FCC PART 15.407, OCTOBER 2017
ISEDC RSS-247, ISSUE 2, FEBRUARY 2017

TEST REPORT

For

Samsung Electronics Co., Ltd.

19 Chapin Rd., Building D,

Pine Brook, NJ 07058, USA

FCC ID: A3LSIP005AFS30
IC: 649E-SIP005AFS30

Report Type:	**Product Type:**
Class II Permissive Change	System-on-Module

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Report Number:	R1709282-407
Report Date:	2017-10-19
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1709282-407	Original	2017-10-19

1 General Description

1.1 Product Description for Equipment under Test (EUT)

This test and measurement report was prepared on behalf of *Samsung Electronics Co Ltd.,* and their product model: *SIP005AFS3, FCC ID: A3LSIP005AFS30, IC: 649E-SIP005AFS30* or the "EUT" as referred to in this report. The product is a System-on-Module.

1.2 Objective

This report is prepared on behalf of *Samsung Electronics Co Ltd.,* in accordance with FCC CFR47 §15.407 and ISEDC RSS-247 Issue 2, February 2017.

The objective is to determine compliance with FCC Part 15.407 and ISEDC RSS-247 rules for Output Power, Antenna Requirements, AC Line Conducted Emissions, Emission Bandwidth, Power spectral density, Conducted and Radiated Spurious Emissions.

This project is a Permissive Change II submission for the purpose of Adding Molex 47950-0001 Antenna.

1.3 Related Submittal(s)/Grant(s)

FCC Part 15, Subpart C, Equipment DTS with FCC ID: A3LSIP005AFS30, IC: 649E-SIP005AFS30
FCC Part 15, Subpart C, Equipment DSS with FCC ID: A3LSIP005AFS30, IC: 649E-SIP005AFS30

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 v01r04.

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 Appendix 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 17025:2005 by A2LA (Test Laboratory Accreditation Certificate Number 3279.02),*** 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***
- - 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 3279.01)*** 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: (Industry Canada - IC) 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 & Teleterminal Equipment (R&TTE) Directive 1995/5/EC 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 Development Authority - IDA) 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 EUT 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 v01r04.

2.2 EUT Exercise Software

The test firmware used was Marvell 8997 Labtool provided by *Whisker Labs, Inc*. The software is compliant with the standard requirements being tested against.

2.3 Duty Cycle Correction Factor

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r04 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	-	-	100	0
802.11n20	-	-	100	0
802.11n40	-	-	100	0

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

2.4 Equipment Modifications

No modifications to the EUT were made.

2.5 Local Support Equipment

Manufacturer	Description	Model
Dell	Laptop	Latitude E6410
Netgear	Router	WNR2020

2.6 Support Equipment

There was no support equipment included, or intended for use with EUT during these tests.

2.7 Interface Ports and Cabling

Cable Description	Length (m)	To	From
Ethernet Cable	2 m	Laptop	Router
Ethernet Cable	7 m	Router	EUT

3 Summary of Test Results

Results reported relate only to the product tested.

FCC and IC Rules	Description of Test	Result
FCC §15.203 ISEDC RSS-Gen Clause 8.3	Antenna Requirement	Compliant
FCC §2.1091, §15.407(f), ISED RSS-102	RF Exposure	Compliant[1]
FCC §407(a) IC RSS-247 §6.2	Output Power	Compliant
FCC §15.407(a) IC RSS-247 §6.2	Power Spectral Density	Compliant
FCC §2.1053, §15.205, §15.209, 15.407(b) ISEDC RSS-247 Clause 6.2	Spurious Radiated Emissions	Compliant
FCC §15.407(h) ISEDC RSS-247 §6.3	Dynamic Frequency Selection (DFS)	Compliant[2]

Note[1]: Please refer to BACL report number: R1709282-MPE.
Note[2]: The new antenna has higher gain than the original antenna. Therefore, DFS testing is not needed in this report.

4 FCC §15.203 & ISEDC RSS-Gen Clause 8.3 - 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.

And according to FCC §15.247 (b) (4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to ISEDC RSS-Gen Clause 8.3: Transmitter Antenna

The applicant for equipment certification, as per RSP-100, must provide a list of all antenna types that may be used with the license-exempt transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna.

License-exempt transmitters that have received equipment certification may operate with different types of antennas. However, it is not permissible to exceed the maximum equivalent isotopically radiated power (e.i.r.p.) limits specified in the applicable standard (RSS) for the license-exempt apparatus.

Testing shall be performed using the highest gain antenna of each combination of license-exempt transmitter and antenna type, with the transmitter output power set at the maximum level. [9] When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna manufacturer.

User manuals for transmitters equipped with detachable antennas shall also contain the following notice in a conspicuous location:

This radio transmitter (identify the device by certification number) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types approved for use with the transmitter, indicating the maximum permissible antenna gain (in dBi).

4.2 Antenna List

The antennas used by the EUT are permanent attached antennas.

Antenna usage	Frequency Range (MHz)	Maximum Antenna Gain (dBi)
Wi-Fi/Bluetooth	2400-2500	3.0
Wi-Fi	5180-5825	4.6

5 FCC §407(a) & IC RSS-247 §6.2 - Output Power

5.1 Applicable Standards

For mobile and portable 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 IC 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 IC 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 IC 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 IC RSS-247 §6.2.4 for frequency band 5725-5850 MHz:

The maximum conducted output power shall not exceed 1 W. The output 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.

5.2 Measurement Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to a power meter.

5.3 Test Results

5150 - 5250 MHz

FCC Results

Frequency (MHz)	Conducted Output Power (dBm)	FCC Limit (dBm)
802.11a mode		
5180	12.56	24
5200	12.73	24
5240	13.14	24
802.11n20 mode		
5180	12.79	24
5200	12.91	24
5240	13.14	24
802.11n40 mode		
5190	11.90	24
5230	13.08	24

ISED Results

Modulation	Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ISEDC Limit (dBm)
802.11a	5180	12.56	4.60	17.16	22
	5200	12.73	4.60	17.33	22
	5240	13.14	4.60	17.74	22
802.11n20	5180	12.79	4.60	17.39	22.5
	5200	12.91	4.60	17.51	22.5
	5240	13.14	4.60	17.74	22.5
802.11n40	5190	11.90	4.60	16.5	23
	5230	13.08	4.60	17.68	23

Note: Conducted data is refered from UL FCC Part 15C DTS Report with FCC ID: A3LSIP005AFS30, IC: 649E-SIP005AFS30. Report Number: 16K23791-E4V3, Issue date: Oct 12, 2016.

