

2024.03.13

RA-N2403-41

APPROVAL SHEET

MODEL : 60S-MESH
Antenna layout

Review	Consent	Approval

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1. Revision History

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NO.	Before	After	Reason	Date
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

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2. Product Information

2.1 General Features

PART NUMBER	GRSN24039MS11
ANTENNA TYPE	PCB Pattern Antenna
APPLICATIONS	MESH

2.2 Electrical Specifications

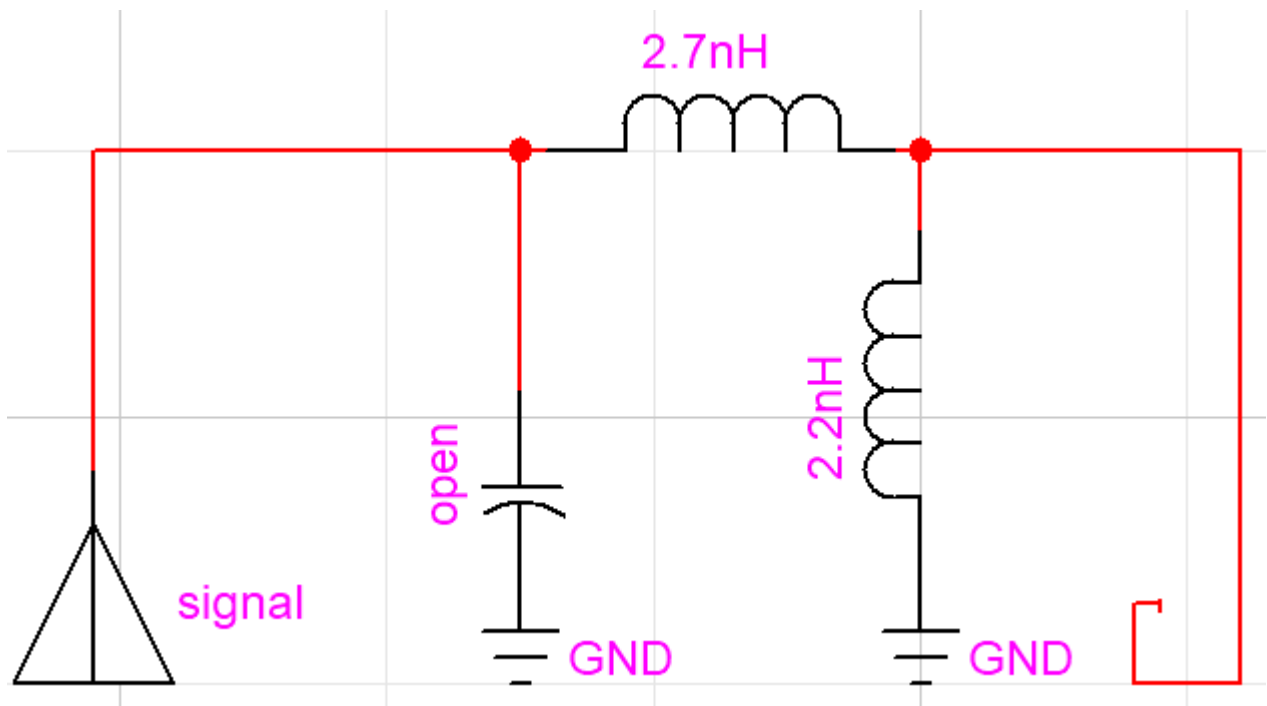
Frequency Range1 (TX)		2400MHz~2485MHz	
Frequency Range1 (RX)		2400MHz~2485MHz	
IMPEDANCE		50 Ω	
V.S.W.R	TX	2400MHz	2485MHz
		3 ↓	3 ↓
	RX	2400MHz	2485MHz
		3 ↓	3 ↓
RADIATION PATTERN		Omni-directional	
POLARIZATION		Linear	

