

SPECIFICATIONS

PRODUCT NAME : WiFi Dual Band & BT Antenna

MODEL NAME : ETWCFRBC01 (LGIT) Ant.

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Change History of Revision

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REG. DATE : 2022.05.18	SPECIFICATION MODEL NAME : ETWCFRBC01(LGIT) LGSBWAC23(LGE)	REV.NO : 1.0
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1. ANT Features

- Dual Bands Wi-Fi & BT ANT
- Main Frequency: 2.45GHz, 5.5GHz
- Frequency range
: From 2.40 to 2.50GHz, 5GHz~6GHz
- Operating temperature range
: -35 to +95°C (typ.)
- Wi-Fi ANT Material : Metal press + Printed of FR-4
- BT ANT material : Metal press

2. Antenna Characteristics**- Dual Band ANT1**

Antenna Performance				
Parameter	Min	Typ	Max	Unit
Frequency Range	2400	2450	2500	MHz
	5000	5500	6000	MHz
Directivity	-	Omni	-	-
Full Bands Average Gain	-	-3.69	-	dBi
Full Bands Peak Gain		-	1.50	
V.S.W.R	3:1	-	-	Under
Impedance		50		Ohm
Radiation Material		Metal		



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- Dual Band ANT2

Antenna Performance				
Parameter	Min	Typ	Max	Unit
Frequency Range	2400	2450	2500	MHz
	5000	5500	6000	MHz
Directivity	-	Omni	-	-
Full Bands Average Gain	-	-4.47	-	dBi
Full Bands Peak Gain		-	1.5	
V.S.W.R	3:1	-	-	Under
Impedance		50		Ohm
Radiation Material		Metal		

- BT ANT

Antenna Performance				
Parameter	Min	Typ	Max	Unit
Frequency Range	2400	2450	2500	MHz
Directivity	-	Omni	-	-
Full Bands Average Gain	-	-6.66	-	dBi
Full Bands Peak Gain		-	1.12	
V.S.W.R	3:1	-	-	Under
Impedance		50		Ohm
Radiation Material		Metal		

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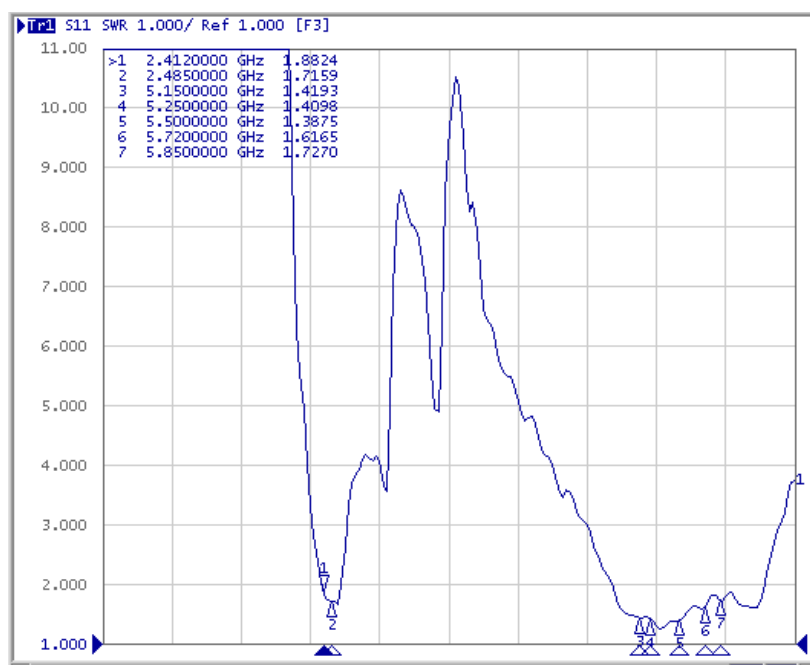
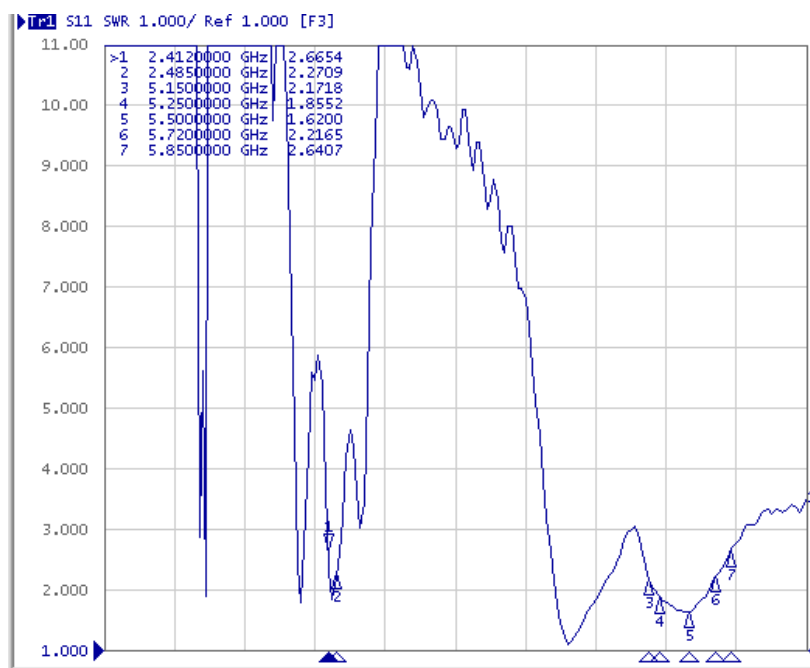
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2.1 Network Data**ANT 1_VSWR****ANT 2_VSWR**



