



FCC RADIO EXPOSURE TEST REPORT

FCC ID : Q87-03418

Equipment : LINKSYS E2500 N600 Dual-Band WIFI ROUTER,
LINKSYS E5350 AC1000 Dual-Band WIFI ROUTER,
LINKSYS E5400 AC1200 Dual-Band WIFI ROUTER,
LINKSYS E5300 AC750 Dual-Band WIFI ROUTER

Brand Name : LINKSYS

Model Name : E2500 V4, E5350, E5400, E5300

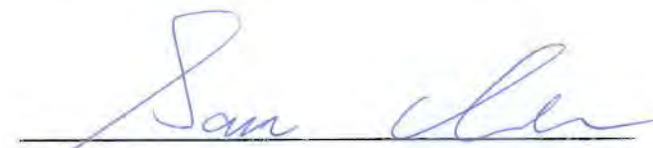
Applicant : Linksys LLC
121 Theory, Irvine CA 92617, United States

Standard : 47 CFR Part 2.1091

The product was received on Oct. 31, 2018, and testing was started from Oct. 31, 2018 and completed on Dec. 27, 2018. 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 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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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: Sandy Chuang



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 EUT has four equipment names and model names which are identical to each other in all aspects except for the following table:

Item	Equipment Name	Model Name
1	LINKSYS E2500 N600 Dual-Band WIFI ROUTER	E2500 V4
2	LINKSYS E5350 AC1000 Dual-Band WIFI ROUTER	E5350
3	LINKSYS E5400 AC1200 Dual-Band WIFI ROUTER	E5400
4	LINKSYS E5300 AC750 Dual-Band WIFI ROUTER	E5300

Item	Radio Type					Description
	802.11b	802.11g	802.11n	802.11a	802.11ac	
1	V	V	V	V	X	The difference equipment and model name served as marketing strategy and supporting radio type.
2	V	V	V	V	V	
3	V	V	V	V	V	
4	V	V	V	V	V	

From the above models, model: E5400 is the highest speed of this series and include all functions and standard, so it was selected as representative model for the test and its data was recorded in this report.



1.3 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 20 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;G1D	2.53	25.84	28.37	0.50	28.87	0.77090	20	0.15337	1.00000
5.2G;D1D	6.34	24.53	30.87	0.50	31.37	1.37088	20	0.27273	1.00000
5.8G;D1D	6.34	24.41	30.75	0.50	31.25	1.33352	20	0.26530	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;G1D	2.53	25.84	28.37	0.50	28.87	0.77090	20	0.15336	1	0.15336
5.2G;D1D	6.34	24.53	30.87	0.50	31.37	1.37088	20	0.27272	1	0.27272
									Sum Ratio	0.42608
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

————THE END————