

2024.03.13

RA-N2403-41

APPROVAL SHEET

MODEL : 60S-MESH
Antenna layout

Review	Consent	Approval

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	PRODUCT APPROVAL SHEET		GRSN24039MS11			
	MODEL NAME	60S-MESH	REV.	1.0	Page	2 / 8

Table of contents

1. Revision History

2. Product Information

2.1 General Features

2.2 Electrical Specifications

3. Pattern Specifications

4. Matching Network

5. Electrical Characteristics

5.1 VSWR

5.2 Smith Chart

5.3 3D-PLOT

5.4 2D-GAIN

6. Passive Measurement

7. Measurement Process

1. Revision History

	PRODUCT APPROVAL SHEET		GRSN24039MS11			
	MODEL NAME	60S-MESH	REV.	1.0	Page	3 / 8

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

	PRODUCT APPROVAL SHEET		GRSN24039MS11			
	MODEL NAME	60S-MESH	REV.	1.0	Page	4 / 8

2. Product Information

2.1 General Features

PART NUMBER	GRSN24039MS11
ANTENNA TYPE	PCB Pattern Antenna
APPLICATIONS	MESH

2.2 Electrical Specifications

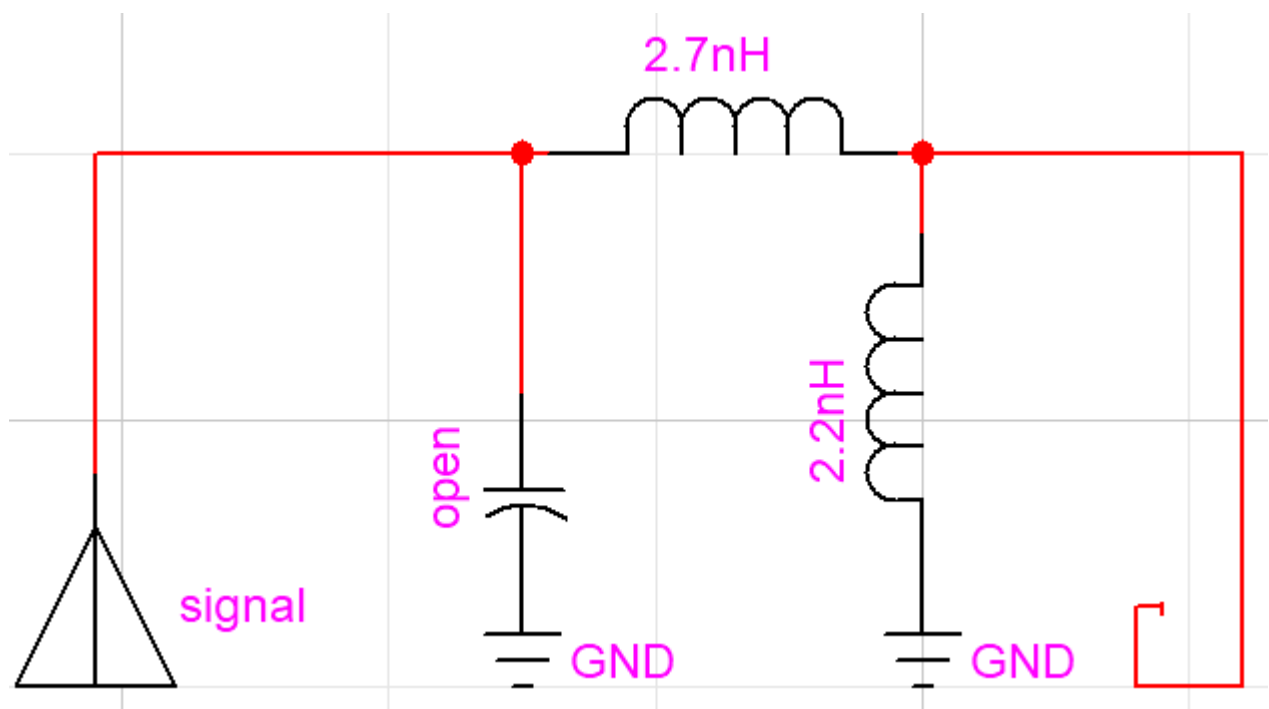
Frequency Range1 (TX)		2400MHz~2485MHz	
Frequency Range1 (RX)		2400MHz~2485MHz	
IMPEDANCE		50 Ω	
V.S.W.R	TX	2400MHz	2485MHz
		3 ↓	3 ↓
	RX	2400MHz	2485MHz
		3 ↓	3 ↓
RADIATION PATTERN		Omni-directional	
POLARIZATION		Linear	

