

# SPECIFICATIONS

**PRODUCT NAME : LGE HE/H&A向 ZIGBEE Module**

**MODEL NAME : SZB23W(ETWZBSUC01)**

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Designed	Checked	Approved	<b>LG Innotek Co., Ltd.</b>	
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2022.08.26	2022.08.26	2022.08.26	PAGE	13

REG. DATE : 2022. 08. 26

**Specification For Approval**

REV. NO : 1.0

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**ETWZBSUC01**

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## 1. Features

ETWZBSUC01 is the small size module for TV Accessory, IoT Devices.

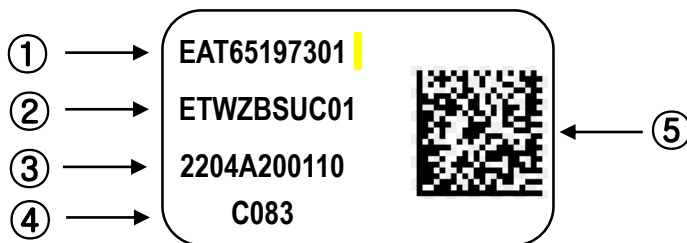
ETWZBSUC01 is based on Silicon Labs EFR32MG21 solution.

- 2.4GHz Zigbee Module
- Size : 30mm x 43mm x 7.65 mm
- PCB printed Antenna
- UART interface
- Applied the conformal coating
- Application : TV Accessory, Home Appliance

## 2. Ordering Information

Model	Description
ETWZBSUC01	2.4GHz Zigbee Module

## 3. Label Marking



① Customer P/N : EAT65197301

③ Product Lot No.

② Model No.

22 : Year

20 : Date

④ Check sum(V10: C083)

04 : Month

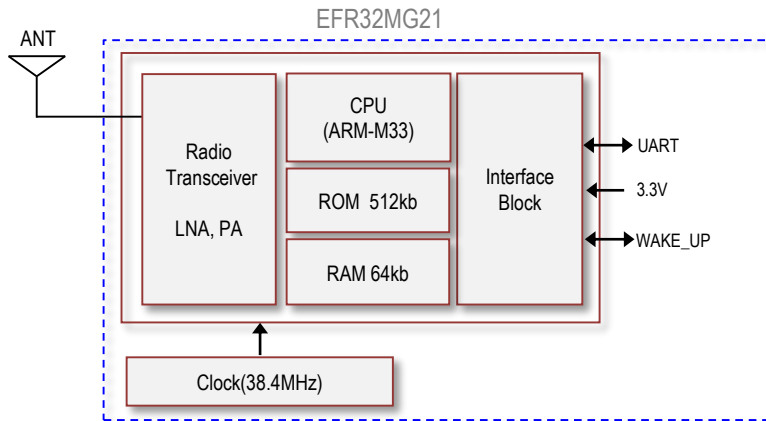
01 : Manufactured Process

⑤ 2D Matrix Code for GMES

Revision No. : A

10 : Change History of Revision

## 4. Block Diagram



## 5. Absolute Maximum Ratings

Parameter	Min	Max	Unit
Storage Temperature	-20	+80	°C
Storage Humidity (@ 40°C)	-	90	%

**Caution** : The specifications above the Table define levels at which permanent damage to the device can occur. Function operation is not guaranteed under these conditions. Operating at absolute maximum conditions for extend periods can adversely affect the long-term reliability of the device.

- Other conditions

- 1) Do not use or store modules in the corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are contained.  
Also, avoid exposure to moisture.
- 2) Store the modules where the temperature and relative humidity do not exceed 5 to 40°C and 20 to 60%.
- 3) Assemble the modules within 6 months.  
Check the soldering ability in case of 6 months over.

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## 6. Operating Test Conditions

Parameter	Min	Typ	Max	Unit
Operating Temperature	0	-	+60	°C
Operating Humidity (40°C)	-	-	85	%
Supply Voltage	3	3.3	3.6	Vdc

## 7. Standard Test Conditions

The Test for electrical specification shall be performed under the following condition  
 Otherwise this following conditions, not guaranteed this performance.

