

EN 62311:2008
ASSESSMENT REPORT

For

Shanghai High-Flying Electronics Technology Co., Ltd

Room 1002, Building 1, No.3000, Longdong Avenue, Pudong New Area, Shanghai, China

Tested Model: Elfin-EW11

Report Type: Original Report	Product Type: Elfin-EW11
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Report Number: RSHD200303002-01C	
Report Date: 2020-03-30	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Shanghai High-Flying Electronics Technology Co., Ltd
Tested Model:	Elfin-EW11
Product Type:	Elfin-EW11
Power Supply:	DC 5-18V
RF Function:	2.4G Wi-Fi
Operating Band /Frequency:	2412-2472 MHz
Channel Number:	13
Channel Separation:	5MHz
Modulation Type:	DSSS,OFDM
Antenna Type:	PCB Antenna
Maximum Antenna Gain:	-0.35 dBi

**All measurement and test data in this report was gathered from production sample serial number: 20200303002. (Assigned by BACL, Kunshan). The EUT was received on 2020-03-03.*

Objective

This report is prepared on behalf of *Shanghai High-Flying Electronics Technology Co., Ltd* in accordance with EN 62311:2008, Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.

The objective is to determine the compliance of EUT with EN 62311:2008.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with EN 62311:2008.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01 and CAB identifier CN0004 under the ISED requirement. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

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Technical Requirements Specification in EN 62311

General Description of Applied Standards

EN 62311 Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.

RF Exposure Evaluation

Limit:

According to EN 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.

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/m ²)
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.

Test method

The antenna of the product, under normal use condition is at least 20cm away from the body of the user. Warning statement of the user for keeping 20cm separation distance and the prohibition of operating to a person has been printed on the user manual. So, this product under normal use is located on electromagnetic far field between the human body.

Far Field Calculation Formula

$$E = \frac{\sqrt{30PG(\theta, \phi)}}{r}$$

G = antenna gain relative to an isotropic antenna
 θ, ϕ = elevation and azimuth angles to point of investigation
 r = distance from observation point to the antenna

Test Data**Environmental Conditions**

Temperature:	20.2 °C
Relative Humidity:	49 %
ATM Pressure:	101.2 kPa

The testing was performed by Jack Jiao on 2020-03-27.

Function	Frequency Range (MHz)	Tune-up EIRP (dBm)	Tune-up EIRP (mW)	E-Field Strength (V/m)	E-Field Limit (V/m)	Result
2.4G Wi-Fi	2412-2472	17.50	56.23	6.49	61	Pass

Note:

1. Antenna Gain (numeric): -0.35 dBi (0.92)
2. The distance from observation point to the antenna is 20cm.

EXHIBIT A - EUT PHOTOGRAPHS

Refer to report no. RSHD200303002-01B

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****** END OF REPORT ******