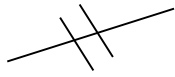




RFID Quadrifilar Helix Antenna Specification

Unit Name.	QUBE PLUS
Parts Name	KSA-947A7015B80F
Date	19-Jan-24

Written by	Checked by	Approved by
JSKim		

Head Office & Factory

614-1, Wolhari Suhmyon Yunkikun Chungnam, Republic of Korea
Phone No: 82-41-865-9000; FAX No: 82-41-865-9339

Seoul Branch Office

115-16, Buma B/D Nonhyun-dong Kangnam-ku Seoul, Republic of Korea
PhoneNo: 82-41-548-7691; FAX No: 82-41-548-7690

USA Branch Office in PA

354, Goldfinch Drive, Palmyra, PA 17078 USA
Phone No.: 717-838-8373; FAX No: 215-754-460

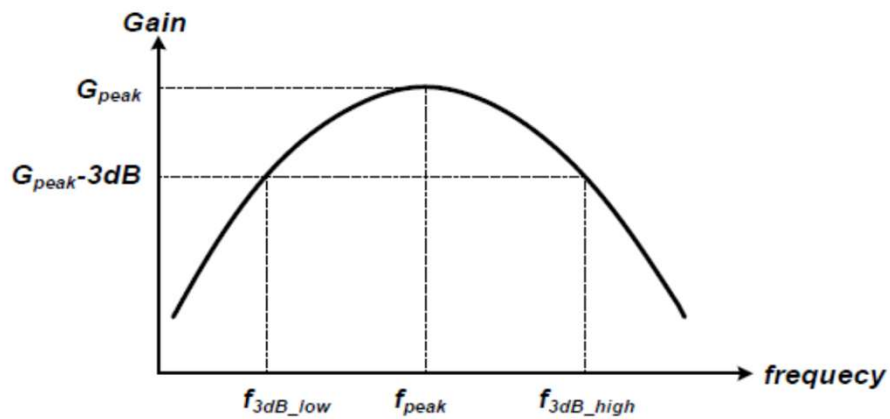
1. Part Name

KSA-947A7015B80F

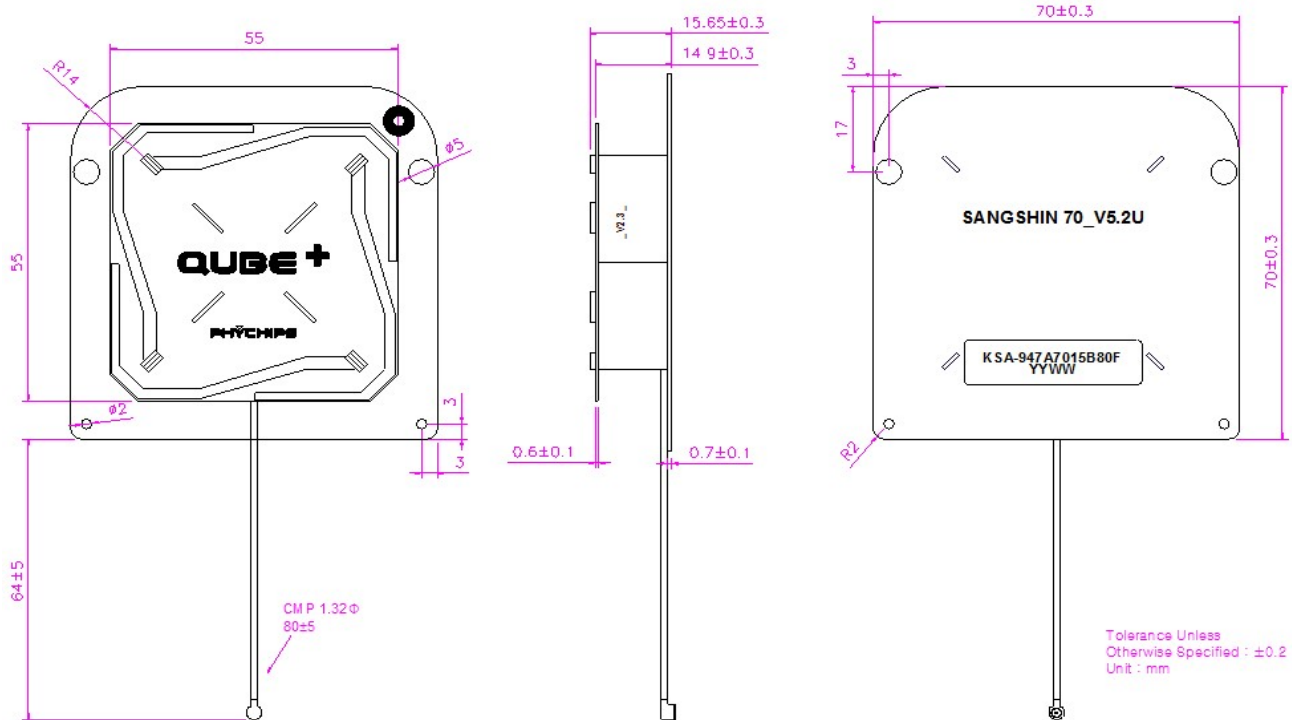
2. Electrical Specifications

Item	Specifications			
	Min.	Typical	Max.	Unit
Center Frequency (= Fc)	943	947	951	MHz
3dB Bandwidth	26	30		MHz
Return Loss @ Fc			-15	dB
Polarization	R.H.C.P			
Peak Gain @ Fc (RHCP)		3.8		dBic
Gain @ Reference Antenna	-14	-11		dB

Note 1. 3dB Bandwidth is defined as frequency range between f_{3dB_low} and f_{3dB_high} .