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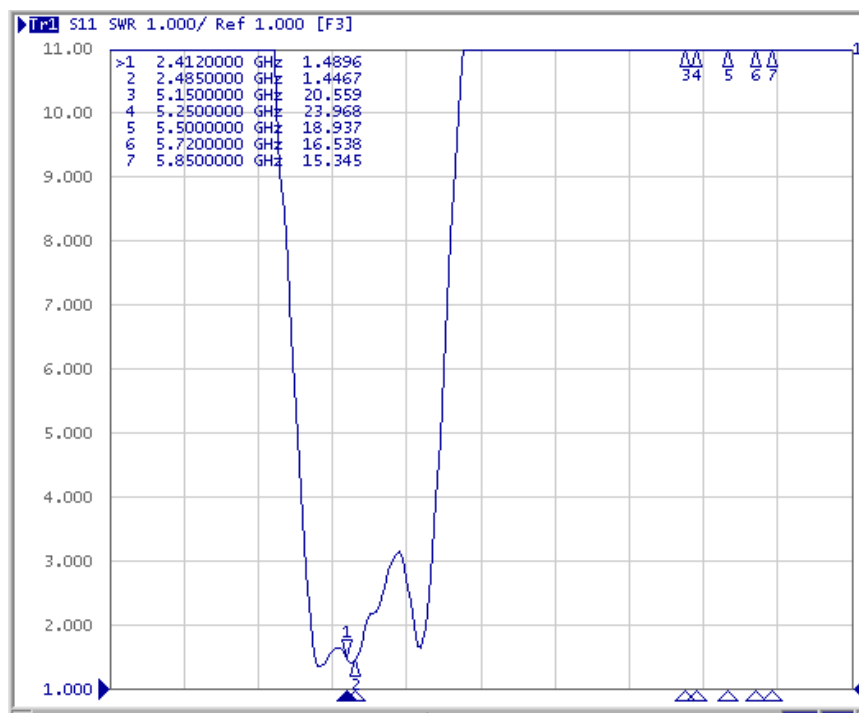
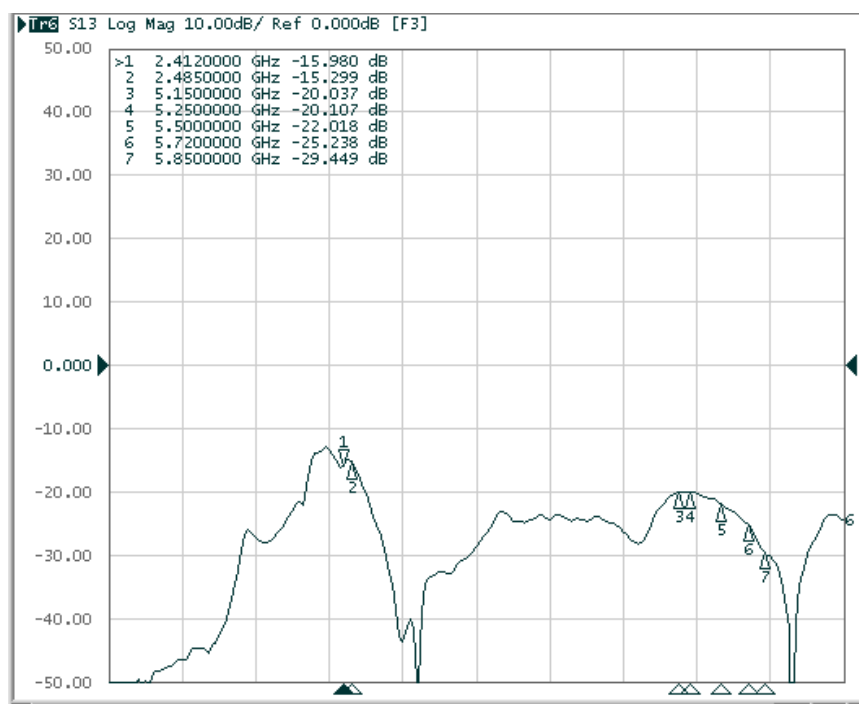
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BT_VSWR**ANT 1 <-> ANT 2 Isolation**

