

RF Exposure Evaluation Report

Product : CSM92F30 Module
Trade mark : Chipsea
Model/Type reference : CSM92F30 Module
Serial Number : N/A
Report Number : EED32L00174002
FCC ID : 2AGM5CSM92F30
Date of Issue : Aug. 15, 2019
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01v06
Test result : PASS

Prepared for:

Chipsea technologies (Shenzhen) Crop.
9F, Block A, Garden City Digital Building,
No. 1079 Nanhai Road, Nanshan District, Shenzhen

Prepared by:

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Aug. 15, 2019

Check No.: 3096349871



2 Version

Version No.	Date	Description
00	2019-08-15	Original

3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION.....	2
3 CONTENTS.....	3
4 GENERAL INFORMATION.....	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT.....	4
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD.....	4
4.4 TEST LOCATION.....	5
4.5 DEVIATION FROM STANDARDS.....	5
4.6 ABNORMALITIES FROM STANDARD CONDITIONS.....	5
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	5
5 RF EXPOSURE EVALUATION.....	6
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	6
5.1.1 Limits.....	6
5.1.2 Test Procedure.....	6
5.1.3 EUT RF Exposure Evaluation.....	7
PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS.....	8

4 General Information

4.1 Client Information

Applicant:	Chipsea technologies (Shenzhen) Crop.
Address of Applicant:	9F, Block A, Garden City Digital Building, No. 1079 Nanhai Road, Nanshan District, Shenzhen
Manufacturer:	Chipsea technologies (Shenzhen) Crop.
Address of Manufacturer:	9F, Block A, Garden City Digital Building, No. 1079 Nanhai Road, Nanshan District, Shenzhen
Factory:	Chipsea technologies (Shenzhen) Crop.
Address of Factory:	9F, Block A, Garden City Digital Building, No. 1079 Nanhai Road, Nanshan District, Shenzhen

4.2 General Description of EUT

Product Name:	CSM92F30 Module
Model No.(EUT):	CSM92F30 Module
Trade Mark:	Chipsea
EUT Supports Radios application	BT 5.0 only mode, 2402MHz to 2480MHz

4.3 Product Specification subjective to this standard

Frequency Range:	2402MHz~2480MHz	
Modulation Type:	GFSK	
Number of Channels:	40	
Test Power Grade:	N/A	
Test Software of EUT:	FixFreqTester V1.0	
Antenna Type:	PCB antenna	
Antenna Gain:	0.5 dBi	
Power Supply:	Battery:	DC 3.3V
EIRP:	-3.222dBm	
	The ERP data refer to the report EED32L00174001	
Sample Received Date:	Jul. 02, 2019	
Sample tested Date:	Jul. 02, 2019 to Aug. 14, 2019	
The tested sample(s) and the sample information are provided by the client.		

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.

5.1.3 EUT RF Exposure Evaluation

Antenna Gain: 0.5dBi

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	-3.222	0.5	-2.722	0.534	20	0.00005	1.0	Pass

Note: Refer to report No. EED32L00174001 for EUT test Max Conducted Peak Output Power value.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32L00174001 for EUT external and internal photos.

*** End of Report ***

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