6 FCC §15.407(a) & IC RSS-247 §6.2 - Power Spectral Density

6.1 Applicable Standards

According to FCC §15.407(a):

For mobile and portable 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 IC 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 IC 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 IC 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 IC RSS-247 §6.2.4 for frequency band 5725-5850 MHz:

The maximum conducted output power shall not exceed 1 W. The output 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.

6.2 Measurement Procedure

(i) Set span to encompass the entire emission bandwidth (EBW) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW ≥ 3 MHz.
(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
(v) Sweep time = auto.
(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".
(viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
(ix) Compute power by integrating the spectrum across the 26 dB EBW of the signal using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges. If the spectrum analyzer does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW of the spectrum.

6.3 Test Results

5150 – 5250 MHz

FCC Results:

Frequency (MHz)	PSD (dBm/MHz)	FCC Limit (dBm/MHz)
802.11a mode		
5180	2.3	11
5200	2.44	11
5240	3.01	11
802.11n20 mode		
5180	2.25	11
5200	2.54	11
5240	2.48	11
802.11n40 mode		
5190	-1.63	11
5230	-0.48	11

ISED Results:

Frequency (MHz)	PSD (dBm/MHz)	EIRP PSD (dBm/MHz)	ISED Limit (dBm/MHz)
802.11a mode			
5180	2.3	6.9	10
5200	2.44	7.04	10
5240	3.01	7.61	10
802.11n20 mode			
5180	2.25	6.85	10
5200	2.54	7.14	10
5240	2.48	7.08	10
802.11n40 mode			
5190	-1.63	2.97	10
5230	-0.48	4.12	10

Note: Conducted data is refered from UL FCC Part 15C DTS Report with FCC ID: A3LSIP005AFS30, IC: 649E-SIP005AFS30. Report Number: 16K23791-E4V3, Issue date: Oct 12, 2016.

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.

(2) 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.

(3) For transmitters operating in the 5.47 -5.725 GHz band: All emissions outside of the 5.47-5725 GHz band shall not exceed an ei.r.p. of -27 dBm/MHz.

(4) 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.

(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 Clause 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 / Sweep = Auto

7.4 Corrected Amplitude and Margin Calculation

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 for Class A. The equation for margin calculation is as follows:

Margin = Corrected Amplitude - Limit

7.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde and Schwarz	Receiver, EMI Test	ESCI 1166.5950K03	100338	2016-02-04	2 years
Agilent	Analyzer, Spectrum	E4440A	US42221851	2017-08-14	1 year
Sunol Sciences	System Controller	SC99V	011003-1	N/R	N/A
Sunol Sciences	Antenna, Biconi-Log	JB1	A013105-3	2015-07-11	28 months
EMCO	Antenna, Horn	3115	9511-4627	2016-01-28	2 years
Agilent	Amplifier, Pre	8447D	2944A07030	2017-05-17	1 year
IW	AOBOR Hi frequency Co AX Cable	KPS-1501N-3960-KPS	-	2017-04-27	1 year
-	SMA cable	-	C0002	Each time[1]	N/A
-	N-Type Cable	-	C00012	Each time[1]	N/A
-	N-Type Cable	-	C00014	Each time[1]	N/A
Agilent	Pre-Amplifier	8449B	3147A00400	2017-06-15	1 year
Sunol Sciences	Antenna, Horn	DRH-118	A052704	2017-03-27	2 years
A.R.A.	Antenna, Horn	DRG-118/A	1132	2015-09-21	26 months
Vasona	Test software	V6.0 build 11	10400213	N/R	N/R

Note[1]: cables and attenuators 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 A2LA Policy P102 (dated 09 June 2016) "A2LA Policy on Metrological Traceability".*

7.6 Test Environmental Conditions

Temperature:	22-24 ºC
Relative Humidity:	40-41 %
ATM Pressure:	103.1-104.1 kPa

The testing was performed by Chin Ming Lui & Troy Pandhumsoporn from 2017-09-29 to 2017-10-05 in 5m chamber 3.

