



# FCC RADIO TEST REPORT

**FCC ID** : Q87-03397  
**Equipment** : Linksys EA7300 MAX-STREAM AC1750 MU-MIMO Gigabit Wi-Fi Router  
**Brand Name** : Linksys  
**Model Name** : EA7300 V2 / EA7200 / EA7450  
**Applicant** : Linksys LLC  
121 Theory Drive Irvine, CA 92617, United States  
**Standard** : 47 CFR FCC Part 15.407

The product was received on Apr. 08, 2020, and testing was started from Apr. 08, 2020 and completed on Apr. 24, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**  
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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TEL : 886-3-656-9065  
FAX : 886-3-656-9085  
Report Template No.: CB-A12\_1 Ver1.0



## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.407(a)	Maximum Conducted Output Power	PASS	-
3.2	15.407(b)	Unwanted Emissions	PASS	-

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

**Reviewed by: Sam Chen**

**Report Producer: Cindy Peng**



# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4TX
5.15-5.25GHz	802.11n HT20	20	4TX
5.15-5.25GHz	802.11n HT20-BF	20	4TX
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ac VHT20-BF	20	4TX
5.15-5.25GHz	802.11n HT40	40	4TX
5.15-5.25GHz	802.11n HT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	4TX
5.725-5.85GHz	802.11a	20	4TX
5.725-5.85GHz	802.11n HT20	20	4TX
5.725-5.85GHz	802.11n HT20-BF	20	4TX
5.725-5.85GHz	802.11ac VHT20	20	4TX
5.725-5.85GHz	802.11ac VHT20-BF	20	4TX
5.725-5.85GHz	802.11n HT40	40	4TX
5.725-5.85GHz	802.11n HT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	4TX

**Note:**

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ BWch is the nominal channel bandwidth.

**1.1.2 Antenna Information**

Ant.	Port		Brand	P/N		Type	Connector	Gain (dBi)	
	2.4GHz	5GHz		2.4GHz	5GHz			2.4GHz	5GHz
1	2	1	FIT	4TS4009-A0003-JH	4TS4009-A0003-JH	Dipole	I-PEX	1.24	2.20
2	1	2	FIT	4TS4009-A0004-JH	4TS4009-A0004-JH	Dipole	I-PEX	1.20	2.10
3	-	3	FIT	-	4TS4009-A0005-JH	Dipole	I-PEX	-	1.85
4	-	4	FIT	-	4TS4009-A0006-JH	Dipole	I-PEX	-	2.82

Note1: The above information was declared by manufacturer.

Note2: The EUT has four antennas.

**<For 2.4GHz Band>**
**For IEEE 802.11b/g/n mode (2TX/2RX)**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

**<For 5GHz Band>**
**For IEEE 802.11a/n/ac mode (4TX/4RX)**

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.968	0.141	1.398m	1k

**Note:**

- ♦ DC is Duty Cycle.
- ♦ DCF is Duty Cycle Factor.



## 1.1.4 EUT Operational Condition

<b>EUT Power Type</b>	From power adapter			
<b>Beamforming Function</b>	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/>	Without beamforming
	The product has beamforming function for 802.11n/ac in 5GHz			
<b>Function</b>	<input type="checkbox"/>	Outdoor P2M	<input checked="" type="checkbox"/>	Indoor P2M
	<input type="checkbox"/>	Fixed P2P	<input type="checkbox"/>	Client
<b>Test Software Version</b>	QA Tool_0.0.1.85			

Note: The above information was declared by manufacturer.

## 1.1.5 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Description
EA7300 V2	There is nothing different of three model names, just for different marketing use.
EA7200	
EA7450	

From the above models, model: EA7300 V2 was selected as representative model for the test and its data was recorded in this report.

## 1.1.6 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR892642AB

Below is the table for the change of the product with respect to the original one.

