Radio Equipment Directive-Health
For
High-Flying Electronics Technology Co., Ltd.

Embedded Wi-Fi Module
Model No.: HF-A21-SMT

Prepared for : High-Flying Electronics Technology Co., Ltd.
Address : Room 1002, Building 1, No.3000, Longdong Avenue, Pudong New Area, Shanghai, China, 201203

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited
Address : 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China
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Report No. : R011506375H
Date of Test : Jun. 12~ Jul. 23 ,2015
Date of Report : Jul. 27 ,2015

TABLE OF CONTENT

Description Page

TEST REPORT DESCRIPTION

Applicant : High-Flying Electronics Technology Co., Ltd.
Manufacturer : High-Flying Electronics Technology Co., Ltd.
EUT : Embedded Wi-Fi Module
Model No. : HF-A21-SMT
Trademark : High-Flying
Power Supply : DC 2.8V-3.6V, 200mA

Test Procedure Used:
EN 62311: 2008

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. This report shows the EUT to be technically compliant with the EN 62311:2008 requirements. The test results are contained in this report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full responsibility for the accuracy and completeness of these tests.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Jun. 12~ Jul. 23 ,2015

Prepared by : Kebo Zhang
(Engineer / Kebo Zhang)

Reviewer : Amy Ding
(Project Manager/Amy Ding)

Approved & Authorized Signer : Tom Chen
(Manager/Tom Chen)

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT : Embedded Wi-Fi Module

Model Number : HF-A21-SMT

Test Power Supply : AC 230V, 50Hz for adapter

Adapter : Model: FLDS1003-0501000C
Input: AC 100-240V, 50/60Hz, 0.15A Max
Output: DC 5V, 1.0A

Max.Output Power : 19.33dBm

Applicant : High-Flying Electronics Technology Co., Ltd.
Address : Room 1002, Building 1, No.3000, Longdong Avenue, Pudong New Area, Shanghai, China, 201203

Manufacturer : High-Flying Electronics Technology Co., Ltd.
Address : Room 1002, Building 1, No.3000, Longdong Avenue, Pudong New Area, Shanghai, China, 201203

Factory : China Dragon Technology Limited.
Address : B4 Bldg. Haosan No.1 Industry Park, Baoan Dist., Shenzhen, China

Date of received : Jun. 12, 2015

Date of Test : Jun. 12~ Jul. 23 ,2015

1.2 Description of Test Facility

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

FCC-Registration No.: 752021
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, July 10, 2013.

IC-Registration No.: 8058A-1
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, February 22, 2013.

CNAS - LAB Code: L3503
Shenzhen Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing Laboratories.

Test Location
All Emissions tests were performed
Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

1.3 Measurement Uncertainty

Radiation Uncertainty : Ur = 4.1 dB (Horizontal)
Ur = 4.3 dB (Vertical)

Conduction Uncertainty : Uc =3.4 dB

2. GENERAL PRODUCT INFORMATION

2.1 Basic Restriction

The essential requirements of Directive 99/5/EC in the article 3.1(a) and the limits must be taken from Council Recommendation 99/519/EC for General Population or form the ICNIRP Guidelines for Occupational Exposure. EN 50371:2002 Generic standard to demonstrate the compliance of low power electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields. The average power of EUT is less than 20mW then comply with basic restriction (1999/519/EC) without test.

2.2 Table for Filed Antenna

Ant.	Antenna Type	Gain (dBi)
1.	Integrated PCB	2.07

3.TEST TESULT

3.1 EMF Exposure Measurement

3.1.1 Limit

Basic Restrictions

Council Recommendation 99/519/EC Annex II
Basic restrictions for electric, magnetic and electromagnetic fields (0 Hz to 300 GHz)

Frequency range	Magnetic flux density (mT)	Current density (mA/m^2) (rms)	Whole body average SAR (W/kg)	Localized SAR (head and trunk) (W/kg)	Localized SAR (limbs) (W/kg)	Power density, S (W/m^2)
0Hz	40	-	-	-	-	-
>0-1Hz	-	8	-	-	-	-
1–4Hz	-	8/f	-	-	-	-
4Hz–1000Hz	-	2	-	-	-	-
1000Hz–100kHz	-	f/500	-	-	-	-
100kHz–10MHz	-	f/500	0.08	2	4	-
10MHz–10GHz	-	-	0.08	2	4	-
10GHz–300GHz	-	-	-	-	-	10

Note:

1. f is the frequency in Hz.

2. The basic restriction on the current density is intended to protect against acute exposure effects on central nervous system tissues in the head and trunk of the body and includes a safety factor. The basic restrictions for ELF fields are based on established adverse effects on the central nervous system. Such acute effects are essentially instantaneous and there is no scientific justification to modify the basic restrictions for exposure of short duration. However, since the basic restriction refers to adverse effects on the central nervous system, this basic restriction may permit higher current densities in body tissues other than the central nervous system under the same exposure conditions.

3. Because of electrical inhomogeneity of the body, current densities should be averaged over a cross section of 1 cm^2 perpendicular to the current direction.

4. For frequencies up to 100kHz, peak current density values can be obtained by multiplying the rms value by √2 (=1.414). For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated as-1/(2tp).

5. For frequencies up to 100kHz and for pulsed magnetic fields, the maximum current density associated with the pulses can be calculated from the rise/fall times and the maximum rate of change of magnetic flux density. The induced current density can then be compared with the appropriate basic restriction.

