

# User Manual

**PRODUCT NAME : RF Module**

---

**MODEL NAME : ETWFAEWC01**

---

**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.**

REG. DATE : 2020.04.09

**User Manual**

REV. NO : v1.0

REV. DATE : 2020.04.09

**MODEL NAME : ETWFAEWC01**

PAGE : 1 / 7

**Table of Contents**

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

## 1. Features

ETWFAEWC01 is the module for IEEE 802.11b/g/n wireless LAN.

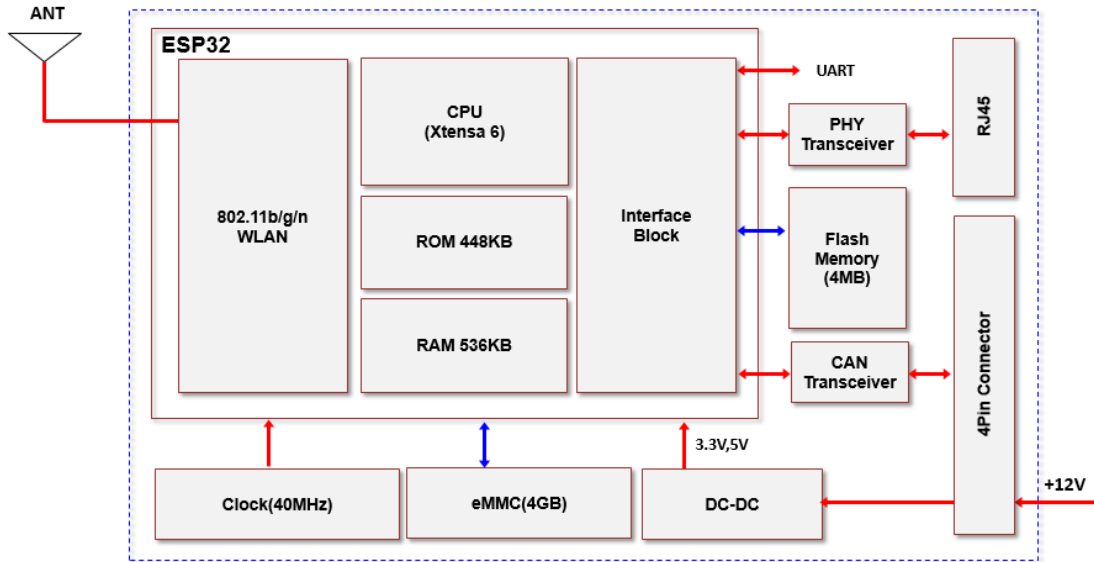
ETWFAEWC01 is based on ESP32-D0WDQ6 solution.

- IEEE 802.11 b/g/n single band WLAN infrastructure
- Size : 70mm x 70mm x 15mm
- 802.11n, up to 150Mbps PHY rate
- CAN 2.0 interface
- Ethernet, 10 Mbps and 100 Mbps rates
- 4Gbyte eMMC Flash Memory
- Security : WFA, WPA, WPA2, WAPI
- Application : Home Appliance

## 2. Picture of Product



### 3. Block Diagram



### 4. Absolute Maximum Ratings

Parameter	Min	Max	Unit
Storage Temperature	-40	+85	°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.

## 5. Operating Test Conditions

Parameter	Min	Typ	Max	Unit
Operating Temperature <sup>1)</sup>	-20	-	+70	°C
Operating Humidity (40°C)	-	-	85	%
Supply Voltage <sup>1)</sup>	10.8	12	13.2	Vdc

<sup>1)</sup> It can be operated from 8V to 16V, but this voltage range shouldn't be guaranteed

