

SPECIFICATIONS

PRODUCT NAME : : 802.11a/b/g/n/ac + Bluetooth Combo Module

MODEL NAME : LGSBWAC72

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Designed	Checked	Approved	LG Innotek Co., Ltd.	
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2016.04.26	2016.04.26	2016.04.26	DOCUMENT No.	-
			PAGE	20

REG. DATE : 2016.04.26

SPECIFICATION

REV.NO : 1.0

REV. DATE : 2016.04.26

MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

PAGE : 1 / 12

Index

No	Description	Page
1	Features	2
2	Ordering Information	2
3	Label Marking	2
4	Block Diagram	3
5	Absolute Maximum Ratings	3
6	Operating Conditions	4
7	Standard Test Conditions	4
8	Pin Description	5
9	Mechanical Characteristics	6
10	Outline Drawing	7
11	Packing Information	8
12	Change History of Revision	10
13	Regulatory Notices	11

REG. DATE : 2016.04.26

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**MODEL NAME : TWCM-K305D (LGIT)
LGSBWAC72 (LGE)**

PAGE : 2 / 12

1. Features

TWCM-K305D is the small size and low power module for IEEE 802.11ac wireless LAN & BT4.2 + HS. TWCM-K305D is based on Mediatek MT7662TU solution.

- IEEE 802.11 a/b/g/n/ac Dual Band WLAN infrastructure
- Bluetooth 4.2+ HS
- Size : 68.0mm x 38.0 mm
- Two stream spatial multiplexing up to 300Mbps(802.11n)/ 867Mbps(802.11ac)
- WLAN Metal Press antenna, BT Printed antenna on
- Use on-chip OTP (One-Time Programmable)
- Host Interface : USB2.0 (WLAN & BT)
 - This model is using the common USB2.0 to control WLAN and BT
- Security : WAPI, WEP, WPA, WPA2, WMM, AES, WEP, TKIP, CKP
- Application: DTV, DVR, HD DVD Player, Blue-ray Disk Player, STB

2. Ordering Information

Model	Description
TWCM-K305D LGSBWAC72	802.11 a/b/g/n/ac + BT combo Module, Dual Band 2T2R MIMO

3. Label marking



① Customer P/N

④ Product Lot No. : 1604B2601

② MAC Address BAR Code

-16 : Year

- 26 : Date

③ Model No

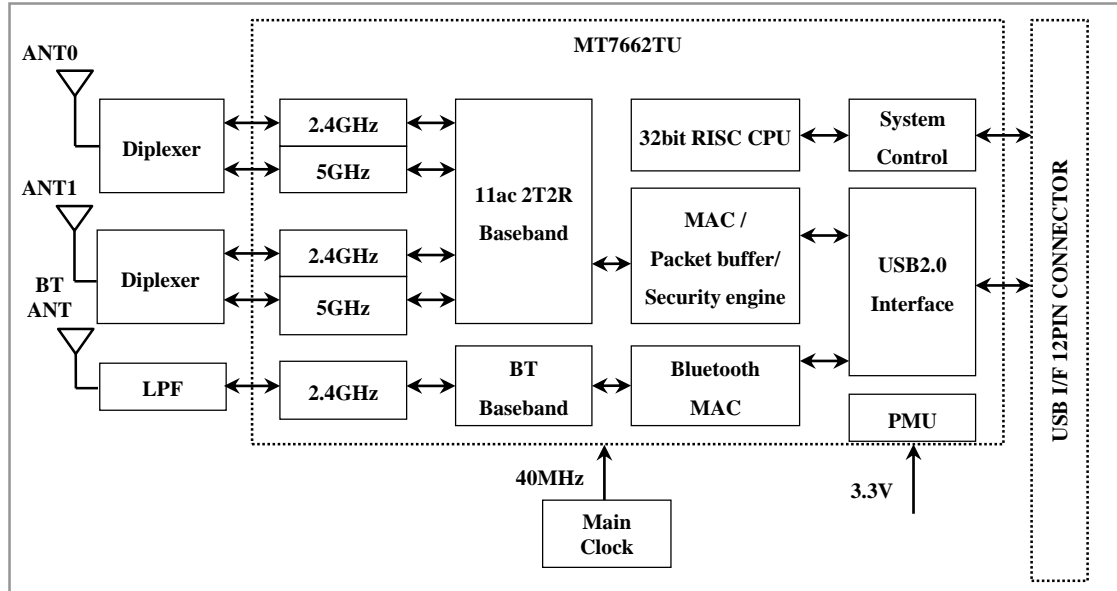
- 04: Month

- 01 : Manufactured Process

 - A :Revision No. **- 01 : Change History of Revision**

⑤ MAC Address No.

