

3in1 module Antenna specification

Customer	LG Electronics Inc.,
Product Name	Wi-Fi+BLE+Thread Combo Antenna
Customer Model	LCWBT-001
Customer P/N	EBR271060
Supplier Model	

Beyond_i CO., LTD. ENGINEERING DEP.		
DATE 2026. 06. 30.		
DESIGNED BY	CHECKED BY	APPROVED BY
J.Y KIM		

Beyond_i CO., LTD.

CONTENTS

1. Revision History 3

2. Features 4

 2.1 General 4

 2.2 Ordering Information 4

3. Product Specifications 5

 3.1 Electrical Specifications 5

 3.2 Standard Test Conditions 5

 3.3 Outline Drawing 6

 3.4 Picture 6

 3.5 Radiation Pattern 7

 3.6 Test condition 8~9

1. Revision History

No	Revision	Contents of Revision Change	Date	Remark
1	1.0	First release	2026.05.20	J.Y KIM

2. Features

2.1 General

- Integrated PCB antenna(FR_4)
- SIZE : 48 mm x 20 mm 10.65 mm(PCB size)

2.2 Ordering Information

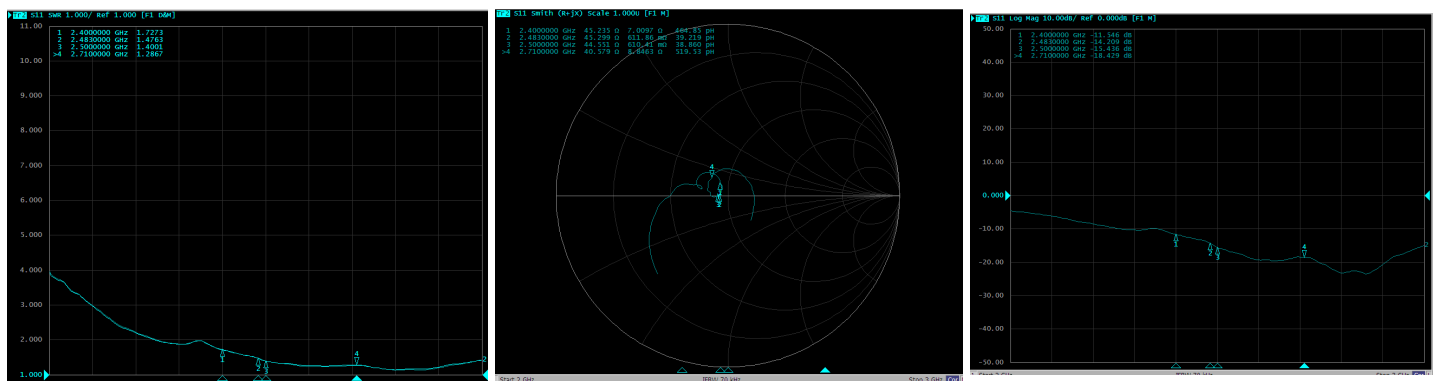
Model	Description
LCWBT-001	For 802.11 b/g/n (HT20) Module Bluetooth® low energy mode 802.15.4 (Thread)

3. Product Specifications

3.1 Electrical Specifications

3.1.1 VSWR(return loss)

Parameter	min	typ	max	unit
Frequency Range	2400	2450	2500	MHz
full Bands Average Gain		-3.51		dBi
full Bands Peaks Gain			-1.599	dBi
V.S.W.R	2:1			Under
Impedance		50		Ohm
Directivity	Omni			
Radiation Material	PCB Pattern(RF4)			



3.1.2 Radiation efficiency

4. Summary (Horizontal + Vertical)

Frequency	Avg. Gain	Efficiency	Peak Value			Null Value		
[MHz]	[dBi]	[%]	θ[Deg]	Φ[Deg]	Value[dBi]	θ[Deg]	Φ[Deg]	Value[dBi]
2400	-4.274	37.38	120	255	0.513	45	60	-22.581
2450	-4.824	32.929	120	255	-0.744	150	195	-34.157
2483	-5.687	26.995	120	255	-1.593	150	195	-44.333

3.1.3 Absolute Maximum Ratings

Description	Min.	Typ	Max.	Unit
Storage Temperature	-30		+85	°C
Storage Humidity			85	%