Modifications				Performance Checking												
<div>1. Changing the 5GHz PA. The difference between original 5GHz PA and new 5GHz PA as below:</div> <table><tr><th colspan="2">Original 5GHz PA</th><th colspan="2">New 5GHz PA</th></tr><tr><th>Brand Name</th><th>Model Name</th><th>Brand Name</th><th>Model Name</th></tr><tr><td>Microsemi</td><td>LX5589H</td><td>Qorvo</td><td>QPF4503</td></tr></table>				Original 5GHz PA		New 5GHz PA		Brand Name	Model Name	Brand Name	Model Name	Microsemi	LX5589H	Qorvo	QPF4503	<div>1. Maximum Conducted Output Power.</div> <div>2. Unwanted Emissions Above 1GHz.</div> <div>All test items are testing 802.11a_Nss1, 5745MHz only, and it is max power channel of original test report.</div>
				Original 5GHz PA		New 5GHz PA										
				Brand Name	Model Name	Brand Name	Model Name									
				Microsemi	LX5589H	Qorvo	QPF4503									
<div>2. Changing the brand name to “Linksys” from “LINKSYS”.</div> <div>3. Removing the 4TX/2S function of 5GHz.</div> <div>4. Adding two model names “EA7200 / EA7450”.</div>				<div>It is not necessary to re-test.</div>												



## 1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 789033 D02 v02r01
- ♦ FCC KDB 662911 D01 v02r01
- ♦ FCC KDB 412172 D01 v01r01

## 1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL : 886-3-327-3456 FAX : 886-3-327-0973
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Owen Hsu	23.5~25.6°C / 54~60%	Apr. 24, 2020
Radiated	03CH04-CB	Ekko Hsieh	23.2~25.6°C / 53~60%	Apr. 08, 2020~Apr. 24, 2020

Test site Designation No. TW0006 with FCC

Test site registered number IC 4086D with Industry Canada.

## 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%





## 2 Test Configuration of EUT

### 2.1 Test Channel Mode

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5745MHz	20

### 2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	Maximum Conducted Output Power
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode > 1GHz	CTX
The EUT can be placed in Y-axis and Z-axis. After evaluating, "Z axis" generated the worst test result, So the measurement will follow this same test configuration.	
1	EUT Z axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Sporton Test Report No.: FA892642-01 for Co-location RF Exposure Evaluation.	

