



RF Exposure Evaluation Report

APPLICANT : Bomotti LLC
EQUIPMENT : Smart AC Plug
MODEL NAME : HD34BX
FCC ID : 2ALBG-2017
STANDARD : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Eric Huang / Manager

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.)



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Revision History



1. Administration Data

1.1. Testing Laboratory

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978

Applicant	
Company Name	Bomotti LLC
Address	28 Schenck Parkway, Building 2B, Suite 200, Asheville, North Carolina 28803

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Smart AC Plug
Model Name	HD34BX
FCC ID	2ALBG-2017
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2472 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	802.11b/g/n HT20/HT40 Bluetooth LE

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

**3. Maximum RF average output power among production units**

Band / Mode	Average Power (dBm)	
	LE	
	GFSK	
Bluetooth		4.0

Band / Channel / Frequency (MHz)	IEEE 802.11 Average Power (dBm)				
	11b	11g	HT20	HT40	
2.4GHz WLAN	Ch 1 2412	18.5	17.5	16.5	
	Ch 3 2422				15.5
	Ch 6 2437	18.5	17.5	16.5	15.5
	Ch 9 2452				15.5
	Ch10 2457				15.5
	Ch 11 2462	18.5	17.5	16.5	15.5
	Ch 12 2467	18.5	16.0	15.5	
	Ch 13 2472	16.5	13.5	13.0	



4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
(B) Limits for General Population/Uncontrolled Exposure				
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

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
2.4GHz WLAN	2412.0	2.31	18.50	20.810	0.121	120.504	0.024	1.000
Bluetooth	2402.0	2.31	4.00	6.310	0.004	4.276	0.001	1.000

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.