FCC PART 15.407
ISEDC RSS-247, ISSUE 3, AUGUST 2023

TEST REPORT

For

Rajant Corporation

200 Chesterfield Pkwy,
Malvern, PA 19355, USA

FCC ID: VJA-AG15250M
IC: 7382A-AG15250M

Report Type: Class II Permissive Change Report	**Model:** AG1-5250M
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Report Number:	R2309254-NII
Report Date:	2024-03-19
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ACCREDITED
CERTIFICATE #3297.02

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R2309254-NII	CIIPC Report	2024-03-19

1 General Description

1.1 Product Description for Equipment under Test (EUT)

This test report was prepared on behalf of *Rajant Corporation.*, and their product model: AG1-5250M, FCC ID: VJA-AG15250M, IC: 7382A-AG15250M, the "EUT" as referred to in this report. The EUT is a mobile wireless network node.

Model Number	AG1-5250M
FCC ID	VJA-AG15250M
IC	7382A-AG15250M
Device Type	Mobile wireless network node
Radio Name	Wlan1, Wlan0
Operating Frequency	5250 – 5350 MHz 5350 – 5725 MHz
Antenna Gain	5000 – 5900 MHz: <6dBi (PUCK-12) 5250 – 5350 MHz: 7dBi (KMA-5250-7) 5350 – 5750 MHz: 6dBi (KMA-5550-6)

Note: Device with four antenna ports
Ant A and B can transmit simultaneously between radios on same bands
Ant C and D can transmit simultaneously between radios on same bands
WLAN0 (Ant A/B) and WLAN1 (Ant C/D), cannot transmit simultaneously between radios on same bands

1.2 Objective

This report was prepared on behalf of *Rajant Corporation.*, in accordance with FCC CFR47 §15.407 and ISEDC RSS-247 Issue 3, Auguest 2023.

The objective is to determine compliance with FCC Part 15.407 and ISEDC RSS-247 for Radiated Spurious Emissions testing, Occupied Bandwidth, Output Power, Spectral Density, Band Edges, RF Exposure, AC Line Conducted Emission testing for DFS bands.

In order to determine compliance, the manufacturer or a contracted laboratory makes measurements and takes the necessary steps to ensure that the equipment complies with the appropriate technical standards.

1.3 Related Submittal(s)/Grant(s)

N/A

1.4 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.10-2013, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz, and FCC KDB 789033 D02 General UNII Test Procedure New Rules v02r01.

1.5 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Parameter	Measurement uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.57 dB
Power Spectral Density, conducted	±1.48dB
Unwanted Emissions, conducted	±1.57dB
All emissions, radiated	±4.0 dB
AC power line Conducted Emission	±2.0 dB
Temperature	±2 ^{o} C
Humidity	±5 %
DC and low frequency voltages	±1.0 %
Time	±2 %
Duty Cycle	±3 %

1.6 Test Facility Registrations

BACLs test facilities that are used to perform Radiated and Conducted Emissions tests are currently recognized by the Federal Communications Commission as Accredited with NIST Designation Number US1129.

BACL's test facilities that are used to perform Radiated and Conducted Emissions tests are currently registered with Industry Canada under Registration Numbers: 3062A-1, 3062A-2, and 3062A-3.

BACL is a Chinese Taipei Bureau of Standards Metrology and Inspection (BSMI) validated Conformity Assessment Body (CAB), under Annex B, Phase I Procedures of the APEC Mutual Recognition Arrangement (MRA). BACL's BSMI Lab Code Number is: SL2-IN-E-1002R

BACL's test facilities that are used to perform AC Line Conducted Emissions, Telecommunications Line Conducted Emissions, Radiated Emissions from 30 MHz to 1 GHz, and Radiated Emissions from 1 GHz to 6 GHz are currently recognized as Accredited in accordance with the Voluntary Control Council for Interference [VCCI] Article 15 procedures under Registration Number A-0027.

1.7 Test Facility Accreditations

Bay Area Compliance Laboratories Corp. (BACL) is:

A- ***An independent, 3rd-Party, Commercial Test Laboratory accredited to ISO/IEC 17025:2017 by A2LA (Test Laboratory Accreditation Certificate Number 3297.02),*** in the fields of: Electromagnetic Compatibility and Telecommunications. Unless noted by an Asterisk (*) in the Compliance Matrix (See Section 3 of this Test Report), BACL's ISO/IEC 17025:2005 Scope of Accreditation includes all of the Test Method Standards and/or the Product Family Standards detailed in this Test Report.

BACL's ISO/IEC 17025:2005 Scope of Accreditation includes a comprehensive suite of EMC Emissions, EMC Immunity, Radio, RF Exposure, Safety and wireline Telecommunications test methods applicable to a wide range of product categories. These product categories include Central Office Telecommunications Equipment [including NEBS - Network Equipment Building Systems], Unlicensed and Licensed Wireless and RF devices, Information Technology Equipment (ITE); Telecommunications Terminal Equipment (TTE); Medical Electrical Equipment; Industrial, Scientific and Medical Test Equipment; Professional Audio and Video Equipment; Industrial and Scientific Instruments and Laboratory Apparatus; Cable Distribution Systems, and Energy Efficient Lighting.

B- ***A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3297.03)*** to certify

- For the USA (Federal Communications Commission):
  - 1- All Unlicensed radio frequency devices within FCC Scopes A1, A2, A3, and A4;
  - 2- All Licensed radio frequency devices within FCC Scopes B1, B2, B3, and B4;
  - 3- All Telephone Terminal Equipment within FCC Scope C.
- For the Canada (Industry Canada):
  - 1 All Scope 1-Licence-Exempt Radio Frequency Devices;
  - 2 All Scope 2-Licensed Personal Mobile Radio Services;
  - 3 All Scope 3-Licensed General Mobile & Fixed Radio Services;
  - 4 All Scope 4-Licensed Maritime & Aviation Radio Services;
  - 5 All Scope 5-Licensed Fixed Microwave Radio Services
  - 6 All Broadcasting Technical Standards (BETS) in the Category I Equipment Standards List.
- For Singapore (Info-Communications Development Authority (IDA)):
  - 1 All Line Terminal Equipment: All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2011, Annex 2
  - 2. All Radio-Communication Equipment: All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2011, Annex 2
- For the Hong Kong Special Administrative Region:
  - 1 All Radio Equipment, per KHCA 10XX-series Specifications;
  - 2 All GMDSS Marine Radio Equipment, per HKCA 12XX-series Specifications;
  - 3 All Fixed Network Equipment, per HKCA 20XX-series Specifications.
- For Japan:
  - 1 MIC Telecommunication Business Law (Terminal Equipment):
    - All Scope A1 - Terminal Equipment for the Purpose of Calls;
    - All Scope A2 - Other Terminal Equipment
  - 2 Radio Law (Radio Equipment):
    - All Scope B1 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 1 of the Radio Law
    - All Scope B2 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 2 of the Radio Law
    - All Scope B3 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 3 of the Radio Law

C- ***A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3297.01)*** to certify Products to USA's Environmental Protection Agency (EPA) ENERGY STAR Product Specifications for:

1 Electronics and Office Equipment:
- for Telephony (ver. 3.0)
- for Audio/Video (ver. 3.0)
- for Battery Charging Systems (ver. 1.1)
- for Set-top Boxes & Cable Boxes (ver. 4.1)
- for Televisions (ver. 6.1)
- for Computers (ver. 6.0)
- for Displays (ver. 6.0)
- for Imaging Equipment (ver. 2.0)
- for Computer Servers (ver. 2.0)

2 Commercial Food Service Equipment
- for Commercial Dishwashers (ver. 2.0)
- for Commercial Ice Machines (ver. 2.0)
- for Commercial Ovens (ver. 2.1)
- for Commercial Refrigerators and Freezers

3 Lighting Products
- For Decorative Light Strings (ver. 1.5)
- For Luminaires (including sub-components) and Lamps (ver. 1.2)
- For Compact Fluorescent Lamps (CFLs) (ver. 4.3)
- For Integral LED Lamps (ver. 1.4)

4 Heating, Ventilation, and AC Products
- for Residential Ceiling Fans (ver. 3.0)
- for Residential Ventilating Fans (ver. 3.2)

5 Other
- For Water Coolers (ver. 3.0)

D- ***A NIST Designated Phase-I and Phase-II Conformity Assessment Body (CAB) for the following economies and regulatory authorities under the terms of the stated MRAs/Treaties:***

- Australia: ACMA (Australian Communication and Media Authority) – APEC Tel MRA -Phase I;
- Canada: (Innovation, Science and Economic development Canada - ISEDC) Foreign Certification Body – FCB – APEC Tel MRA -Phase I & Phase II;
- Chinese Taipei (Republic of China – Taiwan):
  - BSMI (Bureau of Standards, Metrology and Inspection) APEC Tel MRA -Phase I;
  - NCC (National Communications Commission) APEC Tel MRA -Phase I;
- European Union:
  - EMC Directive 2014/30/EU US-EU EMC & Telecom MRA CAB (NB)
  - Radio Equipment (RE) Directive 2014/53/EU US-EU EMC & Telecom MRA CAB (NB)
  - Low Voltage Directive (LVD) 2014/35/EU
- Hong Kong Special Administrative Region: (Office of the Telecommunications Authority – OFTA) APEC Tel MRA -Phase I & Phase II
- Israel – US-Israel MRA Phase I
- Republic of Korea (Ministry of Communications - Radio Research Laboratory) APEC Tel MRA -Phase I
- Singapore: (Infocomm Media Development Authority - IMDA) APEC Tel MRA -Phase I & Phase II;
- Japan: VCCI - Voluntary Control Council for Interference US-Japan Telecom Treaty VCCI Side Letter-
- USA:
  - ENERGY STAR Recognized Test Laboratory – US EPA
  - Telecommunications Certification Body (TCB) – US FCC;
  - Nationally Recognized Test Laboratory (NRTL) – US OSHA

Vietnam: APEC Tel MRA -Phase I;

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.10-2013 and FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

2.2 EUT Exercise Software

The test utility used was the "*Rajant Breadcrumb Commander tool version 11.27.1_b1*", provided by *Rajant Corporation,* the software is compliant with the standard requirements being tested against.

The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

Note: 5600-5650 MHz band is not supported for ISEDC.

WLAN0 (Ports A and B)
5.3 Band

Channel	Frequency (MHz)	Power Setting
802.11a		
52	5260	19
60	5300	19
64	5320	19
802.11n20		
52	5260	15
60	5300	14
64	5320	14
802.11n40		
54	5270	16
62	5310	12
802.11ac 80		
58	5290	10

5.6 Band

Channel	Frequency (MHz)	Power Setting
802.11a		
100	5500	18
120	5600	22
140	5700	18
144	5720	22
802.11n20		
100	5500	15
120	5600	15
140	5700	15
144	5720	16
802.11n40		
102	5510	14
118	5590	17
134	5670	17
142	5710	17
802.11ac80		
106	5530	10
122	5610	17
138	5690	17

WLAN1(Ports C and D)
5.3 Band

Channel	Frequency (MHz)	Power Setting
802.11a		
52	5260	23
60	5300	22
64	5320	20
802.11n20		
52	5260	17
60	5300	16
64	5320	16
802.11n40		
54	5270	16
62	5310	10
802.11ac 80		
58	5290	10

5.6 Band

Channel	Frequency (MHz)	Power Setting
802.11a		
100	5500	18
120	5600	23
140	5700	14
144	5720	22
802.11n20		
100	5500	17
120	5600	17
140	5700	13
144	5720	17
802.11n40		
102	5510	12
118	5590	15
134	5670	14
142	5710	15
802.11ac80		

106	5530	10
122	5610	15
138	5690	15

2.3 Equipment Modification

None.

2.4 Duty Cycle for Correction Factor

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 section B:

All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.

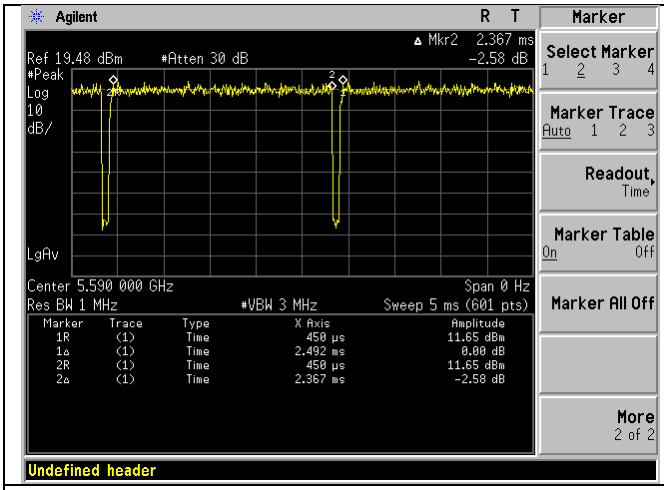
Radio Mode	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11a	2.01	2.11	95.27	0.21
802.11n20	2.01	2.10	95.68	0.19
802.11n40	2.36	2.49	94.98	0.22
802.11ac80	1.10	1.217	90.04	0.44

Note: Duty Cycle Correction Factor = 10*log(1/duty cycle)

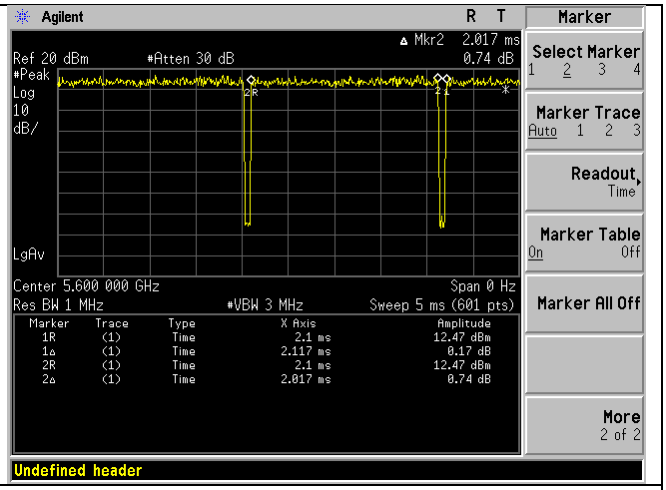
Please refer to the following plots for duty cycle.

Naming Convention:

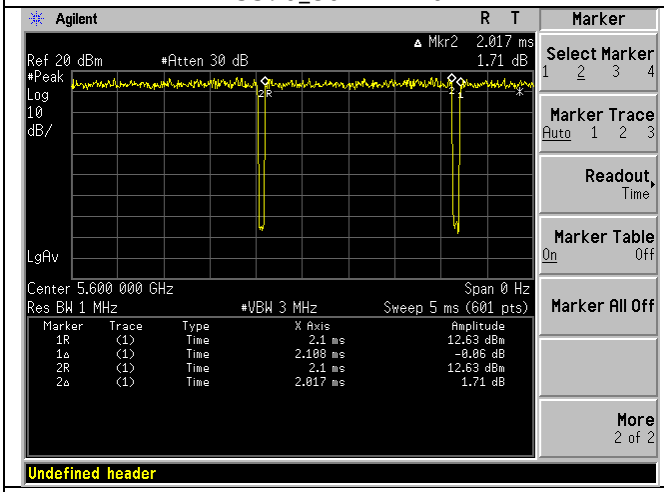
Frequency (MHz)_Modulation



5590_802.11n40



5600_802.11a



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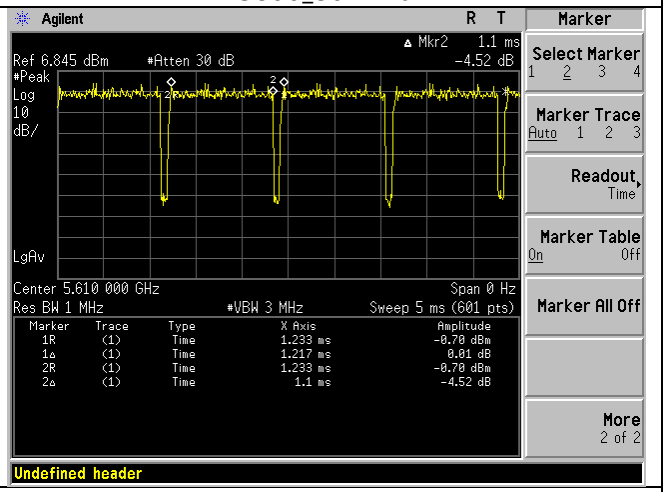


5610_802.11ac80

2.5 Local Support Equipment

Manufacturer	Description	Model
Dell	laptop	Latitude 5480

2.6 Remote Support Equipment

Manufacturer	Description	Model
TP	Power Over Ethernet (PoE) injector	TP-POE-24G

2.7 Interface Ports and Cabling

Cable Description	Length (m)	To	From
Ethernet Cable	1 m	EUT	PoE
Ethernet Cable	1 m	Laptop	PoE

3 Summary of Test Results

Results reported relate only to the product tested.

FCC & ISEDC Rules	Description of Test	Results
FCC §2.1091, §15.407(f), ISEDC RSS-102 - RF Exposure	RF Exposure	Compliant
FCC §15.203, ISEDC RSS-Gen §6.8	Antenna Requirement	Compliant
FCC §15.207, ISEDC RSS-Gen §8.8	AC Power Line Conducted Emissions	Compliant
FCC §2.1053, §15.205, §15.209, 15.407(b), FCC §2.1051 ISEDC RSS-247 §6.2	Spurious Radiated Emissions	Compliant
FCC §15.407(e), ISEDC RSS-247 §6.2	Occupied Bandwidth	Compliant
FCC §407(a), ISEDC RSS-247 §6.2	Output Power	Compliant
FCC §15.407(a), ISEDC RSS-247 §6.2	Power Spectral Density	Compliant
FCC §15.407(h) ISEDC RSS-247	Dynamic Frequency Selection	Compliant[1]

Note[1]: Please refer to report R2309254-DFS for test results.

BACL is responsible for all the information provided in this report, except when information is provided by the customer as identified in this report. Information provided by the customer, e.g., antenna gain, can affect the validity of results.

4 FCC §15.203 & ISEDC RSS-Gen §6.8 - Antenna Requirements

4.1 Applicable Standards

According to FCC §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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

According to ISEDC RSS-Gen §6.8: Transmitter Antenna

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For license-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

4.2 Antenna Description

Antenna Model	External/ Internal/ Integral	Part Number	Antenna Type	Frequency Range (MHz)	Maximum Antenna Gain (dBi)
KMA-5550-6-NM	External	75-100139-055	Omni-directional	5350-5750 MHz	6
KMA-5250-7-NM	External	75-100139-052	Omni-directional	5150-5350 MHz	7
PUCK-12-V1-01	External	6009880915248	Omni-directional	5150-5750 MHz	>4, <6

Note: Worst case MIMO gains:

1. 5.3 band: 10dBi
2. 5.6 band: 9dBi

Note: This device must be professionally installed.

5 FCC §15.407(f) §2.1091 & ISED RSS-102 - RF Exposure

5.1 Applicable Standards

As per FCC §1.1310(d) (3), At operating frequencies above 6 GHz, the MPE limits listed in Table 1 in paragraph (e)(1) of this section shall be used in all cases to evaluate the environmental impact of human exposure to RF radiation as specified in §1.1307(b) of this part.

TABLE 1 TO §1.1310(E)(1)—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*($180/f^2$)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

According to ISED RSS-102 Issue 5:

2.5.2 Exemption Limits for Routine Evaluation — RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz Footnote6 and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 4.49/f0.5 W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1.31 x 10-2 f0.6834 W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

5.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = EIRP/4\pi R^2$$

Where: S = power density
EIRP = Effective Isotropic Radiated Power
R = distance to the center of radiation of the antenna

5.3 MPE Results for the FCC

Standalone

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
WLAN0 2.4GHz Wifi	2462	7.5	24.22	31.72	1485.94	0.296	1.0
WLAN0 5GHz Wifi	5590	9	21	30	1000	0.2	1.0
WLAN1 5GHz Wifi	5270	10	20	30	1000	0.2	1.0

Note: multiple configurations cannot transmit within one radio (i.e. 2.4 and 5GHz Wifi cannot transmit simultaneously on WLAN0)
Note: Non DFS band info including power and gain referenced from previous certification. For DFS antenna gain info, refer to section 4.2. For DFS power/EIRP, rounded up for a rated power.

Sum of Ratios:

WLAN0 2.4Wifi + WLAN1 5Wifi: 0.296/1.0+0.2/1.0= 0.496 < 1

5.4 MPE Results for IC

WLAN0 2.4GHz Wifi

The EIRP of this device is 31.72 dBm (1485.94 mW) which is less than the exemption threshold, i.e., 1.31*10^(-2) * f^(0.6834)=2.72W. Therefore, the RF exposure evaluation is exempt.

WLAN0 5GHz Wifi

The EIRP of this device is 30dBm (1000 mW) which is less than the exemption threshold, i.e., 1.31*10^(-2) * f^(0.6834)=4.77W. Therefore, the RF exposure evaluation is exempt.

WLAN1 5GHz Wifi

The EIRP of this device is 30 dBm (1000 mW) which is less than the exemption threshold, i.e., 1.31*10^(-2) * f^(0.6834)=4.58W. Therefore, the RF exposure evaluation is exempt.

Note: multiple configurations cannot transmit within one radio(i.e. 2.4 and 5GHz Wifi cannot transmit simultaneously on WLAN0)

Sum of Ratios:

WLAN0 2.4Wifi + WLAN1 5Wifi: 1.49/2.72+1.0/4.58= 0.77 < 1

Note: For WLAN0 2.4Wifi data referenced above, please refer to original FCC /IC certification's MPE calculations

6 FCC §15.207& ISEDC RSS-Gen §8.8 - AC Line Conducted Emissions

6.1 Applicable Standards

As per FCC §15.207 and ISEDC RSS GEN §8.8 Conducted limits:

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note1	56 to 46 Note2
0.5-5	56	46
5-30	60	50

Note1: Decreases with the logarithm of the frequency.

Note2: A linear average detector is required

6.2 Test Setup

The measurement was performed at shield room, using the setup per ANSI C63.10-2013 measurement procedure. The specification used were FCC §15.207 and ISEDC RSS GEN §8.8.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The AC/DC power adapter of the EUT was connected with LISN-1 which provided 120 V / 60 Hz AC power.

6.3 Test Procedure

During the conducted emissions test, the power cord of the EUT host system was connected to the mains outlet of the LISN-1 and the power cords of support equipment were connected to LISN-2.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data were recorded in the peak, quasi-peak, and average detection mode. Quasi-Peak readings are distinguished with a “QP.” Average readings are distinguished with an “Ave”.

6.4 Corrected Amplitude and Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Correction Factor (CF) to indicated Amplitude (Ai) reading. The basic equation is as follows:

$$CA = Ai + CF$$

For example, a corrected amplitude of 46.2 dBuV = Indicated Reading (32.5 dBuV) + Correction Factor (13.7 dB)

The Correction Factor is calculated by adding Cable loss (CL) and attenuation of the impulse limiter and the high pass filter. The basic equation is as follows:

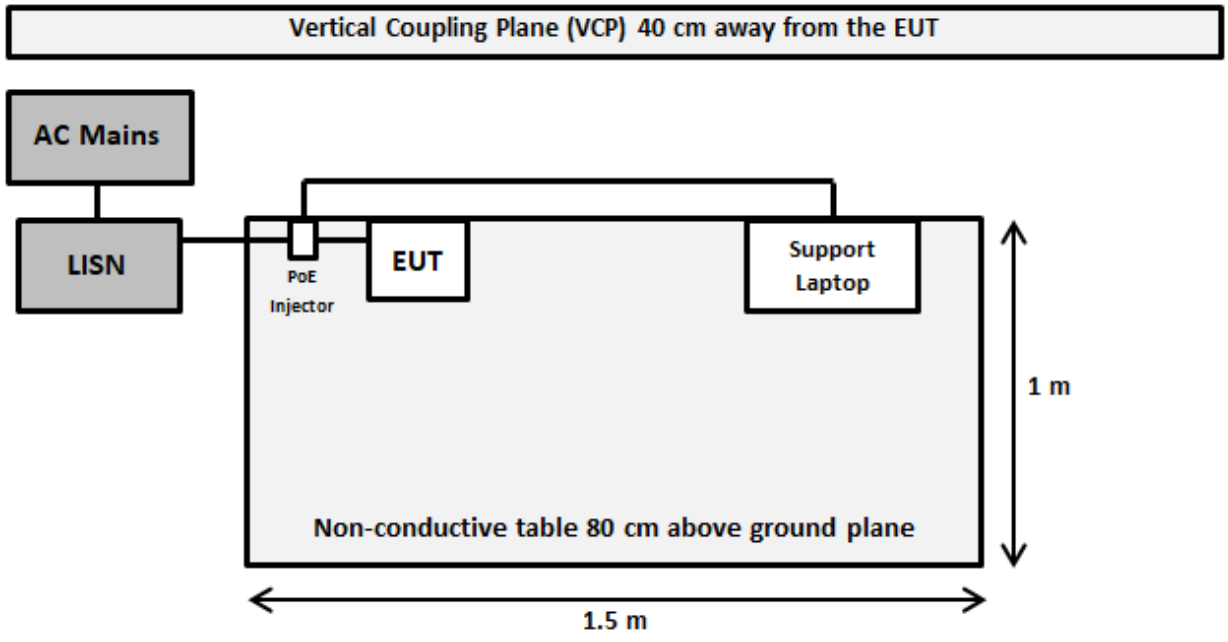
$$CF= CL + Attenuator$$

For example, a corrected amplitude of 13.7 dB = Cable Loss (3.7 dB) + Attenuation (10 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

$$Margin = Corrected\ Amplitude – Limit$$

6.5 Test Setup Block Diagram



6.6 Test Equipment List and Details

BACL No.	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
124	Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100044	2023-06-16	1 year
681	Rohde & Schwarz	Impulse Limiter	ESH3-Z2	101962	2023-07-12	6 months
726	Solar Electronics Company	High Pass Filter	Type 7930-100	7930150204	2023-07-24	6 months
732	FCC	LISN	FCC-LISN-50-25-2-10-CISPR16	160129	2023-09-12	1 year
1226	Fairview Microwave	Micro-Coax Cable	FMC0101223-240	210241	2023-06-28	6 months

Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

6.7 Test Environmental Conditions

Temperature:	17.3 to 17.5 ºC
Relative Humidity:	53.3 to 54.2 %
ATM Pressure:	102.7 kPa

The testing was performed by Steven Lianto on 2023-12-02 in the 5 meter chamber 3.

6.8 Summary of Test Results

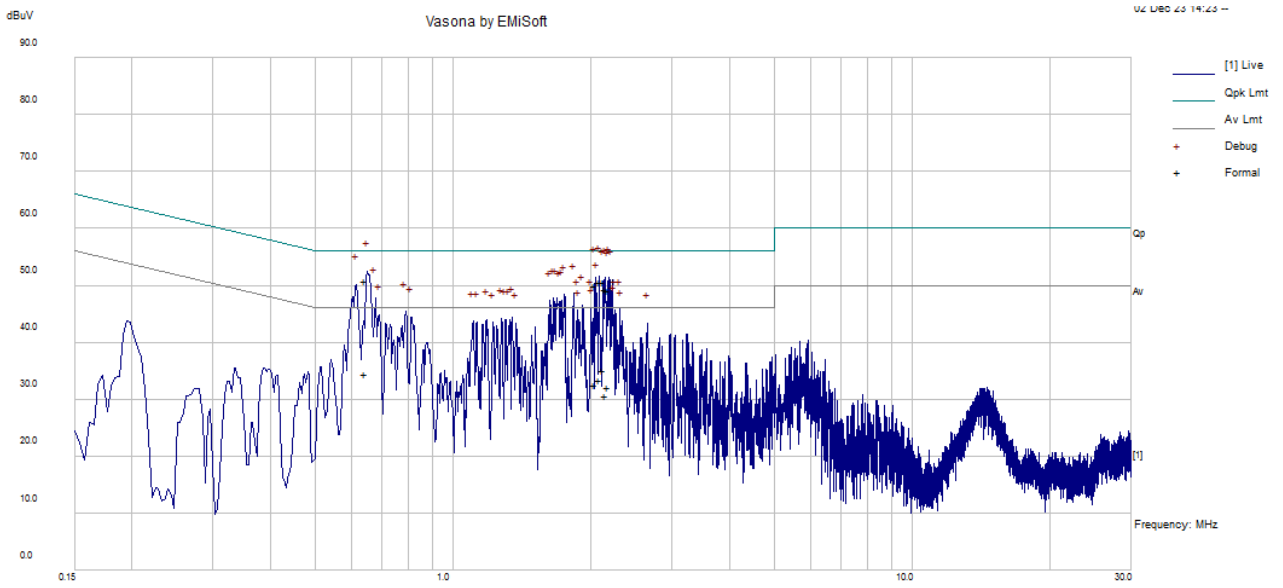
According to the recorded data in following table, the EUT complied with the FCC 15C and ISEDC RSS-Gen standard's conducted emissions limits, with the margin reading of:

Worst Case – AC Line (via PoE Injector): 120V, 60Hz			
Margin (dB)	**Frequency (MHz)**	**Conductor Mode (Hot/Neutral)**	**Range (MHz)**
-4.67	2.084454	Neutral	0.15 to 30

6.9 Conducted Emissions Test Plots and Data

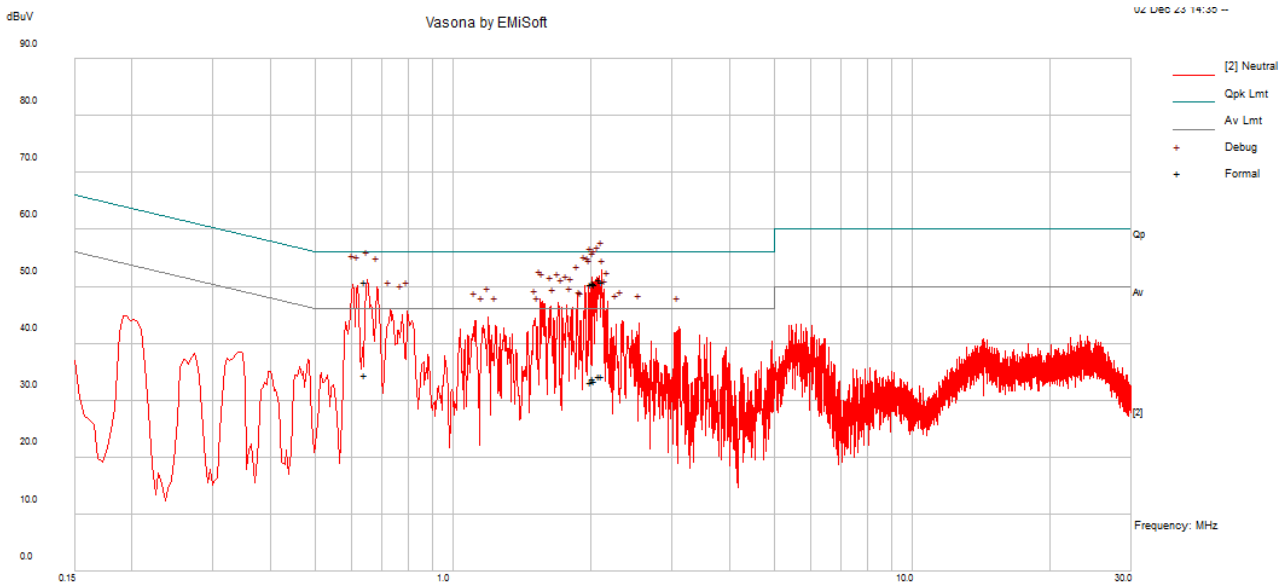
Note: all testing performed with both radios(WLAN0 and WLAN1) transmitting simultaneously.
Note: Both radios were configured for 802.11a mode at 5720MHz for the following testing

AC Line (via PoE Injector): 120V, 60Hz – Hot Conductor



Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBµV)	Limit (dBµV)	Margin (dB)	Detector
0.644765	40.6	10.23	50.83	56	-5.17	QP
2.08302	40.53	10.08	50.61	56	-5.39	QP
2.172207	38.98	10.07	49.05	56	-6.95	QP
2.039489	39.89	10.09	49.98	56	-6.02	QP
2.154777	39.26	10.08	49.33	56	-6.67	QP
2.125283	40.62	10.08	50.7	56	-5.3	QP
0.644765	24.32	10.23	34.55	46	-11.45	Ave
2.08302	23.22	10.08	33.3	46	-12.7	Ave
2.172207	22.03	10.07	32.11	46	-13.89	Ave
2.039489	22.55	10.09	32.63	46	-13.37	Ave
2.154777	20.66	10.08	30.74	46	-15.26	Ave
2.125283	24.95	10.08	35.03	46	-10.97	Ave

AC Line (via PoE Injector): 120V, 60Hz – Neutral Conductor



Frequency (MHz)	Ai. Reading (dBuV)	Correction Factor (dB)	Corrected Amplitude (dBµV)	Limit (dBµV)	Margin (dB)	Detector
2.108096	40.8	10.08	50.88	56	-5.12	QP
2.084454	**41.25**	**10.08**	**51.33**	**56**	**-4.67**	**QP**
2.00137	40.41	10.09	50.51	56	-5.49	QP
2.041109	40.37	10.09	50.46	56	-5.54	QP
0.645395	40.55	10.23	50.79	56	-5.21	QP
2.020148	40.53	10.09	50.62	56	-5.38	QP
2.108096	24.18	10.08	34.26	46	-11.74	Ave
2.084454	24.17	10.08	34.25	46	-11.75	Ave
2.00137	23.11	10.09	33.2	46	-12.8	Ave
2.041109	23.31	10.09	33.4	46	-12.6	Ave
0.645395	24.18	10.23	34.41	46	-11.59	Ave
2.020148	23.79	10.09	33.88	46	-12.12	Ave

7 FCC §15.209, §15.407(b) & ISEDC RSS-247 §6.2 - Spurious Radiated Emissions

7.1 Applicable Standard

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	960 – 1240	4. 5 – 5. 15
0.495 – 0.505	16.69475 – 16.69525	1300 – 1427	5. 35 – 5. 46
2.1735 – 2.1905	25.5 – 25.67	1435 – 1626.5	7.25 – 7.75
4.125 – 4.128	37.5 – 38.25	1645.5 – 1646.5	8.025 – 8.5
4.17725 – 4.17775	73 – 74.6	1660 – 1710	9.0 – 9.2
4.20725 – 4.20775	74.8 – 75.2	1718.8 – 1722.2	9.3 – 9.5
6.215 – 6.218	108 – 121.94	2200 – 2300	10.6 – 12.7
6.26775 – 6.26825	123 – 138	2310 – 2390	13.25 – 13.4
6.31175 – 6.31225	149.9 – 150.05	2483.5 – 2500	14.47 – 14.5
8.291 – 8.294	156.52475 – 156.52525	2690 – 2900	15.35 – 16.2
8.362 – 8.366	156.7 – 156.9	3260 – 3267	17.7 – 21.4
8.37625 – 8.38675	162.0125 –167.17	3.332 – 3.339	22.01 – 23.12
8.41425 – 8.41475	167.72 – 173.2	3 3458 – 3 358	23.6 – 24.0
12.29 – 12.293	240 – 285	3.600 – 4.400	31.2 – 31.8
12.51975 – 12.52025	322 – 335.4		36.43 – 36.5
12.57675 – 12.57725	399.9 – 410		Above 38.6
13.36 – 13.41	608 – 614		

As per FCC §15.209: The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100 Note 1	3
88 - 216	150 Note 1	3
216 - 960	200 Note 1	3
Above 960	500	3

Note 1: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

As per FCC Part 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.

(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 noet exceed an e.i.r.p. of -27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(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.

As per ISEDC RSS-247 §6.2

For transmitters operating in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, any unwanted emissions that fall into the band 5250- 5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz. Otherwise, the transmission is considered as intentional and the devices shall implement dynamic frequency selection (DFS) and transmitter power control (TPC) as per the requirements for the band 5250-5350 MHz

For devices with both operating frequencies and channel bandwidths contained within the band 5250-5350 MHz, the device shall comply with the following:

1. All emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. if the equipment is intended for outdoor use; or
2. All emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. and any emissions within the band 5150-5250 MHz shall meet the power spectral density limits of Section 6.2.1. The device shall be labelled “for indoor use only.”

For devices with operating frequencies in the band 5250-5350 MHz but having a channel bandwidth that overlaps the band 5150-5250 MHz, the devices’ unwanted emission shall not exceed -27 dBm/MHz e.i.r.p. outside the band 5150-5350 MHz and its power shall comply with the spectral power density for operation within the band 5150-5250 MHz. The device shall be labelled “for indoor use only.”