### 7-1. Ambient condition

Temperature	25 ± 5°C
Humidity	65 ± 5%

### 7-2. Power supply voltages

Input power(VDD)	Supply Voltage
+3.3V	+3.3V ± 10%

### 7-3. Current consumption

Current Consumption	Min.	Typ.	Max.	Unit
TX Mode @ 6dBm	-	-	100	mA
RX Mode	-	16	-	

### 7-4. ESD Information

Human Body Model (HBM)	Min.	Max.	Unit
Contact	-	±2	kV
Air	-	±10	

Note 1 : IEC 61000-4-2 (150pF, 330R)

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## 8. Electrical Characteristics

### 8-1. RF Characteristics

Parameter (Condition)	Min.	Typ.	Max.	Unit
Frequency Range	2400	-	2483.5	MHz
TX output power	3	6	9	dBm
Receiver Sensitivity	-	-94	-90	dBm
Maximum Input Level	-10	-	-	dBm
Frequency tolerance	-30	0	+30	ppm
Error Vector Magnitude (EVM)	-	-	35	%

\* Normal Condition : 25°C, VDD=3.3V.

\* RF characteristics is board limit. It can differ according to standards

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## 9. Environmental Tests

Item	Test Conditions	SPEC
Heat Load Test	Initial values are measured at standard test condition. Leave samples in $60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for $200 \pm 5$ hours, and in standard test condition for 30 minutes, then take measurements after 2 hours. - Supply voltage : standard $\pm 5\%$	•TX Power : $\pm 4\text{dB Max}$  • Min Input Level : $\pm 4\text{dB Max}$
Humidity Load Test	Initial values are measured at standard test condition. Leave samples in $45^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , 95% RH for $96 \pm 5$ hours, and in standard test condition for 30 minutes, then take measurements after 2 hours. - Supply voltage : standard + 5%	
Heat Test	Initial values are measured at standard test condition. Leave samples in $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $120 \pm 5$ hours, and in standard ambient for 1 hour with standard power Supply then take measurements within 1 hour.	
Cold Test	Initial values are measured at standard test condition. Leave samples in $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $120 \pm 5$ hours, and in standard ambient for 1 hour with standard power Supply then take measurements after 2 hours.	
Temperature Shock	Take measurements in standard test condition. Temp. : $-45^{\circ}\text{C} \sim +125^{\circ}\text{C}$ Duration : 30min@ $-45^{\circ}\text{C}$ , 30min@ $125^{\circ}\text{C}$ Ramp-up & Ramp-down for 5 min Cycle : 200cycle.	
Vibration Test	Initial value measure at standard test condition. Sweep rate : 1 single sweep/ minute Amplitude : 1.5 mm Frequency : 10-55Hz Duration : 1 Hours per direction (X,Y,Z)	

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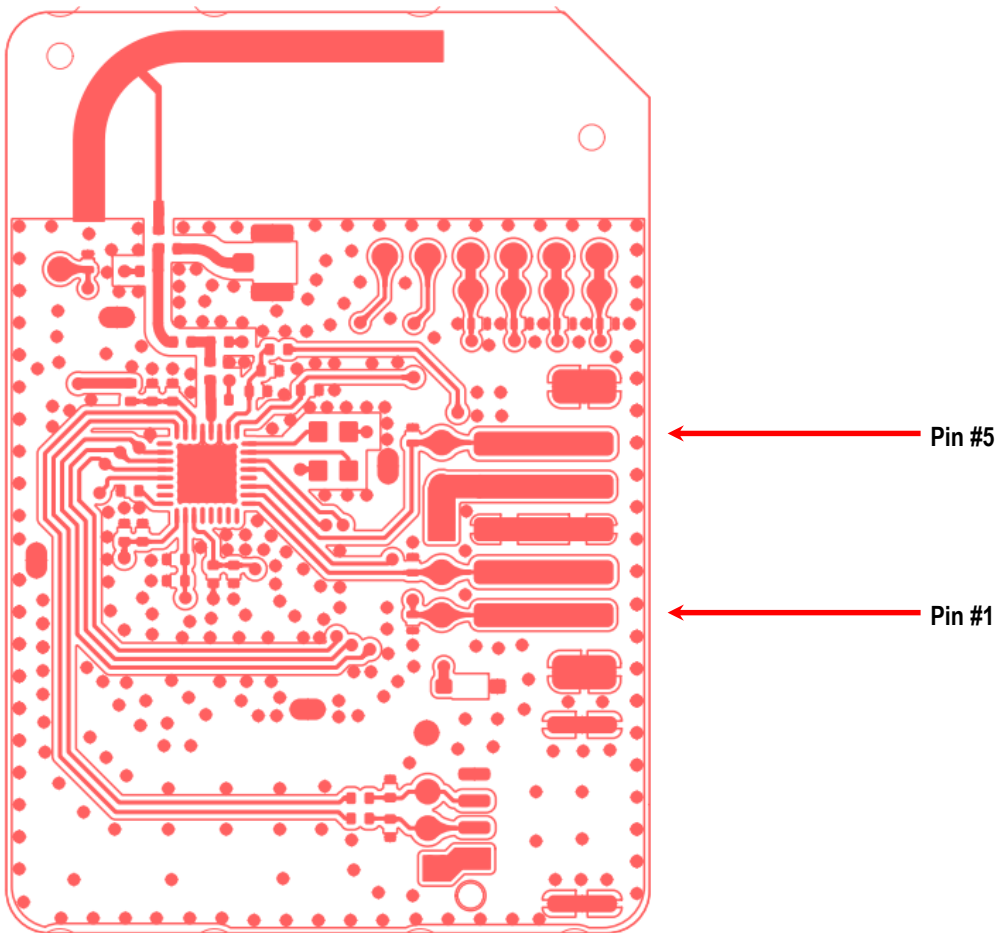
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## 10. Pin Description