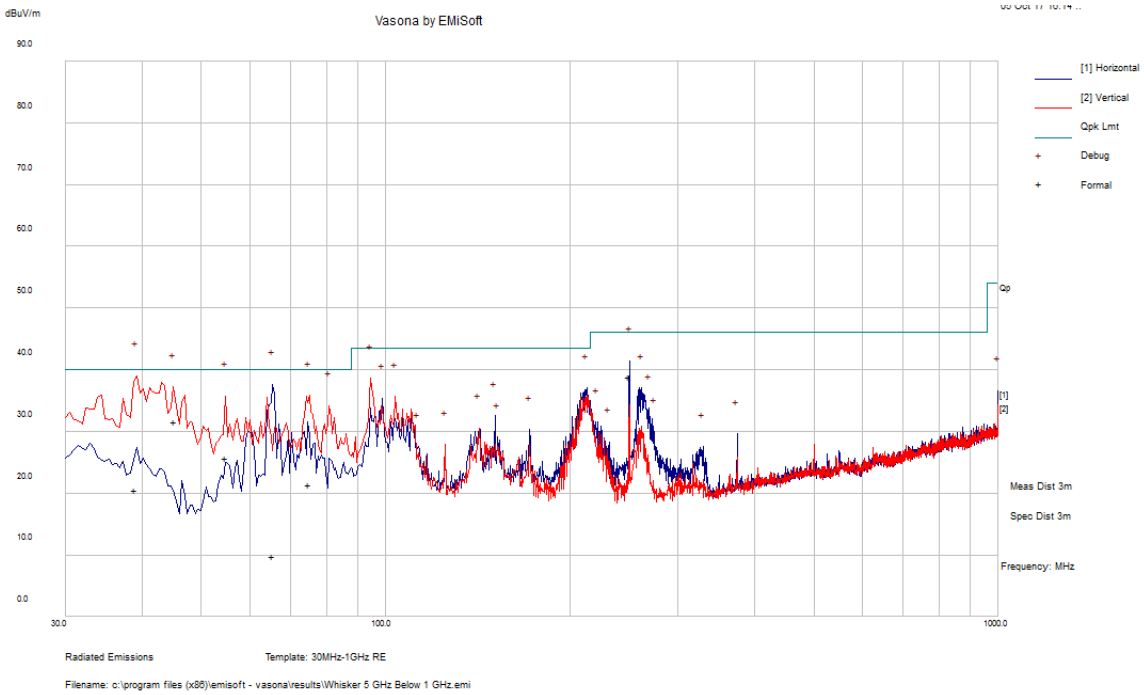
7.7 Summary of Test Results

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

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-3.11	5470	Horizontal	n40 mode, 5510 MHz

7.8 Radiated Emissions Test Result Data

1) 30 MHz – 1 GHz



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments (PK/QP/Ave.)
38.97625	20.61	158	V	143	40	-19.39	QP
65.476	9.81	204	H	161	40	-30.19	QP
45.26125	31.69	101	V	141	40	-8.31	QP
74.92525	21.33	154	V	75	40	-18.67	QP
54.909	25.71	113	V	359	40	-14.29	QP
249.991	38.89	101	H	179	46	-7.11	QP

Note: Only six emissions were present because all of the other emissions were 20 dB below the limit.

2) 1–40 GHz

5150 - 5250 MHz

802.11a mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5180 MHz											
5180	57.72	67	0	H	33.58	8.35	0.00	99.65	-	-	PK
5180	49.65	67	0	H	33.58	8.35	0.00	91.58	-	-	AV
5180	57.91	328	100	V	33.58	8.35	0.00	99.84	-	-	PK
5180	49.89	328	100	V	33.58	8.35	0.00	91.82	-	-	AV
5150	46.62	65	100	H	33.42	8.35	36.19	52.21	74.00	-21.79	PK
5150	33.77	65	100	H	33.42	8.35	36.19	39.36	54.00	-14.64	AV
5150	47.85	0	100	V	33.42	8.35	36.19	53.44	74.00	-20.56	PK
5150	34.40	0	100	V	33.42	8.35	36.19	39.99	54.00	-14.01	AV
10360	45.49	250	100	H	38.09	14.58	35.51	62.65	74.00	-11.35	PK
10360	33.05	250	100	H	38.09	14.58	35.51	50.21	54.00	-3.79	AV
10360	45.85	55	100	V	38.09	14.58	35.51	63.01	74.00	-10.99	PK
10360	33.19	55	100	V	38.09	14.58	35.51	50.35	54.00	-3.65	AV
Middle Channel 5200 MHz											
5200	58.85	70	275	H	33.58	8.35	0.00	100.78	-	-	PK
5200	50.42	70	275	H	33.58	8.35	0.00	92.35	-	-	AV
5200	58.18	0	100	V	33.58	8.35	0.00	100.11	-	-	PK
5200	50.24	0	100	V	33.58	8.35	0.00	92.17	-	-	AV
10400	45.08	0	100	H	38.12	14.58	35.51	62.27	74.00	-11.73	PK
10400	32.64	0	100	H	38.12	14.58	35.51	49.83	54.00	-4.17	AV
10400	44.94	0	100	V	38.12	14.58	35.51	62.13	74.00	-11.87	PK
10400	32.55	0	100	V	38.12	14.58	35.51	49.74	54.00	-4.26	AV
High Channel 5240 MHz											
5240	60.60	235	275	H	33.56	8.35	0.00	102.51	-	-	PK
5240	52.56	235	275	H	33.56	8.35	0.00	94.47	-	-	AV
5240	58.80	10	100	V	33.56	8.35	0.00	100.71	-	-	PK
5240	50.73	10	100	V	33.56	8.35	0.00	92.64	-	-	AV
10480	44.44	285	100	H	38.19	14.90	35.44	62.09	74.00	-11.91	PK
10480	31.93	285	100	H	38.19	14.90	35.44	49.58	54.00	-4.42	AV
10480	44.43	290	150	V	38.19	14.90	35.44	62.08	74.00	-11.92	PK
10480	32.00	290	150	V	38.19	14.90	35.44	49.65	54.00	-4.35	AV

802.11n20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5180 MHz											
5180	58.60	68	278	H	33.58	8.35	0.00	100.53	-	-	PK
5180	51.97	68	278	H	33.58	8.35	0.00	93.90	-	-	AV
5180	57.64	0	105	V	33.58	8.35	0.00	99.57	-	-	PK
5180	49.76	0	105	V	33.58	8.35	0.00	91.69	-	-	AV
5150	49.06	72	300	H	33.42	8.35	36.19	54.65	74.00	-19.35	PK
5150	36.84	72	300	H	33.42	8.35	36.19	42.43	54.00	-11.57	AV
5150	47.03	345	100	V	33.42	8.35	36.19	52.62	74.00	-21.38	PK
5150	35.00	345	100	V	33.42	8.35	36.19	40.59	54.00	-13.41	AV
10360	45.82	0	100	H	38.09	14.58	35.51	62.98	74.00	-11.02	PK
10360	32.99	0	100	H	38.09	14.58	35.51	50.15	54.00	-3.85	AV
10360	45.40	0	100	V	38.09	14.58	35.51	62.56	74.00	-11.44	PK
10360	32.90	0	100	V	38.09	14.58	35.51	50.06	54.00	-3.94	AV
Middle Channel 5200 MHz											
5200	57.76	70	276	H	33.58	8.35	0.00	99.69	-	-	PK
5200	50.43	70	276	H	33.58	8.35	0.00	92.36	-	-	AV
5200	57.78	0	100	V	33.58	8.35	0.00	99.71	-	-	PK
5200	49.97	0	100	V	33.58	8.35	0.00	91.90	-	-	AV
10400	45.27	0	100	H	38.12	14.58	35.51	62.46	74.00	-11.54	PK
10400	32.70	0	100	H	38.12	14.58	35.51	49.89	54.00	-4.11	AV
10400	44.83	0	100	V	38.12	14.58	35.51	62.02	74.00	-11.98	PK
10400	32.55	0	100	V	38.12	14.58	35.51	49.74	54.00	-4.26	AV
High Channel 5240 MHz											
5240	59.77	234	276	H	33.56	8.35	0.00	101.68	-	-	PK
5240	52.31	234	276	H	33.56	8.35	0.00	94.22	-	-	AV
5240	57.84	9	100	V	33.56	8.35	0.00	99.75	-	-	PK
5240	50.27	9	100	V	33.56	8.35	0.00	92.18	-	-	AV
10480	45.09	0	100	H	38.19	14.90	35.44	62.74	74.00	-11.26	PK
10480	32.43	0	100	H	38.19	14.90	35.44	50.08	54.00	-3.92	AV
10480	43.50	0	100	V	38.19	14.90	35.44	61.15	74.00	-12.85	PK
10480	31.66	0	100	V	38.19	14.90	35.44	49.31	54.00	-4.69	AV

