



FCC RADIO EXPOSURE 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

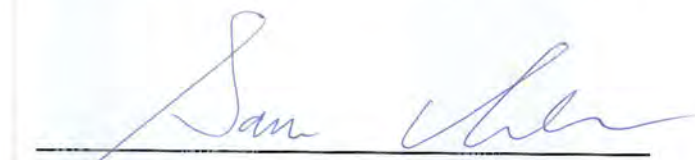
Applicant : Linksys LLC
121 Theory Drive Irvine, CA 92617, United States

Standard : 47 CFR Part 2.1091

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 47 CFR Part 2.1091 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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Report Template No.: CB-A1_1 Ver1.0



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	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 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
5GHz WLAN	5150-5250 5725-5850	5180-5240 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)

1.2 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.

1.3 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FA892642

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

Modifications	Performance Checking												
1. Changing the 5GHz PA. The difference between original 5GHz PA and new 5GHz PA as below: <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	After verifying, the test result was better than original, thus the original test results have been recorded in this test report.
Original 5GHz PA		New 5GHz PA											
Brand Name	Model Name	Brand Name	Model Name										
Microsemi	LX5589H	Qorvo	QPF4503										
2. Changing the brand name to “Linksys” from “LINKSYS”. 3. Removing the 4TX/2S function of 5GHz. 4. Adding two model names “EA7200 / EA7450”.	It is not necessary to re-test.												



1.4 Testing Location

Testing Location		
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
☒	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 site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.



2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

The MPE was calculated at 35 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	1.24	25.19	26.43	0.50	26.93	0.49317	35	0.03204	1.00000
5.2G;D1D	8.27	27.07	35.34	0.50	35.84	3.83707	35	0.24925	1.00000
5.8G;D1D	8.27	27.65	35.92	0.07	35.99	3.97192	35	0.25801	1.00000

Simultaneous Transmission Analysis Mode: WLAN 2.4GHz + WLAN 5GHz

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio (S/Limit)
2.4G;D1D	1.24	25.19	26.43	0.50	26.93	0.49317	35	0.03204	1	0.03204
5.8G;D1D	8.27	27.65	35.92	0.07	35.99	3.97192	35	0.25801	1	0.25801
									Sum Ratio	0.29005
									Ratio Limit	1

—————THE END—————