3.2 Standard Test Conditions

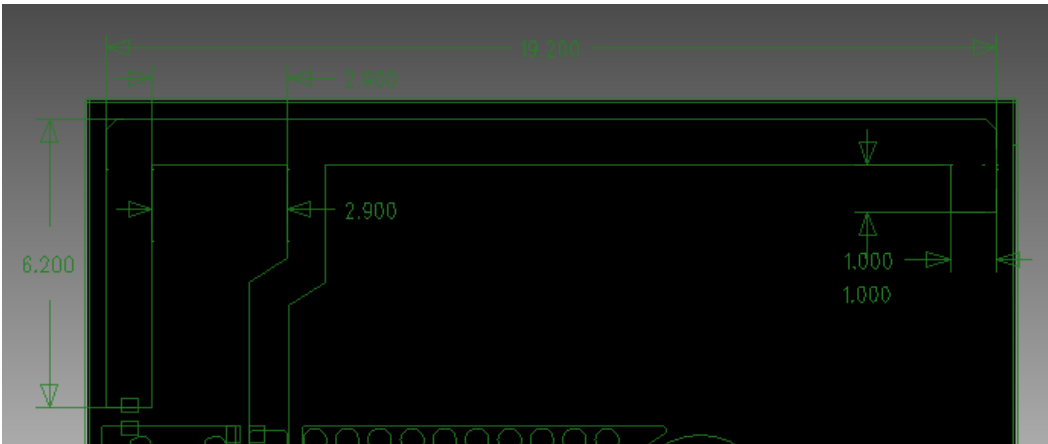
The Test for electrical specification shall be performed under the following condition

Otherwise this following conditions, not guaranteed this performance

3.2.1 Ambient Condition

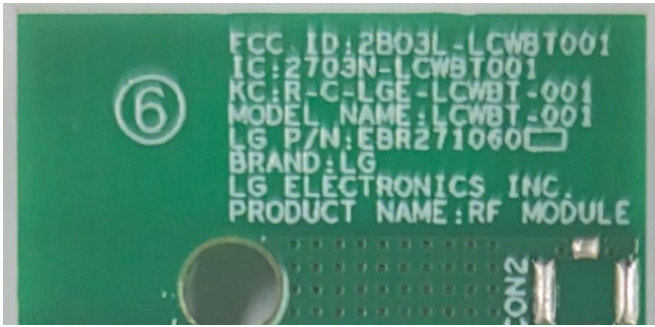
Description	Min.	Typ	Max.	Unit
Ambient Temperature	20		30	°C
Ambient Humidity	30		70	%