802.11n40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5190 MHz											
5190	54.27	222	100	H	33.58	8.35	0.00	96.20	-	-	PK
5190	46.63	222	100	H	33.58	8.35	0.00	88.56	-	-	AV
5190	56.32	0	100	V	33.58	8.35	0.00	98.25	-	-	PK
5190	48.80	0	100	V	33.58	8.35	0.00	90.73	-	-	AV
5150	48.70	154	100	H	33.42	8.35	36.19	54.29	74.00	-19.71	PK
5150	35.94	154	100	H	33.42	8.35	36.19	41.53	54.00	-12.47	AV
5150	51.00	0	100	V	33.42	8.35	36.19	56.59	74.00	-17.41	PK
5150	38.33	0	100	V	33.42	8.35	36.19	43.92	54.00	-10.08	AV
10380	45.47	139	100	H	38.09	14.58	35.51	62.63	74.00	-11.37	PK
10380	32.72	139	100	H	38.09	14.58	35.51	49.88	54.00	-4.12	AV
10380	45.34	38	100	V	38.09	14.58	35.51	62.50	74.00	-11.50	PK
10380	32.81	38	100	V	38.09	14.58	35.51	49.97	54.00	-4.03	AV
High Channel 5230 MHz											
5230	54.92	222	100	H	33.56	8.35	0.00	96.83	-	-	PK
5230	47.17	222	100	H	33.56	8.35	0.00	89.08	-	-	AV
5230	55.66	0	100	V	33.56	8.35	0.00	97.57	-	-	PK
5230	47.69	0	100	V	33.56	8.35	0.00	89.60	-	-	AV
10460	43.40	0	100	H	38.19	14.90	35.44	61.05	74.00	-12.95	PK
10460	31.35	0	100	H	38.19	14.90	35.44	49.00	54.00	-5.00	AV
10460	43.14	0	100	V	38.19	14.90	35.44	60.79	74.00	-13.21	PK
10460	31.32	0	100	V	38.19	14.90	35.44	48.97	54.00	-5.03	AV

5250 - 5350 MHz

802.11a mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz											
5260	58.66	223	100	H	33.56	8.46	0.00	100.68	-	-	PK
5260	50.56	223	100	H	33.56	8.46	0.00	92.58	-	-	AV
5260	60.52	10	100	V	33.56	8.46	0.00	102.54	-	-	PK
5260	52.36	10	100	V	33.56	8.46	0.00	94.38	-	-	AV
10520	44.37	130	100	H	38.19	14.90	35.44	62.02	74.00	-11.98	PK
10520	32.21	130	100	H	38.19	14.90	35.44	49.86	54.00	-4.14	AV
10520	44.24	216	100	V	38.19	14.90	35.44	61.89	74.00	-12.11	PK
10520	32.09	216	100	V	38.19	14.90	35.44	49.74	54.00	-4.26	AV
Middle Channel 5280 MHz											
5280	59.32	222	100	H	33.61	8.46	0.00	101.39	-	-	PK
5280	51.73	222	100	H	33.61	8.46	0.00	93.80	-	-	AV
5280	59.96	13	100	V	33.61	8.46	0.00	102.03	-	-	PK
5280	52.17	13	100	V	33.61	8.46	0.00	94.24	-	-	AV
10560	44.13	110	100	H	38.24	15.08	35.42	62.03	74.00	-11.97	PK
10560	31.97	110	100	H	38.24	15.08	35.42	49.87	54.00	-4.13	AV
10560	44.31	0	100	V	38.24	15.08	35.42	62.21	74.00	-11.79	PK
10560	32.09	0	100	V	38.24	15.08	35.42	49.99	54.00	-4.01	AV
High Channel 5320 MHz											
5320	60.23	221	100	H	33.61	8.46	0.00	102.30	-	-	PK
5320	51.84	221	100	H	33.61	8.46	0.00	93.91	-	-	AV
5320	61.54	18	100	V	33.61	8.46	0.00	103.61	-	-	PK
5320	52.55	18	100	V	33.61	8.46	0.00	94.62	-	-	AV
5350	50.06	194	100	H	33.61	9.50	36.13	57.04	74.00	-16.96	PK
5350	36.23	194	100	H	33.61	9.50	36.13	43.21	54.00	-10.79	AV
5350	49.22	17	100	V	33.61	9.50	36.13	56.20	74.00	-17.80	PK
5350	36.61	17	100	V	33.61	9.50	36.13	43.59	54.00	-10.41	AV
10640	43.99	160	100	H	38.21	15.08	35.42	61.86	74.00	-12.14	PK
10640	31.35	160	100	H	38.21	15.08	35.42	49.22	54.00	-4.78	AV
10640	44.73	0	100	V	38.21	15.08	35.42	62.60	74.00	-11.40	PK
10640	31.79	0	100	V	38.21	15.08	35.42	49.66	54.00	-4.34	AV

