User Manual

PRODUCT NAME : RF Module

MODEL NAME : LGSBWAC03

The information contained herein is the exclusive property of LG Innotek and shall not be distributed, reproduced or disclosed in whole or no in part without prior written permission of LG Innotek.

Index

No	Description	Page
1	Features	2
2	Picture of Product	2
3	Installation Manual	3
4	Block Diagram	4
5	Absolute Maximum Ratings	4
6	Operating Conditions	5
7	Standard Test Conditions	5
8	Pin Description	6
9	Out Drawing	7
10	Packing Information	8

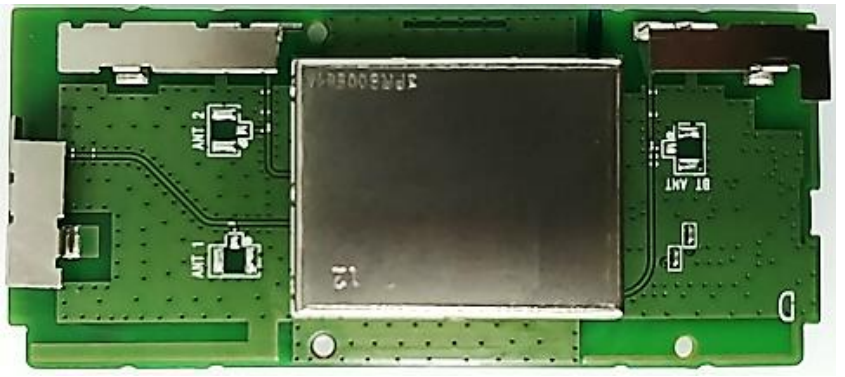
Copyright©. 2020. All Rights Reserved.

1. Features

LGSBWAC03 is the small size and low power module for IEEE 802.11ac wireless LAN & BT5.0 + HS. ETWCFMBC02 is based on Mediatek MT7663BUN solution.

- IEEE 802.11 a/b/g/n/ac
- Bluetooth 5.0+ HS , BLE
- Size : 68.0mm x 30.0 x 7.35 mm
- Two stream spatial multiplexing up to 300Mbps(802.11n) / 867Mbps(802.11ac)
- 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, TKIP, CKP
- Application: DTV, DVR, HD DVD Player, Blue-ray Disk Player, STB