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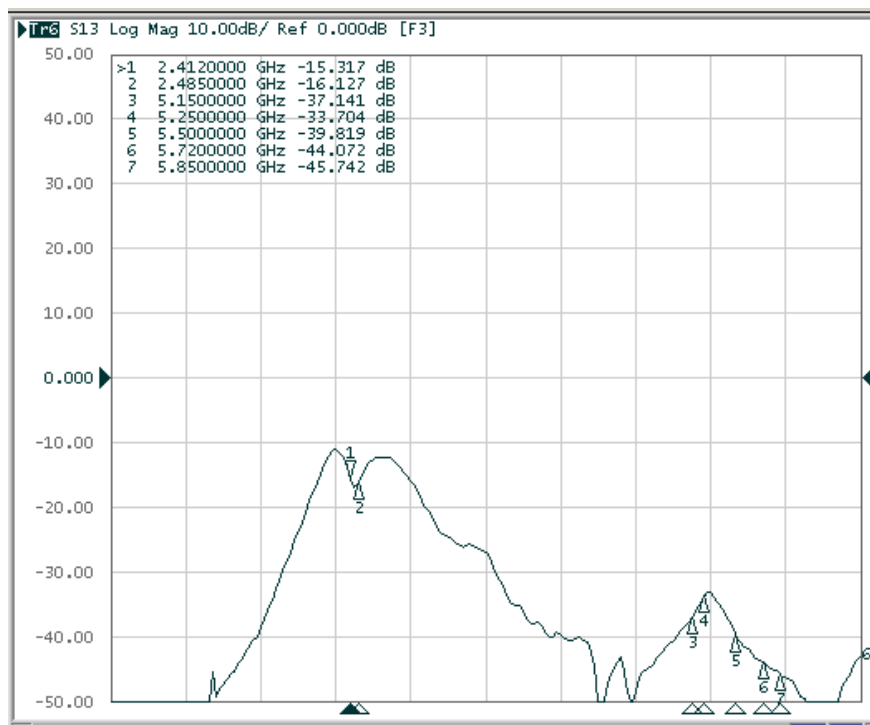
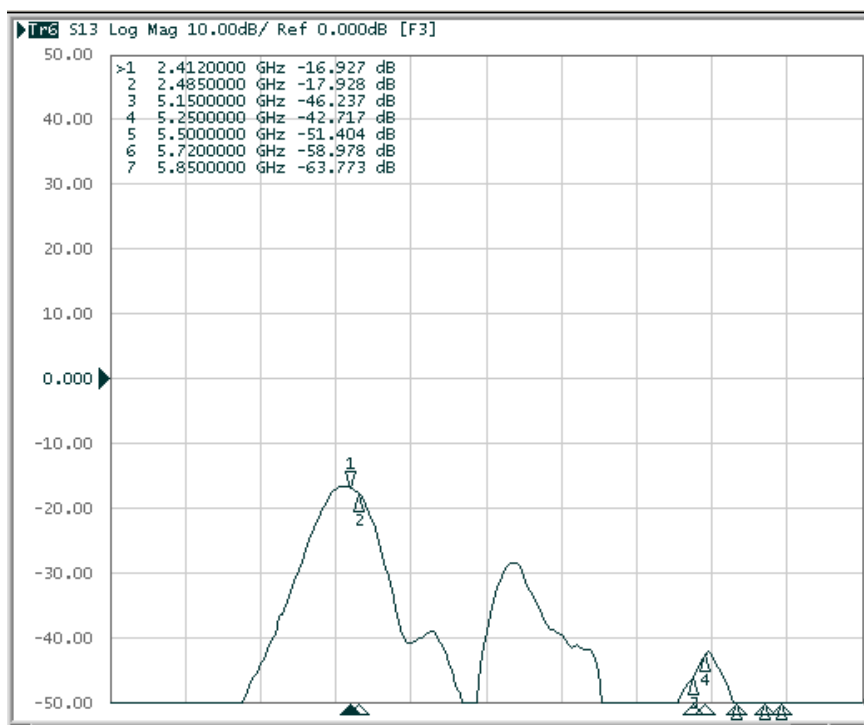
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ANT 1 <-> BT_Isolation**ANT 2 <-> BT_Isolation**



