

2024.02.02

RA-N2402-41

APPROVAL SHEET

MODEL : U1
SUB MESH
Antenna layout

Review	Consent	Approval

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REV.


1.0

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1. Revision History

NO.	Before	After	Reason	Date
1				
2				
3				
4				
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2. Product Information

2.1 General Features

PART NUMBER	GradiANT
ANTENNA TYPE	PCB Pattern Antenna
APPLICATIONS	MESH

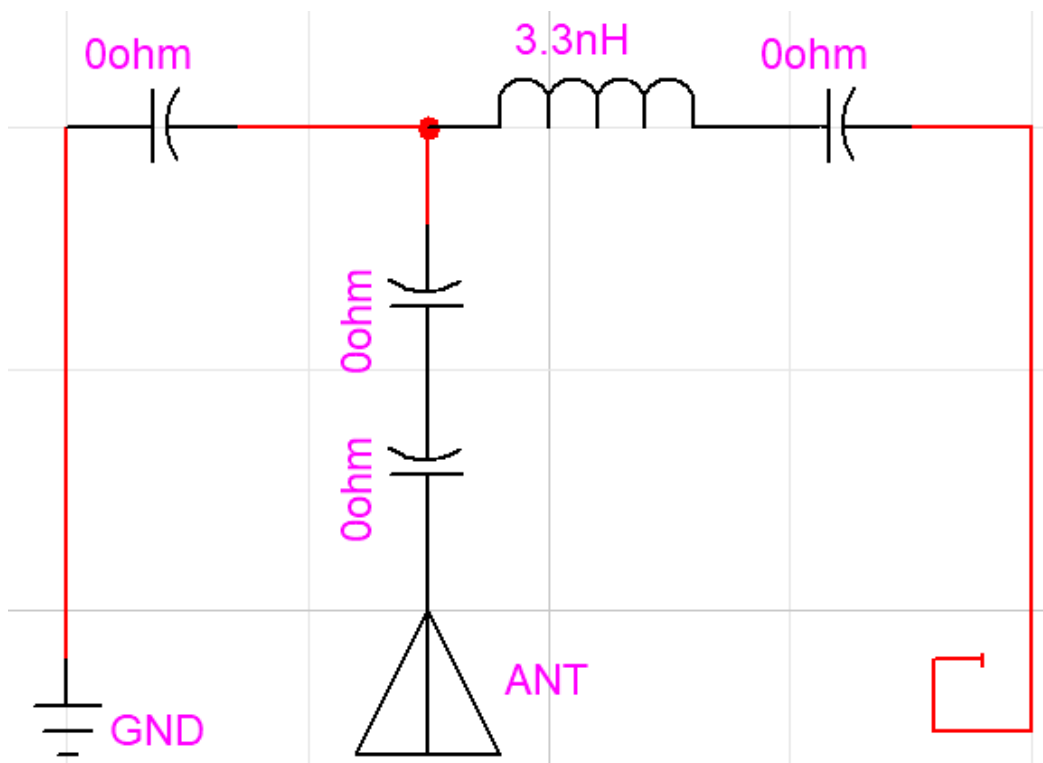
2.2 Electrical Specifications


Frequency Range1 (TX)		2400MHz~2485MHz	
Frequency Range1 (RX)		2400MHz~2485MHz	
IMPEDANCE		50 Ω	
V.S.W.R	TX	2400MHz	2485MHz
		3 ↓	3 ↓
	RX	2400MHz	2485MHz
		3 ↓	3 ↓
RADIATION PATTERN		Omni-directional	
POLARIZATION		Linear	

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4. Matching Network

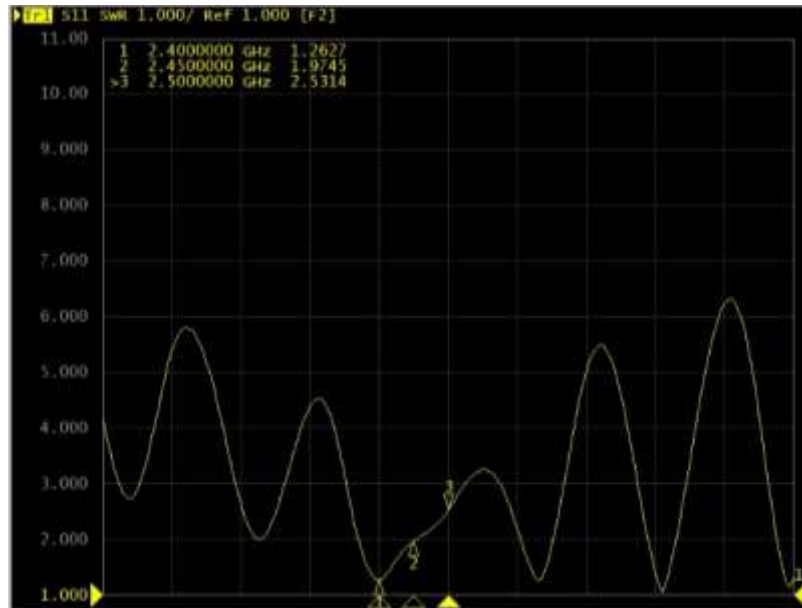
Capacitor value can be changed depending on different situation



