



RF Exposure Evaluation Report

Application No.: DNT2508140299R8822-11272
Applicant: Shanghai eKrode Technologies Co.,Ltd
Address of Applicant: Rm 805,Huitu Building,No.898 Tongpu Rd,Shanghai,200333,P.R.C
EUT Description: Industrial Dual-band 4x4 WiFi6 AP/CPE
Model No.: IWA5824-624Xi
Additional Model(s): IWA5824-624X,IWA5824-624X-R
FCC ID: 2BSASIWA5824-624XI
Power supply DC 48V/0.5A
Trade Mark: 伊珂络德
47 CFR Part 2.1091
Standards: FCC KDB 447498 D01 v06
Date of Receipt: 2025/8/14
Date of Test: 2025/8/15 to 2025/9/27
Date of Issue: 2025/9/27
Test Result: **PASS**

Prepared By: Wayne Lin (Testing Engineer)

Reviewed By: Pengfei Chen (Project Engineer)

Approved By: Heise Shen (Manager)



Note: If there is any objection to the results in this report, please submit a written inquiry to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp, and is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

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Report Revise Record

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V1.0	/	Sep.27, 2025	Valid	Original Report



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1 General Information

1.1 Test Location

Company:	Dongguan DN Testing Co., Ltd
Address:	No. 1, West Fourth Street, South Xinfu Road, Wusha Liwu, Chang ' an Town, Dongguan City, Guangdong P.R.China
Test engineer:	Wayne Lin

1.2 General Description of EUT

Manufacturer:	Shanghai eKrode Technologies Co.,Ltd
Address of Manufacturer:	Rm 805,Huitu Building,No.898 Tongpu Rd,Shanghai,200333,P.R.C
EUT Description::	Industrial Dual-band 4x4 WiFi6 AP/CPE
Test Model No.:	IWA5824-624Xi
Additional Model(s):	IWA5824-624X,IWA5824-624X-R
Serial Number	PR2508140299R8822
Power Supply	DC 48V/0.5A
Trade Mark:	伊珂络德
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	2.4G:2412-2462MHz (BW:20M); 2422-2452MHz (BW:40M); 5G:5150-5250MHz; 5725-5850MHz;
Type of Modulation:	DSSS/OFDM/OFDMA
Sample Type:	☐ Portable Device, ☐ Module, ☒ Mobile Device
Antenna Type:	☐ External, ☒ Integrated
Antenna Gain:	☒ Provided by applicant
	2.4G: ANT1:12.84dBi; ANT2: 12.65dBi; 5G: ANT3:16.25dBi; ANT4:16.94dBi; ANT5:15.39dBi ANT6:16.25dBi

Remark:

*All models are just name differences, motherboard, PCB circuit board, chip, electronic components, appearance is all the same.



*Since the above data and/or information is provided by the applicant relevant results or conclusions of this report are only made for these data and/or information, DNT is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.



1.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

Lab A:

• **FCC, USA**

Designation Number: CN1348

• **A2LA (Certificate No. 7050.01)**

DONGGUAN DN TESTING CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 7050.01.

• **Innovation, Science and Economic Development Canada**

DONGGUAN DN TESTING CO., LTD. EMC Laboratory has been recognized by ISED as an accredited testing laboratory. CAB identifier is CN0149.

IC#: 30755.

1.4 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	DTS Bandwidth	$\pm 0.0196\%$
2	Maximum Conducted Output Power	± 0.686 dB
3	Maximum Power Spectral Density Level	± 0.743 dB
4	Band-edge Compliance	± 1.328 dB
5	Unwanted Emissions In Non-restricted Freq Bands	9KHz-1GHz: ± 0.746 dB 1GHz-26GHz: ± 1.328 dB

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.0 dB (150kHz to 30MHz)
2	Radiated Emission	± 4.8 dB (Below 1GHz)
		± 4.8 dB (1GHz to 6GHz)
		± 4.5 dB (6GHz to 18GHz)
		± 5.02 dB (Above 18GHz)



2 RF Exposure Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	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				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30
F=frequency in MHz *=Plane-wave equivalent power density RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).				

