Test Procedure

Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator and set the Spectrum Analyzer as below:

RBW = 1 MHz
VBW ≥ 3 MHz
Number of points in Sweep ≥ 2 Span/ RBW
Detector: RMS
Span: Encompass entire emission bandwidth

(1) Switch analyzer to channel power mode

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7.4.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.5 Maximum Average Power Spectral Density

7.5.1 Limit (FCC PART 15 Section 15.407(a)(1)(i), 15.407(a)(3)])

15.407(a)(1)(i):

For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Limit
17 dBm/1 MHz

15.407(a)(3):

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Limit
30 dBm/500 kHz

7.5.2 Test Procedure

Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator and set the Spectrum Analyzer as below:

(1) Follow procedure for measuring output power

(2) Do not switch to channel power mode, instead keep in regular spectrum analyzer mode

(3) Use marker to find peak

(4) Add correction of 10log(Specified Bandwidth/Actual Used Bandwidth), if the actual used bandwidth is lower than the specified bandwidth.

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7.5.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.6 Emissions in Non-Restricted Frequency Bands

7.6.1 Limit (FCC PART 15 Section 15.407(b)(1,4))

15.407(b)(1):

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

15.407(b)(4):

For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

Limit
-27 dBm/MHz outside 5.15-5.35 GHz for 5.15-5.25 GHz transmitter
AND
-27 dBm/MHz outside 5.725-5.85 GHz for 5.725-5.85 GHz transmitter
With limit of -17 dBm/MHz, 10 MHz below or above the bandedge

7.6.2 Test Procedure

Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator, set the Spectrum Analyzer as below:

RBW: 1 MHz
VBW: ≥ 3 MHz
Detector: Peak
Trace Mode: Max Hold

(1) Mark highest emissions

7.6.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.7 Bandedge

7.7.1 Limit (FCC PART 15 Section 15.407(b)(1,4))

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

Limit
-27 dBm/MHz outside 5.15-5.35 GHz for 5.15-5.25 GHz transmitter
AND
-27 dBm/MHz outside 5.725-5.85 GHz for 5.725-5.85 GHz transmitter
With limit of -17 dBm/MHz, 10 MHz below or above the bandedge

7.7.2 Test Procedure

Connect the antenna port of the EUT to the spectrum analyzer via an Attenuator, set the Spectrum Analyzer as below:

RBW: 1 MHz
VBW: ≥ 3 MHz
Detector: Peak
Trace Mode: Max Hold

(1) Mark highest emissions

7.7.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.8 Antenna Requirement

7.8.1 Requirement (FCC PART 15 SECTION 15.203)

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

7.8.2 Test Result

The antennas are secured using special connectors and furthermore, the unit is secured together using torx screws.

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8. CONCLUSIONS / COMPLIANCE STATEMENT

Based upon the results contained in this report, Electro Magnetic Test, Inc. has determined that the WIFI MODULE, Model: BLUEFIN 5G meets all of the specification limits defined in FCC Title 47, Part 15, Subpart C.

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APPENDIX A

RADIATED AND CONDUCTED DATA SHEETS

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

Radiated Emissions

EUT:	WIFI MODULE	Model Name:	BLUEFIN 5G
Test Mode:	-	Test Date:	10/5/15
Test Engineer:	George Hsu	Measurement:	9 KHz to 30 MHz

The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators were attenuated more than 20 dB below the permissible value

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Radiated Emissions

EUT:	WIFI MODULE	Model Name:	BLUEFIN 5G
Test Mode:	Channel 149, 802.11a, 5 MHz	Test Date:	10/7/15
Test Engineer:	George Hsu	Measurement:	30 MHz to 1 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
47.100000	39.8	100.0	V	257.0	9.8	0.20	40.00
47.580000	35.5	100.0	V	270.0	9.7	4.50	40.00
54.150000	38.0	114.0	V	9.0	8.4	2.00	40.00
66.300000	30.3	113.0	V	331.0	8.0	9.70	40.00
146.250000	42.7	197.0	H	193.0	9.1	0.80	43.50
375.000000	43.4	100.0	H	172.0	17.8	2.60	46.00
375.000000	47.4	119.0	V	190.0	17.8	-1.40	46.00
630.030000	43.5	250.0	V	60.0	23.8	2.50	46.00

Quasipeak Measurement:

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
47.100000	34.6	100.0	V	257.0	9.8	5.40	40.00
47.580000	30.4	100.0	V	270.0	9.7	9.60	40.00
54.150000	33.8	114.0	V	9.0	8.4	6.20	40.00
66.300000	25.9	113.0	V	331.0	8.0	14.10	40.00
146.250000	37.6	197.0	H	193.0	9.1	5.90	43.50
375.000000	41.9	100.0	H	172.0	17.8	4.10	46.00
375.000000	45.8	106.7	V	180.6	17.8	0.20	46.00
630.030000	31.6	250.0	V	60.0	23.8	14.40	46.00

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Radiated Emissions

EUT:	WIFI MODULE	Model Name:	BLUEFIN 5G
Test Mode:	Channel 149, 802.11a, 5 MHz	Test Date:	10/5/15
Test Engineer:	George Hsu	Measurement:	1 GHz to 18 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
9053.370000	54.6	381.0	V	2.0	15.1	19.40	74.00
11492.345000	67.1	221.0	V	289.0	19.3	6.90	74.00
11493.885000	59.0	182.0	H	304.0	19.3	15.00	74.00
16807.270000	59.2	362.0	V	276.0	27.7	14.80	74.00
17236.930000	72.5	178.0	V	144.0	28.7	1.50	74.00
17237.700000	67.2	265.0	H	54.0	28.7	6.80	74.00

Average Measurement:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
9053.370000	34.3	381.0	V	2.0	15.1	19.70	54.00
11492.345000	51.8	221.0	V	289.0	19.3	2.20	54.00
11493.885000	42.3	182.0	H	304.0	19.3	11.70	54.00
16807.270000	45.9	362.0	V	276.0	27.7	8.10	54.00
17236.930000	50.1	178.0	V	144.0	28.7	3.90	54.00
17237.700000	47.8	265.0	H	54.0	28.7	6.20	54.00

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Radiated Emissions

EUT:	WIFI MODULE	Model Name:	BLUEFIN 5G
Test Mode:	Channel 149, 802.11a, 10 MHz	Test Date:	10/5/15
Test Engineer:	George Hsu	Measurement:	1 GHz to 18 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
11489.650000	64.8	223.0	V	158.0	19.3	9.20	74.00
11490.420000	56.8	158.0	H	304.0	19.3	17.20	74.00
12298.535000	54.6	235.0	V	7.0	21.8	19.40	74.00
16374.915000	59.4	300.0	V	4.0	27.8	14.60	74.00
17234.235000	62.8	200.0	H	146.0	28.7	11.20	74.00
17236.545000	67.8	164.0	V	278.0	28.7	6.20	74.00

Average Measurement:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
11489.650000	50.7	223.0	V	158.0	19.3	3.30	54.00
11490.420000	42.8	158.0	H	304.0	19.3	11.20	54.00
12298.535000	40.9	235.0	V	7.0	21.8	13.10	54.00
16374.915000	46.0	300.0	V	4.0	27.8	8.00	54.00
17234.235000	47.1	200.0	H	146.0	28.7	6.90	54.00
17236.545000	48.1	164.0	V	278.0	28.7	5.90	54.00

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Radiated Emissions

EUT:	WIFI MODULE	Model Name:	BLUEFIN 5G
Test Mode:	Channel 48, 802.11a, 5 MHz	Test Date:	10/5/15
Test Engineer:	George Hsu	Measurement:	1 GHz to 18 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
10479.025000	55.6	100.0	H	130.0	17.3	18.40	54.00
10482.875000	68.2	209.0	V	172.0	17.3	5.80	54.00
15720.800000	63.0	182.0	H	255.0	26.1	11.00	54.00
15721.955000	68.4	154.0	V	256.0	26.1	5.60	54.00
17611.535000	61.1	370.0	H	189.0	29.4	12.90	54.00
17642.335000	61.2	324.0	H	114.0	29.5	12.80	54.00

Average Measurement:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
10479.025000	39.5	100.0	H	130.0	17.3	14.50	54.00
10482.875000	49.8	209.0	V	172.0	17.3	4.20	54.00
15720.800000	46.1	182.0	H	255.0	26.1	7.90	54.00
15721.955000	48.9	154.0	V	256.0	26.1	5.10	54.00
17611.535000	47.8	370.0	H	189.0	29.4	6.20	54.00
17642.335000	48.0	324.0	H	114.0	29.5	6.00	54.00

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Radiated Emissions

EUT:	WIFI MODULE	Model Name:	BLUEFIN 5G
Test Mode:	Channel 36, 802.11a, 10 MHz	Test Date:	10/5/15
Test Engineer:	George Hsu	Measurement:	1 GHz to 18 GHz

Peak Measurement:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
10357.365000	51.2	155.0	H	78.0	17.5	22.80	74.00
10362.370000	64.0	200.0	V	172.0	17.5	10.00	74.00
14856.860000	56.0	294.0	V	90.0	24.4	18.00	74.00
15534.075000	66.9	178.0	V	143.0	26.4	7.10	74.00
15543.700000	60.8	248.0	H	20.0	26.5	13.20	74.00
17256.565000	60.8	318.0	H	317.0	28.5	13.20	74.00

Average Measurement:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
10357.365000	37.5	155.0	H	78.0	17.5	16.50	54.00
10362.370000	48.3	200.0	V	172.0	17.5	5.70	54.00
14856.860000	43.0	294.0	V	90.0	24.4	11.00	54.00
15534.075000	48.1	178.0	V	143.0	26.4	5.90	54.00
15543.700000	45.5	248.0	H	20.0	26.5	8.50	54.00
17256.565000	46.8	318.0	H	317.0	28.5	7.20	54.00

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Radiated Emissions

EUT:	WIFI MODULE	Model Name:	BLUEFIN 5G
Test Mode:	-	Test Date:	10/5/15
Test Engineer:	George Hsu	Measurement:	18 GHz to 40 GHz

The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators were attenuated more than 20 dB below the permissible value

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

6dB Bandwidth Test Data (Conducted)

Company:	Tropos Networks, Inc.	**Test Date:**	9/17/15
EUT Name:	WIFI Module	**Test Engineer:**	George Hsu
Model:	BLUEFIN 5G	**Test Result:**	PASS
Operating Mode:	TX Mode		

Mode	Test CH	Frequency (MHz)	6 dB Bandwidth (KHz)	Limit (KHz)	Conclusion
802.11a, 5 MHz	149	5745	4.134	≥ 500	PASS
	157	5785	4.149	≥ 500	PASS
	165	5825	4.154	≥ 500	PASS
802.11a, 10 MHz	149	5745	8.225	≥ 500	PASS
	157	5785	8.229	≥ 500	PASS
	165	5825	8.213	≥ 500	PASS

Test Equipment: Please refer to section 5.2

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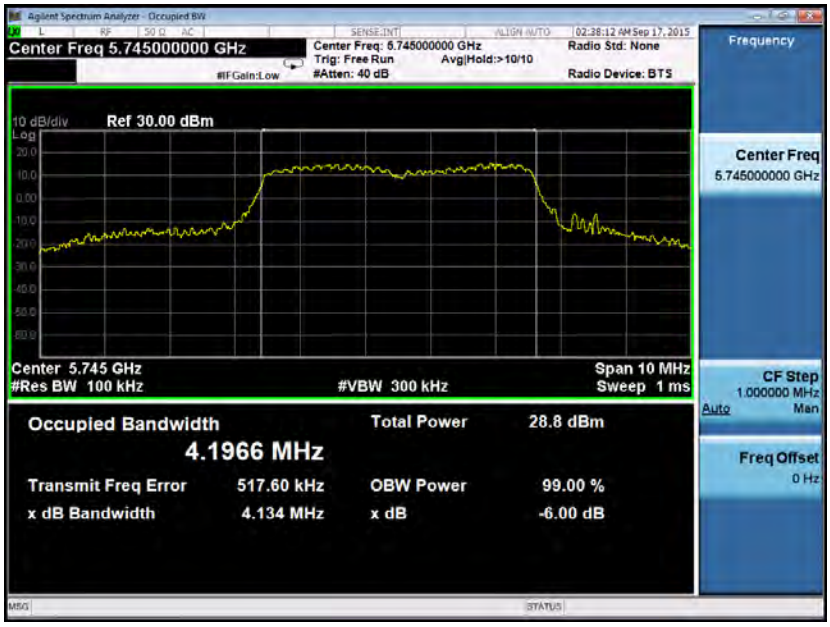
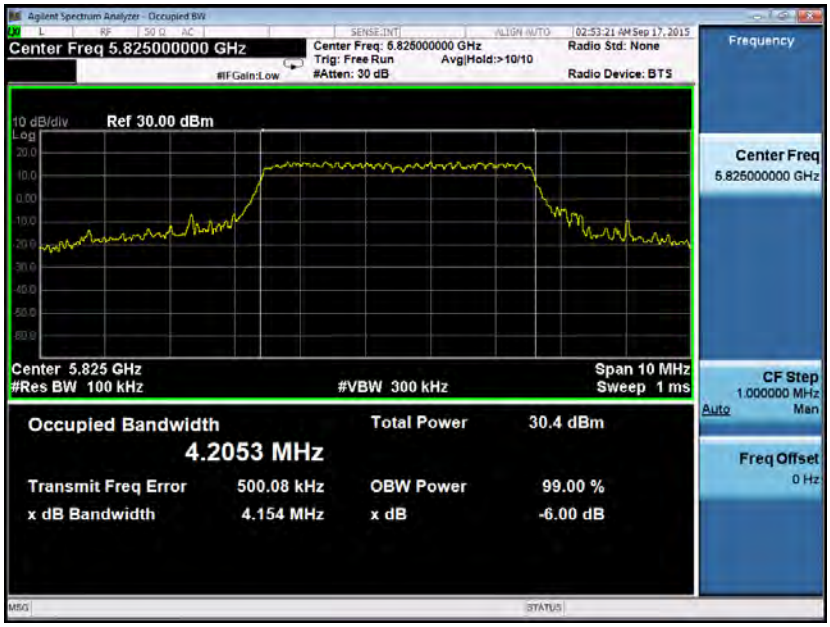
6dB Bandwidth Test (Conducted)



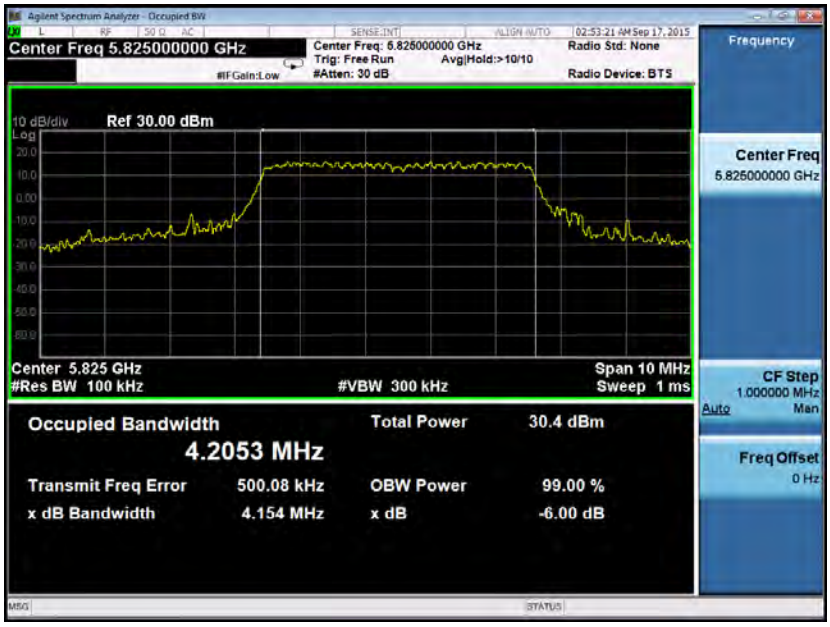
5 Mhz, 802.11a, Channel 149



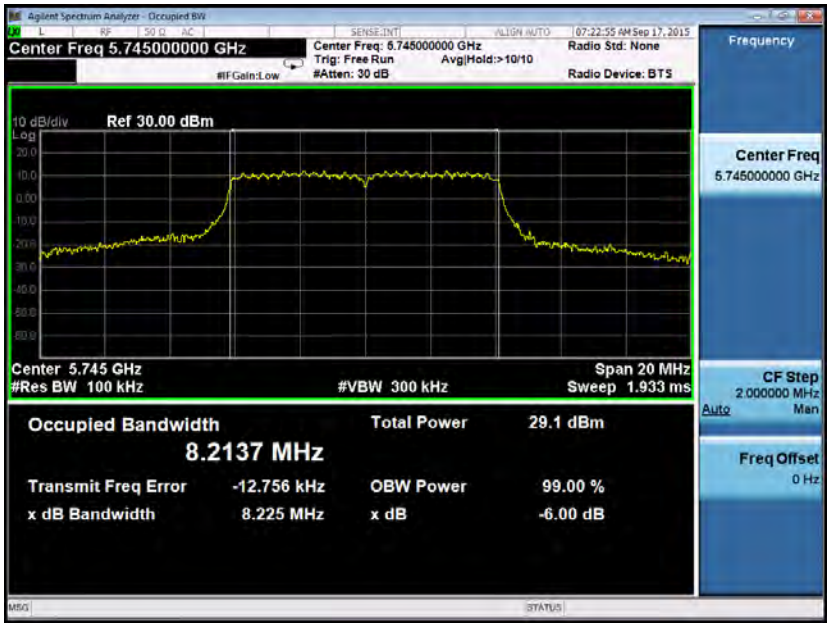
5 Mhz, 802.11a, Channel 157

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

6dB Bandwidth Test (Conducted)



5 Mhz, 802.11a, Channel 165



10 Mhz, 802.11a, Channel 149

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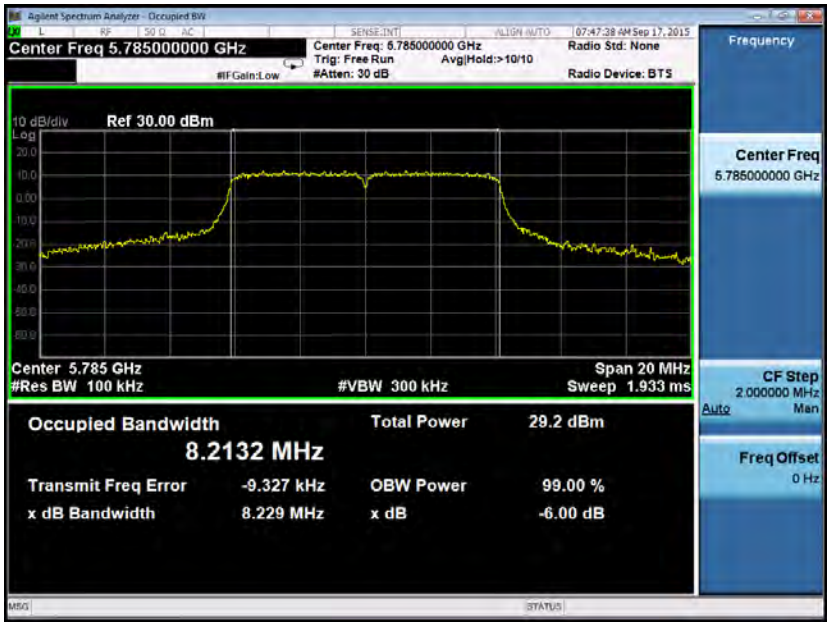
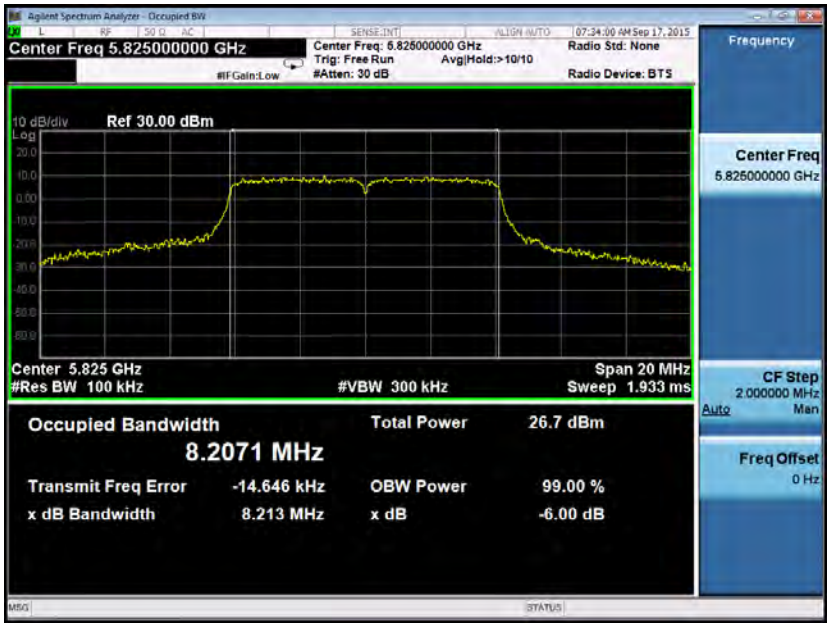
6dB Bandwidth Test (Conducted)



10 Mhz, 802.11a, Channel 157



10 Mhz, 802.11a, Channel 165

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

26dB Bandwidth Test Data (Conducted)

Company:	Tropos Networks, Inc.	**Test Date:**	9/17/15
EUT Name:	WIFI Module	**Test Engineer:**	George Hsu
Model:	BLUEFIN 5G	**Test Result:**	PASS
Operating Mode:	TX Mode		

Mode	Test CH	Frequency (MHz)	26 dB Bandwidth (KHz)
802.11a, 5 MHz	36	5180	5.292
	42	5210	5.324
	48	5240	6.245
802.11a, 10 MHz	36	5180	9.618
	42	5210	9.647
	48	5240	9.588

Test Equipment: Please refer to section 5.2

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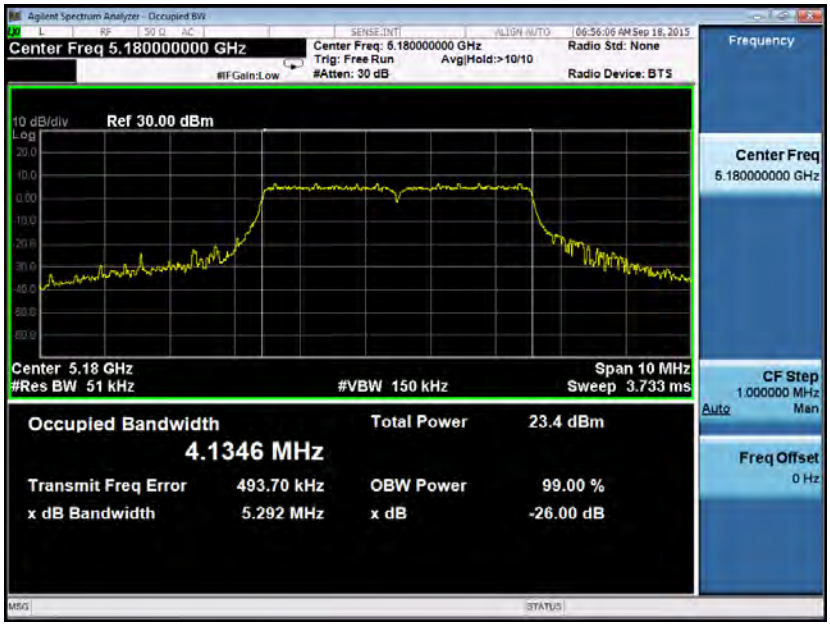
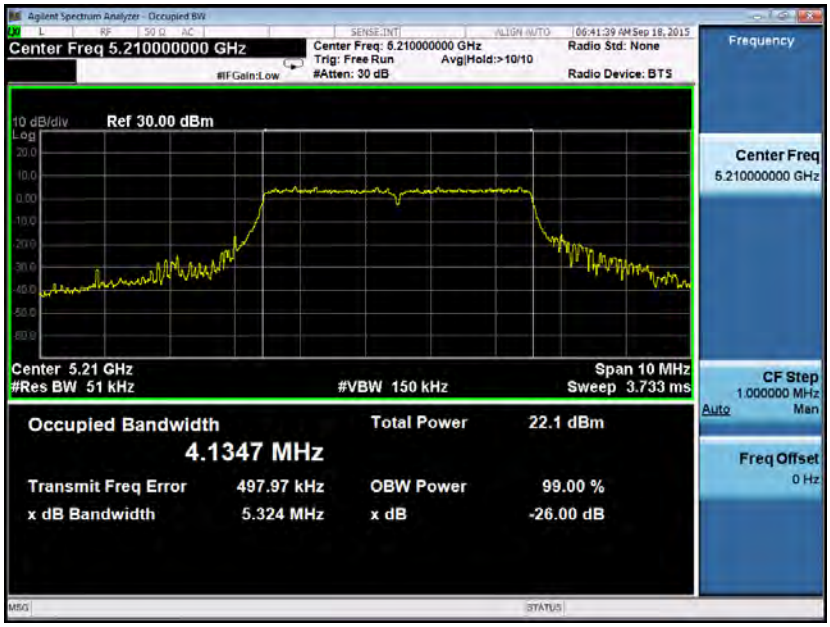
26dB Bandwidth Test (Conducted)