### 2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



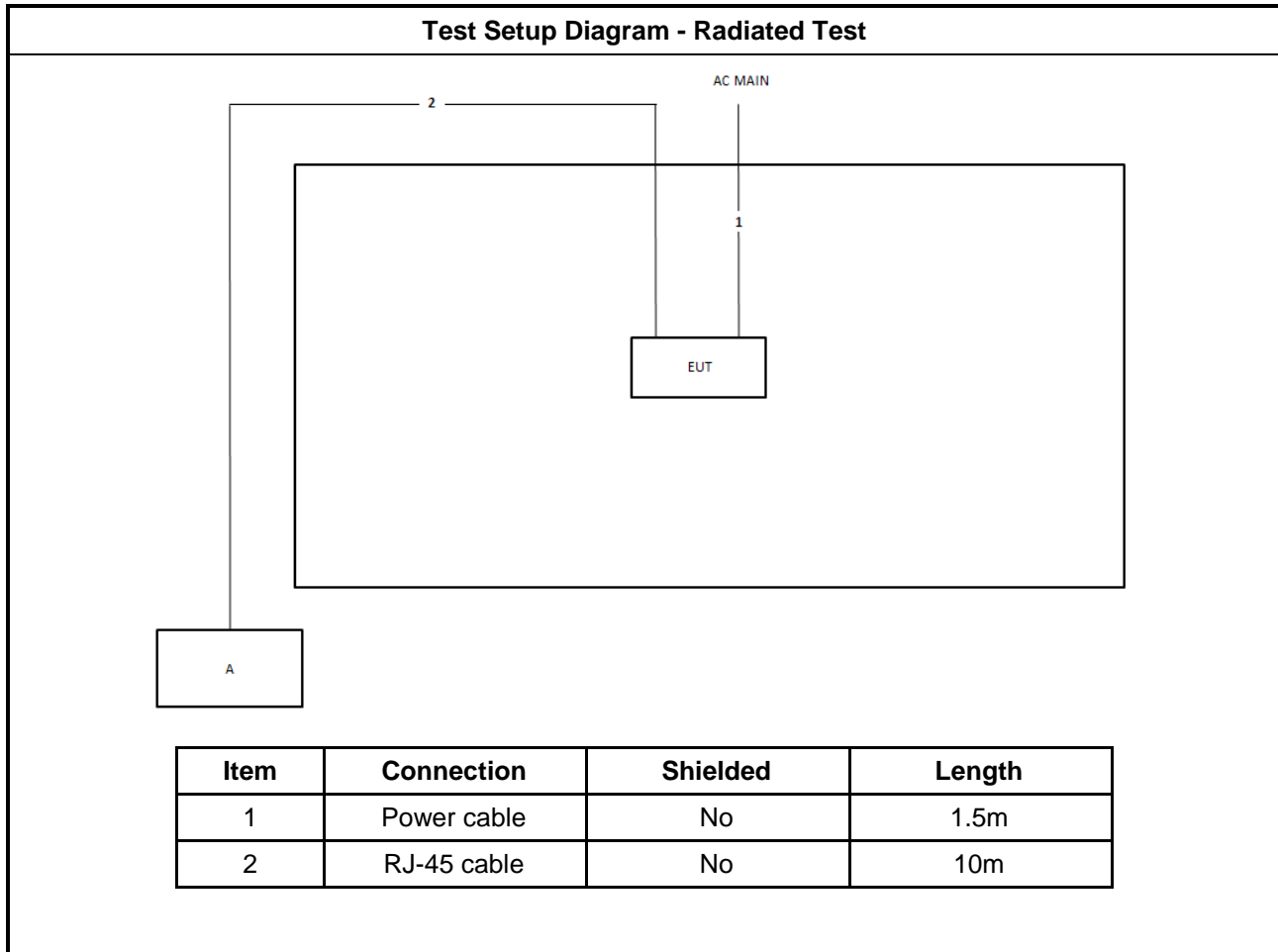
## 2.4 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model Name	Rating
1	Adapter 1	Ktec	KSA-24W-120200HU	Input: 100-240V~50/60Hz, 0.6A Output: 12V, 2.0A
2	Adapter 2	APD	WB-24J12FU	Input: 100-120V~50-60Hz, 0.7A Max. Output: 12V, 2A
No.	Others			
3	RJ-45 cable*1: Non-Shielded, 0.9m			

## 2.5 Support Equipment

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

## 2.6 Test Setup Diagram



### 3 Transmitter Test Result

#### 3.1 Maximum Conducted Output Power

##### 3.1.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Outdoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>. e.i.r.p. at any elevation angle above 30 degrees <math>\leq 125</math>mW [21dBm]</li> <li>Indoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math></li> <li>Point-to-point AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 23)</math>.</li> <li>Mobile or Portable Client: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 250 mW. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 24 - (G_{TX} - 6)</math>.</li> </ul>
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .
<input type="checkbox"/>	For the 5.47-5.725 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> <li>Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul>
<b>LE-LAN Devices</b>	
<input type="checkbox"/>	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.725-5.85 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> <li>Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul>
$P_{Out}$ = maximum conducted output power in dBm, $G_{TX}$ = the maximum transmitting antenna directional gain in dBi.	