3.3 Outline Drawing

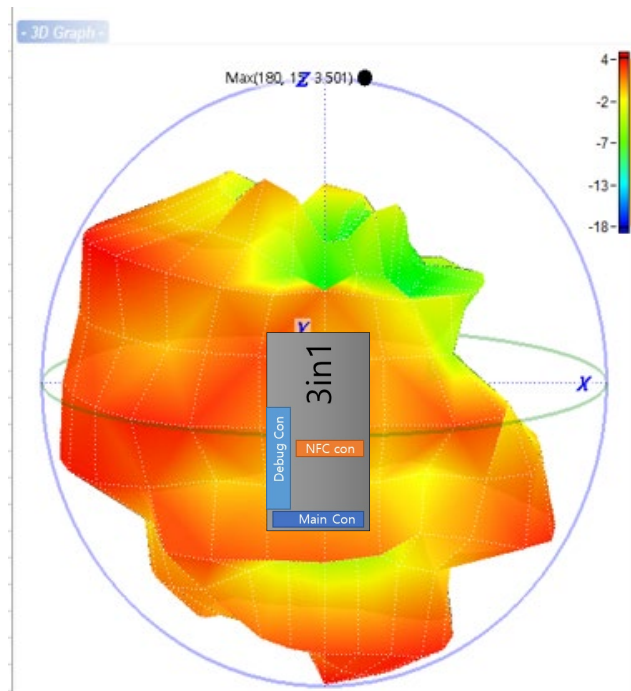


GENERAL TOLERANCE : ±0.2

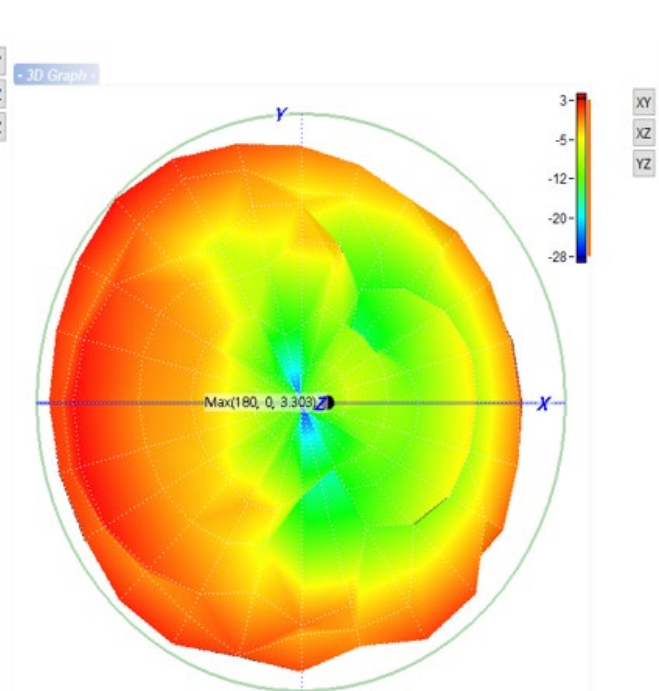
3.4 Picture



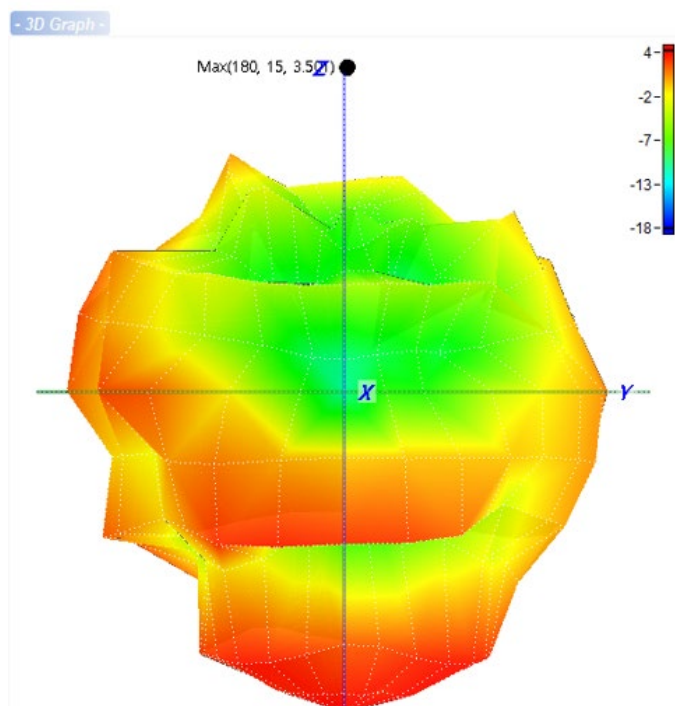
3.5 Radiation Pattern(2400MHz)