5 Mhz, 802.11a, Channel 36



5 Mhz, 802.11a, Channel 42

EMT ELECTRO MAGNETIC TEST, INC.
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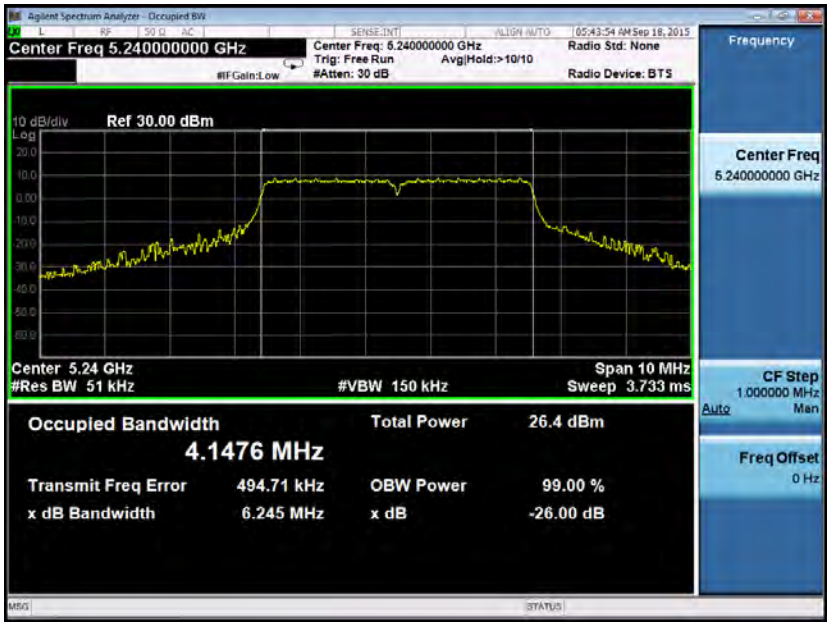
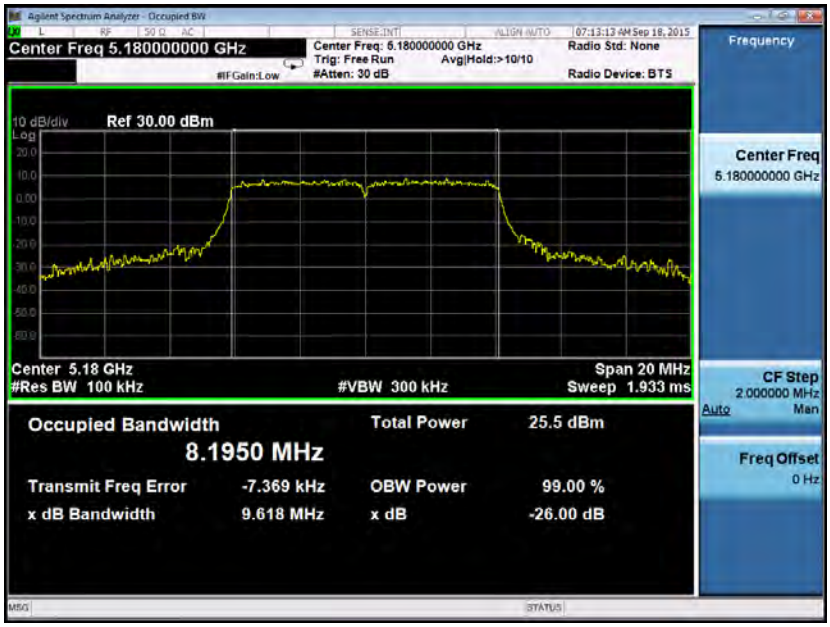
26dB Bandwidth Test (Conducted)



5 Mhz, 802.11b, Channel 48



10 Mhz, 802.11b, Channel 36

EMT ELECTRO MAGNETIC TEST, INC.
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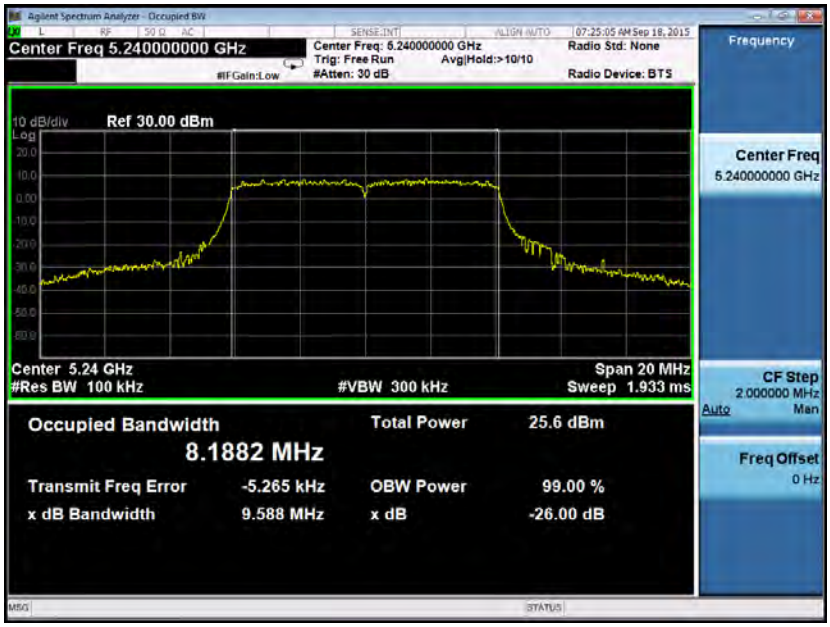
26dB Bandwidth Test (Conducted)

10 Mhz, 802.11b, Channel 42



10 Mhz, 802.11b, Channel 48

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

Maximum Average Output Power Test Data (Conducted)

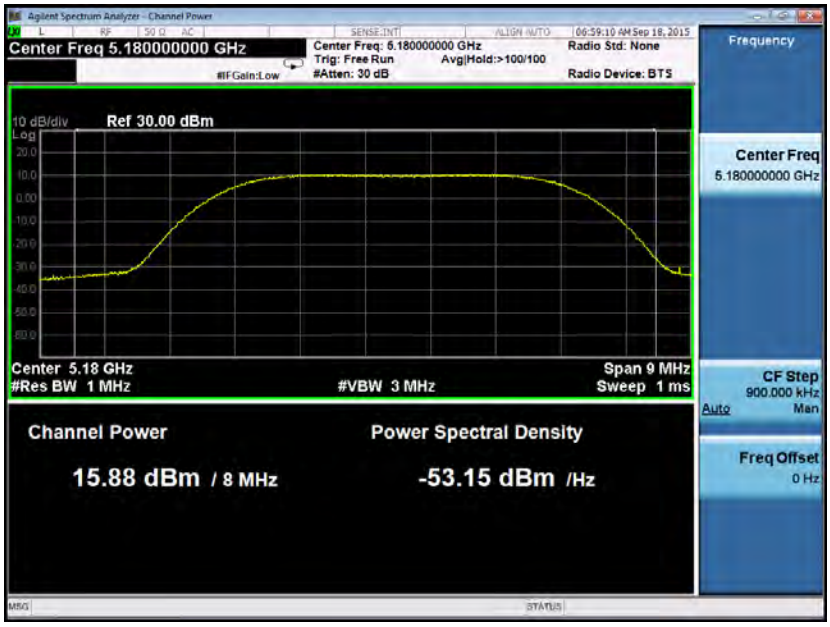
Company:	Tropos Networks, Inc.	**Test Date:**	9/18/15
EUT Name:	WIFI Module	**Test Engineer:**	George Hsu
Model:	Bluefin 5G	**Test Result:**	PASS
Operating Mode:	TX Mode		

Mode	Test CH	Frequency (MHz)	Chain 0 Average Output Power (dBm)	Chain 1 Average Output Power (dBm)	Total Average Output Power (dBm)	Limit (dBm)	Conclusion
802.11a, 5 MHz	36	5180	15.880	16.910	19.436	≤ 28	Pass
	42	5210	15.780	16.090	18.948	≤ 28	Pass
	48	5240	16.010	16.340	19.188	≤ 28	Pass
802.11a, 10 MHz	36	5180	19.040	19.560	22.318	≤ 28	Pass
	42	5210	18.780	19.050	21.927	≤ 28	Pass
	48	5240	19.200	19.090	22.156	≤ 28	Pass
802.11a, 5 MHz	149	5745	21.550	22.980	25.334	≤ 28	Pass
	157	5785	21.130	23.220	25.310	≤ 28	Pass
	165	5825	20.470	23.320	25.135	≤ 28	Pass
802.11a, 10 MHz	149	5745	20.740	22.660	24.816	≤ 28	Pass
	157	5785	21.060	22.750	24.997	≤ 28	Pass
	165	5825	20.260	22.930	24.807	≤ 28	Pass

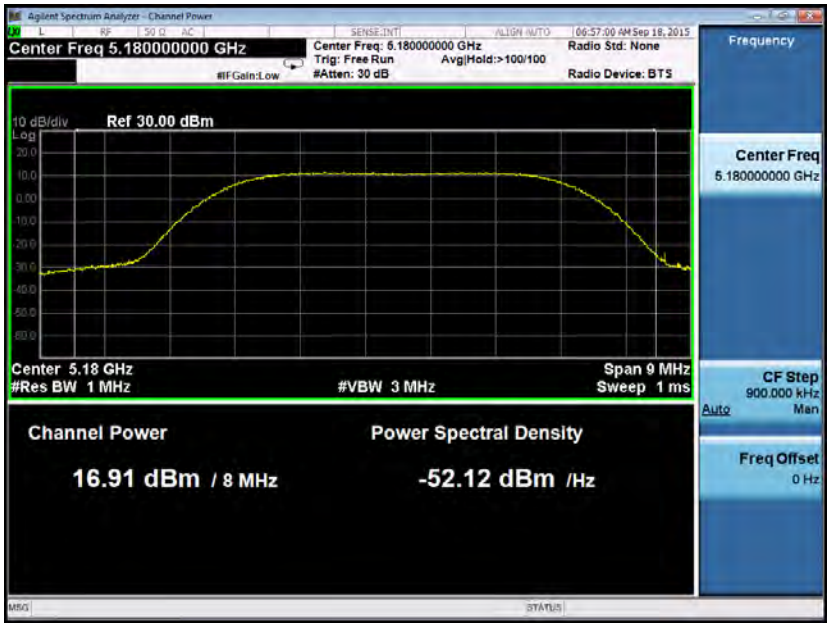
Test Equipment: Please refer to section 5.2

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

Maximum Average Output Power Test Data (Conducted)



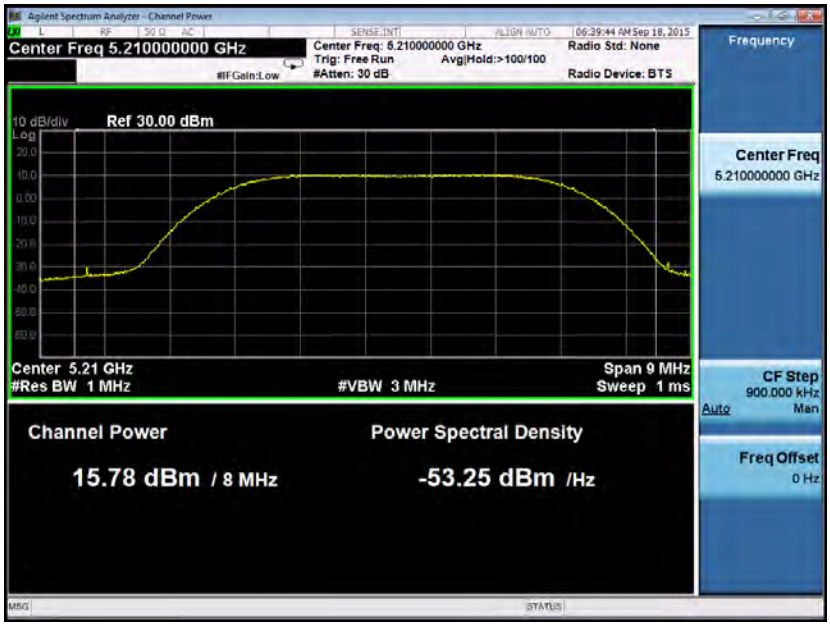
5 MHz, 802.11a, Channel 36, Chain 0



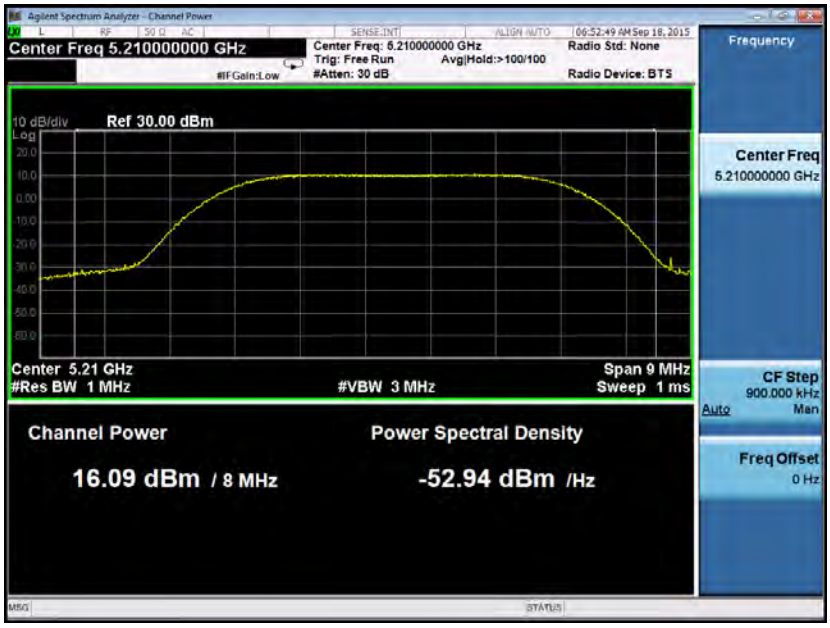
5 MHz, 802.11a, Channel 36, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



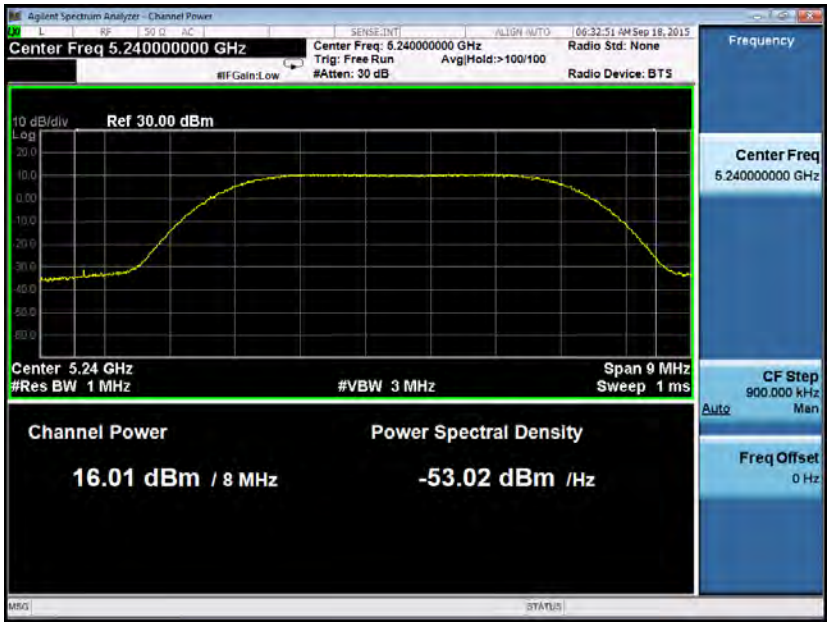
5 MHz, 802.11a, Channel 42, Chain 0



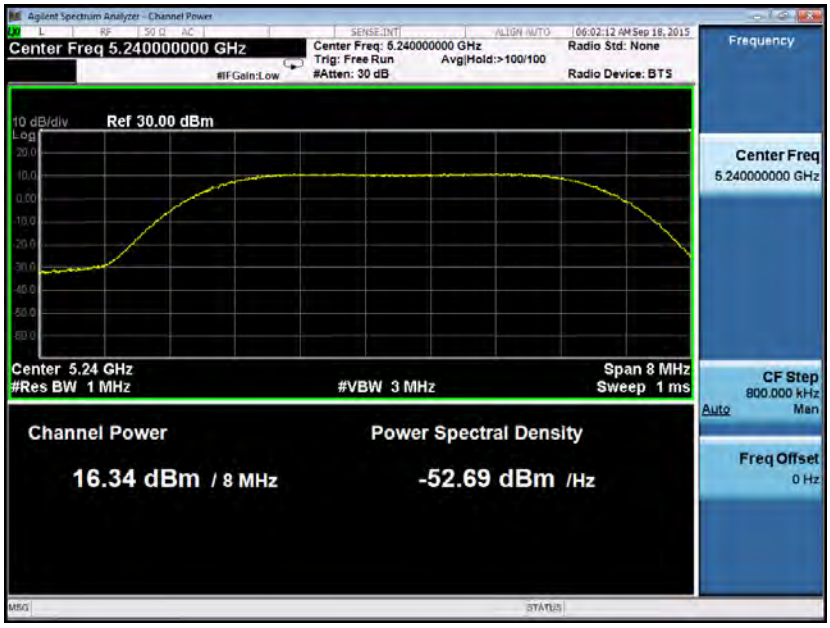
5 MHz, 802.11a, Channel 42, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



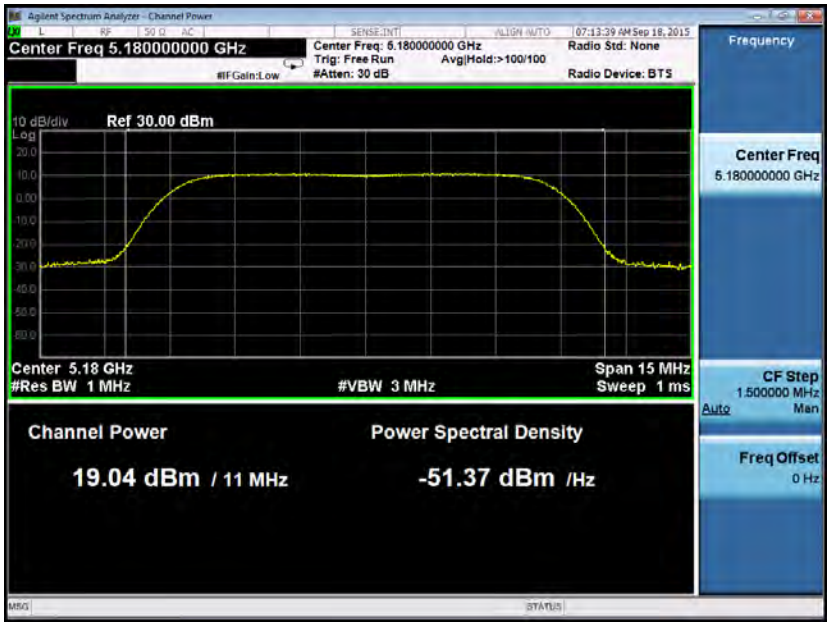
5 MHz, 802.11a, Channel 48, Chain 0



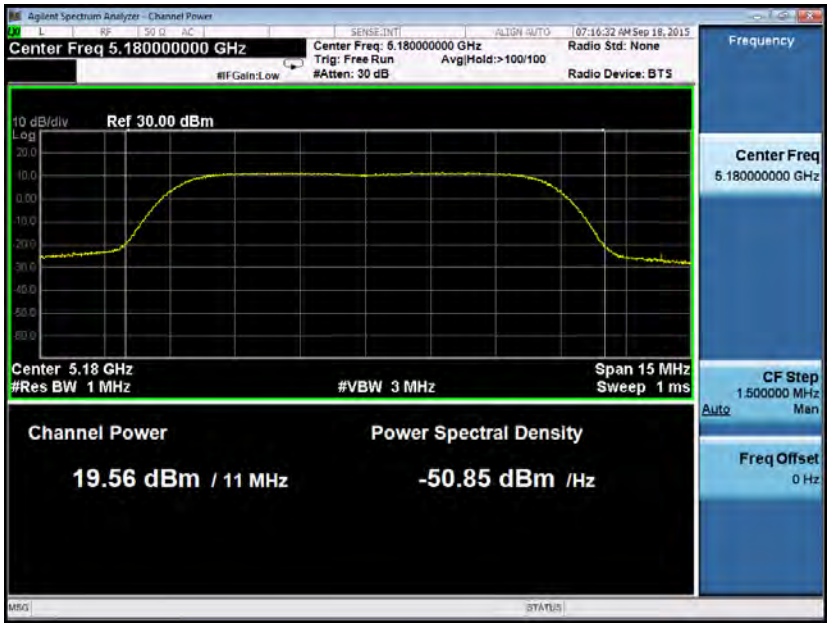
5 MHz, 802.11a, Channel 48, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



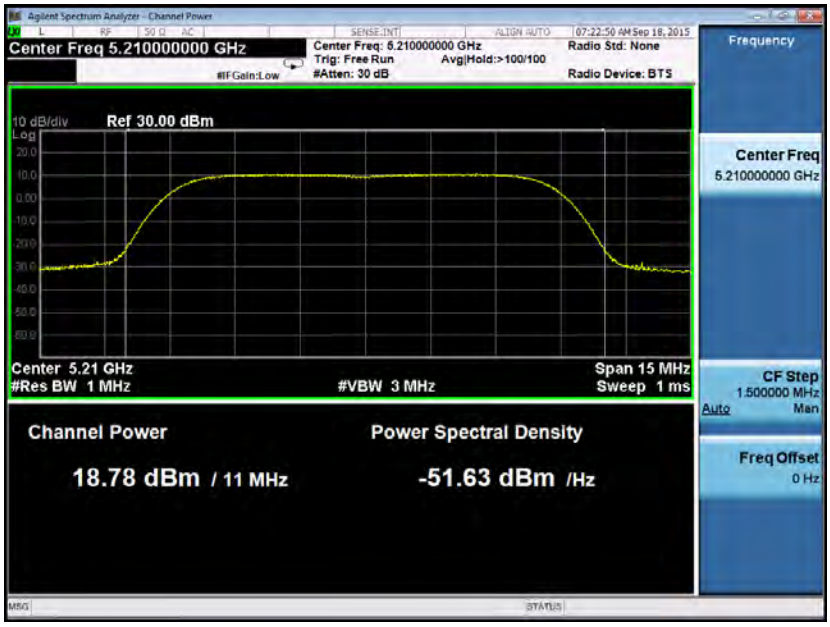
10 MHz, 802.11a, Channel 36, Chain 0



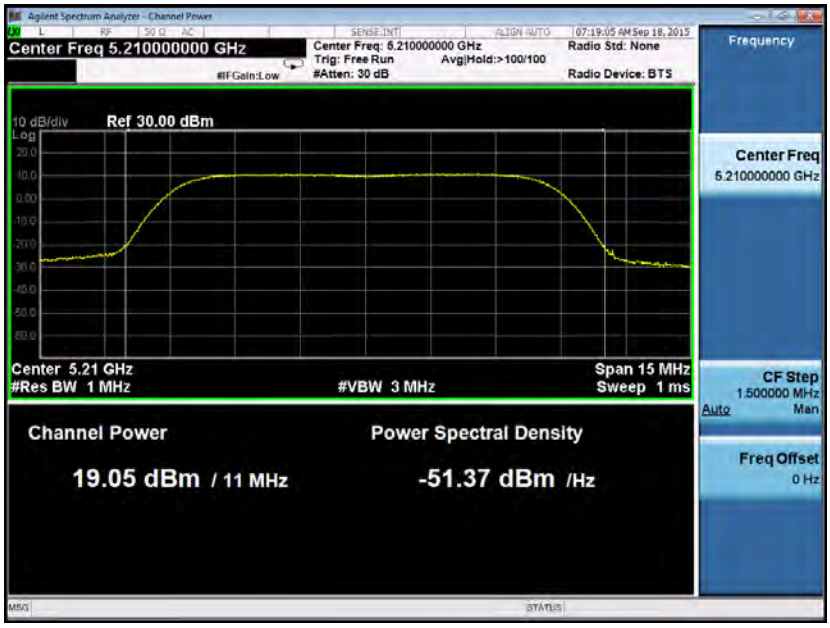
10 MHz, 802.11a, Channel 36, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