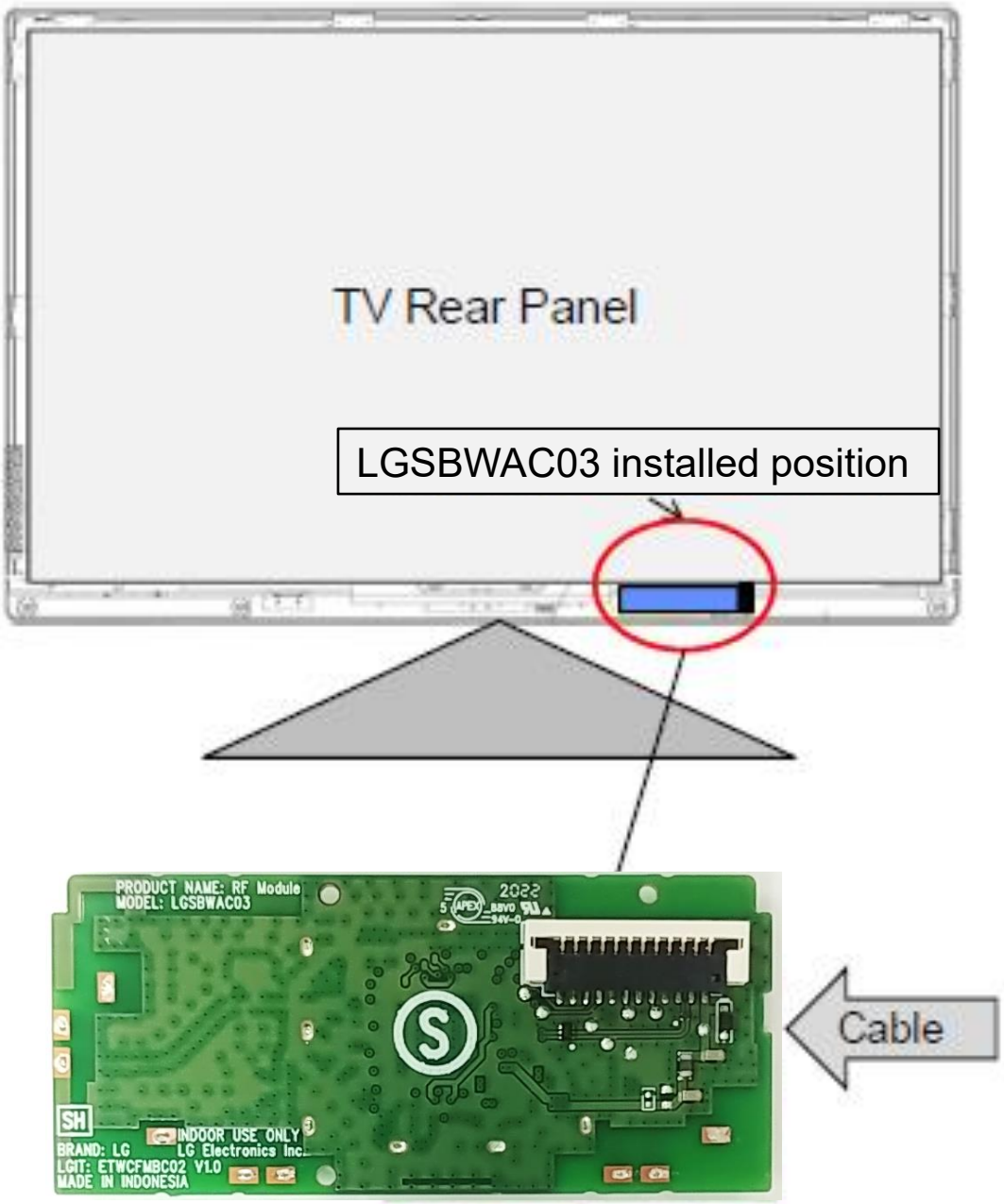
2. Picture of Product



Copyright©. 2020. All Rights Reserved.

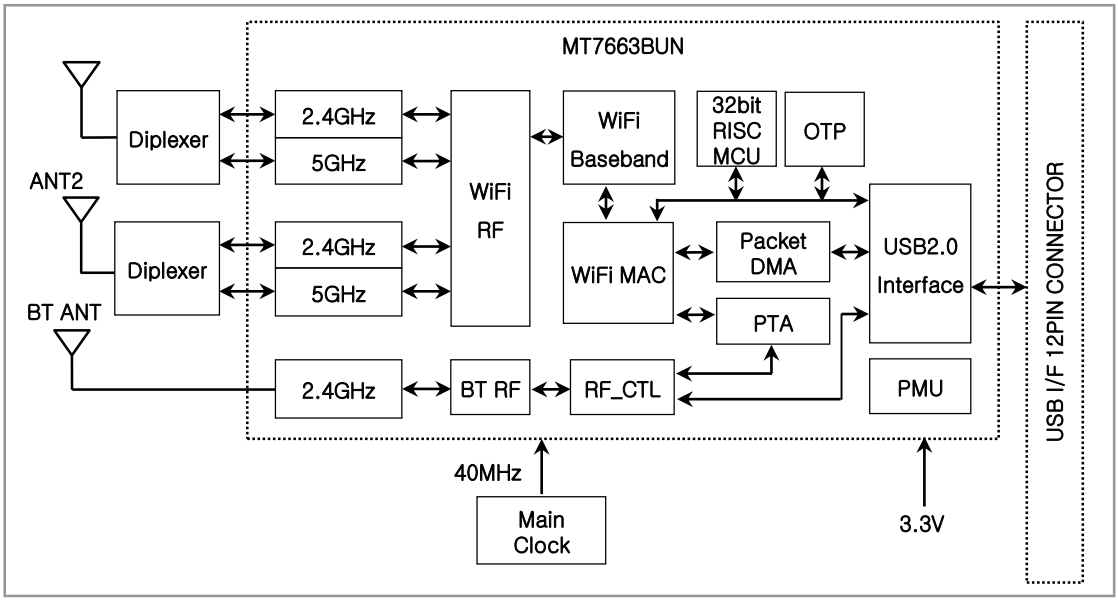
3. Installation Manual

Install the module like below in the back of the TV



Copyright©. 2020. All Rights Reserved.