3. Pattern Specifications

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4. Matching Network

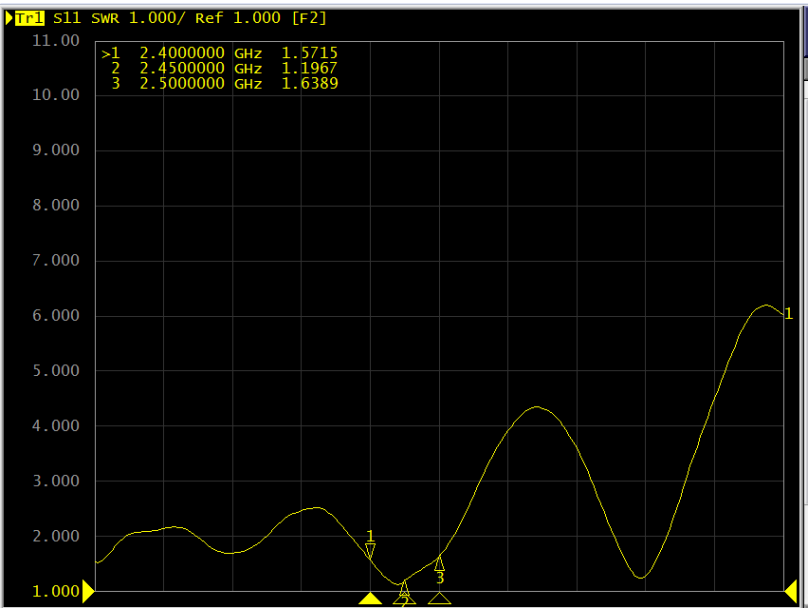
Capacitor value can be changed depending on different situation



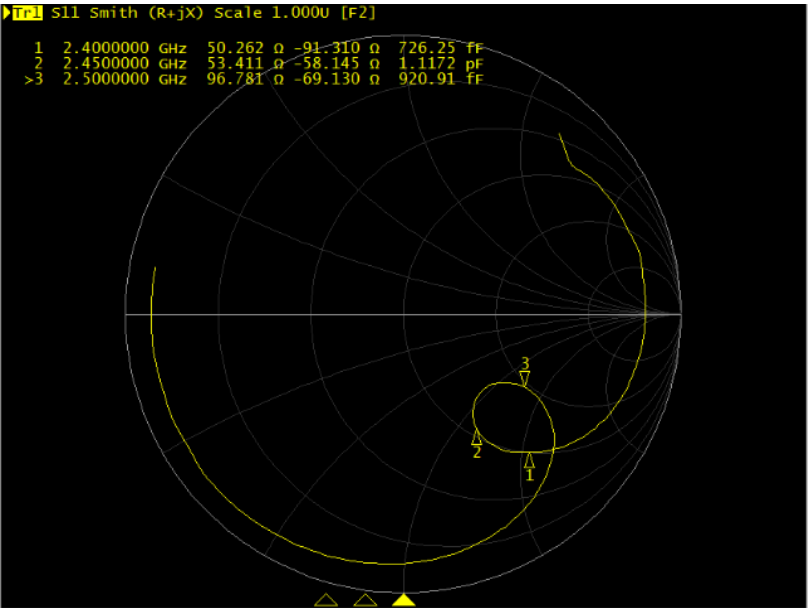
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5. Electrical Characterristics