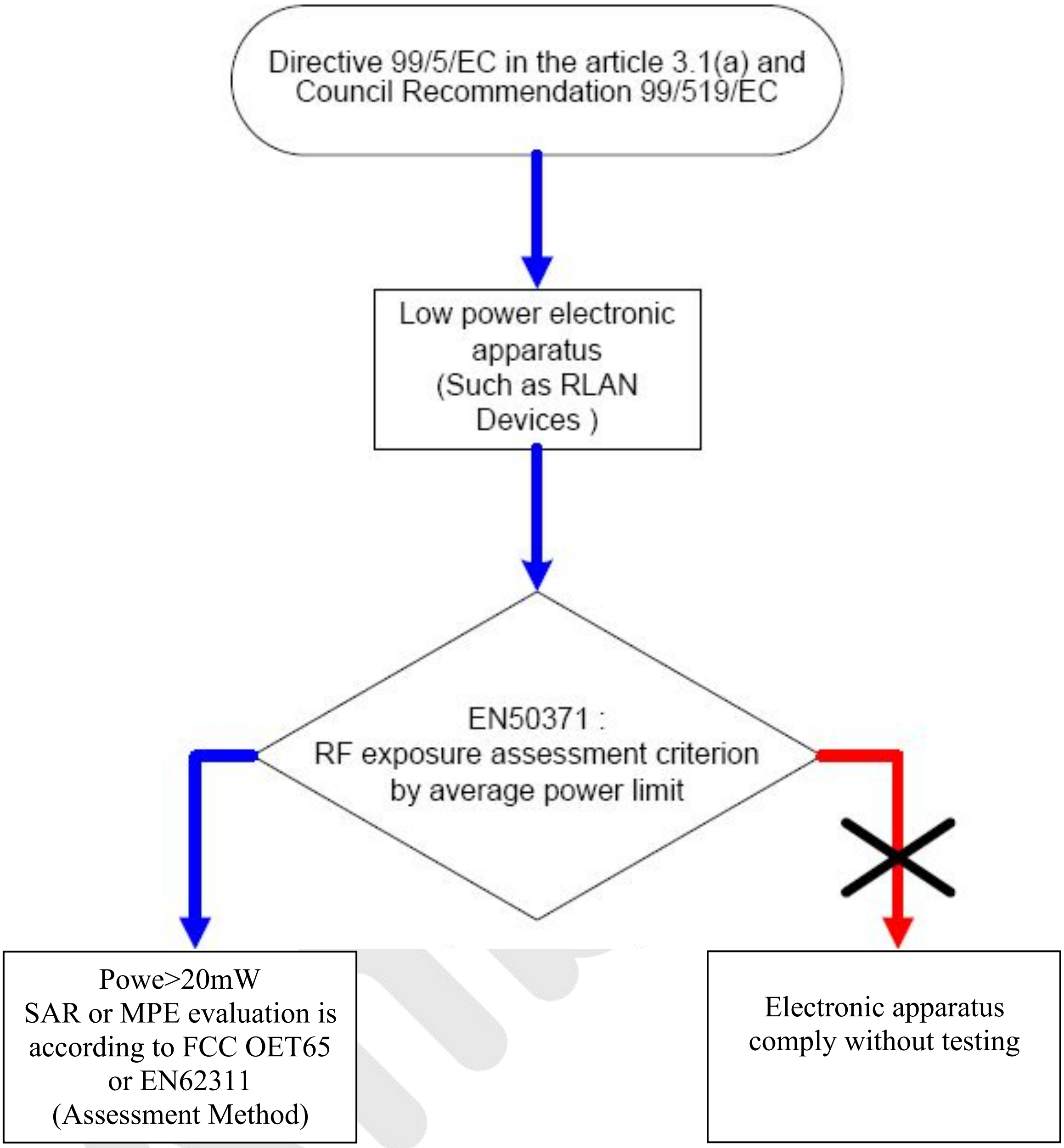
6. All SAR values are to be averaged over any six-minute period.

7. Localised SAR averaging Mass is any 10g of contiguous tissue; the maximum SAR so obtained should be the value used for the estimation of exposure. These 10g of tissue are intended to be a mass of contiguous tissue with nearly homogeneous electrical properties. In specifying a contiguous mass of tissue, it is recognized that this concept can be used in computational dissymmetry but may present difficulties for direct physical measurements. A simple geometry such as cubic tissue mass can be used provided that the calculated dissymmetric quantities have conservative values relative to the exposure guidelines.

8. For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated an=1/(2tp). Additionally, for pulsed exposures, in the frequency rage 0.3 to 10GHz and for localized exposure of the head, in order to limit and avoid auditory effects caused by thermoplastic expansion, an additional basic restriction is recommended. This is that the SA should not exceed 2mJ kg-1 averaged over 10g of tissue.

3.1.2. Evaluation Routine

Low Power Electronic Apparatus for RF exposure evaluation routine



3.2 Detailed results

3.2.1 Summary of Results

Limit (W/ m²)	Result (W/ m²)	Verdict
10	0.27	passed

3.2.2 MPE Evaluation

$S = PG * \text{Duty factor} / 4\pi R^2$
P = Peak Power Input to antenna (Watts)
G =Antenna Gain (numeric)
R = distance to the center of radiation of antenna (in meter) = 0.20 m
Note:
1) P (Watts)=(10 ^ (dBm /10))/1000
2) G (Antenna gain in numeric) = 10^ (Antenna gain in dBi /1)
3) Duty factor=1
4) $\pi=3.142$

The maximum power density at a distance of 0.2 m for EUT is shown as below:

Antenna Gain(dBi)	Peak Output Power (dBm)	Peak Output Power (W)	Duty factor	Calculated RF Exposure (W/ m²)	Limit (W/ m²)
2.07	19.33	0.0857	1	0.27	10

3.2.4 Measurement Uncertainty

Extended Uncertainty (k=2) 95% 0.5dB