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2.2. Efficiency**ANT1**

Frequency(MHz)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2412	2420	2450	2460	2485	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Efficiency(dB)	-9.23	-9.58	-7.35	-6.91	-7.95	-2.95	-3.10	-3.06	-2.87	-2.72	-2.43	-2.57	-2.90	-2.89	-2.63	-2.82	-3.03	-2.48	-3.10	-3.43
Efficiency(%)	11.94	11.02	18.40	20.36	16.03	50.72	48.95	49.40	51.66	53.46	57.10	55.34	51.34	51.42	54.55	52.29	49.73	56.45	48.94	45.40
TRG(dB)	-9.23	-9.58	-7.35	-6.91	-7.95	-2.95	-3.10	-3.06	-2.87	-2.72	-2.43	-2.57	-2.90	-2.89	-2.63	-2.82	-3.03	-2.48	-3.10	-3.43
TRG _{total} (dB)	-12.10	-12.23	-9.22	-8.63	-9.52	-4.79	-4.65	-4.63	-4.57	-4.48	-4.11	-4.26	-4.46	-4.45	-4.25	-4.41	-4.76	-4.20	-4.74	-5.00
TRG _{PH} (dB)	-12.39	-12.98	-11.92	-11.78	-13.12	-7.56	-8.34	-8.24	-7.75	-7.49	-7.39	-7.48	-8.09	-8.09	-7.71	-7.94	-7.87	-7.35	-8.13	-8.81
UHRG(dB)	-10.25	-10.65	-8.44	-7.99	-9.05	-4.36	-4.55	-4.49	-4.22	-4.04	-3.73	-3.87	-4.24	-4.25	-3.96	-4.17	-4.35	-3.76	-4.47	-4.87
UHRG/TRG(%)	79.09	78.22	77.77	77.96	77.67	72.22	71.59	71.91	73.23	73.71	74.23	74.20	73.45	73.14	73.66	73.15	73.78	74.48	72.93	71.82
H-Plane	-14.81	-14.77	-11.37	-10.65	-11.29	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
E1-Plane, AVG(dB)	-9.19	-9.85	-8.49	-8.12	-8.91	-4.27	-4.86	-4.95	-3.08	-5.22	-2.10	-4.34	-4.58	-4.43	-4.25	-4.35	-4.77	-3.86	-4.62	-4.54
E2-Plane, AVG(dB)	-10.62	-10.83	-8.22	-7.78	-9.09	-6.89	-7.18	-6.96	-4.03	-6.72	-3.10	-6.37	-6.71	-6.67	-6.46	-6.83	-7.24	-6.72	-7.21	-7.02
Peak Gain(dB)	-2.65	-3.03	-1.35	-0.94	-1.91	1.50	1.49	1.49	1.50	1.50	1.46	1.44	1.43	1.46	1.46	1.44	1.48	1.50	1.48	1.32
Directivity(dB)	6.58	6.55	6.00	5.97	6.04	4.45	4.60	4.55	4.37	4.22	3.89	4.01	4.33	4.35	4.09	4.25	4.51	3.98	4.59	4.75
Minimum Gain(dB)	-40.22	-33.67	-22.25	-19.86	-26.92	-27.92	-26.09	-24.46	-25.38	-23.81	-23.75	-22.82	-24.01	-23.73	-22.86	-24.65	-27.38	-25.38	-26.12	-27.01
Test Condition	FS																			
Antenna Type																				
Average Efficiency	-3.69 dB, 42.73 %																			