3. Pattern Specifications

	PRODUCT APPROVAL SHEET		GRSN24039MS11			
	MODEL NAME	60S-MESH	REV.	1.0	Page	5 / 8

4. Matching Network

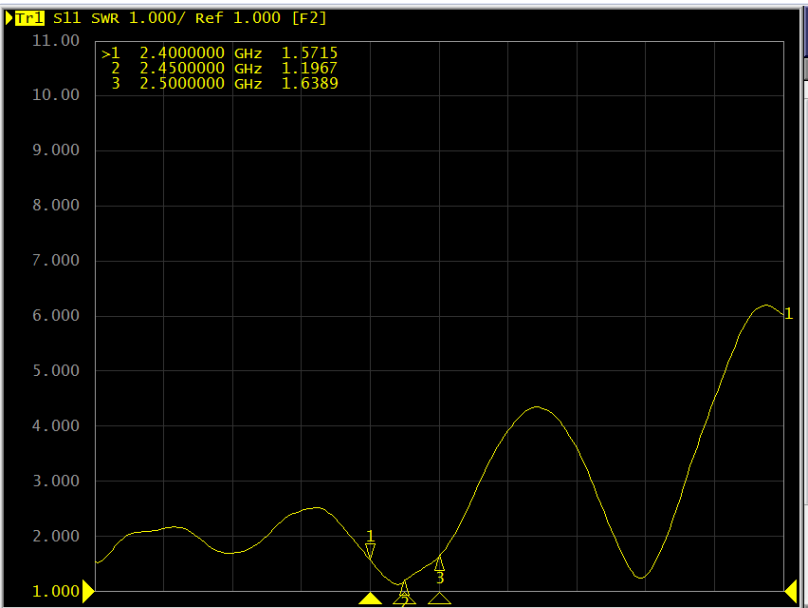
Capacitor value can be changed depending on different situation



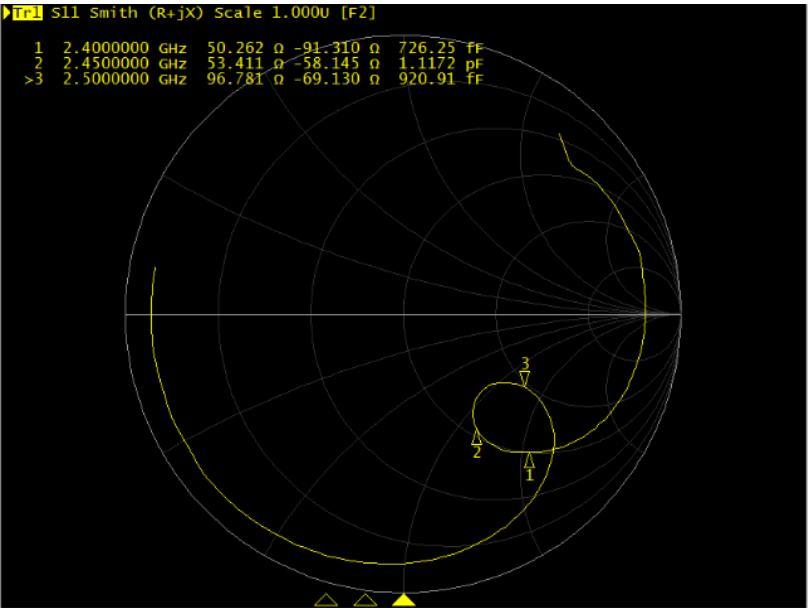
	PRODUCT APPROVAL SHEET		GRSN24039MS11			
	MODEL NAME	60S-MESH	REV.	1.0	Page	6 / 8