## 6. Standard Test Conditions

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

### 6-1. Ambient condition

Temperature	25 ± 2°C
Humidity	65 ± 5%

### 6-2. Power supply voltages

Input power(VDD)	Supply Voltage
+12V	+12V ± 10%

### 6-4. ESD Information

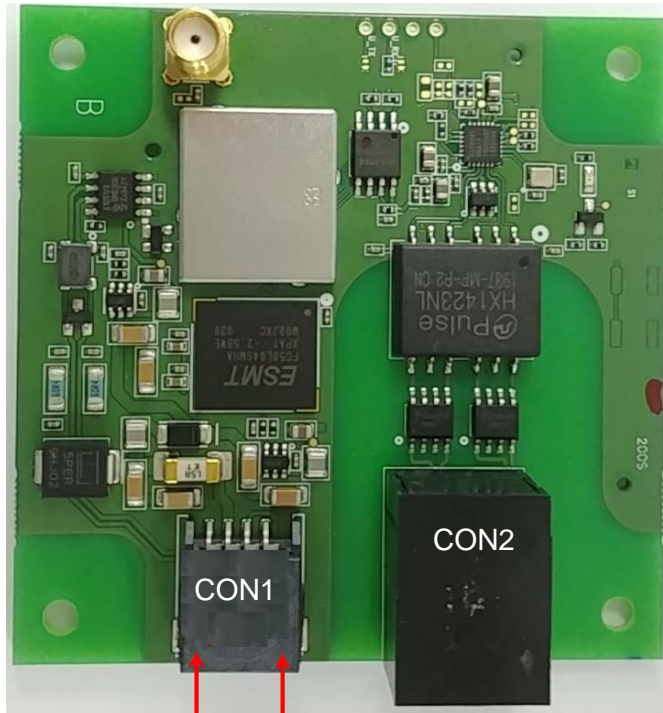
Human Body Model (HBM)	Min.	Max.	Unit
Contact	-	±6	kV
Air	-	±12	

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

## 7. Pin Description

Connector	Pin No.	Pin Name	I/O	Pin Description
CON1	1	GND	P	Ground
	2	12V	P	Power Supply
	3	CAN_L	I/O	Low-level CAN bus line
	4	CAN_H	I/O	High-level CAN bus line
CON2	-	R45	-	Ethernet Connector

< Top View >



Pin #1 Pin #4



# 9. Packing Information

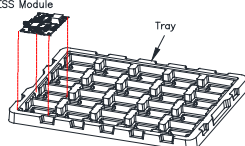
LG Innotek Confidential

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.

DIMENSIONAL TOLERANCE	C H A N G E S	REV NO.	DATE (YY MM DD)	SIGNATURE	CHANGE CONTENTS
~ up to 6	±0.3			A	
over 6 up to 30	±0.5			B	
over 30 up to 120	±0.5			C	
UNLESS OTHERWISE SPECIFIED					

**ESS Module**

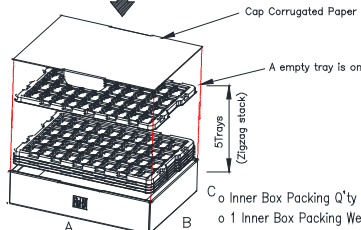


- o 1 Tray Packing Q'ty : 20EA
- o Size : W X D X H : 503 \* 355 \* 27.7
- o 1 Tray Packing Weight : 0.8±0.2kg (1 Module Weight : 30.0±3.0g)

↓

**Cap Corrugated Paper**

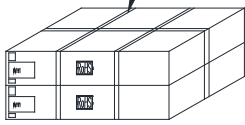
A empty tray is on top



5Trays (Zigzag stack)

- o Inner Box Packing Q'ty : 80EA
- o 1 Inner Box Packing Weight : 3.9±0.5kg

**PP Band**

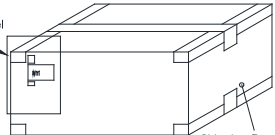


ESS Module

Antenna

↓


Refer the attaching specification of label



Shipping Box

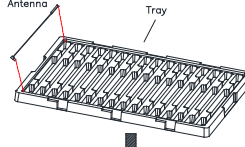
- o Carton Box Packing Q'ty : 80EA (ESS Module:80EA, Antenna:80EA)
- o Size : W X D X H : 514 \* 394 \* 248
- o 1 Carton Box Packing Weight : 6.9±0.7kg

– Attached shipping information label



**Antenna**

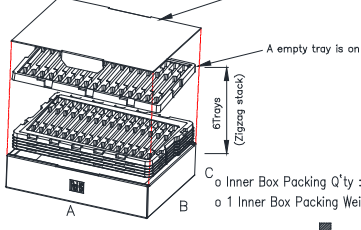


- o 1 Tray Packing Q'ty : 16EA
- o Size : W X D X H : 503 \* 355 \* 24.2
- o 1 Tray Packing Weight : 0.3±0.2kg (1 Module Weight : 6.5±0.6g)

