

SPECIFICATIONS

PRODUCT NAME : WiFi Dual Band & BT Antenna

MODEL NAME : ETWCFMBC03 (LGIT) Ant.

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REG. DATE : 2022.05.18

SPECIFICATION

REV.NO : 1.0

REV. DATE : 2022.05.18

MODEL NAME : ETWCFMBC03(LGIT)
LGSBWAC97(LGE)

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Change History of Revision

Revision	Date	Contents of Revision Change	Remark
1.0	2022.05.18	Wi-Fi & BT ANT Spec	Y.U.Jeong

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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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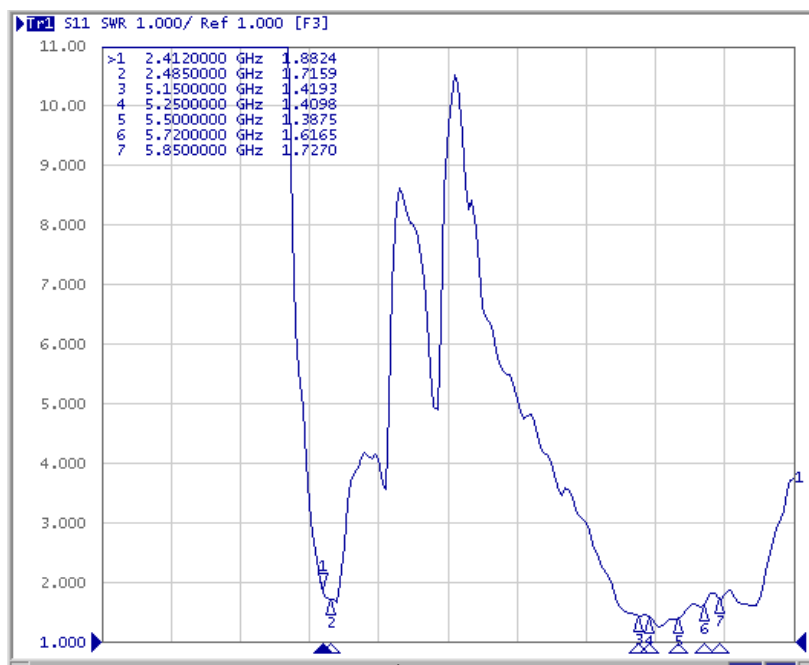
REV. DATE : 2022.05.18

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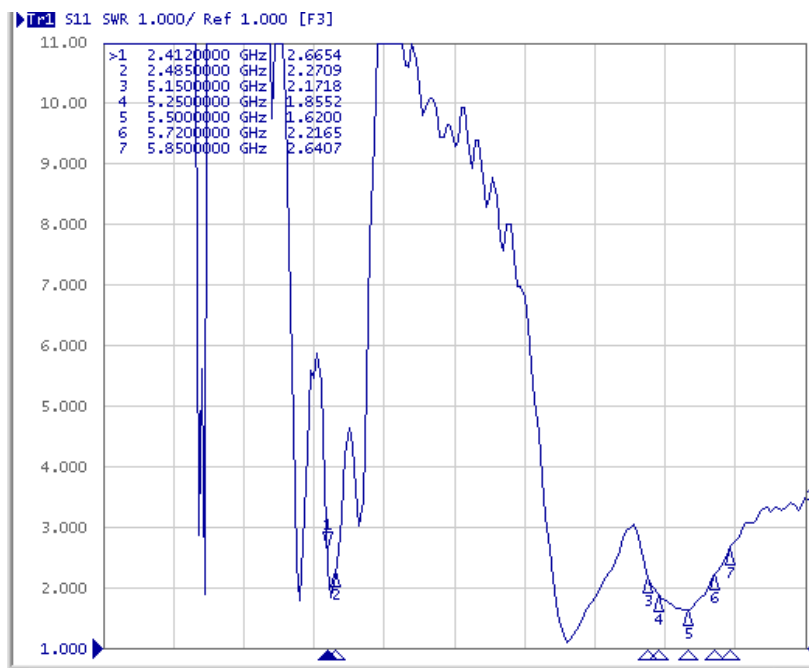
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2.1 Network Data