4. Block Diagram



5. Absolute Maximum Ratings

Caution : The specifications in Table 1 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.

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

< Table 1 >

. 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.

REG. DATE : 2016.04.26

SPECIFICATION

REV.NO : 1.0

REV. DATE : 2016.04.26

 MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

PAGE : 4 / 12

6. Operating Conditions

Parameter	Min	Typ	Max	Unit
Ambient Temperature	0	-	60	°C
Ambient Humidity (40°C)	-	-	85	%
Supply Voltage	3.135	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	Supply Voltage
VDD_3.3V	3.135 ~ 3.6V

7-3. Current consumption

Current Consumption	Min.	Typ.	Max.	Unit
TX Mode (11ac/80MHz)	-	480	1000	mA
Idle and Associated state	-	270	300	
Radio disabled state	-	60	70	

Note 1 : This figure is the RMS(root mean square) Value.

7-4. ESD Information

Human Body Model (HBM)	Min.	Max.	Unit
Contact	-	±2	kV
Air	-	±15	

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

※ Test condition : After 8-pin USB Cable connect to module, progress ESD test.

REG. DATE : 2016.04.26

SPECIFICATION

REV.NO : 1.0

REV. DATE : 2016.04.26

 MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

PAGE : 5 / 12

8. Pin Description

Pin No.	Pin Name	I/O	Pin Description
1	VCC	I	Power Supply 3.3V
2	USB D-	I/O	USB Communication signal USB D-
3	USB D+	I/O	USB Communication signal USB D+
4	GND	I	Ground
5	WL_HOST_WAKE	O	Wake On WLAN
6	VCC	I	Power Supply 3.3V
7	BT_REG_ON	O	BT Regulator ON
8	GND	I	Ground
9	BT_DEV_Wake	O	BT_DEV_Wake
10	BT_HOST_Wake	O	BT_HOST_Wake
11	GND	I	Ground
12	GND	I	Ground

REG. DATE : 2016.04.26

SPECIFICATION

REV.NO : 1.0

REV. DATE : 2016.04.26

MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

PAGE : 6 / 12

9. Mechanical Characteristics**1) Outline view**

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

2) Appearance structure

Item	Test Conditions
Dimension	As assembly drawing
Mounting	As assembly drawing
Weight	9.85g