802.11n20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5260 MHz											
5260	57.58	223	100	H	33.56	8.46	0.00	99.60	-	-	PK
5260	49.77	223	100	H	33.56	8.46	0.00	91.79	-	-	AV
5260	59.13	13	100	V	33.56	8.46	0.00	101.15	-	-	PK
5260	50.92	13	100	V	33.56	8.46	0.00	92.94	-	-	AV
10520	45.04	16	100	H	38.19	14.90	35.44	62.69	74.00	-11.31	PK
10520	31.99	16	100	H	38.19	14.90	35.44	49.64	54.00	-4.36	AV
10520	45.18	0	113	V	38.19	14.90	35.44	62.83	74.00	-11.17	PK
10520	31.82	0	113	V	38.19	14.90	35.44	49.47	54.00	-4.53	AV
Middle Channel 5280 MHz											
5280	59.73	223	111	H	33.61	8.46	0.00	101.80	-	-	PK
5280	51.76	223	111	H	33.61	8.46	0.00	93.83	-	-	AV
5280	59.76	12	104	V	33.61	8.46	0.00	101.83	-	-	PK
5280	51.71	12	104	V	33.61	8.46	0.00	93.78	-	-	AV
10560	44.41	0	100	H	38.24	15.08	35.42	62.31	74.00	-11.69	PK
10560	31.95	0	100	H	38.24	15.08	35.42	49.85	54.00	-4.15	AV
10560	45.44	136	113	V	38.24	15.08	35.42	63.34	74.00	-10.66	PK
10560	31.97	136	113	V	38.24	15.08	35.42	49.87	54.00	-4.13	AV
High Channel 5320 MHz											
5320	59.71	65	100	H	33.61	8.46	0.00	101.78	-	-	PK
5320	51.29	65	100	H	33.61	8.46	0.00	93.36	-	-	AV
5320	59.31	9	300	V	33.61	8.46	0.00	101.38	-	-	PK
5320	52.15	9	300	V	33.61	8.46	0.00	94.22	-	-	AV
5350	49.01	220	278	H	33.61	9.50	36.13	55.99	74.00	-18.01	PK
5350	37.03	220	278	H	33.61	9.50	36.13	44.01	54.00	-9.99	AV
5350	48.33	350	100	V	33.61	9.50	36.13	55.31	74.00	-18.69	PK
5350	36.29	350	100	V	33.61	9.50	36.13	43.27	54.00	-10.73	AV
10640	44.63	0	100	H	38.21	15.08	35.42	62.50	74.00	-11.50	PK
10640	32.13	0	100	H	38.21	15.08	35.42	50.00	54.00	-4.00	AV
10640	44.72	0	100	V	38.21	15.08	35.42	62.59	74.00	-11.41	PK
10640	32.07	0	100	V	38.21	15.08	35.42	49.94	54.00	-4.06	AV

802.11n40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5270 MHz											
5270	56.34	74	131	H	33.56	8.46	0.00	98.36	-	-	PK
5270	48.80	74	131	H	33.56	8.46	0.00	90.82	-	-	AV
5270	54.98	8	100	V	33.56	8.46	0.00	97.00	-	-	PK
5270	47.26	8	100	V	33.56	8.46	0.00	89.28	-	-	AV
10540	44.16	0	100	H	38.24	14.90	35.44	61.86	74.00	-12.14	PK
10540	32.27	0	100	H	38.24	14.90	35.44	49.97	54.00	-4.03	AV
10540	44.20	0	100	V	38.24	14.90	35.44	61.90	74.00	-12.10	PK
10540	32.32	0	100	V	38.24	14.90	35.44	50.02	54.00	-3.98	AV
High Channel 5310 MHz											
5310	57.56	69	120	H	33.61	8.46	0.00	99.63	-	-	PK
5310	49.51	69	120	H	33.61	8.46	0.00	91.58	-	-	AV
5310	56.38	9	300	V	33.61	8.46	0.00	98.45	-	-	PK
5310	49.05	9	300	V	33.61	8.46	0.00	91.12	-	-	AV
5350	53.38	74	142	H	33.61	9.50	36.13	60.36	74.00	-13.64	PK
5350	39.83	74	142	H	33.61	9.50	36.13	46.81	54.00	-7.19	AV
5350	50.61	352	100	V	33.61	9.50	36.13	57.59	74.00	-16.41	PK
5350	37.99	352	100	V	33.61	9.50	36.13	44.97	54.00	-9.03	AV
10620	44.26	0	100	H	38.24	15.08	35.42	62.16	74.00	-11.84	PK
10620	31.88	0	100	H	38.24	15.08	35.42	49.78	54.00	-4.22	AV
10620	44.43	0	100	V	38.24	15.08	35.42	62.33	74.00	-11.67	PK
10620	31.89	0	100	V	38.24	15.08	35.42	49.79	54.00	-4.21	AV