ANT 1_VSWR



ANT 2_VSWR





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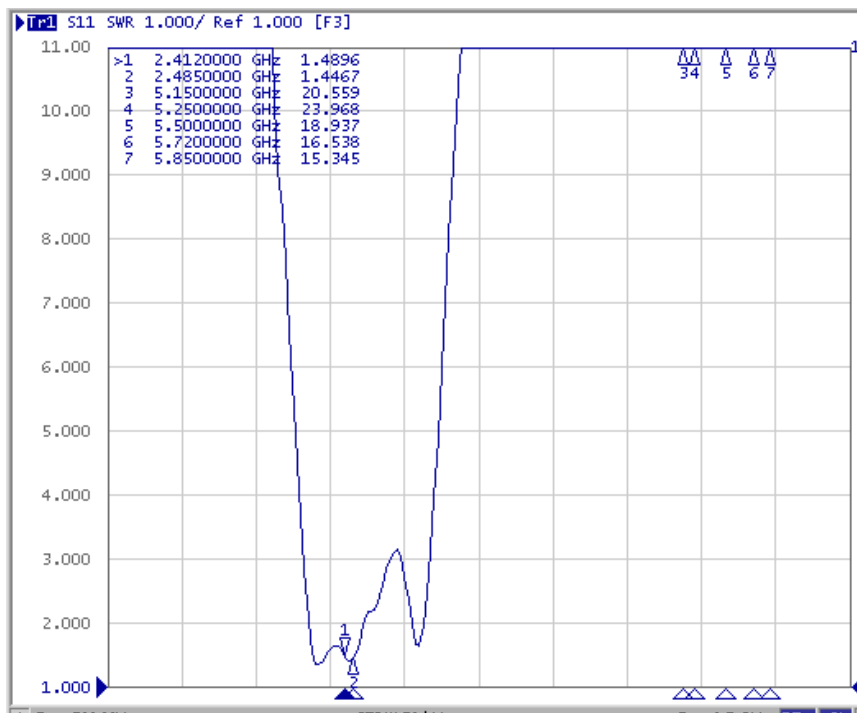
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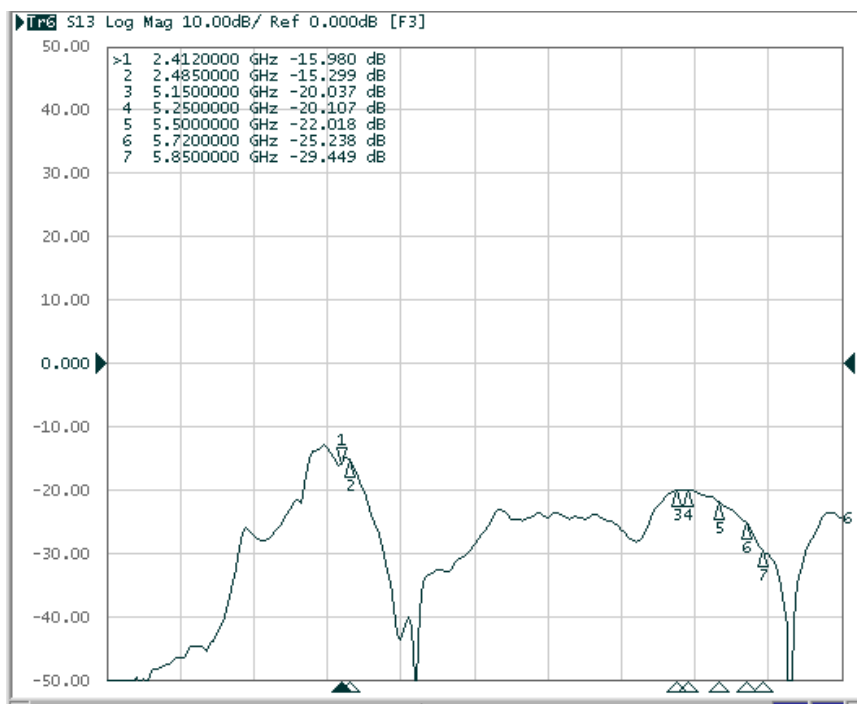
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BT_VSWR



