

STS
TEST
S
L
A
B



RADIO TEST REPORT

Report No: STS2108113H02

Issued for

Shenzhen Zhongyou Hulian Technology Co., Ltd

Room 212, Building 3, 1970 Science and technology Park,
Minkang Road, Longhua District, Shenzhen, Guangdong,
China

Product Name:	Solar wifi camera
Brand Name:	N/A
Model Name:	SQW-2
Series Model:	SQ, ST, SD, SL
FCC ID:	2A222ZYHL-2003
Test Standard:	FCC 47CFR §2.1091

Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from STS, all test data presented in this report is only applicable to presented test sample.

Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ,
Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com





Test Report Certification

Applicant's Name : Shenzhen Zhongyou Hulian Technology Co., Ltd
Address : Room 212, Building 3, 1970 Science and technology Park, Minkang Road, Longhua District, Shenzhen, Guangdong, China
Manufacturer's Name : Huizhou Shenghonghao Industrial Co., Ltd.
Address : 11th Floor, Building 2, Xunyang Hi-Tech Park, Chayuan Road, Qiuchang Town, Huiyang District, Huizhou, Guangdong, China

Product Description

Product Name : Solar wifi camera
Brand Name : N/A
Model Name : SQW-2
Series Model : SQ, ST, SD, SL

Standards : FCC 47CFR §2.1091

This report shall not be reproduced except in full, without the written approval of STS, this document only be altered or revised by STS, personal only, and shall be noted in the revision of the document.

Date of Test :

Date of receipt of test item : 30 Aug. 2021
Date (s) of performance of tests : 30 Aug. 2021 ~ 22 Sept. 2021
Date of Issue : 22 Sept. 2021
Test Result : **Pass**

Testing Engineer : 

(Chris Chen)

Technical Manager : 

(Sean she)

Authorized Signatory : 

(Vita Li)





TABLE OF CONTENTS

1. GENERAL INFORMATION	5
1.1 GENERAL DESCRIPTION OF THE EUT	5
1.2 TEST FACTORY	5
2. FCC 47CFR §2.1091 REQUIREMENT	6
2.1 TEST STANDARDS	6
2.2 LIMIT	6
2.3 EUT OPERATION CONDITION	6
2.4 CLASSIFICATION	6
2.5 TEST RESULT	7



**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	22 Sept. 2021	STS2108113H02	ALL	Initial Issue





1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Solar wifi camera									
Brand Name	N/A									
Model Name	SQW-2									
Series Model	SQ, ST, SD, SL									
Model Difference	The difference in the model name and appearance									
Product Description	<p>The EUT is Solar wifi camera</p> <table border="1"><tr><td>Operation Frequency:</td><td>802.11b/g/n 20: 2412~2462 MHz</td></tr><tr><td>Modulation Type:</td><td>802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM</td></tr><tr><td>Antenna gain:</td><td>5dBi</td></tr><tr><td>Antenna Designation:</td><td>PIFA Antenna</td></tr></table>		Operation Frequency:	802.11b/g/n 20: 2412~2462 MHz	Modulation Type:	802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM	Antenna gain:	5dBi	Antenna Designation:	PIFA Antenna
Operation Frequency:	802.11b/g/n 20: 2412~2462 MHz									
Modulation Type:	802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM									
Antenna gain:	5dBi									
Antenna Designation:	PIFA Antenna									
Rating	Input: 5V 2A									
Battery	Rated Voltage: 3.7V Charge Limit Voltage: 4.2V Capacity: 16000mAh									
Hardware version number	LY_38M_REV3.0									
Software version number	V12.0.8									

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friis Formula

Friis Transmission Formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.



2.5 TEST RESULT

Turn up

Mode	Detector	Turn up Power
802.11b	AV	12±1dBm

ANT Gain (G)

2402-2483.5MHz: 0dBi (gain of antenna in linear scale=1)

Protocol	Max Turn up Power (dBm)	Max Turn up Power (mW)	ANT Gain(gain of antenna in linear scale)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
802.11b	13	19.953	1	0.0126	1	Pass

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