For transmitters operating in the band 5470-5725 MHz, emissions outside the band shall not exceed -27 dBm/MHz e.i.r.p.

For the band 5725-5850 MHz, emissions at frequencies from the band edges to 10 MHz above or below the band edges shall not exceed -17 dBm/MHz e.i.r.p. For emissions at frequencies more than 10 MHz above or below the band edges, the emissions power shall not exceed -27 dBm/MHz.

7.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.10-2013. The specification used was the FCC 15.407 and ISEDC RSS-247 limits.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test table and bundle when necessary.

7.3 Test Procedure

For the radiated emissions test, the EUT host, and all support equipment power cords were connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter or 1.5 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

The spectrum analyzer or receiver is set as:

Below 1000 MHz:

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

(1) Peak: RBW = 1MHz / VBW = 3MHz / Sweep = 100ms
(2) Average: RBW = 1MHz / VBW = 10Hz or 1/T / Sweep = Auto

7.4 Corrected Amplitude and Margin Calculation

For emissions below 1 GHz,

The Corrected Amplitude (CA) is calculated by adding the Correction Factor to the S.A. Reading. The basic equation is as follows:

CA = S.A. Reading + Correction Factor

For example, a corrected amplitude of 40.3 dBuV/m = S.A. Reading (32.5 dBuV) + Correction Factor (7.8 dB/m)

The Correction Factor is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) together. This calculation is done in the measurement software, and reported in the test result section. The basic equation is as follows:

Correction Factor = AF + CL + Atten – Ga

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude – Limit

For emission above 1 GHz,

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

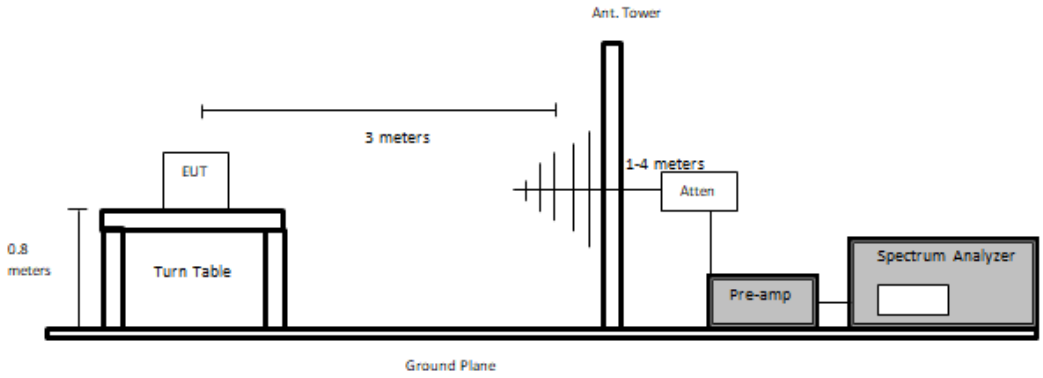
For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude – Limit

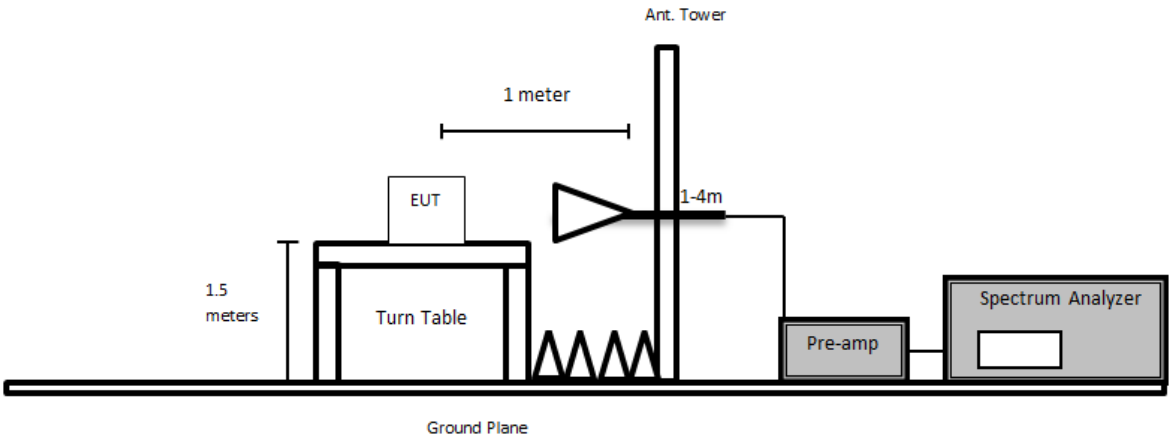
7.5 Test Setup Block Daigram

Below 1GHz:

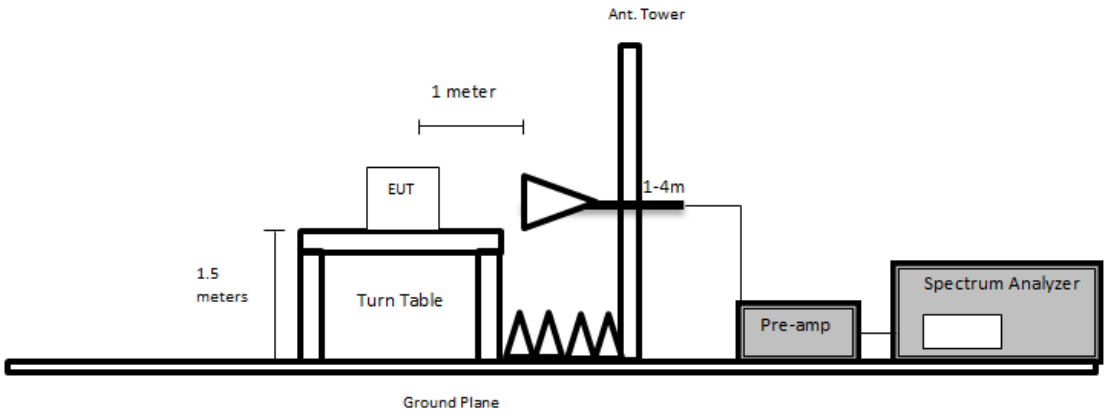


Above 1GHz:

Using Asset #1192



Using Asset #91, #92



7.6 Test Equipment List and Details

WLAN0

BACL No.	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
124	Rhode & Schwarz	EMI Test Receiver	ESCI 1166.5950 K03	100044	2023-06-16	1 year
287	HP/Agilent	PSA spectrum analyzer 3HZ to 44 GHZ	E4446A	US44300386	2023-05-06	1 year
424	Agilent	Spectrum Analyzer	E4440A	US45303156	2022-12-19	13 months
655	Rohde & Schwarz	Signal Analyzer	FSQ26	200749	2023-06-06	1 year
327	Sunol Science Corp	System Controller	SC110V	122303-1	N/R	N/A
316	Sonoma Instruments	Preamplifier 10 kHz - 2.5 GHz	317	260406	2023-09-26	1 year
658	HP/Agilent	Pre-Amplifier	8449B OPT HO2	3008A01103	2023-12-01	6 months
827	AH Systems	Preamplifier	PAM 1840 VH	170	2023-11-08	6 months
321	Sunol Sciences	Biconilog Antenna	JB3	A020106-2; 1504	2023-12-18	2 years
1192	ETS Lindgren	Horn Antenna	3117	00218973	2022-09-29	2 years
91	ETS Lindgren	Horn Antenna	ARH-4223-02	10555-02	2022-03-08	2 years
92	ETS Lindgren	Horn Antenna	ARH-2823-02	10555-01	2022-03-17	2 years
1186	Pasternack	Coaxial Cable, RG214	PE3062-1050CM	1	2023-10-03	1 year
1248	Pasternack	RG214 COAX Cable	PE3062	-	2023-10-04	1 year
1249	Time Microwave	LMR-400 Cable Dc-3 Ghz	AE13684	2k80612-56fts	2023-09-26	1 year
1295	Carlisle	10m Ultra Low Loss Coaxial Cable	UFB142A-1-3937-200200	6463989091 2-001	2023-10-31	6 months
1329	Pasternack	2.92mm short coaxial cable	PE360-12	NA	2023-11-28	6 months
1346	RFMW	2.92mm 10ft RF cable	KMSE-160SAW-240.0-KSME	NA	2023-11-03	6 Months
387	Micro-Tronics	5150-5350 MHz Notch Filter	BRC50703	006	2023-03-02	1 year
389	Micro-Tronics	5.6 GHz Notch Filter	BRC 50704	003	2023-05-04	1 year
1245	-	6dB Atennuator	PE7390-6	01182018A	2022-11-22	2 year
1246	HP	RF Limiter	11867A	01734	2023-04-13	1 year
-	Vasona	Test software	V6.0 build 11	10400213	N/R	N/R

WLAN1

BACL No.	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
124	Rhode & Schwarz	EMI Test Receiver	ESCI 1166.5950 K03	100044	2023-06-16	1 year
287	HP/Agilent	PSA spectrum analyzer 3HZ to 44 GHZ	E4446A	US44300386	2023-05-06	1 year
424	Agilent	Spectrum Analyzer	E4440A	US45303156	2022-12-19	13 months
655	Rohde & Schwarz	Signal Analyzer	FSQ26	200749	2023-06-06	1 year
327	Sunol Science Corp	System Controller	SC110V	122303-1	N/R	N/A
316	Sonoma Instruments	Preamplifier 10 kHz - 2.5 GHz	317	260406	2023-09-26	1 year
658	HP/Agilent	Pre-Amplifier	8449B OPT HO2	3008A01103	2023-06-13	6 months
827	AH Systems	Preamplifier	PAM 1840 VH	170	2023-05-17	6 months
321	Sunol Sciences	Biconilog Antenna	JB3	A020106-2; 1504	2021-11-22	2 years
1192	ETS Lindgren	Horn Antenna	3117	00218973	2022-09-29	2 years
91	ETS Lindgren	Horn Antenna	ARH-4223-02	10555-02	2022-03-08	2 years
92	ETS Lindgren	Horn Antenna	ARH-2823-02	10555-01	2022-03-17	2 years
1186	Pasternack	Coaxial Cable, RG214	PE3062-1050CM	1	2023-10-03	1 year
1248	Pasternack	RG214 COAX Cable	PE3062	-	2023-10-04	1 year
1249	Time Microwave	LMR-400 Cable Dc-3 Ghz	AE13684	2k80612-5 6fts	2023-09-26	1 year
1295	Carlisle	10m Ultra Low Loss Coaxial Cable	UFB142A-1-3937-200200	64639890912-001	2023-05-04	6 months
1329	Pasternack	2.92mm short coaxial cable	PE360-12	NA	2023-06-09	6 months
1346	RFMW	2.92mm 10ft RF cable	KMSE-160SAW-240.0-KSME	NA	2023-06-23	6 Months
387	Micro-Tronics	5150-5350 MHz Notch Filter	BRC50703	006	2023-03-02	1 year
389	Micro-Tronics	5.6 GHz Notch Filter	BRC 50704	003	2023-05-04	1 year
1245	-	6dB Atennuator	PE7390-6	01182018A	2022-11-22	2 year
1246	HP	RF Limiter	11867A	01734	2023-04-13	1 year
-	Vasona	Test software	V6.0 build 11	10400213	N/R	N/R

Note[1]: cable and notch filters included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

7.7 Test Environmental Conditions

Temperature:	23 ~25 °C
Relative Humidity:	45 %
ATM Pressure:	102 kPa

The WLAN1 testing was performed by Shankar Pangeni from 2023-10-04 – 2023-10-23 in 5m chamber 3.
The WLAN0 testing was performed by Will Hu from 2023-12-27 – 2023-12-29 in 5m chamber 3.

7.8 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Part 15.407 and ISEDC RSS-247 standards' radiated emissions limits, and had the worst margin of:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-0.18	88.49	V	802.11a configuration, 5500 MHz

7.9 Radiated Emissions Test Result Data

Note: *Below test data are the radiated cabinet emissions, for conducted in-lieu of radiated measuemrent performded at the antenna port please refer to ANNEX F and ANNEX E.*

Note: *For testing that passed "conducted in lieu of radiated testing" in bench, testing was performed with antenna ports terminated for radiated testing to evaluate cabinet emissions only. For testing that exceeded limits for "conducted in lieu of radiated testing" in bench due to over estimations, these items were further evaluated in chamber with device transmitting through antennas.*

Note*: Lowest frequency emitted by device is above 30MHz, thus below 30MHz spurious is not needed.*

Note: *peak detector was used in comparison to QP limit in some cases to show worst-case compliance*

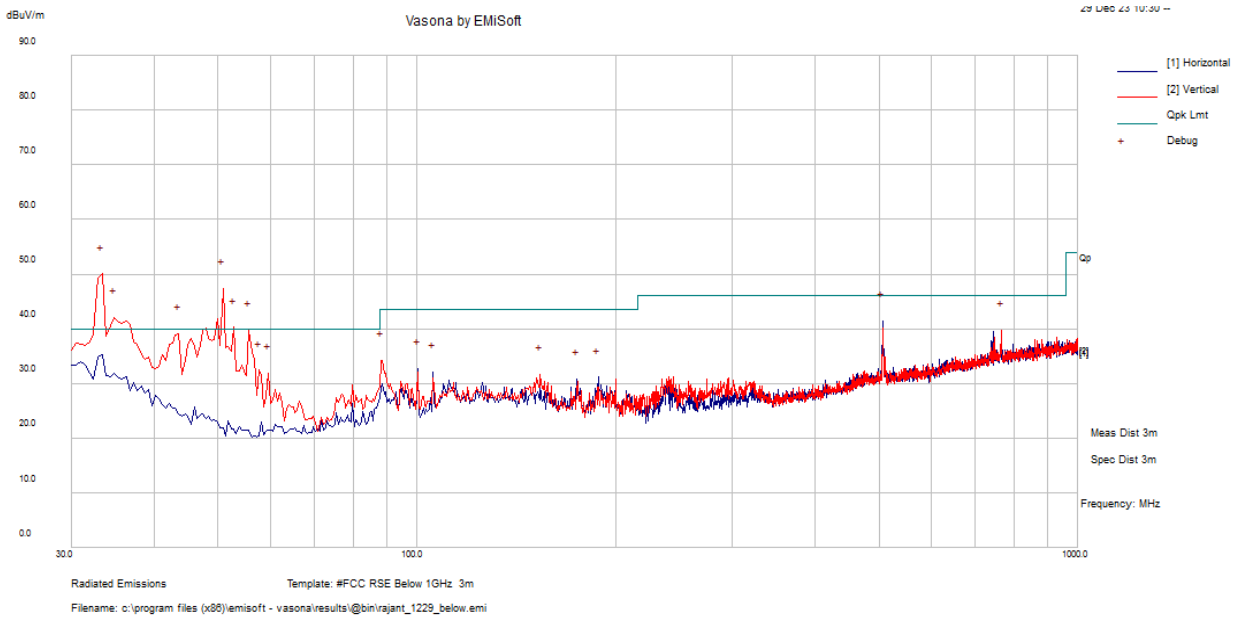
Note*: As per FCC Part 15.407 and ISDEC RSS-247 §6.2, emissions outside the restricted bands shall not exceed -27dBm/MHz. Per ANSI 63.10-2013 Section 12.7.2: E[dBµV/m] = EIRP [dBM] + 95.2, for d = 3meters. Thus Limit [dBµV/m @ 3m]=-27[dBm/MHz] + 95.3=68.3[dBµV/m @ 3m]*

Note: *Per ANSI C63.10-2013 section 5.6.2.2(b): Measure the mode with the highest output power and the mode with the highest output power sepectral density for reach modulation family. Thus a worst case of 802.11 mode forcing transmit through availalble paths was chosen. For bandedge radiated emission,all mode tested.*

30MHz – 1 GHz Worst Case, Worst Case Measured at 3 meters

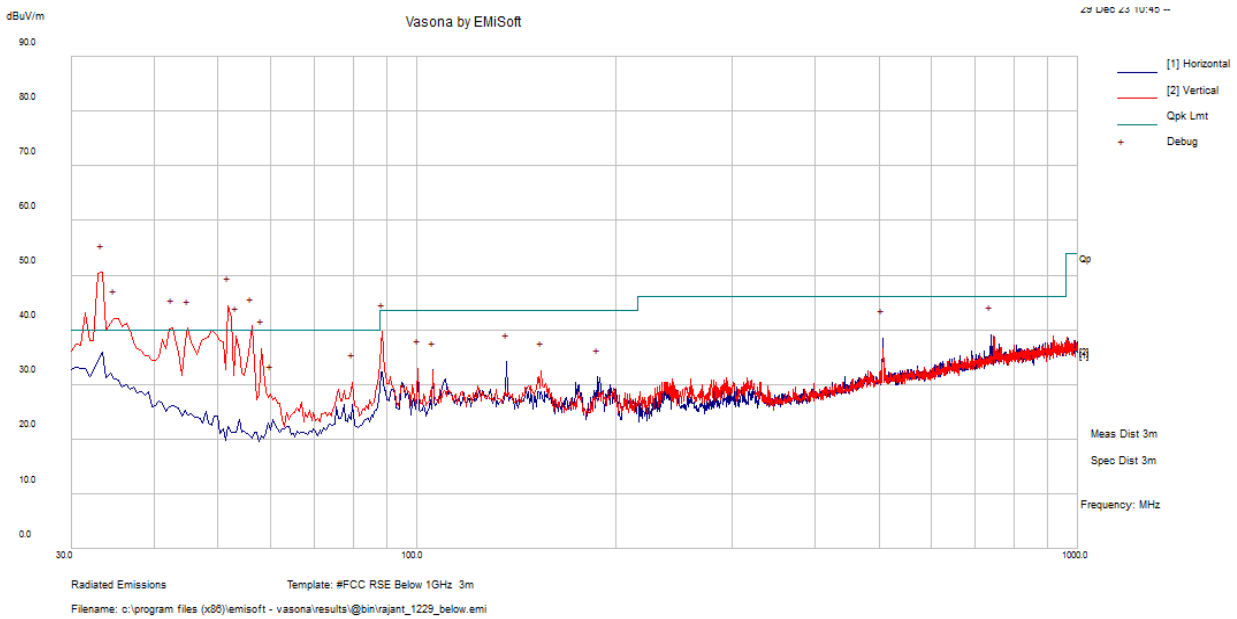
WLAN0, port A

1) 5260 MHz, 802.11a configuration



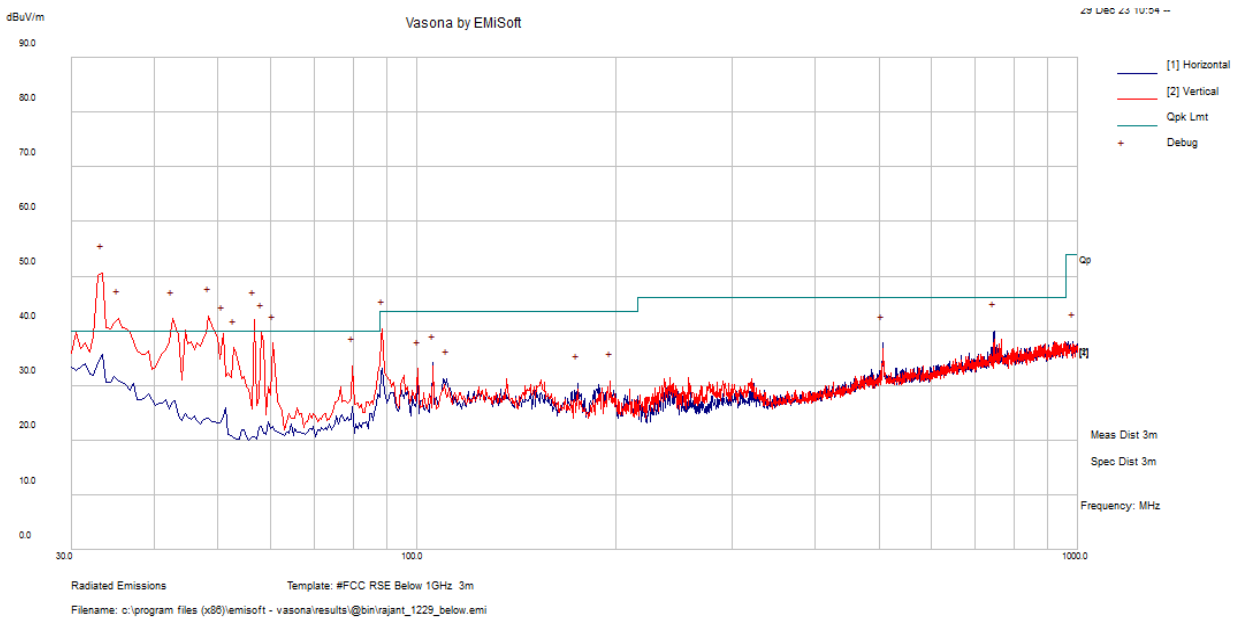
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
33.395	41.44	-3.22	38.22	103	V	10	40	-1.78	QP
50.855	50.69	-13	37.69	110	V	182	40	-2.31	QP
34.85	35.37	-4.26	31.11	100	V	25	40	-8.89	QP
52.795	43.98	-13.42	30.56	100	V	85	40	-9.44	QP
55.705	53.52	-13.73	39.79	100	V	0	40	-0.21	Peak
43.58	48.97	-9.92	39.05	100	V	0	40	-0.95	Peak

2) 5300 MHz, 802.11a configuration



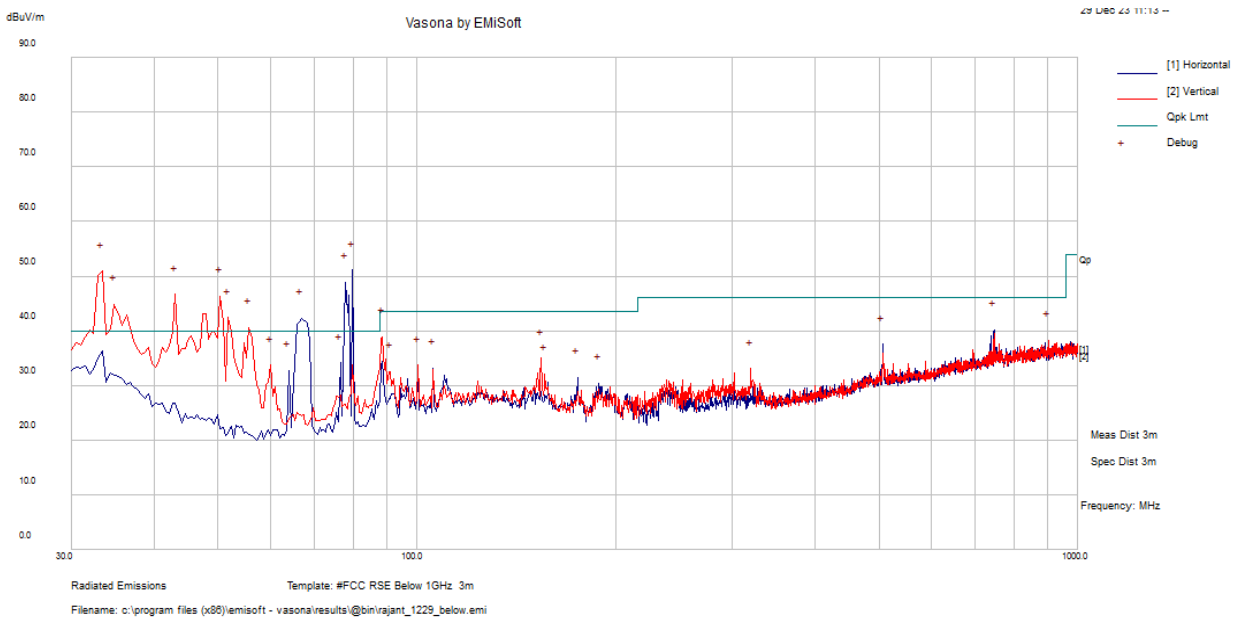
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
33.395	41.9	-3.22	38.68	110	V	74	40	-1.32	QP
51.825	47.92	-13.23	34.69	100	V	80	40	-5.31	QP
34.85	35.44	-4.26	31.18	100	V	0	40	-8.82	QP
56.19	44.75	-13.75	31	142	V	186	40	-9	QP
42.61	39.82	-9.35	30.47	115	V	156	40	-9.53	QP
45.035	41.42	-10.75	30.67	100	V	0	40	-9.33	QP

3) 5320 MHz, 802.11a configuration



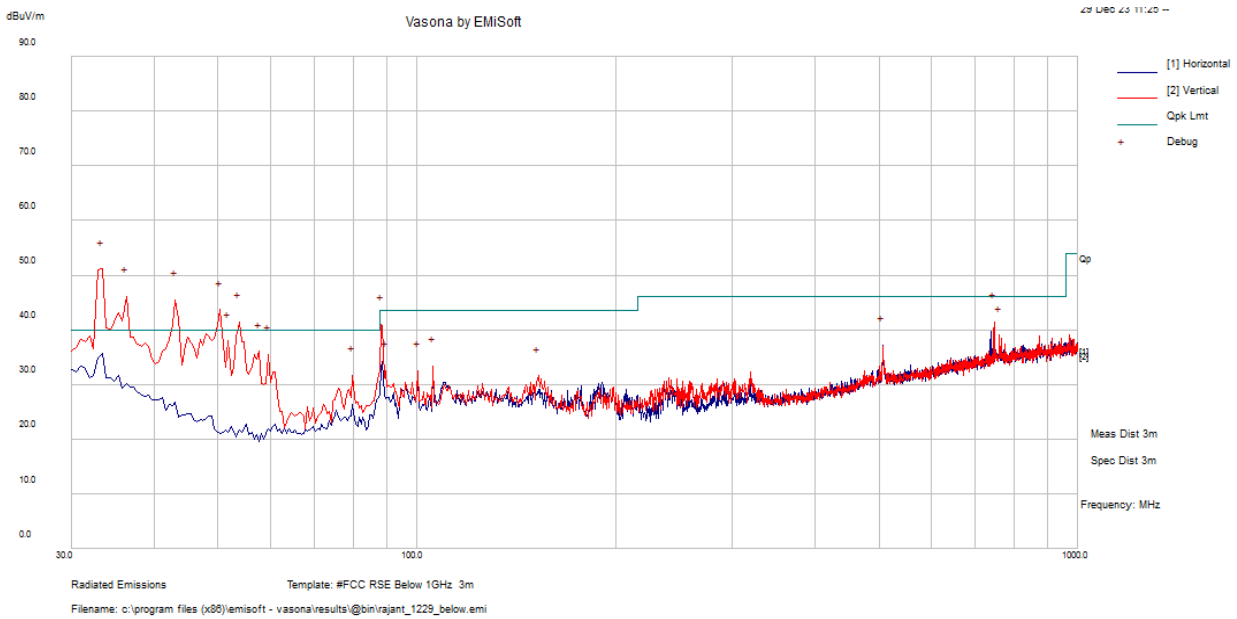
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
33.395	41.95	-3.22	38.73	100	V	0	40	-1.27	QP
48.43	45.23	-12.28	32.95	100	V	0	40	-7.05	QP
35.335	35.97	-4.59	31.38	100	V	0	40	-8.62	QP
42.61	41.81	-9.35	32.46	100	V	0	40	-7.54	QP
56.675	45.95	-13.76	32.19	100	V	0	40	-7.81	QP
58.13	53.53	-13.74	39.79	100	V	0	40	-0.21	Peak

4) 5500 MHz, 802.11a configuration



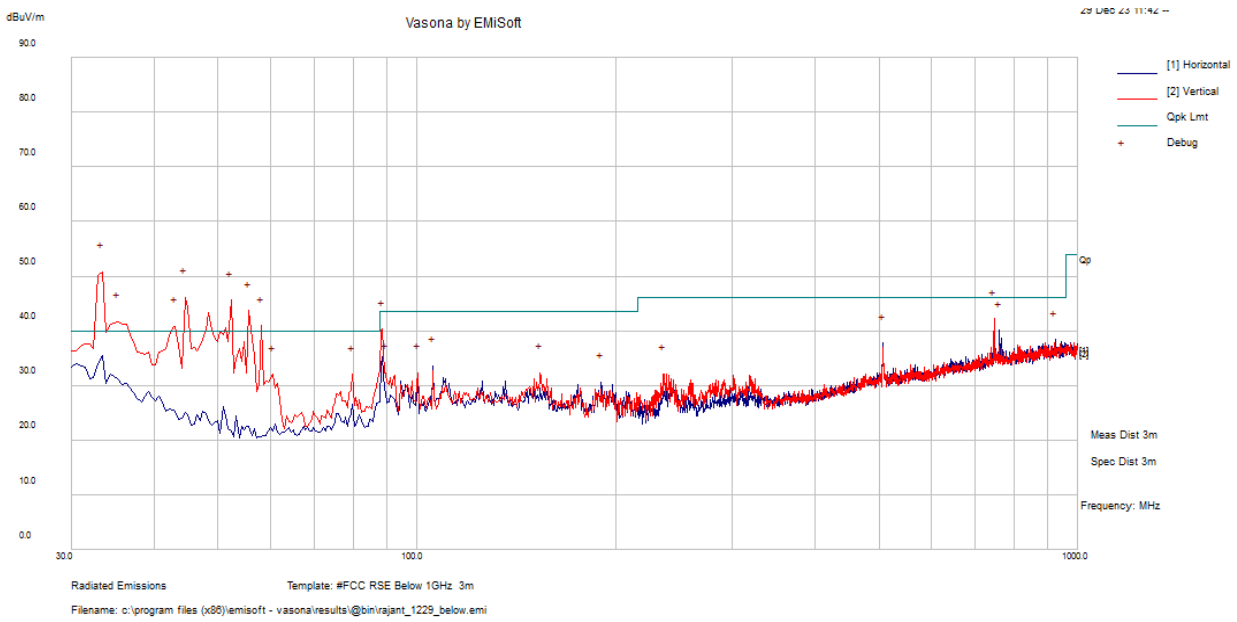
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
79.955	52.77	-13.45	39.32	100	V	0	40	-0.68	QP
33.395	42.33	-3.22	39.11	100	V	0	40	-0.89	QP
78.015	51.4	-13.4	38	100	V	0	40	-2	QP
43.095	46.57	-9.64	36.93	100	V	0	40	-3.07	QP
50.37	49.27	-12.88	36.39	100	V	0	40	-3.61	QP
34.85	39.51	-4.26	35.25	100	V	0	40	-4.75	QP

5) 5600 MHz, 802.11a configuration



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
33.395	42.52	-3.22	39.3	100	V	0	40	-0.7	QP
36.305	39.56	-5.25	34.31	100	V	0	40	-5.69	QP
43.095	44.23	-9.64	34.59	100	V	0	40	-5.41	QP
50.37	46.87	-12.88	33.99	100	V	0	40	-6.01	QP
53.765	45.16	-13.56	31.6	100	V	0	40	-8.4	QP
51.825	51.18	-13.23	37.95	100	V	0	40	-2.05	Peak

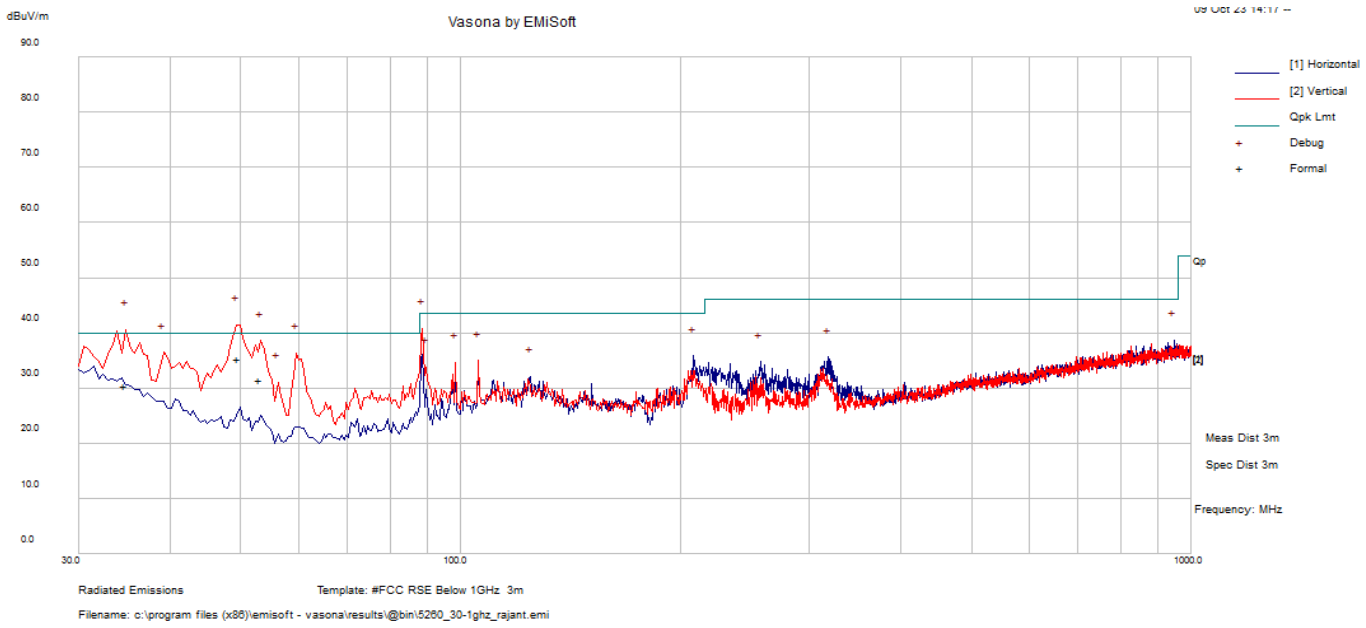
6) **5720 MHz, 802.11a configuration**



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
33.395	42.13	-3.22	38.91	100	V	0	40	-1.09	QP
44.55	44.85	-10.48	34.37	100	V	0	40	-5.63	QP
52.31	47.96	-13.33	34.63	100	V	0	40	-5.37	QP
55.705	47.68	-13.73	33.95	100	V	0	40	-6.05	QP
35.335	36.3	-4.59	31.71	100	V	0	40	-8.29	QP
58.13	44.99	-13.74	31.25	100	V	0	40	-8.75	QP

