
Health Test Report

Report No.: AGC11034220802EH02

PRODUCT DESIGNATION : Video Doorbell

BRAND NAME : Reolink

MODEL NAME : Reolink Video Doorbell WiFi

APPLICANT : Reolink Innovation Limited

DATE OF ISSUE : Nov. 08, 2022

STANDARD(S) : EN IEC 62311:2020
EN 50665:2017

REPORT VERSION : V1.0



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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Nov. 08, 2022	Valid	Initial release

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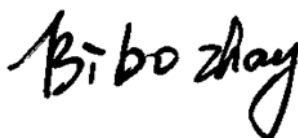
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1. GENERAL INFORMATION

Applicant	Reolink Innovation Limited
Address	FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET MONG KOK KL HONG KONG
Manufacturer	Reolink Innovation Limited
Address	FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET MONG KOK KL HONG KONG
Factory	Shenzhen Reolink Technology Co., Ltd
Address	2-4th Floor, Building 2, Yuanling Industrial Park, ShangWu, Shiyan Street, Bao' an District, Shenzhen, China
Product Designation	Video Doorbell
Brand Name	Reolink
Test Model	Reolink Video Doorbell WiFi
Date of receipt of test item	Sep. 15, 2022
Date of Test	Sep. 20, 2022 – Nov. 08, 2022
Test Result	Pass

We (AGC), Attestation of Global Compliance (Shenzhen) Co., Ltd. for compliance with the requirements set forth in the European Standard EN IEC 62311:2020. The results of testing in this report apply to the product/system which was tested only.

Prepared By



Bibo Zhang
(Project Engineer) Nov. 08, 2022

Reviewed By



Calvin Liu
(Reviewer) Nov. 08, 2022

Approved By



Max Zhang
(Authorized Officer) Nov. 08, 2022

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2. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

Product Designation	Video Doorbell
Brand Name	Reolink
Test Model	Reolink Video Doorbell WiFi
Hardware Version	PWR25 V120, N66C03 V110
Software Version	V1.0
Operation Frequency	2402-2480MHz, 2412-2472MHz; 5150-5250MHz, 5250-5350MHz, 5470-5725MHz, 5745-5825MHz
Modulation type	2.4GWIFI; 802.11b:DQPSK, DBPSK, CCK 802.11g/n: 64-QAM, 16-QAM, QPSK, BPSK 5GWIFI: 802.11a/n:64-QAM, 16-QAM, QPSK, BPSK 802.11ac/n:256-QAM, 64-QAM, 16-QAM, QPSK, BPSK 433.92MHz: OOK
Antenna Type	2.4GHz WIFI: FPC Antenna 5GHz WIFI: FPC Antenna 433.92MHz: FPC Antenna
Antenna gain	2.4GHz WIFI: Antenna 1: 2dBi, Antenna 2: 2dBi 5GHz WIFI: Antenna 1: 4dBi, Antenna 2: 4dBi 433.92MHz: -3dBi
Test Power	DC 24V

Note: For more details, please refer to the user's manual of the EUT.

3. RF EXPOSURE MEASUREMENT

3.1 INTRODUCTION

This International Standard applies to electronic and electrical equipment for which no dedicated product- or product family standard regarding human exposure to electromagnetic fields applies.

This generic standard applies to electronic and electrical apparatus for which no dedicated product- or product family standard regarding human exposure to electromagnetic fields applies.

The frequency range covered is 0 Hz to 300 GHz.

The object of this generic standard is to provide assessment methods and criteria to evaluate such equipment against basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields and induced and contact current.

NOTE: This standard is intended to cover both intentional and non-intentional radiators. If the equipment complies with the requirements in another relevant standard, e.g. EN 62479 covering low power equipment, then the requirements of this standard (IEC 62311) are considered to be met and the application of this standard to that equipment is not necessary.