REG. DATE : 2016.04.26

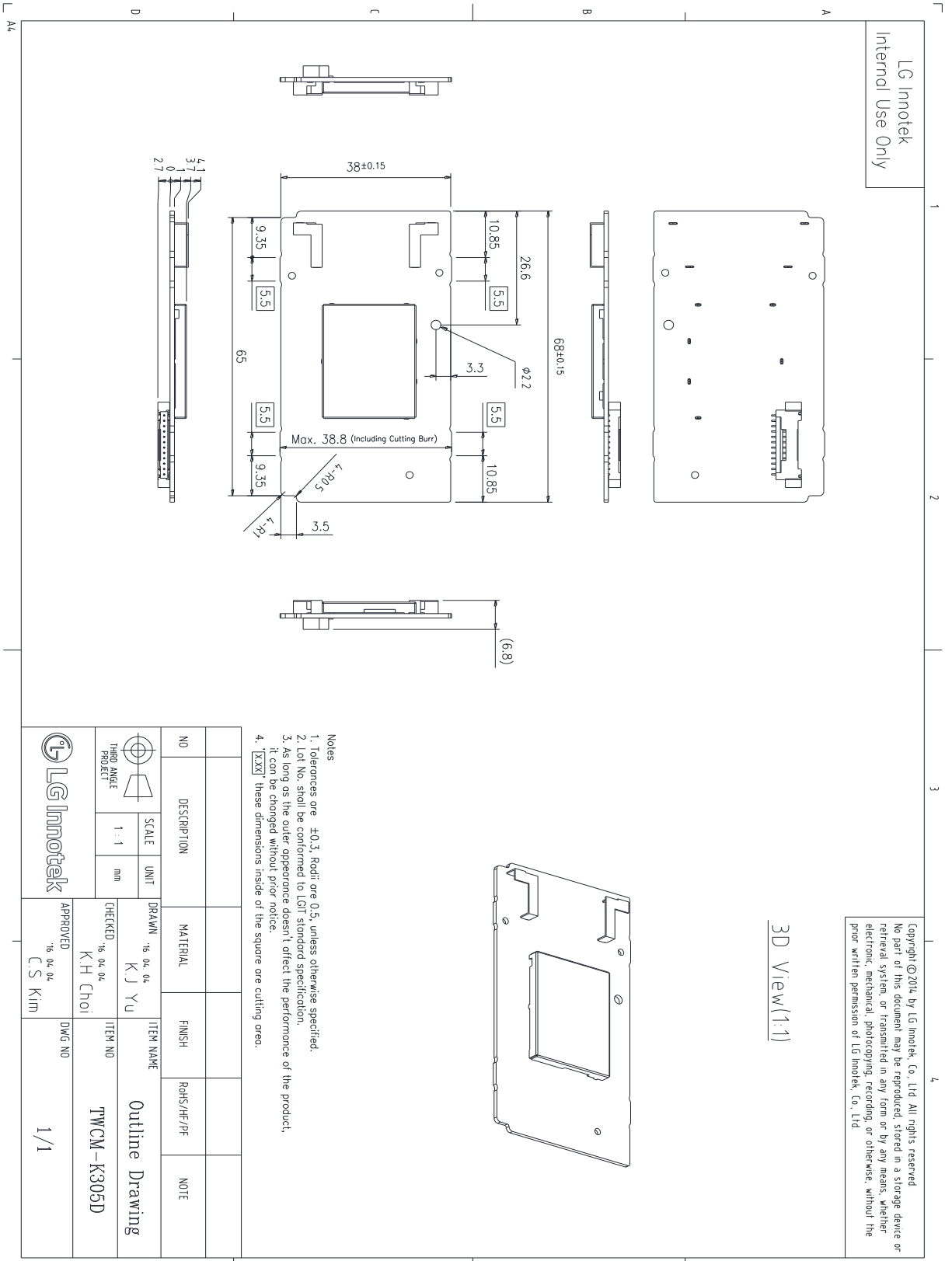
SPECIFICATION

REV.NO : 1.0

REV. DATE : 2016.04.26

 MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

PAGE : 7 / 12

10. Outline Drawing


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3D View(1:1)

- Notes
1. Tolerances are ±0.3, Radii are 0.5, unless otherwise specified.
 2. Lot No. shall be conformed to LGIT standard specification.
 3. As long as the outer appearance doesn't affect the performance of the product, it can be changed without prior notice.
 4. [XXX] these dimensions inside of the square are cutting area.

	SCALE	UNIT	DRAWN '16 04 04 K J Y U	MATERIAL	FINISH	RoHS/HF/PF	NOTE
	1 : 1	mm					
		CHECKED '16 04 04 K H Choi		ITEM NAME Outline Drawing		ITEM NO TWCM-K305D	
APPROVED '16 04 04 C S Kim		DWG NO 1/1					