ANT2

Frequency(MHz)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2412	2420	2450	2460	2485	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Efficiency(dB)	-6.16	-6.55	-6.74	-7.66	-9.15	-3.45	-4.37	-4.14	-3.54	-4.03	-3.52	-3.56	-4.13	-3.89	-3.46	-3.52	-3.74	-3.49	-4.66	-4.48
Efficiency(%)	24.22	22.13	21.18	17.15	12.17	45.15	36.57	38.52	44.26	39.52	44.50	44.09	38.66	40.87	45.10	44.48	42.29	44.73	34.17	35.61
TRG(dB)	-6.16	-6.55	-6.74	-7.66	-9.15	-3.45	-4.37	-4.14	-3.54	-4.03	-3.52	-3.56	-4.13	-3.89	-3.46	-3.52	-3.74	-3.49	-4.66	-4.48
TRG _{total} (dB)	-7.73	-8.08	-8.31	-8.89	-9.76	-5.85	-6.64	-6.55	-6.05	-6.51	-6.06	-5.67	-5.97	-5.58	-5.44	-5.56	-5.60	-5.34	-6.43	-6.25
TRG _{PH} (dB)	-11.33	-11.84	-11.92	-13.73	-17.93	-7.17	-8.27	-7.86	-7.11	-7.65	-7.05	-7.70	-8.75	-8.80	-7.82	-7.78	-8.31	-8.10	-9.42	-9.24
UHRG(dB)	-7.53	-8.02	-8.46	-9.61	-11.51	-4.21	-5.22	-4.97	-4.37	-4.87	-4.30	-4.34	-4.92	-4.64	-4.16	-4.19	-4.42	-4.20	-5.50	-5.32
UHRG/TRG(%)	72.93	71.24	67.28	63.83	58.01	83.99	82.19	82.63	82.68	82.38	83.55	83.49	83.25	84.00	85.12	85.65	85.48	85.04	82.39	82.41
H-Plane	-5.00	-5.00	-5.00	-5.00	-5.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00
E1-Plane, AVG(dB)	-8.10	-9.08	-10.54	-10.85	-11.31	-6.81	-7.85	-7.61	-6.39	-7.35	-6.78	-6.65	-6.91	-6.50	-5.96	-6.81	-7.28	-5.91	-7.64	-7.46
E2-Plane, AVG(dB)	-8.10	-8.60	-9.84	-10.80	-11.88	-6.43	-7.10	-6.92	-6.38	-7.07	-6.08	-5.95	-6.62	-6.23	-5.68	-6.95	-5.59	-5.53	-6.67	-6.74
Peak Gain(dB)	-1.68	-2.06	-2.13	-3.36	-4.30	1.43	1.39	1.50	1.43	1.29	1.27	1.45	1.19	1.28	1.40	1.46	1.41	1.49	0.61	1.30
Directivity(dB)	4.48	4.49	4.61	4.30	4.85	4.88	5.76	5.64	4.97	5.32	4.78	5.01	5.32	5.17	4.86	4.98	5.14	4.99	5.27	5.78
Minimum Gain(dB)	-26.09	-25.85	-24.67	-22.56	-26.24	-23.97	-27.56	-28.30	-25.86	-29.60	-37.83	-28.55	-25.60	-25.01	-23.02	-24.74	-33.01	-28.10	-29.33	-28.59
Test Condition	FS																			
Antenna Type																				
Average Efficiency	-4.47 dB, 35.77 %																			