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	℃
Storage Humidity (40℃)	-	90	%

. 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℃ and 20 to 60%.
3) Assemble the modules within 6 months.
   Check the soldering ability in case of 6 months over.

Copyright©. 2020. All Rights Reserved.

6. Operating Conditions

Parameter	Min	Typ	Max	Unit
Ambient Temperature	0	-	60	℃
Ambient Humidity (40℃)	-	-	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

Temparature	25 ± 5℃
Humidity	65 ± 5%

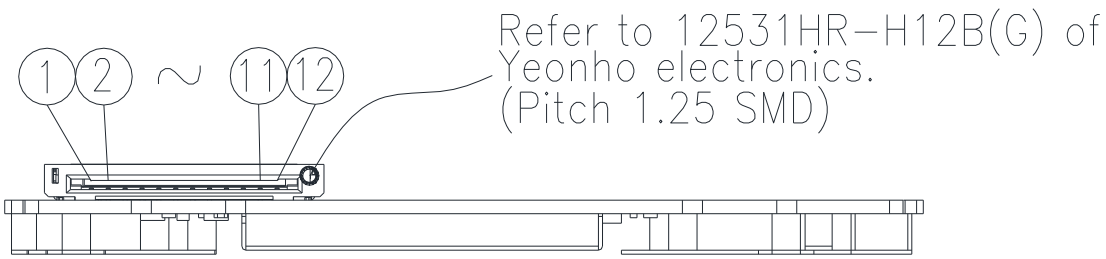
7-2. Power supply voltages

Input Voltage	Supply Voltage
VDD_3.3V	3.135 ~ 3.6V

Copyright©. 2020. All Rights Reserved.