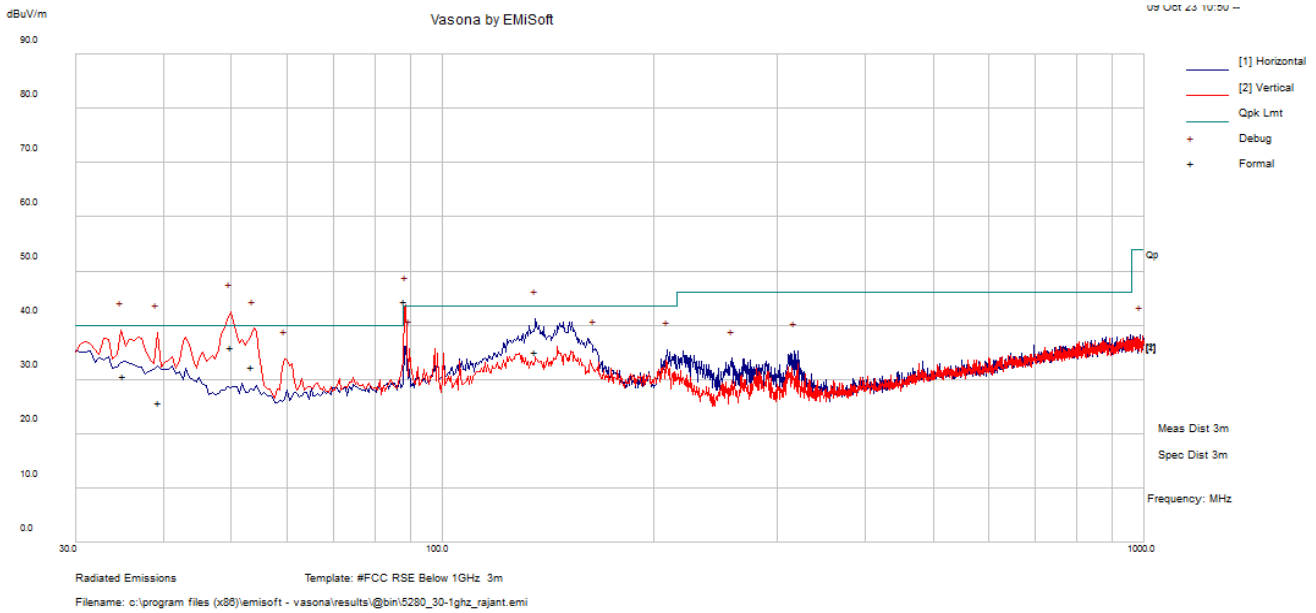
WLAN 1, port D

1) 5260 MHz, 802.11a configuration



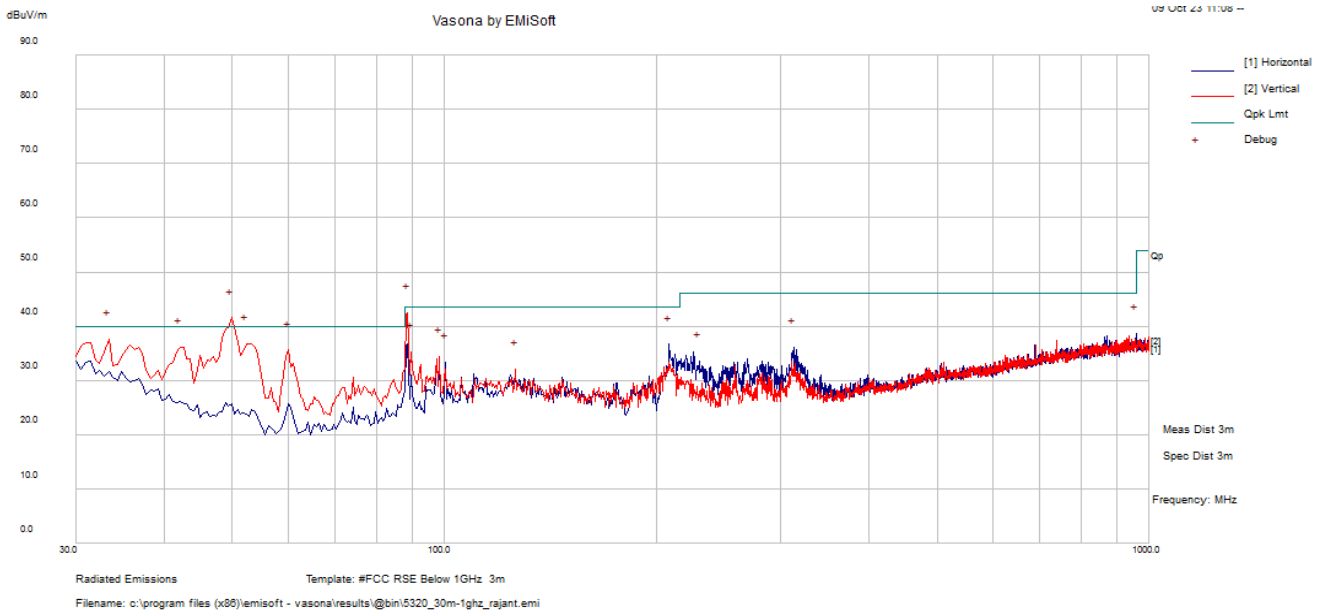
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
49.598	48.05	-12.67	35.38	119	V	335	40	-4.62	QP
34.71825	34.68	-4.17	30.51	113	V	126	40	-9.49	QP
53.083	44.94	-13.47	31.47	168	V	84	40	-8.53	QP
88.685	53.76	-12.96	40.8	100	V	0	43.5	-2.7	Peak
39.215	43.79	-7.32	36.47	100	V	0	40	-3.54	Peak
59.585	49.99	-13.7	36.29	100	V	0	40	-3.71	Peak

2) 5280 MHz, 802.11a configuration



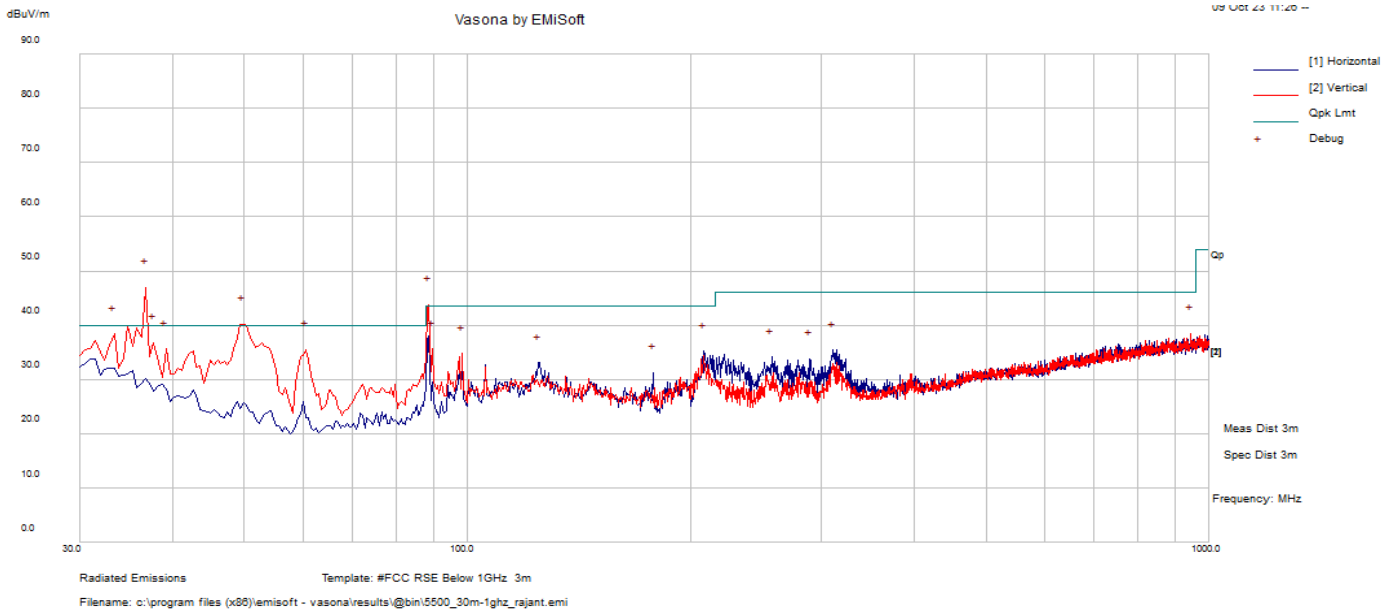
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
50.04025	48.7	-12.8	35.9	119	V	136	40	-4.1	QP
88.4965	55.96	-12.98	42.98	121	V	191	43.5	-0.52	QP
53.765	53	-13.56	39.44	100	V	0	40	-0.56	Peak
34.85	43.38	-4.26	39.12	100	V	0	40	-0.88	Peak
39.215	45.98	-7.32	38.65	100	V	0	40	-1.35	Peak
135.73	48.49	-7.33	41.16	300	H	0	43.5	-2.34	Peak

3) 5320 MHz, 802.11a configuration



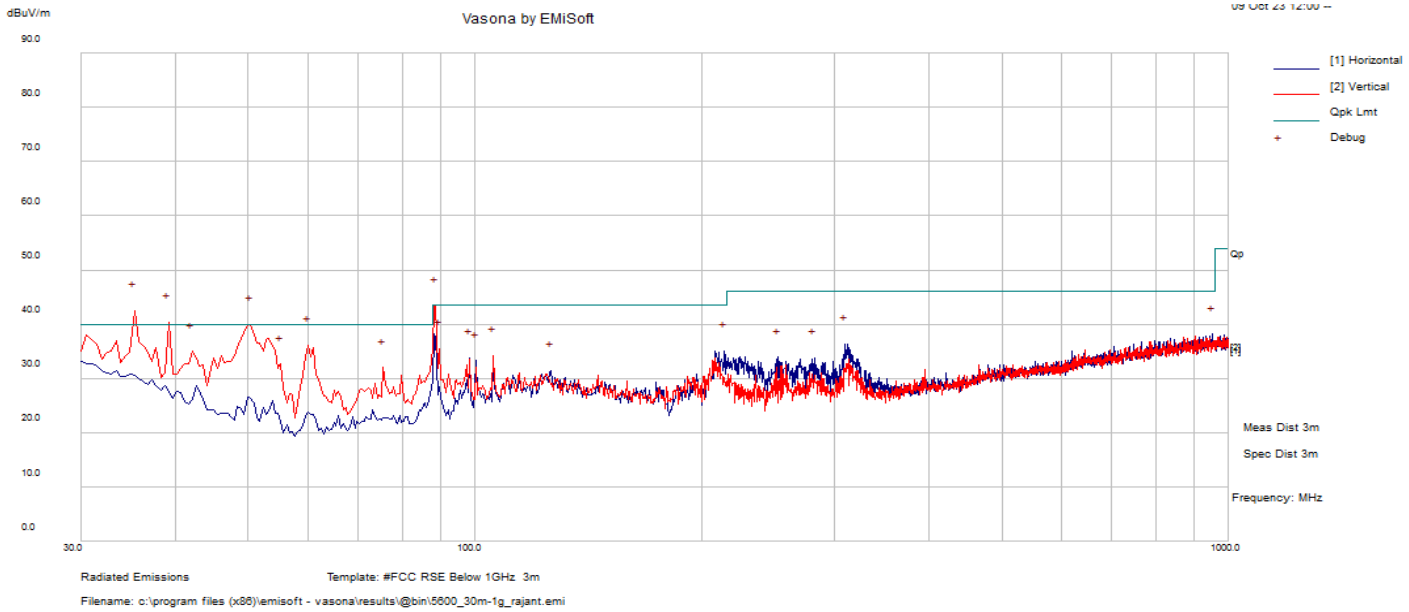
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
50.008	48.05	-12.79	35.26	119	V	69	40	-4.74	QP
88.685	55.46	-12.96	42.5	100	V	0	43.5	-1.00	Peak
33.395	40.81	-3.22	37.58	100	V	0	40	-2.42	Peak
52.31	50.1	-13.33	36.76	100	V	0	40	-3.24	Peak
42.125	45.16	-9.06	36.09	100	V	0	40	-3.91	Peak
60.07	49.29	-13.69	35.61	100	V	0	40	-4.39	Peak

4) 5500 MHz, 802.11a configuration



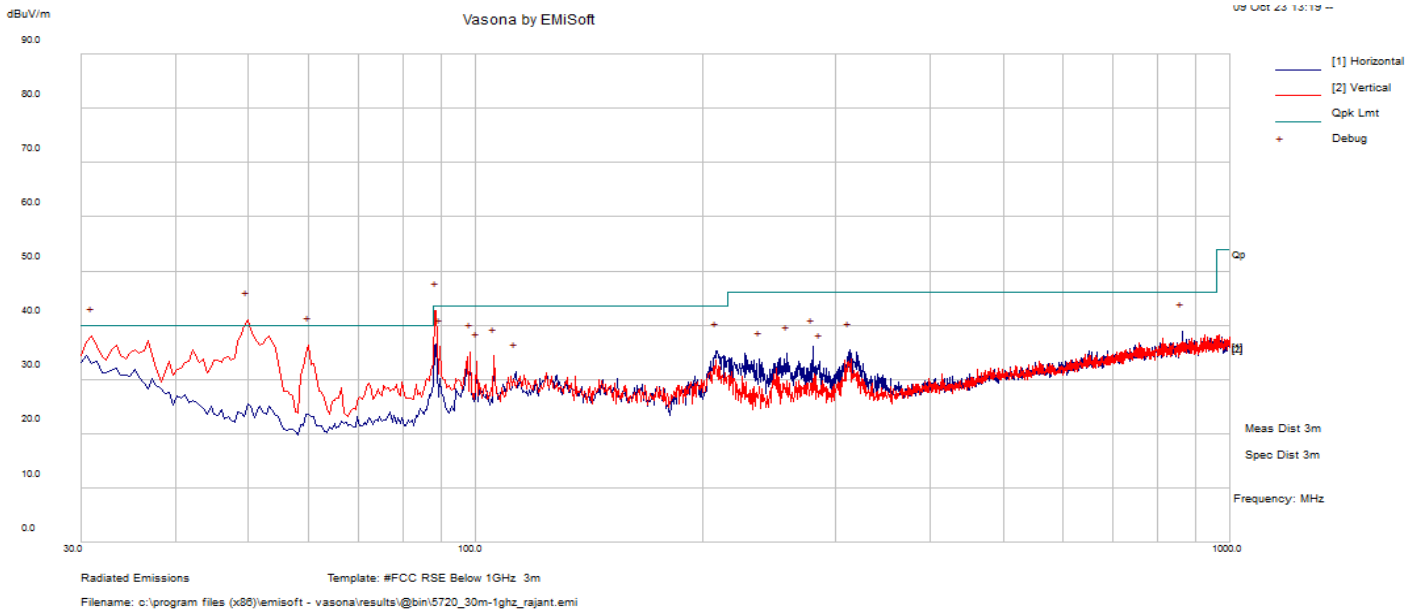
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
36.72275	36.03	-5.52	30.51	100	V	245	40	-9.49	QP
88.494	56.3	-12.98	43.32	109	V	163	43.5	-0.18	QP
49.885	48.7	-12.8	35.9	119	V	136	40	-4.1	QP
33.395	41.58	-3.22	38.35	100	V	0	40	-1.65	Peak
37.76	43.06	-6.27	36.79	100	V	0	40	-3.21	Peak
39.215	42.89	-7.32	35.56	100	V	0	40	-4.44	Peak

5) 5600 MHz, 802.11a configuration



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
35.30725	35.67	-4.57	31.1	135	V	283	40	-8.9	QP
39.21925	33.09	-7.33	25.77	130	V	217	40	-14.23	QP
50.15475	49.33	-12.83	36.5	117	V	37	40	-3.5	QP
88.47725	53.88	-12.98	40.9	163	V	201	43.5	-2.6	QP
60.07	49.74	-13.69	36.06	100	V	0	40	-3.94	Peak
42.125	43.99	-9.06	34.93	100	V	0	40	-5.07	Peak

6) **5720 MHz, 802.11a configuration**



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
49.8665	48.52	-12.75	35.77	118	V	30	40	-4.23	QP
88.502	55.68	-12.98	42.7	127	V	191	43.5	-0.8	QP
30.9575	32.16	-1.71	30.45	118	V	281	40	-9.55	QP
60.1645	44.46	-13.68	30.77	147	V	6	40	-9.23	QP
863.23	35.78	3.05	38.83	300	H	0	46	-7.17	Peak
89.655	48.81	-12.81	36.00	100	V	0	43.5	-7.5	Peak

1–18 GHz Worst Case, Measured at 1 meter

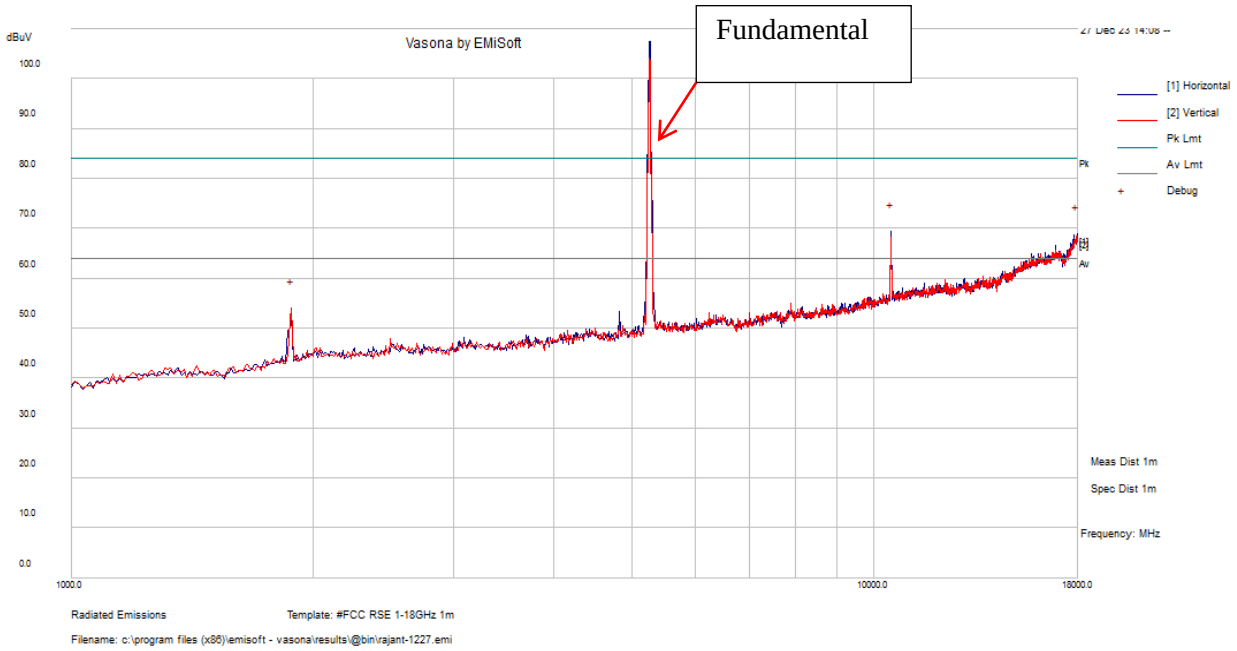
FCC/IC Limits for 1 GHz to 40 GHz				
Applicablity	**(dBm)**	**(uV/m at 3meters)**	**(dBuV/m at 3meters)**	**(dBuV/m at 1meter)[2]**
Restricted Band Average Limit	-	500	54	63.54
Restricted Band Peak Limit[1]	-	-	74	83.54
FCC §15.407(b) & ISEDC RSS-247 §6.2 Defined Unwanted Emissions Limit	-27	-	68.2	77.74

Note[1]: Restricted Band Peak Limit is defined to be 20dB higher than Average Limit.
Note[2]: Limits at 1 meter are determined by applying a Distance correction factor accounts for extrapolation from 1 meters to 3 meters. Formula used is as follows: 20*log(3meters/1meter) = 9.54 (According to ANSI C63.10-2013 Section 9.4). i.e. 54[dBuV/m at 3m] + 9.54dB = 63.54[dBuV/m at 1m]
Note[3]: Where Restricted Band Peak Limit is replaced with stricter 78 dBµV/m at 1 meter, compliance is being shown for unwmated emissions per FCC §15.407(b) & ISEDC RSS-247 §6.2
Note: dBuV/m = 20*log(V/m) + 120. Thus 20*log((500[uV/m]/1000000))+120=54[dBuV/m]
Note: Per ANSI C63.10-2013 Section 12.7.2: E[dBuV/m] = EIRP[dBm] + 95.2, for d = 3meters. Thus -27dBm + 95.2dB = 68.2dBuV/m at 3meters.

WLAN0, port A

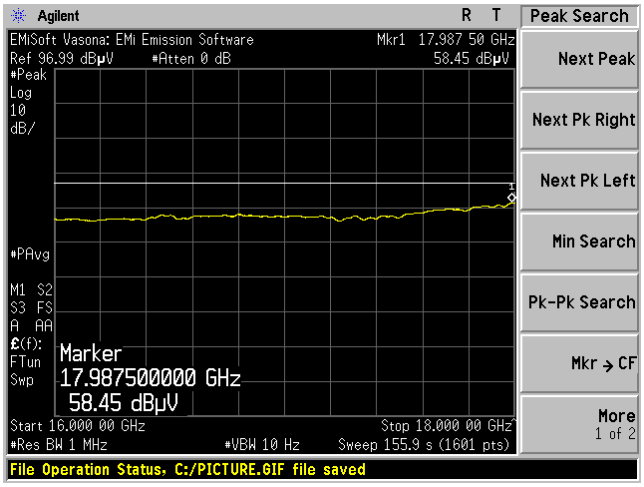
5-15-5.35 GHz Omnidirectional Kinetic Mesh Antenna (KMA-5250-7)

1) 5260 MHz, 802.11a configuration



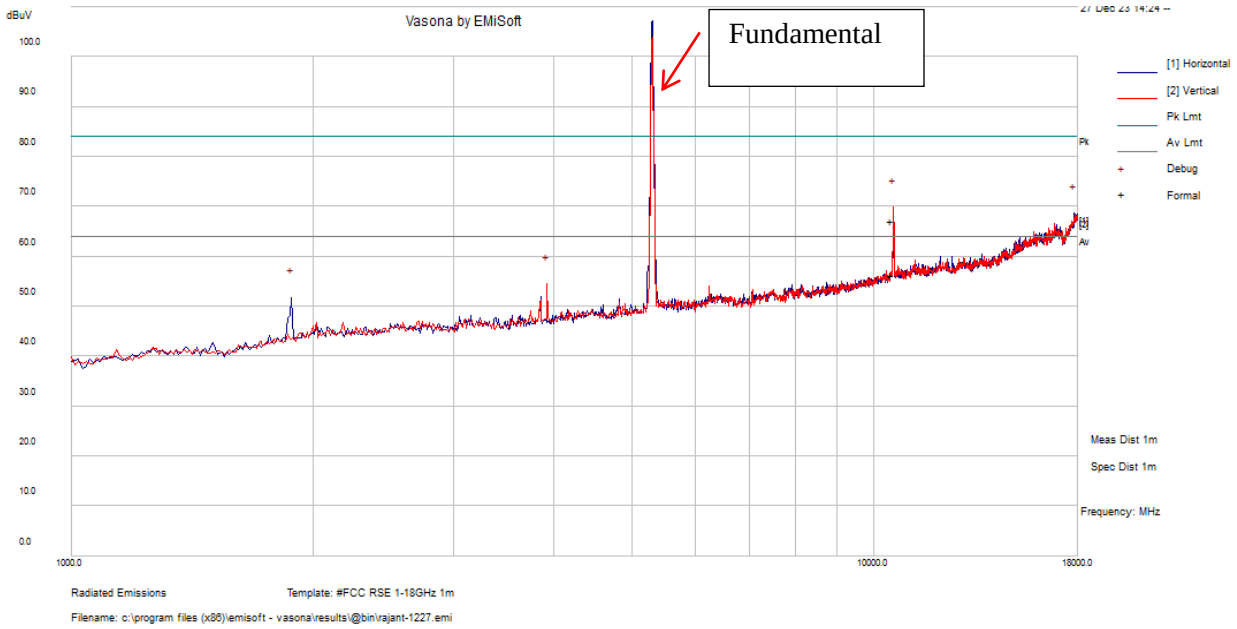
Note: Notch filter was not used for above plot
Note: Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz



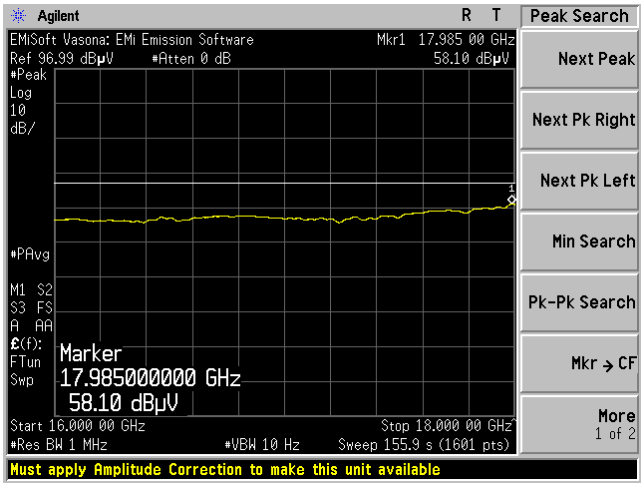
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10518.52	57.51	9.62	67.13	H	225	333	83.54	-16.41	Peak
10518.52	46.57	9.62	56.19	H	225	333	63.54	-7.35	Average

2) 5300 MHz, 802.11a configuration



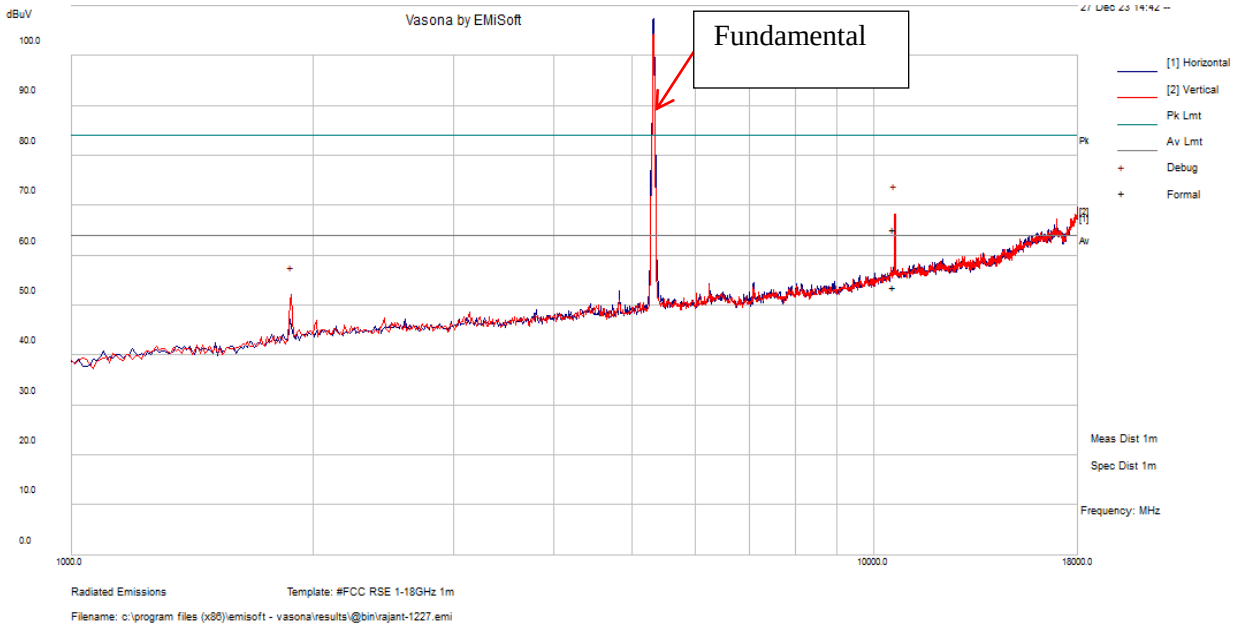
Note: Notch filter was not used for above plot
Note: Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz



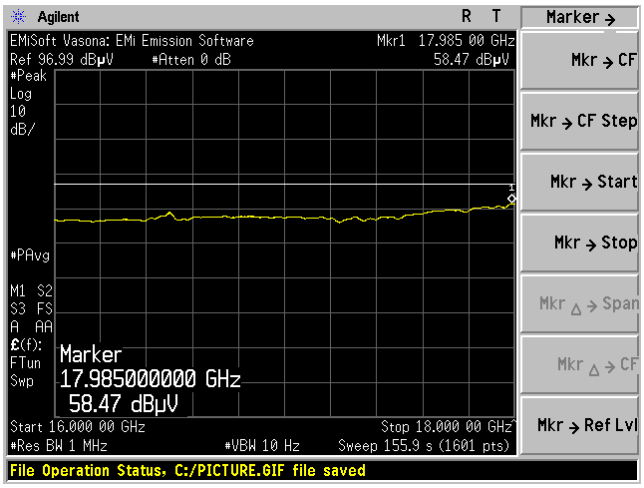
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10604.85	55.3	9.92	65.23	V	182	229	83.54	-18.31	Peak
10604.85	43.67	9.92	53.59	V	182	229	63.54	-9.95	Averge

3) 5320 MHz, 802.11a configuration



Note: Notch filter was not used for above plot
Note: Above plot shows complicance for 1-16GHz.

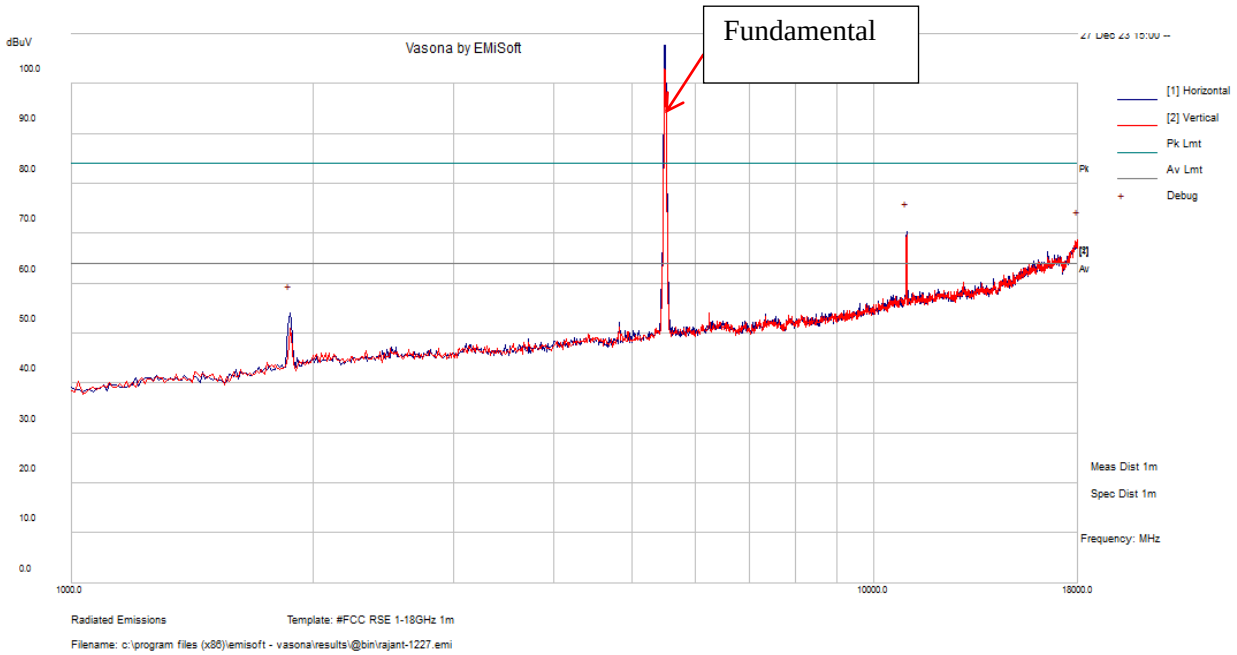
Average plot in the range 16GHz-18GHz



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10634.92	54.45	9.97	64.42	V	189	228	83.54	-19.12	Peak
10634.92	43.54	9.97	53.51	V	189	228	63.54	-10.03	Average

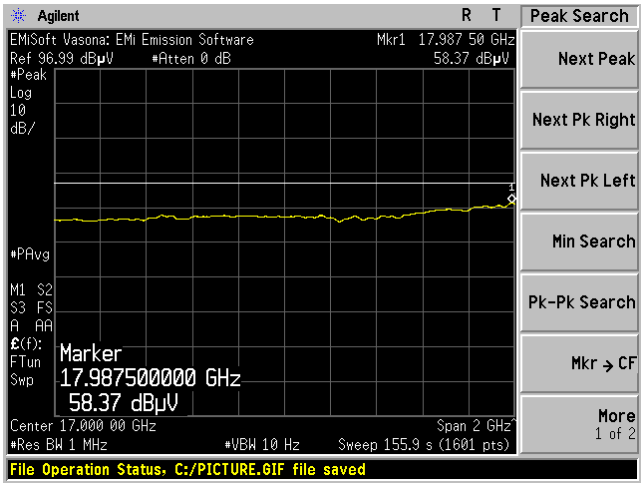
5.50-5.75 GHz Omnidirectional Kinetic Mesh Antenna KMA-5550-6.

4) 5500 MHz, 802.11a configuration



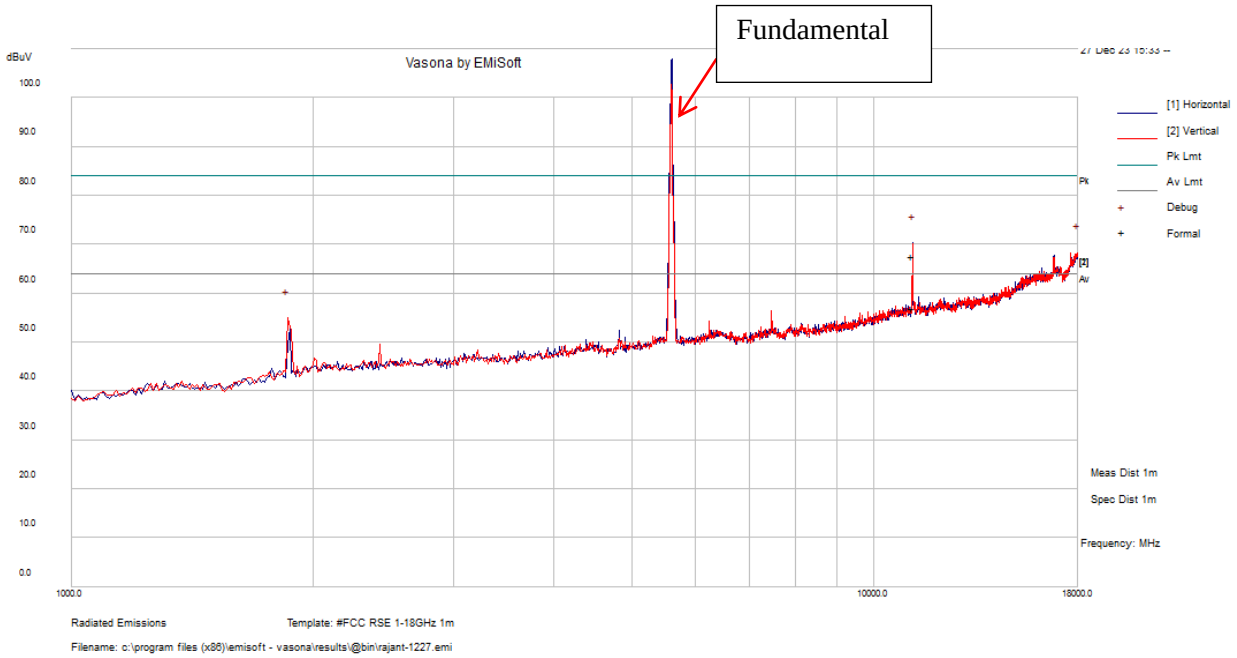
Note: Notch filter was not used for above plot
Note: Above plot shows complicance for 1-17GHz.