BT

Frequency(MHz)	1	2	3	4	5	6	7	8	9	10
	2402	2420	2430	2440	2445	2450	2460	2470	2480	2485
Efficiency(dB)	-6.99	-6.73	-6.48	-6.39	-6.27	-6.38	-6.50	-6.62	-7.03	-7.38
Efficiency(%)	20.01	21.21	22.51	22.96	23.59	23.00	22.40	21.80	19.80	18.28
TRG(dB)	-6.99	-6.73	-6.48	-6.39	-6.27	-6.38	-6.50	-6.62	-7.03	-7.38
TRG _{total} (dB)	-9.55	-9.37	-9.19	-9.14	-9.07	-9.21	-9.30	-9.47	-9.86	-10.18
TRG _{PH} (dB)	-10.50	-10.15	-9.80	-9.68	-9.50	-9.59	-9.73	-9.79	-10.24	-10.61
UHRG(dB)	-7.51	-7.25	-6.98	-6.89	-6.77	-6.89	-7.00	-7.12	-7.54	-7.89
UHRG/TRG(%)	88.60	88.82	88.96	89.02	89.10	89.09	89.10	89.05	89.03	88.98
H-Plane	-14.00	-13.88	-13.71	-13.70	-13.61	-13.76	-13.80	-13.95	-14.34	-14.62
E1-Plane, AVG(dB)	-6.09	-5.86	-5.74	-5.66	-5.66	-5.68	-5.77	-5.94	-6.35	-6.74
E2-Plane, AVG(dB)	-8.34	-8.12	-7.96	-7.89	-7.90	-7.95	-8.12	-8.21	-8.61	-9.00
Peak Gain(dB)	0.46	0.63	0.76	0.75	1.12	0.85	0.72	0.68	0.21	-0.26
Directivity(dB)	7.45	7.36	7.24	7.14	7.39	7.23	7.21	7.30	7.25	7.12
Minimum Gain(dB)	-23.28	-23.43	-23.34	-23.23	-23.23	-23.55	-24.32	-24.70	-25.68	-26.23
Test Condition	FS									
Antenna Type										
Average Efficiency	-6.66 dB, 21.56 %									

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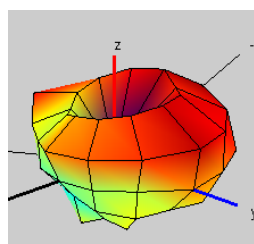
SPECIFICATION

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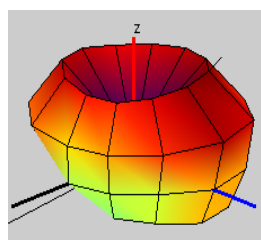
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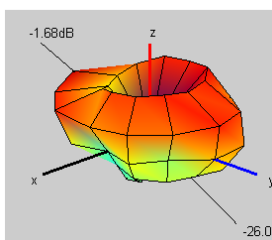
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2.3. Radiation Pattern**ANT1**