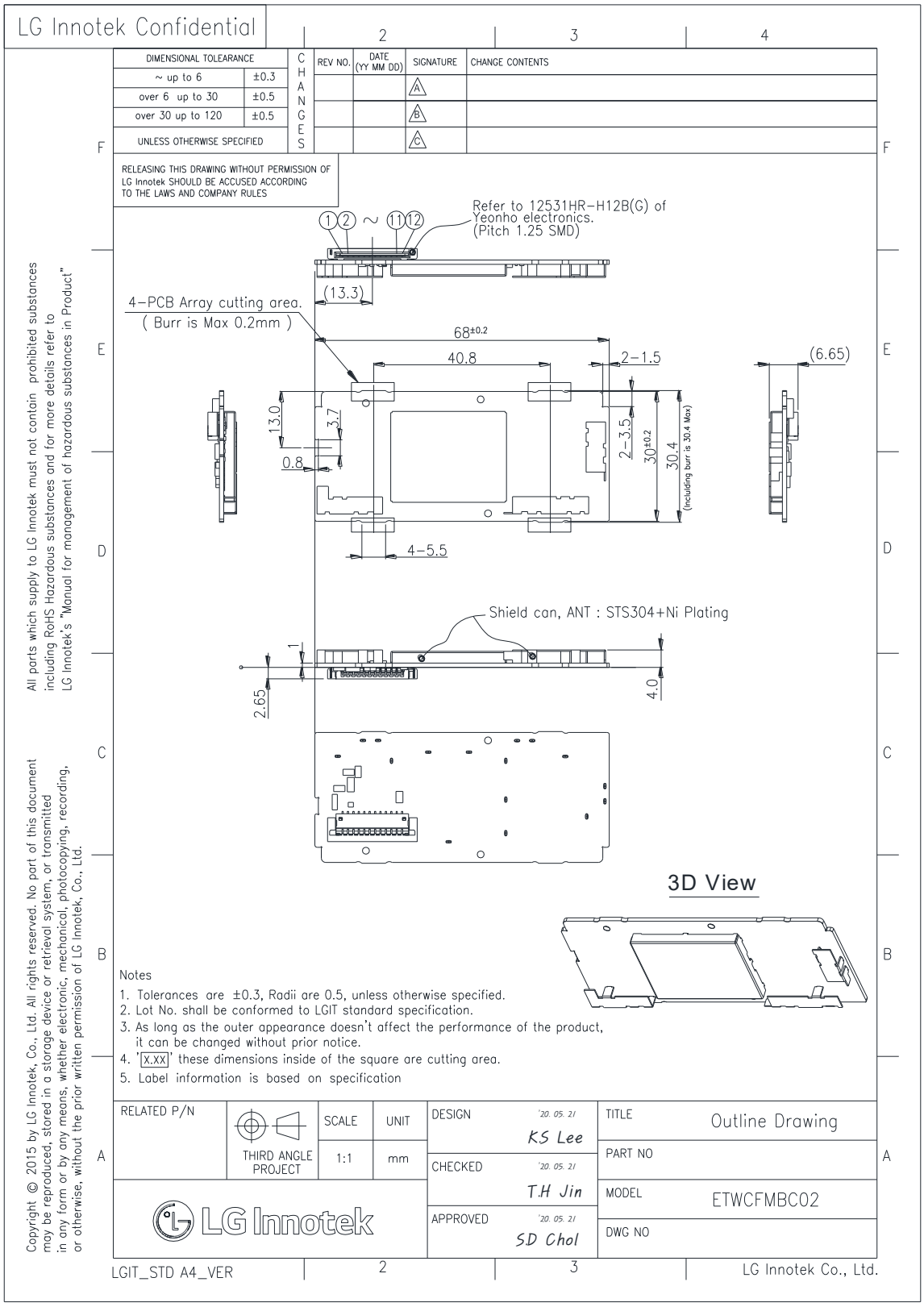
8. Pin Description

Pin No.	Pin Name	I/O	Pin Description
1	VCC	I	VDD 3.3V
2	D-	I/O	USB Communication signal USB_DN
3	D+	I/O	USB Communication signal USB_DP
4	GND	-	GND
5	WOWL	O	Wake On WLAN
6	VCC	I	VDD 3.3V
7	RESUME	I	SUSPEND_RESUME
8	GND	-	GND
9	RESET	I	Bluetooth device wake up (option)
10	WOBLE	O	Host wake up. (Signal from Wi-Fi module to the host)
11	GND	-	GND
12	VCC	-	VDD 3.3V