5470 - 5725 MHz

802.11a mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz											
5500	60.16	190	100	H	33.91	8.72	0.00	102.79	-	-	PK
5500	52.25	190	100	H	33.91	8.72	0.00	94.88	-	-	AV
5500	57.95	345	100	V	33.91	8.72	0.00	100.58	-	-	PK
5500	49.72	345	100	V	33.91	8.72	0.00	92.35	-	-	AV
5470	48.88	195	300	H	33.73	9.49	36.11	55.99	74.00	-18.01	PK
5470	35.32	195	300	H	33.73	9.49	36.11	42.43	54.00	-11.57	AV
5470	47.51	0	100	V	33.73	9.49	36.11	54.62	74.00	-19.38	PK
5470	34.33	0	100	V	33.73	9.49	36.11	41.44	54.00	-12.56	AV
11000	44.76	0	100	H	38.40	14.38	35.16	62.38	74.00	-11.62	PK
11000	32.01	0	100	H	38.40	14.38	35.16	49.63	54.00	-4.37	AV
11000	44.37	0	100	V	38.40	14.38	35.16	61.99	74.00	-12.01	PK
11000	31.92	0	100	V	38.40	14.38	35.16	49.54	54.00	-4.46	AV
Middle Channel 5580 MHz											
5580	60.16	335	157	H	34.02	8.81	0.00	102.99	-	-	PK
5580	51.53	335	157	H	34.02	8.81	0.00	94.36	-	-	AV
5580	62.19	166	278	V	34.02	8.81	0.00	105.02	-	-	PK
5580	53.69	166	278	V	34.02	8.81	0.00	96.52	-	-	AV
11160	44.04	0	100	H	38.44	15.29	34.98	62.79	74.00	-11.21	PK
11160	31.36	0	100	H	38.44	15.29	34.98	50.11	54.00	-3.89	AV
11160	44.35	0	100	V	38.44	15.29	34.98	63.10	74.00	-10.90	PK
11160	31.68	0	100	V	38.44	15.29	34.98	50.43	54.00	-3.57	AV
High Channel 5700 MHz											
5700	62.65	338	112	H	33.93	8.87	0.00	105.45	-	-	PK
5700	54.13	338	112	H	33.93	8.87	0.00	96.93	-	-	AV
5700	64.11	167	297	V	33.93	8.87	0.00	106.91	-	-	PK
5700	55.44	167	297	V	33.93	8.87	0.00	98.24	-	-	AV
5725	51.85	335	113	H	33.97	9.79	36.16	59.46	68.20	-8.75	PK
5725	51.54	159	197	V	33.97	9.79	36.16	59.15	68.20	-9.06	PK
11400	44.03	0	100	H	38.35	15.14	35.04	62.49	74.00	-11.51	PK
11400	31.68	0	100	H	38.35	15.14	35.04	50.14	54.00	-3.86	AV
11400	44.77	0	100	V	38.35	15.14	35.04	63.23	74.00	-10.77	PK
11400	31.76	0	100	V	38.35	15.14	35.04	50.22	54.00	-3.78	AV

802.11n20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5500 MHz											
5500	64.73	216	265	H	33.91	8.72	0.00	107.36	-	-	PK
5500	56.97	216	265	H	33.91	8.72	0.00	99.60	-	-	AV
5500	57.60	248	125	V	33.91	8.72	0.00	100.23	-	-	PK
5500	49.37	248	125	V	33.91	8.72	0.00	92.00	-	-	AV
5470	49.11	345	185	H	33.73	9.49	36.11	56.22	74.00	-17.78	PK
5470	37.44	345	185	H	33.73	9.49	36.11	44.55	54.00	-9.45	AV
5470	49.64	250	100	V	33.73	9.49	36.11	56.75	74.00	-17.25	PK
5470	37.29	250	100	V	33.73	9.49	36.11	44.40	54.00	-9.60	AV
11000	44.38	0	100	H	38.54	12.07	35.16	59.83	74.00	-14.17	PK
11000	31.87	0	100	H	38.54	12.07	35.16	47.32	54.00	-6.68	AV
11000	43.96	0	100	V	38.54	12.07	35.16	59.41	74.00	-14.59	PK
11000	31.72	0	100	V	38.54	12.07	35.16	47.17	54.00	-6.83	AV
Middle Channel 5580 MHz											
5580	63.89	228	237	H	33.96	5.49	0.00	103.34	-	-	PK
5580	56.07	228	237	H	33.96	5.49	0.00	95.52	-	-	AV
5580	61.08	248	100	V	33.96	5.49	0.00	100.53	-	-	PK
5580	53.56	248	100	V	33.96	5.49	0.00	93.01	-	-	AV
11160	44.11	0	100	H	38.71	13.28	34.98	61.12	74.00	-12.88	PK
11160	31.86	0	100	H	38.71	13.28	34.98	48.87	54.00	-5.13	AV
11160	44.63	0	100	V	38.71	13.28	34.98	61.64	74.00	-12.36	PK
11160	31.80	0	100	V	38.71	13.28	34.98	48.81	54.00	-5.19	AV
High Channel 5700 MHz											
5700	65.68	228	100	H	33.93	5.60	0.00	105.21	-	-	PK
5700	57.02	228	100	H	33.93	5.60	0.00	96.55	-	-	AV
5700	62.38	169	139	V	33.93	5.60	0.00	101.91	-	-	PK
5700	54.88	169	139	V	33.93	5.60	0.00	94.41	-	-	AV
5725	54.85	345	109	H	33.97	6.19	36.16	58.85	74.00	-15.15	PK
5725	53.01	245	100	V	33.97	6.19	36.16	57.01	74.00	-16.99	PK
11400	44.40	0	100	H	38.78	12.71	35.04	60.85	74.00	-13.15	PK
11400	32.16	0	100	H	38.78	12.71	35.04	48.61	54.00	-5.39	AV
11400	44.11	0	100	V	38.78	12.71	35.04	60.56	74.00	-13.44	PK
11400	32.00	0	100	V	38.78	12.71	35.04	48.45	54.00	-5.55	AV

802.11n40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5510 MHz											
5510	61.82	210	240	H	34.09	5.49	0.00	101.41	-	-	PK
5510	53.21	210	240	H	34.09	5.49	0.00	92.80	-	-	AV
5510	57.79	251	100	V	34.09	5.49	0.00	97.38	-	-	PK
5510	49.18	251	100	V	34.09	5.49	0.00	88.77	-	-	AV
5470	58.35	208	100	H	34.09	6.37	36.11	62.70	74.00	-11.30	PK
5470	46.54	208	100	H	34.09	6.37	36.11	50.89	54.00	**-3.11**	AV
5470	55.14	250	100	V	34.09	6.37	36.11	59.49	74.00	-14.51	PK
5470	37.72	250	100	V	34.09	6.37	36.11	42.07	54.00	-11.93	AV
11020	44.75	0	100	H	38.54	12.07	35.16	60.20	74.00	-13.80	PK
11020	31.87	0	100	H	38.54	12.07	35.16	47.32	54.00	-6.68	AV
11020	45.05	0	100	V	38.54	12.07	35.16	60.50	74.00	-13.50	PK
11020	31.64	0	100	V	38.54	12.07	35.16	47.09	54.00	-6.91	AV
Middle Channel 5550 MHz											
5550	62.42	225	136	H	33.96	5.49	0.00	101.87	-	-	PK
5550	54.25	225	136	H	33.96	5.49	0.00	93.70	-	-	AV
5550	59.34	249	100	V	33.96	5.49	0.00	98.79	-	-	PK
5550	51.43	249	100	V	33.96	5.49	0.00	90.88	-	-	AV
11100	44.54	0	100	H	38.58	13.28	35.03	61.37	74.00	-12.63	PK
11100	32.25	0	100	H	38.58	13.28	35.03	49.08	54.00	-4.92	AV
11100	44.42	0	100	V	38.58	13.28	35.03	61.25	74.00	-12.75	PK
11100	32.30	0	100	V	38.58	13.28	35.03	49.13	54.00	-4.87	AV
High Channel 5670 MHz											
5670	62.03	230	140	H	33.94	5.49	0.00	101.46	-	-	PK
5670	54.17	230	140	H	33.94	5.49	0.00	93.60	-	-	AV
5670	58.98	247	100	V	33.94	5.49	0.00	98.41	-	-	PK
5670	51.50	247	100	V	33.94	5.49	0.00	90.93	-	-	AV
5725	51.67	345	100	H	33.94	6.19	36.16	55.64	74.00	-18.36	PK
5725	49.10	215	100	V	33.94	6.19	36.16	53.07	74.00	-20.93	PK
11340	44.72	0	100	H	38.76	12.71	34.98	61.21	74.00	-12.80	PK
11340	32.18	0	100	H	38.76	12.71	34.98	48.67	54.00	-5.34	AV
11340	44.33	100	100	V	38.76	12.71	34.98	60.82	74.00	-13.19	PK
11340	31.61	100	100	V	38.76	12.71	34.98	48.10	54.00	-5.90	AV