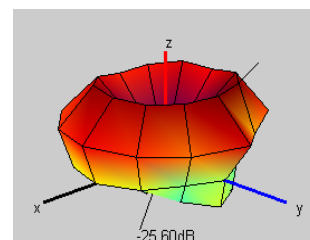
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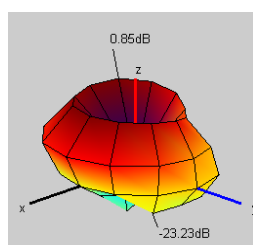
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ANT2

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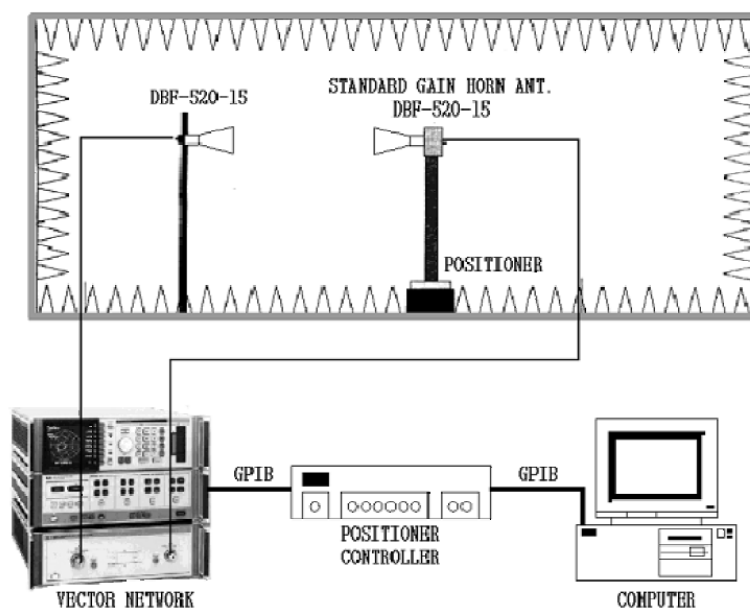
<5.50GHz>

BT

<2.45GHz>

3. ANT Test Condition

CTIA-OTA Test Chamber : 3x6x3m



[Confidential]

1

2

3

4

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3D View(5:1)

Notes

1. Tolerances are ±0.15, radii are 0.1, unless otherwise specified.

2. Cutting planes should be clean. Remove burr generated on the cutting surface. It can be foreign material.(Burr should be 0.05mm or smaller if not specified)

3. Flatness must be less than 0.1mm.

4. Parts to be clean and free of oil.

5. Take special care so the cutting surface corroded or damaged during storage or transferring.

6. Sample should pass the part approval test of LGIT, including packing method, before mass production.

7. CTQ These Dimensions are Cpk point. The Cpk must be equal to or greater than 1.33

8. 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"

9. IF it's "Dimension NG", use it after checking VSWR and Isolation when it meets each spec.

10. Dimension A must be over than Dimension B and less than 0.1mm(Refer the figure below.)

1	3SDP00014A	SUS304 ±0.04 0.3T+Ni(Reel Plating) Ni Plating spec : Min 1.5u	Reel Packing (by vendor)	RoHS/HF	—
NO	DESCRIPTION	MATERIAL	Packing	RoHS/HF	NOTE
CHANGES	⑥				
	⑤				
	④				
	③				
	②				
	①				
ZONE	ISSUE NO	DATE (YY MM DD)	SIGNATURE	CHANGE CONTENTS	DOCUMENT NO.

