

## RF Exposure Report

**Report No.:** SA191202C10-2

**FCC ID:** K7SG1S0001

**Test Model:** G1S0001

**Received Date:** Dec. 02, 2019

**Date of Evaluation:** Jan. 17, 2020

**Issued Date:** Jan. 22, 2020

**Applicant:** Belkin International, Inc

**Address:** 12045 East Waterfront Drive, Playa Vista, USA, CA 90094

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, TAIWAN

**FCC Registration /  
Designation Number:** 788550 / TW0003



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### Release Control Record

Issue No.	Description	Date Issued
SA191202C10-2	Original Release	Jan. 22, 2020

## 1 Certificate of Conformity

**Product:** Smart Speaker

**Brand:** belkin

**Test Model:** G1S0001

**Sample Status:** Engineering Sample

**Applicant:** Belkin International, Inc

**Date of Evaluation:** Jan. 17, 2020

**Standards:** FCC Part 2 (Section 2.1091)

**References Test** KDB 447498 D01 General RF Exposure Guidance v06

**Guidance:** IEEE C95.3 -2002

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :**

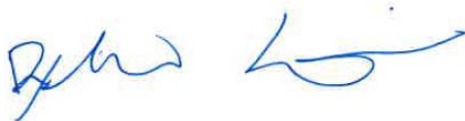


**Date:**

Jan. 22, 2020

Gina Liu / Specialist

**Approved by :**



**Date:**

Jan. 22, 2020

Dylan Chiou / Senior Project Engineer

## 2 RF Exposure

### 2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
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 <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

f = Frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Formula

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$r$  = distance between observation point and center of the radiator in cm

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

### 2.4 Antenna Gain

The antenna information is listed as below.

Antenna Type		Frequency (MHz)						
		2400	2450	2500	5150	5470	5725	5850
Dipole	Peak Gain (dBi) Antenna 1	3.75	4.16	4.34	4.38	4.13	3.59	3.96
	Peak Gain (dBi) Antenna 2	2.64	2.64	2.67	2.75	3.81	3.26	2.54

## 2.5 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN	2412-2462	20.00	6.56	20	0.090	1.00
	5180-5240	19.83	6.61	20	0.088	1.00
	5260-5320	19.75	6.61	20	0.086	1.00
	5500-5700	20.00	6.98	20	0.099	1.00
	5745-5825	19.34	6.63	20	0.079	1.00
BT	2402-2480	7.91	4.34	20	0.003	1.00

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: Directional gain =  $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.56$   
**For U-NII-1, U-NII-2A Band:**  
 Directional gain =  $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.61$  dBi  
**For U-NII-2C Band:**  
 Directional gain =  $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.98$  dBi  
**For U-NII-3:**  
 Directional gain =  $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.63$
- The worst MPE result of Qi shall refer to BV CPS report no.: SA191202C10.

### Conclusion:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.090 / 1.00 + 0.099 / 1.00 = 0.189$$

**Therefore the maximum calculations of above situations are less than the “1” limit.**

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