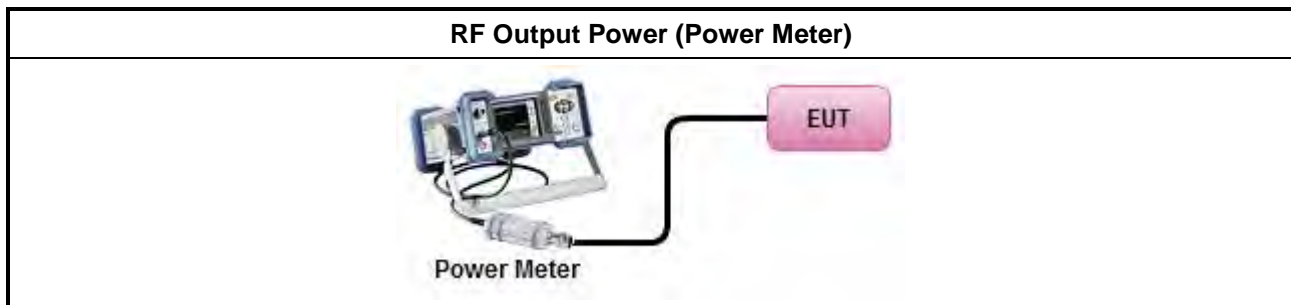
### 3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

### 3.1.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>Maximum Conducted Output Power</li> </ul>	
	Average over on/off periods with duty factor
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
<ul style="list-style-type: none"> <li>For conducted measurement.</li> </ul>	
<ul style="list-style-type: none"> <li>If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.</li> </ul>	
<ul style="list-style-type: none"> <li>If multiple transmit chains, EIRP calculation could be following as methods:  <math>P_{total} = P_1 + P_2 + \dots + P_n</math>                      (calculated in linear unit [mW] and transfer to log unit [dBm])  <math>EIRP_{total} = P_{total} + DG</math> </li> </ul>	

### 3.1.4 Test Setup



### 3.1.5 Test Result of Maximum Conducted Output Power

Refer as Appendix A



## 3.2 Unwanted Emissions

### 3.2.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
<input checked="" type="checkbox"/> 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m @3m]
<input type="checkbox"/> 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m @3m]
<input type="checkbox"/> 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m @3m]
<input checked="" type="checkbox"/> 5.725 - 5.85 GHz	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.

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of



linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

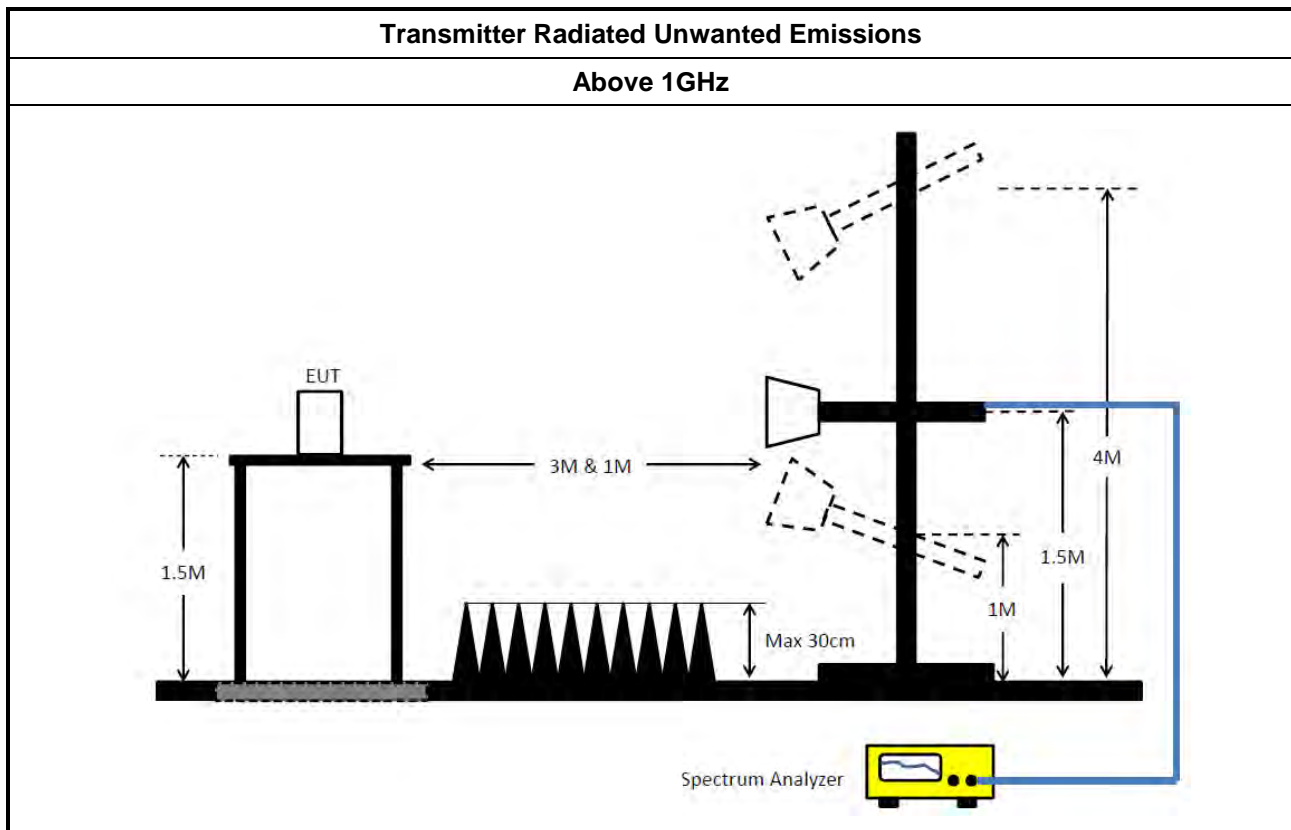
### 3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