ANT 1 <->ANT 2_Isolation





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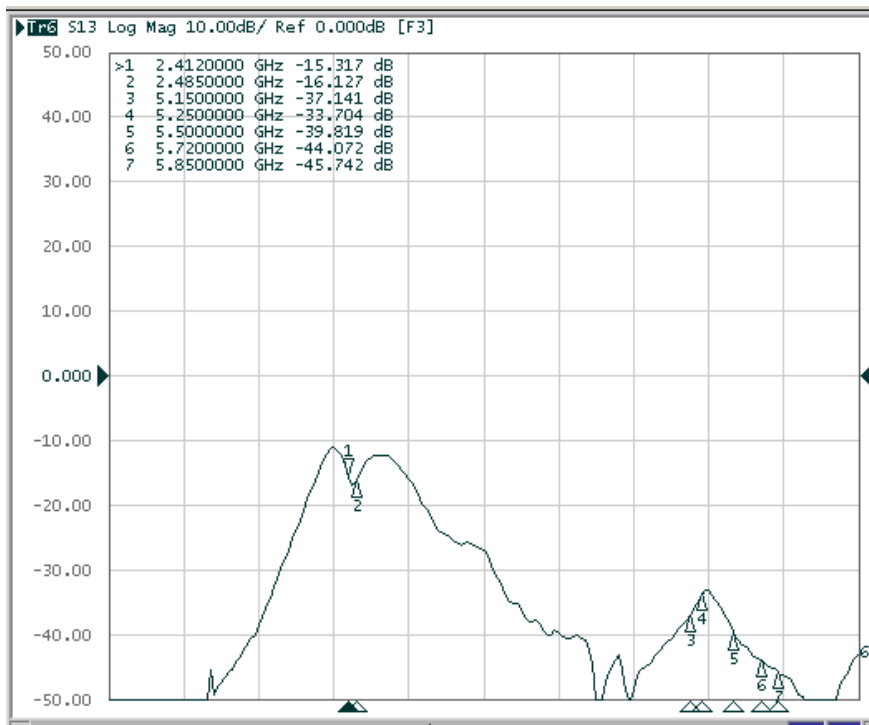
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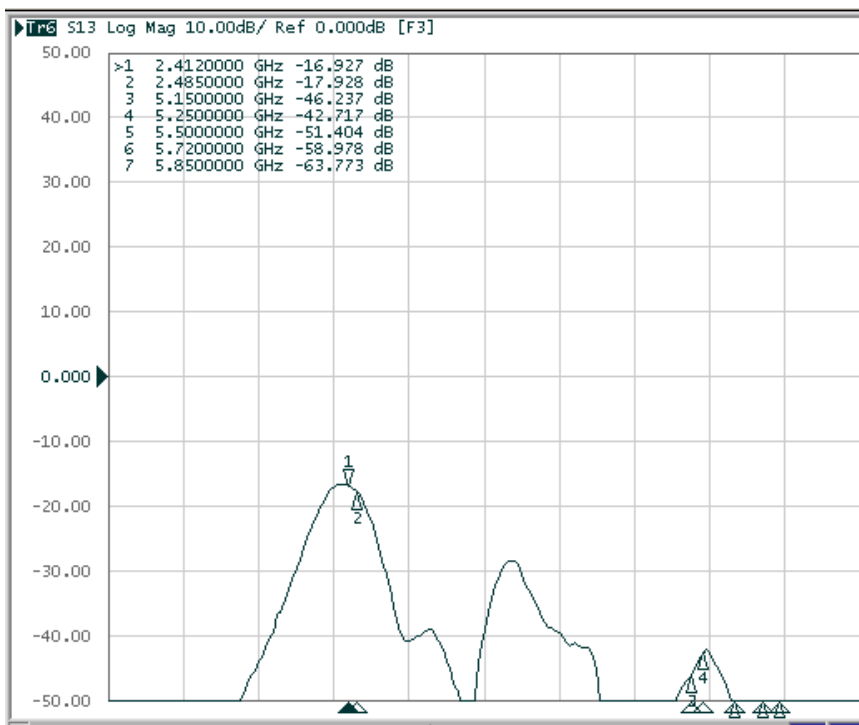
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ANT 1 <-> BT_Isolation