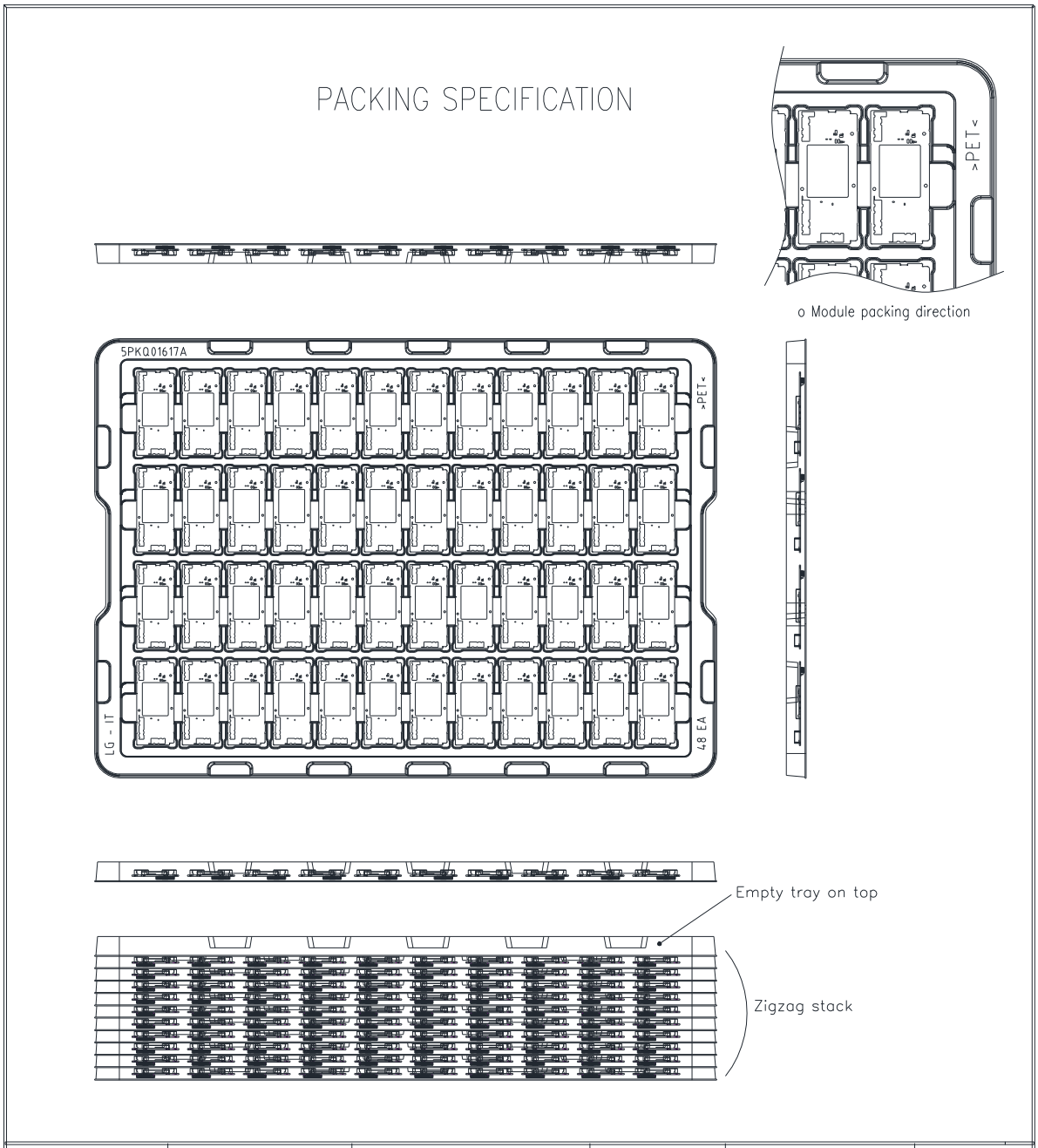
Copyright©. 2020. All Rights Reserved.

9. Outline Drawing



Copyrightⓒ. 2020. All Rights Reserved.

10. Packing Information



					A4
PART NO.	NAME	MATERIAL	SPEC.	FINISH	SIZE

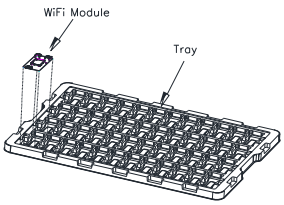
ZONE	SYMB	DATE OR NO.	APPD	CHKD	DSGD	APPD.	CHKD.	DSGD.	DRAW.	UNIT mm	SCALE N/A	ETWCFMBC02
							20.06.03 Lee K.S.		20.06.03 Lee K.S.			TITLE EXP. Packing Specification
												DOCUMENT NO.

Copyright©. 2020. All Rights Reserved.

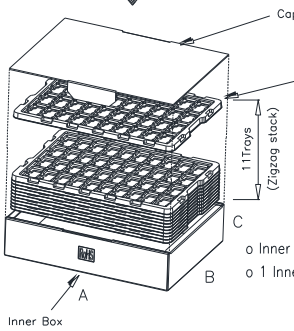
LG Innotek Confidential

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

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

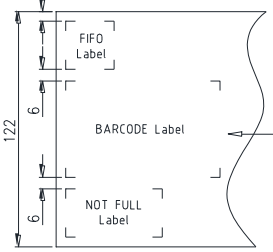


- o 1 Tray Packing Q'ty : 48EA
- o Size : W X D X H : 503 * 355 * 16
- o 1 Tray Packing Weight : 0.6±0.1kg (1 Module Weight : 8.3±1g)



