A Test Lab Techno Corp.

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MPE Report

Applicant	:	Ring LLC
Product Type	:	Door View Cam
Trade Name	:	Ring
Model Number	:	G63R9A
Received Date	:	Apr. 08, 2019
Test Period	:	Apr. 17 ~ Apr. 19, 2019
Issue Date	:	May 03, 2019
Test Specification	:	ANSI / IEEE Std.C95.1-1992 / IEEE Std. 1528-2013
		47 CFR § 2.1091
		47 CFR § 1.1310
Test Firm MRA designation number	:	TW0010

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full. This report shall not be reproduced except in full, without the written approval of A Test Lab Techno Corp.
4. This document may be altered or revised by A Test Lab Techno. Corp. personnel only, and shall be noted in the revision section of the document.

Approved By : Edison Hu (Edison Hu)

Tested By : Kris Pan (Kris Pan)

Revision History

Rev.	Issue Date	Revisions	Revised By
00	May 03, 2019	Initial Issue	Shelly Chen

Contents

1. Description of Equipment under Test (EUT)

Applicant	Ring LLC 1523 26th Street, Santa Monica CA 90404, United States		
Manufacturer	Ring Inc. 1523 26th Street, Santa Monica CA 90404, United States		
Product Type	Door View Cam		
Trade Name	Ring		
Model Number	G63R9A		
FCC ID	2AEUPBHADV001		
Frequency Range	Operate Band		Frequency Range (MHz)
	IEEE 802.11b / 802.11g / 802.11n 2.4 GHz 20 MHz		2412 - 2462
	Bluetooth LE		2402 - 2480
Antenna Information	Antenna	Type	Max. Gain (dBi)
	WLAN	PIFA Antenna	2.78
	Bluetooth	PIFA Antenna	1.94
Antenna Delivery	1TX		
RF Evaluation	0.015 mW/cm^2		
Operate Temp. 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

2. 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.

3. RF Output Power

Band	Data Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)
IEEE 802.11b	1M	2412.0	15.29
		2437.0	15.63
		2462.0	15.60
IEEE 802.11g	6M	2412.0	10.55
		2437.0	15.37
		2462.0	10.54
IEEE 802.11n 2.4 GHz 20 MHz	6.5M	2412.0	10.55
		2437.0	14.43
		2462.0	10.50
Bluetooth LE	1M	2402.0	-1.57
		2440.0	-1.46
		2480.0	-1.28
	2M	2402.0	-1.55
		2440.0	-1.42
		2480.0	-1.24

4. Test Result

Antenna	Band	Test mode/ RB/Data rate	Frequency (MHz)	Limit (mw)/cm^2	Distance [R] (cm)	max tune-up Power [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	Power with Duty cycle [TP] (mW)	Power Density [S] (mw)/cm^2
WLAN Antenna	IEEE 802.11b	1M	2412.0	1	20	16.00	2.78	1.9	1	75.64	0.015
			2437.0	1	20	16.00	2.78	1.9	1	75.64	0.015
			2462.0	1	20	16.00	2.78	1.9	1	75.64	0.015
	IEEE 802.11g	6M	2412.0	1	20	11.00	2.78	1.9	1	23.92	0.005
			2437.0	1	20	16.00	2.78	1.9	1	75.64	0.015
			2462.0	1	20	11.00	2.78	1.9	1	23.92	0.005
	IEEE 802.11n 2.4 GHz 20 MHz	6.5M	2412.0	1	20	11.00	2.78	1.9	1	23.92	0.005
			2437.0	1	20	15.00	2.78	1.9	1	60.08	0.012
			2462.0	1	20	11.00	2.78	1.9	1	23.92	0.005
Bluetooth Antenna	Bluetooth LE	1 M	2402.0	1	20	0.00	1.94	1.56	1	1.56	0.0003
			2440.0	1	20	0.00	1.94	1.56	1	1.56	0.0003
			2480.0	1	20	0.00	1.94	1.56	1	1.56	0.0003
		2 M	2402.0	1	20	0.00	1.94	1.56	1	1.56	0.0003
			2440.0	1	20	0.00	1.94	1.56	1	1.56	0.0003
			2480.0	1	20	0.00	1.94	1.56	1	1.56	0.0003

Note:

1. Mobile or fixed location transmitters, minimum separation distance is 20 cm, 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. The device not support simultaneous transmission.