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



2.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

2.1.3 EUT RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 / 2.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

Test Mode	Antenna	Frequency	Max Power [dBm]
11B	Ant1	2412	15.34
	Ant2	2412	13.97
	Ant1	2437	16.01
	Ant2	2437	14.11
	Ant1	2462	15.26
	Ant2	2462	12.67
11G	Ant1	2412	14.18
	Ant2	2412	11.86
	Ant1	2437	14.54
	Ant2	2437	15.23
	Ant1	2462	13.62
	Ant2	2462	11.88
11N20MIMO	Ant1	2412	13.19
	Ant2	2412	12.19
	total	2412	16.65
	Ant1	2437	16.82
	Ant2	2437	13.46
	total	2437	18.47
	Ant1	2462	14.72
	Ant2	2462	12.92
11N40MIMO	total	2462	16.92
	Ant1	2422	12.54
	Ant2	2422	10.43
	total	2422	14.62
	Ant1	2437	14.54
	Ant2	2437	12.70
	total	2437	16.73
	Ant1	2452	14.41
11AX20MIMO	Ant2	2452	12.64
	total	2452	16.62
	Ant1	2412	14.32
	Ant2	2412	12.35
	total	2412	16.46
	Ant1	2437	14.46
	Ant2	2437	12.42
	total	2437	16.57
11AX40MIMO	Ant1	2462	13.64
	Ant2	2462	11.91
	total	2462	15.87
	Ant1	2422	14.65
	Ant2	2422	12.54
	total	2422	16.73
	Ant1	2437	14.58
	Ant2	2437	12.67
11A	total	2437	16.74
	Ant1	2452	14.44
	Ant2	2452	12.49
	total	2452	16.58
	Ant3	5180	1.56
	Ant4	5180	4.64



	Ant5	5180	3.82
	Ant6	5180	4.03
	Ant3	5200	1.97
	Ant4	5200	4.38
	Ant5	5200	3.43
	Ant6	5200	3.43
	Ant3	5240	1.96
	Ant4	5240	4.13
	Ant5	5240	3.48
	Ant6	5240	3.51
	Ant3	5745	12.16
	Ant4	5745	10.86
	Ant5	5745	11.35
	Ant6	5745	13.37
	Ant3	5785	11.61
	Ant4	5785	11.96
	Ant5	5785	12.71
	Ant6	5785	12.20
	Ant3	5825	10.63
	Ant4	5825	11.57
	Ant5	5825	12.04
	Ant6	5825	10.12
11N20MIMO	Ant3	5180	3.85
	Ant4	5180	1.27
	Ant5	5180	0.47
	Ant6	5180	-3.30
	total	5180	7.28
	Ant3	5200	-2.55
	Ant4	5200	-0.44
	Ant5	5200	-1.53
	Ant6	5200	-1.62
	total	5200	4.55
	Ant3	5240	-1.67
	Ant4	5240	-1.01
	Ant5	5240	-1.79
	Ant6	5240	-1.61
	total	5240	4.51
	Ant3	5745	6.20
	Ant4	5745	4.26
	Ant5	5745	5.03
	Ant6	5745	6.92
	total	5745	11.74
	Ant3	5785	5.07
	Ant4	5785	6.10
	Ant5	5785	5.25
	Ant6	5785	6.18
	total	5785	11.7
	Ant3	5825	5.04
	Ant4	5825	4.80
	Ant5	5825	5.62
	Ant6	5825	6.32
	total	5825	11.51
11N40MIMO	Ant3	5190	-0.59
	Ant4	5190	0.28
	Ant5	5190	0.99
	Ant6	5190	0.98
	total	5190	6.48
	Ant3	5230	-0.62
	Ant4	5230	0.04
	Ant5	5230	0.11
	Ant6	5230	-0.35
	total	5230	5.83
	Ant3	5755	6.47



	Ant4	5755	6.39
	Ant5	5755	5.49
	Ant6	5755	6.04
	total	5755	12.13
	Ant3	5795	5.92
	Ant4	5795	6.90
	Ant5	5795	5.59
	Ant6	5795	6.70
	total	5795	12.33
11AC20MIMO	Ant3	5180	-1.08
	Ant4	5180	0.27
	Ant5	5180	-0.16
	Ant6	5180	0.05
	total	5180	5.82
	Ant3	5200	-1.72
	Ant4	5200	0.10
	Ant5	5200	-0.31
	Ant6	5200	-0.12
	total	5200	5.56
	Ant3	5240	-1.21
	Ant4	5240	-0.06
	Ant5	5240	-0.33
	Ant6	5240	-0.45
	total	5240	5.53
	Ant3	5745	6.30
	Ant4	5745	5.67
	Ant5	5745	5.82
	Ant6	5745	6.17
	total	5745	12.02
	Ant3	5785	7.05
	Ant4	5785	7.23
	Ant5	5785	6.23
	Ant6	5785	6.92
	total	5785	12.89
11AC40MIMO	Ant3	5825	7.33
	Ant4	5825	8.02
	Ant5	5825	7.27
	Ant6	5825	7.42
	total	5825	13.54
	Ant3	5190	5.48
	Ant4	5190	4.19
	Ant5	5190	4.51
	Ant6	5190	4.32
	total	5190	10.68
	Ant3	5230	6.31
	Ant4	5230	5.93
	Ant5	5230	5.10
	Ant6	5230	6.04
	total	5230	11.89
	Ant3	5755	5.61
	Ant4	5755	5.53
	Ant5	5755	6.30
	Ant6	5755	6.63
	total	5755	12.06
	Ant3	5795	7.56
	Ant4	5795	8.09
	Ant5	5795	7.21
	Ant6	5795	7.85
	total	5795	13.71
11AC80MIMO	Ant3	5210	-2.03
	Ant4	5210	-0.21
	Ant5	5210	-1.00
	Ant6	5210	-0.62