Pin NO	Pin Name	I/O	Pin Description
1	UART_ Tx	I/O	UART Interface
2	UART_ Rx	I/O	UART Interface
3	GND	GND	Ground
4	3.3V	PWR	Power
5	Wake Up	I/O	Wake Up





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## 11. Mechanical Characteristics

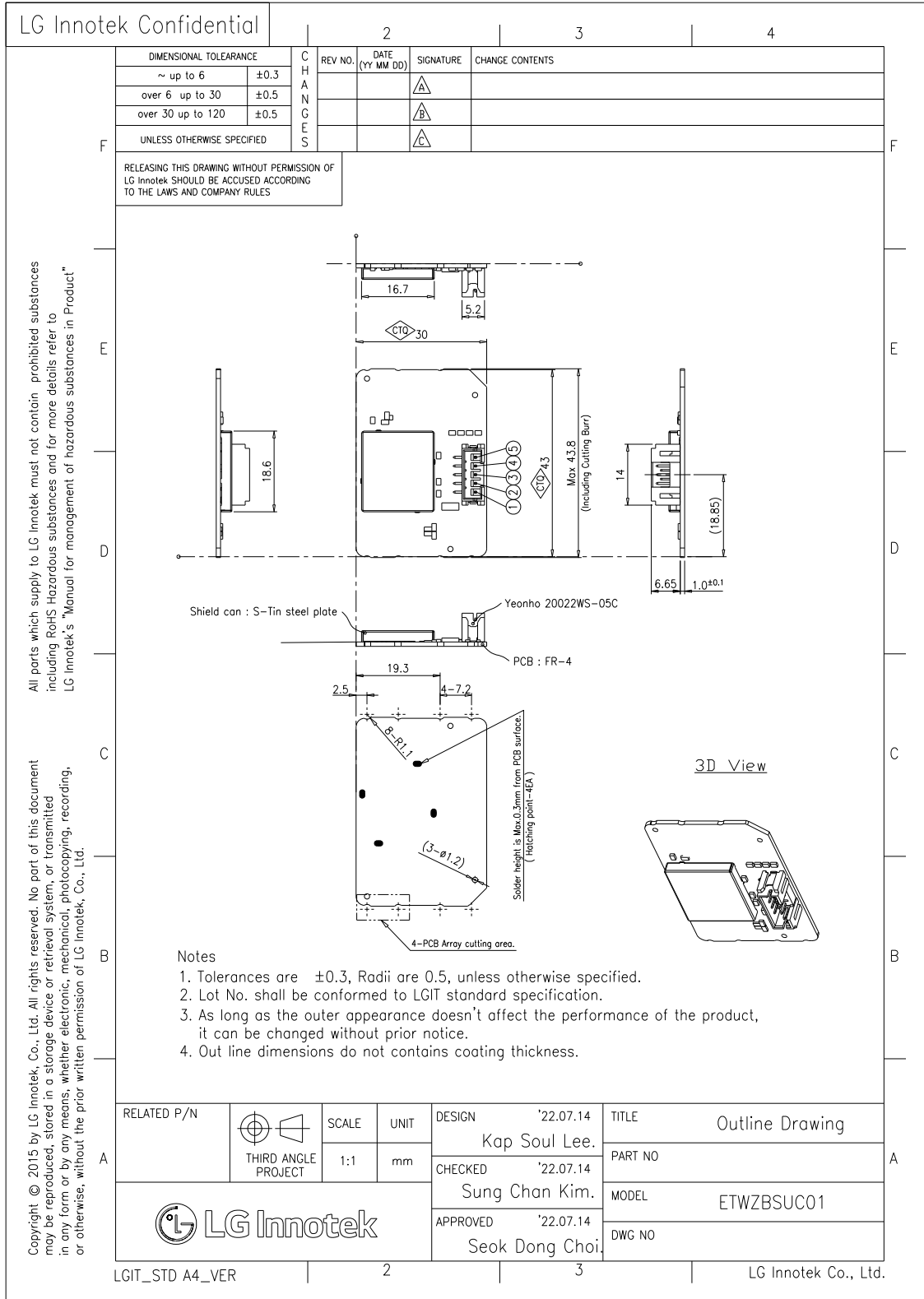
### 11-1. Outline view

Item	Test Conditions
Assembly	No defects of wiring, soldering and assembling
Appearance	No dirt, rust, corrosion or foreign material

### 11-2. Appearance structure

Item	Test Conditions
Dimension	As assembly drawing
Mounting	As assembly drawing
Weight	Approximately $4.9 \pm 0.5\text{g}$

## 12. Outline Drawing



All parts which supply to LG Innotek must not contain prohibited substances including RoHS Hazardous substances and for more details refer to LG Innotek's "Manual for management of hazardous substances in Product"

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### 13. Packing Information

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DIMENSIONAL TOLERANCE	
~ up to 6	±0.3
over 6 up to 30	±0.5
over 30 up to 120	±0.5
UNLESS OTHERWISE SPECIFIED	

REV. NO.	DATE (YY MM DD)	SIGNATURE	CHANGE CONTENTS
		A	
		B	
		C	

**WiFi Module Tray**

- o 1 Tray Packing Q'ty : 120EA
- o Size : W X D X H : 503 \* 355 \* 32.7
- o 1 Tray Packing Weight : 0.8±0.1kg (1 Module Weight : 4.9±0.5g)

**Inner Box (SILICA GEL:4EA)**

- o Inner Box Packing Q'ty : 600EA
- o 1 Inner Box Packing Weight : 4.6±0.5kg