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	51.42	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 _{pph} (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	-3.98	-4.17	-4.35	-3.76	-4.47	-4.87
UHRG/TRG(%)	79.09	78.22	77.77	77.96	77.87	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	-4.88	-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	38.65	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 _{pph} (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 %																			

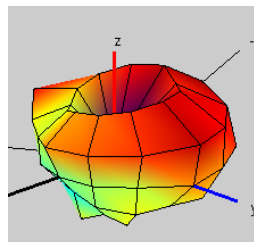
BT

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 _{pph} (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 %									

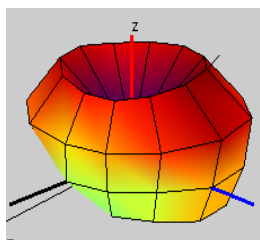
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REV. DATE : 2022.05.18		MODEL NAME : ETWCFMBC03(LGIT) LGSBWAC97(LGE)

2.3. Radiation Pattern

ANT1

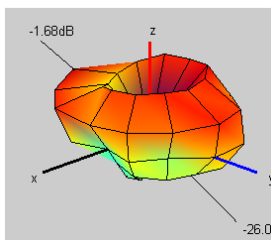


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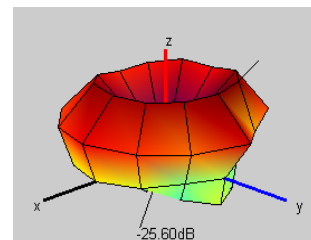


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ANT2

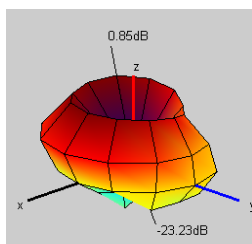


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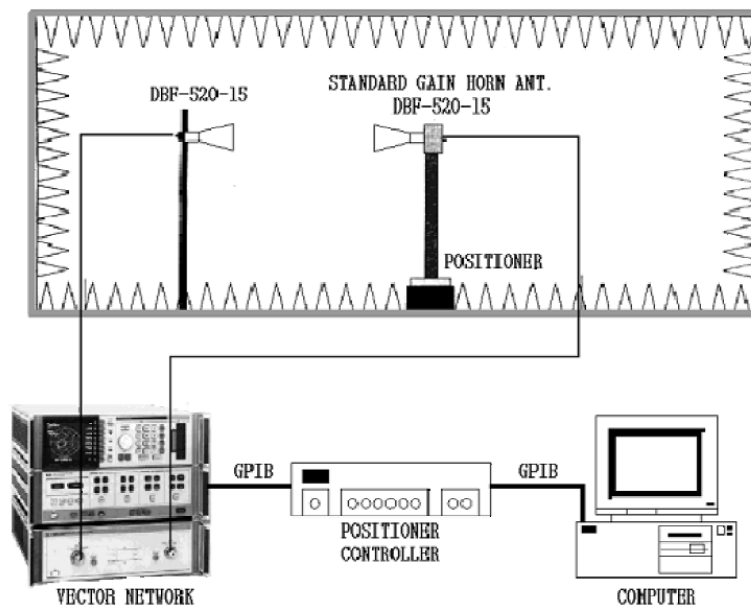
BT