Average plot in the range 17GHz-18GHz



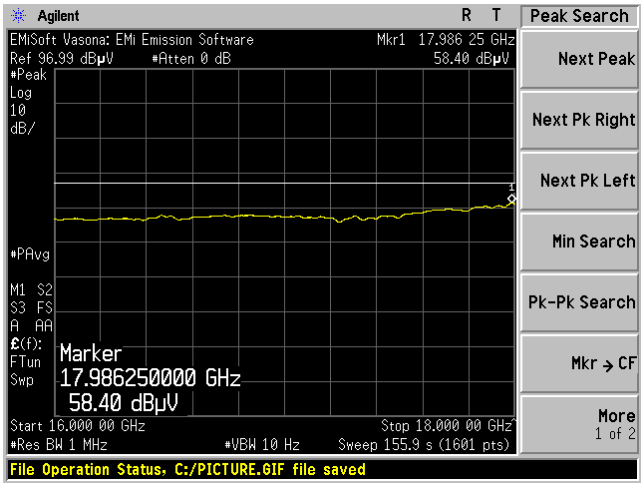
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
11008.51	55.89	10.24	66.13	H	172	324	83.54	-17.41	Peak
11008.51	45.08	10.24	55.32	H	172	324	63.54	-8.22	Average

5) 5600 MHz, 802.11a configuration



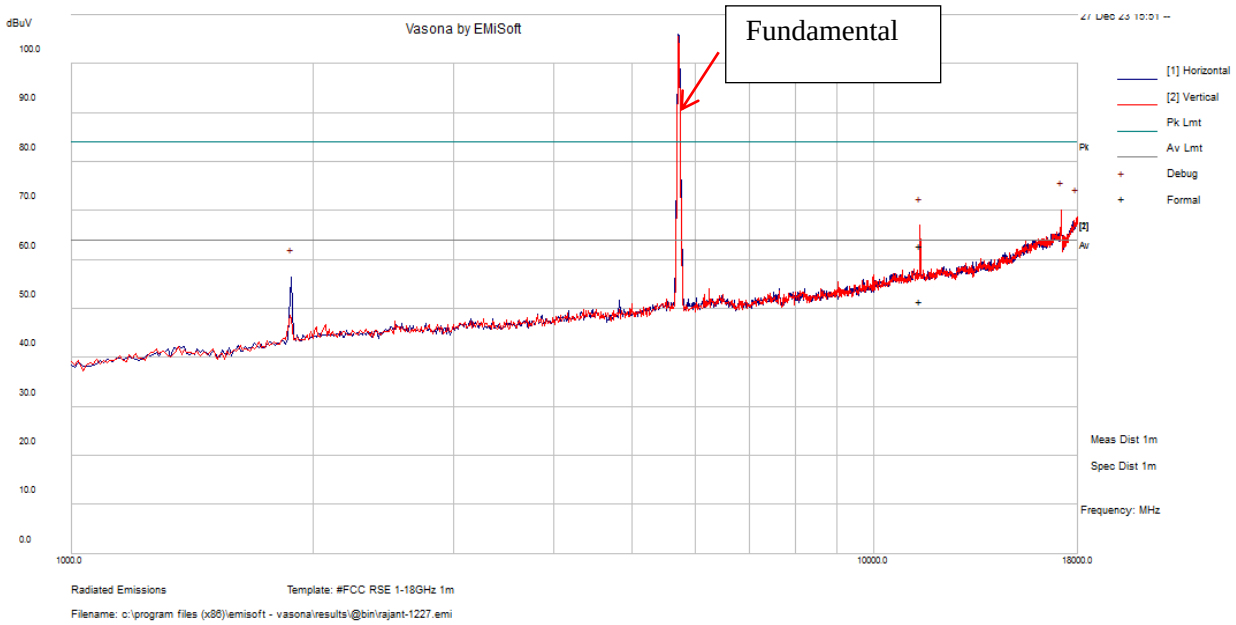
Note: Notch filter was not used for above plot
Note: Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz



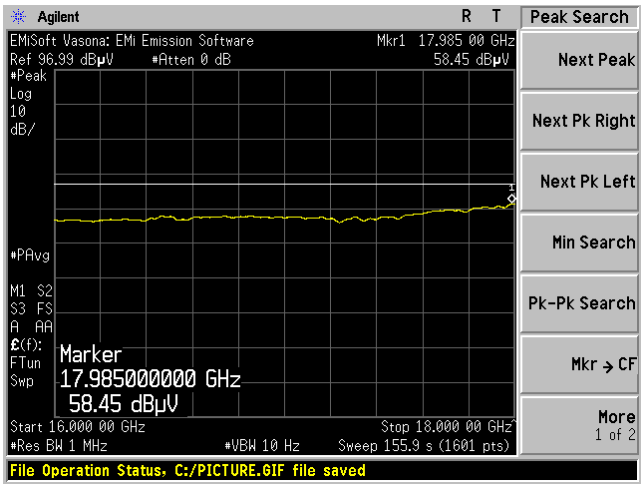
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
11198.59	56.88	10.68	67.56	H	203	339	83.54	-16.28	Peak
11198.59	46.23	10.68	56.91	H	203	339	63.54	-6.63	Average

6) 5720 MHz, 802.11a configuration



Note: Notch filter was not used for above plot
Note:Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz

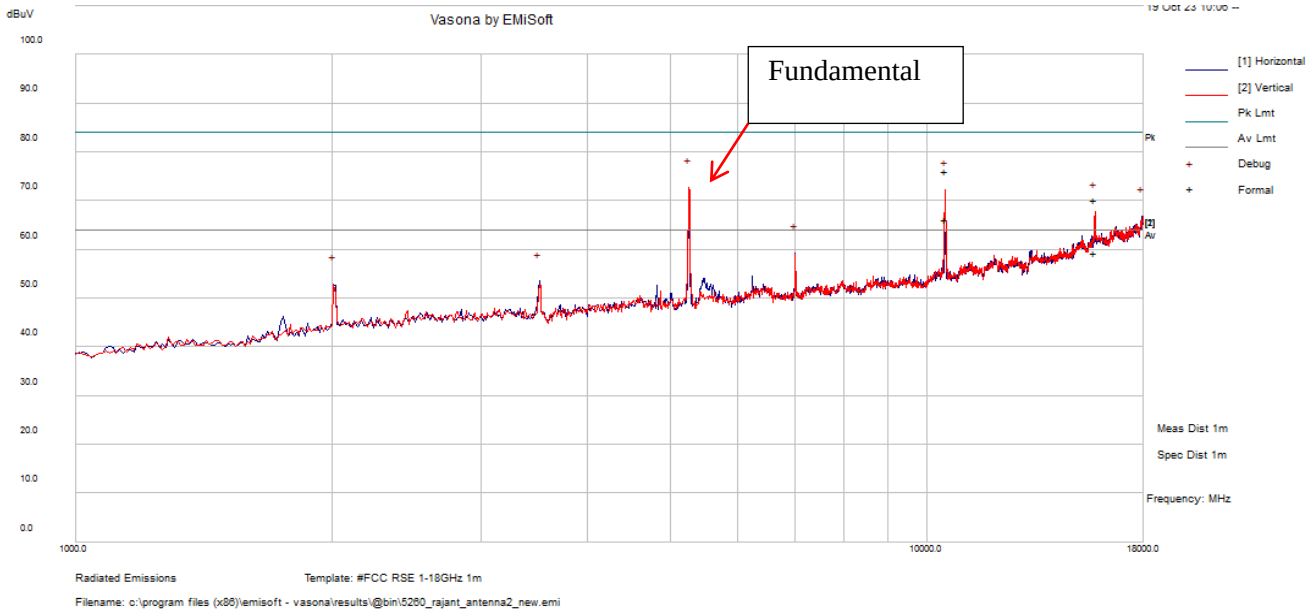


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
11444.93	51.99	10.92	62.91	V	207	23	83.54	-20.63	Peak
11444.93	40.51	10.92	51.44	V	207	23	63.54	-12.1	Average

WLAN1, port D

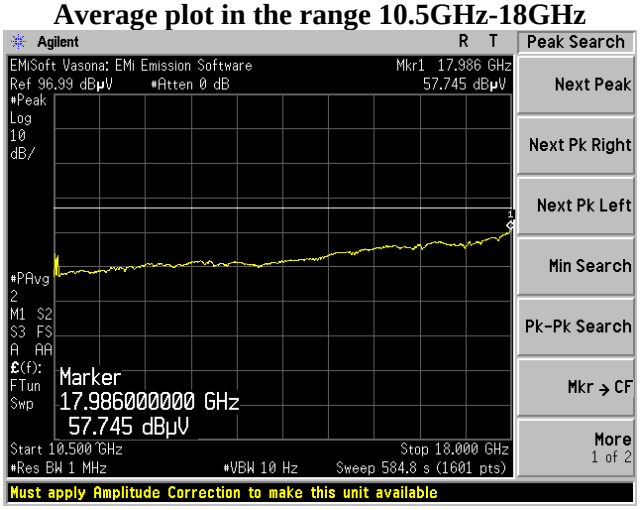
5-15-5.35 GHz Omnidirectional Kinetic Mesh Antenna (KMA-5250-7)

1) 5260 MHz, 802.11a configuration



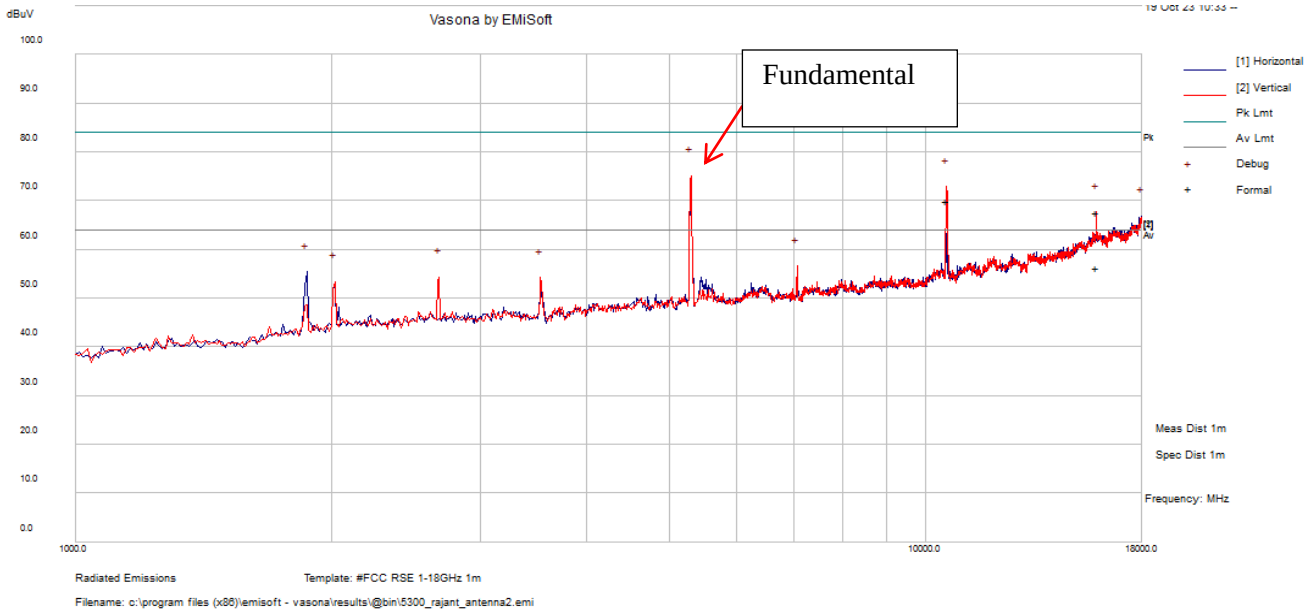
Note: Notch filter was used for above plot

Average plot in the range 10.5GHz-18GHz



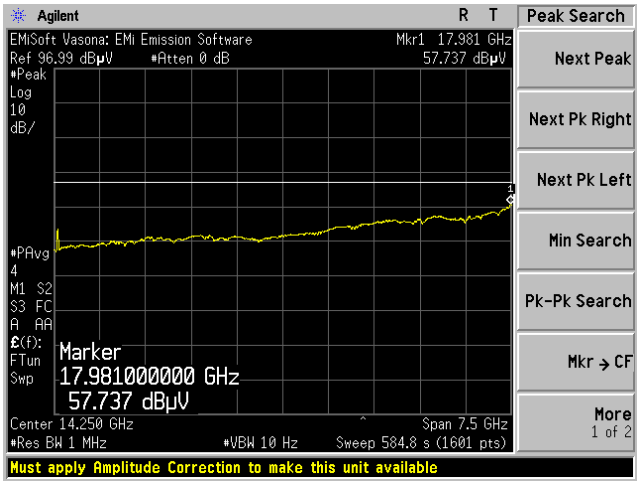
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10520.29	66.88	9.28	76.16	V	161	188	83.54	-7.38	Peak
10520.29	47.80	9.28	57.08	V	161	188	63.54	-6.46	Avg

2) 5300 MHz, 802.11a configuration



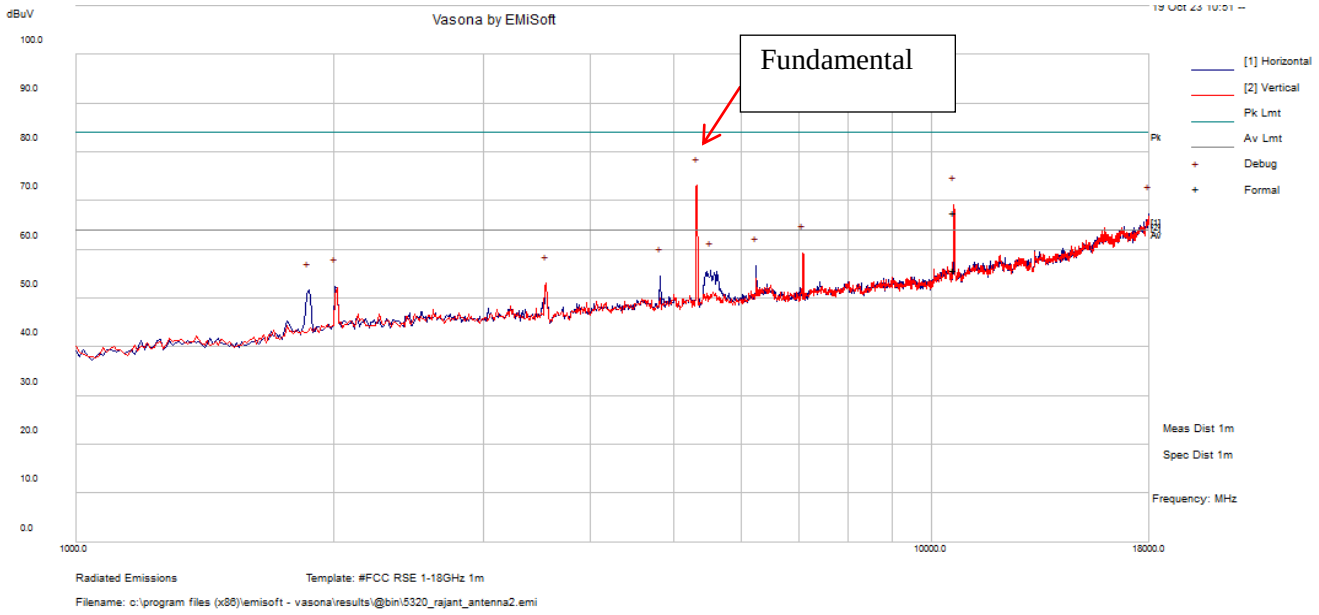
Note: Notch filter was used for above plot

Average plot in the range 14.25GHz-18GHz



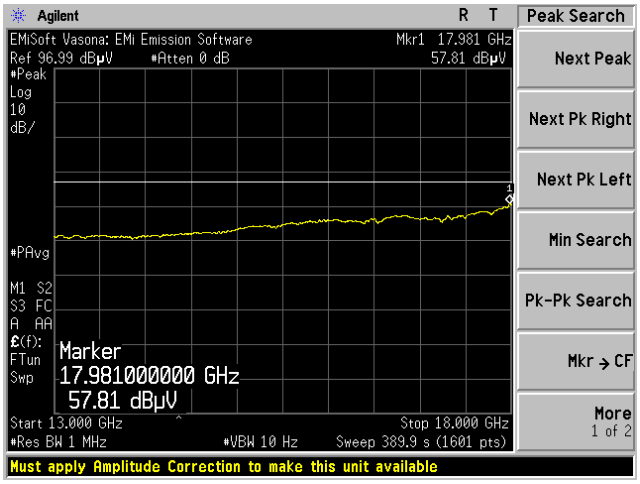
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10600.34	60.25	9.61	69.86	V	120	181	83.54	-14.14	Peak
10600.34	50.3	9.61	59.92	V	120	181	63.54	-3.62	Avg
15906.26	51.08	16.61	67.69	V	198	344	83.54	-15.85	Peak
15906.26	39.71	16.61	56.32	V	198	344	63.54	-7.22	Avg

3) 5320 MHz, 802.11a configuration



Note: Notch filter was used for above plot

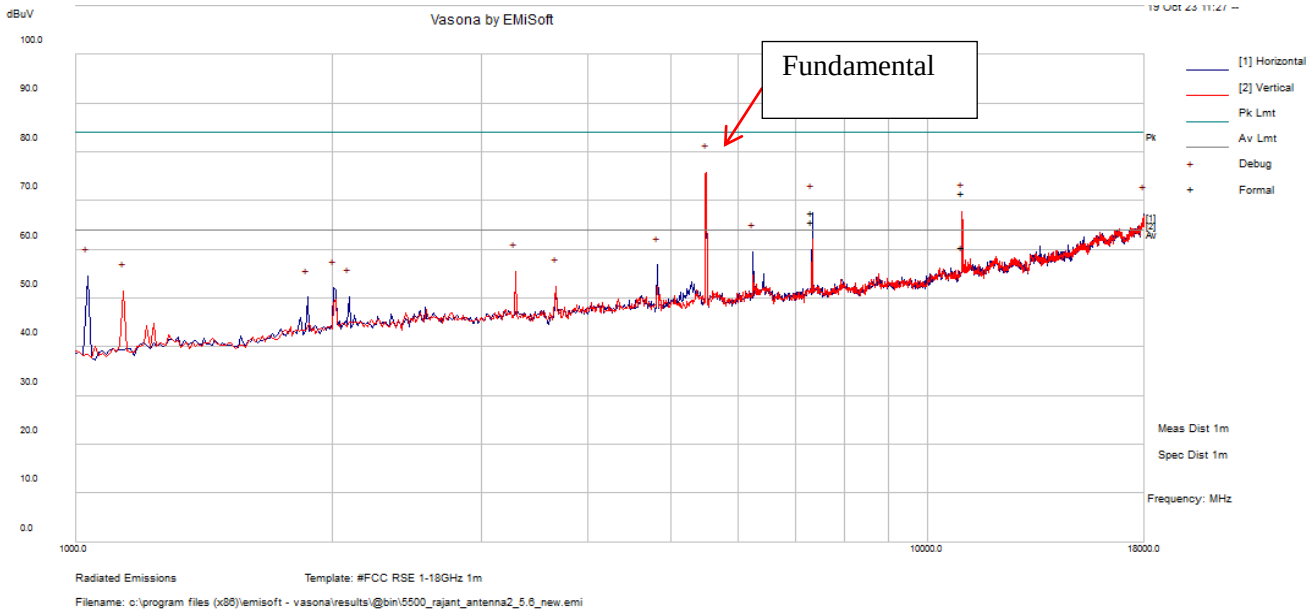
Average plot in the range 13GHz-18GHz



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10638.67	57.93	9.68	67.61	V	104	327	83.54	-15.93	Peak
10638.67	46.09	9.68	55.77	V	104	327	63.54	-27.77	Avg

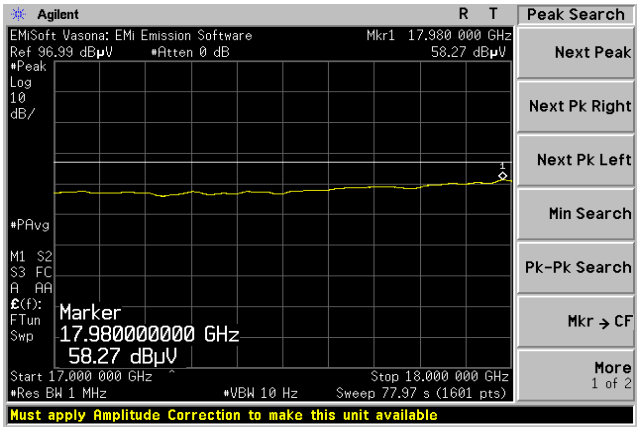
5.50-5.75 GHz Omnidirectional Kinetic Mesh Antenna KMA-5550-6.

4) 5500 MHz, 802.11a configuration



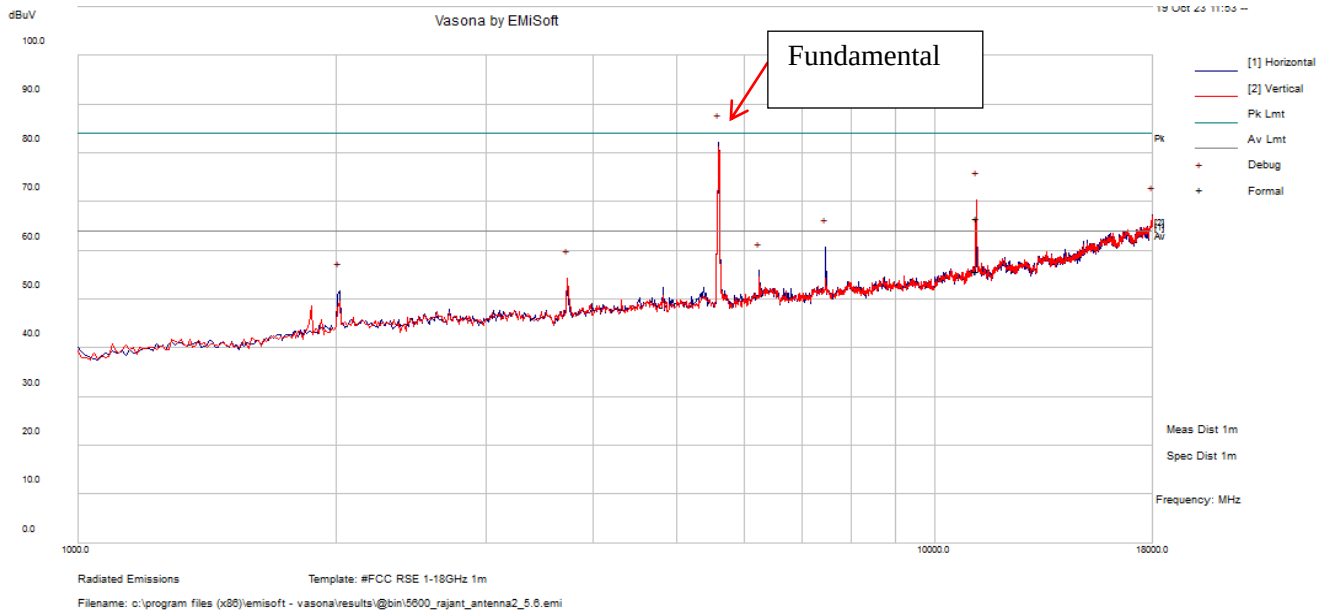
Note: Notch filter was used for above plot

Average plot in the range 17GHz-18GHz



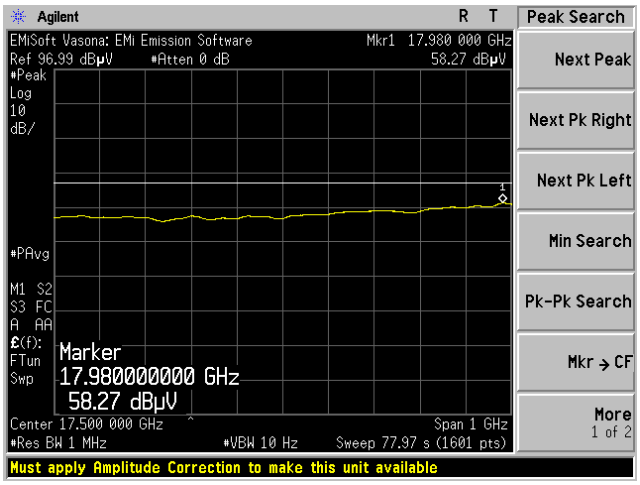
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10999.54	61.61	10	71.61	V	173	186	83.54	-11.93	Peak
10999.54	50.41	10	60.41	V	173	186	63.54	-3.13	Avg
7333.258	56.76	6.76	63.52	H	106	337	83.54	-20.02	Peak
7333.258	54.34	6.76	61.1	H	106	337	63.54	-2.44	Avg

5) 5600 MHz, 802.11a configuration



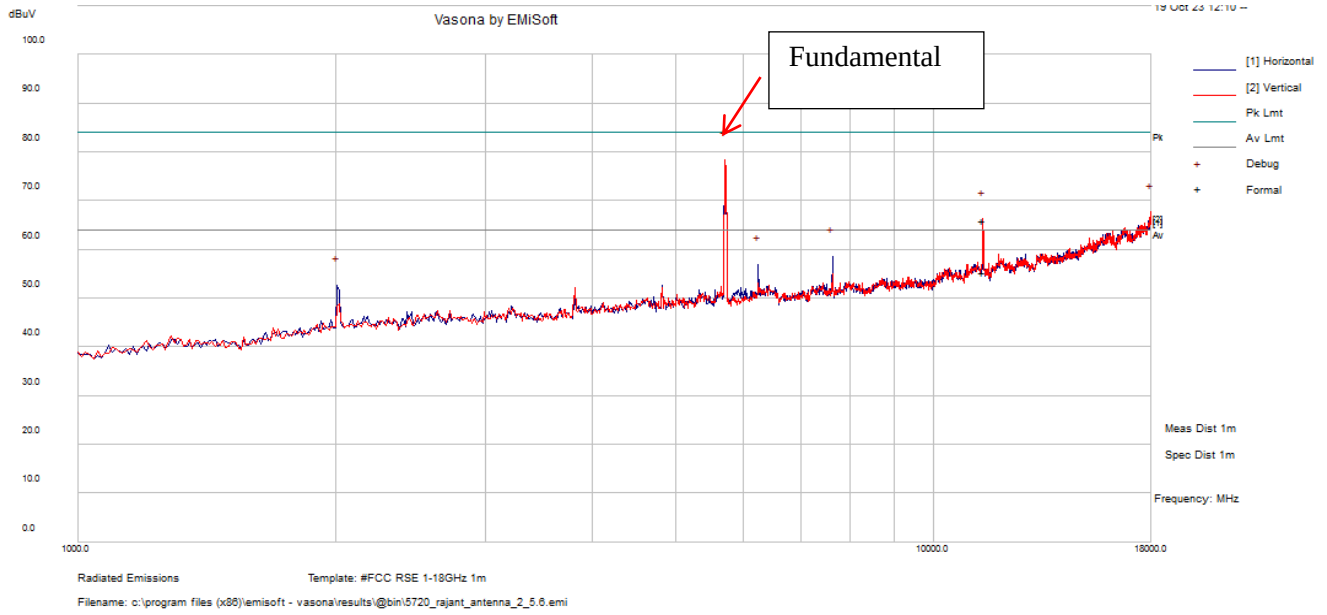
Note: Notch filter was used for above plot

Average plot in the range 17.5GHz-18GHz



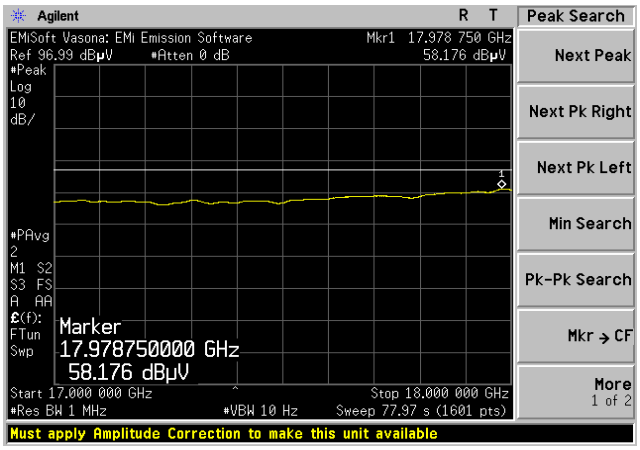
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
11201.21	56.09	10.46	66.54	V	122	28	83.54	-17	Peak
11201.21	45.3	10.46	55.75	V	122	28	63.54	-7.79	Avg

6) 5720 MHz, 802.11a configuration



Note: Notch filter was used for above plot

Average plot in the range 17GHz-18GHz



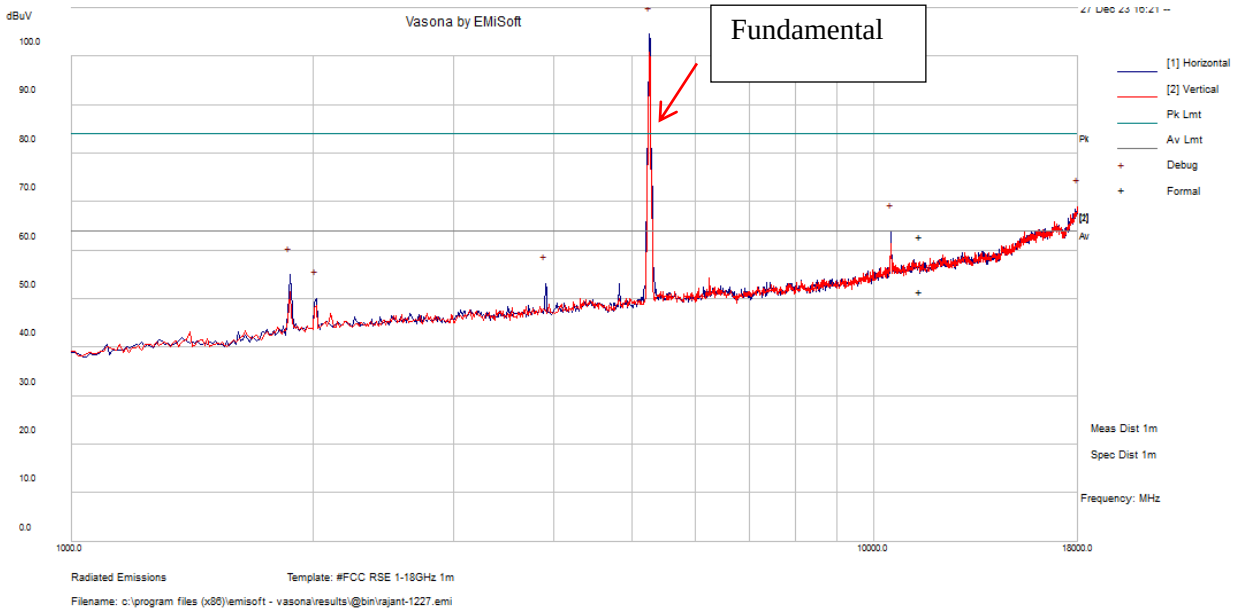
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
11434.87	55.21	10.63	65.83	V	189	167	83.54	-17.71	Peak
11434.87	44.76	10.63	55.38	V	189	167	63.54	-8.16	Avg

1–18 GHz Worst Case, Measured at 1 meter with PUCK-12 Antenna

WLAN0, port A

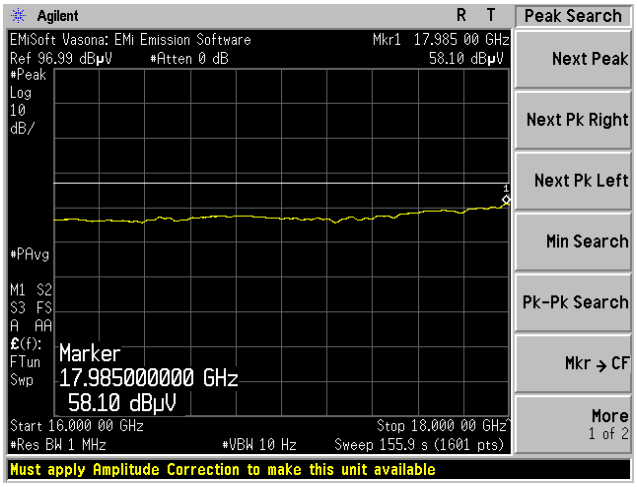
5.0-7.2 GHz Omnidirectional Antenna (PUCK-12*)*

1) 5260 MHz, 802.11a configuration



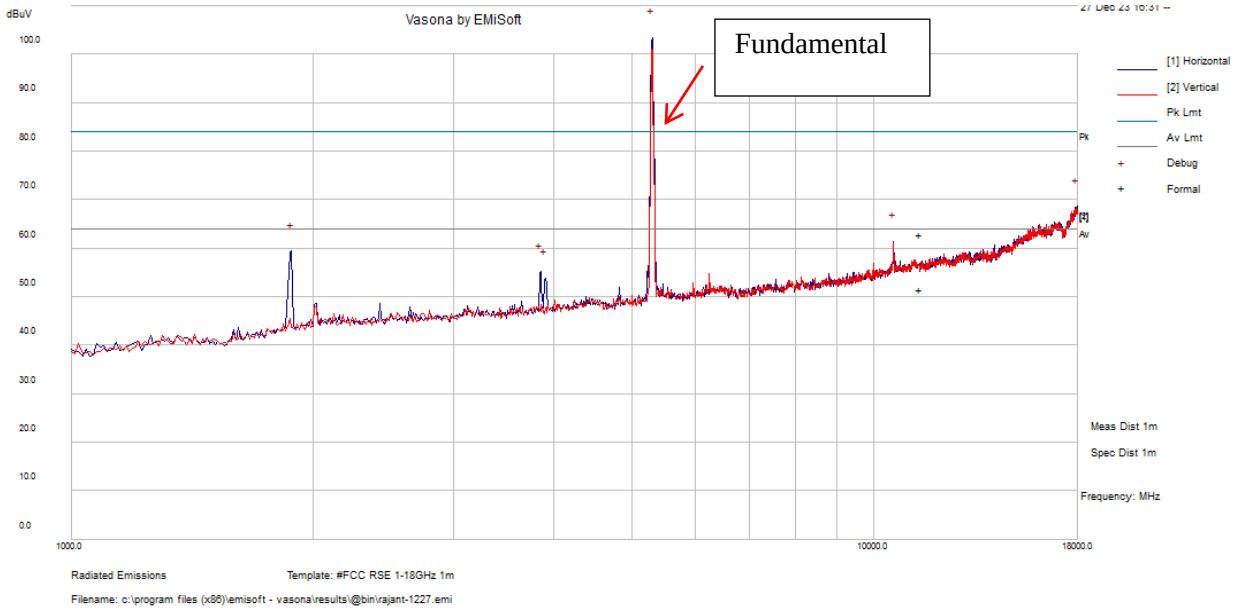
Note: Notch filter was not used for above plot
Note: Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz



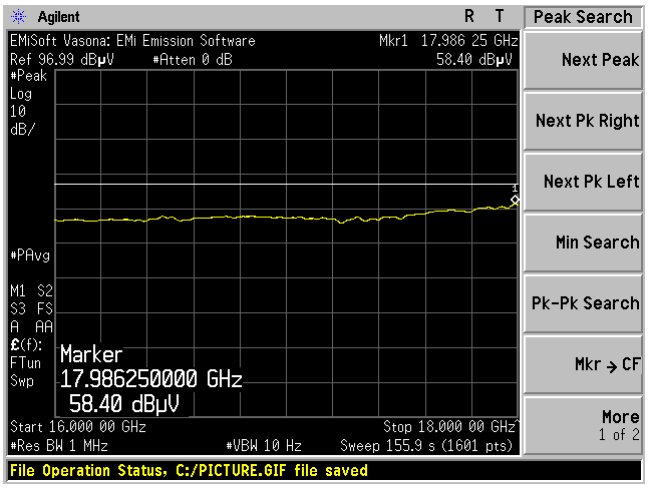
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10520	54.22	9.62	63.84	H	200	0	83.54	-19.7	Peak
1871.25	58.93	-4.06	54.88	H	200	0	83.54	-28.66	Peak
3900.625	52.04	1.05	53.1	H	200	0	83.54	-30.44	Peak
2020	53.19	-3.07	50.12	H	200	0	83.54	-33.42	Peak

2) 5300 MHz, 802.11a configuration



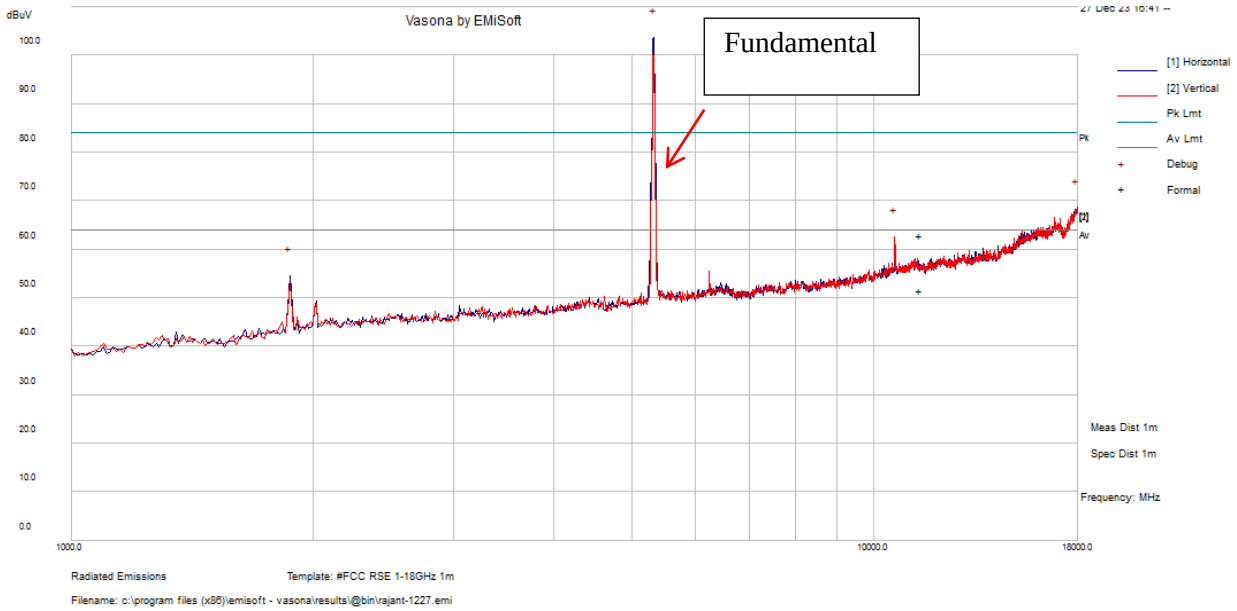
Note: Notch filter was not used for above plot
Note:Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz



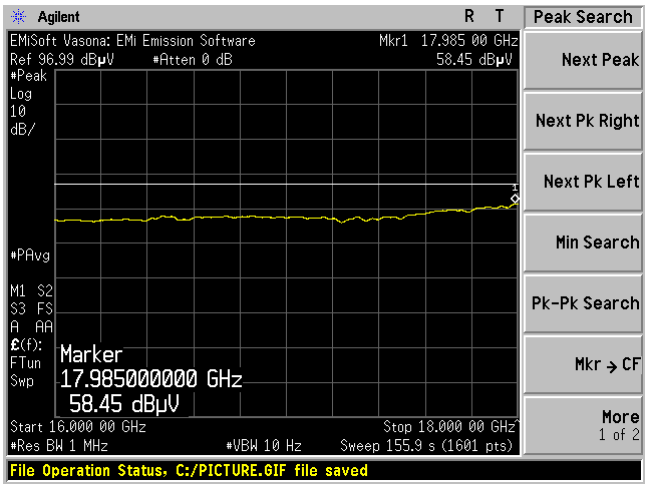
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10594.38	51.42	9.9	61.32	H	200	0	83.54	-22.22	Peak
1881.875	63.44	-4.03	59.41	H	200	0	83.54	-24.13	Peak
3847.5	53.78	1.34	55.12	H	200	0	83.54	-28.42	Peak
3900.625	52.8	1.05	53.86	H	200	0	83.54	-29.68	Peak

3) 5320 MHz, 802.11a configuration



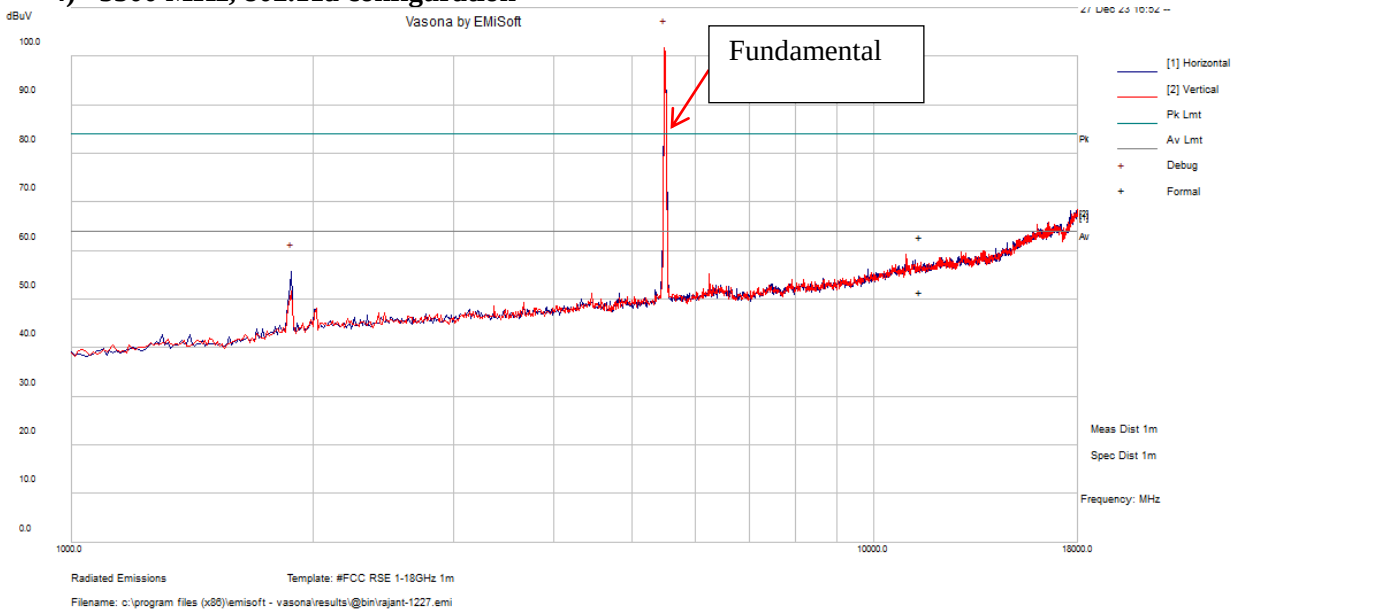
Note: Notch filter was not used for above plot
Note:Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz



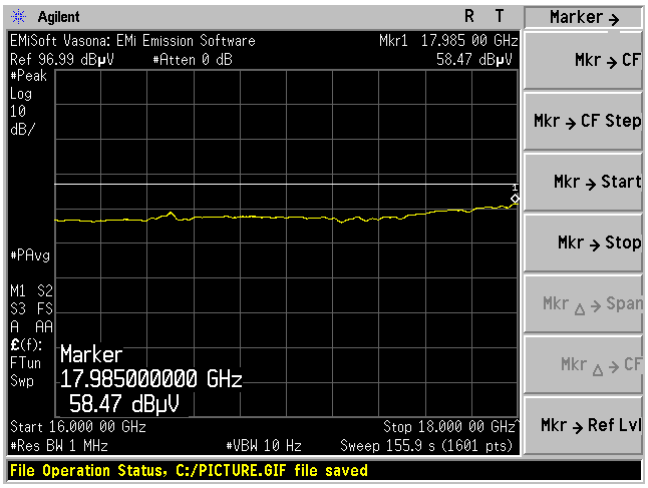
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10636.88	52.66	9.97	62.63	V	200	0	83.54	-20.91	Peak
1871.25	58.62	-4.06	54.57	H	100	0	63.54	-8.97	Peak

4) 5500 MHz, 802.11a configuration



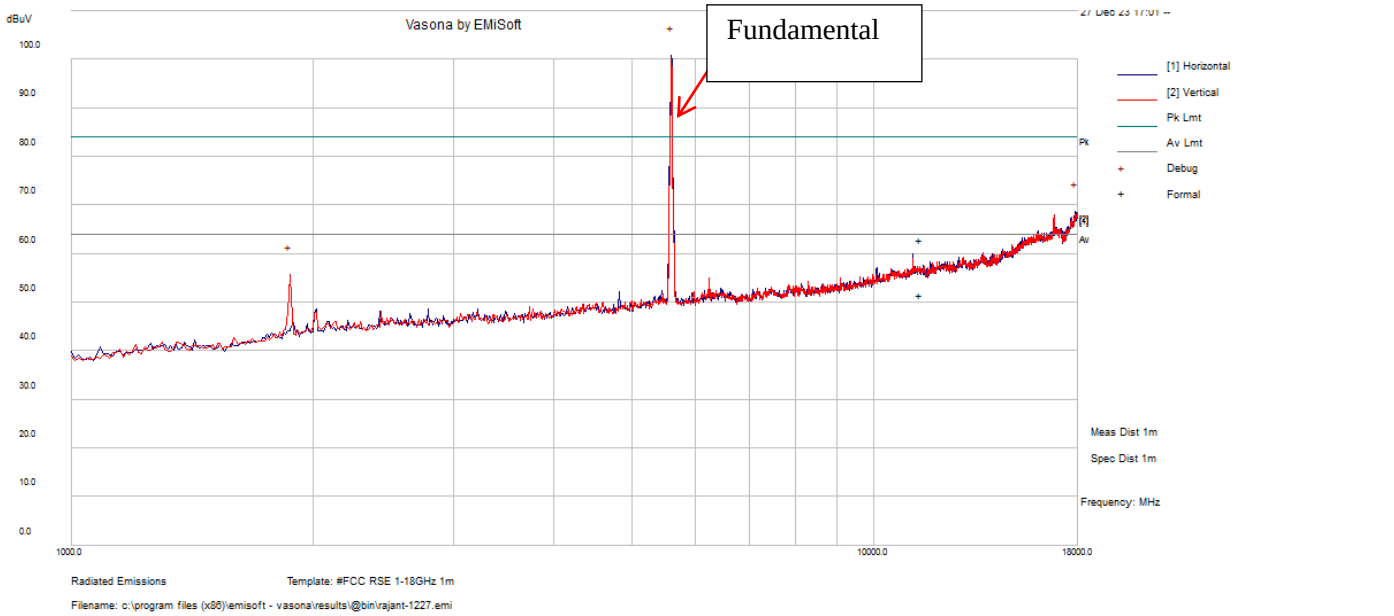
Note: Notch filter was not used for above plot
Note:Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz



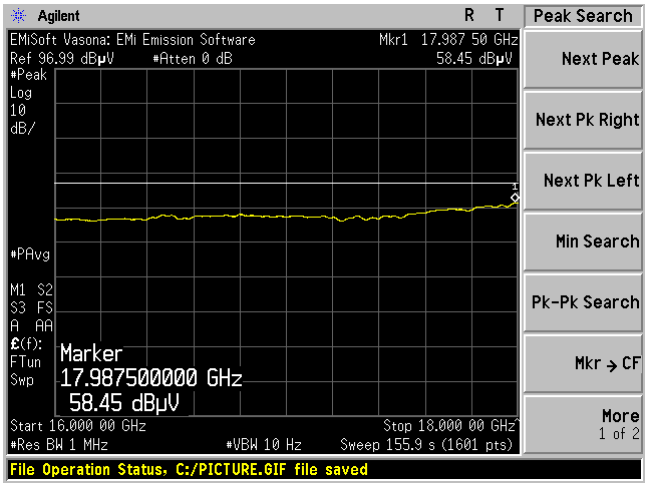
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
1881.875	59.74	-4.03	55.71	H	100	0	83.54	-27.83	Peak

5) 5600 MHz, 802.11a configuration



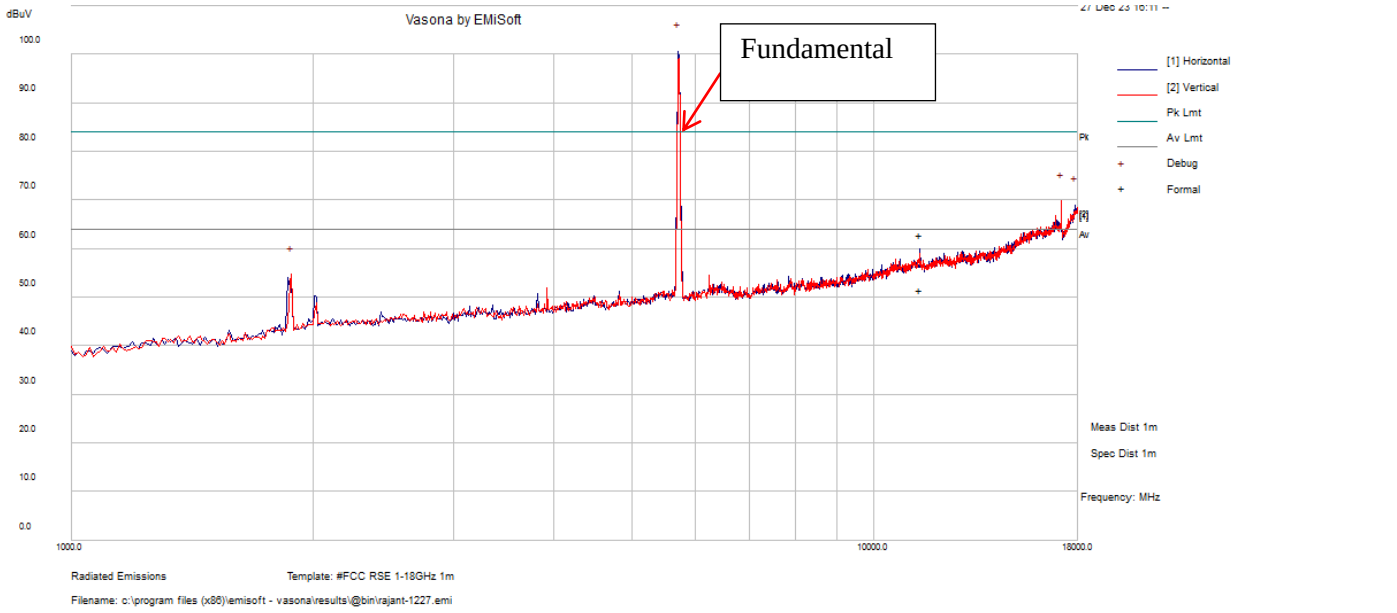
Note: Notch filter was not used for above plot
Note: Above plot shows complicance for 1-16GHz.

Average plot in the range 16GHz-18GHz



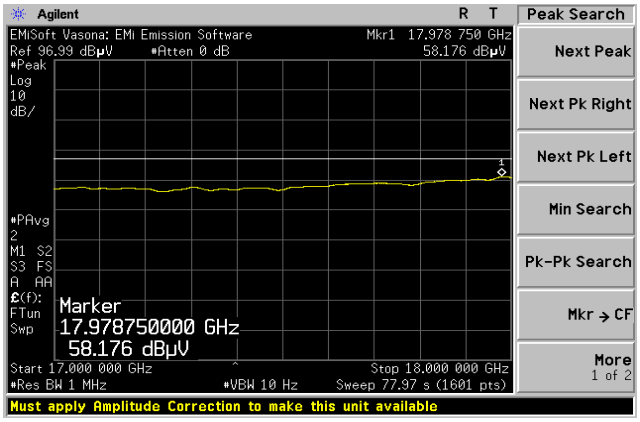
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
17861.88	47.69	20.98	68.66	H	300	0	83.54	-14.88	Peak
1871.25	59.8	-4.06	55.74	V	200	0	63.54	-7.8	Peak

6) 5720 MHz, 802.11a configuration



Note: Notch filter was not used for above plot

Average plot in the range 17GHz-18GHz

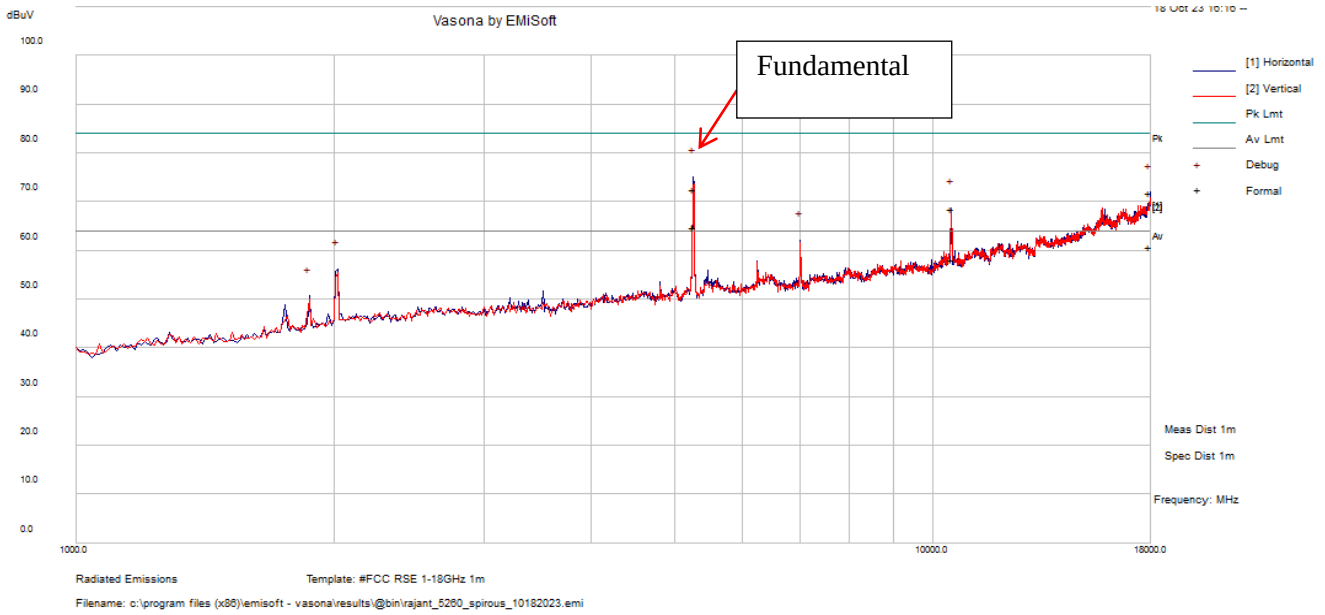


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
1881.875	58.66	-4.03	54.63	V	200	0	63.54	-28.91	Peak

WLAN1, port A

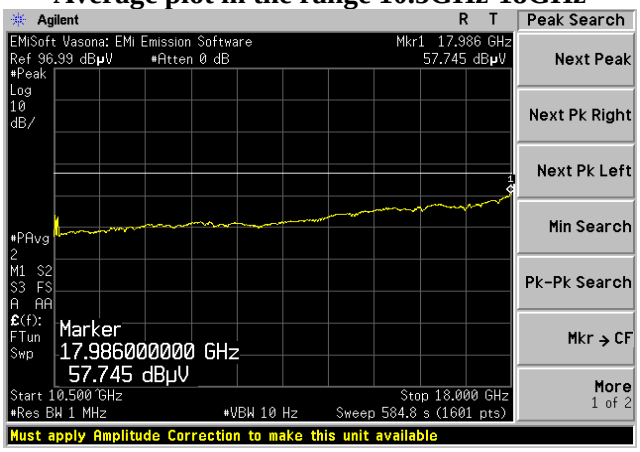
5.0-7.2 GHz Omnidirectional Antenna (PUCK-12)

1) 5260 MHz, 802.11a configuration



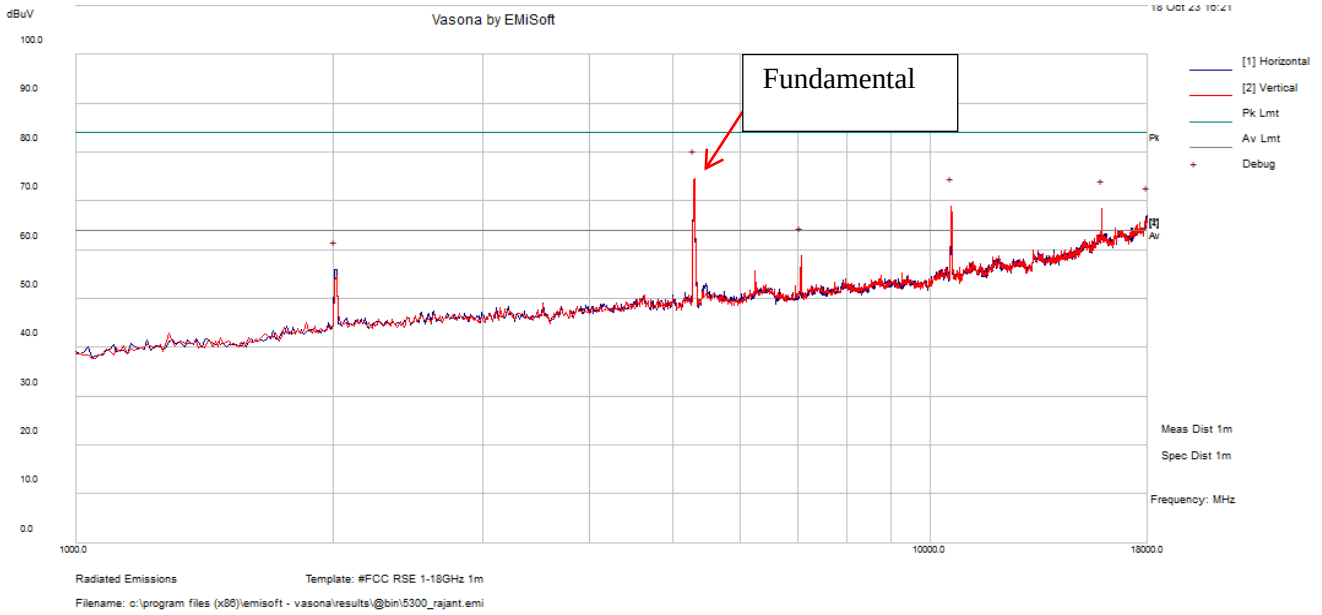
Note: Notch filter was used for above plot

Average plot in the range 10.5GHz-18GHz



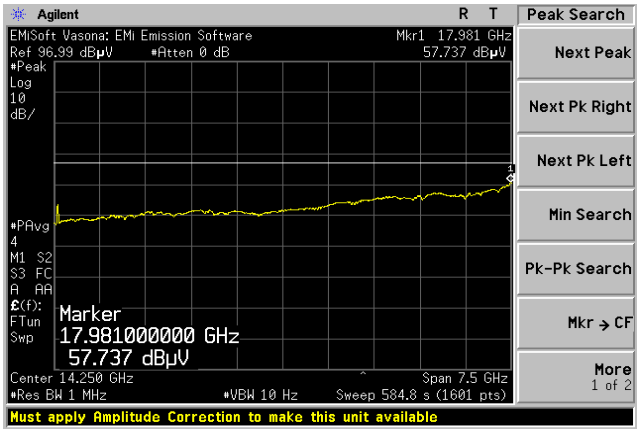
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
7013.75	53.84	8.31	62.15	H	200	0	83.54	-21.39	Peak
10521.11	56.15	12.49	68.63	V	120	14	83.54	-14.91	Peak
10521.11	45.59	12.49	58.07	V	120	14	63.54	-5.47	Avg

2) 5300 MHz, 802.11a configuration



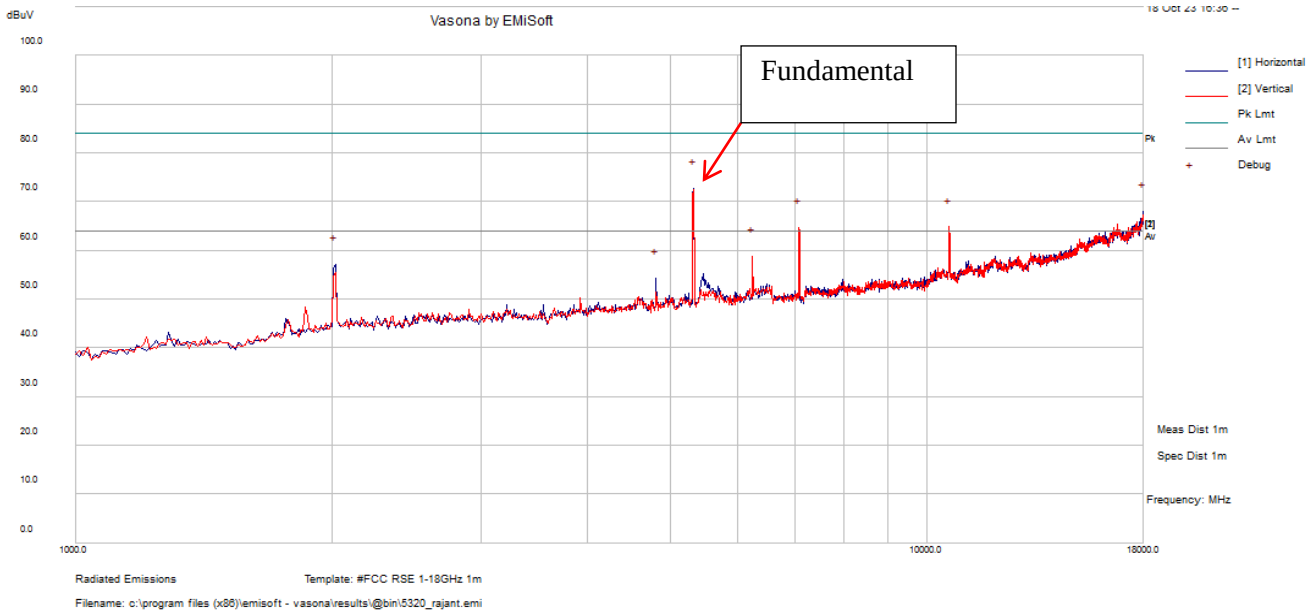
Note: Notch filter was used for above plot

Average plot in the range 14.25GHz-18GHz



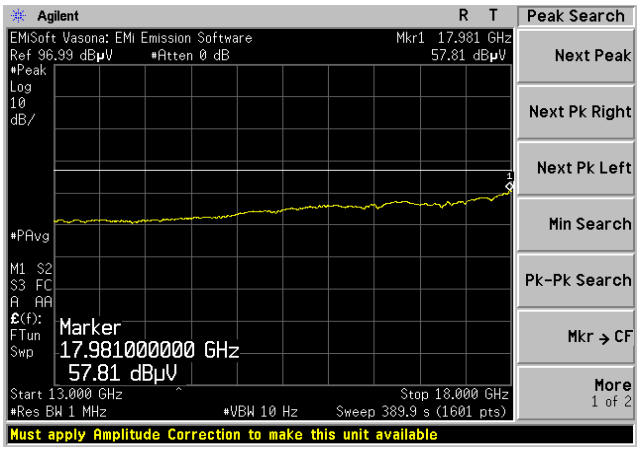
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10604.9	69.56	5.17	74.73	V	142	135	83.54	-8.81	Peak
15903.79	63.67	10.62	74.3	V	137	23	83.54	-9.24	Peak
10604.9	57.52	5.17	63.19	V	142	135	63.54	-0.35	Avg
15903.79	52.49	10.62	63.12	V	137	23	63.54	-0.42	Avg

3) 5320 MHz, 802.11a configuration



Note: Notch filter was used for above plot

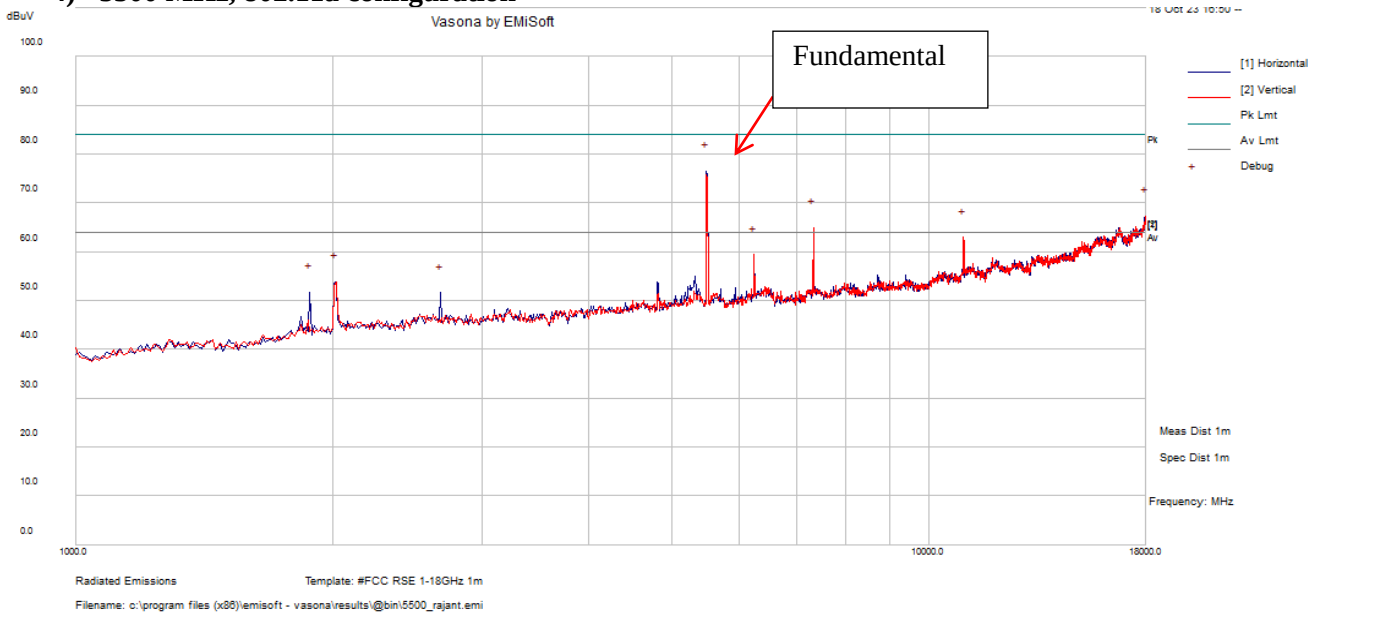
Average plot in the range 13GHz-18GHz



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
10627.59	63.97	5.19	69.16	V	114	18	83.54	-14.38	Peak
10627.59	53.27	5.19	58.45	V	114	18	63.54	-5.09	Avg
7088.125	58.72	6.06	64.77	V	200	0	77.74	-13.23	Peak

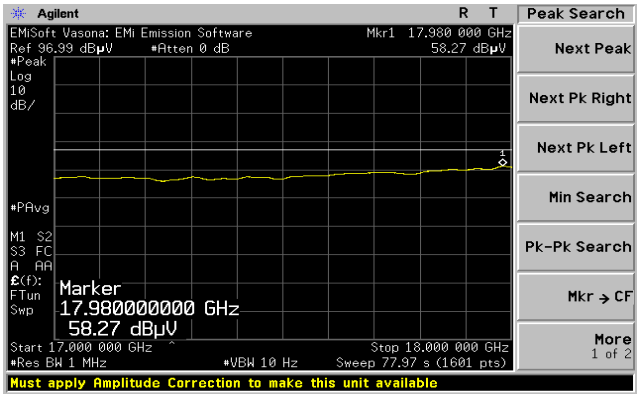
Note: 7088.125MHz Falls outside the restricted band as per FCC §15.205(a).

4) 5500 MHz, 802.11a configuration



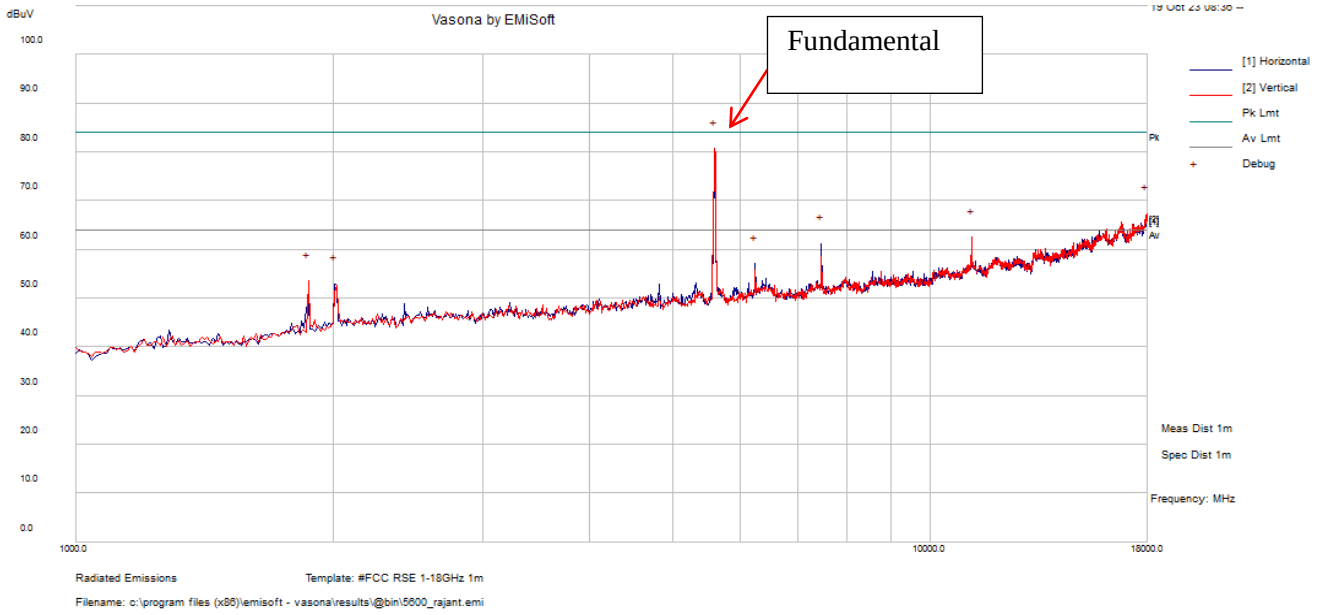
Note: Notch filter was used for above plot

Average plot in the range 17GHz-18GHz



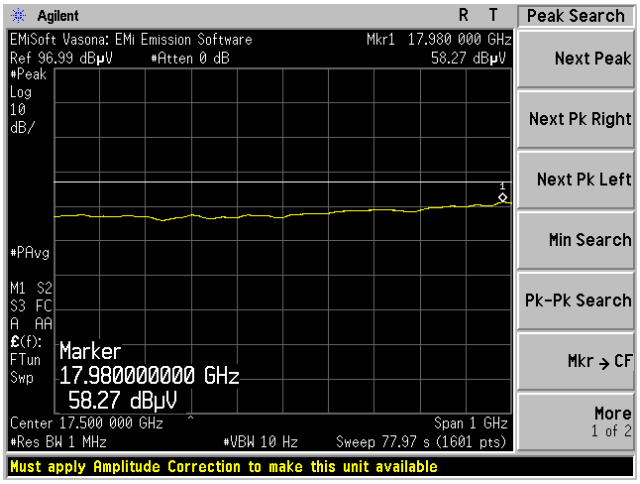
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
7333.39	59.15	2.93	62.08	V	192	251	83.54	-21.46	Peak
7333.39	56.71	2.93	59.64	V	192	251	63.54	-3.9	Avg
10996.93	61.43	5.23	66.66	V	176	352	83.54	-16.88	Peak
10996.93	49.98	5.23	55.21	V	176	352	63.54	-8.33	Avg

5) 5600 MHz, 802.11a configuration



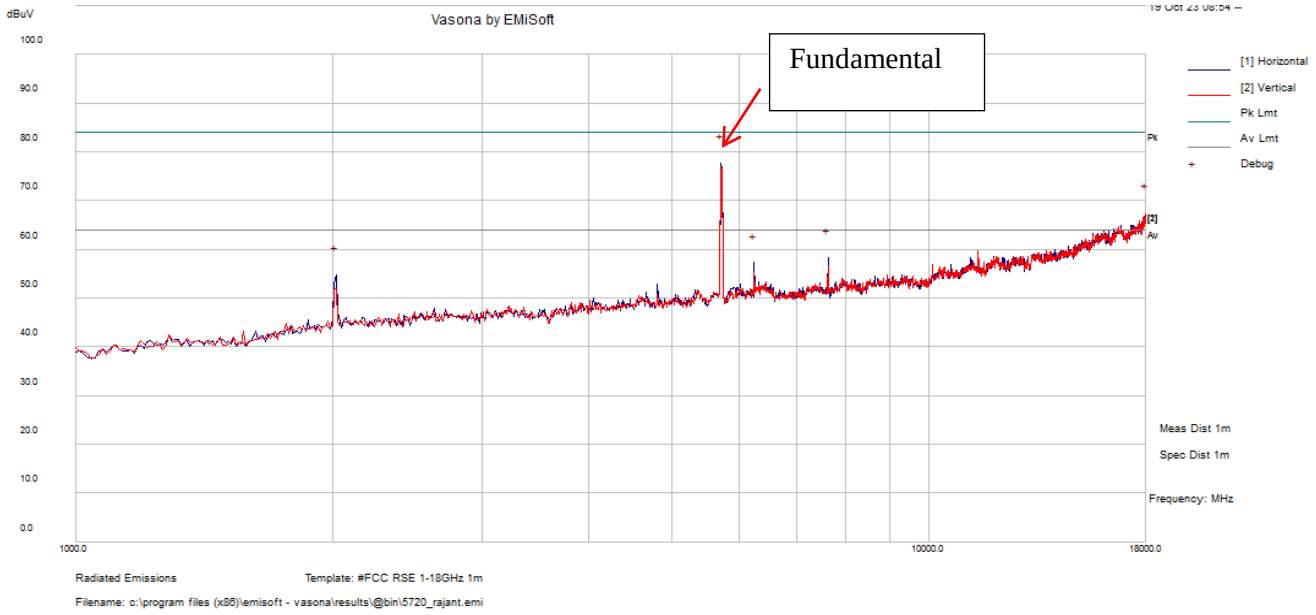
Note: Notch filter was used for above plot

Average plot in the range 17.5GHz-18GHz



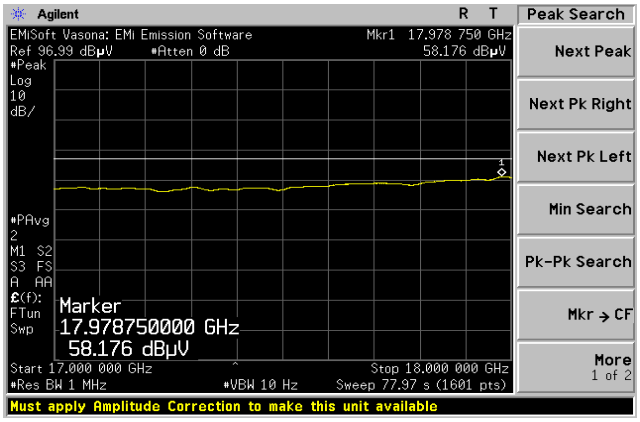
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
11200	52.01	10.46	62.46	V	200	0	83.54	-21.08	Peak
7470.625	54.72	6.43	61.15	H	200	0	83.54	-22.39	Peak
6248.75	51.35	5.7	57.05	H	200	0	83.54	-26.49	Peak
1871.25	57.63	-4.15	53.49	V	100	0	83.54	-30.05	Peak