Front View



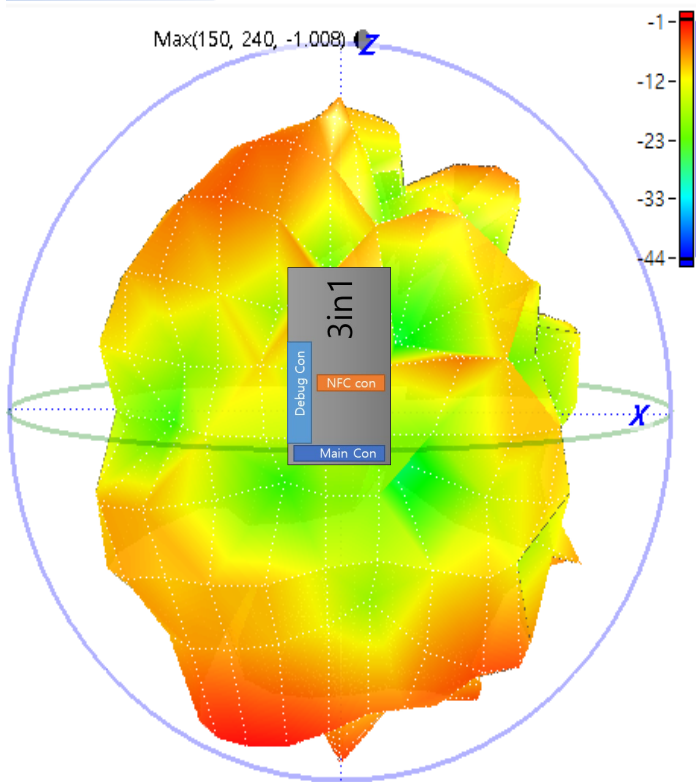
Top View



Side view

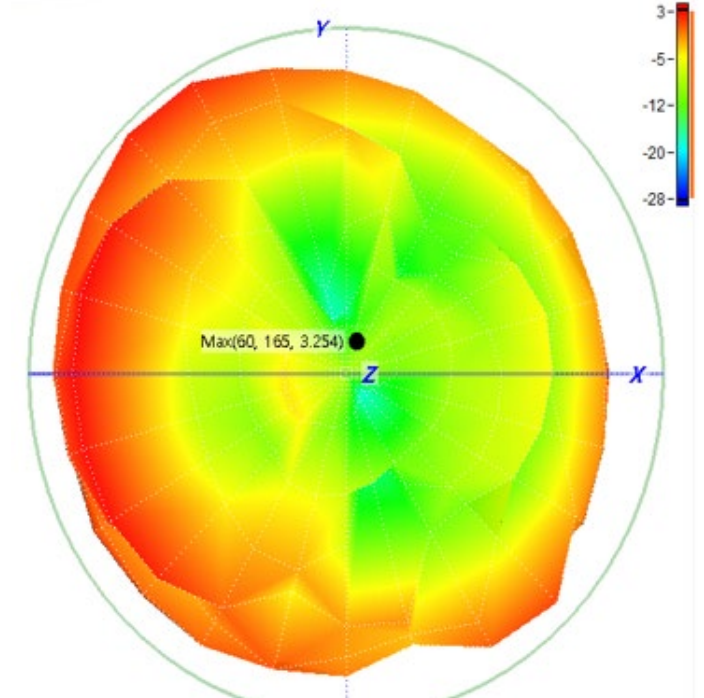
3.6 Radiation Pattern(2450MHz)