5725 - 5850 MHz

802.11a mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5745 MHz											
5745	61.88	345	142	H	33.94	5.60	0.00	101.42	-	-	PK
5745	53.97	345	142	H	33.94	5.60	0.00	93.51	-	-	AV
5745	58.50	132	100	V	33.94	5.60	0.00	98.04	-	-	PK
5745	50.08	132	100	V	33.94	5.60	0.00	89.62	-	-	AV
5700	48.21	0	100	H	33.94	6.19	36.16	52.18	68.23	-16.05	PK
5700	47.23	0	100	V	33.94	6.19	36.16	51.20	68.23	-17.03	PK
5720	51.61	353	100	H	33.94	6.19	36.16	55.58	105.20	-49.62	PK
5720	49.38	150	100	V	33.94	6.19	36.16	53.35	105.20	-51.85	PK
5725	52.14	338	158	H	33.94	6.19	36.16	56.11	110.80	-54.69	PK
5725	50.16	151	100	V	33.94	6.19	36.16	54.13	110.80	-56.67	PK
11490	44.51	0	100	H	38.96	12.84	35.09	61.22	74.00	-12.78	PK
11490	32.25	0	100	H	38.96	12.84	35.09	48.96	54.00	-5.04	AV
11490	45.45	0	100	V	38.96	12.84	35.09	62.16	74.00	-11.84	PK
11490	32.36	0	100	V	38.96	12.84	35.09	49.07	54.00	-4.93	AV
Middle Channel 5785 MHz											
5785	63.18	343	100	H	33.86	5.60	0.00	102.64	-	-	PK
5785	54.92	343	100	H	33.86	5.60	0.00	94.38	-	-	AV
5785	60.31	151	120	V	33.86	5.60	0.00	99.77	-	-	PK
5785	52.39	151	120	V	33.86	5.60	0.00	91.85	-	-	AV
11570	44.15	0	100	H	39.27	12.95	35.14	61.23	74.00	-12.77	PK
11570	31.78	0	100	H	39.27	12.95	35.14	48.86	54.00	-5.14	AV
11570	43.68	0	100	V	39.27	12.95	35.14	60.76	74.00	-13.24	PK
11570	33.11	0	100	V	39.27	12.95	35.14	50.19	54.00	-3.81	AV
High Channel 5825 MHz											
5825	61.68	313	100	H	33.86	5.60	0.00	101.14	-	-	PK
5825	53.08	313	100	H	33.86	5.60	0.00	92.54	-	-	AV
5825	59.77	151	100	V	33.86	5.60	0.00	99.23	-	-	PK
5825	51.29	151	100	V	33.86	5.60	0.00	90.75	-	-	AV
5850	51.49	346	100	H	33.93	6.39	36.24	55.57	68.23	-12.66	PK
5850	48.56	167	100	V	33.93	6.39	36.24	52.64	68.23	-15.59	PK
11650	44.26	0	100	H	39.46	12.80	35.16	61.36	74.00	-12.64	PK
11650	32.22	0	100	H	39.46	12.80	35.16	49.32	54.00	-4.68	AV
11650	44.56	0	100	V	39.46	12.80	35.16	61.66	74.00	-12.34	PK
11650	32.24	0	100	V	39.46	12.80	35.16	49.34	54.00	-4.66	AV

802.11n20 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5745 MHz											
5745	62.20	347	100	H	33.94	5.60	0.00	101.74	-	-	PK
5745	54.52	347	100	H	33.94	5.60	0.00	94.06	-	-	AV
5745	59.10	249	100	V	33.94	5.60	0.00	98.64	-	-	PK
5745	51.39	249	100	V	33.94	5.60	0.00	90.93	-	-	AV
5725	55.66	347	100	H	33.94	6.19	36.16	59.63	68.23	-8.60	PK
5725	52.52	250	100	V	33.94	6.19	36.16	56.49	68.23	-11.74	PK
11490	45.06	0	100	H	38.96	12.84	35.09	61.77	74.00	-12.23	PK
11490	32.26	0	100	H	38.96	12.84	35.09	48.97	54.00	-5.03	AV
11490	44.30	0	100	V	38.96	12.84	35.09	61.01	74.00	-12.99	PK
11490	31.77	0	100	V	38.96	12.84	35.09	48.48	54.00	-5.52	AV
Middle Channel 5785 MHz											
5785	63.18	337	102	H	33.86	5.60	0.00	102.64	-	-	PK
5785	54.90	337	102	H	33.86	5.60	0.00	94.36	-	-	AV
5785	59.46	214	100	V	33.86	5.60	0.00	98.92	-	-	PK
5785	50.81	214	100	V	33.86	5.60	0.00	90.27	-	-	AV
11570	45.17	0	100	H	39.27	12.95	35.14	62.25	74.00	-11.75	PK
11570	32.20	0	100	H	39.27	12.95	35.14	49.28	54.00	-4.72	AV
11570	44.45	0	100	V	39.27	12.95	35.14	61.53	74.00	-12.47	PK
11570	31.96	0	100	V	39.27	12.95	35.14	49.04	54.00	-4.96	AV
High Channel 5825 MHz											
5825	61.30	338	115	H	33.86	5.60	0.00	100.76	-	-	PK
5825	53.14	338	115	H	33.86	5.60	0.00	92.60	-	-	AV
5825	58.91	247	100	V	33.86	5.60	0.00	98.37	-	-	PK
5825	50.71	247	100	V	33.86	5.60	0.00	90.17	-	-	AV
5850	52.53	346	100	H	33.93	6.39	36.24	56.61	68.23	-11.62	PK
5850	49.19	260	222	V	33.93	6.39	36.24	53.27	68.23	-14.96	PK
11650	44.76	0	100	H	39.46	12.80	35.16	61.86	74.00	-12.14	PK
11650	31.80	0	100	H	39.46	12.80	35.16	48.90	54.00	-5.10	AV
11650	44.72	0	100	V	39.46	12.80	35.16	61.82	74.00	-12.18	PK
11650	31.81	0	100	V	39.46	12.80	35.16	48.91	54.00	-5.09	AV

