2023.10.19

RA-N2310-11

APPROVAL SHEET

MODEL : X-COM3
Antenna layout

Review	Consent	Approval

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1. Revision History

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2. Product Information

2.1 General Features

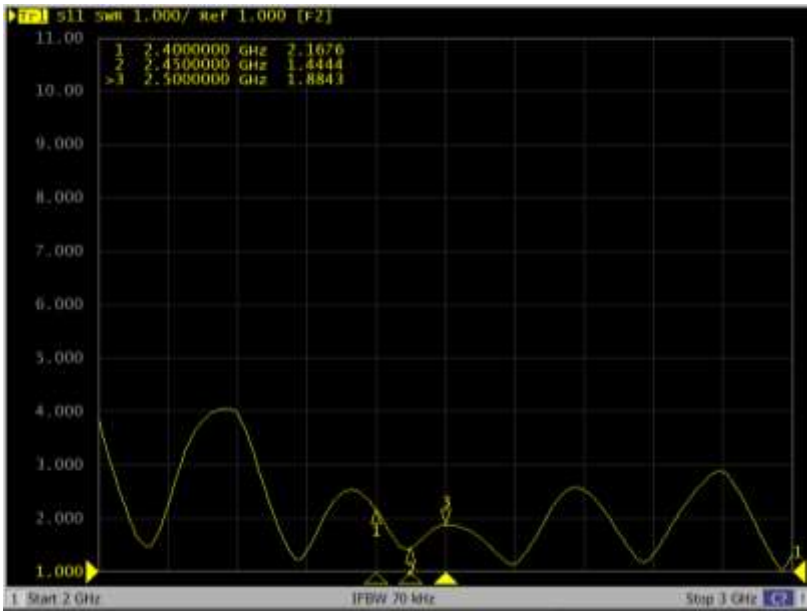
PART NUMBER	GRSN23108MS31
ANTENNA TYPE	Dipole Antenna
APPLICATIONS	Mesh