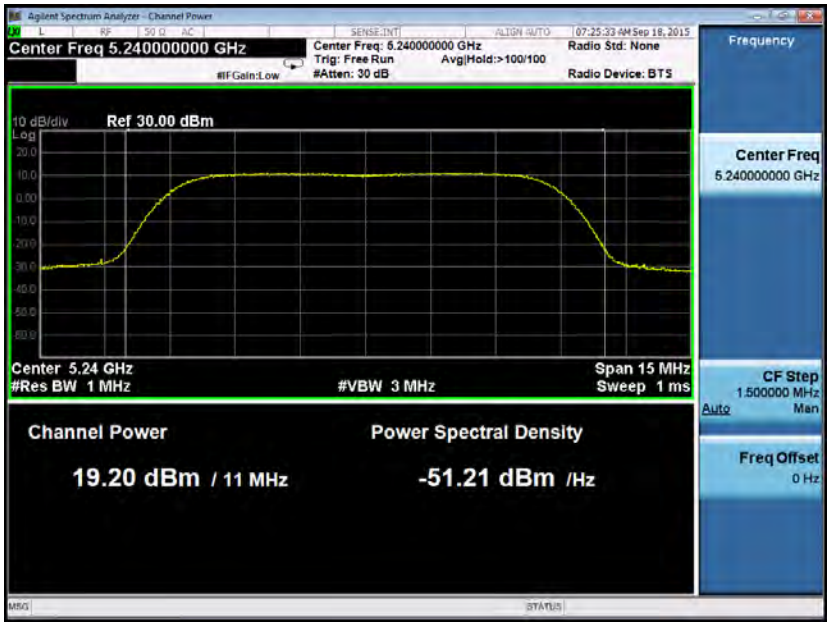
10 MHz, 802.11a, Channel 42, Chain 0



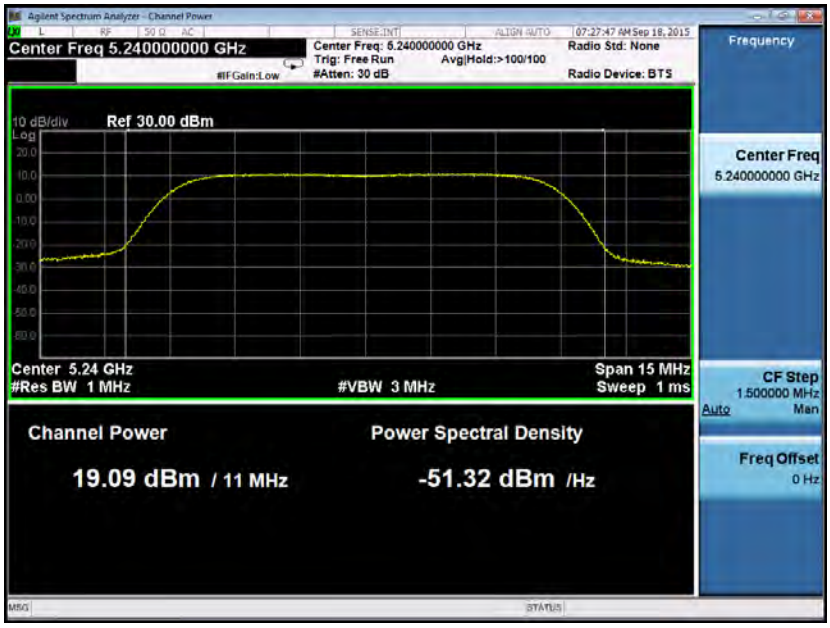
10 MHz, 802.11a, Channel 42, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



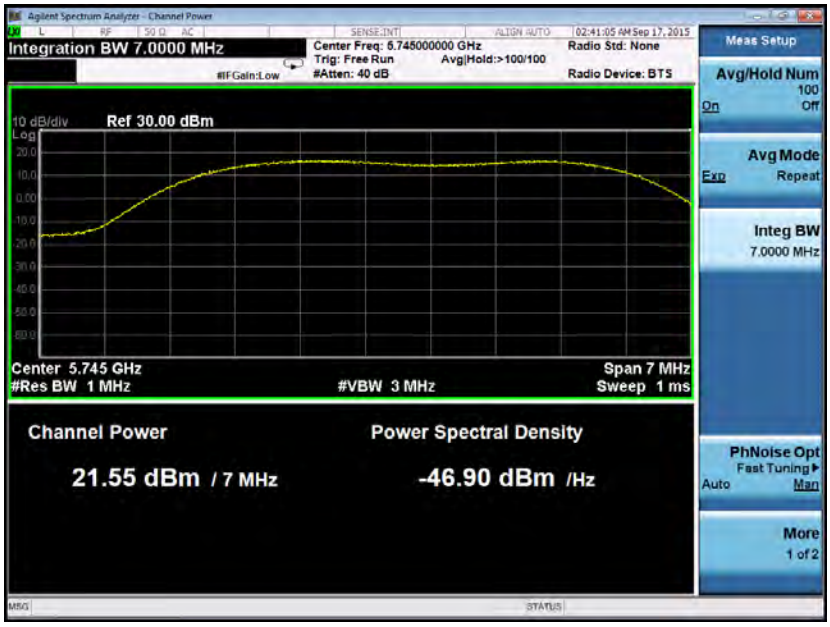
10 MHz, 802.11a, Channel 48, Chain 0



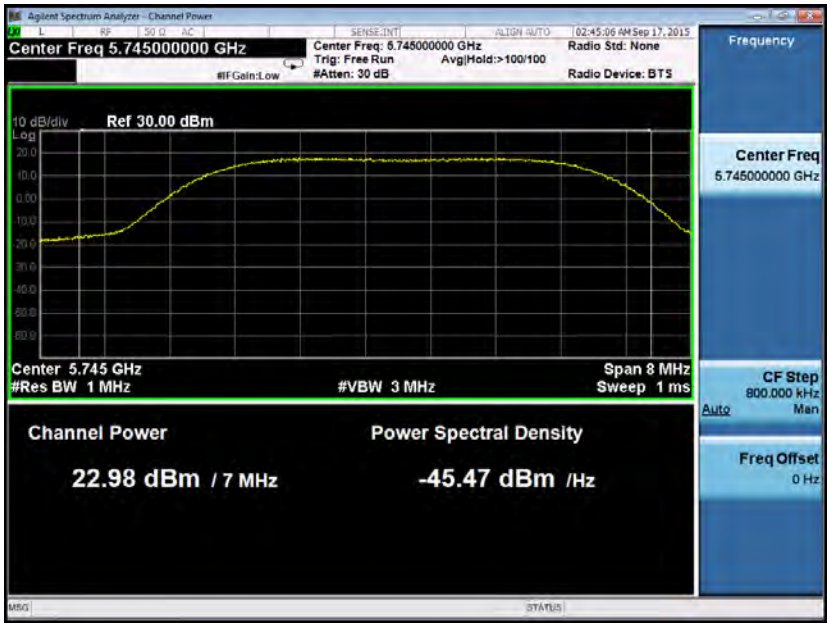
10 MHz, 802.11a, Channel 48, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



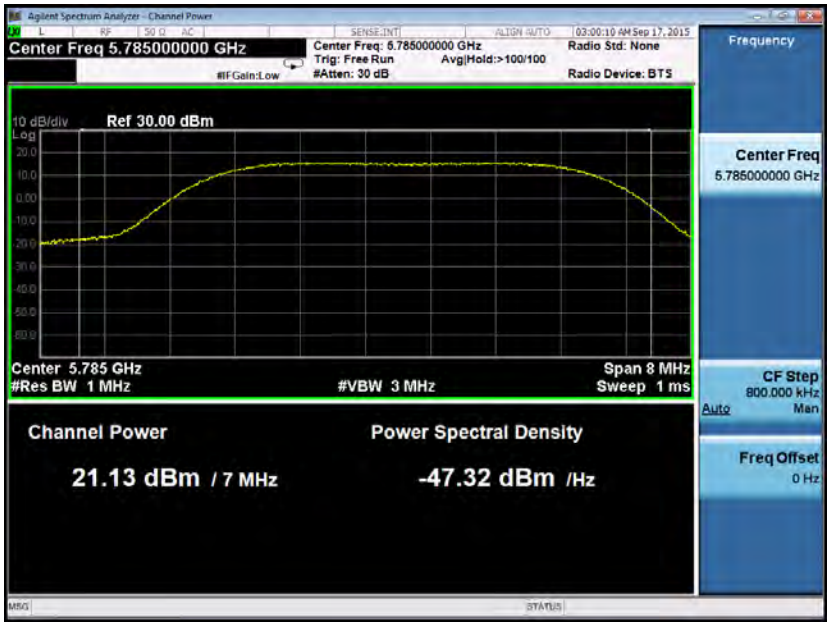
5 MHz, 802.11a, Channel 149, Chain 0



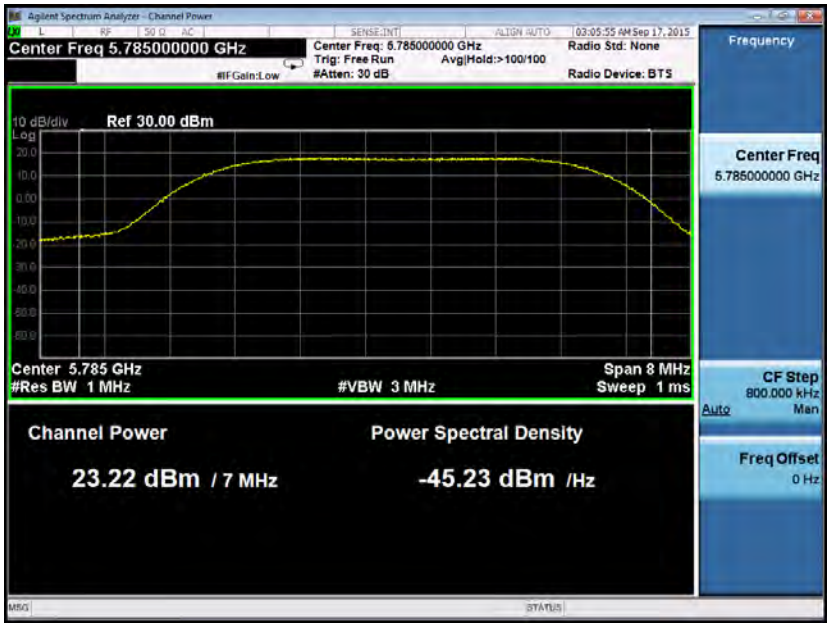
5 MHz, 802.11a, Channel 149, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



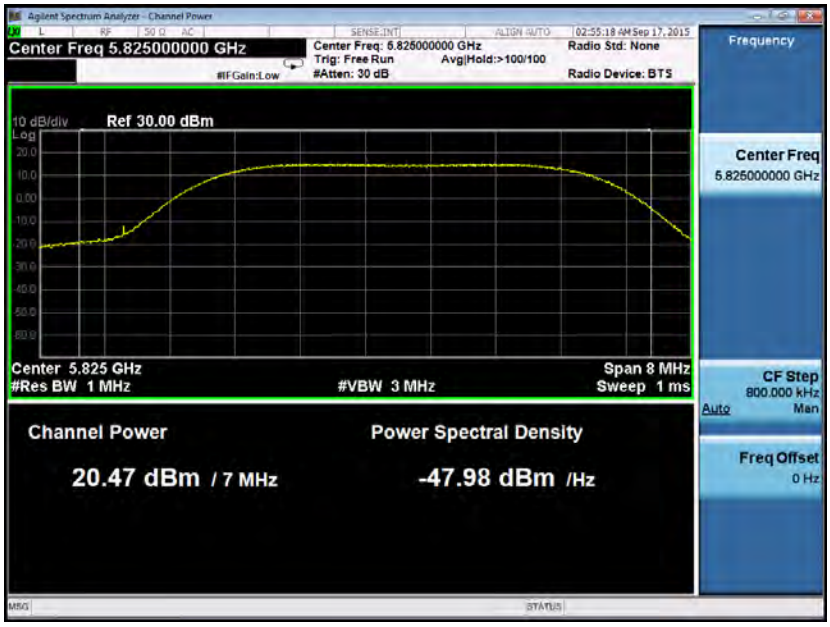
5 MHz, 802.11a, Channel 157, Chain 0



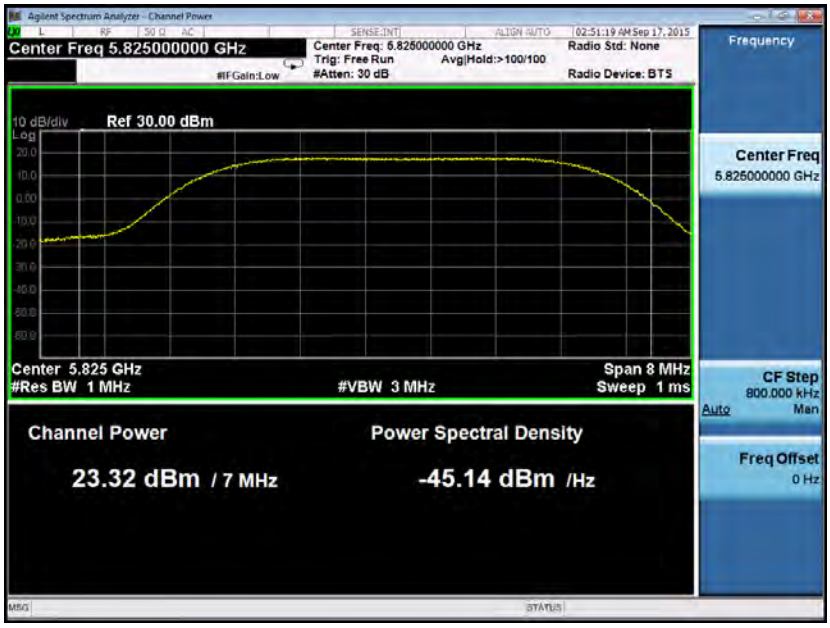
5 MHz, 802.11a, Channel 157, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



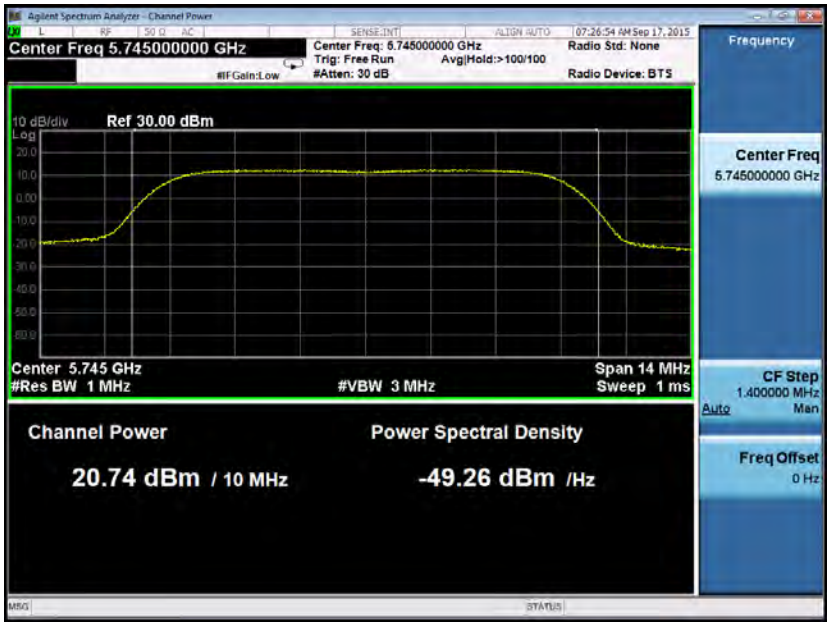
5 MHz, 802.11a, Channel 165, Chain 0



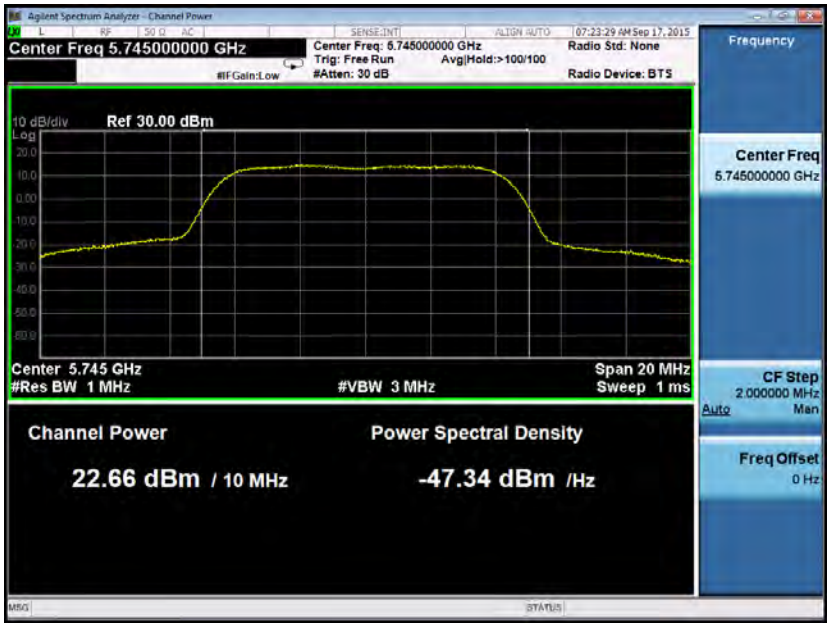
5 MHz, 802.11a, Channel 165, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



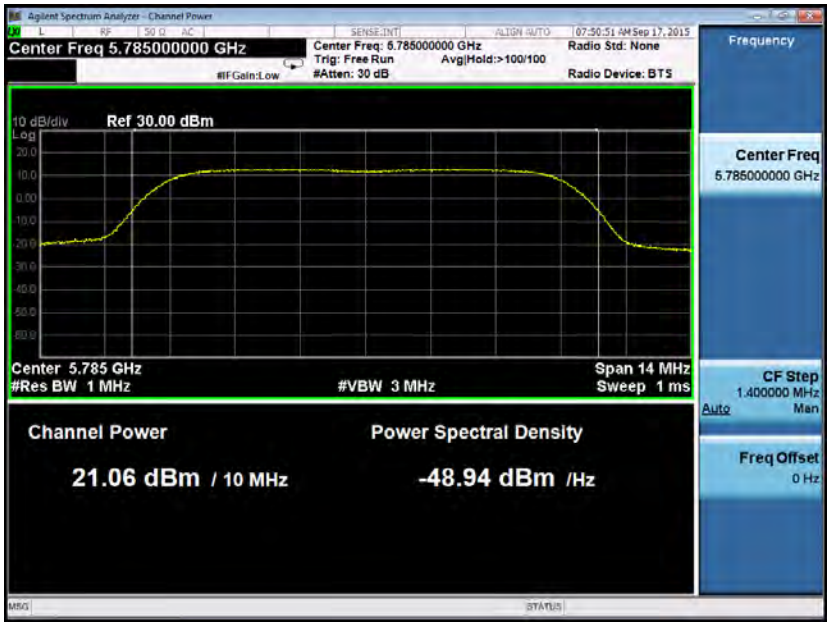
10 MHz, 802.11a, Channel 149, Chain 0



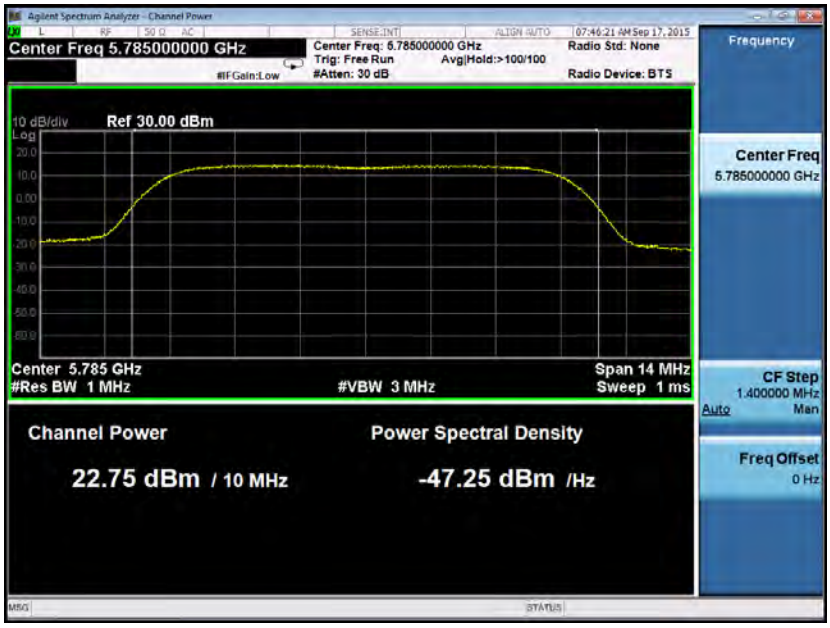
10 MHz, 802.11a, Channel 149, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



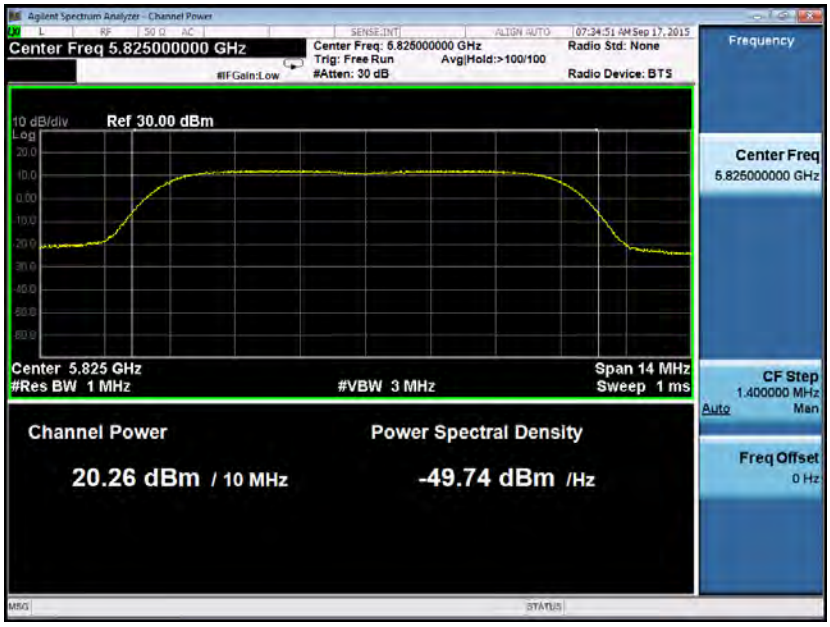
10 MHz, 802.11a, Channel 157, Chain 0



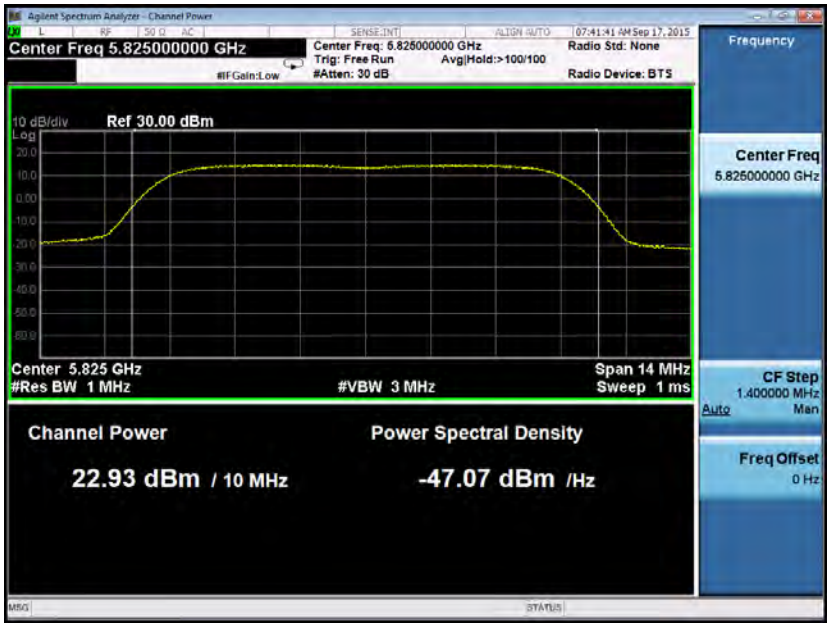
10 MHz, 802.11a, Channel 157, Chain 1

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

Maximum Average Output Power Test Data (Conducted)



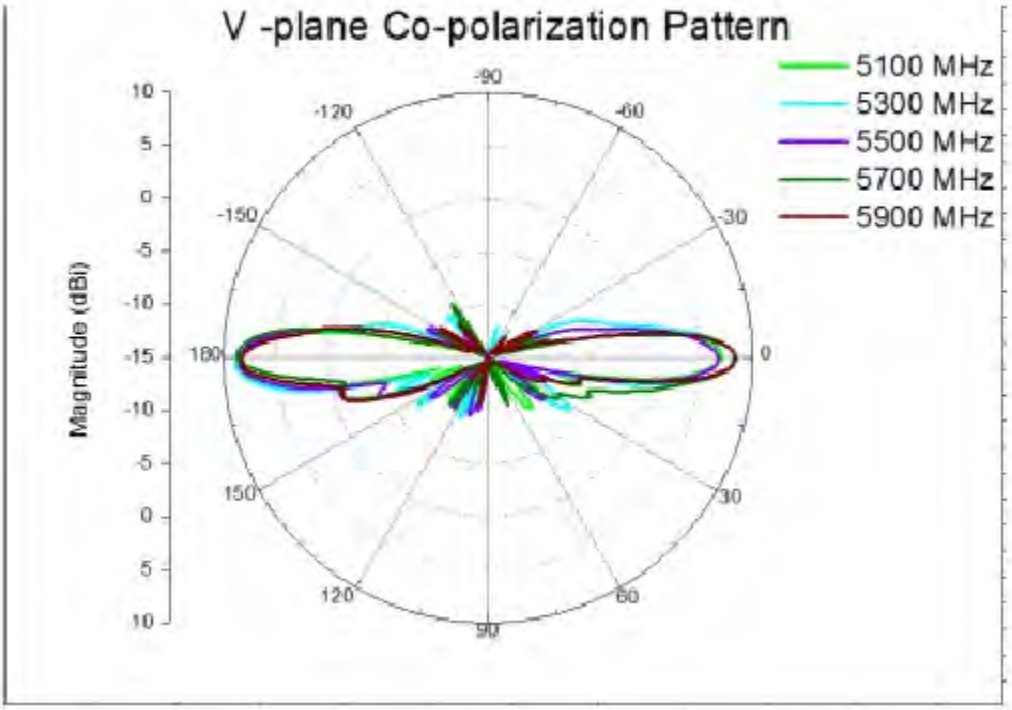
10 MHz, 802.11a, Channel 165, Chain 0



10 MHz, 802.11a, Channel 165, Chain 1

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

Maximum Average Output Power (Maximum EIRP 30 Degrees Above Horizon)



The maximum antenna gain 30 degrees above the horizon is -11.9101 dB and the maximum allowable conducted power is 28 dBm (after correction for antenna gain), therefore the maximum possible EIRP is 16.0899 dBm which is lower than the 21 dBm (125mW) limit.

