1 Cover Page

RF Exposure Evaluation Report

Application No.:	SHCR2503000488HS
Applicant:	Ningbo Deye Domestic Electrical Appliance Technology Co., Ltd
Address of Applicant:	No.568, South Rixian Road, Binhai Economic Development Zone, Cixi, Ningbo, Zhejiang, 315300, P.R.China
Manufacturer:	Ningbo Deye Domestic Electrical Appliance Technology Co., Ltd
Address of Manufacturer:	No.568, South Rixian Road, Binhai Economic Development Zone, Cixi, Ningbo, Zhejiang, 315300, P.R.China
Factory:	Ningbo Deye Domestic Electrical Appliance Technology Co., Ltd
Address of Factory:	No.568, South Rixian Road, Binhai Economic Development Zone, Cixi, Ningbo, Zhejiang, 315300, P.R.China
Equipment Under Test (EUT):	
EUT Name:	Split Type Air Conditioner
Model No.:	DW3B1-ACDC-27KR2(EU), DMGA1-ACDC-07KR2(EU) DMGA1-ACDC-09KR2(EU), DMGA1-ACDC-12KR2(EU) DMGA1-ACDC-18KR2(EU)
Standard(s) :	EN IEC 62311: 2020
Date of Receipt:	2025-03-06
Date of Test:	2025-03-07 to 2025-03-26
Date of Issue:	2025-03-27
Test Result:	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2025-03-27	/

Authorized for issue by:				
Tested By		Wade Zhang **Wade Zhang/Project Engineer**		
Approved By		Parlam Zhan **Parlam Zhan / Reviewer**		

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3 General Information

3.1 General Description of E.U.T.

Power supply:	AC 220-240V 50Hz

3.2 Details of E.U.T.

BLE

Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK
Channel Spacing:	2MHz
Number of Channels:	40
Antenna Type:	PIFA Antenna
Antenna Gain:	2.5 dBi (Provided by manufacturer)
Power Class:	<10mW
Receiver Category:	2

2.4GHz Wi-Fi

Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2472MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK), 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20): 13
Antenna Type:	PIFA Antenna
Adaptive Type:	LBE under LBT based DAA
Antenna Gain:	2.5 dBi (Provided by manufacturer)
Power Class:	>=10mW
Receiver Category:	1

3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc) is provided by the applicant. (if applicable).

2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).

3. Sample source: sent by customer.

3.4 Test Facility

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

- **A2LA (Certificate No. 6332.01)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

- **FCC (Designation Number: CN1301)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

- **ISED (CAB Identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.
Company Number: 8617A

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4 Test Standards and Limits

The evaluation has been performed on the EUT, pursuant to the relevant requirements of the following document(s) and the harmonized EN standard(s) covering essential requirements under article 3.1 of the RED Directive (2014/53/EU).

Identity	Document Title	Version
Council Recommendation of 12 July 1999(1999/519/EC)	On the limitation of exposure of the general public to electromagnetic fields (0Hz to 300GHz)	1999
EN IEC 62311	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz)	2020

Limit: According to EN IEC 62311, the criteria listed in the below table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified table 2 of Council Recommendation 1999/519/EC.

Table 2

Reference levels for electric, magnetic and electromagnetic fields (0 Hz to 300 GHz, unperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density S_{eq} (W/m²)
0-1 Hz	—	$3,2 \times 10^4$	4×10^4	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	4 000/f	5 000/f	—
0,025-0,8 kHz	250/f	4/f	5/f	—
0,8-3 kHz	250/f	5	6,25	—
3-150 kHz	87	5	6,25	—
0,15-1 MHz	87	0,73/f	0,92/f	—
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	—
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Notes:

1. f as indicated in the frequency range column.
2. For frequencies between 100 kHz and 10 GHz, S_{eq}, E^2, H^2, and B^2 are to be averaged over any six-minute period.
3. For frequencies exceeding 10 GHz, S_{eq}, E^2, H^2, and B^2 are to be averaged over any $68/f^{1.05}$ -minute period (f in GHz).
4. No E-field value is provided for frequencies < 1 Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 25 kV/m. Spark discharges causing stress or annoyance should be avoided.

Note: The limit of power density is 10W/m².

5 Calculation Formula and Test Result

5.1 Calculation Formula

Pd = (Pout*G) / 4πR²

Where:

Pd = Power density in W/m²

Pout = Output power to antenna in W

G = Antenna Gain in linear scale

π = 3.14

R = distance to the center of radiation of antenna (in meter) = 0.2m

NOTE: Pd limit = 10W/m².

5.2 Test Results

The EIRP Data is based on the RF Test Report 4842019325300C & 4842019325300B.

For BLE:

The max EIRP is PG =		8.9	dBm =	0.0078	W;
So, $S=\frac{PG}{4R^2\pi}$	=	0.02	W/m²		

For Wi-Fi:

The max EIRP is PG =		18.2	dBm =	0.0661	W;
So, $S=\frac{PG}{4R^2\pi}$	=	0.13	W/m²		

The BLE and WiFi can simultaneous transmitting at frequency 2.4GHz band. But the maximum rate of MPE is 0.02/10+0.13/10=0.015<=1.0. according to the EN IEC 62311 section 8.3 determine the device is exclusion from SAR test.

-The End of Report-