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5. Electrical Characteristics

5.1 VSWR

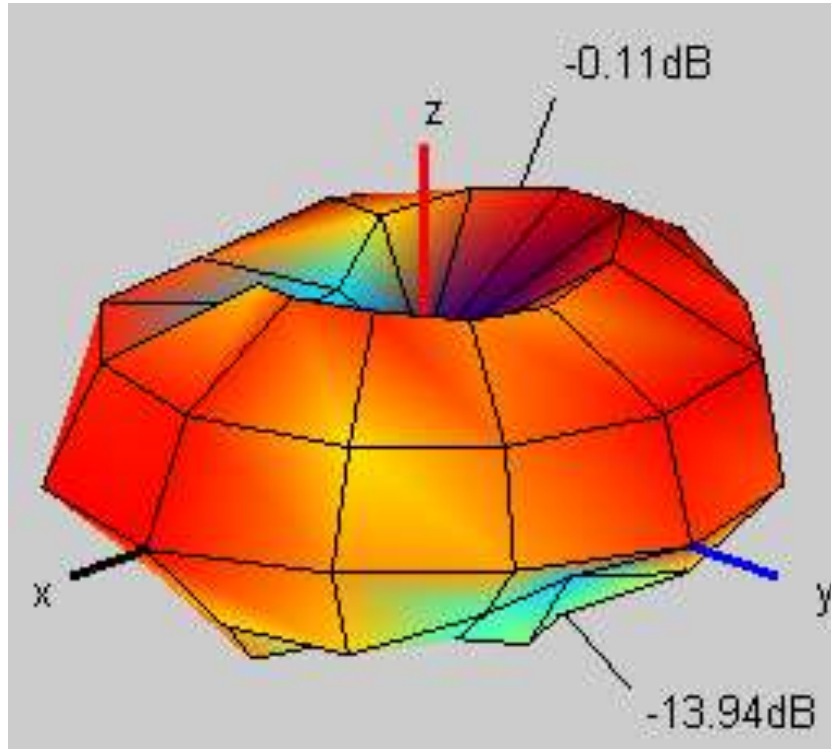


5.2 SMITH CHART

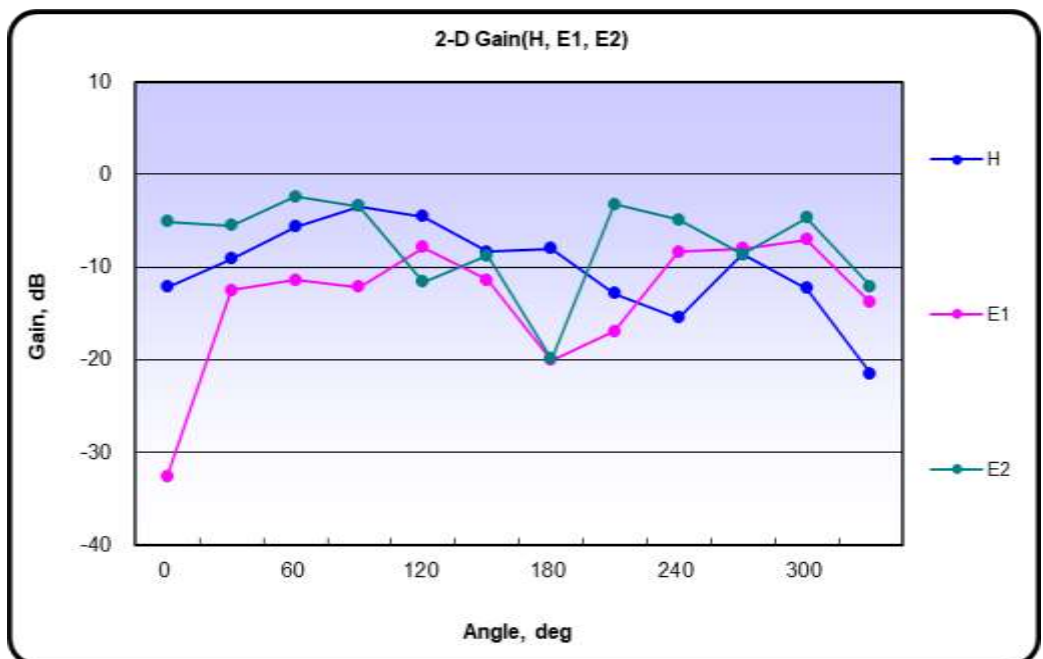



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5.3 3D-PLOTs



5.4 2D-GAIN



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6. Passive Measurement

	1	2	3	4	5	6	7	8	9	10
Frequency [MHz]	2400	2405	2410	2415	2420	2425	2430	2435	2440	2445
Efficiency [dB]	-4.18	-4.14	-4.22	-4.25	-4.26	-4.13	-4.14	-4.31	-4.51	-4.41
Efficiency [%]	38.2	38.6	37.8	37.6	37.5	38.6	38.6	37.1	35.4	36.2
TRG _θ [dB]	-7.43	-7.44	-7.37	-7.45	-7.52	-7.44	-7.30	-7.41	-7.70	-7.50
Gain _{θ Peak} [dB]	-1.95	-2.10	-2.36	-2.23	-1.97	-2.08	-1.63	-2.00	-2.55	-2.19
Gain _{θ Min} [dB]	-29.75	-22.89	-24.35	-25.02	-21.97	-37.55	-28.35	-24.81	-26.01	-34.59
TRG _φ [dB]	-6.97	-6.88	-7.10	-7.08	-7.03	-6.86	-7.00	-7.23	-7.35	-7.35
Gain _{φ Peak} [dB]	-0.69	-0.93	-1.23	-0.73	-0.62	-0.83	-1.13	-1.24	-1.38	-0.78
Gain _{φ Min} [dB]	-31.65	-28.60	-33.02	-27.66	-37.99	-33.04	-31.88	-39.08	-30.94	-35.32
UHRG [dB]	-6.07	-6.02	-6.18	-6.17	-6.13	-6.05	-6.05	-6.27	-6.41	-6.32
UHRG/TRG [%]	64.8	64.8	63.8	64.2	65.1	64.4	64.4	63.7	64.5	64.3
H-Plane	-7.74	-8.09	-7.63	-7.94	-8.10	-7.85	-7.77	-7.94	-8.34	-8.14
E1-Plane, AVG [dB]	-10.95	-10.56	-10.35	-10.69	-10.97	-10.77	-10.77	-10.54	-11.06	-10.81
E2-Plane, AVG [dB]	-5.78	-5.72	-5.94	-5.73	-5.95	-5.66	-5.62	-5.86	-5.82	-5.80
Peak Gain [dB]	0.31	-0.06	-0.32	0.08	0.22	0.22	-0.26	-0.33	-0.54	-0.11