Degree	Antenna Gain (dBi)		
	5.1 GHz	5.2 GHz	5.3 GHz
30	-18.2971	-16.0941	-13.9251
31	-18.4371	-18.4851	-15.4131
32	-19.3301	-21.6401	-17.3601
33	-20.2591	-23.5421	-16.0441
34	-23.0391	-20.5931	-15.4001
35	-24.6161	-18.8031	-15.0431
36	-26.2591	-17.2441	-14.3471
37	-24.0751	-15.9561	-13.7371
38	-22.4261	-15.1011	-13.5081
39	-20.4331	-15.3101	-13.3701
40	-20.7841	-16.1821	-13.5991

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

Maximum Average Output Power (Maximum EIRP 30 Degrees Above Horizon)

Degree	Antenna Gain (dBi)		
	5.1 GHz	5.2 GHz	5.3 GHz
41	-19.9801	-15.8231	-14.4721
42	-19.5151	-16.3321	-15.5831
43	-19.3891	-16.0991	-17.0931
44	-19.3441	-16.1951	-17.3691
45	-19.0081	-15.3741	-16.3671
46	-17.7281	-14.8281	-15.5221
47	-17.6011	-13.7391	-14.6761
48	-18.0251	-13.1761	-14.6501
49	-17.5281	-13.2141	-13.5831
50	-17.6321	-13.8391	-13.5601
51	-18.1281	-13.7911	-12.2601
52	-20.6211	-13.8741	-11.9101
53	-22.6731	-13.3991	-12.6831
54	-26.9161	-15.6411	-13.2091
55	-26.2471	-17.4301	-13.6491
56	-27.5531	-18.4511	-14.6621
57	-27.1191	-20.4781	-17.3571
58	-24.9991	-22.5301	-20.3941
59	-22.7911	-21.6681	-23.6461
60	-22.1481	-22.8951	-27.3031
61	-20.5451	-20.6751	-29.2291
62	-19.9621	-19.7051	-27.0681
63	-19.6581	-19.7711	-22.4921
64	-18.9291	-18.4191	-21.1841
65	-18.8251	-17.0791	-21.8081

EMT ELECTRO MAGNETIC TEST, INC.
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Maximum Average Output Power (Maximum EIRP 30 Degrees Above Horizon)

Degree	Antenna Gain (dBi)		
	5.1 GHz	5.2 GHz	5.3 GHz
66	-17.4101	-17.3141	-19.7971
67	-16.9331	-16.2791	-16.6011
68	-16.2611	-14.9721	-14.9581
69	-15.1851	-13.7071	-14.0161
70	-14.8501	-13.4251	-13.4101
71	-14.8841	-13.8001	-12.9801
72	-15.1181	-13.8591	-12.3511
73	-15.3391	-13.8801	-12.1091
74	-13.3901	-15.3661	-13.3731
75	-16.5591	-17.8771	-14.5241
76	-17.7091	-18.7701	-15.7241
77	-19.1021	-19.0081	-17.7261
78	-19.9631	-20.9621	-19.0631
79	-19.3551	-23.3071	-19.9871
80	-19.4311	-22.9511	-18.0421
81	-19.2491	-22.0051	-17.7181
82	-19.1221	-21.7111	-19.3911
83	-19.0451	-22.1701	-17.9991
84	-20.5051	-23.2201	-18.0251
85	-22.7871	-25.3551	-18.1231
86	-25.3291	-29.6001	-20.9331
87	-28.5161	-37.7351	-22.4861
88	-29.3401	-35.9181	-23.9841
89	-27.2891	-36.5101	-24.9901
90	-30.2901	-35.4251	-26.3951

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

Maximum Average Power Spectral Density

Company:	Tropos Networks, Inc.	**Test Date:**	9/18/15
EUT Name:	WIFI Module	**Test Engineer:**	George Hsu
Model:	Bluefin 5G	**Test Result:**	PASS
Operating Mode:	TX Mode		

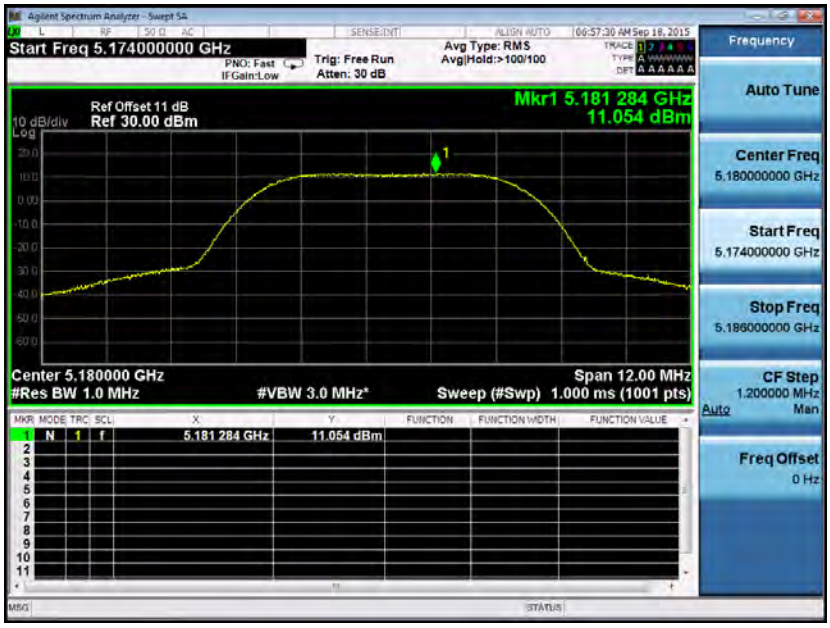
Mode	Test CH	Frequency (MHz)	Chain 0 Average PSD (dBm)	Chain 1 Average PSD (dBm)	Total Average PSD (dBm)	Limit (dBm)	Conclusion
802.11a, 5 MHz	36	5180	9.926	10.700	13.341	≤ 15 /MHz	Pass
	42	5210	10.057	10.366	13.225	≤ 15 /MHz	Pass
	48	5240	10.570	11.054	13.829	≤ 15 /MHz	Pass
802.11a, 10 MHz	36	5180	10.814	11.273	14.060	≤ 15 /MHz	Pass
	42	5210	10.736	10.728	13.742	≤ 15 /MHz	Pass
	48	5240	10.707	10.278	13.508	≤ 15 /MHz	Pass
802.11a, 5 MHz	149	5745	12.455	14.458	16.581	≤ 28 /500 KHz	Pass
	157	5785	12.719	14.177	16.519	≤ 28 /500 KHz	Pass
	165	5825	12.065	14.391	16.392	≤ 28 /500 KHz	Pass
802.11a, 10 MHz	149	5745	9.590	11.495	13.656	≤ 28 /500 KHz	Pass
	157	5785	9.093	11.284	13.440	≤ 28 /500 KHz	Pass
	165	5825	9.245	11.508	14.151	≤ 28 /500 KHz	Pass

Test Equipment: Please refer to section 5.2

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

Maximum Average Power Spectral Density Test Data (Conducted)

5 MHz, 802.11a, Channel 36, Chain 0



5 MHz, 802.11a, Channel 36, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)

5 MHz, 802.11a, Channel 42, Chain 0

5 MHz, 802.11a, Channel 42, Chain 1

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

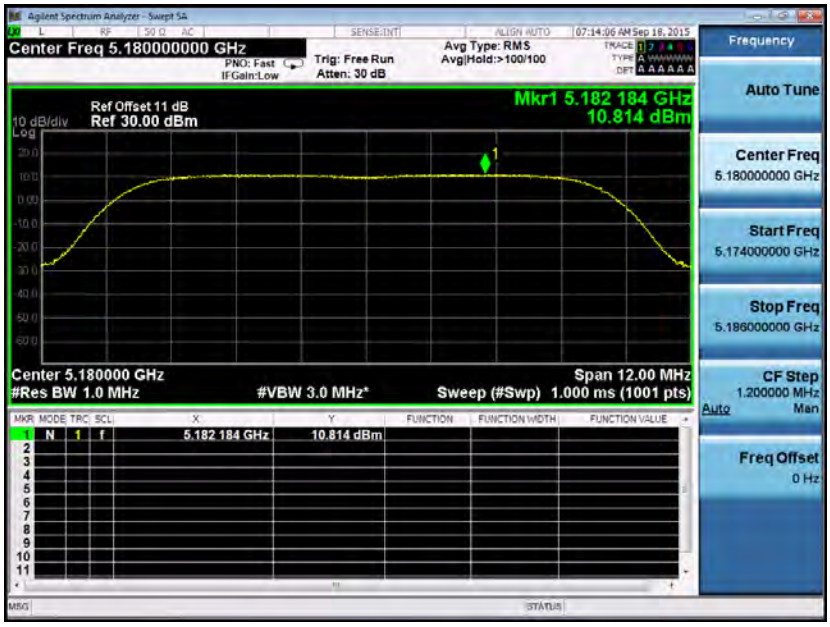
Maximum Average Power Spectral Density Test Data (Conducted)

5 MHz, 802.11a, Channel 48, Chain 0

5 MHz, 802.11a, Channel 48, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)

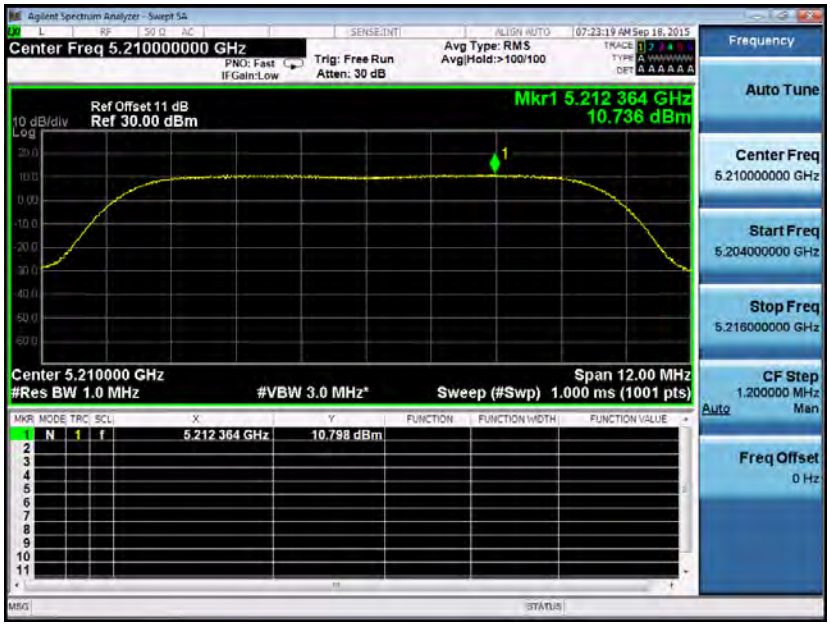


10 MHz, 802.11a, Channel 36, Chain 0

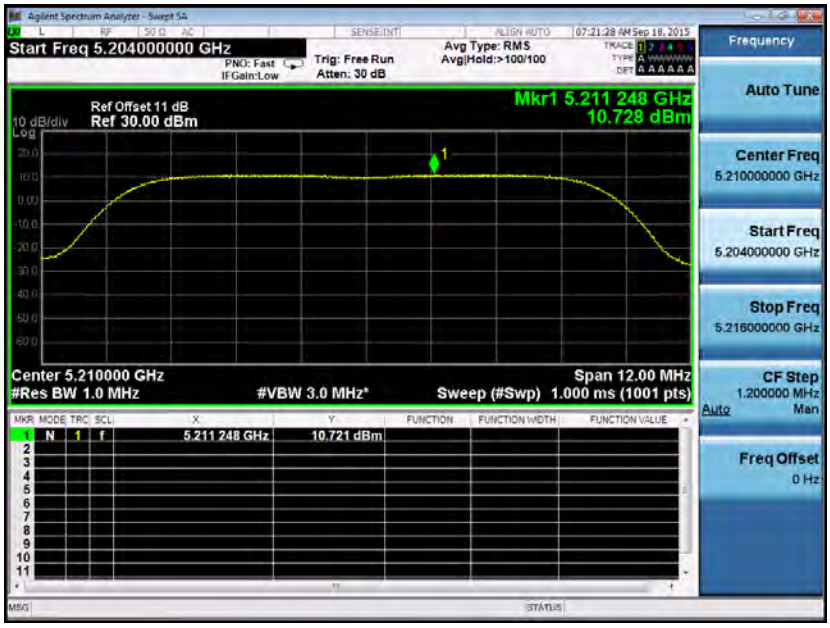
10 MHz, 802.11a, Channel 36, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)



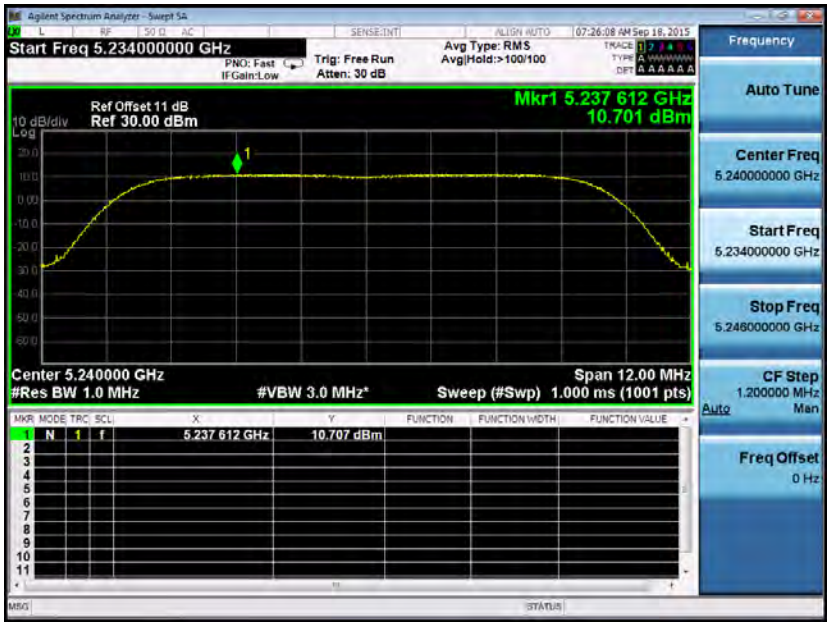
10 MHz, 802.11a, Channel 42, Chain 0



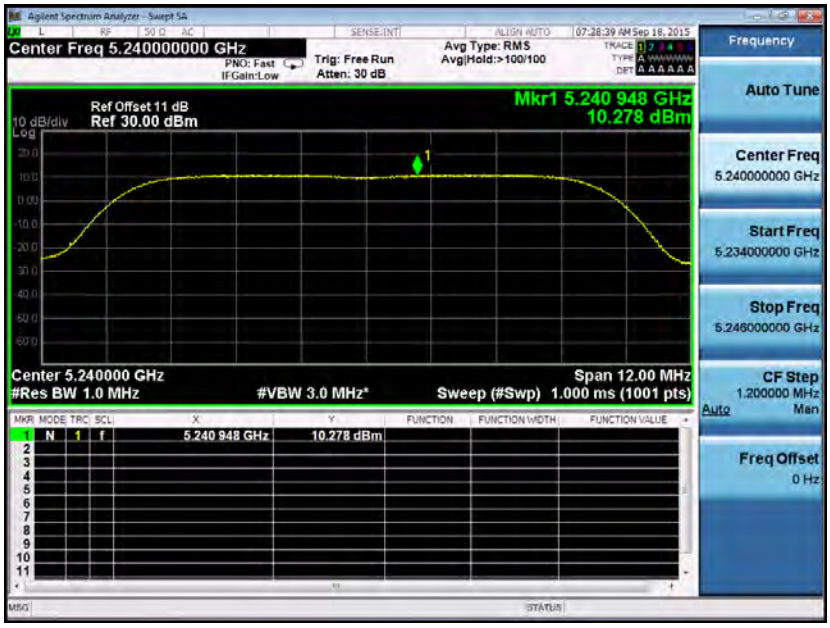
10 MHz, 802.11a, Channel 42, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)



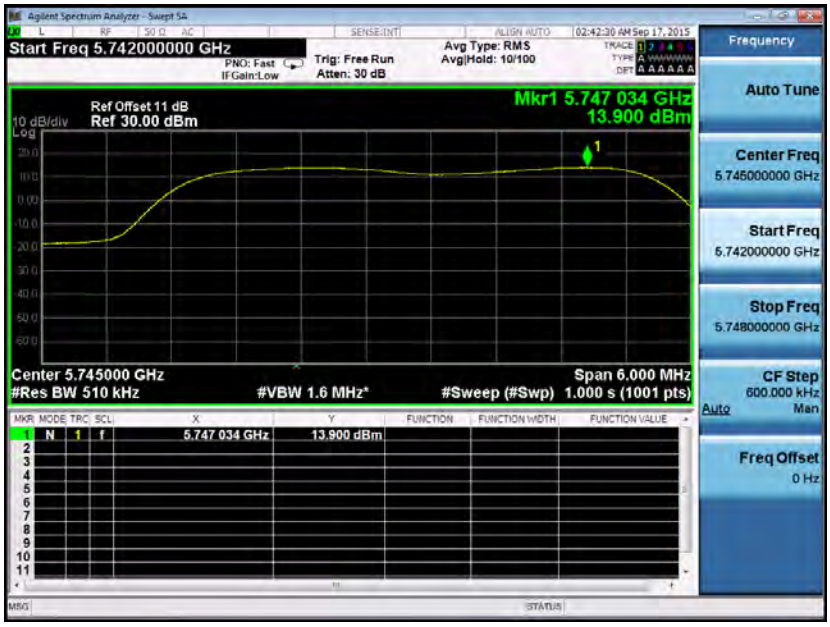
10 MHz, 802.11a, Channel 48, Chain 0



10 MHz, 802.11a, Channel 48, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)



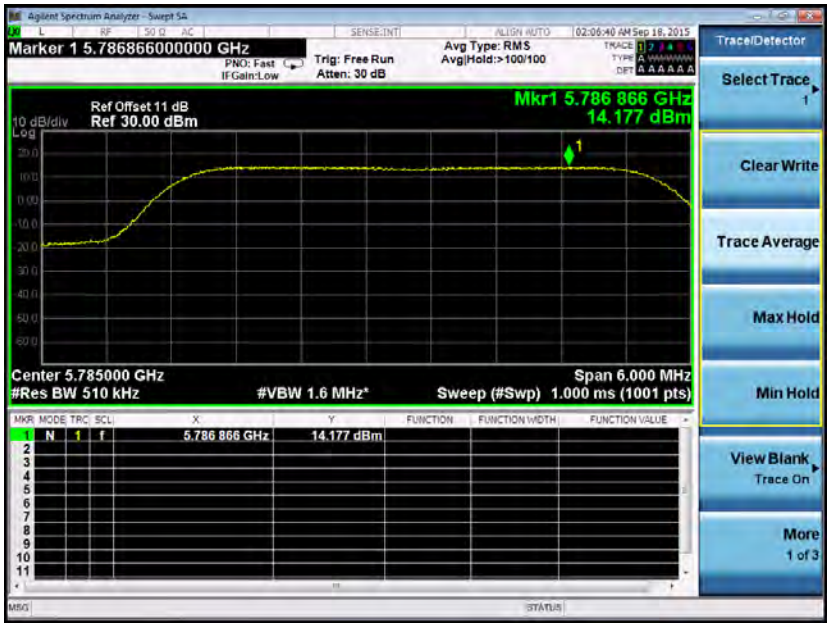
5 MHz, 802.11a, Channel 149, Chain 0

5 MHz, 802.11a, Channel 149, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)

5 MHz, 802.11a, Channel 157, Chain 0

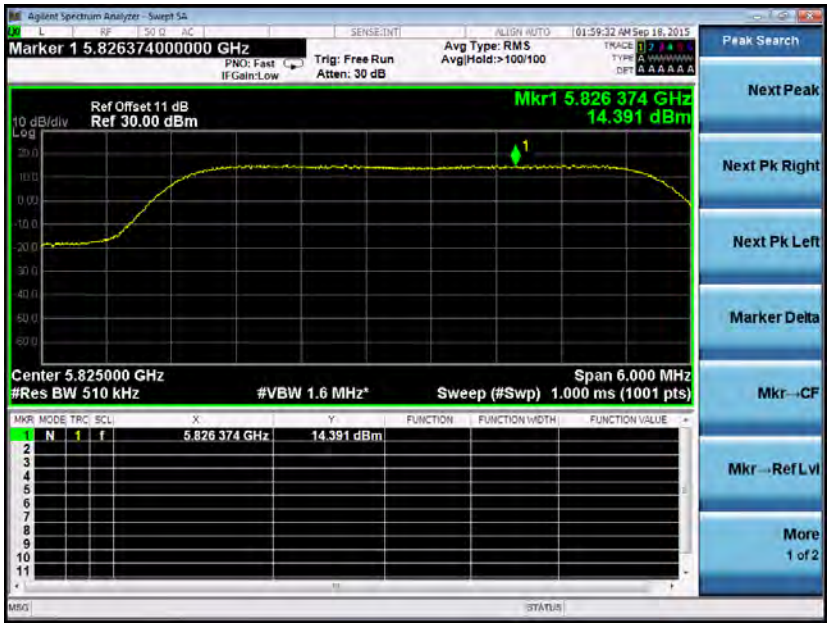


5 MHz, 802.11a, Channel 157, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)

5 MHz, 802.11a, Channel 165, Chain 0



5 MHz, 802.11a, Channel 165, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)

10 MHz, 802.11a, Channel 149, Chain 0

10 MHz, 802.11a, Channel 149, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)

10 MHz, 802.11a, Channel 157, Chain 0

10 MHz, 802.11a, Channel 157, Chain 1

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

Maximum Average Power Spectral Density Test Data (Conducted)

10 MHz, 802.11a, Channel 165, Chain 0

10 MHz, 802.11a, Channel 165, Chain 1

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

Emissions in Non-Restricted Frequency Bands (Conducted)

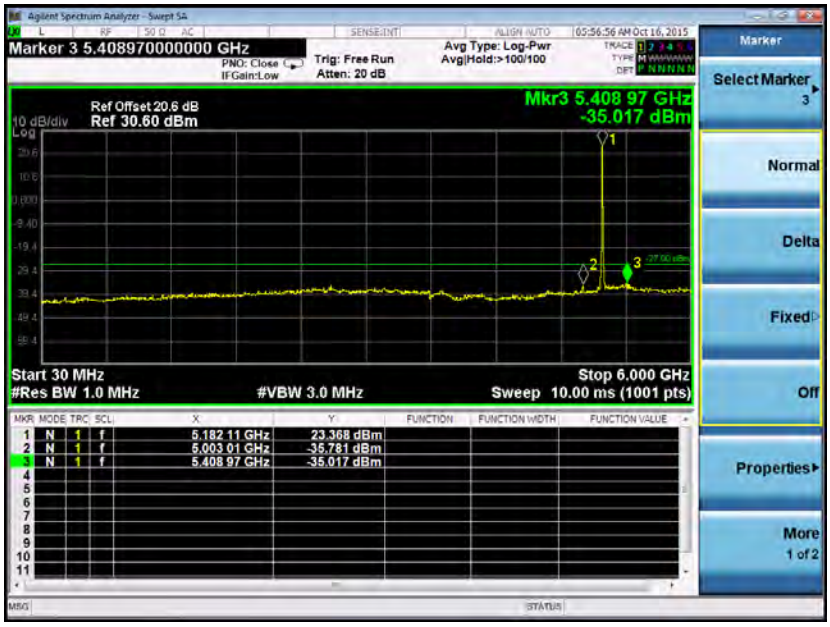
Company:	Tropos Networks, Inc.	**Test Date:**	9/15/15
EUT Name:	WIFI Module	**Test Engineer:**	George Hsu
Model:	Bluefin 5G	**Test Result:**	PASS
Operating Mode:	TX Mode		

Mode	Test CH	Frequency (MHz)	Chain 0 Highest Emission (dBm)	Chain 1 Highest Emission (dBm)	Total Emission (dBm)	Limit (dBm)	Conclusion
802.11b, 5 MHz	36	See Below				≤ -27.00	Pass
	42					≤ -27.00	Pass
	48					≤ -27.00	Pass
802.11b, 10 MHz	36					≤ -27.00	Pass
	42					≤ -27.00	Pass
	48					≤ -27.00	Pass
802.11g, 5 MHz	149					≤ -27.00	Pass
	157					≤ -27.00	Pass
	165					≤ -27.00	Pass
802.11g, 10 MHz	149					≤ -27.00	Pass
	157					≤ -27.00	Pass
	165					≤ -27.00	Pass