REG. DATE : 2016.04.26

SPECIFICATION

REV.NO : 1.0

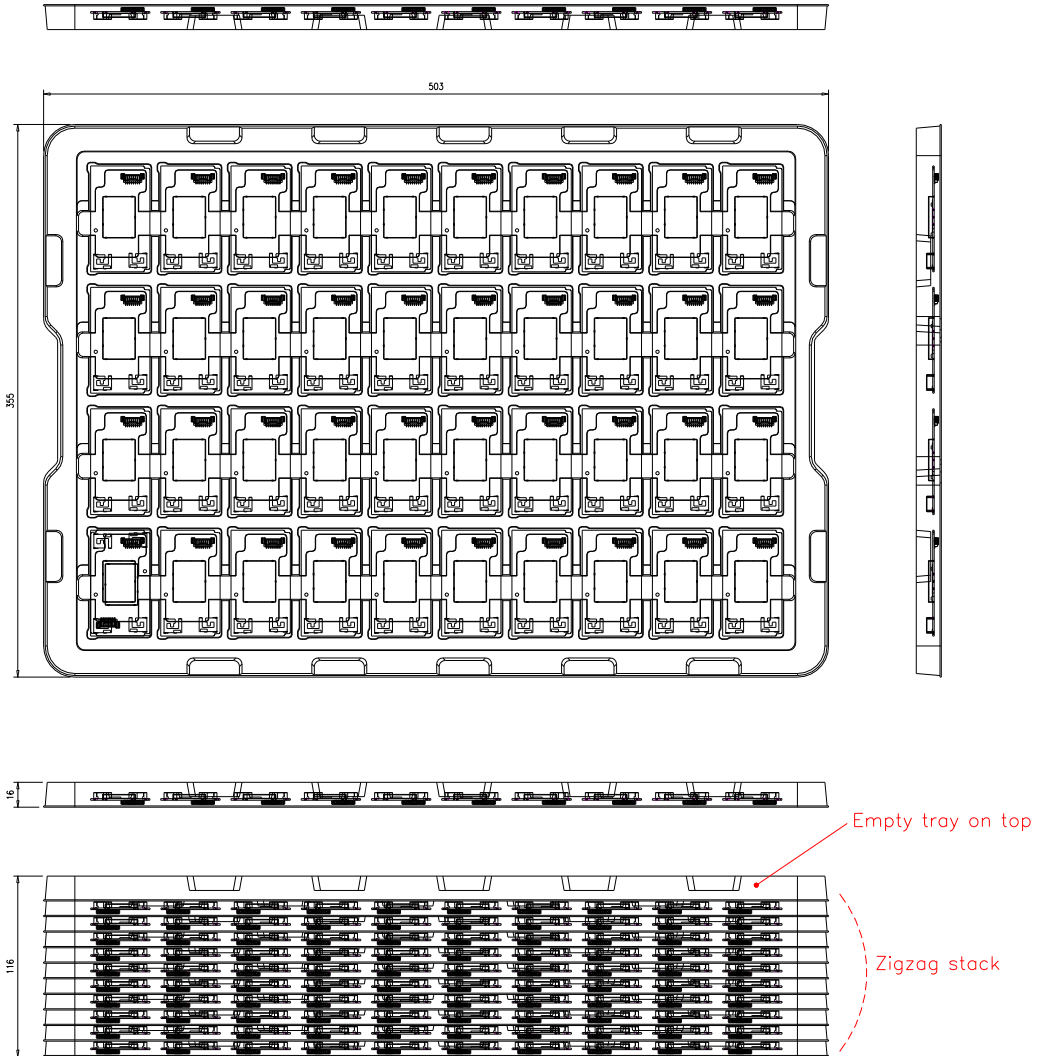
REV. DATE : 2016.04.26

MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

PAGE : 8 / 12

11. Packing Information

PACKING SPECIFICATION



PART NO.		NAME		MATERIAL		SPEC.		FINISH		A4 SIZE
						UNIT mm	SCALE N/A	5PKQ00618A		
						DSGD.	DRAW.	TITLE Packing Tray		
						APPD.	CHKD.	DOCUMENT NO.		1/2
ZONE	SYMB	DATE OR NO.	APPD	CHKD	DSGD	'14.09.11 Yang J. E.	'14.09.11 Yu K. J.	'14.09.10 Muhamad Wiradinata		

REG. DATE : 2016.04.26

SPECIFICATION

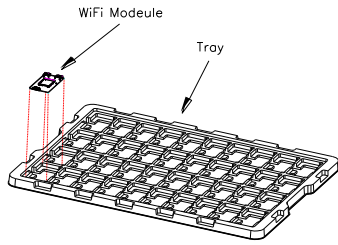
REV.NO : 1.0

REV. DATE : 2016.04.26

MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

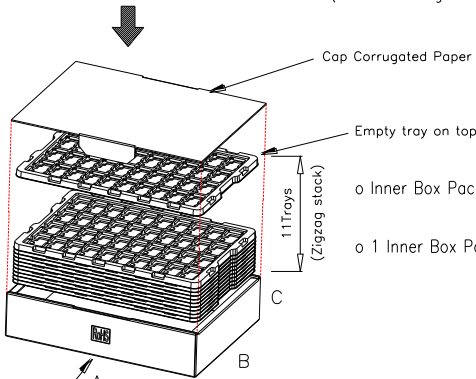
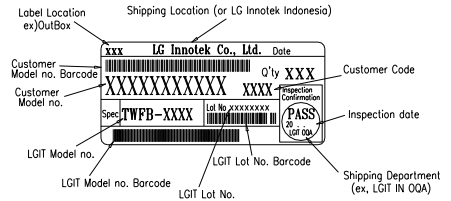
PAGE : 9 / 12