5.1 VSWR

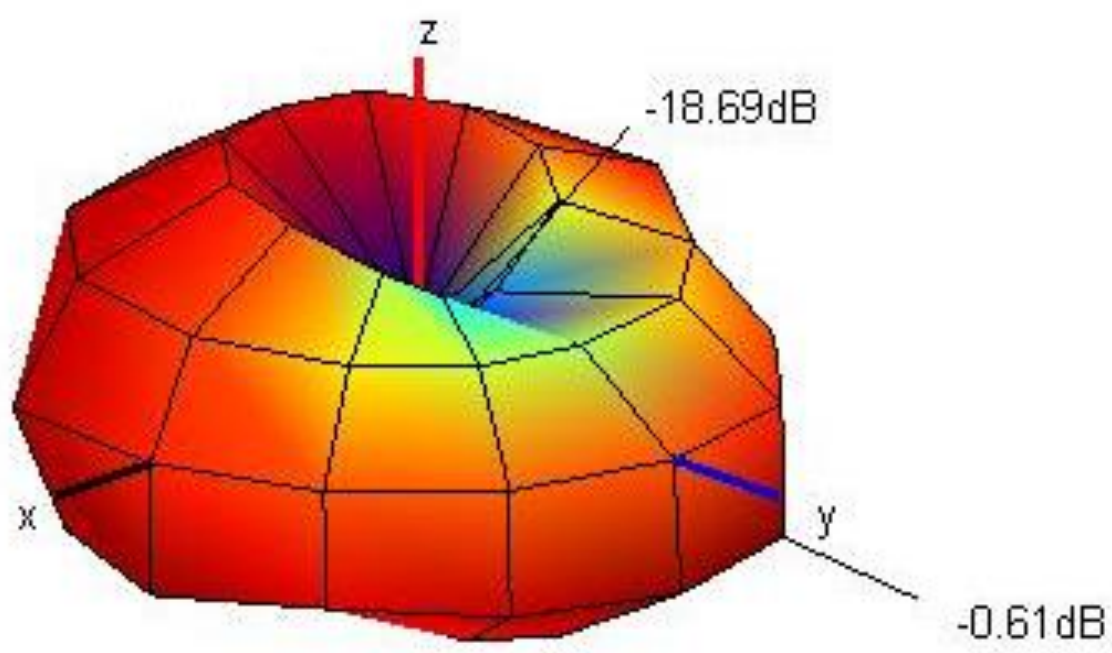


5.2 SMITH CHART

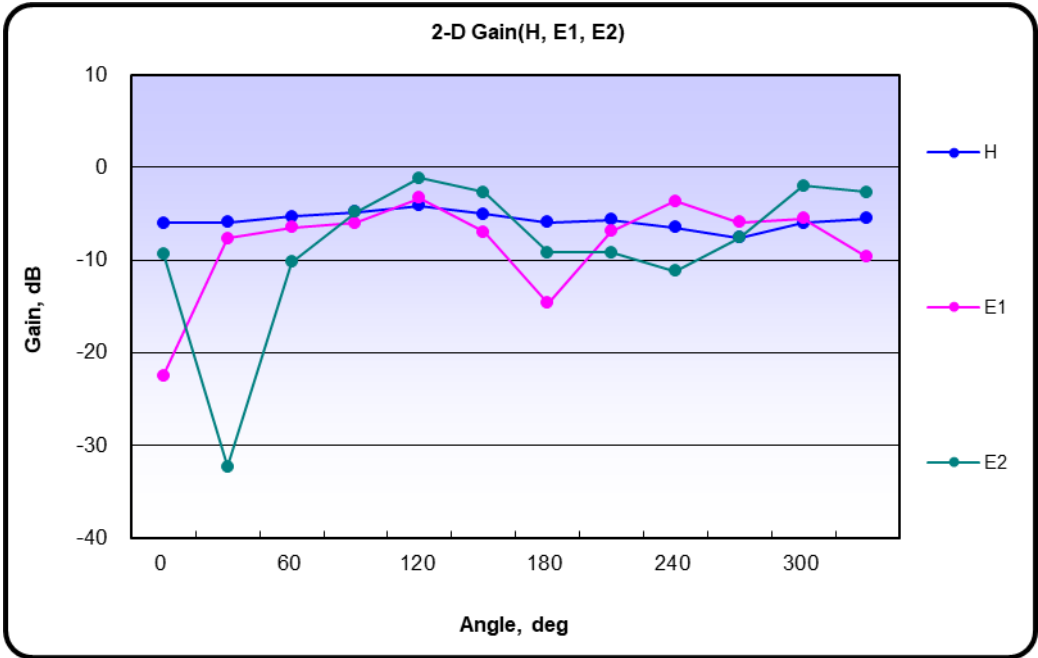


5.3 3D-PLOTs

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5.4 2D-GAIN



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]	-5.84	-5.89	-5.77	-5.59	-5.60	-5.04	-4.46	-4.06	-4.18	-4.05