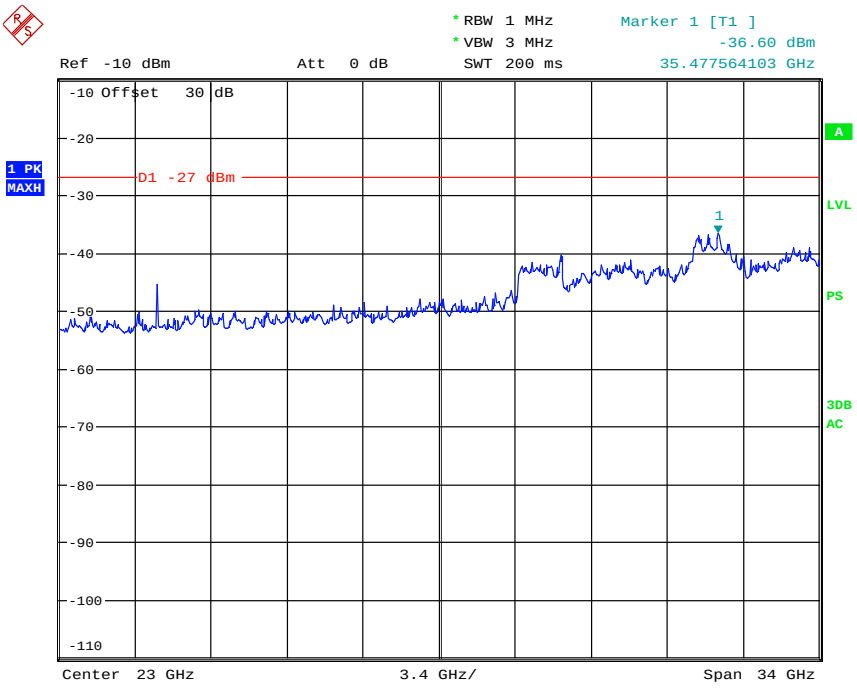
Test Equipment: Please refer to section 5.2

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

Emissions in Non-Restricted Frequency Bands (Conducted)



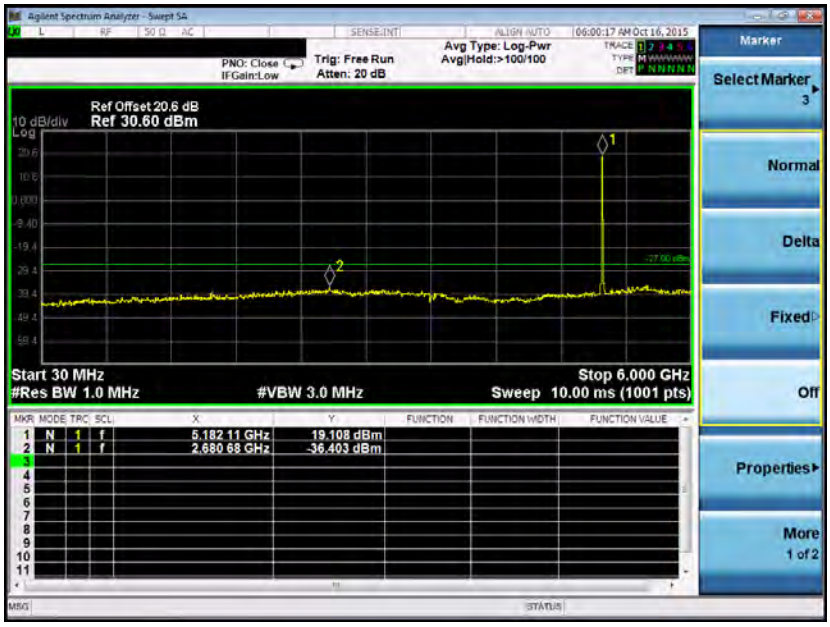
30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 36, Chain 0



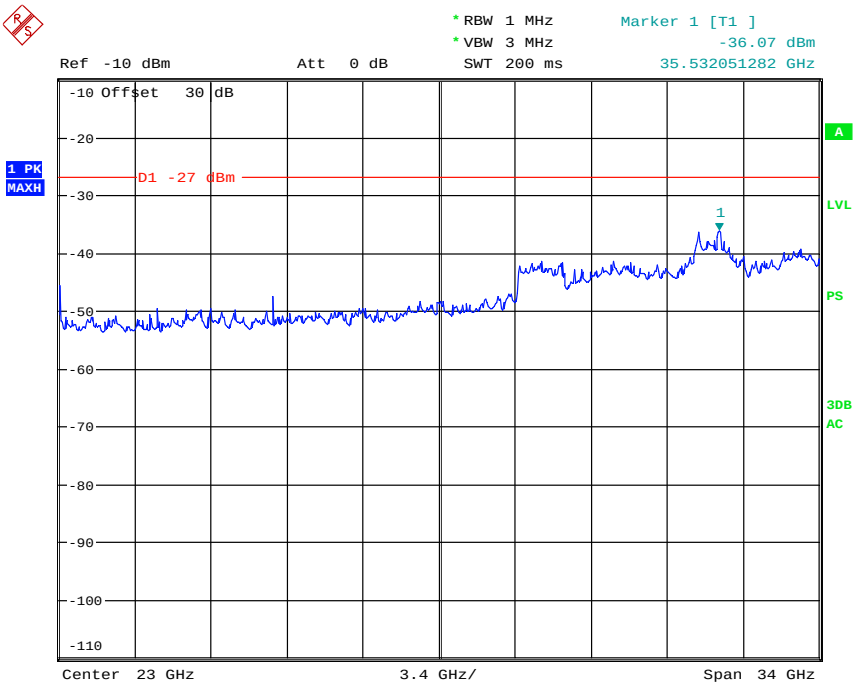
6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 36, Chain 0

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

Emissions in Non-Restricted Frequency Bands (Conducted)



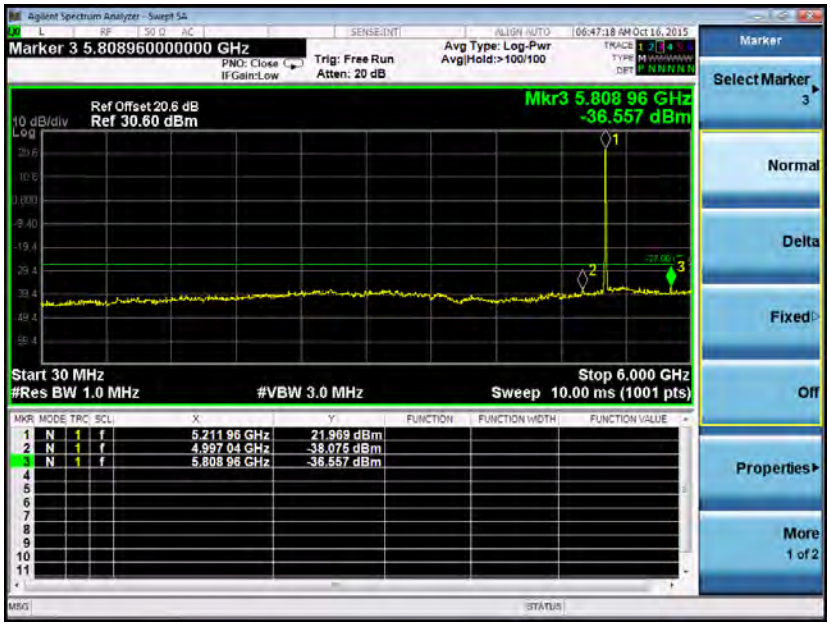
30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 36, Chain 1



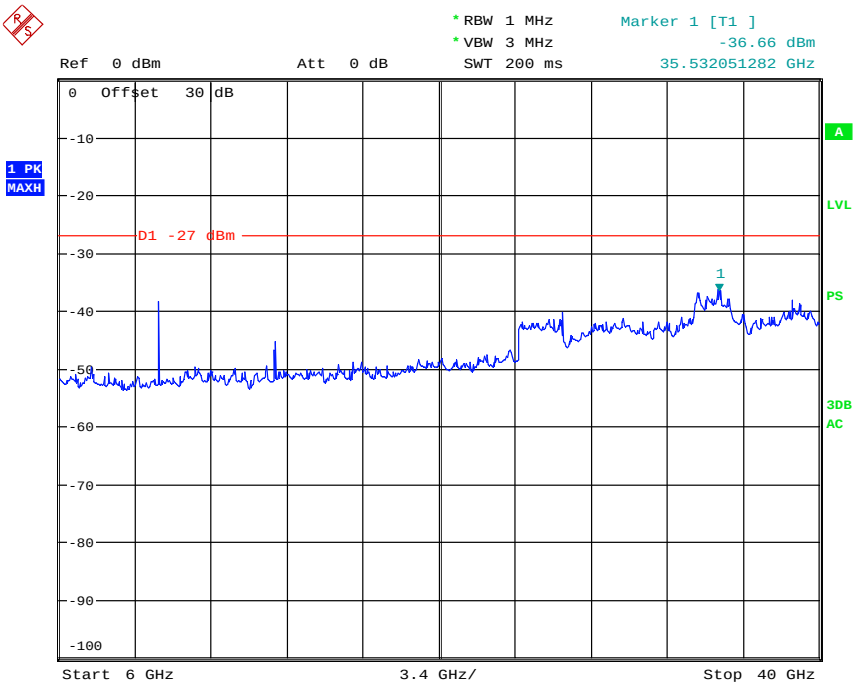
6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 36, Chain 1

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

Emissions in Non-Restricted Frequency Bands (Conducted)



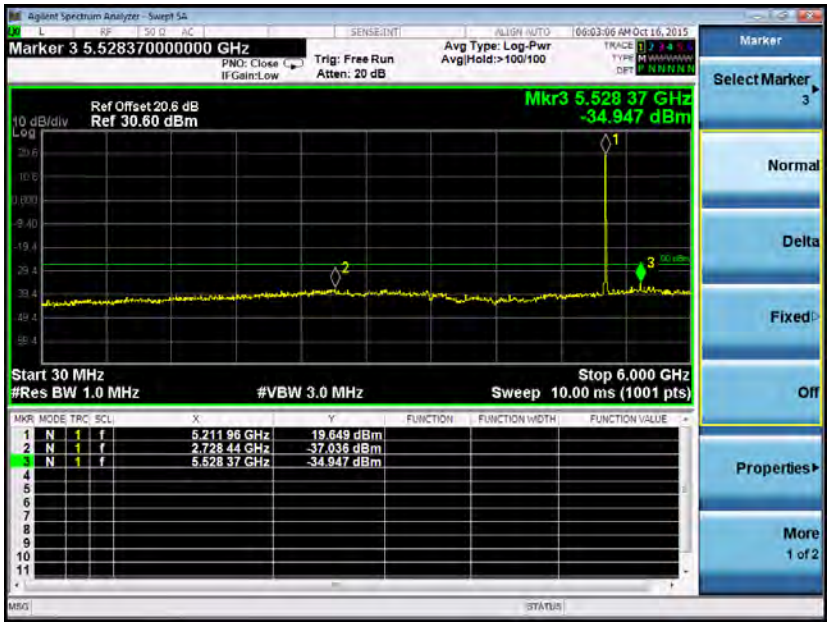
30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 42, Chain 0



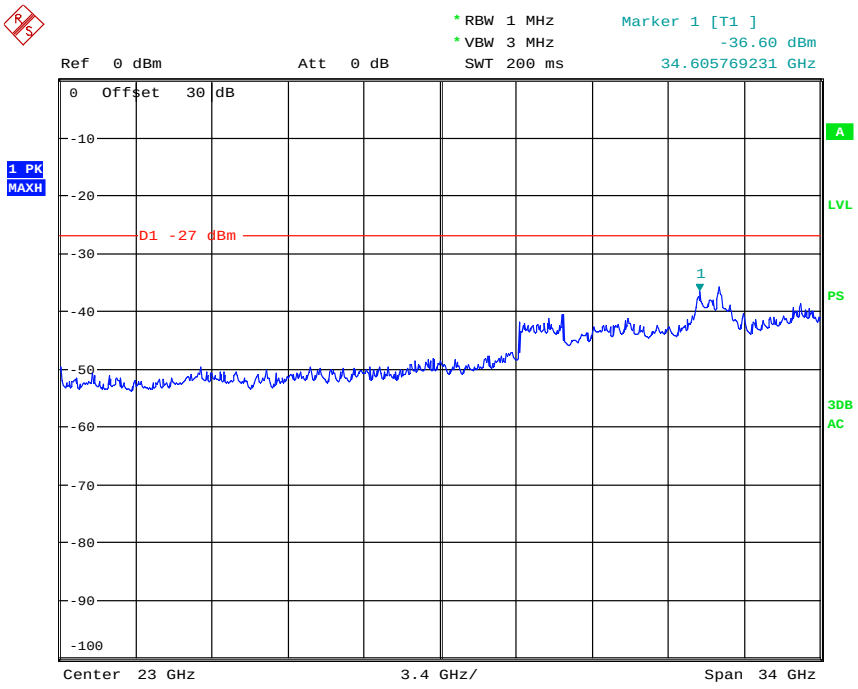
6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 42, Chain 0

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

Emissions in Non-Restricted Frequency Bands (Conducted)



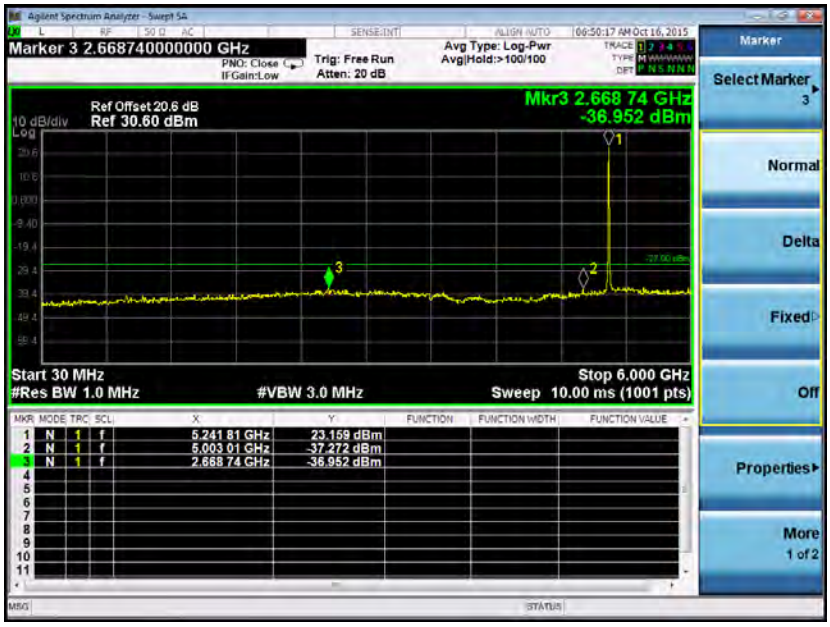
30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 42, Chain 1



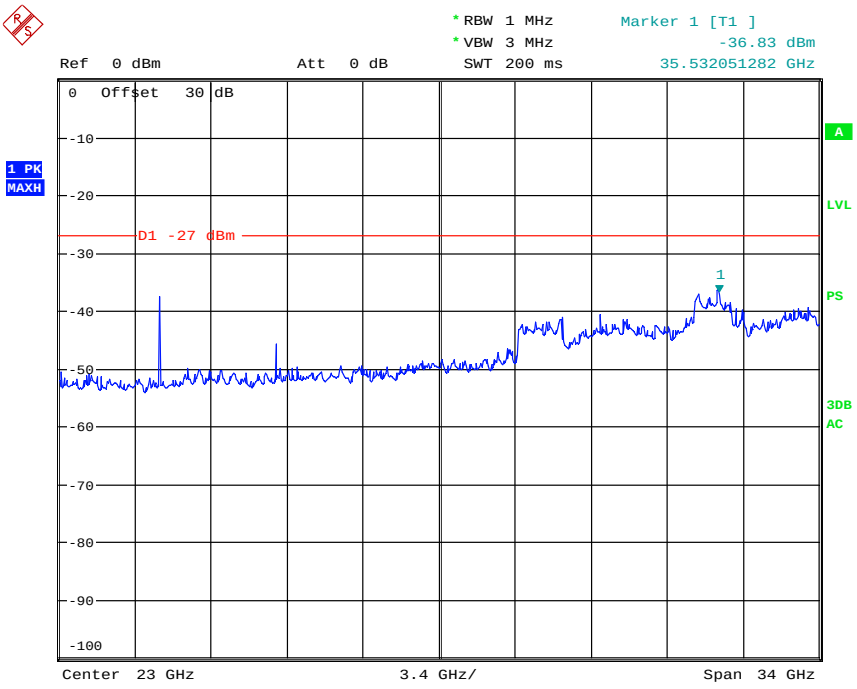
6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 42, Chain 1

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

Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 48, Chain 0



6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 48, Chain 0

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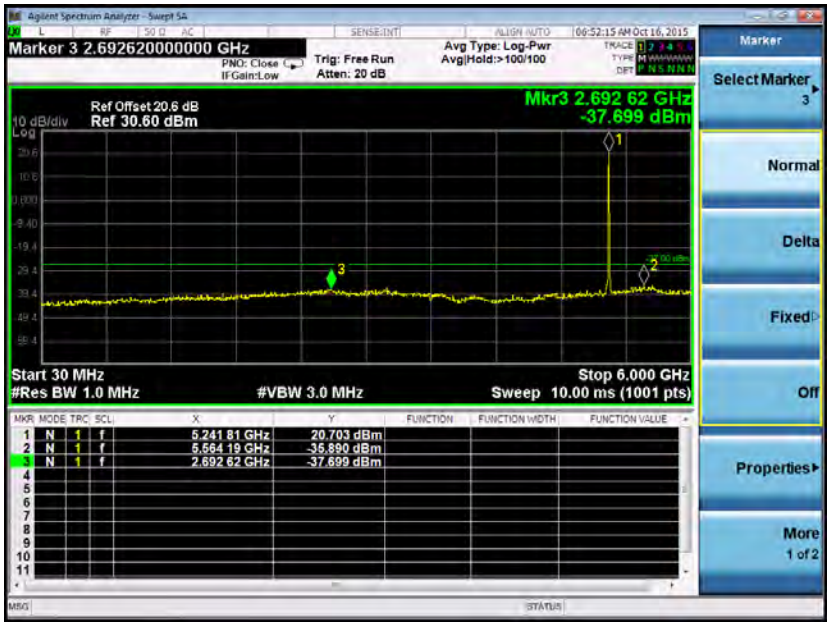
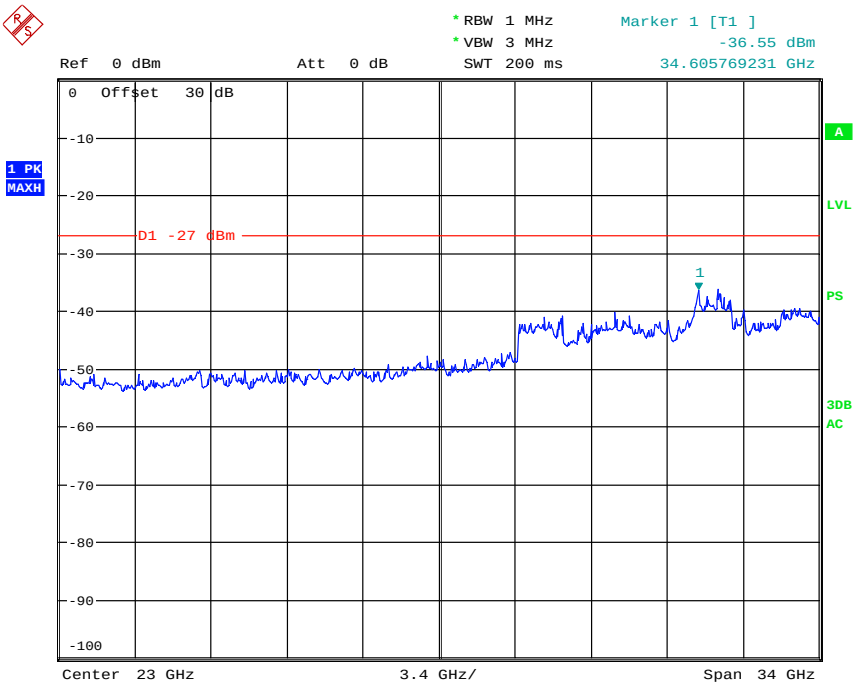
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 48, Chain 1



6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 48, Chain 1

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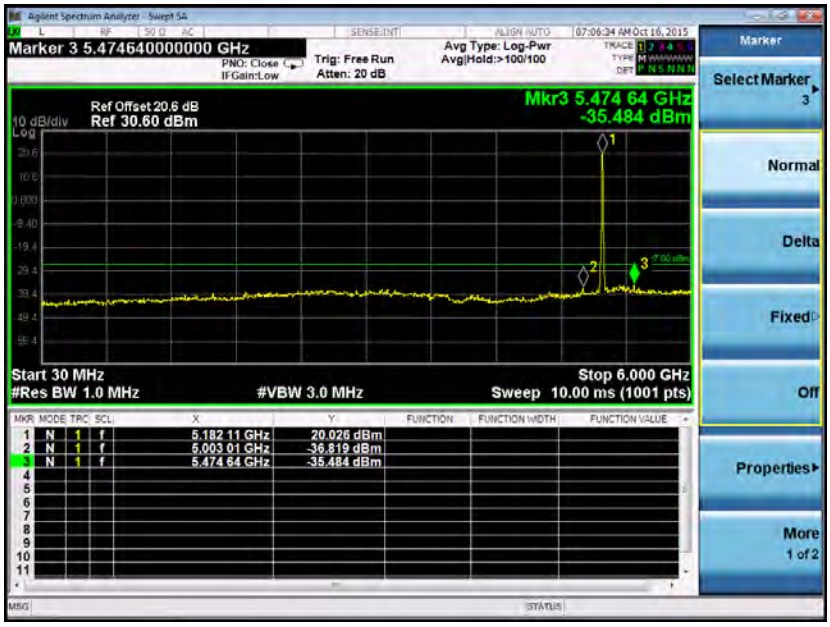
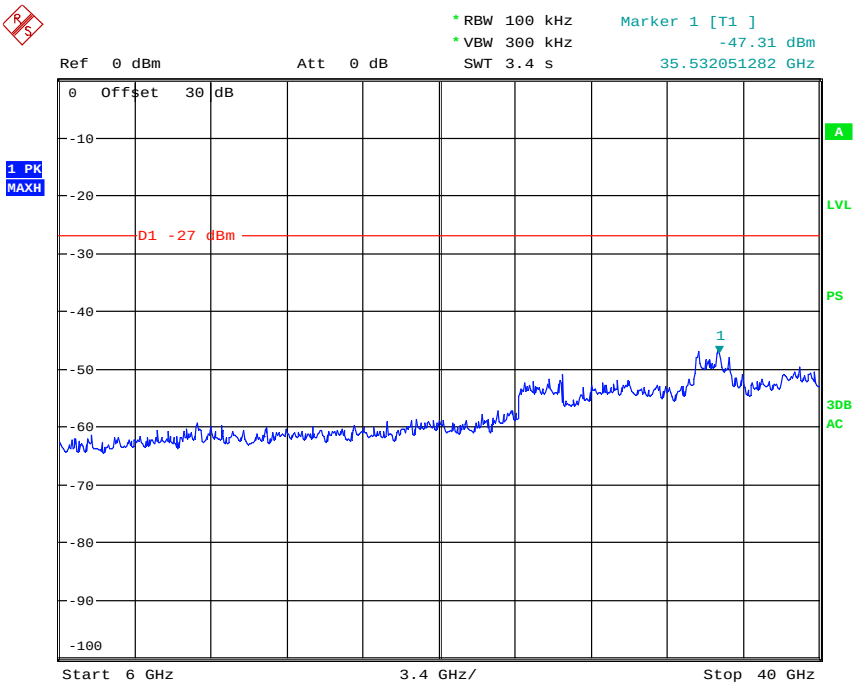
Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 36, Chain 0



6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 36, Chain 0

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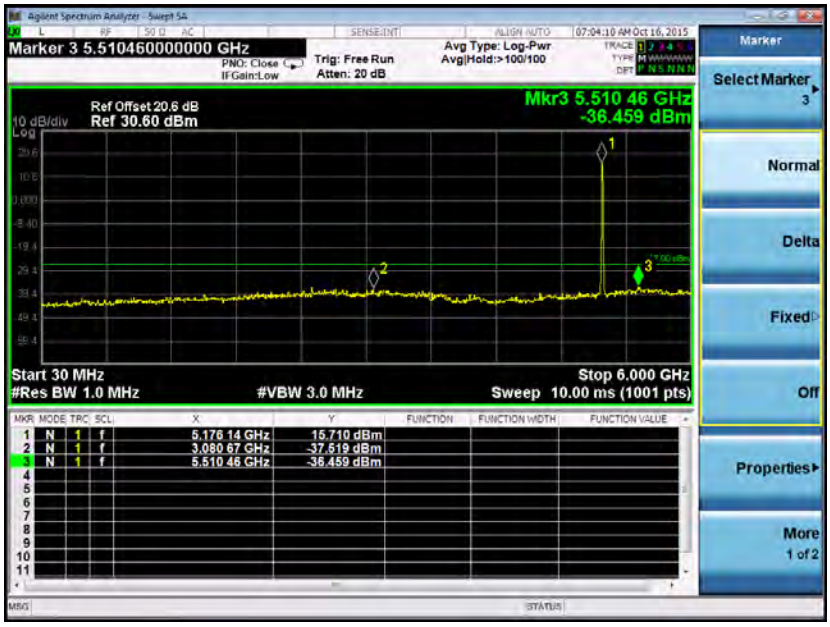
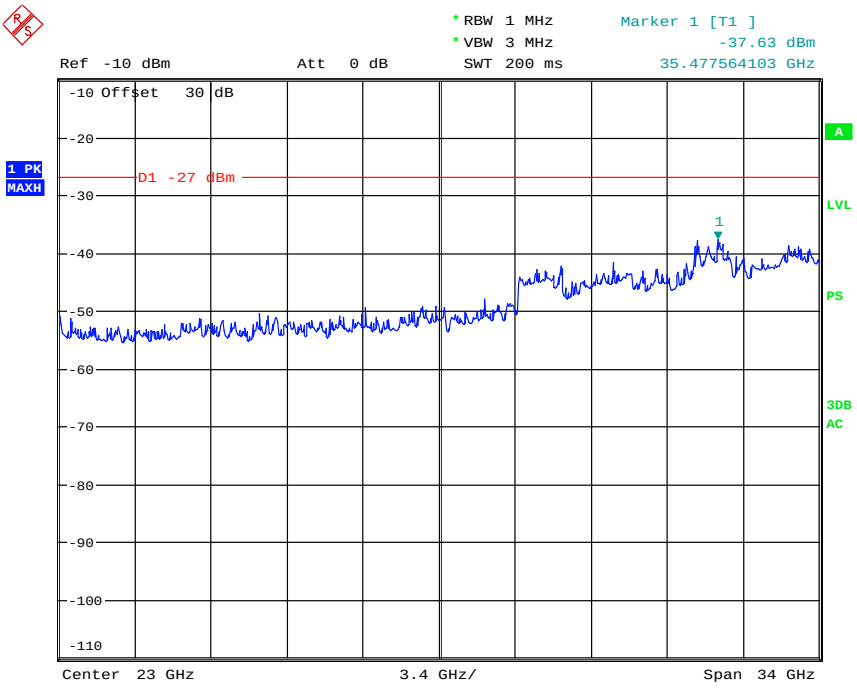
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 36, Chain 1