### 3.2.3 Test Procedures

Test Method	
<ul style="list-style-type: none"><li>Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).</li></ul>	
<ul style="list-style-type: none"><li>The average emission levels shall be measured in [duty cycle <math>\geq</math> 98 or duty factor].</li></ul>	
<ul style="list-style-type: none"><li>For the transmitter unwanted emissions shall be measured using following options below:</li></ul>	
	<ul style="list-style-type: none"><li>Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.</li></ul>
	<ul style="list-style-type: none"><li>Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.</li></ul>
	<input type="checkbox"/> Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq$ 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.
<input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.	
<ul style="list-style-type: none"><li>For radiated measurement.</li></ul>	
	<ul style="list-style-type: none"><li>Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.</li></ul>
	<ul style="list-style-type: none"><li>Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.</li></ul>
	<ul style="list-style-type: none"><li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li></ul>
<ul style="list-style-type: none"><li>The any unwanted emissions level shall not exceed the fundamental emission level.</li></ul>	
<ul style="list-style-type: none"><li>All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.</li></ul>	

### 3.2.4 Test Setup



### 3.2.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

### 3.2.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix B





## 4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	ETS • Lindgren	3115	00143147	750MHz~18GHz	Oct. 22, 2019	Oct. 21, 2020	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 11, 2020	Mar. 10, 2021	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 18, 2019	Dec. 17, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 18, 2019	Nov. 17, 2020	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 07, 2020	Feb. 06, 2021	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 07, 2020	Feb. 06, 2021	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.



## Average Power Result

Appendix A

### Summary

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	29.95	0.98855



## Average Power Result

Appendix A

### Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5745MHz	Pass	2.82	24.13	23.72	23.69	24.16	29.95	30.00

