

Maximum Permissible Exposure

Equipment : Wi-Fi enabled Video Doorbell
Brand Name : RING
Model No. : Video Doorbell Pro
FCC ID : 2AEUPBHALP011
Standard : ANSI/IEEE C95.1
Applicant : Bot Home Automation, Inc.
Manufacturer : 1523 26th St, Santa Monica, CA 90404, USA
Manufacturer : Chicony Electronics (Dong Guan) Co.,Ltd.
San Zhong Guan Li Qu, Qingxi Town, Dongguan
City Guangdong 523651 China

The product sample received on Dec. 09, 2015 and completely tested on Jan. 08, 2016. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI/IEEE C95.1 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



Kevin Liang / Assistant Manager

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Revision History

[illegible]

1 Human Exposure Assessment

1.1 Maximum Permissible Exposure

1.1.1 Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	F/300	6
1500-100,000	-	-	5	6
Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	F/1500	30
1500-100,000	-	-	1.0	30
Note 1: f = frequency in MHz ; *Plane-wave equivalent power density				
Note 2: For the applicable limit, see FCC 1.1310				

1.1.2 MPE Calculation Method

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

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

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 (appropriate units, e.g., cm)

1.1.3 Result of Maximum Permissible Exposure (2.4GHz)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N _{TX})	RF Output Power (dBm)
2400-2483.5	b	2412-2462	1-11 [11]	1	15.50
2400-2483.5	g	2412-2462	1-11 [11]	1	14.19
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	1	13.19
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	1	12.96
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.					

Worst Maximum RF Output Power Result						
Exposure Environment		General Population / Uncontrolled Exposure				
Separation Distance (cm)		20				
Condition		RF Output Power (dBm)				
Modulation Mode	N _{TX}	Chain- Port 1	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
11b	1	15.50	15.50	2.29	17.79	0.01196
Maximum Permissible Exposure Limit (mW/cm ²)						1
Note 1: N _{TX} = Number of Transmit Chains						

1.1.4 Result of Maximum Permissible Exposure (Bluetooth)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N _{TX})	RF Output Power (dBm)
2400-2483.5	BR / EDR	2402-2480	0-78 [79]	1	8.47
2400-2483.5	v4.0 LE	2402-2480	0-39 [40]	1	7.20
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.					

Worst Maximum RF Output Power Result				
Exposure Environment	General Population / Uncontrolled Exposure			
Separation Distance (cm)	20			
Condition	RF Output Power (dBm)			
Modulation Mode	RF Output Power	Antenna Gain (dBi)	EIRP Power	PD (S) (mW/cm ²)
BR / EDR	8.47	2.29	10.76	0.00233
v4.0 LE	7.20	2.29	9.49	0.01770
Maximum Permissible Exposure Limit (mW/cm ²)				1

1.1.5 Result of Maximum Permissible Exposure (5.2GHz)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N _{TX})	RF Output Power (dBm)
5150-5250	a	5180-5240	36-48 [4]	1	15.96
5150-5250	n (HT20)	5180-5240	36-48 [4]	1	15.02
5150-5250	n (HT40)	5190-5230	38-46 [2]	1	14.89
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.					

Worst Maximum RF Output Power Result						
Exposure Environment		General Population / Uncontrolled Exposure				
Separation Distance (cm)		20				
Condition		RF Output Power (dBm)				
Modulation Mode	N _{TX}	Chain- Port 1	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
11a	1	15.96	15.96	3.39	19.35	0.01713
Maximum Permissible Exposure Limit (mW/cm ²)						1
Note 1: N _{TX} = Number of Transmit Chains						

1.1.6 Result of Maximum Permissible Exposure (5.8GHz)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11 Protocol	Ch. Frequency (MHz)	Channel Number	Number of Transmit Chains (N _{TX})	RF Output Power (dBm) Co-location
5725-5850	a	5745-5825	149-165 [5]	1	15.09
5725-5850	n (HT20)	5745-5825	149-165 [5]	1	14.17
5725-5850	n (HT40)	5755-5795	151-159 [2]	1	14.52
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power.					

Worst Maximum RF Output Power Result						
Exposure Environment		General Population / Uncontrolled Exposure				
Separation Distance (cm)		20				
Condition		RF Output Power (dBm)				
Modulation Mode	N _{TX}	Chain- Port 1	Sum Chain	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
11a	1	15.09	15.09	3.39	18.48	0.01402
Maximum Permissible Exposure Limit (mW/cm ²)						1
Note 1: N _{TX} = Number of Transmit Chains						

1.1.7 Result of Maximum Permissible Exposure (Co-Location)

Worst Maximum RF Output Power Result					
Exposure Environment		General Population / Uncontrolled Exposure			
Separation Distance (cm)		20			
Condition		RF Output Power (dBm)			
Modulation Mode	N _{TX}	RF Output Power (dBm)	DG (dBi)	EIRP Power	PD (S) (mW/cm ²)
11b	1	15.50	2.29	17.79	0.01196
11a (5150-5250)	1	15.96	3.39	19.35	0.01713
Co-location Total					0.02909
Maximum Permissible Exposure Limit (mW/cm ²)					1
Note 1: N _{TX} = Number of Transmit Chains					