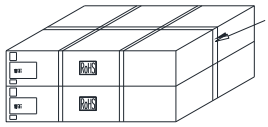
- o Inner Box Packing Q'ty : 480EA
- o 1 Inner Box Packing Weight : 6.6±0.5kg

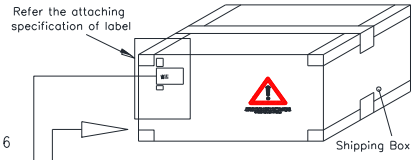
< Attaching specification of label. >



– Attached inner box label and FIFO label

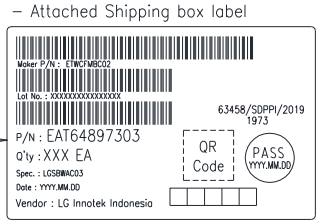
– "NOT FULL" label attached in inner and outer box if in inner box have loose q'ty.



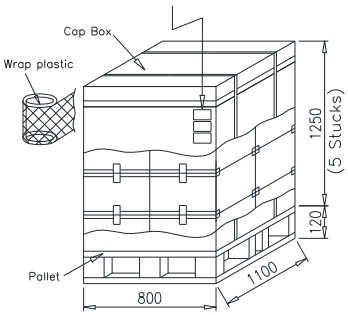


- o Carton Box Packing Q'ty : 960EA
- o Size : W X D X H : 514 * 394 * 248
- o 1 Carton Box Packing Weight : 14.0±0.8kg

– Attached Shipping box label



– Attached shipping information label



(CARTON BOX : 20EA)

- o Box Material : Corrugated Paper
- o Total Packing Q'TY : 19,200EA
- o Total Packing Weight : 295±10kg

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"

Copyright © 2015 by LG Innotek, Co., Ltd. All rights reserved. No part of this document may be reproduced, stored in a storage device or retrieval system, or transmitted in any form or by any means, whether electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of LG Innotek, Co., Ltd.

RELATED P/N	THIRD ANGLE PROJECT	SCALE	UNIT	DESIGN	'20. 05. 27 Lee Kap Soul.	TITLE	EXP. Packing Specification
		–	mm	CHECKED	'20. 05. 27 Jin Tae Hoon.	PART NO	
LG Innotek				APPROVED	'20. 05. 27 Choi Seok Dong.	MODEL	ETWCFMBC02
						DWG NO	

LGIT_STD A4_VER | LG Innotek Co., Ltd.

Copyright ⓒ. 2020. All Rights Reserved.

<Regulatory notice>

1. 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.

Responsible Party Information

Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information

Responsible Party – U.S. Contact Information

LG Electronics USA
1000 Sylvan Avenue Englewood Cliffs
New Jersey, United States, 07632
Telephone number or internet contact information

Copyrightⓒ. 2020. All Rights Reserved.

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

List of applicable FCC rules
This module has been granted modular approval as below listed FCC rule parts.
- FCC Rule parts 15C(15.247 / 15.407)

Summarize the specific operational use conditions
-The OEM integrator should use equivalent antennas which is the same type and equal or less gain then an antenna listed in this instruction manual.

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.

Antennas list
This module is certified with the following integrated antenna.
-Type: Metal antenna (Internal Antenna)
- Max. peak Antenna gain

Frequency Band	Dual Band Ant1	Dual Band Ant 2	BT Ant (2402-2480)
2.4G (2412-2472)	-1.19 dBi	1.50 dBi	1.19 dBi
UNII-1 (5180-5240)	0.05 dBi	1.42 dBi	
UNII-2A (5260-5320)	0.98 dBi	1.45 dBi	
UNII-2C (5500-5720) (without 5600-5650)	1.41 dBi	1.37 dBi	
UNII-3 (5745-5825)	1.44 dBi	1.42 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: BEJLGSBWAC03”
“Contains IC: 2703H-LGSBWAC03”

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.

Copyrightⓒ. 2020. All Rights Reserved.

2. ISED

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 LGSBWAC03 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: BEJLGSBWAC03 »
« Contient module émetteur IC : 2703H-LGSBWAC03 »

"The 5150-5250 MHz band is restricted to indoor use only."

Copyright©. 2020. All Rights Reserved.