



FCC RADIO EXPOSURE TEST REPORT

FCC ID : Z3WAIR4960

Equipment : 5400 Mbps 11ax Wi-Fi Mesh Extender, 5400 Mbps
11ax Wi-Fi Mesh Access Point, Home Wi-Fi
Solution Kit, AX5400 Wi-Fi 6 Router

Brand Name : AirTies

Model Name : Air 4960R/Air 4960

Applicant : AirTies Wireless Networks
Mithat Uluunlu Sokak No. 23 Esentepe, Sisli
Istanbul, 34394 Turkey

Manufacturer : AirTies Wireless Networks
Mithat Uluunlu Sokak No. 23 Esentepe, Sisli
Istanbul, 34394 Turkey

Standard : 47 CFR Part 2.1091

The product was received on Feb. 04, 2020, and testing was started from Feb. 10, 2020 and completed on Apr. 13, 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 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) VHT: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5250 5250-5320 5500-5720 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)

1.2 Table for Multiple Listing

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

EUT	Equipment Name	Model Name	I/O Port Function	I/O Port Color	DDR	WLAN Function
1	5400 Mbps 11ax Wi-Fi Mesh Extender	Air 4960	LAN*2	yellow	Brand: Winbond Model Name: W632GU6NB-12 Capacity: 256MB	Mesh: Only 5GHz 802.11a/an/ac 20/40/80MHz AP: 802.11abgn/ac/ax 20/40/80/160MHz
	5400 Mbps 11ax Wi-Fi Mesh Access Point					
	Home Wi-Fi Solution Kit					
2	AX5400 Wi-Fi 6 Router	Air 4960R	LAN*1 WAN*1	LAN: yellow WAN: Red	Brand: Winbond Model Name: W634GU6NB-11 Capacity: 512MB	802.11abgn/ac/ax 20/40/80/160MHz



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;D1D	5.87	22.61	28.48	0.50	28.98	0.79068	20	0.15730	1.00000
5.2G;D1D	7.36	28.51	35.87	0.12	35.99	3.97192	20	0.79019	1.00000
5.3G;D1D	7.92	21.98	29.90	0.09	29.99	0.99770	20	0.19849	1.00000
5.6G;D1D	7.49	22.47	29.96	0.03	29.99	0.99770	20	0.19849	1.00000
5.8G;D1D	7.73	28.25	35.98	0.01	35.99	3.97192	20	0.79019	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	5.87	22.61	28.48	0.50	28.98	0.79068	20	0.1573	1.00000	0.1573
5.8G;D1D	7.73	28.25	35.98	0.01	35.99	3.97192	20	0.79019	1.00000	0.79019
									Sum Ratio	0.94749
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

————THE END————