6) 5720 MHz, 802.11a configuration



Note: Notch filter was used for above plot

Average plot in the range 17GHz-18GHz

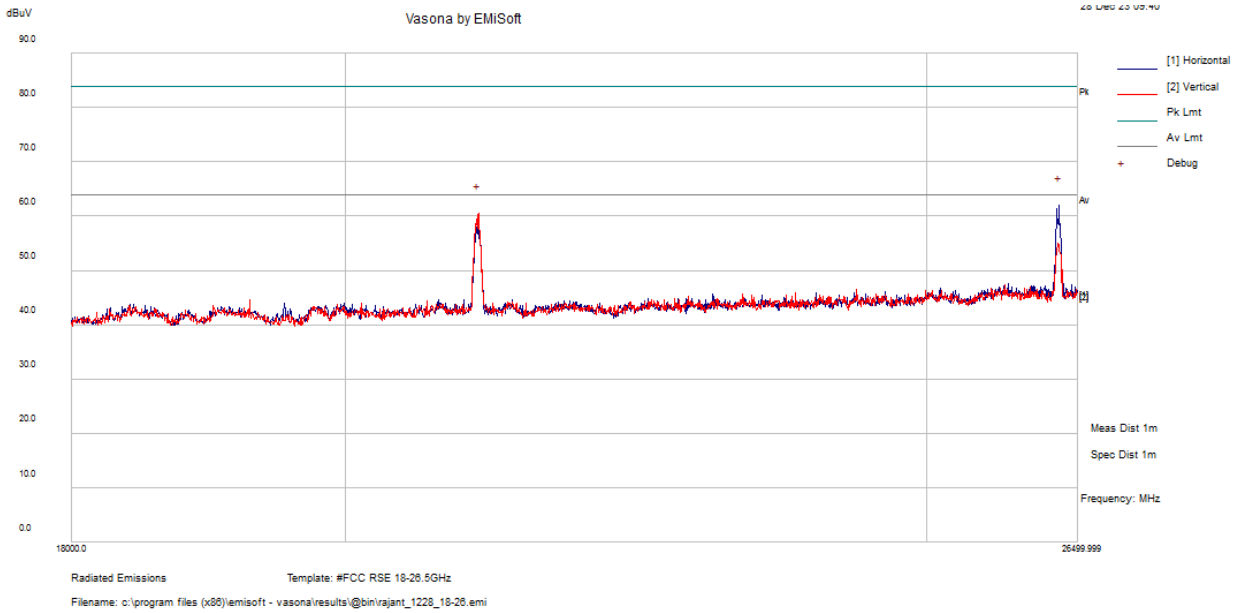


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
7630	52.06	6.32	58.39	H	200	0	83.54	-25.15	Peak
6248.75	51.52	5.7	57.22	H	200	0	83.54	-6.32	Peak

18-26.5 GHz Worst Case, Measured at 1 meter (Antenna port terminated for cabinet emissions)

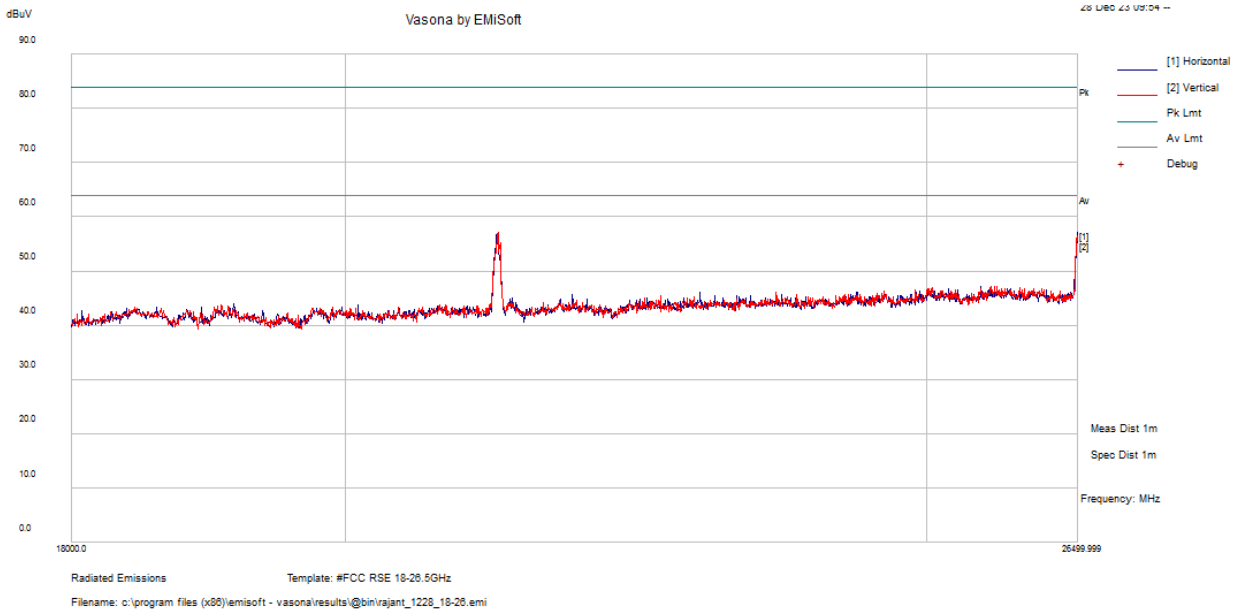
WLAN0, port A

1) 5260 MHz, 802.11a configuration



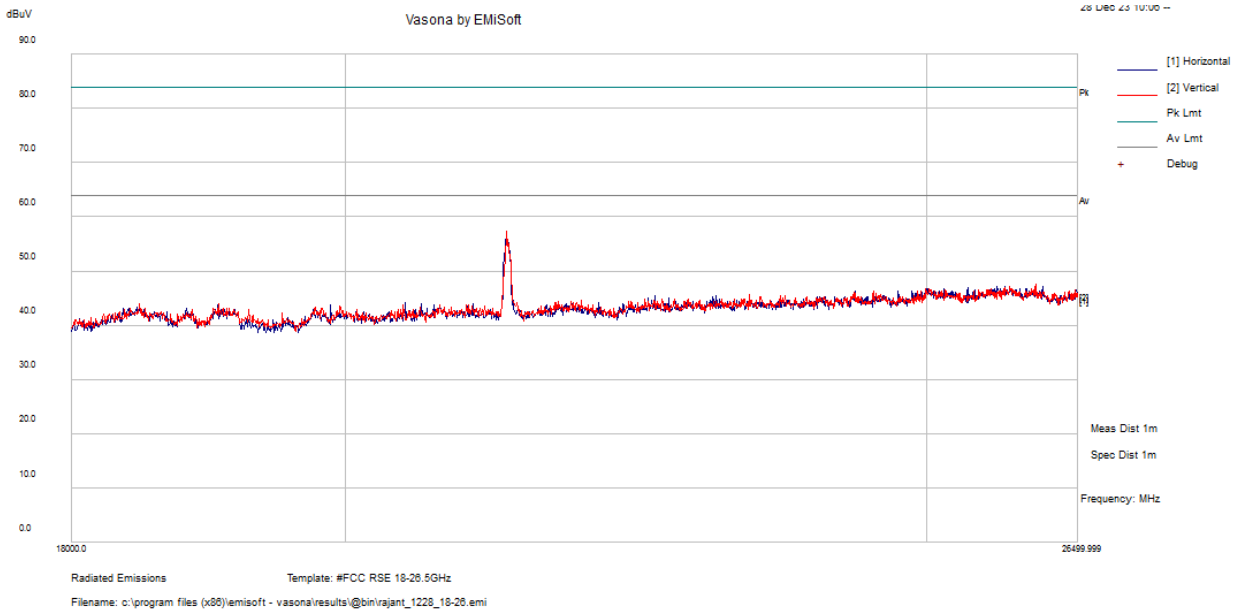
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
26300	55.12	7.79	62.91	H	150	0	63.54	-0.63	Peak compared to Average Limit
21040	54.92	6.9	61.82	H	150	0	63.54	-1.72	Peak compared to Average Limit

2) 5300 MHz, 802.11a configuration



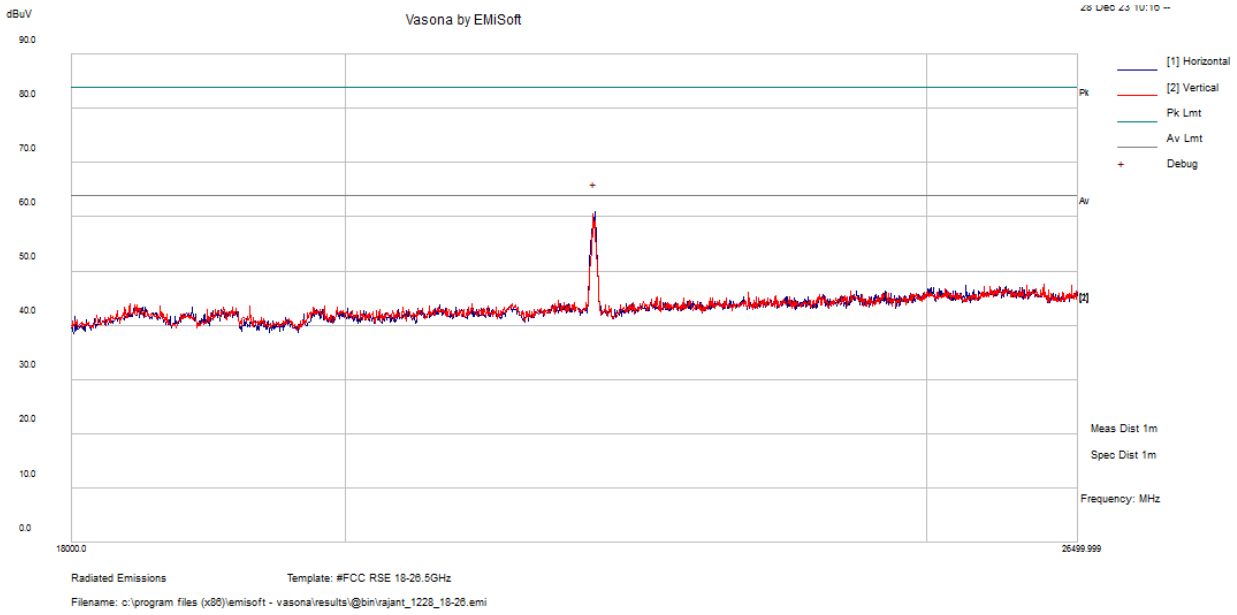
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
26499	48.49	7.79	56.28	H	150	0	63.54	-7.26	Peak compared to Average Limit
21200	50.73	6.9	57.63	H	150	0	63.54	-5.91	Peak compared to Average Limit

3) 5320 MHz, 802.11a configuration



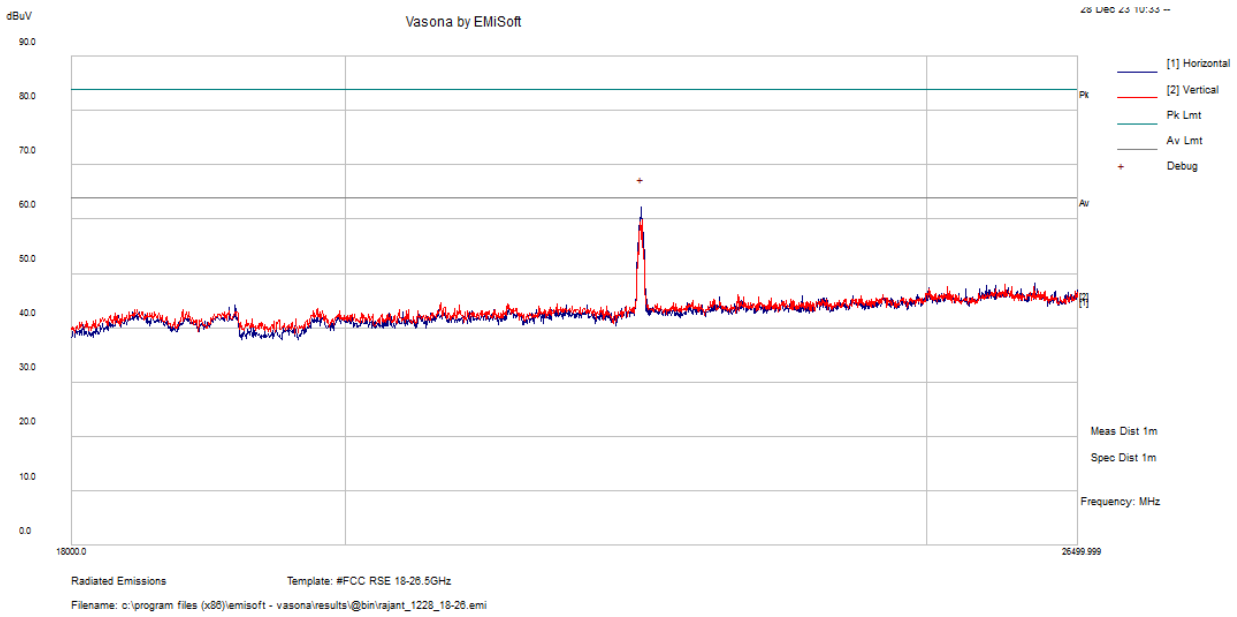
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
21280	51.85	6.9	58.75	H	150	0	63.54	-4.79	Peak compared to Average Limit

4) 5500 MHz, 802.11a configuration



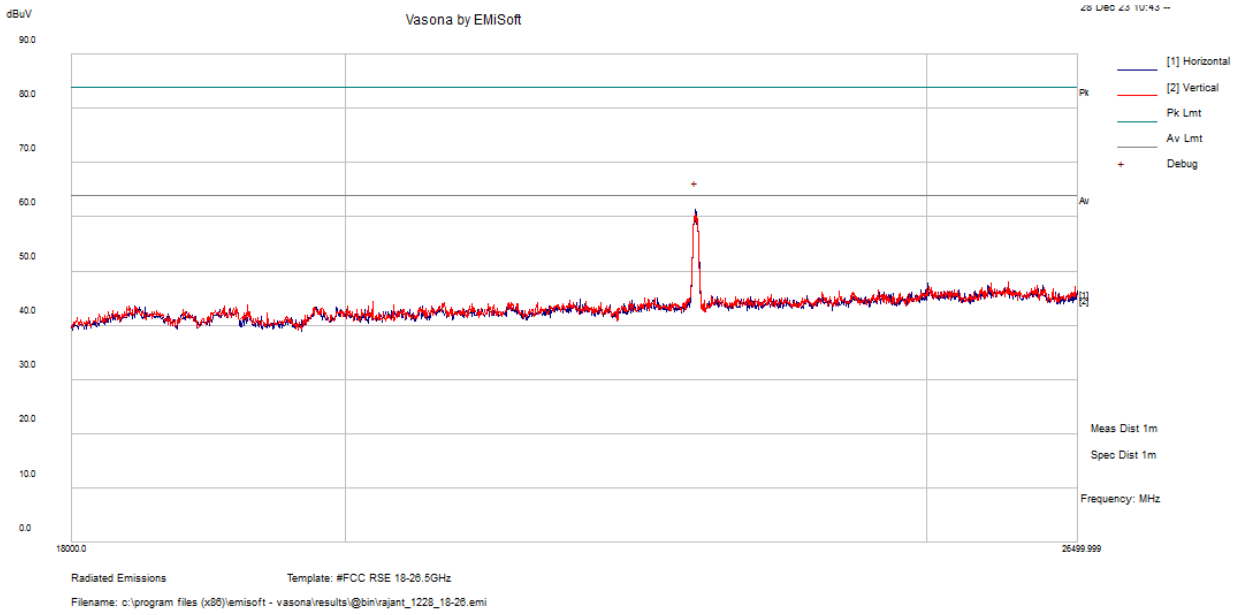
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
22000	55.08	6.9	61.98	H	150	0	63.54	-1.56	Peak compared to Average Limit

5) 5600 MHz, 802.11a configuration



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
22400	56.98	6.9	63.28	H	150	0	63.54	-0.26	Peak compared to Average Limit

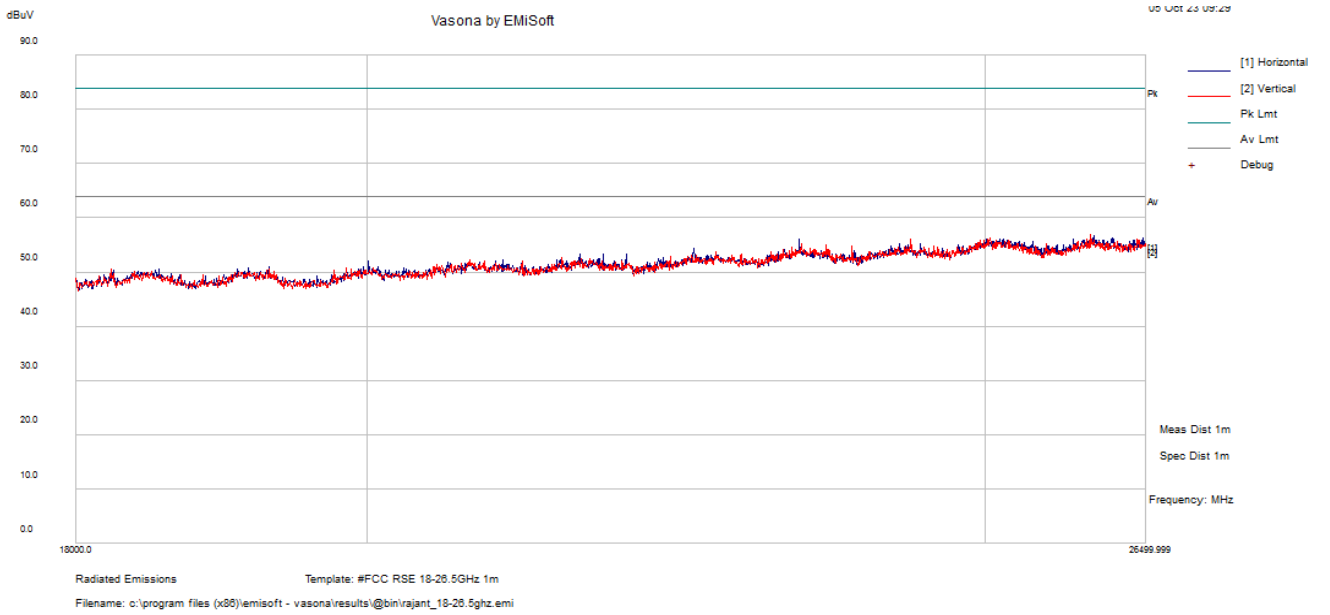
6) 5720 MHz, 802.11a configuration



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
22880	55.28	6.9	62.18	H	150	0	63.54	-1.36	Peak compared to Average Limit

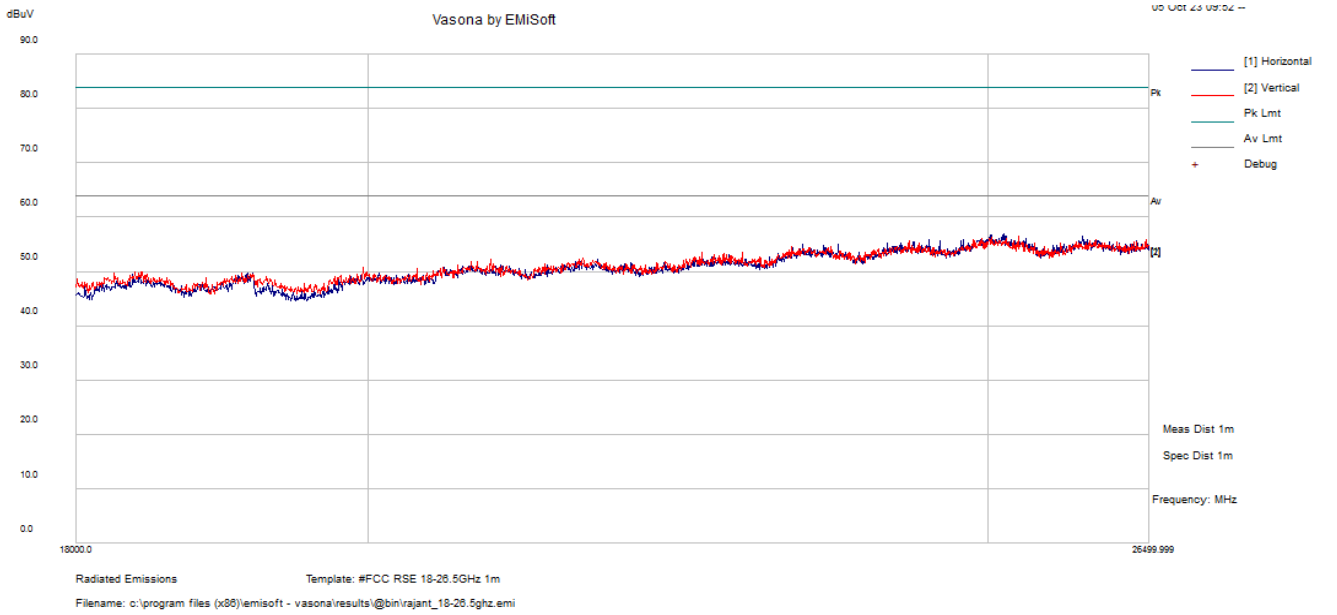
WLAN1, port D

1) 5260 MHz, 802.11a configuration



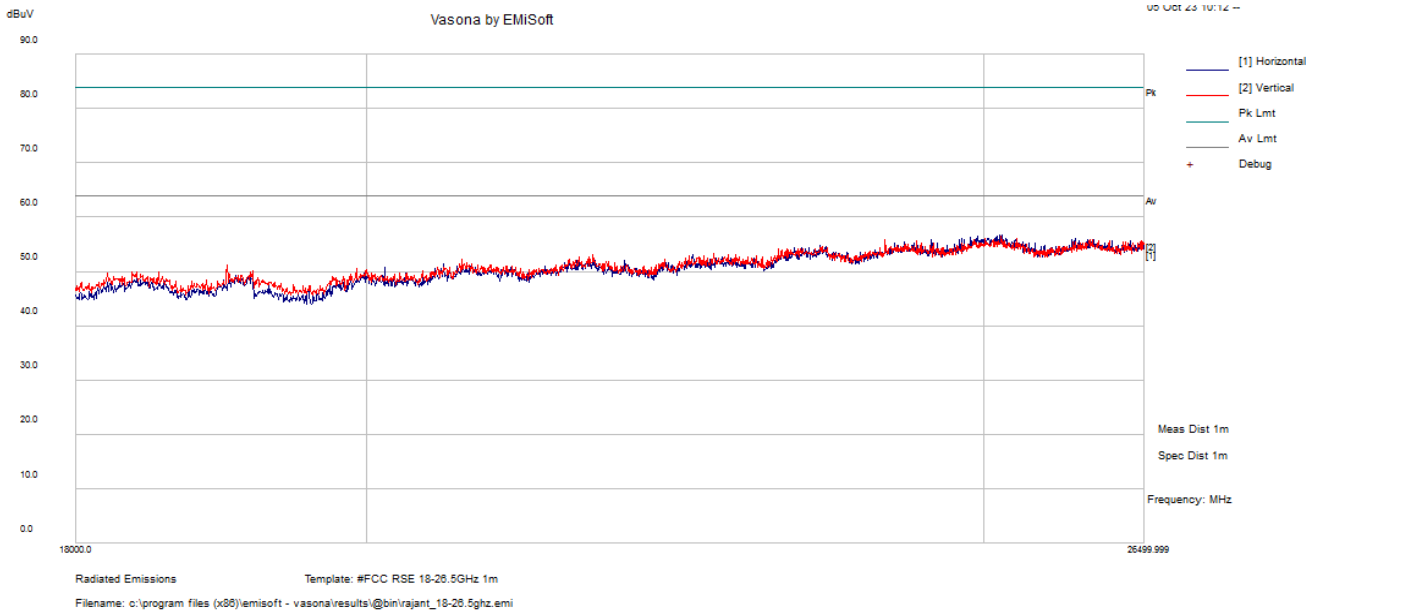
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
26499	41.82	7.79	49.61	H	150	0	63.54	-13.93	Peak compared to Average Limit

2) 5280 MHz, 802.11a configuration



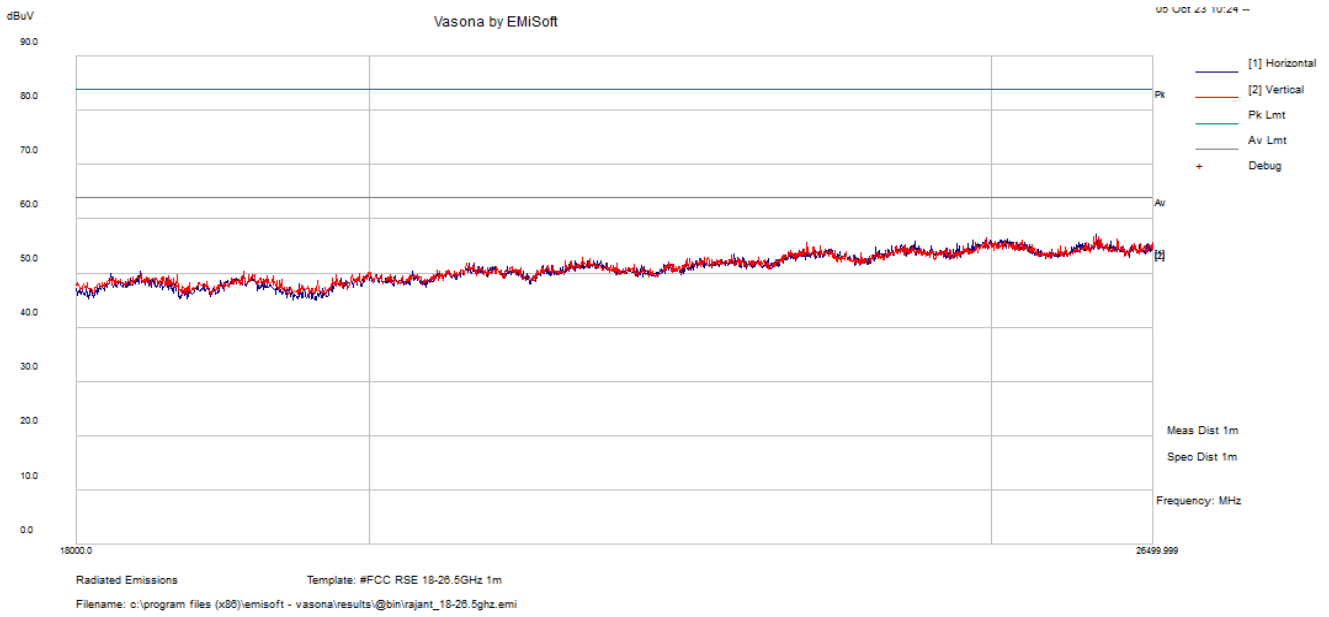
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
26499	42.12	7.79	49.91	H	150	0	63.54	-13.63	Peak compared to Average Limit

3) 5320 MHz, 802.11a configuration



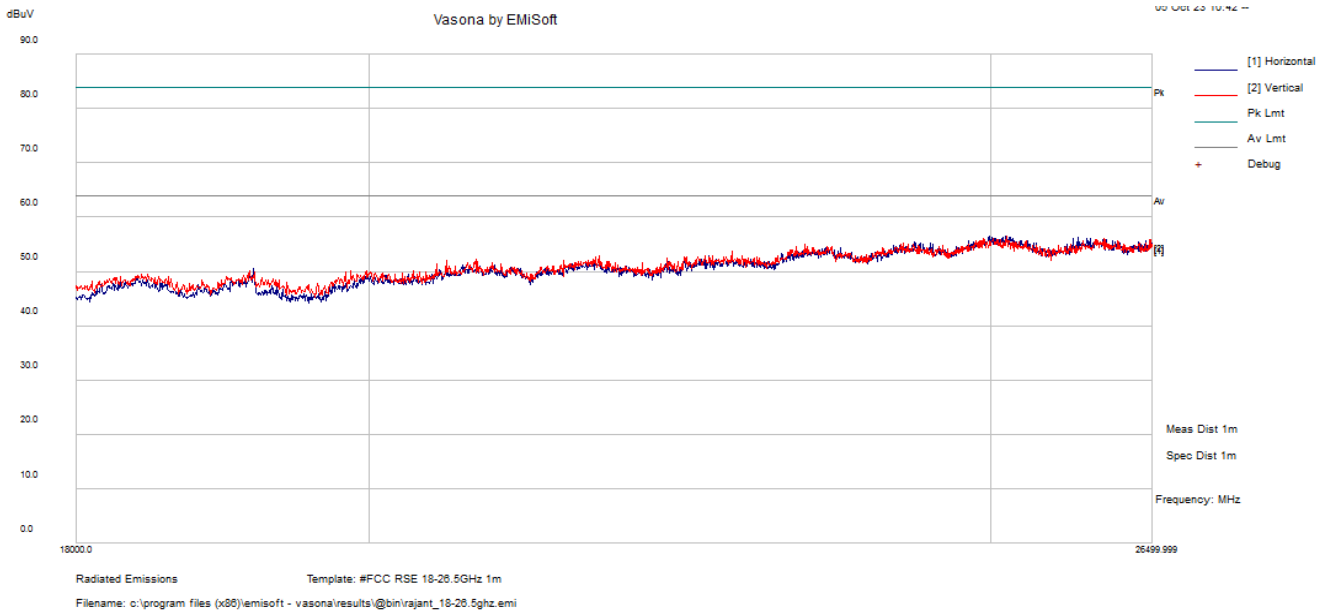
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
26499	41.89	7.79	49.68	H	150	0	63.54	-13.86	Peak compared to Average Limit

4) 5500 MHz, 802.11a configuration



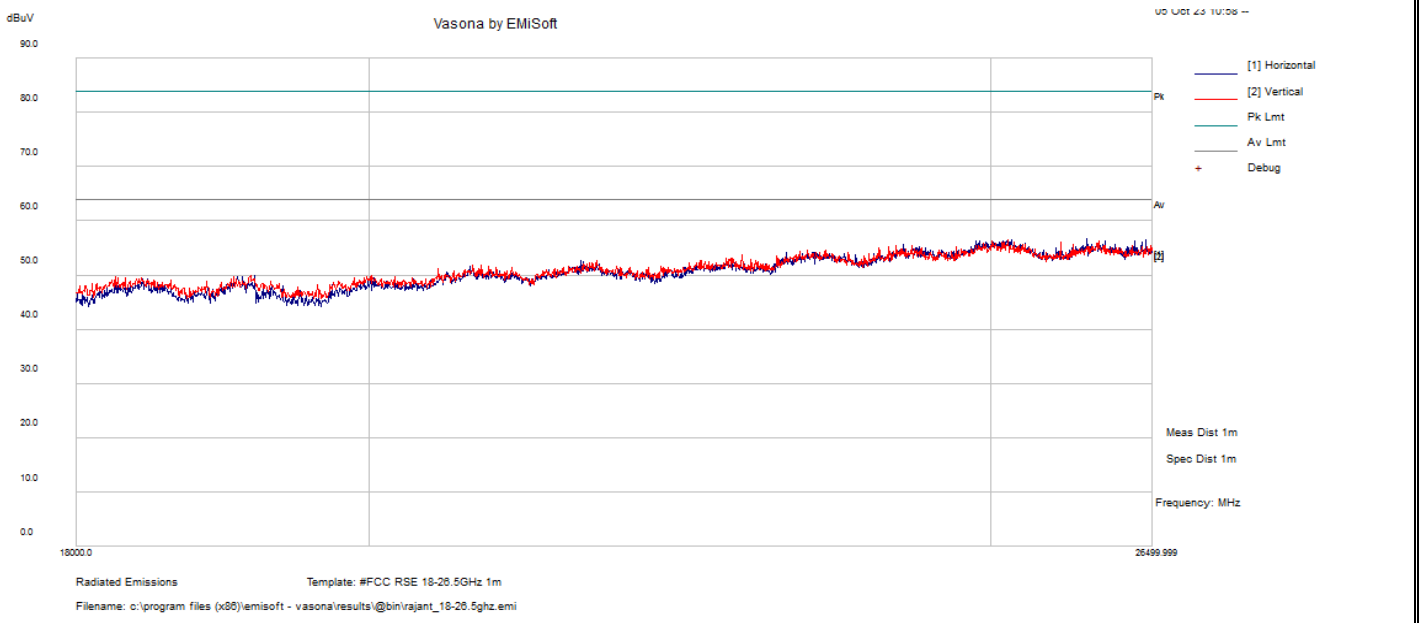
Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
26499	42.31	7.79	50.1	H	150	0	63.54	-13.44	Peak compared to Average Limit

5) 5600 MHz, 802.11a configuration



Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
26499	42.29	7.79	50.08	H	150	0	63.54	-13.46	Peak compared to Average Limit

6) 5720 MHz, 802.11a configuration

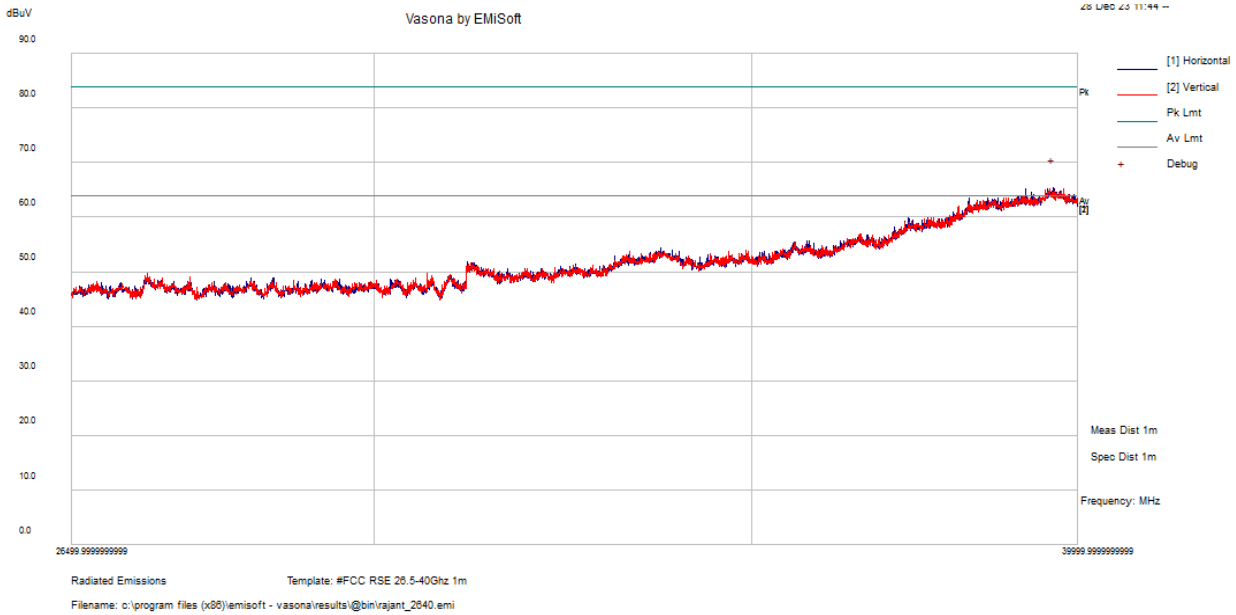


Frequency (MHz)	S.A. Reading (dBuV)	Correction Factor (dB/m)	Corrected Amplitude (dBµV/m)	Ant. Polarity (H/V)	Ant. Height (cm)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Detector (Peak /Ave.)
26499	42.17	7.79	49.96	H	150	0	63.54	-13.58	Peak compared to Average Limit

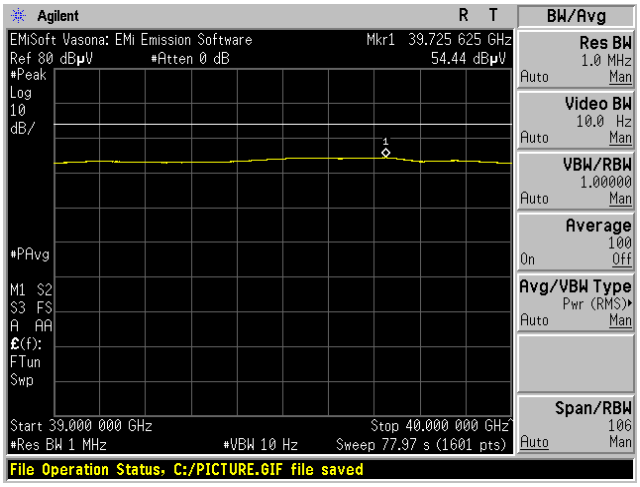
26.5-40 GHz Worst Case, Measured at 1 meter (Antenna port terminated for cabinet emissions)