<2.45GHz>

3. ANT Test Condition

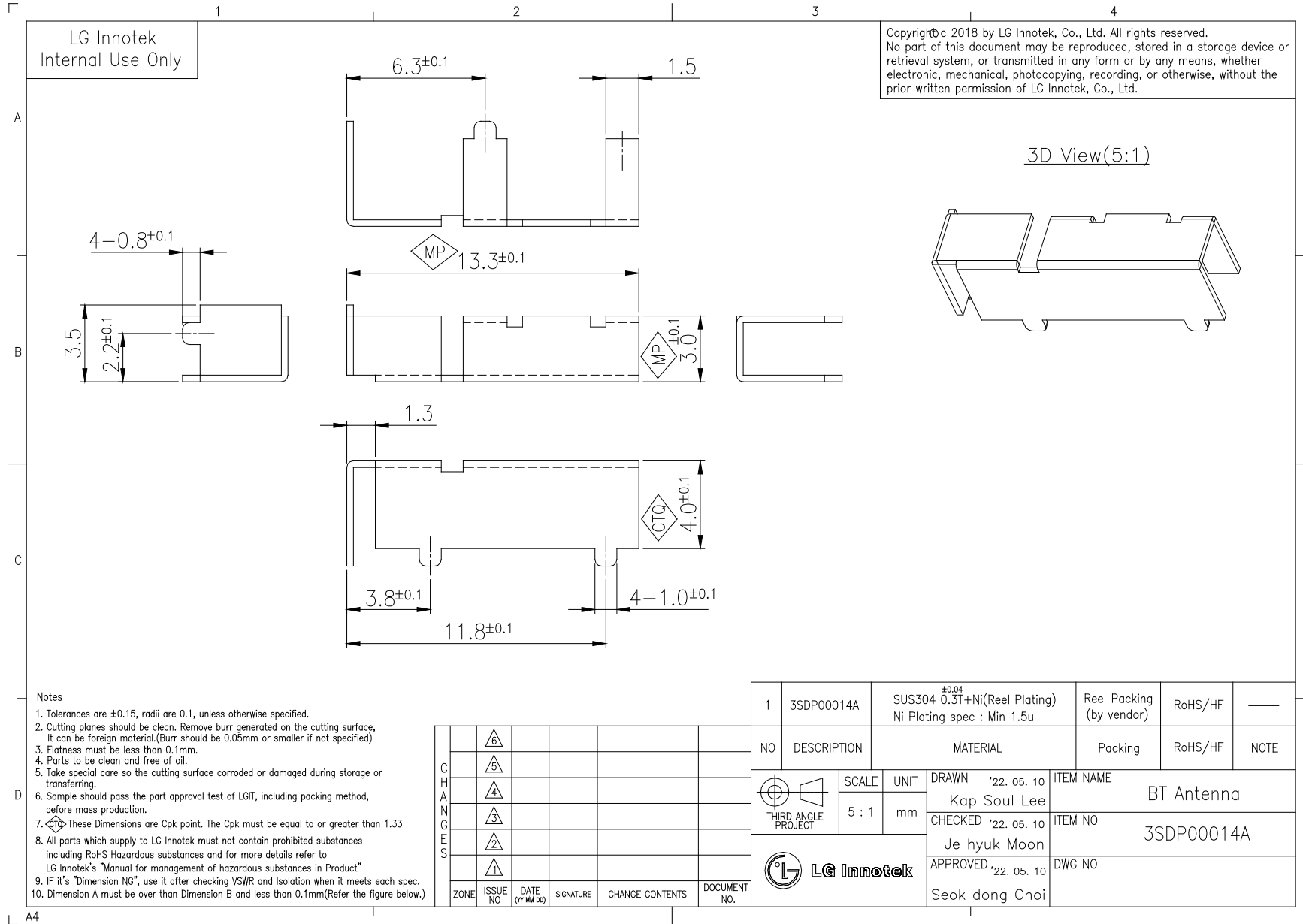
CTIA-OTA Test Chamber : 3x6x3m



Bluetooth Antenna

[Confidential]

