



MPE Report

Report No.: STS2512452H01

Issued for

GUANGDONG ROULE ELECTRONICS CO.,LTD.

No. 12, Pingdong 3rd Road, Nanping Industry Community,
Zhuhai City, GuangDong, China

Product Name: WIFI Video Doorbell

Brand Name:



Model Name: RL-IPA09D-48V

Series Model(s): See P5

FCC ID: YI6RL-IPA09

Test Standard: FCC 47CFR §2.1091

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the ShenZhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name : GUANGDONG ROULE ELECTRONICS CO.,LTD.
Address : No. 12, Pingdong 3rd Road, Nanping Industry Community, Zhuhai City, Guangdong, China
Manufacturer's Name : GUANGDONG ROULE ELECTRONICS CO.,LTD.
Address : No. 12, Pingdong 3rd Road, Nanping Industry Community, Zhuhai City, Guangdong, China

Product Description

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Brand Name : 

Model Name : RL-IPA09D-48V

Series Model(s) : See P5

Test Standards : FCC 47CFR §2.1091
447498 D01 Interim General RF Exposure Guidance v06

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Date of Test :

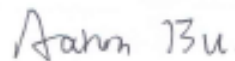
Date of receipt of test item : 2025-12-08

Date (s) of performance of tests : 2025-12-09 to 2025-12-18

Date of Issue : 2025-12-19

Test Result : **Pass**

Testing Engineer :



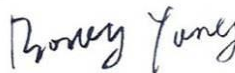
(Aaron Bu)

Technical Manager :



(Skylar Li)

Authorized Signatory :



(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	15 December 2025	STS2512452H01	ALL	Initial Issue



1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	WIFI Video Doorbell	
Brand Name		
Model Name	RL-IPA09D-48V	
Series Model(s)	RL-IPA09, RL-IPA09J, RL-IPA09G, RL-IPA09H, RL-IPA09D, RL-IPA09A, RL-IPA09F, RL-IPA09E, RL-IPA09G-DC, RL-IPA09H-DC, RL-IPA09D-DC, RL-IPA09A-DC, RL-IPA09F-DC, RL-IPA09E-DC, RL-IPA09J-CLOCK, RL-IPA09G-CLOCK, RL-IPA09H-CLOCK, RL-IPA09D-CLOCK, RL-IPA09A-CLOCK, RL-IPA09F-CLOCK, RL-IPA09E-CLOCK, RL-IPA09J-DLOCK, RL-IPA09G-DLOCK, RL-IPA09H-DLOCK, RL-IPA09D-DLOCK, RL-IPA09A-DLOCK, RL-IPA09F-DLOCK, RL-IPA09E-DLOCK, RL-IP16, RL-IP16-DC, RL-IP16-LOCK, RL-IP16-CLOCK, RL-IP16-DLOCK, RL-IP5SF, RL-IP11D, RL-IP12D-NET, RL-IP12D-NET-WIFI, RL-IP12H-NET-WIFI, RL-IP5S+0981, RL-IP5SF-0981, 103864, RL-D1, DK60, DK61, DK62, CL-DRB-WF-GR-01, MZ-R10, MZ-R20, MZ-L10, MZ-L20, MZ-R10+MZ-L10, MZ-R20+MZ-L20	
Model Difference	All the model are the same circuit and RF module, except model names.	
Product Description	The EUT is WIFI Video Doorbell	
	Operation Frequency:	SRD: 433.92MHz BLE: 2402-2480MHz WIFI: 2412-2462MHz
	Modulation Type:	SRD: OOK BLE: GFSK WIFI: DSSS, OFDM
	Antenna Type:	SRD: Spring antenna BLE: PCB Antenna WIFI: FPC antenna
	Antenna Gain:	SRD: 2 dBi BLE: 1.34 dBi WIFI: 2.63 dBi
Power Rating	DC 48V	
Adapter	NA	
Battery	NA	
Hardware version number	NA	
Software version number	NA	



1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai 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
3.0-30	1842/f	4.89/f	*(900/f ²)
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1.34-30	824/f	2.19/f	*(180f ²)
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss 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 TEST RESULT

433M

Below 1GHz: dBm=dBuV/m-95.2-4.7

Modulation	Channel Freq. (MHz)	Output Power (dBuV/m)	Output Power (dBm)
OOK	433.92	86.08	-13.82

Tune up

Mode	Detector	Tune up Power
SRD	PK	-13±1
BLE	PK	0±1dBm
WIFI	PK	12±1dBm

Protocol	Fre. (GHz)	Separation distance (cm)	Max Tune up power (dBm)	ANT Gain (dBi)	Max EIRP (dBm)	Max EIRP (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Ratio	Result
SRD	0.434	20	-12	2	-10	0.1	0.00002	0.29	0.00002	Pass
BLE	2.480	20	1	1.34	2.34	1.71	0.00034	1	0.00034	Pass
WIFI	2.462	20	13	2.63	15.63	36.56	0.00726	1	0.00726	Pass

Multiple transmission:

$$433\text{M} + \text{BLE} + \text{WIFI} = 0.00002 + 0.00034 + 0.00726 = 0.00762 < 1$$

Note: 1. The Maximum power is less than the limit, complies with the exemption requirements.

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