	total	5210	5.11
	Ant3	5775	5.91
	Ant4	5775	5.71
	Ant5	5775	6.60
	Ant6	5775	7.15
	total	5775	12.40
11AX20MIMO	Ant3	5180	-1.17
	Ant4	5180	0.05
	Ant5	5180	-0.31
	Ant6	5180	0.11
	total	5180	5.72
	Ant3	5200	-1.30
	Ant4	5200	-0.63
	Ant5	5200	-0.84
	Ant6	5200	-0.66
	total	5200	5.17
	Ant3	5240	-1.61
	Ant4	5240	-0.41
	Ant5	5240	-0.57
	Ant6	5240	-0.61
	total	5240	5.25
	Ant3	5745	5.78
	Ant4	5745	5.09
	Ant5	5745	4.86
	Ant6	5745	5.61
	total	5745	11.37
	Ant3	5785	6.32
	Ant4	5785	6.70
	Ant5	5785	6.97
	Ant6	5785	7.97
	total	5785	13.05
	Ant3	5825	5.12
	Ant4	5825	8.02
	Ant5	5825	7.54
	Ant6	5825	7.88
	total	5825	13.30
11AX40MIMO	Ant3	5190	-1.39
	Ant4	5190	-0.29
	Ant5	5190	-0.46
	Ant6	5190	-0.61
	total	5190	5.35
	Ant3	5230	-1.46
	Ant4	5230	-0.55
	Ant5	5230	-1.10
	Ant6	5230	-0.82
	total	5230	5.05
	Ant3	5755	5.67
	Ant4	5755	6.68
	Ant5	5755	5.21
	Ant6	5755	4.47
	total	5755	11.60
	Ant3	5795	7.76
	Ant4	5795	5.38
	Ant5	5795	7.67
	Ant6	5795	8.11
	total	5795	13.37
11AX80MIMO	Ant3	5210	7.29
	Ant4	5210	6.54
	Ant5	5210	6.69
	Ant6	5210	5.76
	total	5210	12.62
	Ant3	5775	7.93
	Ant4	5775	7.20



	Ant5	5775	8.05
	Ant6	5775	7.59
	total	5775	13.73

The Worst Mode	Antenna	MAX output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result	Distance (cm)
					(dBi)	(Linear)				
11B(2.4G)	Ant1	16.01	16±1	17	12.84	19.231	0.1917	1	Complies	20
11G(2.4G)	Ant2	15.23	15±1	16	12.65	18.408	0.1458	1	Complies	20
11A(5G)	Ant3	12.16	12±1	13	16.25	42.170	0.1674	1	Complies	20
	Ant4	10.86	10±1	11	16.94	49.431	0.1238	1	Complies	20
	Ant5	12.71	12±1	13	15.39	34.594	0.1373	1	Complies	20
	Ant6	13.37	13±1	14	16.25	42.170	0.2107	1	Complies	20

2.4G:ANT1+ANT2

MAX Power Density (S) (mW/cm ²) ANT1	MAX Power Density (T) (mW/cm ²) ANT2	Total Radio	Limit	Result
0.1917	0.1458	0.3375	1	Complies

5G:Ant3+Ant4+Ant5+Ant6

MAX Power Density (U) (mW/cm ²) ANT3	MAX Power Density (V) (mW/cm ²) ANT4	MAX Power Density (W) (mW/cm ²) ANT5	MAX Power Density (X) (mW/cm ²) ANT6	Total Radio	Limit	Result
0.1674	0.1238	0.1317	0.2107	0.6392	1	Complies

2.4G+5G

MAX Power Density (Y) (mW/cm ²) 2.4G	MAX Power Density (Z) (mW/cm ²) 5G	Total Radio	Limit	Result
0.3375	0.6392	0.9767	1	Complies

The End Report