6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 36, Chain 1

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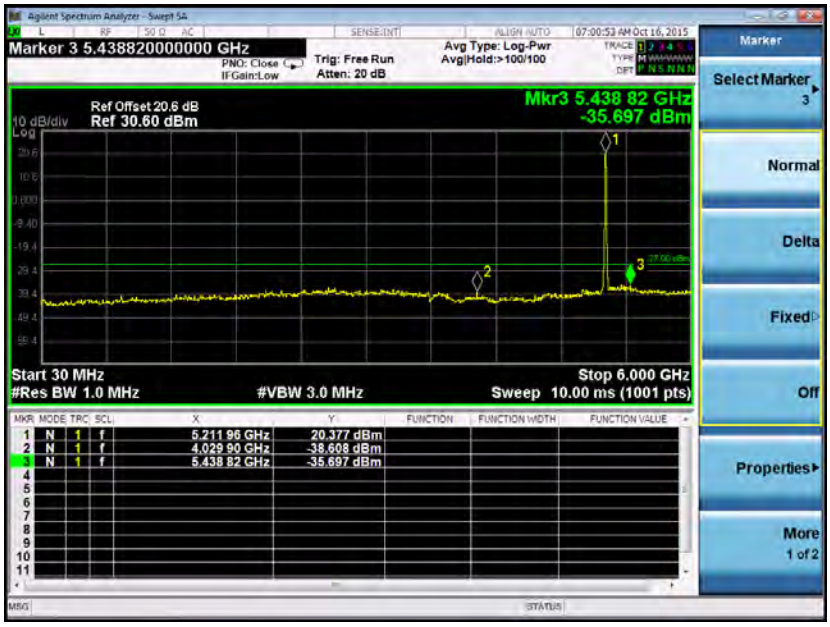
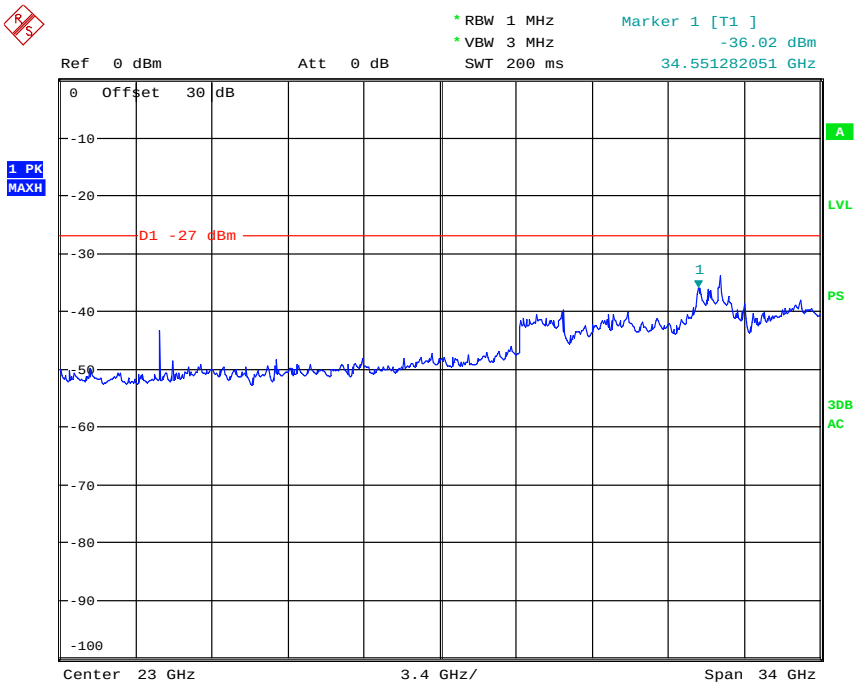
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 42, Chain 0



6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 42, Chain 0

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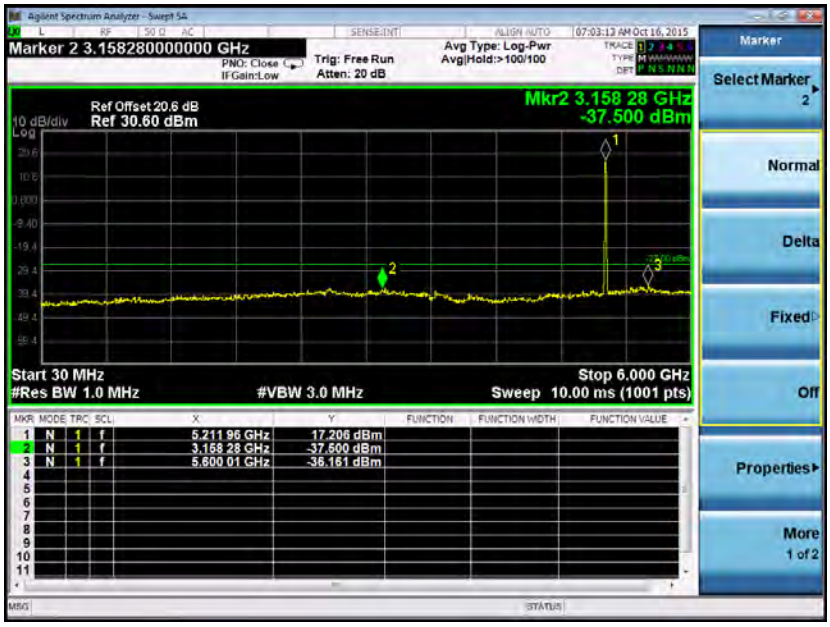
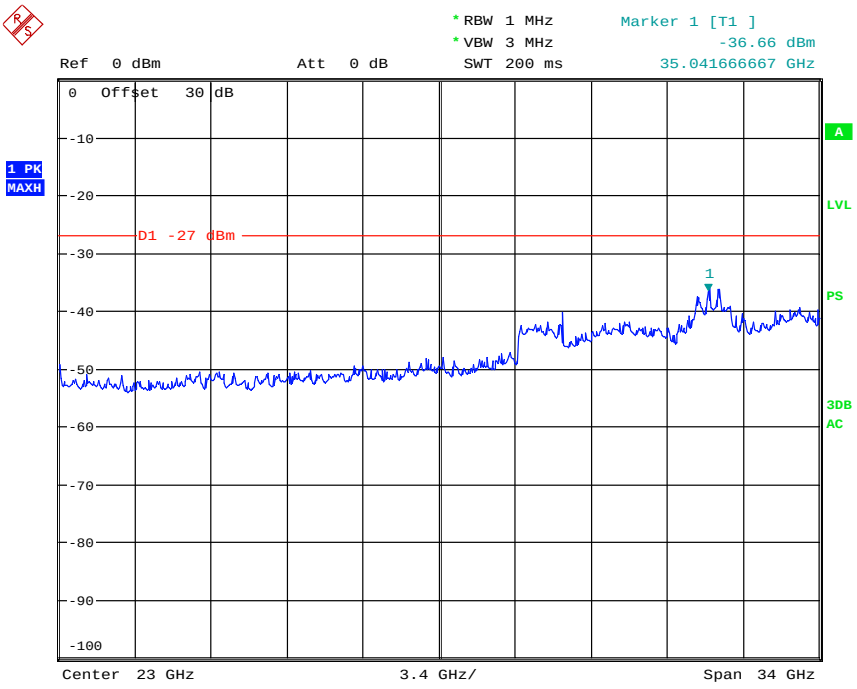
Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 42, Chain 1



6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 42, Chain 1

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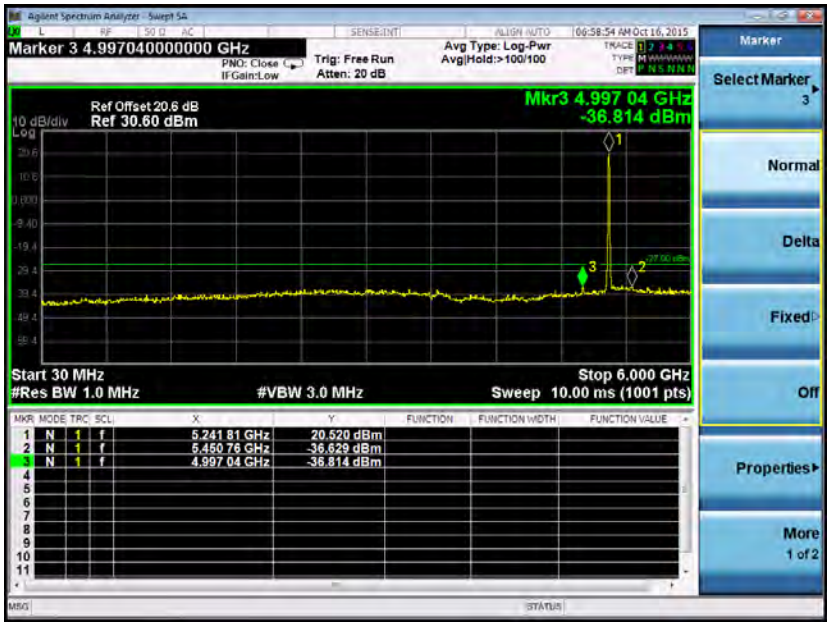
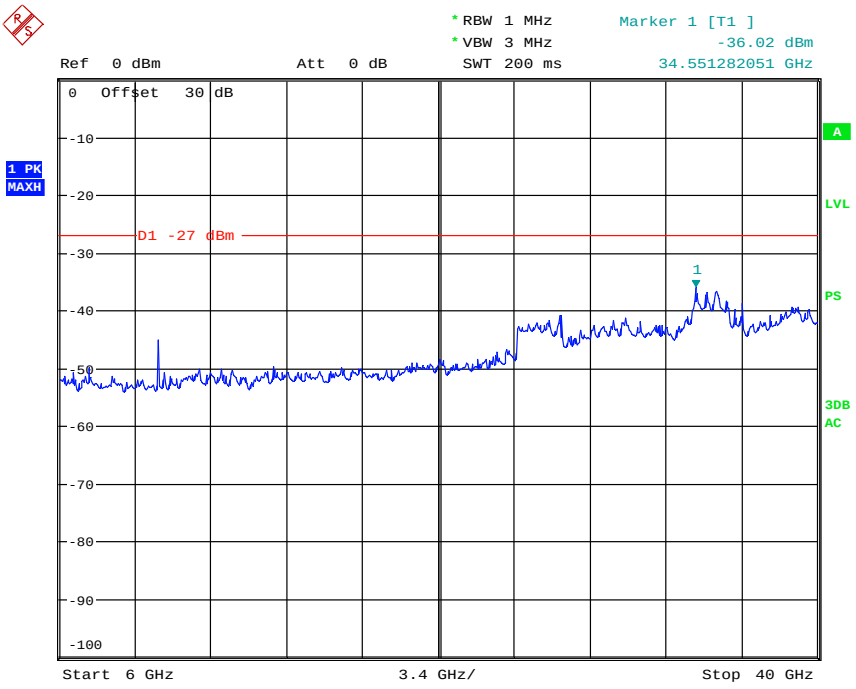
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)



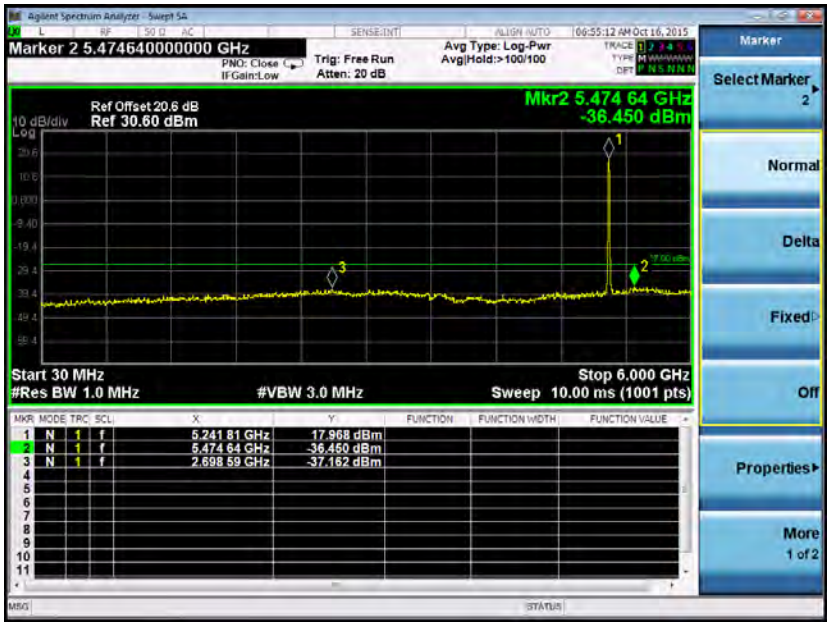
30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 48, Chain 0



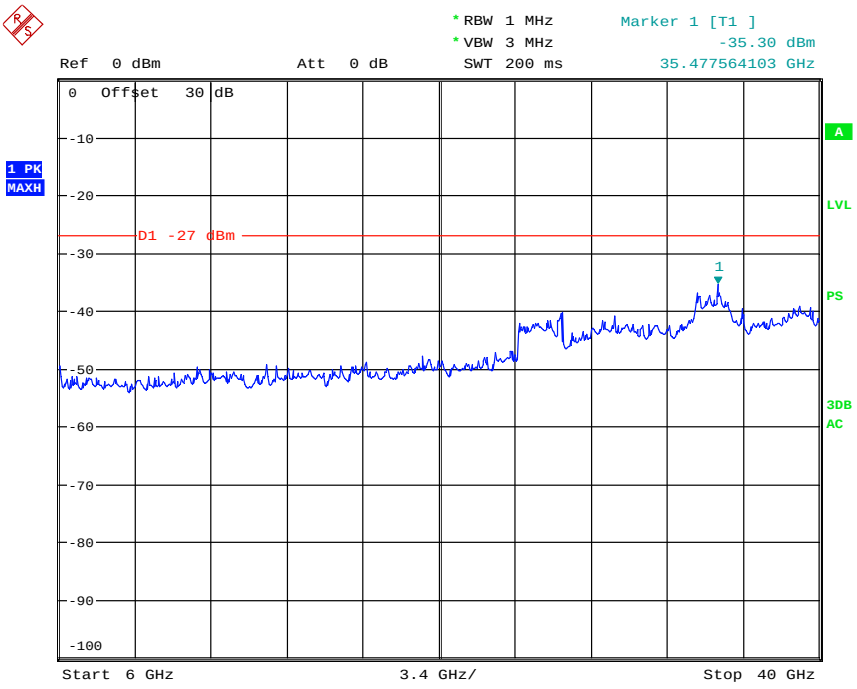
6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 48, Chain 0

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

Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 48, Chain 1

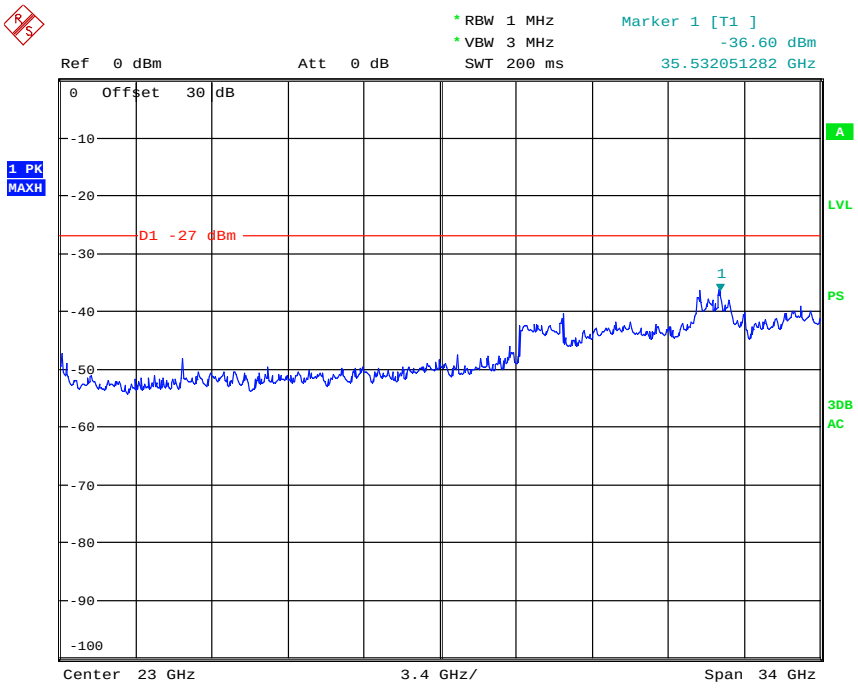


6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 48, Chain 1

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

Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 149, Chain 0



6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 149, Chain 0

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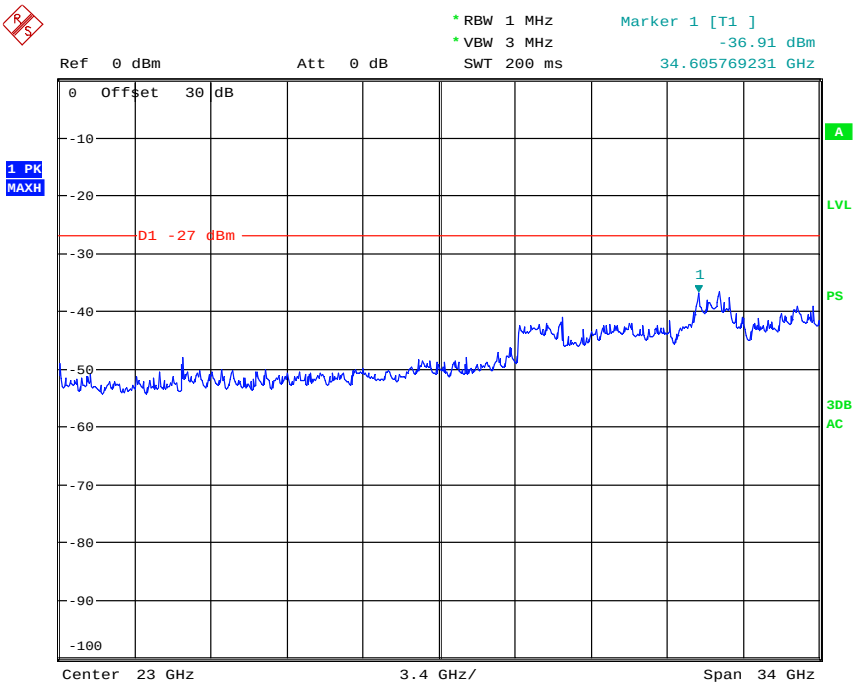
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 149, Chain 1



6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 149, Chain 1

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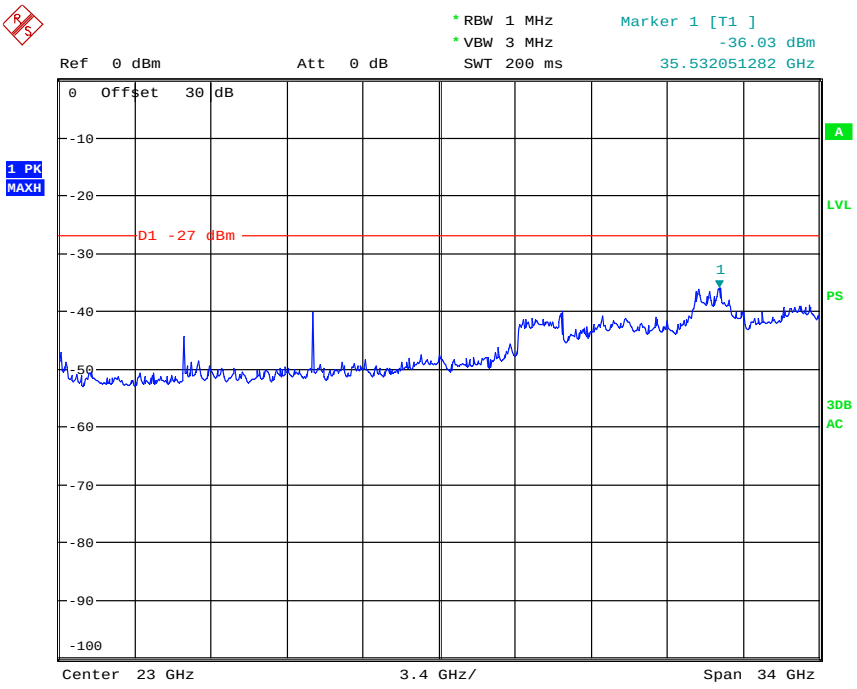
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 157, Chain 0



6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 157, Chain 0

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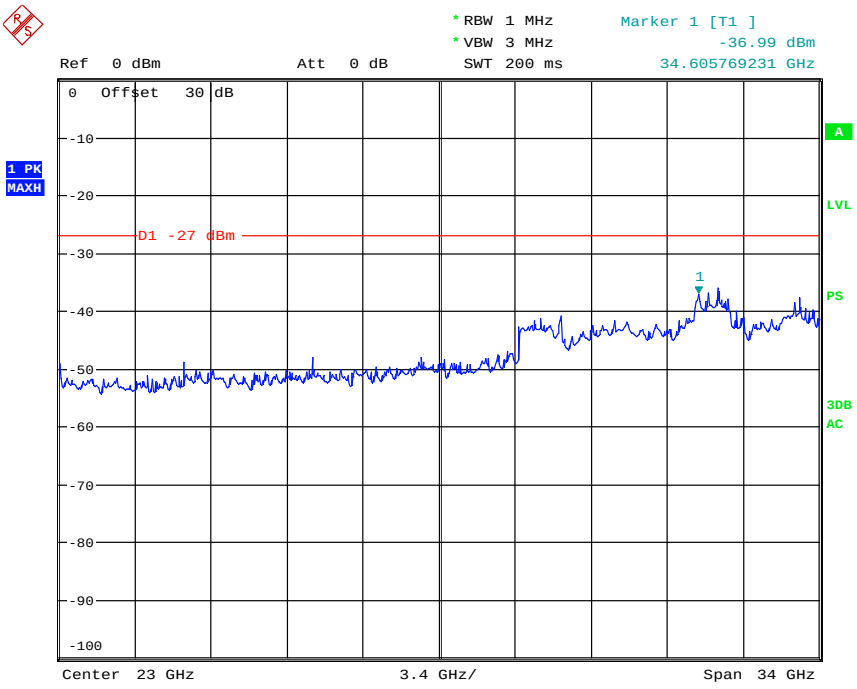
Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 157, Chain 1



6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 157, Chain 1

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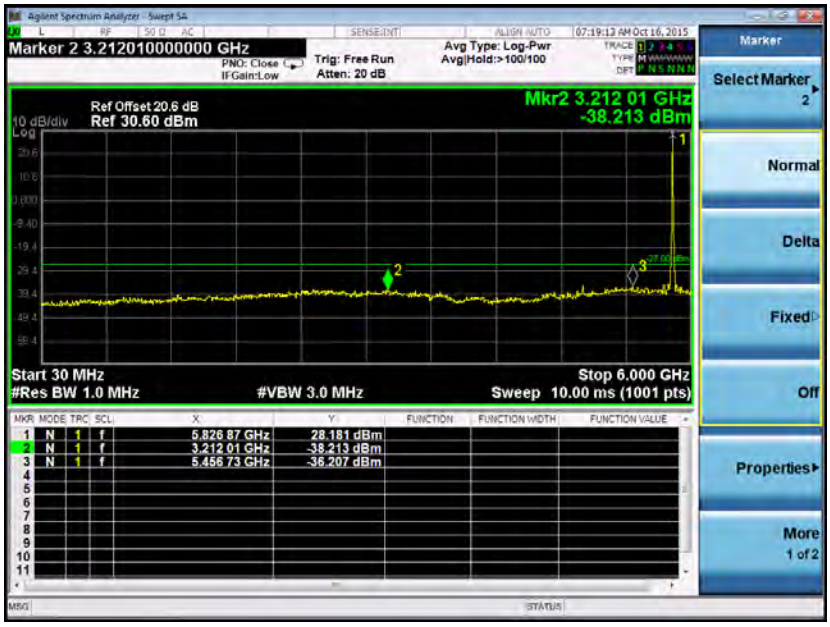
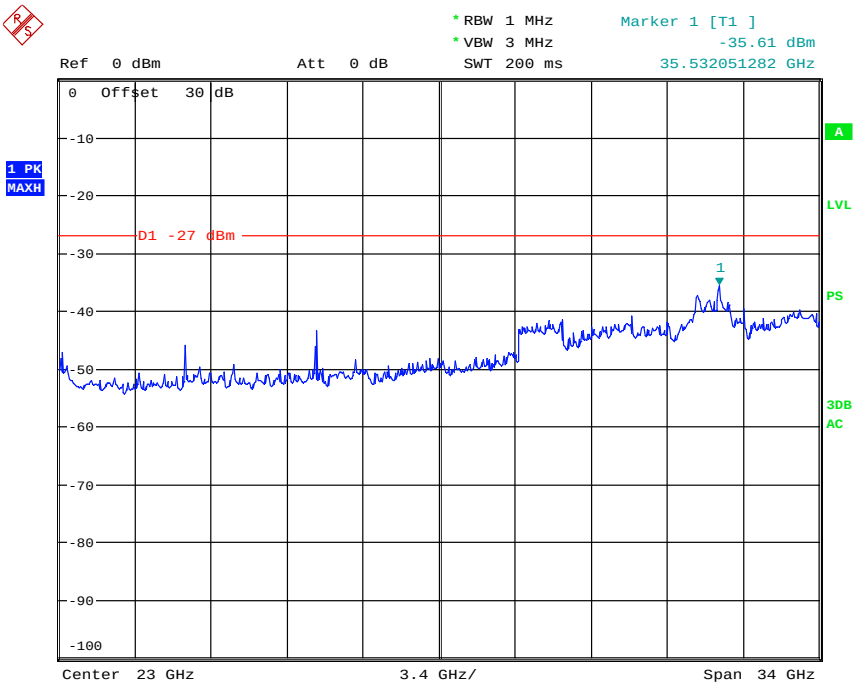
Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 165, Chain 0



