

Compliance Certification Services (Kunshan) Inc.

Report No.: KSEM211100190003

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# 1 Cover Page

# RF Exposure Evaluation Report

Application No.: KSEM2111001900CR

FCC ID: GV3M01553

**Applicant:** ACCO Brands, Inc.

Address of Applicant: 4 Corporate Drive, Lake Zurich, Illinois 60047, USA

Manufacturer: ACCO Brands, Inc.

Address of Manufacturer: 4 Corporate Drive, Lake Zurich, Illinois 60047, USA

Factory: BizLink (Kunshan) Co., Ltd.

Address of Factory: No.168.Nanhe Road, Economic & Technological Development

Zone, Kunshan, Jiangsu Province, China

**Equipment Under Test (EUT):** 

EUT Name: Universal 3-in-1 Pro Audio Headset Switch

Model No.: M01553

Trade mark: Kensington

FCC Rules 47 CFR §2.1091

Standard(s): KDB447498 D01 General RF Exposure Guidance v06

**Date of Receipt:** 2021-11-15

**Date of Test:** 2021-11-16 to 2021-12-01

**Date of Issue:** 2021-12-03

Test Result: Pass\*

\* In the configuration tested, the EUT complied with the standards specified above.

**EMC Lab Manager** 



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eric Lin



### Compliance Certification Services (Kunshan) Inc.

Report No.: KSEM211100190003

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Revision Record				
Version	Description	Date	Remark	
00	Original	2021-12-03	/	

Authorized for issue by:		
	Damon zhou	
	Damon Zhou / Project Engineer	
	Eria Li	
	Eric Lin / Reviewer	_



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# 3 General Information

# 3.1 General Description of E.U.T.

Power supply:	DC 5V by Adapter
Cable:	2m USB Cable, USB type C to type A female
Serial Number:	Conducted: A12150A000306
	Radiated: A12150A000305
Firmware Version:	X06

# 3.2 Technical Specifications

D1	
Antenna Gain:	Ant 1: 2.14dBi (Microchip) (Provided by manufacturer)
	Ant 2: 1.65dBi (Realtek) (Provided by manufacturer)
Antenna Type:	Antenna 1:FPC Antenna
	Antenna 2:FPC Antenna
Bluetooth Version:	BT 5.0 for Microchip, BT 5.1 for Realtek
Channel Spacing:	1MHz
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Operation Frequency:	2402MHz to 2480MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)

### BLE

DLL	
Antenna Gain:	Ant 1: 2.14dBi (Microchip) (Provided by manufacturer)
	Ant 2: 1.65dBi (Realtek) (Provided by manufacturer)
Antenna Type:	Antenna 1:FPC Antenna Antenna 2:FPC Antenna
Bluetooth Version:	BT 5.0 for Microchip, BT 5.1 for Realtek
Channel Spacing:	2MHz
Modulation Type:	GFSK
Data Rate:	1Mbps for Microchip, 1Mbps & 2Mbps for Realtek
Number of Channels:	40
Operation Frequency:	2402MHz to 2480MHz



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### 3.3 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

# 3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### • CNAS (No. CNAS L4354)

CNAS has accredited Compliance Certification Services (Kunshan) Inc. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

### • A2LA (Certificate No. 2541.01)

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

#### • FCC (Designation Number: CN1172)

Compliance Certification Services Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

### • ISED (CAB identifier: CN0072)

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

CAB Identifier: CN0072.

### VCCI (Member No.: 1938)

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600,C-11707, T-11499, G-10216 respectively.



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### 4 Test Standards and Limits

# 4.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency	Power density(mW/cm²)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30



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### 5 Measurement and Calculation

# 5.1 Maximum transmit power

BT for FCC

The Power Data is based on the RF Test Report KSEM211100190001

#### **RF Module Microchip**

Test Mode	Test Frequency (MHz)	Output Power (dBm)	Reading Power (mW)
	2402	8.30	6.76
GFSK	2441	8.25	6.68
	2480	7.02	5.04
	2402	9.14	8.20
π/4DQPSK	2441	9.16	8.24
	2480	6.85	4.84
	2402	9.51	8.93
8DPSK	2441	9.51	8.93
	2480	8.16	6.55

#### **RF Module Realtek**

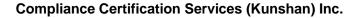
Test Mode	Test Frequency (MHz)	Output Power (dBm)	Reading Power (mW)
	2402	7.22	5.27
GFSK	2441	7.96	6.25
J. J. V.	2480	7.53	5.66
	2402	9.61	9.14
π/4DQPSK	2441	10.22	10.52
	2480	9.76	9.46
	2402	10.01	10.02
8DPSK	2441	10.67	11.67
	2480	10.18	10.42



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#### **BLE for FCC**

The Power Data is based on the RF Test Report KSEM211100190002

#### **RF Module Microchip**

Test Mode	Test Frequency	Output Power	Reading Power
rest wode	(MHz)	(dBm)	(mW)
	2402	3.38	2.18
1M	2442	3.67	2.33
	2480	2.51	1.78

#### **RF Module Realtek**

Test Mode	Test Frequency (MHz)	Output Power (dBm)	Reading Power (mW)
	2402	-0.34	0.92
1M	2442	0.53	1.13
	2480	-0.07	0.98
	2402	-0.13	0.97
2M	2440	0.53	1.13
	2480	-0.03	0.99



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### 5.2 MPE Calculation

According to the formula  $S=P/4\pi R^2$ , we can calculate S which is MPE.

Note:

- 1) P (mW)
- 2) R = distance to the center of radiation of antenna (in meter) = 20cm
- 3) MPE limit = 1mW/cm²

### For Module Microchip

#### For BT - Antenna 1:

The max. antenna gain is		2.14	dBi		
Max. Conducted Power P(mW)	Gain in Linear Scale G	Operation Distance R(cm)	Power Density (mW/cm²)	Limit (mW/cm <sup>2</sup> )	Result
8.93	1.637	20	0.00291	1	Pass

#### For BLE - Antenna 1:

The max. antenna gain is		2.14	dBi		
Max. Conducted Power P(mW)	Gain in Linear Scale G	Operation Distance R(cm)	Power Density (mW/cm²)	Limit (mW/cm <sup>2</sup> )	Result
2.33	1.637	20	0.00076	1	Pass

### For Module Realtek

#### For BT - Antenna 2:

The max. antenna gain is		1.65	dBi		
Max. Conducted Power P(mW)	Gain in Linear Scale G	Operation Distance R(cm)	Power Density (mW/cm²)	Limit (mW/cm <sup>2</sup> )	Result
11.67	1.462	20	0.00339	1	Pass

### For BLE - Antenna 2:

The max. antenna gain is		1.65	dBi		
Max. Conducted Power P(mW)	Gain in Linear Scale G	Operation Distance R(cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
1.13	1.462	20	0.00033	1	Pass



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The Module Microchip and Realtek can simultaneous transmitting, so the maximum rate of MPE is 0.00291/1.0+0.00339/1.0=0.0060<=1.0. according to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

-- End of the Report--



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