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	

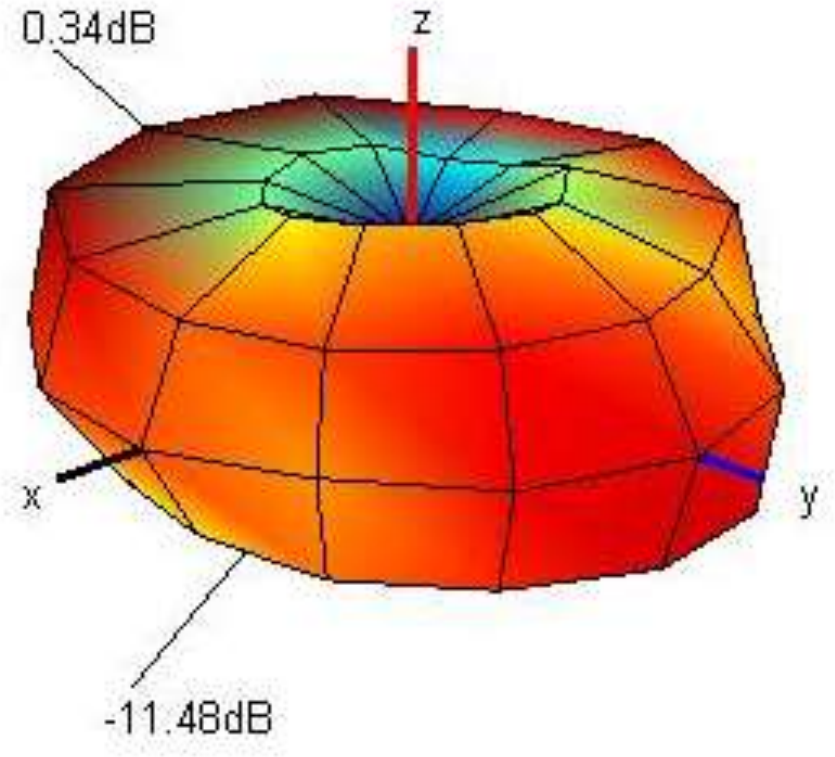
3. Electrical Characterristics

3.1 VSWR

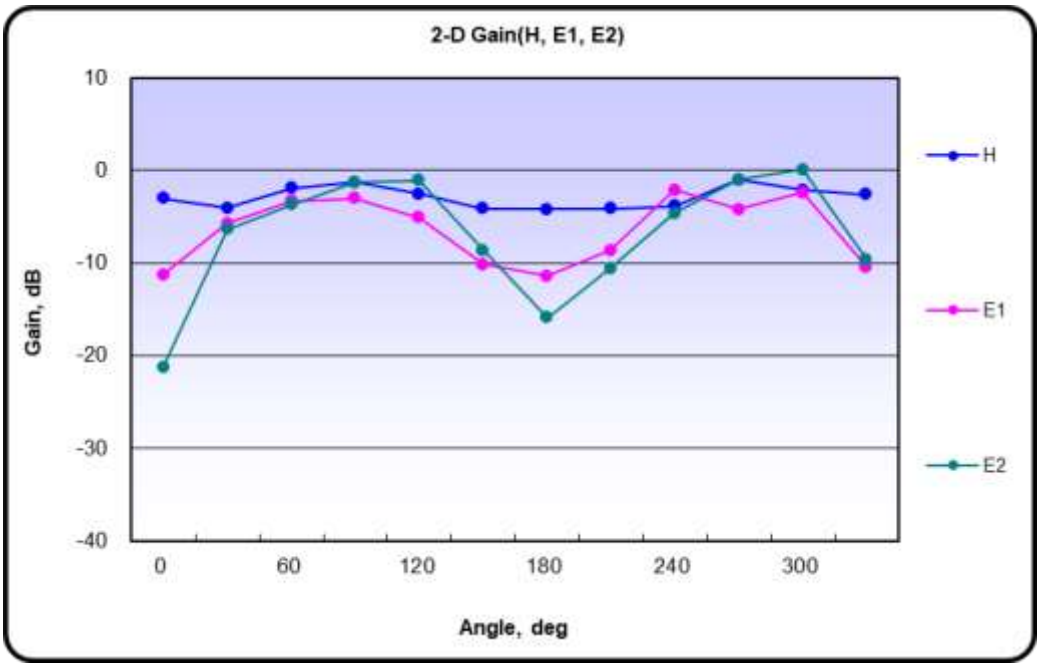


3.2 SMITH CHART

3.3 3D-PLOT



3.4 2D-GAIN



4. 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]	**-4.22**	**-4.04**	**-3.82**	**-3.79**	**-3.75**	**-3.76**	**-3.45**	**-3.39**	**-3.23**	**-3.04**
Efficiency [%]	**37.8**	**39.5**	**41.5**	**41.7**	**42.2**	**42.1**	**45.2**	**45.8**	**47.5**	**49.6**
TRG_{θ} [dB]	-5.31	-5.01	-4.76	-4.74	-4.61	-4.57	-4.17	-4.09	-3.90	-3.64
$Gain_{\theta\ Peak}$ [dB]	-0.15	0.10	0.28	0.26	0.00	-0.09	0.05	0.28	0.16	0.07
$Gain_{\theta\ Min}$ [dB]	-22.03	-18.41	-16.94	-15.92	-15.47	-15.25	-14.16	-12.62	-13.38	-12.86
TRG_{φ} [dB]	-10.77	-10.99	-10.96	-10.89	-11.19	-11.44	-11.61	-11.68	-11.70	-11.99
$Gain_{\varphi\ Peak}$ [dB]	-5.37	-5.34	-5.19	-5.00	-5.58	-6.11	-5.42	-6.21	-5.71	-5.43
$Gain_{\varphi\ Min}$ [dB]	-24.54	-22.78	-25.33	-36.27	-25.09	-28.47	-29.96	-28.69	-35.40	-29.34
UHRG [dB]	-6.55	-6.37	-6.29	-6.20	-6.16	-6.25	-5.97	-5.84	-5.74	-5.63
UHRG/TRG [%]	58.5	58.4	56.6	57.4	57.4	56.4	56.0	56.9	56.1	55.1
H-Plane	-5.87	-5.34	-4.96	-4.62	-4.57	-4.31	-3.66	-3.54	-3.22	-2.78
E1-Plane, AVG [dB]	-6.89	-6.84	-6.61	-6.59	-6.52	-6.32	-6.10	-6.24	-5.70	-5.26
E2-Plane, AVG [dB]	-5.62	-5.17	-4.86	-5.07	-4.88	-4.88	-4.58	-4.37	-4.35	-4.08
Peak Gain [dB]	0.31	0.58	0.74	0.74	0.40	0.42	0.47	0.64	0.51	0.34
Directivity [dB]	4.53	4.62	4.57	4.54	4.14	4.18	3.92	4.03	3.74	3.38
Minimum Gain [dB]	-12.06	-11.14	-10.15	-10.77	-11.53	-11.48	-12.06	-10.82	-12.27	-11.48