6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 165, Chain 0

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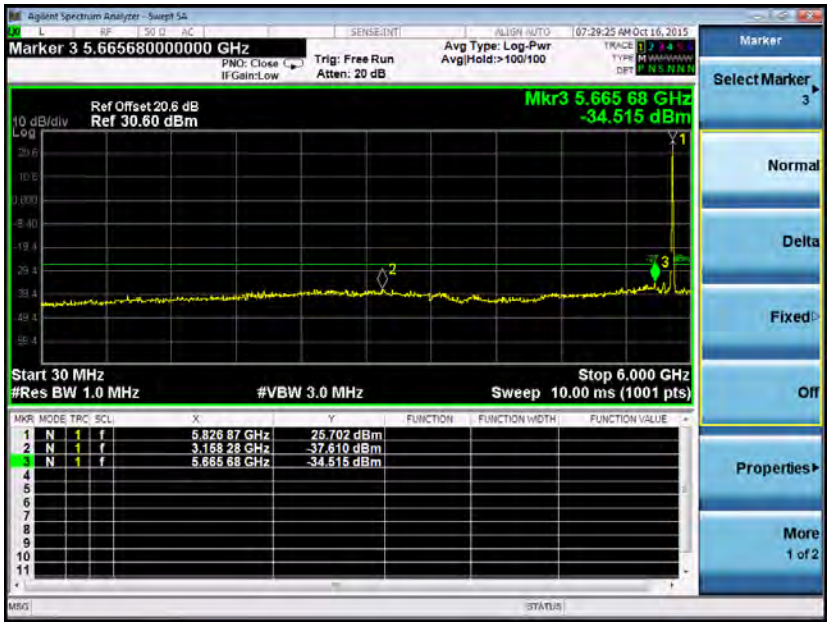
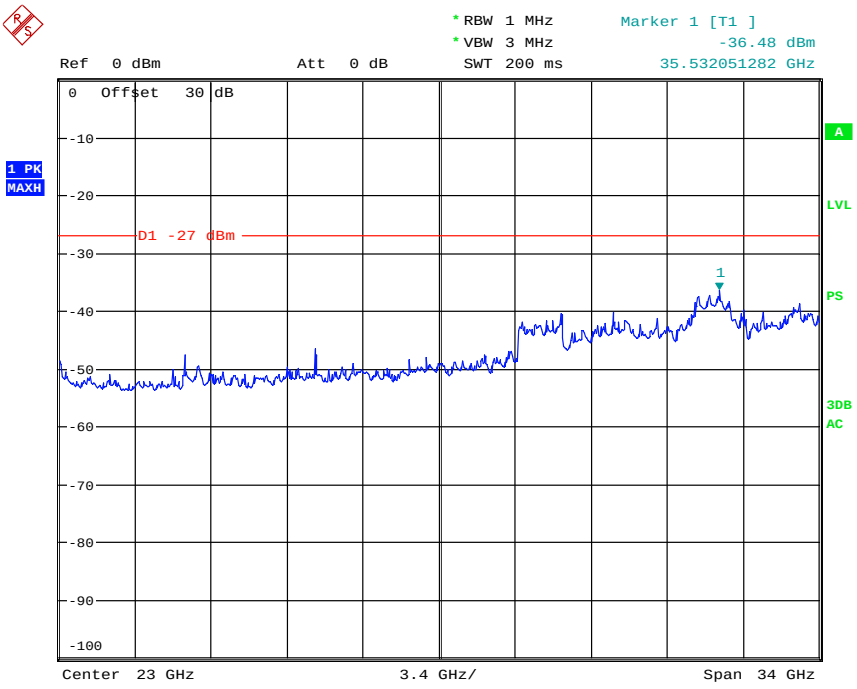
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 5 MHz, 802.11a, Channel 165, Chain 1



6 GHz to 40 GHz, 5 MHz, 802.11a, Channel 165, Chain 1

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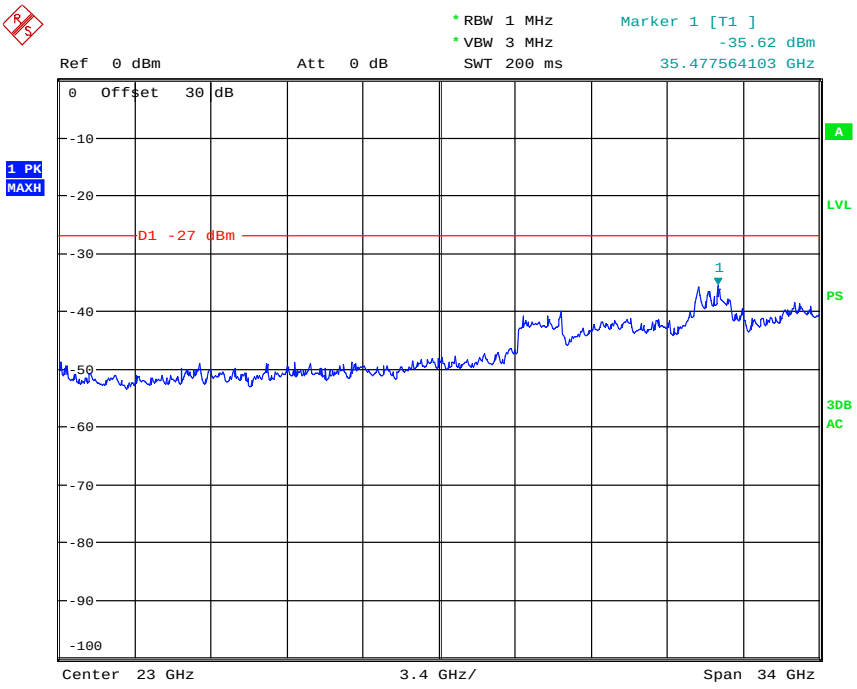
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 149, Chain 0



6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 149, Chain 0

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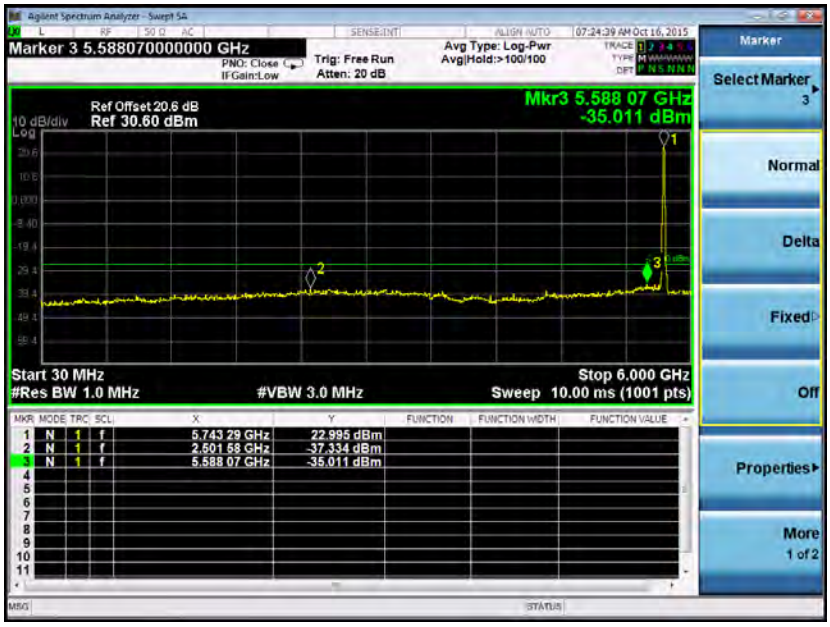
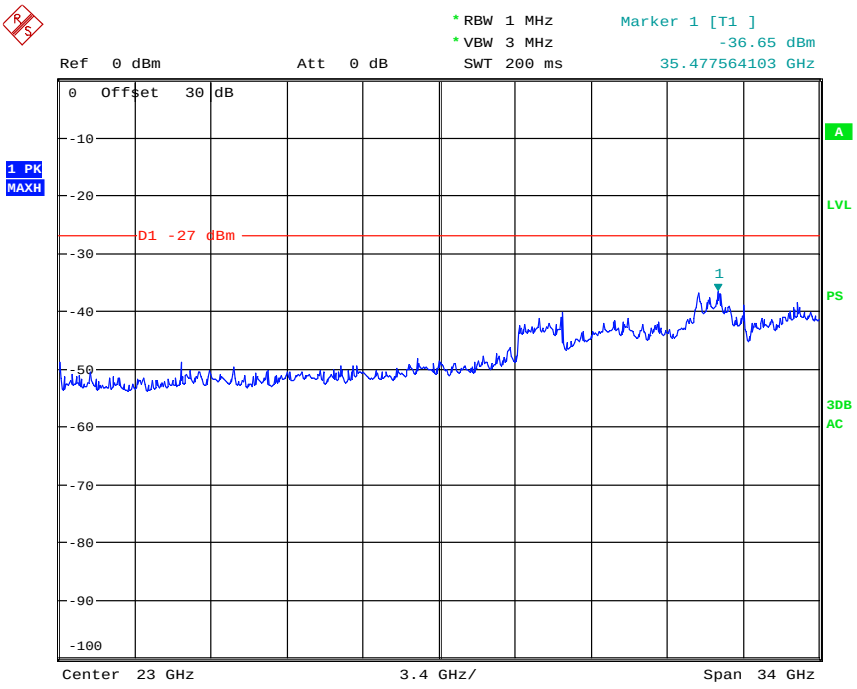
Emissions in Non-Restricted Frequency Bands (Conducted)



30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 149, Chain 1



6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 149, Chain 1

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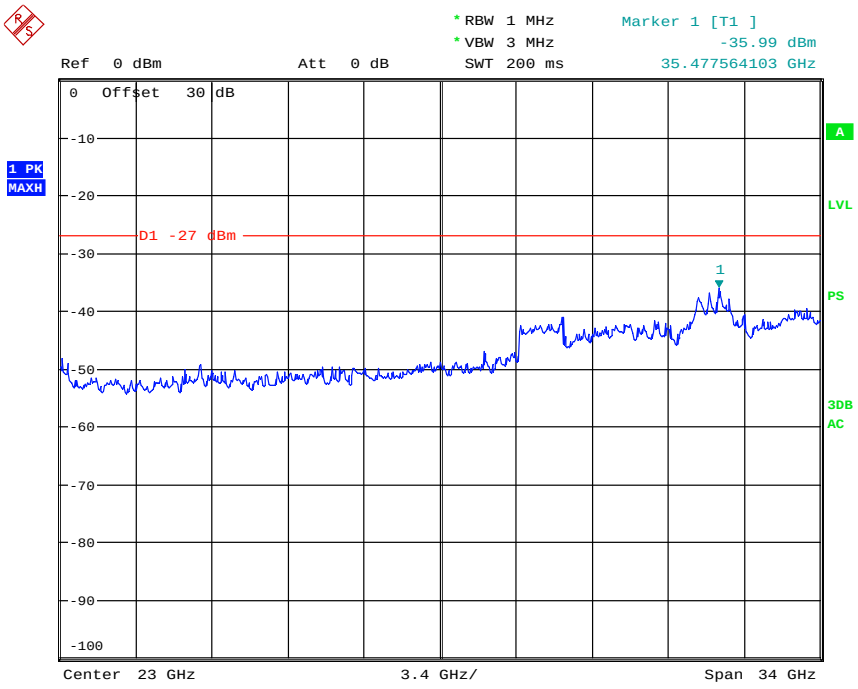
1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 157, Chain 0



6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 157, Chain 0

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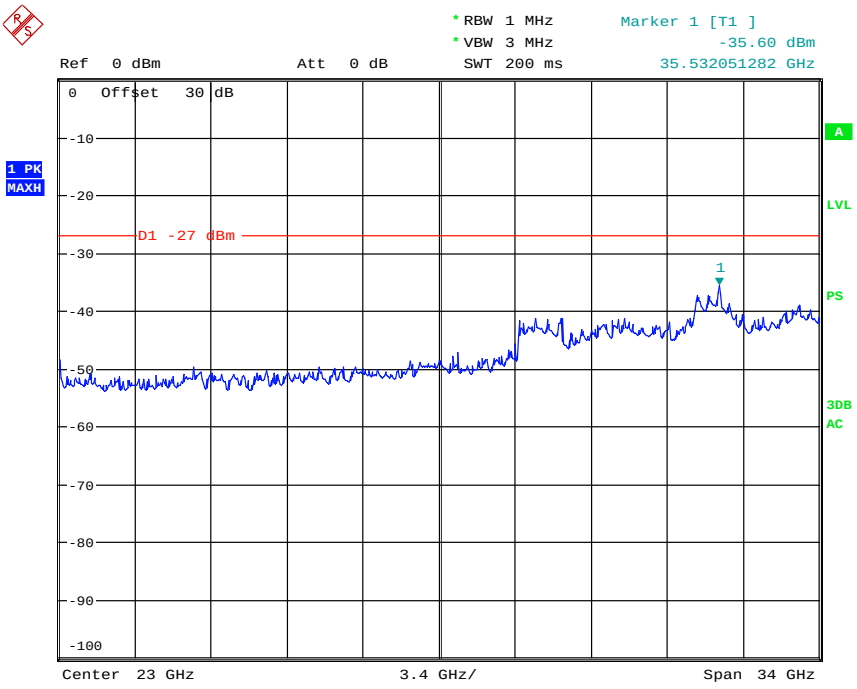
Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 157, Chain 1

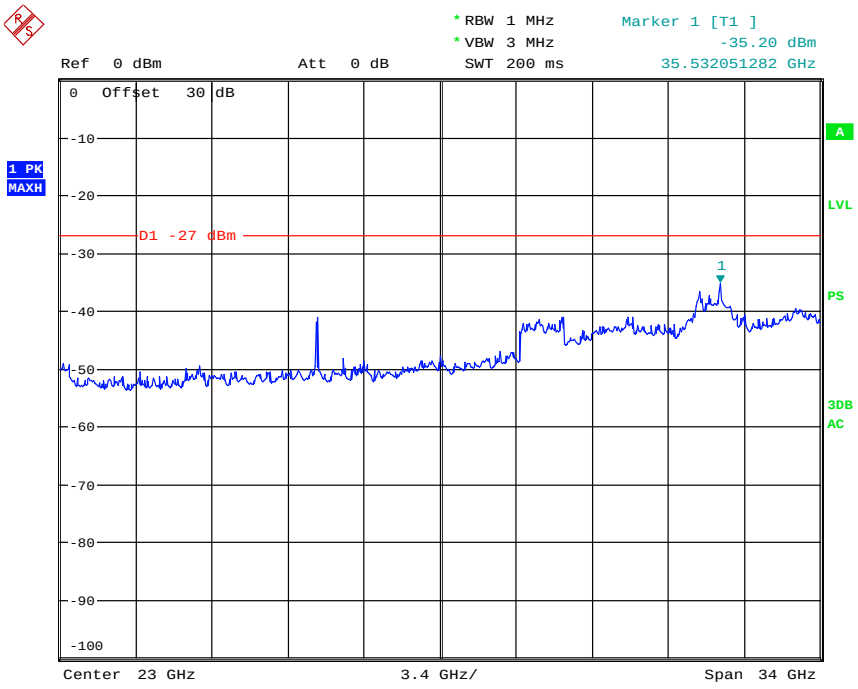


6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 157, Chain 1

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

Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 165, Chain 0

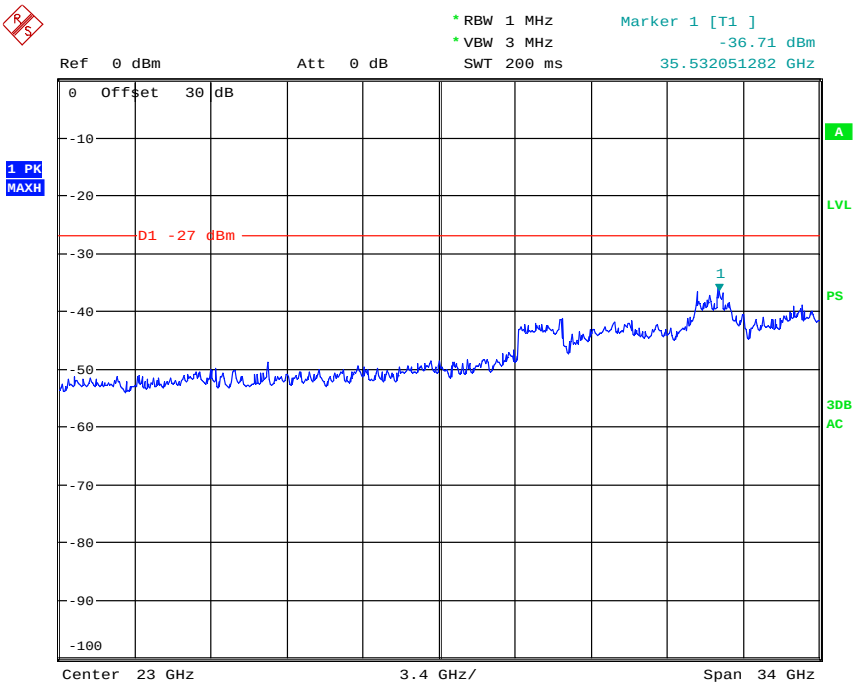


6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 165, Chain 0

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

Emissions in Non-Restricted Frequency Bands (Conducted)

30 MHz to 6 GHz, 10 MHz, 802.11a, Channel 165, Chain 1



6 GHz to 40 GHz, 10 MHz, 802.11a, Channel 165, Chain 1

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

Bandedge Test Data (Conducted)

Company:	Tropos Networks, Inc.	**Test Date:**	9/15/15
EUT Name:	WIFI Module	**Test Engineer:**	George Hsu
Model:	Bluefin 5g	**Test Result:**	PASS
Operating Mode:	TX Mode		

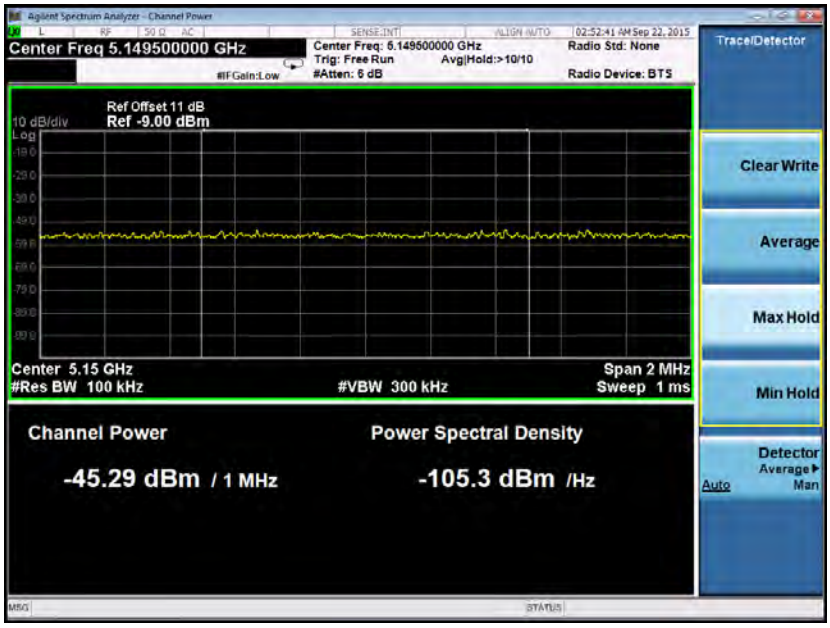
Mode	Test CH	Frequency (MHz)	Chain 0 Channel Power	Chain 1 Channel Power	Total Channel Power	Limit (dBm)	Conclusion
802.11a, 5 MHz	36	5180	-43.74	-45.29	-41.436	≤ -17	Pass
	48	5240	-41.39	-43.03	-39.123	≤ -17	Pass
802.11a, 10 MHz	36	5180	-43.39	-44.38	-40.847	≤ -17	Pass
	48	5240	-41.03	-43.49	-39.078	≤ -17	Pass
802.11a, 5 MHz	149	5745	-44.22	-41.17	-39.422	≤ -27	Pass
	165	5825	-45.64	-43.21	-41.247	≤ -27	Pass
802.11a, 10 MHz	149	5745	-38.92	-33.82	-32.651	≤ -27	Pass
	165	5825	-45.29	-43.72	-41.424	≤ -27	Pass

Test Equipment: Please refer to section 5.2

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

Bandedge Test Data (Conducted)

5 MHz, 802.11a, Channel 36, Chain 0

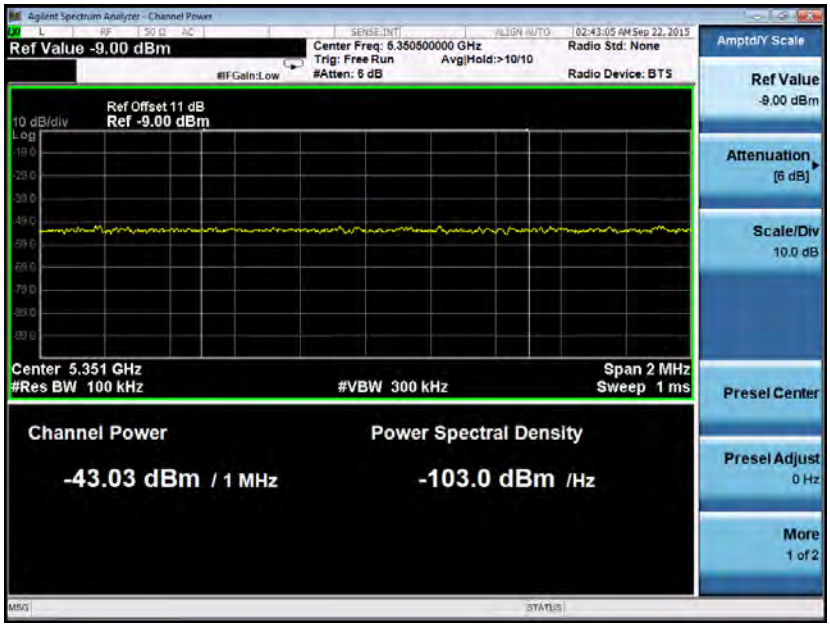


5 MHz, 802.11a, Channel 36, Chain 1

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

Bandedge Test Data (Conducted)

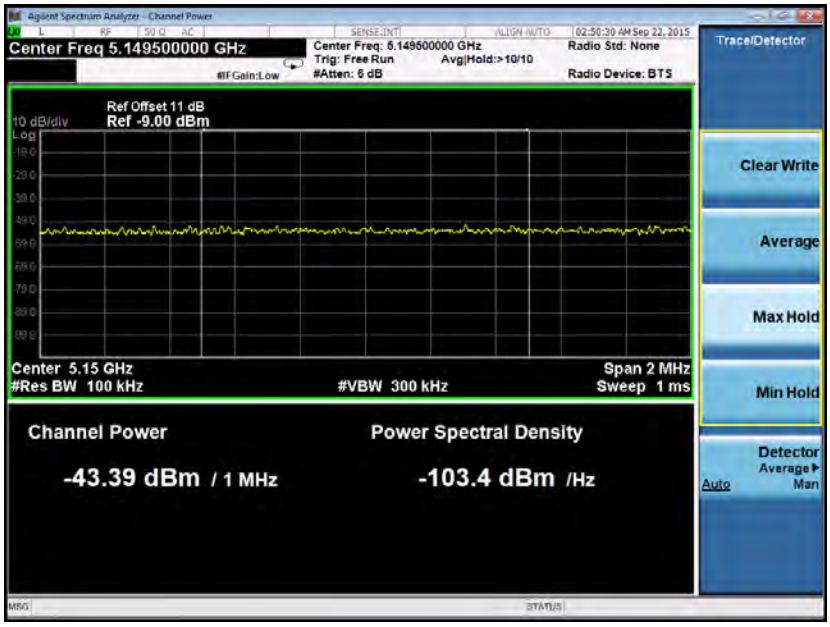
5 MHz, 802.11a, Channel 48, Chain 0



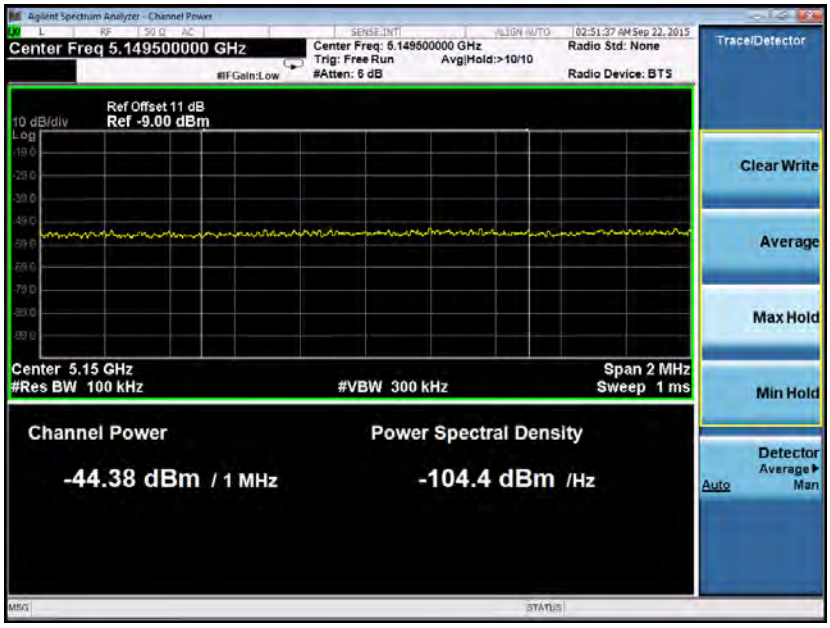
5 MHz, 802.11a, Channel 48, Chain 1

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

Bandedge Test Data (Conducted)



