



## **MPE Report**

Applicant : Swann Communications Pty Ltd
Product Type : Swann Wire-Free Security Camera

Trade Name : Swann

Model Number : SWIFI-CAM

Test Specification : ANSI / IEEE Std.C95.1-1992 / IEEE Std. 1528-2013

47 CFR § 2.1091

47 CFR § 1.1310

Received Date : May 22, 2019
Test Period : Jun. 05, 2019
Issue Date : Jul. 18, 2019

Test Firm MRA : TW0010

designation number

#### Issue by

Approved By : Tested By : Krus Pan (Kris Pan)

A Test Lab Techno Corp.

No. 140-1, Changan Street, Bade District,

Taoyuan City 33465, Taiwan (R.O.C.)

Tel: +886-3-2710188 / Fax: +886-3-2710190

ilac MRA



Taiwan Accreditation Foundation accreditation number: 1330

#### Note:

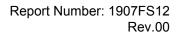
- 1. The test results are valid only for samples provided by customers and under the test conditions described in this report.
- 2. This report shall not be reproduced except in full, without the written approval of A Test Lab Technology Corporation.
- 3. The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which





**Revision History** 

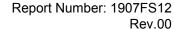
Rev.	Issue Date	Revisions	Revised By		
00	Jul. 18, 2019	Initial Issue	Jennifer Liu		





# **Contents**

1.	Description of Equipment under Test (EUT)	4
2.	Human Exposure Assessment	5
3.	RF Output Power	6
4.	Test Results	7





### 1. Reference Testing Standards

Standard	Description	Version
ANSI/IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York.	2005

### 2. Description of Equipment under Test (EUT)

	Swann Communications Pty Ltd						
Applicant	Unit 5B 706 Lorimer Street, Port Melbourne 3207, Australia						
Manufactura	Chicony Electronics (Dong Guan ) Co.,Ltd.						
Manufacturer	San Zhong Guan Li Qu, Qingxi Town, Dongguan City Guangdong 523651 China						
Product Type	Swann Wire-Free Security Camera	Swann Wire-Free Security Camera					
Trade Name	Swann	Swann					
Model Number	SWIFI-CAM						
FCC ID	VMISWIFICAM						
	Operate Band	Frequency Range (MHz)					
Frequency Range	IEEE 802.11b / 802.11g IEEE 802.11n 2.4 GHz 20 MHz	2412 - 2462					
	IEEE 802.11n 2.4 GHz 40 MHz	2422 - 2452					
Antenna Information	Туре	Max. Gain (dBi)					
	PIFA Antenna	0.49					
Antenna Delivery	1TX						
Temperature Range	-20 ~ +50°C						

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties



Report Number: 1907FS12

Rev.00

#### 3. Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled "Radiofrequency radiation exposure limits", generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as "a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. " This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: "IMPORTANT: To meet the FCC's RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna". Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a "mobile device" as defined in section § 2.1091 paragraph (b).

Exposure evaluation

$$S = \frac{PG}{4\pi R^2}$$

Where

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna.





# RF Output Power

The conducted power turn-up tolerance reference manufacturer specification.

Band	Date Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)		
	1	2412.0	19.41		
IEEE 802.11b	6	2437.0	18.95		
	11	2462.0	18.47		
	1	2412.0	18.46		
IEEE 802.11g	6	2437.0	18.05		
	11	2462.0	17.24		
	1	2412.0	17.47		
IEEE 802.11n 2.4 GHz 20 MHz	6	2437.0	17.32		
	11	2462.0	16.25		
	3	2422.0	16.35		
IEEE 802.11n 2.4 GHz 40 MHz	6	2437.0	16.06		
	9	2452.0	15.66		

Rev.00

Note: The relevant measured result has the offset with cable loss already.



Report Number: 1907FS12

Rev.00

#### 5. Test Results

Antenna	Band	Frequency (MHz)	Limit (mw)	Distance [R] (cm)	Max tune-up Power (upper limit) [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	Power with Duty cycle [TP] (mW)	Power Density [S] (mw/cm²)
Wi-Fi Antenna	2.4 GHz Wi-Fi	2412-2462	1	20	19.50	0.49	1.12	1	99.82	0.020

#### Note:

- Mobile or fixed location transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.
- 2. The Numeric Gain calculated by 10^(ant. Gain(dBi) /10).
- 3. Each band max power which perform MPE of any configurations.
- 4. The MPE results are evaluated by lowest data rate for WLAN.
- 5. The device operating IEEE 802.11 b/g/n mode is 1TX (SISO).
- 6. We used the maximum antenna gain and tune-up power to provide MPE results.

---END---