WLAN0, port A

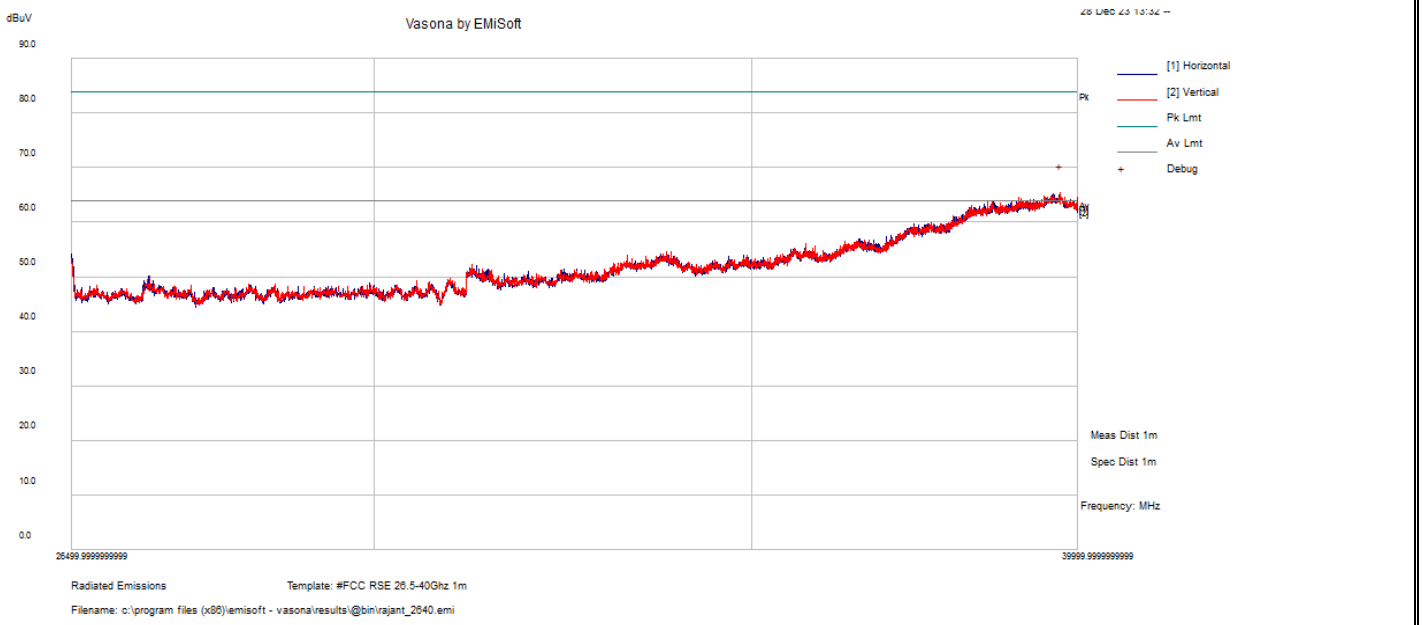
1) 5260 MHz, 802.11a configuration



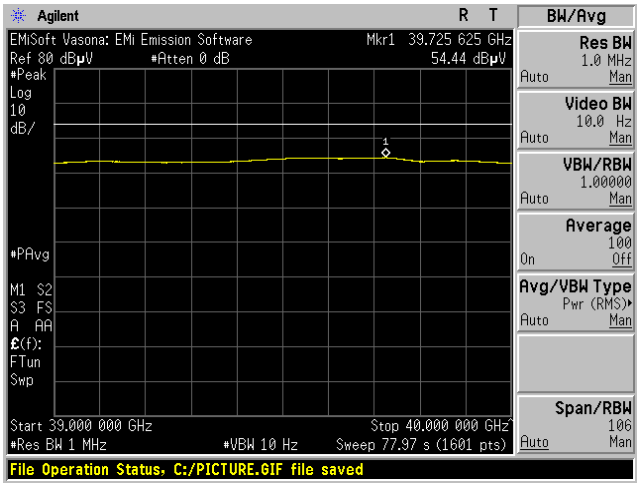
Average Plot in 38GHz-40GHz



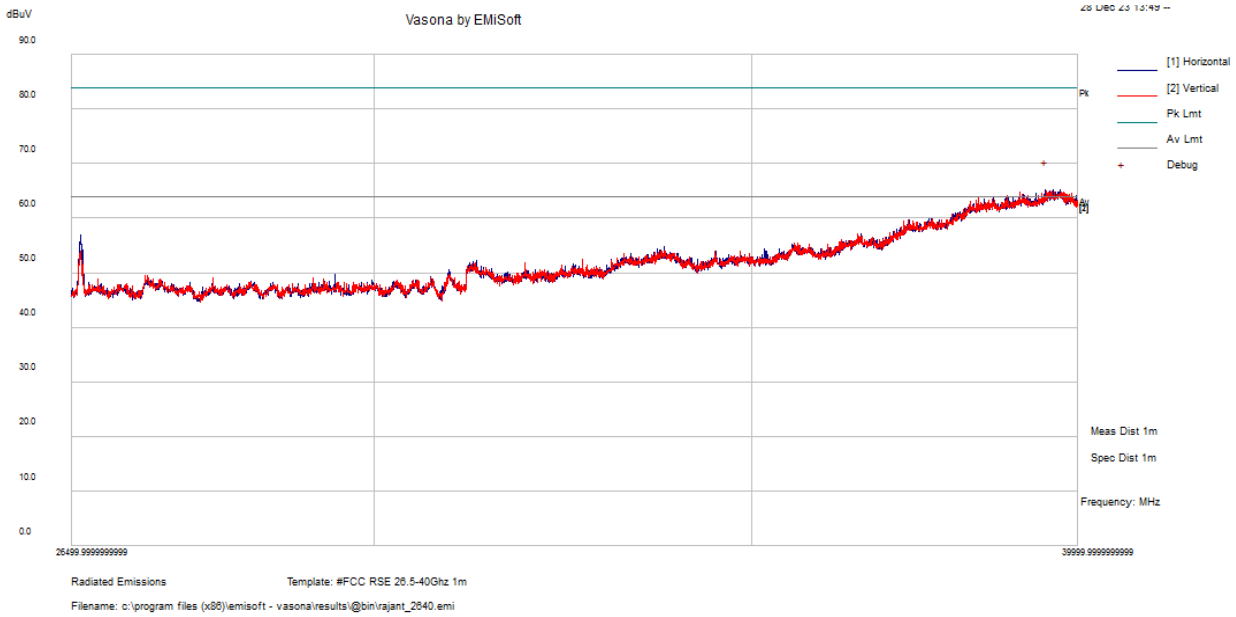
2) 5300 MHz, 802.11a configuration



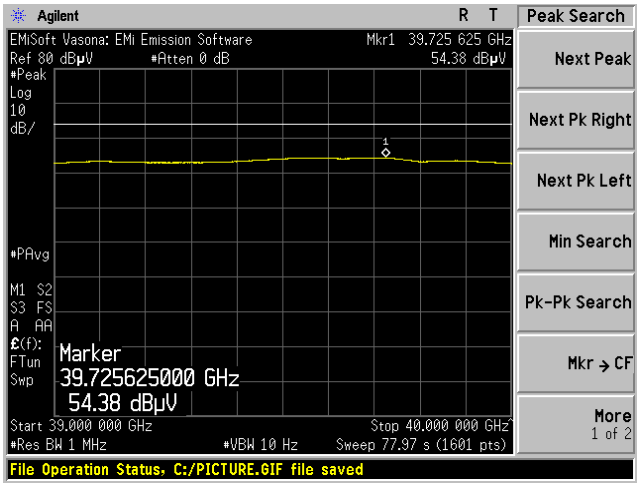
Average Plot in 38GHz-40GHz



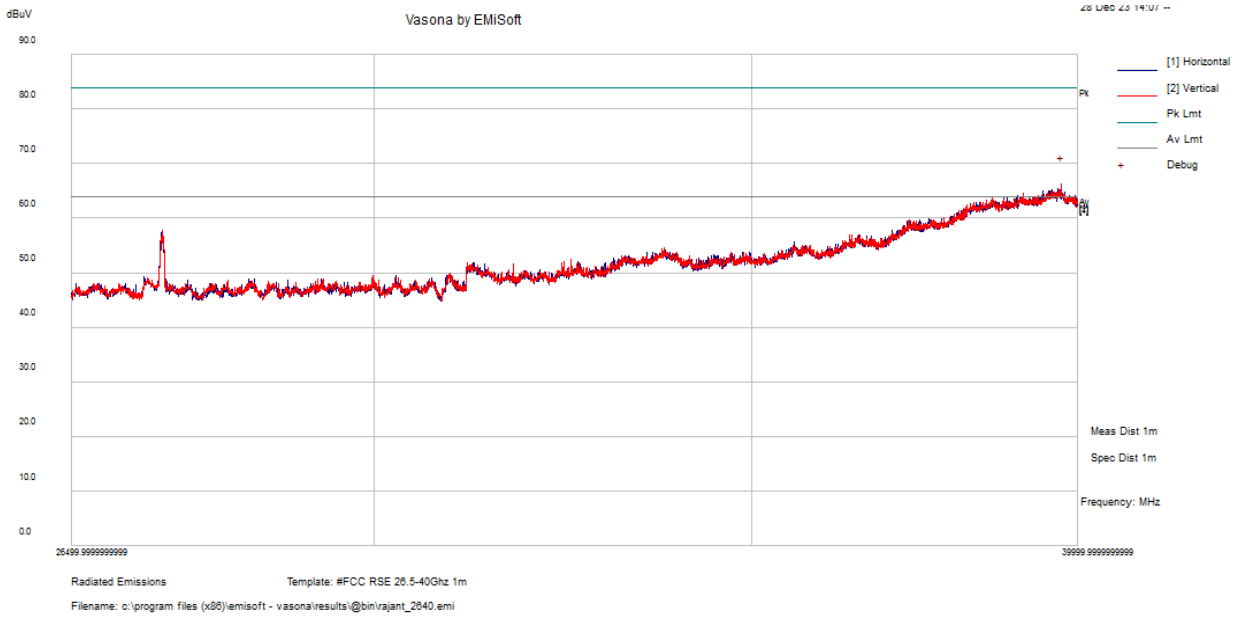
3) 5320 MHz, 802.11a configuration



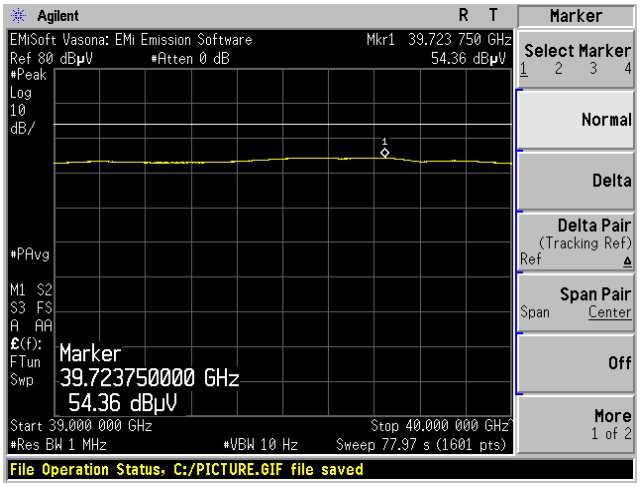
Average Plot in 38GHz-40GHz



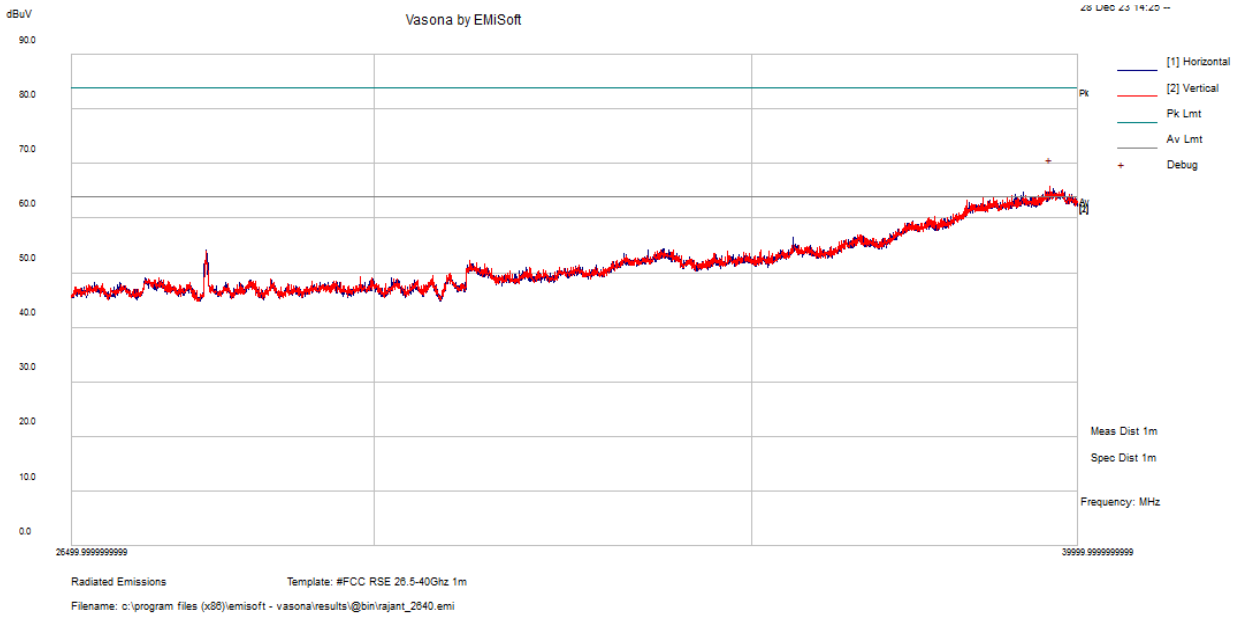
4) 5500 MHz, 802.11a configuration



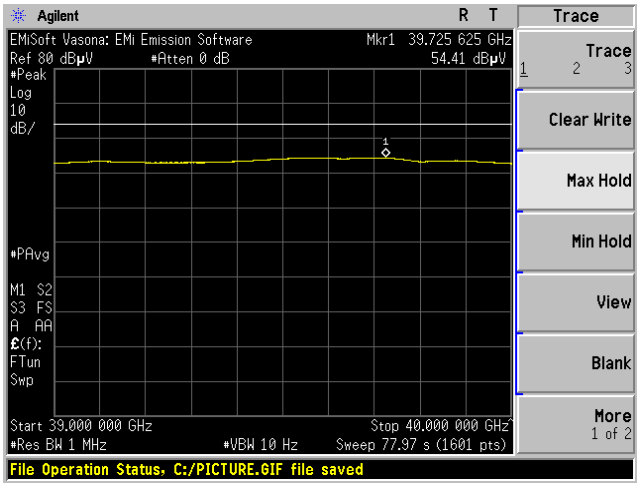
Average Plot in 38GHz-40GHz



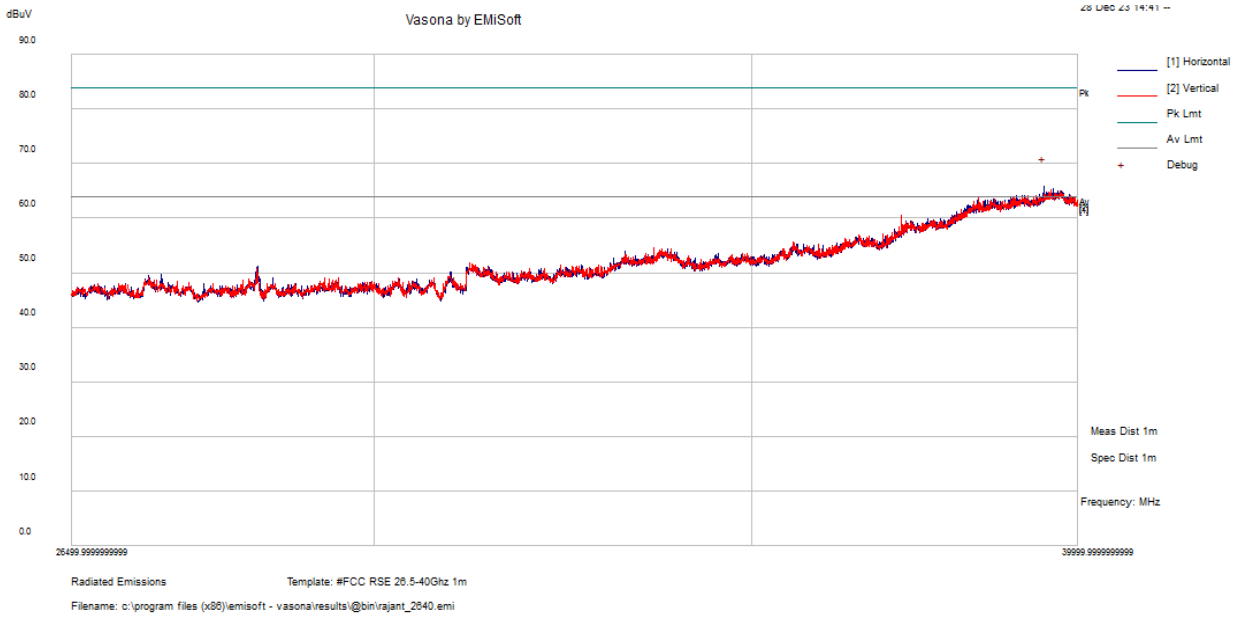
5) 5600 MHz, 802.11a configuration



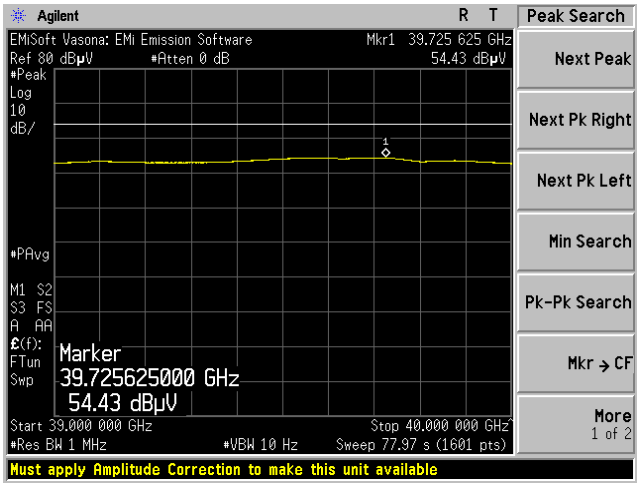
Average Plot in 38GHz-40GHz



6) 5720 MHz, 802.11a configuration

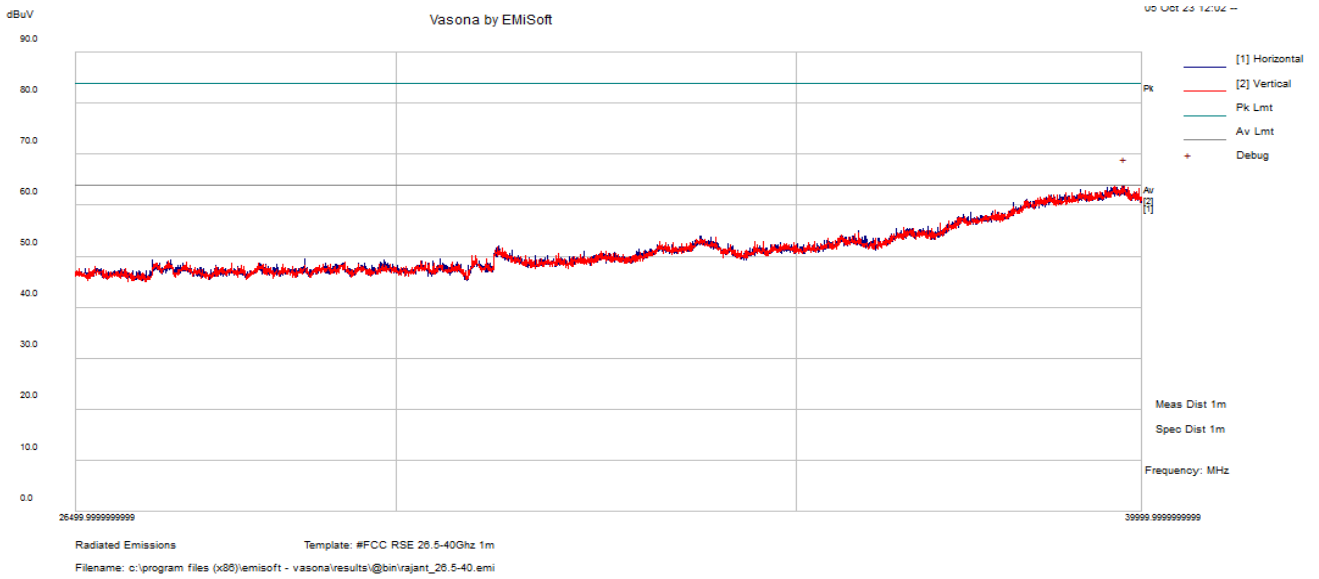


Average Plot in 38GHz-40GHz

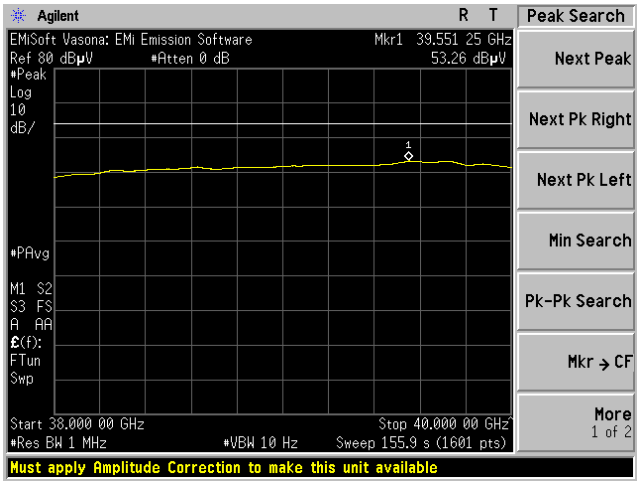


WLAN1, port D

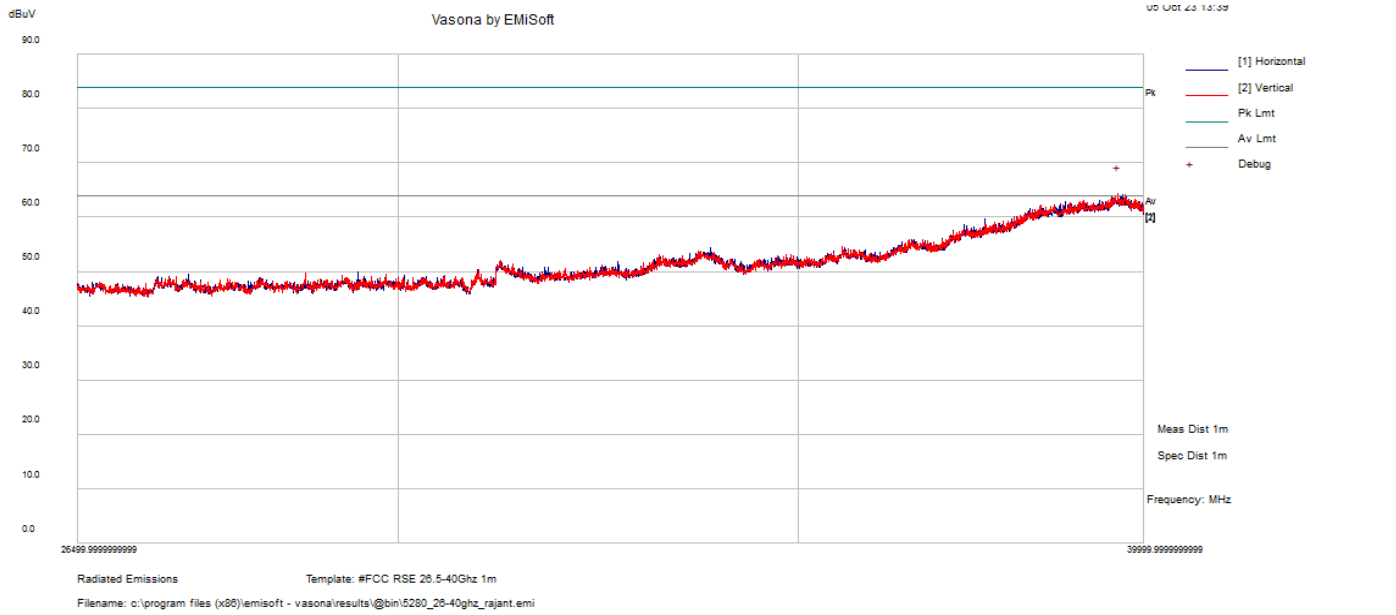
1) 5260 MHz, 802.11a configuration



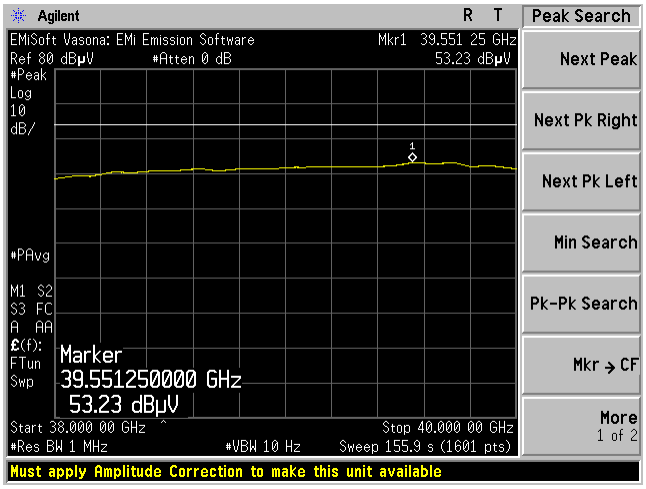
Average Plot in 38GHz-40GHz



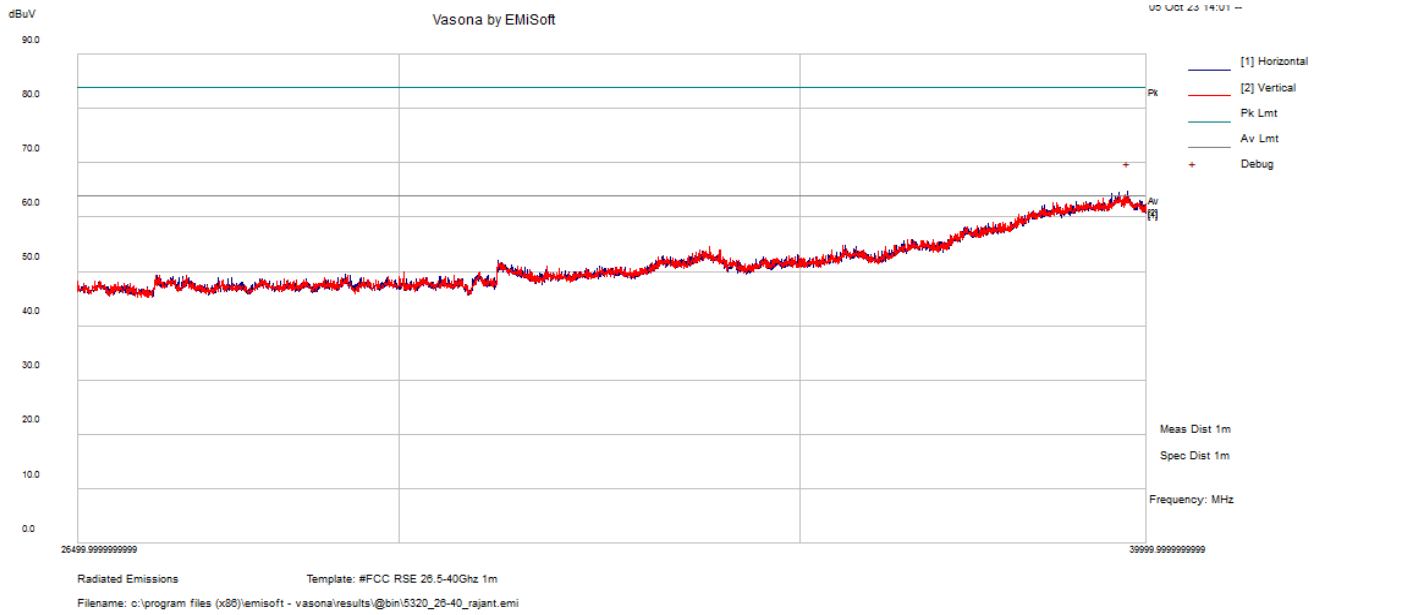
2) 5280 MHz, 802.11a configuration



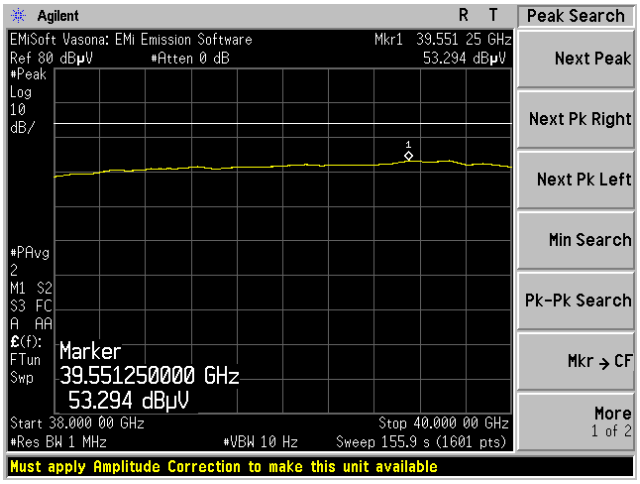
Average Plot in 38GHz-40GHz



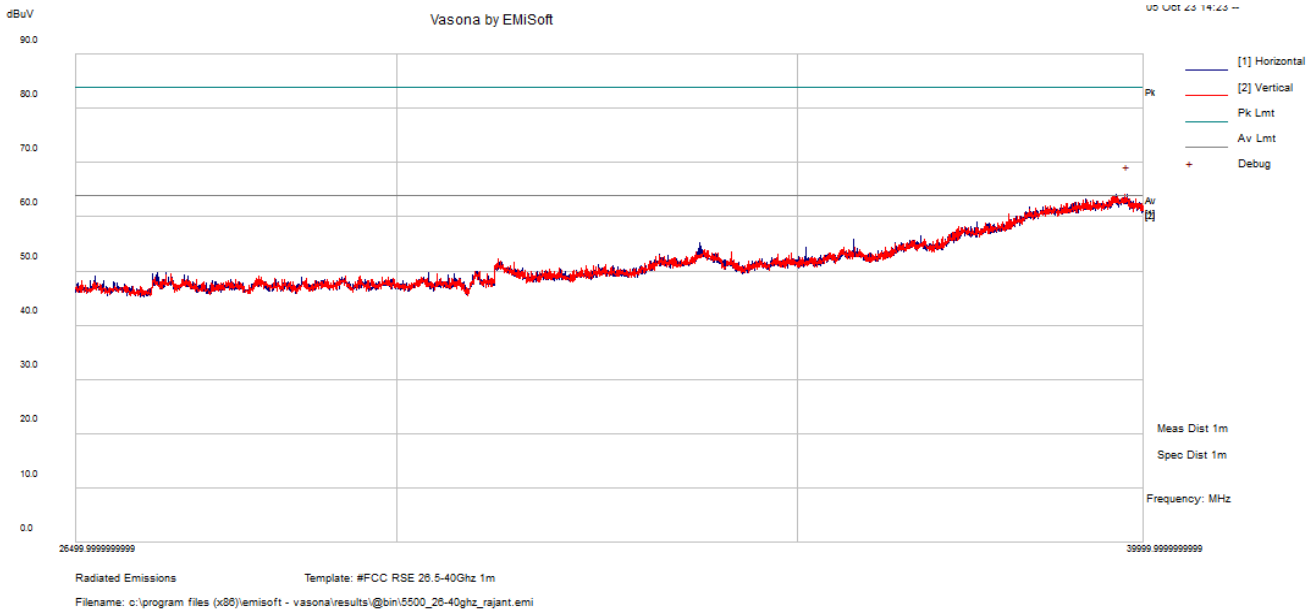
3) 5320 MHz, 802.11a configuration



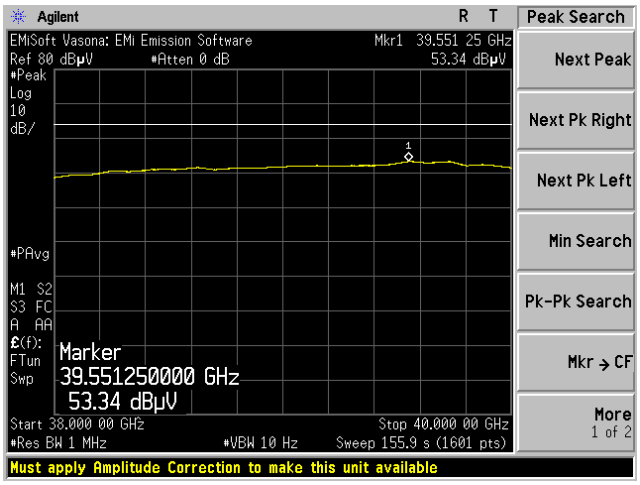
Average Plot in 38GHz-40GHz



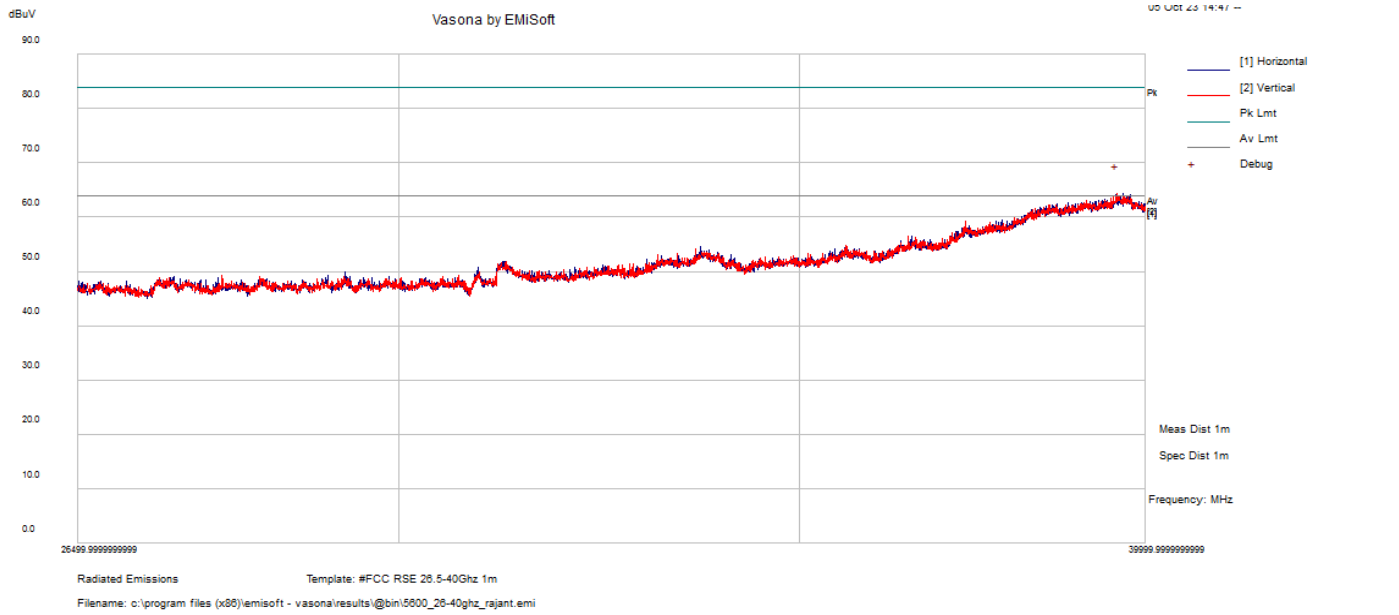
4) 5500 MHz, 802.11a configuration



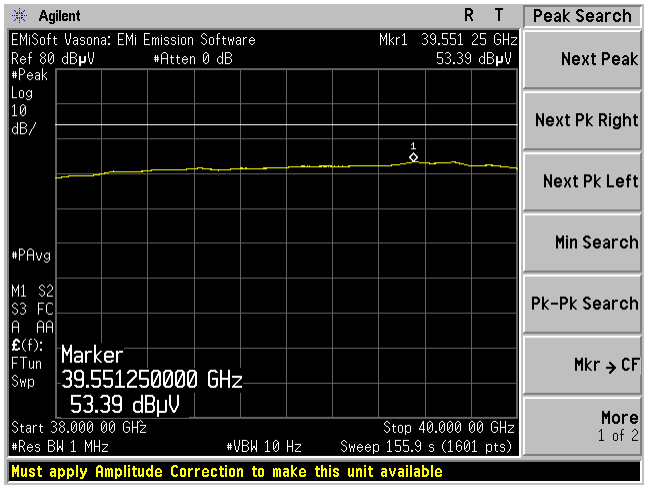
Average Plot in 38GHz-40GHz



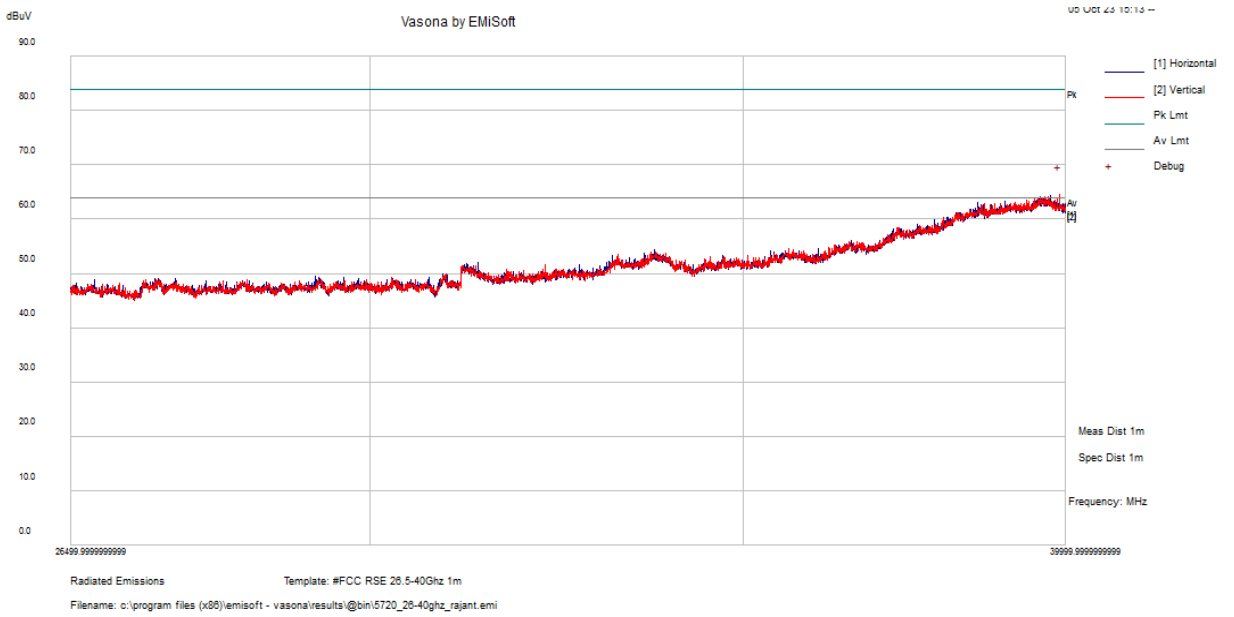
5) 5600 MHz, 802.11a configuration



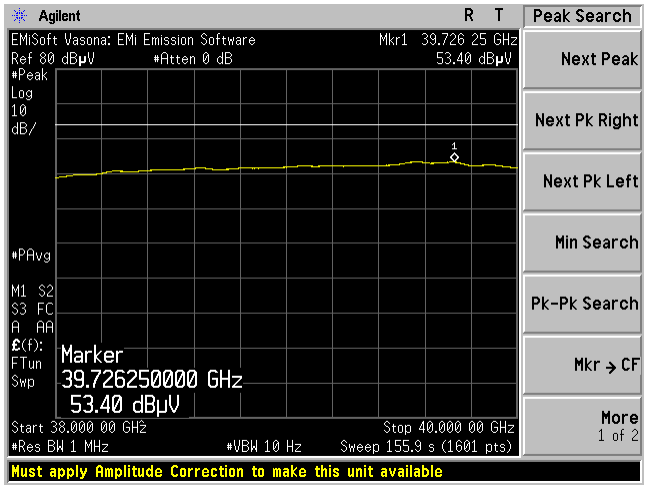
Average Plot in 38GHz-40GHz



6) 5720 MHz, 802.11a configuration



Average Plot in 38GHz-40GHz



8 FCC §15.407(A.2) & ISEDC RSS-247 §6.2 -26 dB, & 99% - Occupied Bandwidth

8.1 Applicable Standards

As per FCC §15.407(a.2) and ISEDC RSS-247 6.2.2, 6.2.3: for equipment operating in the band 5250-5350MHz and 5470-5725 MHz, 99% OBW and 26db OBWare used for reference for other requirement.