**Shipping Box**

- o Carton Box Packing Q'ty : 1,200EA
- o Size : W X D X H : 514 \* 394 \* 248
- o 1 Carton Box Packing Weight : 9.4±0.8kg

**Labels and Markings:**

- Attached Shipping box label
- Attached shipping information label
- Attached inner box label and FIFO label
- "NOT FULL" label attached in inner and outer box if in inner box have loose q'ty.

**Carton Box (20EA)**

- o Box Material : Corrugated Paper
- o Total Packing Q'TY : 24,000EA
- o Total Packing Weight : 218±10kg

RELATED P/N	THIRD ANGLE PROJECT	SCALE	UNIT	DESIGN	TITLE
			mm	22.07.14 Lee Kap Soul.	EXP. Packing Specification
				CHECKED	PART NO
				22.07.14 Kim Sung Chan.	
				APPROVED	MODEL
				22.07.14 Choi Seok Dong.	ETWZBSUC01
					DWG NO

LGIT\_STD A4\_VER

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LG Innotek Co., Ltd.

All parts which supply to LG Innotek must not contain prohibited substances including RoHS Hazardous substances and for more details refer to LG Innotek's "Manual for management of hazardous substances in Product"

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**<FCC Statement>****FCC Part 15.19 Statements:**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**FCC Part 15.21 statement**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

**Regulatory notice to host manufacturer according to KDB 996369 D03 OEM Manual v01>**

This module has been granted modular approval as below listed FCC rule parts.