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Efficiency [%]	26.1	25.8	26.5	27.6	27.5	31.3	35.8	39.3	38.2	39.3
TRG _θ [dB]	-7.05	-7.11	-6.92	-6.76	-6.75	-6.26	-5.55	-5.16	-5.34	-5.20
Gain _{θ Peak} [dB]	-2.67	-2.84	-2.74	-1.95	-1.91	-1.85	-1.27	-0.81	-1.18	-1.16
Gain _{θ Min} [dB]	-36.09	-32.22	-36.92	-29.22	-25.80	-32.50	-43.16	-30.14	-39.91	-32.30
TRG _φ [dB]	-11.99	-12.00	-12.10	-11.85	-11.95	-11.14	-10.98	-10.56	-10.47	-10.41
Gain _{φ Peak} [dB]	-6.56	-6.50	-6.16	-5.44	-6.82	-5.16	-5.00	-4.57	-4.37	-3.91
Gain _{φ Min} [dB]	-29.94	-35.94	-34.01	-34.09	-42.39	-33.73	-33.51	-36.84	-27.87	-34.15
UHRG [dB]	-9.66	-9.66	-9.59	-9.39	-9.36	-8.75	-8.11	-7.70	-7.70	-7.55
UHRG/TRG [%]	41.5	41.9	41.5	41.7	42.1	42.6	43.1	43.2	44.5	44.7
H-Plane	-6.91	-7.01	-6.88	-6.53	-6.64	-6.20	-5.60	-5.29	-5.52	-5.64
E1-Plane, AVG [dB]	-8.36	-8.42	-8.22	-8.05	-8.15	-7.53	-6.97	-6.64	-6.91	-6.58
E2-Plane, AVG [dB]	-7.42	-7.75	-7.39	-7.10	-6.97	-6.48	-5.87	-5.42	-5.44	-5.34
Peak Gain [dB]	-1.69	-1.81	-1.99	-1.68	-1.68	-1.62	-0.69	-0.13	-1.15	-0.61
Directivity [dB]	4.15	4.08	3.78	3.91	3.92	3.42	3.77	3.92	3.03	3.44
Minimum Gain [dB]	-18.81	-25.06	-20.72	-24.59	-20.61	-22.98	-21.45	-21.14	-19.53	-18.69

	11	12	13	14	15	16	17	18	19	20
Frequency [MHz]	2450	2455	2460	2465	2470	2475	2480	2485	2490	2497
Efficiency [dB]	-4.27	-4.03	-3.86	-3.68	-3.49	-3.54	-3.72	-4.29	-4.33	-4.46
Efficiency [%]	37.4	39.6	41.1	42.8	44.8	44.2	42.4	37.2	36.9	35.8
TRG _θ [dB]	-5.35	-5.11	-4.99	-4.75	-4.57	-4.59	-4.77	-5.34	-5.34	-5.49
Gain _{θ Peak} [dB]	-0.92	-0.63	-0.84	-0.51	-0.31	-0.46	-1.01	-1.20	-1.40	-1.34
Gain _{θ Min} [dB]	-48.71	-38.26	-24.03	-24.63	-21.15	-27.48	-31.11	-48.89	-23.41	-20.95
TRG _φ [dB]	-10.85	-10.58	-10.28	-10.29	-10.06	-10.25	-10.40	-10.96	-11.15	-11.23
Gain _{φ Peak} [dB]	-5.03	-4.43	-4.36	-4.03	-4.07	-4.42	-4.05	-5.17	-4.38	-5.21
Gain _{φ Min} [dB]	-32.09	-33.99	-38.26	-41.32	-38.44	-27.53	-51.59	-32.81	-41.81	-34.49
UHRG [dB]	-7.72	-7.45	-7.17	-6.99	-6.69	-6.77	-6.91	-7.46	-7.50	-7.66
UHRG/TRG [%]	45.2	45.4	46.7	46.7	47.9	47.6	48.0	48.2	48.2	47.9
H-Plane	-5.79	-5.29	-5.26	-5.02	-4.73	-4.73	-5.00	-5.44	-5.22	-5.41
E1-Plane, AVG [dB]	-6.69	-6.64	-6.50	-6.13	-5.80	-6.04	-6.31	-7.05	-6.93	-7.07
E2-Plane, AVG [dB]	-5.30	-5.24	-5.14	-5.00	-4.68	-4.66	-4.85	-5.51	-5.59	-5.56
Peak Gain [dB]	-0.74	-0.44	-0.58	0.01	0.12	-0.29	-0.70	-0.87	-1.05	-1.27
Directivity [dB]	3.53	3.59	3.28	3.69	3.61	3.25	3.03	3.42	3.28	3.20
Minimum Gain [dB]	-19.59	-20.52	-18.66	-19.61	-17.45	-21.04	-20.55	-25.13	-19.36	-15.34

Average Efficiency	-4.44dBi	35.98%
Peak Gain	0.12dBi	