	12	13	14	15	16	17	18	19	20	12
Frequency [MHz]	**2450**	**2455**	**2460**	**2465**	**2470**	**2475**	**2480**	**2485**	**2490**	**2497**
Efficiency [dB]	**-3.18**	**-3.05**	**-3.35**	**-3.43**	**-3.40**	**-3.30**	**-3.05**	**-3.64**	**-3.73**	**-3.72**
Efficiency [%]	**48.1**	**49.6**	**46.3**	**45.4**	**45.7**	**46.8**	**49.5**	**43.3**	**42.4**	**42.4**
TRG_{θ} [dB]	-3.74	-3.57	-3.87	-3.92	-3.86	-3.70	-3.45	-4.02	-4.08	-4.03
$Gain_{\theta\ Peak}$ [dB]	-0.05	0.08	-0.35	-0.17	-0.47	-0.15	-0.06	-0.47	-0.71	-0.39
$Gain_{\theta\ Min}$ [dB]	-14.03	-12.64	-13.25	-12.57	-15.51	-14.56	-11.58	-12.89	-12.46	-13.03
TRG_{φ} [dB]	-12.35	-12.51	-12.81	-13.21	-13.35	-13.83	-13.70	-14.39	-14.82	-15.34
$Gain_{\varphi\ Peak}$ [dB]	-5.73	-6.21	-6.81	-7.79	-7.61	-7.61	-7.68	-8.51	-9.82	-9.31
$Gain_{\varphi\ Min}$ [dB]	-31.76	-45.37	-33.43	-38.09	-26.90	-30.89	-31.49	-34.91	-34.42	-30.25
UHRG [dB]	-5.72	-5.70	-6.06	-6.15	-6.16	-6.10	-5.87	-6.49	-6.57	-6.62
UHRG/TRG [%]	55.7	54.3	53.5	53.5	52.9	52.5	52.2	51.8	52.0	51.3
H-Plane	-2.91	-2.54	-2.88	-2.86	-2.75	-2.65	-2.33	-3.10	-2.99	-3.07
E1-Plane, AVG [dB]	-5.50	-4.96	-5.50	-5.62	-5.35	-5.24	-5.24	-5.64	-5.77	-5.63
E2-Plane, AVG [dB]	-4.50	-4.03	-4.48	-4.62	-4.42	-4.51	-4.07	-4.59	-4.84	-4.76
Peak Gain [dB]	0.34	0.55	-0.09	0.23	-0.23	0.21	0.10	-0.33	-0.52	-0.15
Directivity [dB]	3.52	3.60	3.26	3.66	3.16	3.51	3.16	3.31	3.21	3.57
Minimum Gain [dB]	-10.52	-10.59	-11.27	-10.74	-9.83	-10.08	-11.43	-10.49	-11.95	-11.22

Average Efficiency	**-3.51dBi**	**44.62%**
Peak Gain	**0.74dBi**	