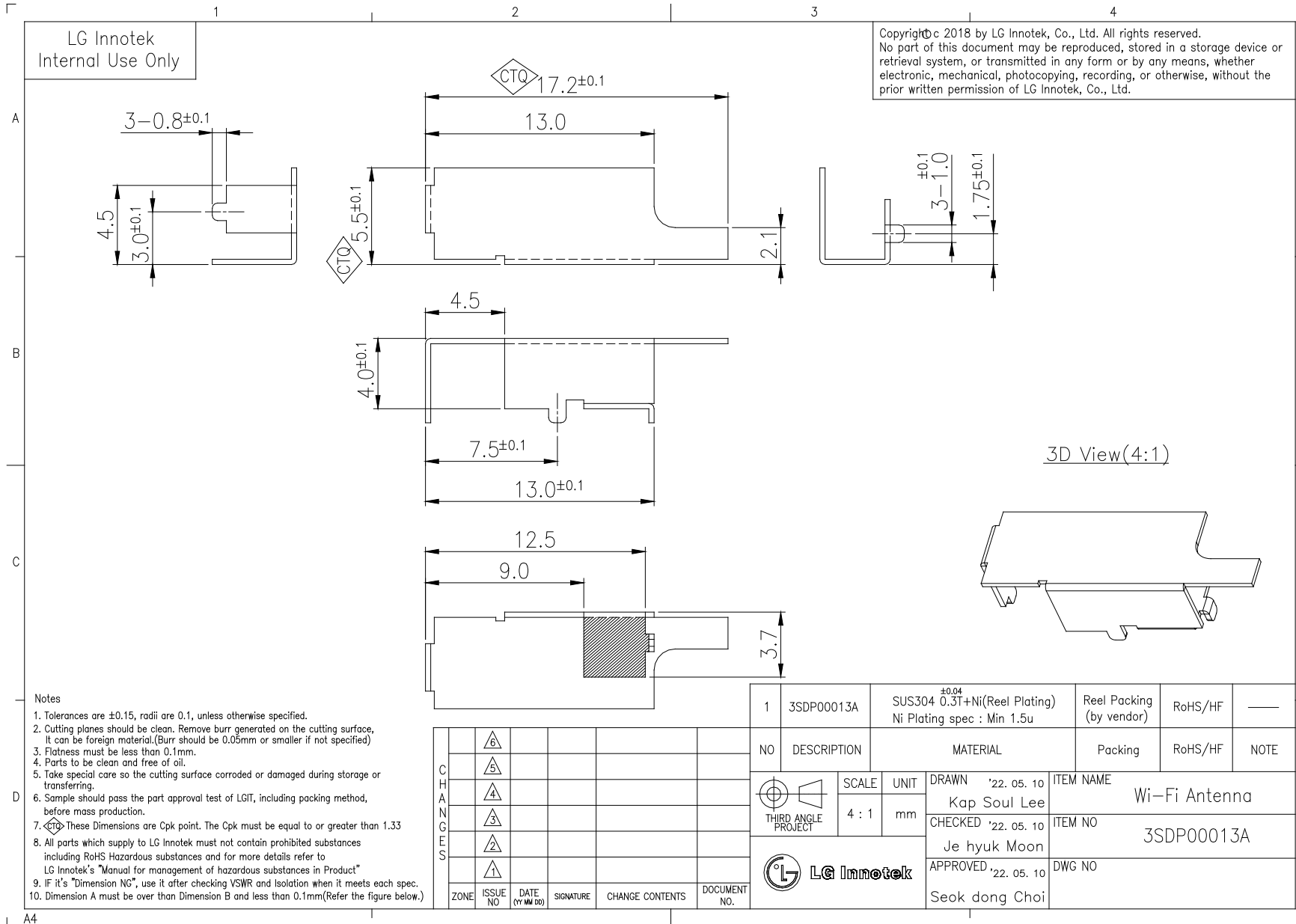
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Wi-Fi Antenna.1

[Confidential]

INNO.1825



Wi-Fi Antenna.2

[Confidential]

INNO.1825