SCALE

UNIT

5 : 1

mm

LG Innotek

DRAWN '22. 05. 10

CHECKED '22. 05. 10

APPROVED '22. 05. 10

Seok dong Choi

ITEM NAME

BT Antenna

ITEM NO

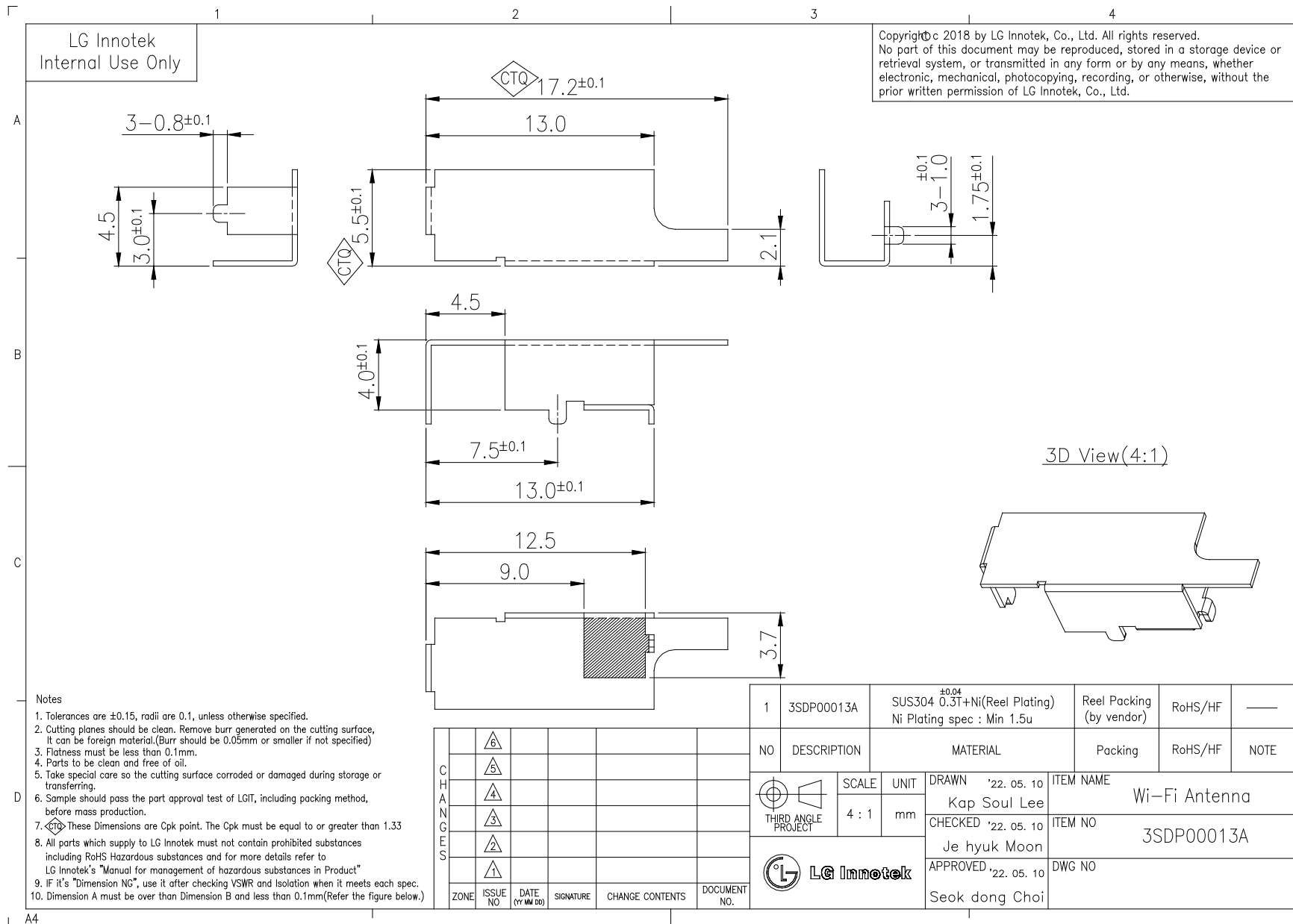
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DWG NO

Wi-Fi Antenna.1

[Confidential]

INNO.1825



Wi-Fi Antenna.2

[Confidential]

INNO.1825