10 MHz, 802.11a, Channel 36, Chain 0

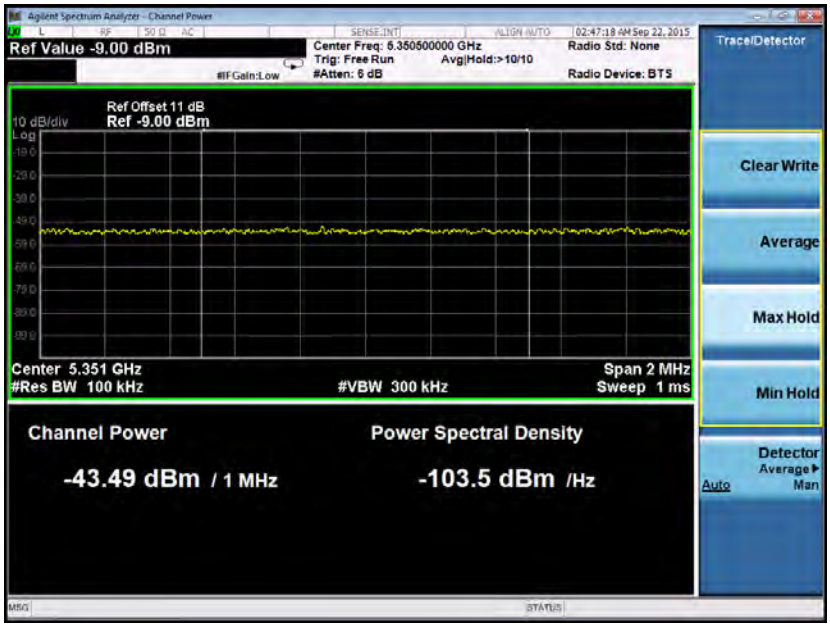


10 MHz, 802.11a, Channel 36, Chain 1

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

Bandedge Test Data (Conducted)

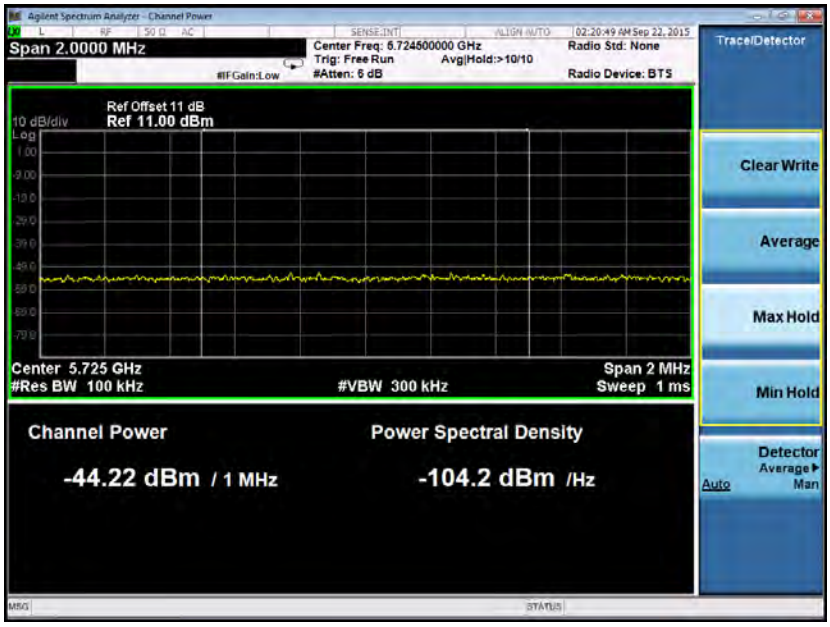
10 MHz, 802.11a, Channel 48, Chain 0



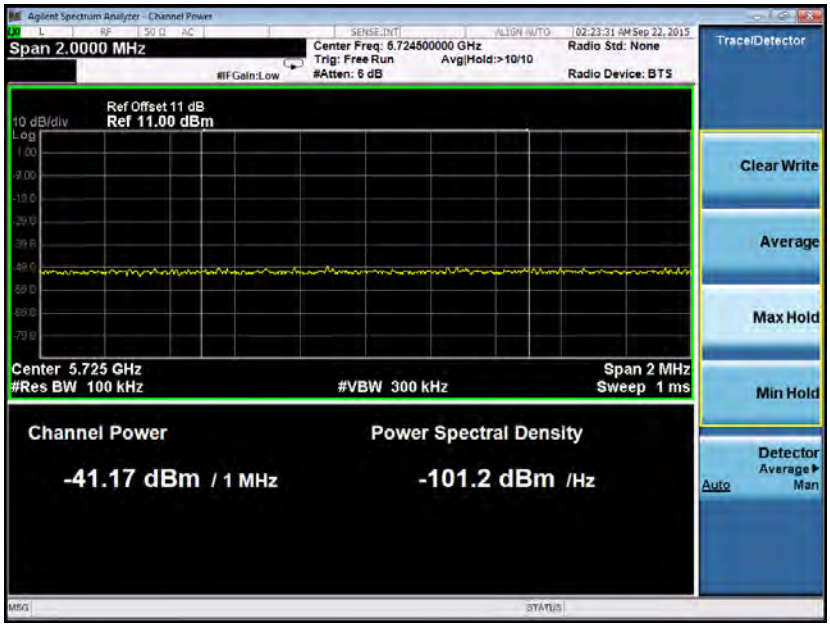
10 MHz, 802.11a, Channel 48, Chain 1

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

Bandedge Test Data (Conducted)



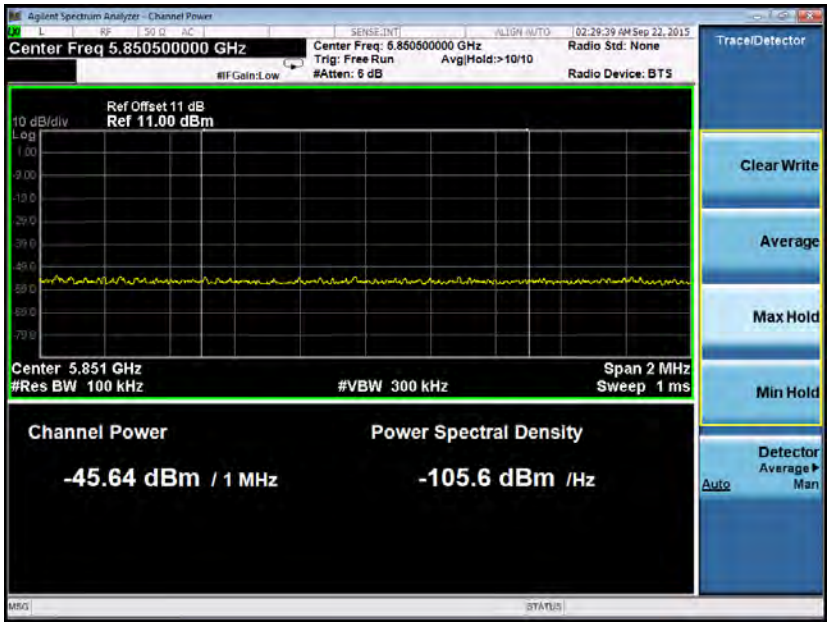
5 MHz, 802.11a, Channel 149, Chain 0



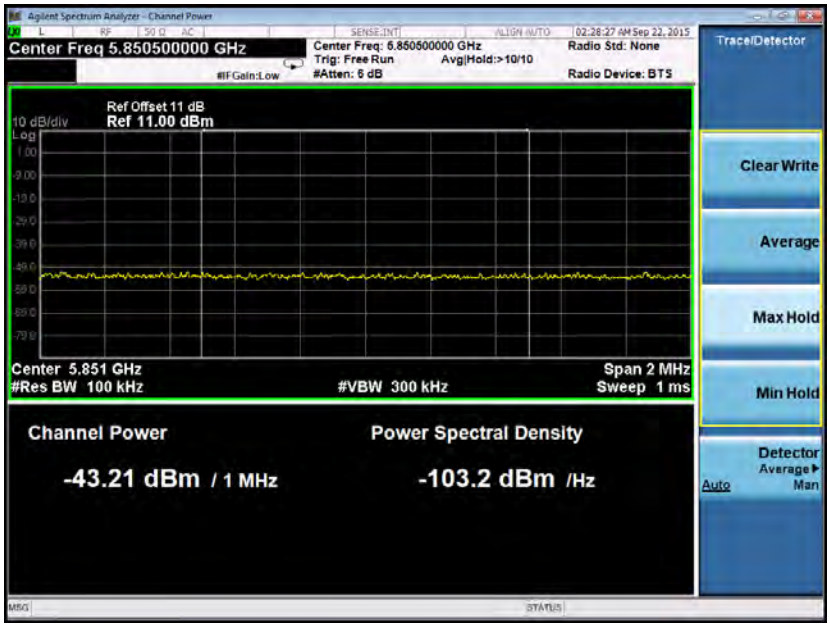
5 MHz, 802.11a, Channel 149, Chain 1

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

Bandedge Test Data (Conducted)



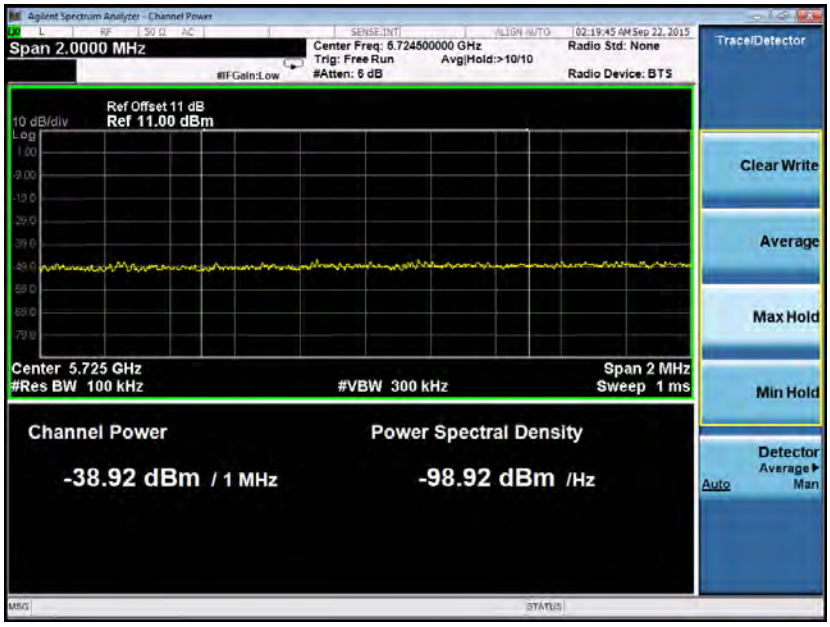
5 MHz, 802.11a, Channel 165, Chain 0



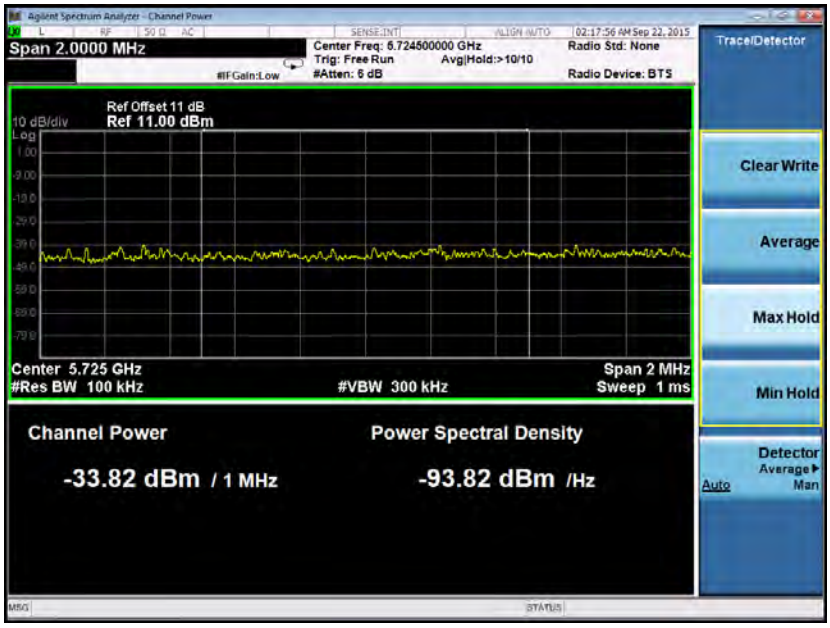
5 MHz, 802.11a, Channel 165, Chain 1

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

Bandedge Test Data (Conducted)



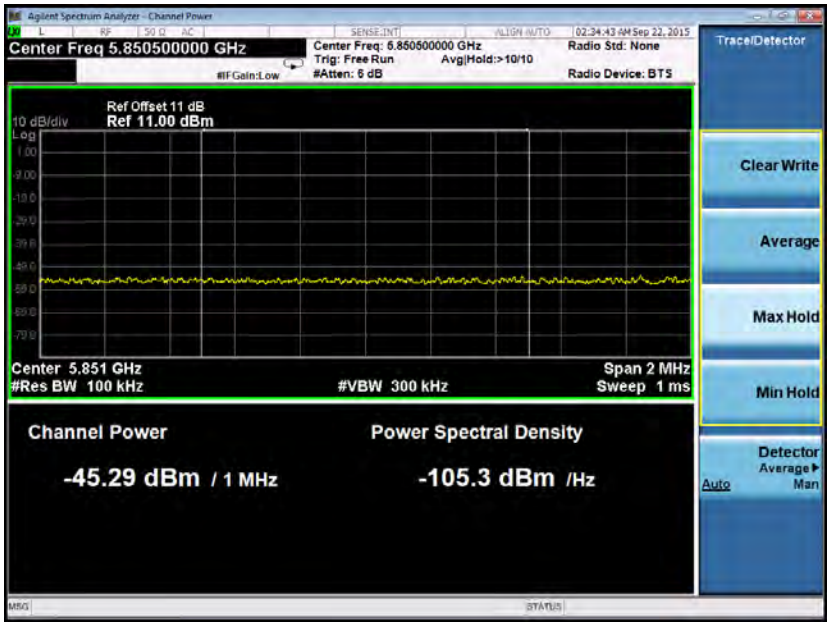
10 MHz, 802.11a, Channel 149, Chain 0



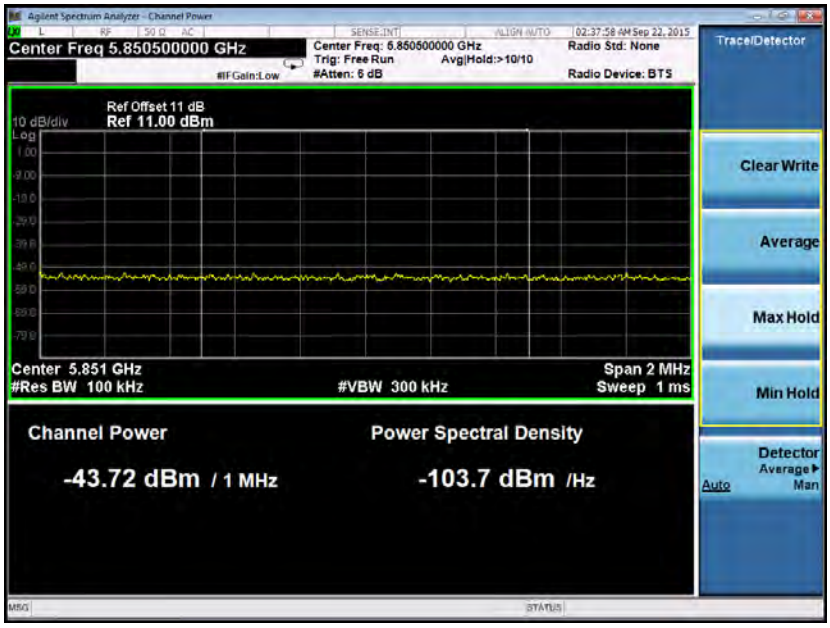
10 MHz, 802.11a, Channel 149, Chain 1

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

Bandedge Test Data (Conducted)



10 MHz, 802.11a, Channel 165, Chain 0



10 MHz, 802.11a, Channel 165, Chain 1

EMT ELECTRO MAGNETIC TEST, INC.
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APPENDIX B

TEST SETUP DIAGRAMS

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

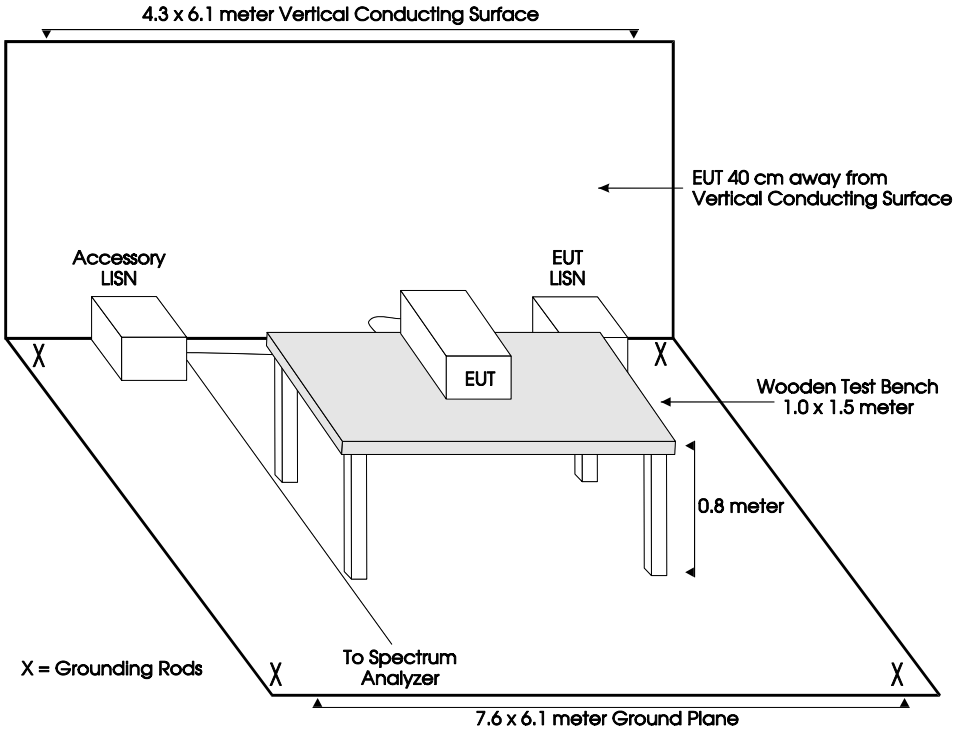

FIGURE 1 – TABLETOP CONDUCTED EMISSIONS TEST SETUP – SITE "A"

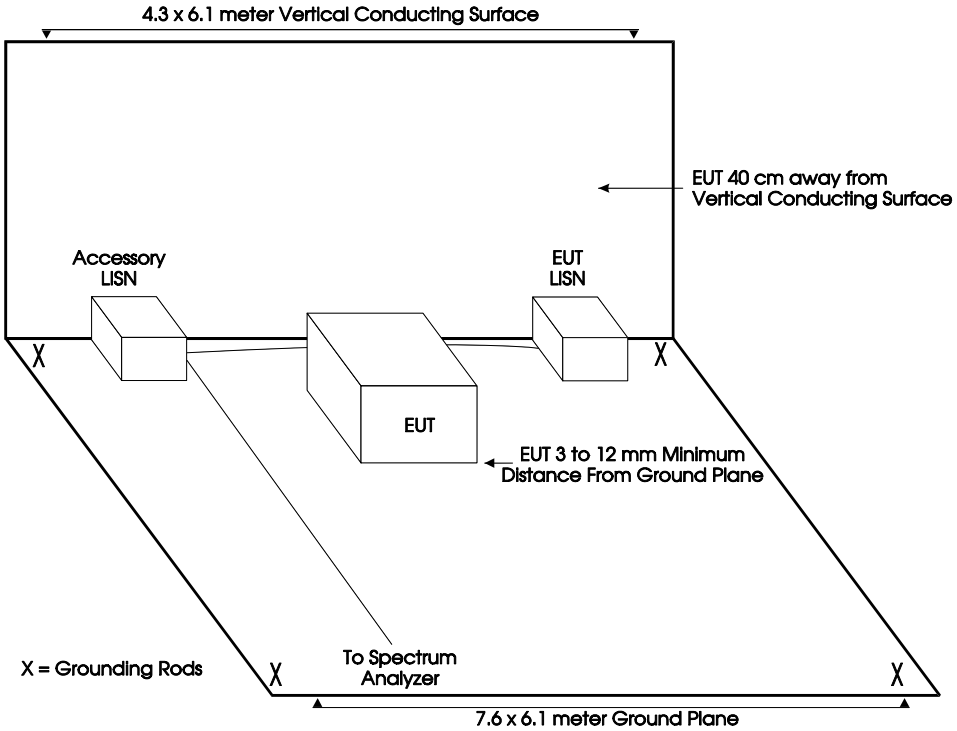

FIGURE 1a – FLOORSTANDING CONDUCTED EMISSIONS TEST SETUP – SITE "A"

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

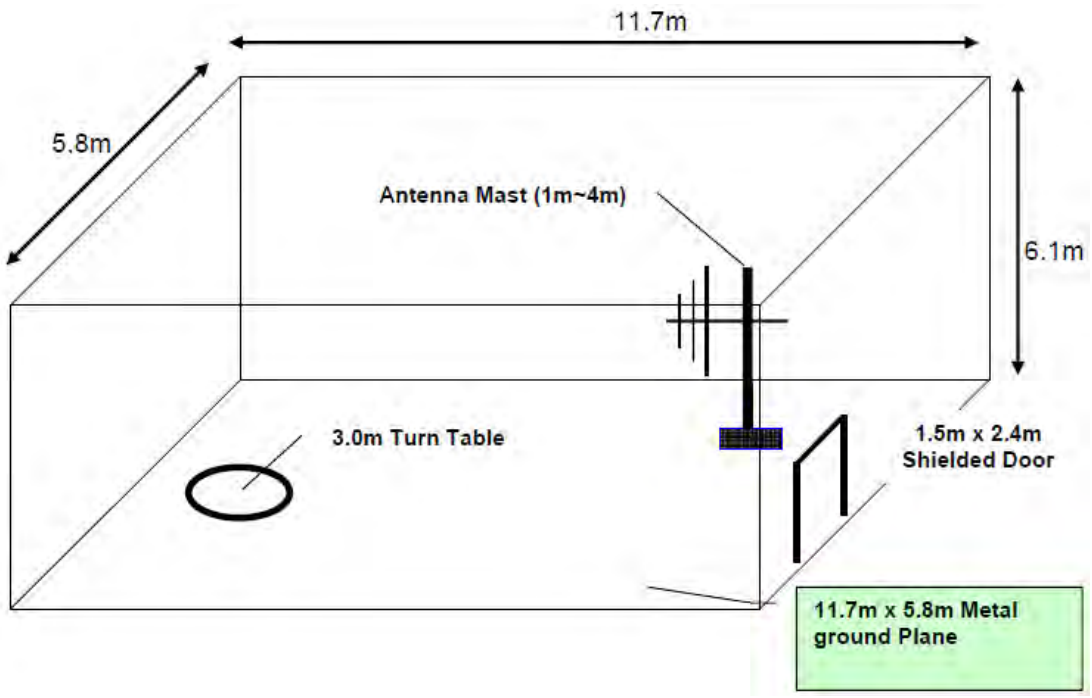

FIGURE 3 - LAYOUT OF 5 METER SEMI-ANECHOIC CHAMBER

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

APPENDIX C

MODIFICATIONS TO THE EUT

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

MODIFICATIONS TO THE EUT

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

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

APPENDIX D

ADDITIONAL MODELS COVERED UNDER THIS REPORT

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

ADDITIONAL MODELS COVERED UNDER THIS REPORT

There are no addtional models covered under this report.