PACKING SPECIFICATION

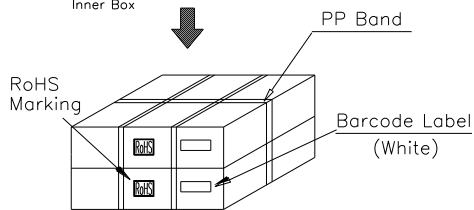
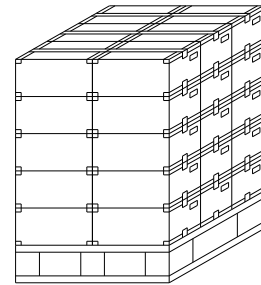


- o 1 Tray Packing Q'ty : 40EA
- o Size : W X D X H : 503 * 355 * 16
- o 1 Tray Packing Weight : 0.6±0.1kg
(1 Module Weight : 9.7±1g)

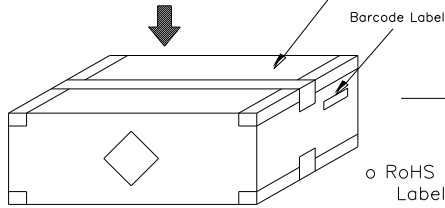
BARCODE LABEL SPECIFICATION



- o Inner Box Packing Q'ty : 400EA
- o 1 Inner Box Packing Weight : 6.6±0.5kg

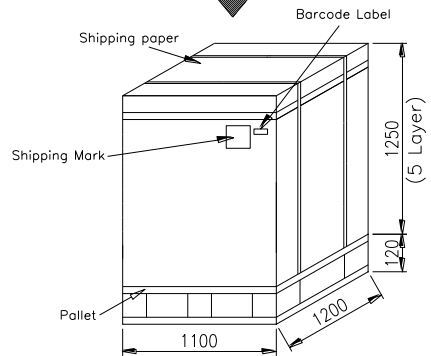


o Including VCI Film



- o Carton Box Packing Q'ty : 800EA
- o Size : W X D X H : 514 * 394 * 248
- o 1 Carton Box Packing Weight : 14.0±0.8kg

- o RoHS Marking : Label, Stamp, Printing
- o Marking Color : Gray or Red for Stamp, Label, Printing on the Board and etc. Black only for Printing on Label.



(CARTON BOX : 30EA)

- o Box Material : Corrugated Paper
- o Total Packing Q'TY : 24,000EA
- o Total Packing Weight : 425±5kg

PART NO.		NAME		MATERIAL		SPEC.		FINISH		A4
						UNIT	SCALE	TWCM-K305D		
						mm	N/A			
						DSGD.	DRAW.	TITLE		
								EXP. Packing Specification		
								DOCUMENT NO.		
								2/2		

REG. DATE : 2016.04.26

SPECIFICATION

REV.NO : 1.0

REV. DATE : 2016.04.26

MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

PAGE : 11 / 12

Regulatory Notices**1. FCC****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.

FCC Part 15.105 statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

OEM Responsibilities to comply with FCC and Industry Canada Regulations

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.

As long as the two condition above is met, further transmitter testing will not be required. However, the 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, etc.).

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: BEJLGSBWAC72

"Contains IC: 2703H-LGSBWAC72"

REG. DATE : 2016.04.26

SPECIFICATION

REV.NO : 1.0

REV. DATE : 2016.04.26

MODEL NAME : **TWCM-K305D (LGIT)**
LGSBWAC72 (LGE)

PAGE : 12 / 12

2. IC**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 : BEJLGSBWAC72

« Contient module émetteur IC : 2703H-LGSBWAC72”

3. CE

Hereby, ' LG Electronics USA, Inc.' declares that this LGSBWAC72 is in compliance with the essential requirements and other relevant provisions of directive 1999/5/EC.