↓

**Cap Corrugated Paper**

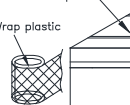
A empty tray is on top



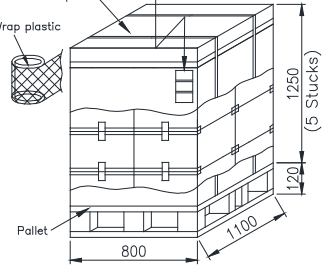
6Trays (Zigzag stack)

- o Inner Box Packing Q'ty : 80EA
- o 1 Inner Box Packing Weight : 2.0±0.5kg

**Cap Box**



Wrap plastic



1250 (5 Strucks)

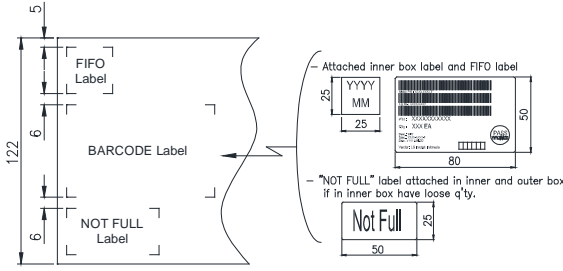
800 1100

( CARTON BOX : 20EA )

- o Box Material : Corrugated Paper
- o Total Packing Q'TY : 1,600EA
- o Total Packing Weight : 158±15kg


  

< 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.

RELATED P/N	 THIRD ANGLE PROJECT	SCALE	UNIT	DESIGN	TITLE
		-	mm	'20.03.06 Lee Kap Soul.	EXP. Packing Specification
				CHECKED '20.03.06 Lee Jin Kuk.	PART NO
				APPROVED '20.03.06 Choi Seok Dong.	MODEL
					ETWFAEWC01
					DWG NO



REG. DATE : 2020.04.09

**User Manual**

REV. NO : v1.0

REV. DATE : 2020.04.09

**MODEL NAME : ETWFAEWC01**

PAGE : 8 / 7

## 10. FCC/IC Statement

<b>FCC Part 15.19 Statements:</b>	<p><b>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.</b></p> <p><b>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.</b></p>
<b>FCC Part 15.21 statement</b>	Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
<b>&lt;Regulatory notice to host manufacturer according to KDB 996369 D03 OEM Manual v01&gt;</b>	
<b>List of applicable FCC rules</b>	This module has been granted modular approval as below listed FCC rule parts. -FCC Rule parts 15C(15.247)
<b>Summarize the specific operational use conditions</b>	-The OEM integrator should use equivalent antennas which is the same type and equal or less gain than an antenna listed in this instruction manual
<p><b>RF exposure considerations The module has been certified for integration into products only by OEM integrators under the following condition:</b></p> <p><b>※1,2 Conditions of RF exposure considerations should be included in OEM manual and it should be informed to an end-user.</b></p>	<p>1. 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. -2. 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.</p> <p>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.</p>

REG. DATE : 2020.04.09

**User Manual**

REV. NO : v1.0

REV. DATE : 2020.04.09

**MODEL NAME : ETWFAEWC01**

PAGE : 9 / 7

## 10. FCC/IC Statement

**Antennas list**

This radio transmitter [ETWFAEWC01] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device. This module is certified with the following integrated antenna.

-Type: External PCB Antenna

-Max. peak Antenna gain: 1.50dBi

Frequency Band	WLAN(2.4GHz)(ETWFAEWC01)
WLAN(2.4GHz)	1.50dBi

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. The use of a different trace layout other than approved requires a Class II Permissive Change or a New Grant as appropriate.

**End Product Labeling**

The module is labeled with its own FCC ID. If the FCC ID is 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: YZP-ETWFAEWC01

-Contains IC: 7414C-ETWFAEWC01

Le module ETWFAEWC01 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 : YZP-ETWFAEWC01-« Contient module émetteur IC : 7414C-ETWFAEWC01

**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.**

REG. DATE : 2020.04.09

**User Manual**

REV. NO : v1.0

REV. DATE : 2020.04.09

**MODEL NAME : ETWFAEWC01**

PAGE : 10 / 7

**10. FCC/IC Statement****Professional Installation**

This device and antenna can only be installed by professionally trained personnel. Antenna should be used the same type and lower gain antenna described below.

- External PCB Antenna
- Max. antenna gain: 1.50 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