- 3D GRAPH -



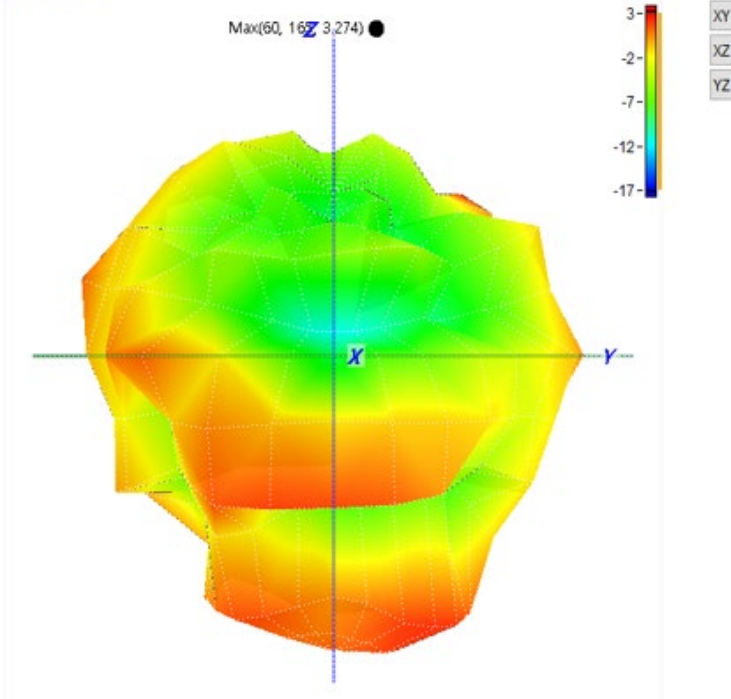
Front View

3D Graph



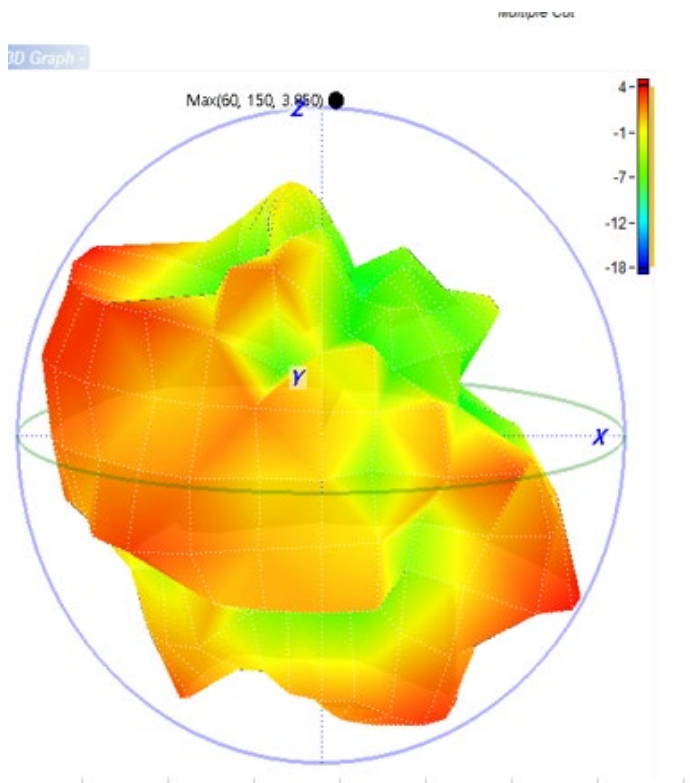
Top View

- 3D Graph -

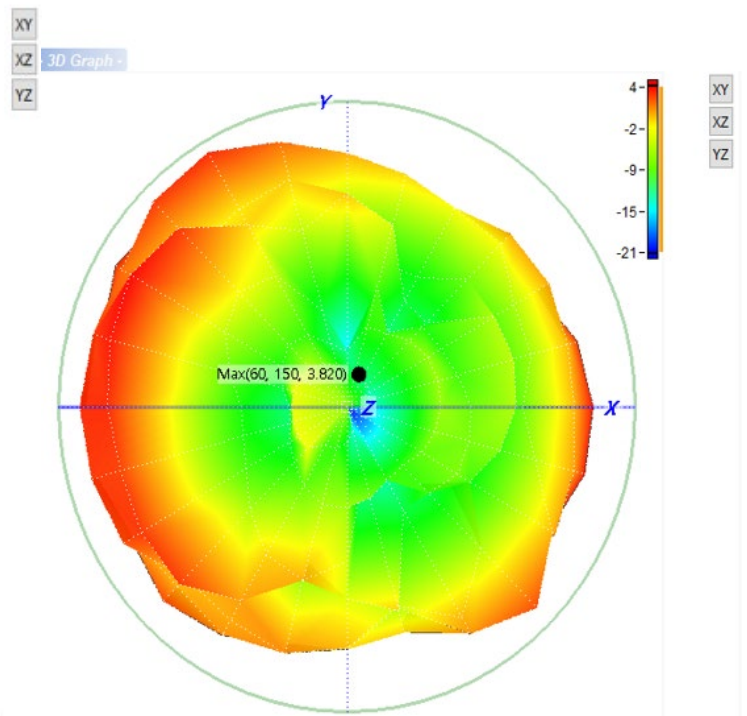


Side view

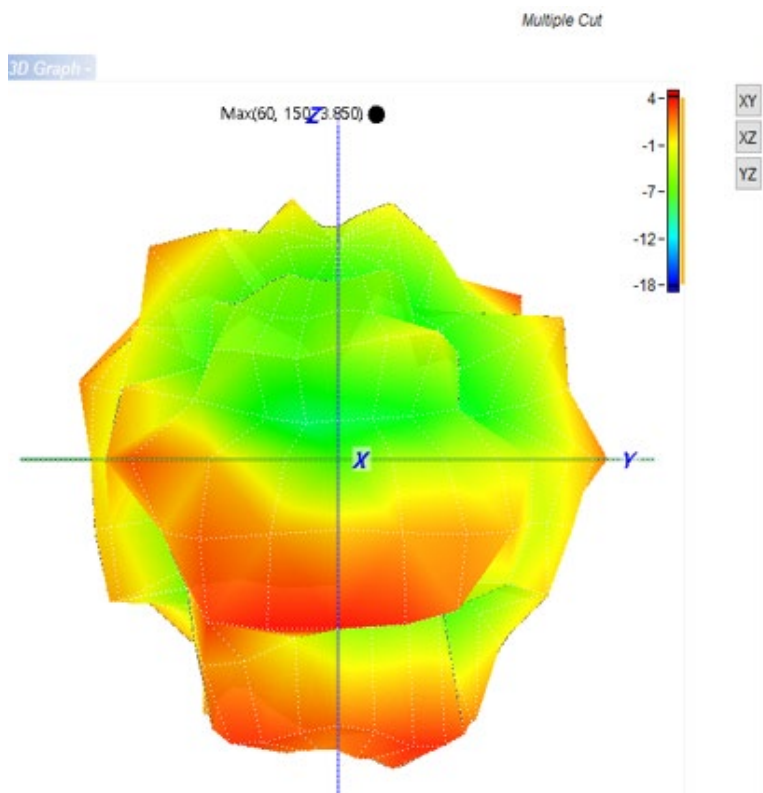
3.7 Radiation Pattern(2483MHz)



Front View



Top View



Side view