-FCC Rule parts **15C(15.247)**

Summarize the specific operational use conditions

-The OEM integrator should use equivalent antennas which is the same type and equal or less gain than an antenna listed below this instruction manual.

**Limited module installation guidance**

This transmitter module is approved as a "limited module" without own power supply regulation, So, the host installer must provide regulated supply voltages to the module when this module is installed into the host product.

**RF exposure considerations**

The module has been certified for integration into products only by OEM integrators under the following condition:

-The antenna(s) must be installed such that a minimum separation distance of at least **20 cm** is maintained between the radiator (antenna) and all persons at all times.

-The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

**-Mobile use**

As long as the three conditions above are met, further transmitter testing will not be required.

OEM integrators should provide the minimum separation distance to end users in their end-product manuals.

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**Antennas list**

This module is certified with the following integrated antenna.

-Type: **PCF Printed PIFA Type (Peak Antenna gain: 1.46 dBi)**

Any new antenna type, higher gain than listed antenna should be met the requirements of FCC rule 15.203 and 2.1043 as permissive change procedure.

**Label and compliance information****End Product Labeling**

The module is labeled with its own FCC ID and IC Certification Number. If the FCC ID and IC Certification Number are not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labeled in a visible area with the following:

“Contains FCC ID: **BEJSZB23W**”

“Contains IC: **2703H-SZB23W**”

**Information on test modes and additional testing requirements**

-OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, additional transmitter in the host, etc.).

Additional testing, Part 15 Subpart B disclaimer

-The final host product also requires Part 15 subpart B compliance testing with the modular transmitter installed to be properly authorized for operation as a Part 15 digital device.

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**<ISED Statement>****RSS-GEN, Sec. 7.1.3--(licence-exempt radio apparatus)**

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**RF Exposure**

The antenna (or antennas) must be installed so as to maintain at all times a distance minimum of at least **20 cm** between the radiation source (antenna) and any individual. This device may not be installed or used in conjunction with any other antenna or transmitter.

**l'exposition aux RF**

L'antenne (ou les antennes) doit être installée de façon à maintenir à tout instant une distance minimum de au moins **20 cm** entre la source de radiation (l'antenne) et toute personne physique.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment. Attention:

Les changements ou modifications de cet appareil non expressément approuvé par le fabricant peuvent annuler votre droit à utiliser cet équipement.

**Étiquetage du produit final (IC)**

Le module BT111 est étiqueté avec sa propre identification FCC et son propre numéro de certification IC. Si l'identification FCC et le numéro de certification IC ne sont pas visibles lorsque le module est installé à l'intérieur d'un autre dispositif, la partie externe du dispositif dans lequel le module est installé devra également présenter une étiquette faisant référence au module inclus. Dans ce cas, le produit final devra être étiqueté sur une zone visible avec les informations suivantes :

« Contient module émetteur identification FCC ID: **BEJSZB23W**

« Contient module émetteur IC : **2703H-SZB23W**

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**3. CE****Simplified EU Declaration of Conformity**

Hereby, **LG Electronics Inc.** declares that the radio equipment type **[SZB23W]** is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

<http://www.lg.com/global/support/cedoc/cedoc#>

**RF Exposure**

The antenna (or antennas) must be installed so as to maintain at all times a distance minimum of at least **20** cm between the radiation source (antenna) and any individual. This device may not be installed or used in conjunction with any other antenna or transmitter

EU Importer : LG Electronics European Shared Service Center B.V. Address :  
Krijgsman 1, 1186 DM Amstelveen, The Netherlands

The host manufacturer has the responsibility that the host device should be compliance with all essential requirement of RED.

**4. UKCA****Simplified UKCA Declaration of Conformity**

Hereby, **LG Electronics Inc.** declares that the radio equipment type **[SZB23W]** is in compliance with [the Radio Equipment Regulations 2017\(SI 2017 No.1206\)](#). The full text of the **UK** declaration of conformity is available at the following internet address:

<http://www.lg.com/global/support/cedoc/cedoc#>

EU Importer : LG Electronics U.K. Ltd  
Address : Velocity 2, Brooklands Drive, Weybridge, KT13 0SL

The host manufacturer has the responsibility that the host device should be compliance with all essential requirement of the Radio Equipment Regulations 2017.