802.11n40 mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 5755 MHz											
5755	59.27	346	100	H	33.86	5.60	0.00	98.73	-	-	PK
5755	50.53	346	100	H	33.86	5.60	0.00	89.99	-	-	AV
5755	56.60	248	100	V	33.86	5.60	0.00	96.06	-	-	PK
5755	48.04	248	100	V	33.86	5.60	0.00	87.50	-	-	AV
5725	56.09	342	100	H	33.94	5.60	36.16	59.47	68.23	-8.76	PK
5725	53.75	248	100	V	33.94	5.60	36.16	57.13	68.23	-11.10	PK
11510	43.92	0	100	H	38.96	10.71	35.09	58.50	74.00	-15.50	PK
11510	31.41	0	100	H	38.96	10.71	35.09	45.99	54.00	-8.01	AV
11510	45.24	0	100	V	38.96	10.71	35.09	59.82	74.00	-14.18	PK
11510	31.32	0	100	V	38.96	10.71	35.09	45.90	54.00	-8.10	AV
High Channel 5795 MHz											
5795	60.28	344	100	H	33.86	5.60	0.00	99.74	-	-	PK
5795	51.97	344	100	H	33.86	5.60	0.00	91.43	-	-	AV
5795	57.87	168	163	V	33.86	5.60	0.00	97.33	-	-	PK
5795	49.40	168	163	V	33.86	5.60	0.00	88.86	-	-	AV
5850	50.89	335	100	H	33.93	5.60	36.24	54.18	68.23	-14.05	PK
5850	48.48	166	166	V	33.93	5.60	36.24	51.77	68.23	-16.46	PK
11590	44.65	0	100	H	38.38	10.71	35.14	58.60	74.00	-15.40	PK
11590	31.87	0	100	H	38.38	10.71	35.14	45.82	54.00	-8.18	AV
11590	44.77	0	100	V	38.38	10.71	35.14	58.72	74.00	-15.28	PK
11590	31.96	0	100	V	38.38	10.71	35.14	45.91	54.00	-8.09	AV

Straddle Channel

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/ISEDC		Comments (PK/Ave.)
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
a mode Channel 5720 MHz											
5720	66.37	163	100	H	33.76	5.55	0.00	105.67	-	-	PK
5720	58.31	163	100	H	33.76	5.55	0.00	97.61	-	-	AV
5720	66.21	35	100	V	33.76	5.55	0.00	105.51	-	-	PK
5720	58.33	35	100	V	33.76	5.55	0.00	97.63	-	-	AV
11440	42.51	0	100	H	40.23	13.13	35.03	60.84	74.00	-13.16	PK
11440	30.26	0	100	H	40.23	13.13	35.03	48.59	54.00	-5.41	AV
11440	41.87	0	100	V	40.23	13.13	35.03	60.20	74.00	-13.80	PK
11440	29.77	0	100	V	40.23	13.13	35.03	48.10	54.00	-5.90	AV
n20 mode Channel 5720 MHz											
5720	66.35	163	100	H	33.76	5.55	0.00	105.65	-	-	PK
5720	58.81	163	100	H	33.76	5.55	0.00	98.11	-	-	AV
5720	66.19	35	100	V	33.76	5.55	0.00	105.49	-	-	PK
5720	58.47	35	100	V	33.76	5.55	0.00	97.77	-	-	AV
11440	41.73	0	100	H	40.23	13.13	35.03	60.06	74.00	-13.94	PK
11440	29.78	0	100	H	40.23	13.13	35.03	48.11	54.00	-5.89	AV
11440	41.91	0	100	V	40.23	13.13	35.03	60.24	74.00	-13.76	PK
11440	29.49	0	100	V	40.23	13.13	35.03	47.82	54.00	-6.18	AV
n40 mode Channel 5710 MHz											
5710	63.09	163	101	H	33.76	5.55	0.00	102.39	-	-	PK
5710	55.58	163	101	H	33.76	5.55	0.00	94.88	-	-	AV
5710	63.46	36	100	V	33.76	5.55	0.00	102.76	-	-	PK
5710	56.02	36	100	V	33.76	5.55	0.00	95.32	-	-	AV
11420	42.55	0	100	H	40.23	13.13	35.03	60.88	74.00	-13.12	PK
11420	30.21	0	100	H	40.23	13.13	35.03	48.54	54.00	-5.46	AV
11420	41.96	0	100	V	40.23	13.13	35.03	60.29	74.00	-13.71	PK
11420	30.10	0	100	V	40.23	13.13	35.03	48.43	54.00	-5.57	AV

Note 1: Any emissions above 12 GHz are emissions from the noise floor.

8 Appendix

Please see attachments:

Annex A – EUT Test Setup Photos
Annex B – EUT photos

--- END OF REPORT ---