5. Electrical Characterristics

5.1 VSWR

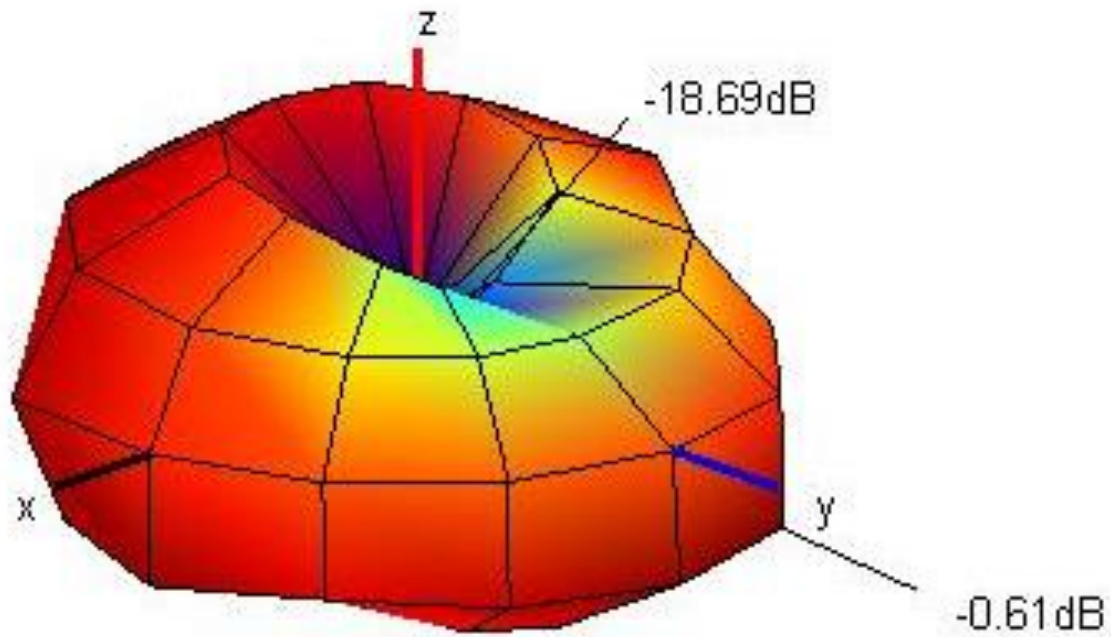


5.2 SMITH CHART

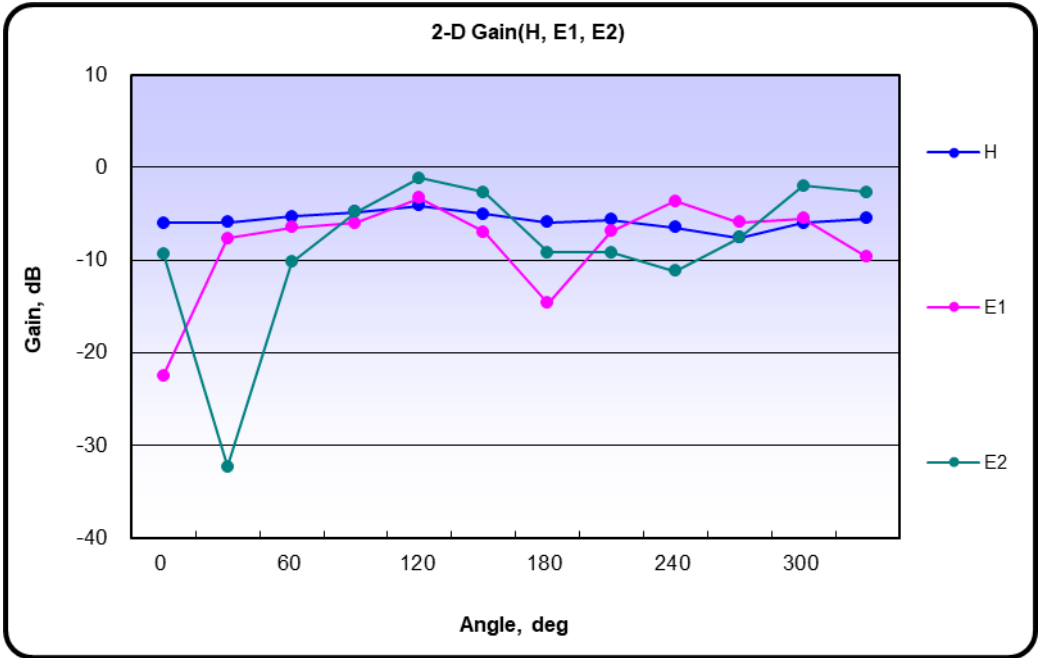


5.3 3D-PLOTs

	PRODUCT APPROVAL SHEET		GRSN24039MS11			
	MODEL NAME	60S-MESH	REV.	1.0	Page	7 / 8



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

	PRODUCT APPROVAL SHEET		GRSN24039MS11			
	MODEL NAME	60S-MESH	REV.	1.0	Page	8 / 8

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	