**DG** = Directional Gain; **Port X** = Port X output power



## RSE TX above 1GHz Result

## Appendix B

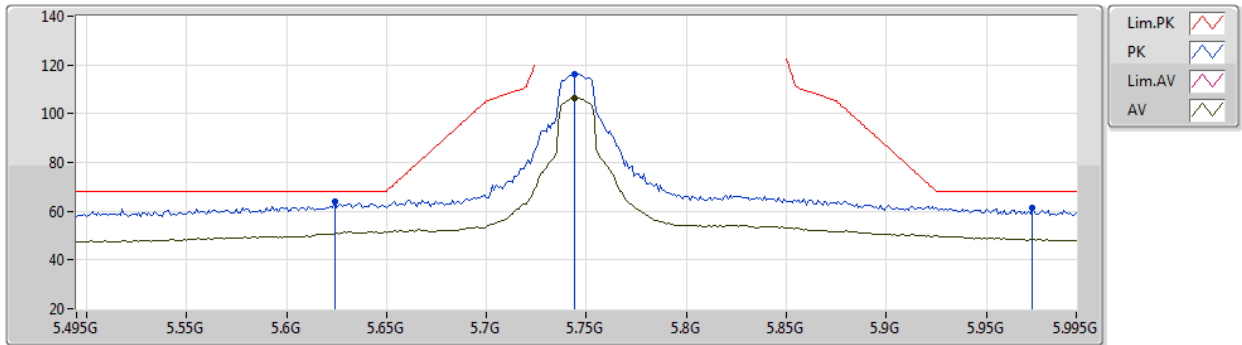
### Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	Pass	PK	5.624G	64.04	68.20	-4.16	3	Vertical	141	1.51	-

## 802.11a\_Nss1,(6Mbps)\_4TX

08/04/2020

## 5745MHz\_TX



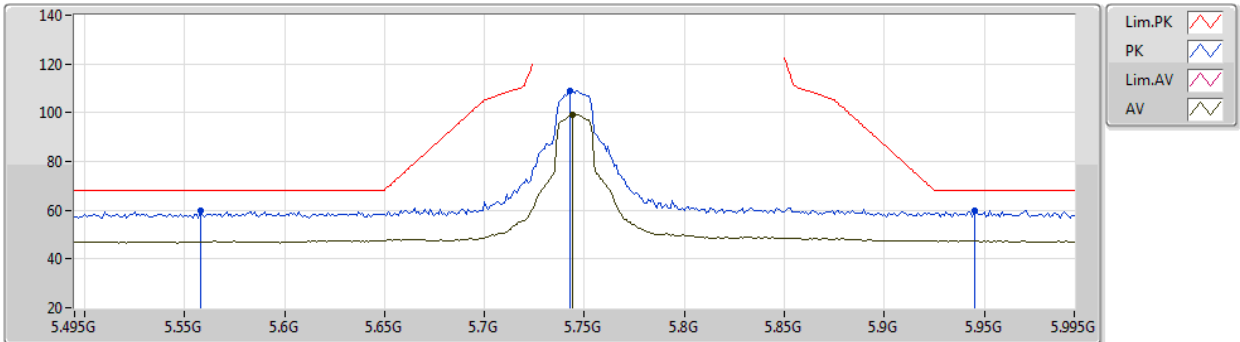
EUT\_Z\_4TX  
Setting 20  
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	5.624G	64.04	68.20	-4.16	57.61	3	Vertical	141	1.51	-	34.38	7.02	34.97
PK	5.744G	116.43	Inf	-Inf	110.04	3	Vertical	141	1.51	-	34.30	7.03	34.94
AV	5.744G	106.58	Inf	-Inf	100.19	3	Vertical	141	1.51	-	34.30	7.03	34.94
PK	5.973G	61.37	68.20	-6.83	54.47	3	Vertical	141	1.51	-	34.72	7.06	34.88

