

RF Exposure Evaluation Report

Product : Low Power WiFi Module
Trade mark : High-Flying
Model/Type reference : HF-LPB135-10
Serial Number : N/A
Report Number : EED32L00042502
FCC ID : 2ACSV-HF-LPB135
Date of Issue : Apr. 08, 2019
: 47 CFR Part 1.1307(2015)
Test Standards : 47 CFR Part 1.1310(2015)
KDB 447498 D01v06
Test result : PASS

Prepared for:

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2 Version

| Version No. | Date | Description |
|-------------|---------------|-------------|
| 00 | Apr. 08, 2019 | Original |
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4 General Information

4.1 Client Information

| | |
|--------------------------|--|
| Applicant: | Shanghai High-Flying Electronics Technology Co., Ltd |
| Address of Applicant: | Room 1002, #1 Building A, No.3000 Longdong Avenue, Pudong, Shanghai |
| Manufacturer: | Shanghai High-Flying Electronics Technology Co., Ltd |
| Address of Manufacturer: | Room 1002, #1 Building A, No.3000 Longdong Avenue, Pudong, Shanghai |
| Factory: | China Dragon Technology Co., Ltd. |
| Address of Factory: | Building B4, Nampo road, oyster road, regard street, Baoan district, Shenzhen city |

4.2 General Description of EUT

| | |
|----------------------------------|--|
| Product Name: | Low Power WiFi Module |
| Model No.(EUT): | HF-LPB135-10 |
| Trade Mark: | High-Flying |
| EUT Supports Radios application: | IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz |

4.3 Product Specification subjective to this standard

| | |
|---|--|
| Frequency Range: | 2412MHz to 2462MHz |
| Modulation Type: | IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20): OFDM (64QAM, 16QAM, QPSK,BPSK) |
| Channel Numbers: | IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels |
| Test Power Grade: | N/A |
| Test Software of EUT: | N/A |
| Antenna Type: | PCB Antenna |
| Antenna Gain: | 1.5dBi |
| Power Supply: | DC 3.3V |
| Max Conducted Peak Output Power: | 22.44dBm The Max Conducted Peak Output Power data refer to the report EED32L00042501 |
| Sample Received Date: | Mar. 22, 2019 |
| Sample tested Date: | Mar. 22, 2019 to Apr. 02, 2019 |
| Remark: The tested sample(s) and the sample information are provided by the client. | |

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4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| 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 |

A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation:

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R= distance to the centre of radiation of the antenna

EIRP = P*G

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user.

Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. Therefore, the S of the device is calculated with R=20cm, and if it is below the limit S, then we can conclude the device complies with the rules.

5.1.2 Test Procedure

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

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5.1.3 EUT RF Exposure Evaluation

Antenna Gain: 1.5dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

| Channel | Frequency (MHz) | Max Conducted Peak Output Power(dBm) | Gain (dBi) | EIRP* (dBm) | EIRP (mW) | R (cm) | S (mW/cm ²) | Limit (mW/cm ²) | Result |
|---------|--------------------|--|---------------|----------------|--------------|-----------|----------------------------|--------------------------------|--------|
| Highest | 2480 | 22.44 | 1.5 | 23.94 | 247.74 | 20 | 0.049 | 1.0 | Pass |

Note: Refer to report No. EED32L00042501 for EUT test Max Conducted Peak Output Power value.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00042501 for EUT external and internal photos.

*** End of Report ***

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