3.2 TEST LIMIT

According to EN IEC 62311:2020, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified 1999/5/EC.

Reference level for electric, magnetic and electromagnetic fields (0Hz to 300GHz, Unperturbed rms values)				
Frequency Range	E-field Strength (V/m)	H-Field Strength (A/m)	B-Field (UT)	Equivalent plane Wave Power Density (W/m ²)
0-1 Hz	--	3.2×10^4	4×10^4	--
1-8 Hz	10000	$3.2 \times 10^4 / f^2$	$4 \times 10^4 / f^2$	--
8-25 Hz	10000	4000/f	5000/f	--
0.025-0.8 KHz	250/f	4/f	5/f	--
0.8-3 KHz	250/f	5	6.25	--
3-150 KHz	87	5	6.25	--
0.15-1 MHz	87	0.73/f	0.92/f	--
1-10 MHz	$87 / f^{1/2}$	0.73/f	0.92/f	--
10-400 MHz	28	0.073	0.092	2
400-2000 MHz	$1.375 f^{1/2}$	$0.0037 f^{1/2}$	$0.0046 f^{1/2}$	f/200
2-300 GHz	61	0.16	0.20	10

*Note:

1. f as indicated in the frequency range column.
2. Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded.
3. For frequencies between 100 kHz and 10 GHz, S, E2, H2 and B2 are to be averaged over any 6-min period.
4. For peak values at frequencies up to 100 kHz see Table 4, note 3.
5. For peak values at frequencies exceeding 100 kHz see Figs.1 and 2. Between 100 KHz and 10MHz, peak values for the field strengths are obtained by interpolation from the 1.5-fold peak at 100 kHz to the 32-fold peak at 10 MHz. For frequencies exceeding 10 MHz it is suggested that the peak equivalent plane wave power density, as averaged over the pulse width, does not exceed 1,000 times the S restrictions, or that the field strength does not exceed 32 times the field strength exposure levels given in the table.
6. For frequencies exceeding 10 GHz, S, E2, H2 and B2 are to be averaged over any 68/ f1.05 –min period (f in GHz).
7. No E-field value is provided for frequencies < 1 Hz, which are effectively static electric fields, Electric shock from low impedance sources is prevented by established electrical safety procedures for such equipment

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4. CLASSIFICATION OF THE ASSESSMENT METHODS

According to User manual, the antenna of the product is at least 20cm 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. So, this product under normal use is located on electromagnetic far field between the human body.

Far Field Calculation Formula

$$E = \eta_0 H = \frac{\sqrt{30PG(\theta, \phi)}}{r}$$

G = antenna gain relative to an isotropic antenna
 θ, ϕ = elevation and azimuth angles to point of investigation
 r = distance from observation point to the antenna
 η_0 = Characteristic impedance of free space

The Pointing vector gives the power density:

$$S = E \times H = \frac{E^2}{\eta} = \frac{P}{4\pi r^2}$$

For the Simultaneous transmission may use below similar formular

$$\sum_i \frac{S_i}{S_{Limit, i}} \leq 1$$

5. EUT OPERATION CONDITION

Set the EUT to transmit at lowest, middle and highest channel individually at maximum power.

Note: only worst case recorded in the test report.

6. TEST RESULT

Operating Band	Frequency	Output Power	Antenna Gain (Linera)	Output Power	E-Field Strength	E-Field Limit	Result
	MHz	dBm	(dBi)	W	V/m	V/m	Pass/Fail
2.4GWIFI	2412	16.69	1.58	0.04667	7.45	61.00	Pass
5GWIFI	5180	14.96	2.51	0.03133	7.68	61.00	Pass
TX	433.92	7.31	0.50	0.00538	1.42	28.64	Pass

Note: The 433.92MHz, 2.4GHz WIFI and 5GHz WIFI band can not transmit simultaneously.

7. CONCLUSION

Remark: EUT meets the basic requirements in the standard.



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3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
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7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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