### 802.11a\_Nss1,(6Mbps)\_4TX

08/04/2020

### 5745MHz\_TX



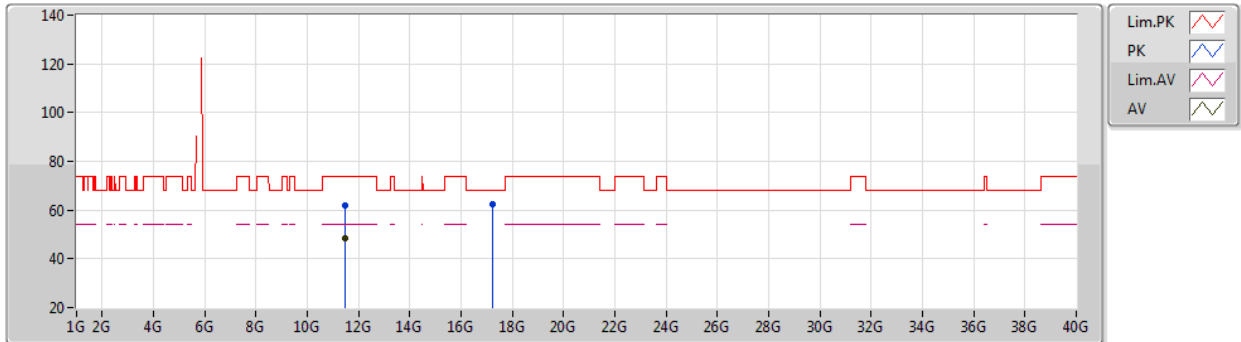
EUT\_Z\_4TX  
Setting 20  
03-D-E-2-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	5.558G	59.88	68.20	-8.32	53.41	3	Horizontal	46	2.70	-	34.44	7.02	34.99
PK	5.743G	108.90	Inf	-Inf	102.51	3	Horizontal	46	2.70	-	34.30	7.03	34.94
AV	5.744G	99.07	Inf	-Inf	92.68	3	Horizontal	46	2.70	-	34.30	7.03	34.94
PK	5.945G	59.84	68.20	-8.36	53.05	3	Horizontal	46	2.70	-	34.63	7.05	34.89

## 802.11a\_Nss1,(6Mbps)\_4TX

08/04/2020

## 5745MHz\_TX



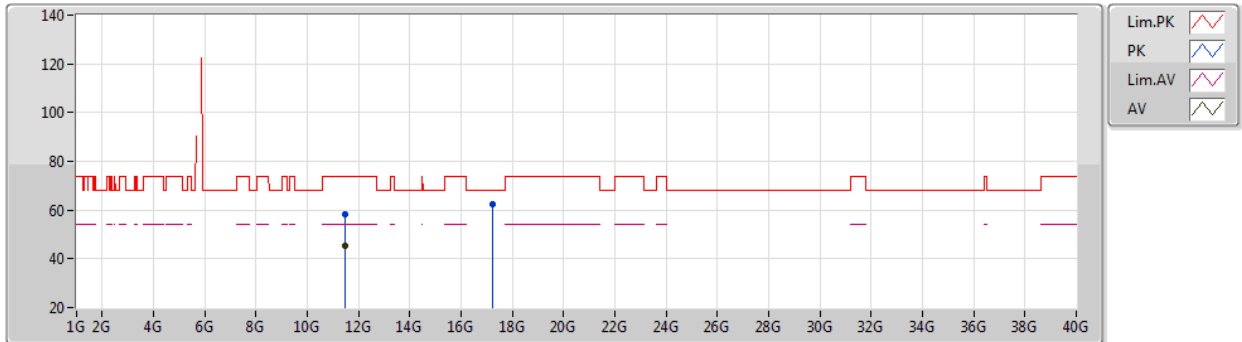
EUT\_Z\_4TX  
Setting 20  
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	11.48634G	62.07	74.00	-11.93	47.75	3	Vertical	25	2.67	-	38.84	10.16	34.68	
AV	11.48808G	48.48	54.00	-5.52	34.16	3	Vertical	25	2.67	-	38.84	10.16	34.68	
PK	17.22756G	62.39	68.20	-5.81	43.83	3	Vertical	296	1.27	-	41.06	12.08	34.58	

### 802.11a\_Nss1,(6Mbps)\_4TX

08/04/2020

### 5745MHz\_TX



EUT\_Z\_4TX  
Setting 20  
03-D-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.48484G	58.23	74.00	-15.77	43.91	3	Horizontal	56	1.05	-	38.84	10.16	34.68
AV	11.49006G	45.10	54.00	-8.90	30.78	3	Horizontal	56	1.05	-	38.84	10.16	34.68
PK	17.24952G	62.28	68.20	-5.92	43.60	3	Horizontal	121	1.69	-	41.17	12.09	34.58