Directivity [dB]	4.50	4.08	3.90	4.32	4.48	4.35	3.87	3.98	3.97	4.30
Minimum Gain [dB]	-14.64	-15.29	-16.20	-14.10	-16.90	-14.87	-13.34	-13.49	-15.59	-13.94

	11	12	13	14	15	16	17	18	19	20
Frequency [MHz]	2450	2455	2460	2465	2470	2475	2480	2485	2490	2497
Efficiency [dB]	-4.60	-4.34	-4.54	-4.46	-4.79	-4.75	-4.61	-5.02	-4.90	-5.06
Efficiency [%]	34.7	36.8	35.2	35.8	33.2	33.5	34.6	31.4	32.3	31.2
TRG _θ [dB]	-7.70	-7.39	-7.62	-7.57	-7.90	-7.90	-7.67	-8.14	-8.09	-8.02
Gain _{θ Peak} [dB]	-1.99	-2.21	-2.28	-2.35	-2.26	-2.65	-2.44	-2.63	-2.79	-3.11
Gain _{θ Min} [dB]	-28.89	-20.72	-24.43	-19.75	-29.14	-28.51	-21.97	-27.30	-27.48	-22.54
TRG _φ [dB]	-7.51	-7.31	-7.47	-7.37	-7.69	-7.63	-7.58	-7.93	-7.74	-8.12
Gain _{φ Peak} [dB]	-1.54	-1.08	-1.12	-1.41	-1.41	-1.37	-1.81	-1.99	-1.36	-1.81
Gain _{φ Min} [dB]	-31.58	-31.70	-29.80	-30.51	-32.06	-31.25	-23.63	-43.19	-30.81	-29.30
UHRG [dB]	-6.54	-6.30	-6.47	-6.38	-6.71	-6.66	-6.55	-6.98	-6.83	-7.04
UHRG/TRG [%]	63.9	63.6	64.0	64.3	64.2	64.5	64.0	63.8	64.1	63.4
H-Plane	-8.18	-7.93	-8.18	-8.18	-8.65	-8.55	-8.07	-8.75	-8.56	-8.57
E1-Plane, AVG [dB]	-10.73	-10.50	-11.01	-10.81	-10.91	-10.93	-10.86	-11.42	-11.12	-10.83
E2-Plane, AVG [dB]	-6.07	-5.48	-5.68	-5.92	-6.35	-6.11	-5.79	-6.37	-6.33	-6.21
Peak Gain [dB]	-0.73	-0.40	-0.48	-0.33	-0.75	-0.78	-0.89	-1.15	-0.66	-0.94
Directivity [dB]	3.87	3.94	4.05	4.13	4.04	3.97	3.73	3.87	4.24	4.12
Minimum Gain [dB]	-13.79	-12.34	-15.29	-15.35	-13.02	-16.13	-13.15	-15.56	-13.41	-13.20

Average Efficiency	-4.47dBi	35.72%
Peak Gain	0.31dBi	