8.2 Measurement Procedure

As per the ANSI 63.10 Clause 12.4.1: Emission Bandwidth

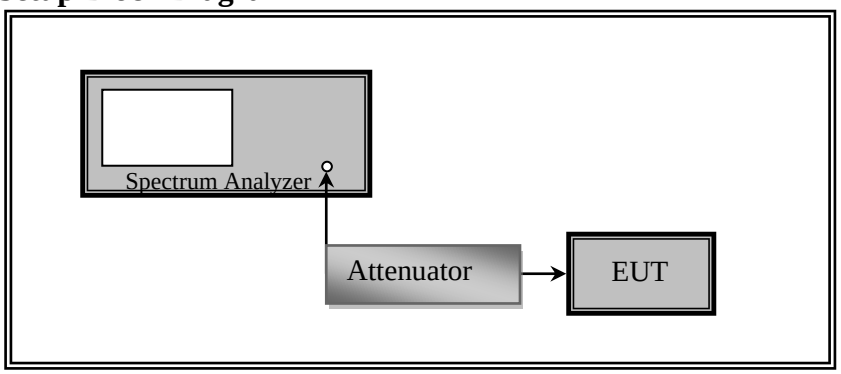
a. Set RBW = approximately 1% of the emission bandwidth
b. Set the VBW > RBW.
c. Detector = peak.
d. Trace mode = max hold.
e. Measure the maximum width of the emission that is 6 or 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

As per the ANSI 63.10 Clause 6.9.3: Occupied Bandwidth – Power Bandwidth (99%)

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

f. The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
g. The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
h. Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
i. Step a) through step c) might require iteration to adjust within the specified range.
j. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
k. Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
l. If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
m. The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

8.3 Test Setup Block Diagram



8.4 Test Equipment List and Details

WLAN0

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446A	MY48250 238	2023-05-12	1 year
-	-	RF cable	-	-	Each time[1]	N/A

Note[1]: cable included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

WLAN1

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446A	MY48250 238	2023-05-12	1 year
-	-	10dB attenuator	-	-	Each time[1]	N/A
-	-	RF cable	-	-	Each time[1]	N/A

Note[1]: cable and attenuator included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

8.5 Test Environmental Conditions

WLAN0

Temperature:	19.8 to 20.4°C
Relative Humidity:	45.4 to 49.6 %
ATM Pressure:	101.9 kPa

The testing was performed by Michael Papa from 2024-01-04 to 2024-01-05 at RF site.

WLAN1

Temperature:	24 °C
Relative Humidity:	46.5 %
ATM Pressure:	102 kPa

The testing was performed by Shankar Pangeni from 2023-10-10 to 2023-10-17 at RF site.

8.6 Test Results

Please refer to the following tables and plots.

5250-5350 MHz
WLAN0
Ant A

Channel	Frequency (MHz)	99% OBW (MHz)	26 dB OBW (MHz)
802.11a			
52	5260	16.78	23.62
60	5300	16.9	24.85
64	5320	16.92	25.99
802.11n20			
52	5260	17.8	20.52
60	5300	17.77	20.45
64	5320	17.78	20.59
802.11n40			
54	5270	36.28	40.16
62	5310	36.27	40.41
802.11ac 80			
58	5290	76.27	84.19

Ant B

Channel	Frequency (MHz)	99% OBW (MHz)	26 dB OBW (MHz)
802.11a			
52	5260	16.8	20.93
60	5300	16.79	26.62
64	5320	16.76	21.77
802.11n20			
52	5260	17.79	20.66
60	5300	17.71	20.04
64	5320	17.51	20.42
802.11n40			
54	5270	36.33	40.36
62	5310	36.47	40.03
802.11ac 80			
58	5290	76.3	83.46

WLAN1
Ant C

Channel	Frequency (MHz)	99% OBW (MHz)	26 dB OBW (MHz)
802.11a			
52	5260	21.55	39.01
60	5300	24.24	40.62
64	5320	16.82	20.55
802.11n20			
52	5260	17.90	20.92
60	5300	17.84	20.91
64	5320	17.98	20.76
802.11n40			
54	5270	36.36	40.57
62	5310	36.08	40.12
802.11ac 80			
58	5290	76.23	84.01

Ant D

Channel	Frequency (MHz)	99% OBW (MHz)	26 dB OBW (MHz)
802.11a			
52	5260	22.97	50.47
60	5300	26.90	52.27
64	5320	16.96	20.88
802.11n20			
52	5260	17.99	21.06
60	5300	17.99	21.05
64	5320	17.92	21.12
802.11n40			
54	5270	36.18	40.39
62	5310	36.14	40.00
802.11ac 80			
58	5290	76.42	84.05

5470-5725 MHz
WLAN0
Ant A

Channel	Frequency (MHz)	99% OBW (MHz)	26 dB OBW (MHz)
802.11a			
100	5500	16.88	22.94
120	5600	22.5	39.95
140	5700	16.79	21.86
144	5720	25.58	42.63
802.11n20			
100	5500	17.84	22.28
120	5600	17.87	22.22
140	5700	17.93	22.41
144	5720	17.95	22.54
802.11n40			
102	5510	36.2	44.32
118	5590	36.35	44.13
134	5700	36.5	44.34
142	5710	36.22	44.07
802.11ac80			
106	5530	76.81	90.68
122	5610	76.74	91.65
138	5690	76.9	91.41

Ant B

Channel	Frequency (MHz)	99% OBW (MHz)	26 dB OBW (MHz)
802.11a			
100	5500	16.95	22.06
120	5600	25.38	43.4
140	5700	17.02	22.46
144	5720	21.95	40.457
802.11n20			
100	5500	18.11	22.09
120	5600	17.99	22.19
140	5700	18.08	22.57
144	5720	18.14	22.55
802.11n40			
102	5510	36.26	44.18
118	5590	36.26	44.25
134	5700	36.39	44.31
142	5710	36.2	36.2
802.11ac80			
106	5530	76.99	90.07
122	5610	76.42	90.62
138	5690	76.54	90.97

WLAN1
Ant C

Channel	Frequency (MHz)	99% OBW (MHz)	26 dB OBW (MHz)
802.11a			
100	5500	16.75	21.64
120	5600	17.82	33.78
140	5700	16.74	21.91
144	5720	19.59	36.58
802.11n20			
100	5500	17.92	22.50
120	5600	18.04	22.44
140	5700	18.02	22.37
144	5720	18.11	22.43
802.11n40			
102	5510	36.17	44.15
118	5590	36.01	44.25
134	5670	36.34	44.32
142	5710	35.99	43.94
802.11ac80			
106	5530	76.30	90.10
122	5610	76.26	91.05
138	5690	76.03	89.82

Ant D

Channel	Frequency (MHz)	99% OBW (MHz)	26 dB OBW (MHz)
802.11a			
100	5500	16.77	21.94
120	5600	18.05	35.01
140	5700	16.86	21.79
144	5720	18.05	34.28
802.11n20			
100	5500	17.85	22.38
120	5600	17.88	22.63
140	5700	17.90	22.38
144	5720	17.93	22.53
802.11n40			
102	5510	36.34	44.08
118	5590	36.25	44.05
134	5670	36.37	44.52
142	5710	36.30	44.33
802.11ac80			
106	5530	76.69	90.55
122	5610	76.72	90.51
138	5690	76.56	90.50

Note: See Annex A for 26dB OBW and 99OBW test results

9 FCC §407(a) & ISEDC RSS-247 §6.2 - Output Power

9.1 Applicable Standards

According to FCC §15.407(a):

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 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.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 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.

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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

According to ISEDC RSS-247 §6.2.1 for frequency band 5150-5250 MHz:

The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10}B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

According to ISEDC RSS-247 §6.2.2 for frequency band 5250-5350 MHz:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

According to ISEDC RSS-247 §6.2.3 for frequency band 5470-5600 MHz and 5650-5725 MHz:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

According to ISEDC RSS-247 §6.2.4 for frequency band 5725-5850 MHz:

The maximum conducted output power shall not exceed 1 W. The 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 power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

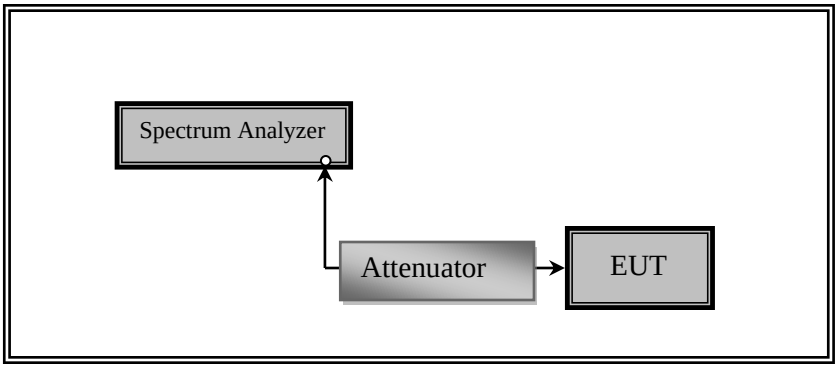
9.2 Measurement Procedure

The measurements are based on ANSI C63.10-2013,

12.3.2.5 Method SA-2A
Method SA-2A uses rms detection with slow sweep with each spectrum bin averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:

a) Measure the duty cycle D of the transmitter output signal as described in 12.2.
b) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.
c) Set RBW = 1 MHz.
d) Set VBW ≥ 3 MHz
e) Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
f) Manually set sweep time ≥ [10 × (number of points in sweep) × (total ON/OFF period of the transmitted signal)].
g.) Set detector = RMS (power averaging).
h) Perform a single sweep.
i) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW of the spectrum.
j) Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add [10 log (1 / 0.25)] = 6 dB if the duty cycle is 25%.

9.3 Test Setup Block Diagram



9.4 Test Equipment List and Details

WLAN0

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446A	MY48250238	2023-05-12	1 year
-	-	RF cable	-	-	Each time[1]	N/A

Note[1]: cable included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

WLAN1

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446A	MY48250238	2023-05-12	1 year
-	-	10dB attenuator	-	-	Each time[1]	N/A
-	-	RF cable	-	-	Each time[1]	N/A

Note[1]: cable and attenuator included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

9.5 Test Environmental Conditions

WLAN0

Temperature:	19.8 to 20.4°C
Relative Humidity:	45.4 to 49.6 %
ATM Pressure:	101.9 kPa

The testing was performed by Michael Papa from 2024-01-04 to 2024-01-08 at RF site.

WLAN1

Temperature:	23 °C
Relative Humidity:	46 %
ATM Pressure:	102.2 kPa

The testing was performed by Shankar Pangeni from 2023-10-10 to 2023-10-17 at RF site.

9.6 Test Results

5250-5350 MHz:

WLAN0

Channel	Frequency (MHz)	Antenna Gain (dBi)	Conducted Output Power (dBm)		Total Power (dBm)	FCC/IC Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
			ANT A	ANT B				
802.11a								
52	5260	7	18.02	17.85	-	<23	25.020	<30
60	5300	7	18.60	18.47	-	<23	25.600	<30
64	5320	7	18.90	18.53	-	<23	25.900	<30
802.11n20								
52	5260	10	14.75	14.22	17.503	<20	27.503	<30
60	5300	10	13.99	13.73	16.872	<20	26.872	<30
64	5320	10	14.58	14.08	17.347	<20	27.347	<30
802.11n40								
54	5270	10	15.13	15.61	18.387	<20	28.387	<30
62	5310	10	11.47	11.72	14.607	<20	24.607	<30
802.11ac80								
58	5290	10	8.90	9.41	12.173	<20	22.173	<30

Note: EIRP(dBm) = Total Power (dBm) + Antenna Gain(dBi)
*Note: Total power (dBm) =10*Log(Ant a(mw)+Ant B(mw))*
Note: Duty cycle correction factor has been added to the Conducted Output Power measurements in the data table
Note: Where applicable, limits are reduced (in dB) by amount that antenna gain exceeds 6dBi.

WLAN1

Channel	Frequency (MHz)	Antenna Gain (dBi)	Conducted Output Power (dBm)		Total Power (dBm)	FCC/IC Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
			ANT C	ANT D				
802.11a								
52	5260	7	20.79	21.13	-	<23	28.130	<30
60	5300	7	20.62	20.28	-	<23	27.280	<30
64	5320	7	17.98	18.80	-	<23	25.800	<30
802.11n20								
52	5260	10	15.81	15.68	18.756	<20	28.750	<30
60	5300	10	15.05	14.42	17.757	<20	27.750	<30
64	5320	10	14.57	15.14	17.875	<20	27.870	<30
802.11n40								
54	5270	10	16.41	16.40	19.415	<20	29.410	<30
62	5310	10	10.73	10.48	13.617	<20	23.620	<30
802.11ac80								
58	5290	10	9.35	9.41	12.390	<20	22.390	<30

Note: EIRP(dBm) = Total Power (dBm) + Antenna Gain(dBi)
*Note: Total power (dBm) =10*Log(Ant C(mw)+Ant D(mw))*
Note: Duty cycle correction factor has been added to the Conducted Output Power measurements in the data table
Note: Where applicable, limits are reduced (in dB) by amount that antenna gain exceeds 6dBi. (The directional antenna gain is 6.5 dBi calculated based on method specified in KDB 662911 D01)

5470-5725 MHz:

WLAN0

Channel	Frequency (MHz)	Antenna Gain (dBi)	Conducted Output Power (dBm)		Total Power (dBm)	FCC/IC Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
			ANT A	ANT B				
802.11a								
100	5500	6	17.20	18.06	-	<24	24.060	<30
120	5600	6	20.79	20.85	-	<24	26.850	<30
140	5700	6	17.87	17.82	-	<24	23.870	<30
144	5720	6	21.69	21.48	-	<24	27.690	<30
144	5710-5725	6	19.93	20.16	-	<24	26.160	<30
144	5725-5730	6	13.89	14.39	-	<30	20.390	<30
802.11n20								
100	5500	9	15.57	14.80	18.212	<21	27.212	<30
120	5600	9	15.50	14.99	18.263	<21	27.263	<30
140	5700	9	15.30	14.58	17.965	<21	26.965	<30
144	5720	9	16.10	15.08	18.630	<21	27.630	<30
144	5710-5725	9	14.51	13.09	16.868	<21	25.868	<30
144	5725-5730	9	8.46	9.96	12.285	<27	21.285	<30
802.11n40								
102	5510	9	14.87	14.38	17.642	<21	26.642	<30
118	5590	9	17.61	17.34	20.487	<21	29.487	<30
134	5670	9	17.37	17.11	20.252	<21	29.252	<30
142	5710	9	17.48	16.79	20.159	<21	29.159	<30
142	5690-5725	9	16.70	16.57	19.646	<21	28.646	<30
142	5725-5730	9	5.32	2.35	7.094	<27	16.094	<30
802.11ac80								
106	5530	9	10.19	9.75	12.986	<21	21.986	<30
122	5610	9	17.35	16.81	20.099	<21	29.099	<30
138	5690	9	16.87	16.65	19.772	<21	28.772	<30
138	5650-5725	9	16.62	16.56	19.600	<21	28.600	<30
138	5725-5730	9	2.42	0.93	4.749	<27	13.749	<30

*Note: Total power (dBm) =10*Log (Ant A(mw)+Ant B(mw))*
Note: Where applicable, limits are reduced (in dB) by amount that antenna gain exceeds 6dBi.
Note: Duty cycle correction factor has been added to the Conducted Output Power measurements in the data table
Note: This table also includes straddle channel power measurements
Note: EIRP(dBm) = Total Power (dBm) + Antenna Gain(dBi)

WLAN1

Channel	Frequency (MHz)	Antenna Gain (dBi)	Conducted Output Power (dBm)		Total Power (dBm)	FCC/IC Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
			ANT C	ANT D				
802.11a								
100	5500	6	17.67	17.25	-	<24	23.460	<29.2
120	5600	6	21.54	19.74	-	<24	27.330	<29.5
140	5700	6	13.24	13.35	-	<24	19.140	<29.5
144	5720	6	21.46	20.59	-	<24	27.250	<29.5
144	5710-5725	6	19.62	22.55	-	<24	28.340	<29.5
144	5725-5730	6	14.50	16.49	-	<30	22.280	<29.5
802.11n20								
100	5500	9	16.54	16.21	19.388	<21	28.200	<29.5
120	5600	9	16.08	16.04	19.070	<21	27.880	<29.5
140	5700	9	11.99	12.45	15.236	<21	24.050	<29.5
144	5720	9	15.87	16.12	19.007	<21	27.810	<29.5
144	5710-5725	9	15.61	14.02	17.898	<21	26.708	<29.5
144	5725-5730	9	11.74	7.97	13.262	<27	22.072	<29.5
802.11n40								
102	5510	9	12.38	12.65	15.527	<21	24.030	<30
118	5590	9	15.63	15.87	18.762	<21	27.540	<30
134	5670	9	13.40	13.50	16.461	<21	25.250	<30
142	5710	9	15.74	15.93	18.846	<21	27.620	<30
142	5690-5725	9	16.43	15.17	18.856	<21	27.636	<30
142	5725-5730	9	2.25	3.68	6.034	<27	14.814	<30
802.11ac80								
106	5530	9	9.25	9.53	12.403	<21	21.400	<30
122	5610	9	14.73	14.68	17.715	<21	26.720	<30
138	5690	9	14.30	14.72	17.525	<21	26.530	<30
138	5650-5725	9	15.25	13.71	17.558	<21	26.558	<30
138	5725-5730	9	-1.44	1.26	3.127	<27	12.127	<30

*Note: Total power (dBm) =10*Log (Ant C(mw)+Ant D(mw))*
Note: Duty cycle correction factor has been added to the Conducted Output Power measurements in the data table
Note: Where applicable, limits are reduced (in dB) by amount that antenna gain exceeds 6dBi. (The directional antenna gain is 6.5 dBi calculated based on method specified in KDB 662911 D01)
Note: This table also includes straddle channel power measurements
Note: EIRP(dBm) = Total Power (dBm) + Antenna Gain(dBi)
Note: See Annex B for Output Power test results

10 FCC §15.407(a) & ISEDC RSS-247 §6.2 - Power Spectral Density

10.1 Applicable Standards

According to FCC §15.407(a):

For an indoor 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.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 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.

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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

According to ISEDC RSS-247 §6.2.1 for frequency band 5150-5250 MHz:

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

According to ISEDC RSS-247 §6.2.2 for frequency band 5250-5350 MHz:

The maximum conducted output power shall not exceed 250 mW or 11 + 10 $\log_{10}$B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 $\log_{10}$B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

According to ISEDC RSS-247 §6.2.3 for frequency band 5470-5600 MHz and 5650-5725 MHz:

The maximum conducted output power shall not exceed 250 mW or 11 + 10 $\log_{10}$B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 $\log_{10}$B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

According to ISEDC RSS-247 §6.2.4 for frequency band 5725-5850 MHz:

The maximum conducted output power shall not exceed 1 W. The 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 power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

10.2 Measurement Procedure

The measurements are based on ANSI C63.10-2013,

12.5 Peak power spectral density: 12.3.2.4 Method SA-2
Method SA-2A uses rms detection with slow sweep with each spectrum bin averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:

a) Measure the duty cycle D of the transmitter output signal as described in 12.2.

b) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.

c) Set RBW = 1 MHz.

d) Set VBW ≥ 3 MHz

e) Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)

f) Manually set sweep time ≥ [10 × (number of points in sweep) × (total ON/OFF period of the transmitted signal)].

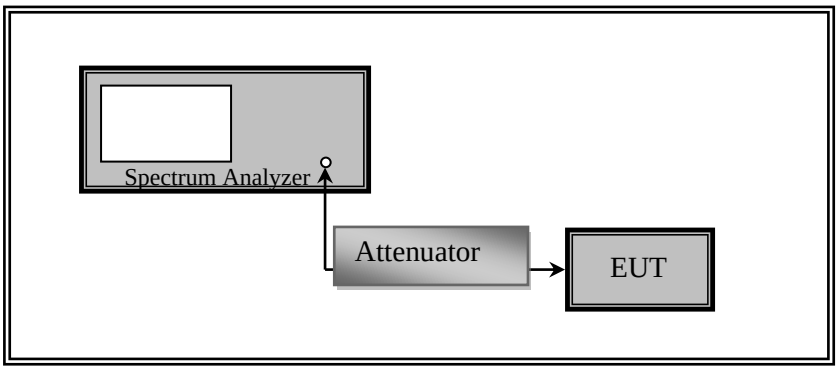
g.) Set detector = RMS (power averaging).

h) Perform a single sweep.

i) Use the peak search function on the instrument to find the peak of the spectrum.

j) Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add [10 log (1 / 0.25)] = 6 dB if the duty cycle is 25%.

10.3 Test Setup Block Diagram



10.4 Test Equipment List and Details

WLAN0

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446A	MY48250 238	2023-05-12	1 year
-	-	RF cable	-	-	Each time[1]	N/A

Note[1]: cable included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

WLAN1

BACL No	Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446A	MY48250 238	2023-05-12	1 year
-	-	10dB attenuator	-	-	Each time[1]	N/A
-	-	RF cable	-	-	Each time[1]	N/A

Note[1]: cable and attenuator included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

10.5 Test Environmental Conditions

WLAN0

Temperature:	19.8 to 20.4°C
Relative Humidity:	45.4 to 49.6 %
ATM Pressure:	101.9 kPa

The testing was performed by Michael Papa from 2024-01-04 to 2024-01-18 at RF site.

WLAN1

Temperature:	24 °C
Relative Humidity:	47 %
ATM Pressure:	101.8 kPa

The testing was performed by Shankar Pangeni from 2023-10-10 to 2023-10-17 at RF site.

10.6 Test Results

5250-5350 MHz
WLAN0

Channel	Frequency (MHz)	PSD (dBm/MHz)		Total PSD(dBm/MHz)	Limit (dBm/MHz)
		ANT A	ANT B		
802.11a					
52	5260	7.306	7.727	-	<10
60	5300	7.723	7.967	-	<10
64	5320	7.949	8.197	-	<10
802.11n20					
52	5260	3.834	0.986	5.650	<7
60	5300	2.849	3.328	6.105	<7
64	5320	3.819	3.827	6.833	<7
802.11n40					
54	5270	1.475	2.574	5.069	<7
62	5310	-2.219	-0.800	1.558	<7
802.11ac80					
58	5290	-8.331	-6.138	-4.087	<7

*Note: Total PSD (dBm/MHz) =10*Log (Ant A(mw)+Ant B(mw))*
Note: Where applicable, limits are reduced (in dB) by amount that antenna gain exceeds 6dBi.
Note: Duty cycle correction factor has been added to the PSD measurements in the data table

WLAN1

Channel	Frequency (MHz)	PSD (dBm/MHz)		Total PSD(dBm/MHz)	Limit (dBm/MHz)
		ANT C	ANT D		
802.11a					
52	5260	9.410	9.550	-	<10
60	5300	9.220	9.520	-	<10
64	5320	6.770	7.840	-	<10
802.11n20					
52	5260	3.482	3.325	6.415	<7
60	5300	3.430	3.500	6.475	<7
64	5320	3.760	3.460	6.623	<7
802.11n40					
54	5270	1.988	2.320	5.167	<7
62	5310	-3.440	-3.700	-0.558	<7
802.11ac80					
58	5290	-7.900	-8.270	-5.071	<7

*Note: Total PSD (dBm/MHz) =10*Log (Ant C(mw)+Ant D(mw))*
Note: Duty cycle correction factor has been added to the PSD measurements in the data table
Note: Where applicable, limits are reduced (in dB) by amount that antenna gain exceeds 6dBi. (The directional antenna gain is 6.5 dBi calculated based on method specified in KDB 662911 D01)

5470-5725 MHz
WLAN0

Channel	Frequency (MHz)	PSD (dBm/MHz)		Total PSD(dBm/MHz)	Limit (dBm/MHz)
		ANT A	ANT B		
802.11a					
100	5500	5.778	6.839	-	<11
120	5600	9.694	10.296	-	<11
140	5700	6.691	6.545	-	<11
144	5720	10.627	10.062	-	<11
144	5710-5725	9.875	10.015	-	<11
144*	5725-5730	6.309	7.084	-	<30 dBm/500kHz
802.11n20					
100	5500	4.276	4.501	7.400	<8
120	5600	4.206	4.652	7.445	<8
140	5700	3.927	3.801	6.875	<8
144	5720	4.626	4.274	7.464	<8
144	5710-5725	4.242	4.069	7.167	<8
144*	5725-5730	0.662	1.370	4.041	<27 dBm/500kHz
802.11n40					
102	5510	0.667	1.402	4.060	<8
118	5590	3.596	1.756	5.783	<8
134	5670	3.442	2.755	6.122	<8
142	5710	3.397	2.526	5.994	<8
142	5690-5725	2.729	2.572	5.662	<8
142*	5725-5730	-1.020	-1.990	1.532	<27 dBm/500kHz
802.11ac80					
106	5530	-7.192	-7.216	-4.194	<8
122	5610	-0.173	-0.095	2.876	<8
138	5690	-0.341	-0.832	2.431	<8
138	5650-5725	-0.853	-0.924	2.122	<8
138*	5725-5730	-4.167	-4.979	-1.544	<27 dBm/500kHz

Note: Duty cycle correction factor has been added to the PSD measurements in the data table
*Note: Total PSD (dBm/MHz) =10*Log (Ant A(mw)+Ant B(mw))*
Note: Due to channel being in U-NII-3 band, PSD and Limit is dBm/500kHz.*

WLAN1

Channel	Frequency (MHz)	PSD (dBm/MHz)		Total PSD(dBm/MHz)	Limit (dBm/MHz)
		ANT C	ANT D		
802.11a					
100	5500	6.450	6.180	-	<11
120	5600	10.370	10.440	-	<11
140	5700	1.990	2.562	-	<11
144	5720	11.340	9.440	-	<11
144	5710-5725	5.564	4.001	-	<11
144*	5725-5730	8.642	8.076	-	<27 dBm/500kHz
802.11n20					
100	5500	4.540	4.412	7.487	<8
120	5600	4.580	4.620	7.610	<8
140	5700	0.489	1.266	3.905	<8
144	5720	5.050	4.560	7.822	<8
144	5710-5725	4.699	4.778	7.749	<8
144*	5725-5730	3.290	0.679	5.188	<27 dBm/500kHz
802.11n40					
102	5510	-1.690	-1.240	1.551	<8
118	5590	1.470	1.550	4.520	<8
134	5670	-1.004	-0.343	2.349	<8
142	5710	2.340	1.540	4.969	<8
142	5690-5725	3.817	2.287	6.129	<8
142*	5725-5730	-5.393	-3.014	-1.032	<27 dBm/500kHz
802.11ac80					
106	5530	-7.870	-7.959	-4.904	<8
122	5610	-2.670	-3.030	0.164	<8
138	5690	-2.510	-3.210	0.164	<8
138	5650-5725	-0.895	-1.690	1.736	<8
138*	5725-5730	-9.196	-7.422	-5.209	<27 dBm/500kHz

*Note: Total PSD (dBm/MHz) =10*Log (Ant C(mw)+Ant D(mw))*
Note: Duty cycle correction factor has been added to the PSD measurements in the data table
Note: Where applicable, limits are reduced (in dB) by amount that antenna gain exceeds 6dBi. (The directional antenna gain is 6.5 dBi calculated based on method specified in KDB 662911 D01)
Note: Due to channel being in U-NII-3 band, PSD and Limit is dBm/500kHz.*

Note: See Annex C for Power Spectrum Denstiy test results

11 FCC §15.209, §15.407(b) & ISEDC RSS-247 §6.2 - Spurious Conducted Emissions

11.1 Applicable Standards

According to FCC §15.407(b):

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 5.25-5.35 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 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 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 shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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.

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

According to ESEDC RSS-247 §6.2:

The output power and e.i.r.p. of the equipment wanted emission shall be measured in terms of average value.

The power and e.i.r.p. of the equipment unwanted emission shall be measured in peak value, unless another measurement method is specified in the respective section for the frequency range of operation of the device. However, the equipment is required to comply with the provisions in RSS-Gen with respect to emissions falling within restricted frequency bands which are listed in the same standard.

For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5250MHz shall not exceed -27 dBm/MHz e.i.r.p.
For transmitters with operating frequencies in the band 5250-5350 MHz, all emissions outside the band 5250-5350MHz shall not exceed -27 dBm/MHz e.i.r.p.
For transmitters with operating frequencies in the band 5725-5825 MHz, all emissions outside the band 5725-5825 MHz shall not exceed -27 dBm/MHz e.i.r.p.

11.2 Measurement Procedure

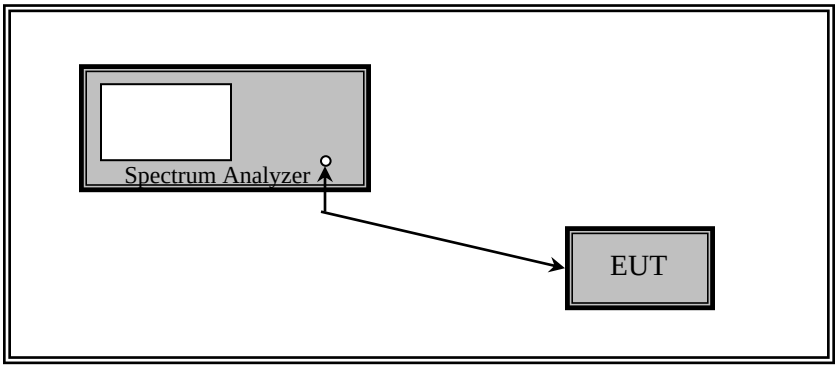
Add a correction factor (antenna gain+ Attenuator loss+cable loss) to the offset of the spectrum analyzer.

Unwanted Emission Measurement:

Maximum emission levels are measured by setting the analyzer as follows:

i. RBW = 1 MHz
ii. VBW ≥ 3 MHz
iii. Detector = Peak
iv. Sweep time = auto
v. Trace mode = max hold

11.3 Test Setup Block Diagram



11.4 Test Equipment List and Details

WLAN0

BACL Number	Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446 A	MY48250238	2023-05-12	1 year
-	-	RF cable	-	-	Each time[1]	N/A

Note[1]: cable included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

WLAN1

BACL Number	Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
624	Agilent	Spectrum Analyzer	E4446 A	MY48250238	2023-05-12	1 year
-	-	RF cable	-	-	Each time[1]	N/A

Note[1]: cable and attenuator included in the test set-up will be checked each time before testing.
Statement of Traceability: BACL Corp. *attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".*

11.5 Test Environmental Conditions

WLAN0

Temperature:	19.8 to 20.4°C
Relative Humidity:	45.4 to 49.6 %
ATM Pressure:	101.9 kPa

Testing was performed by Michael Papai from 2024-01-04 to 2024-01-08 at the RF site.

WLAN1

Temperature:	22-25º C
Relative Humidity:	40-44 %
ATM Pressure:	102.1-103.1 kPa

Testing was performed by Shankar Pangeni from 2023-10-25 to 2023-11-02 at the RF site.

11.6 Test Results

Note: Antenna Gain is considered into offset.

Note: See Annex D for -27dB test results
Note: See Annex E for Bandedges test results

12 Annex G – EUT Test Setup Photographs

Please refer to the attachment.

13 Annex H– External Photographs

Please refer to the attachment.

14 Annex I– Internal Photographs

Please refer to the attachment.

15 Annex J (Normative) - A2LA Electrical Testing Certificate

Accredited Laboratory

A2LA has accredited

BAY AREA COMPLIACE LABORATORIES CORP.

Sunnyvale, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets A2LA R222 - Specific Requirements EPA ENERGY STAR Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 21st day of December 2022.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3297.02
Valid to September 30, 2024

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

Please follow the web link below for a full ISO 17025 scope

https://www.a2la.org/scopepdf/3297-02.pdf

--- END OF REPORT ---