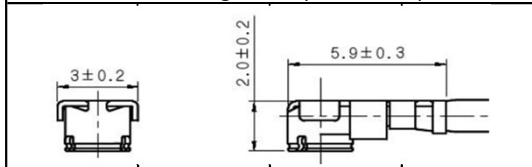


3. Dimensions



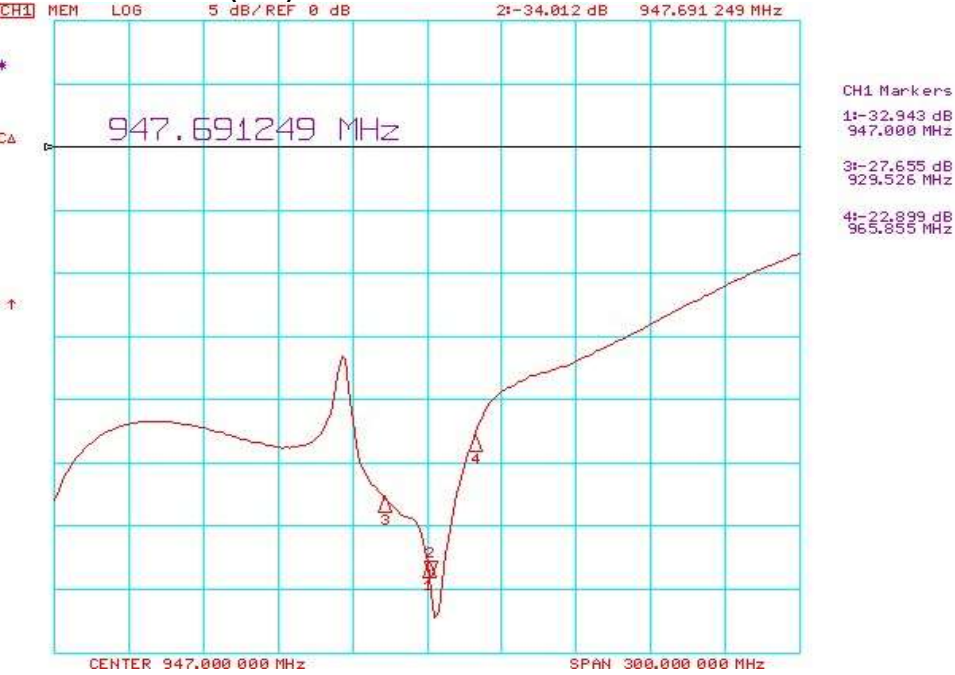
* Dimensions of Connector

CMP- Gigalane(domestic)

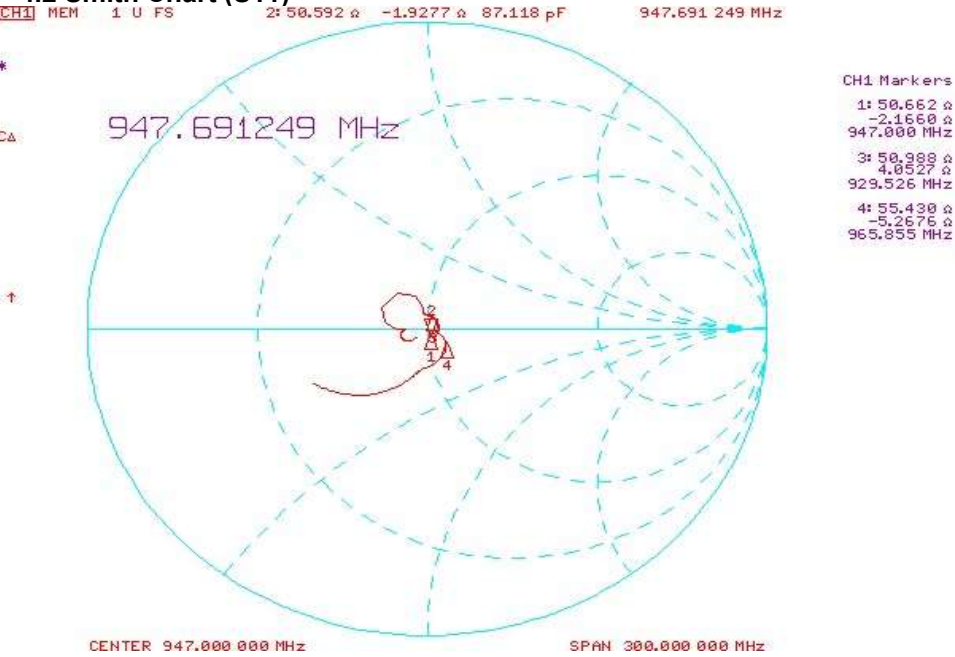


4. S-parameter Data

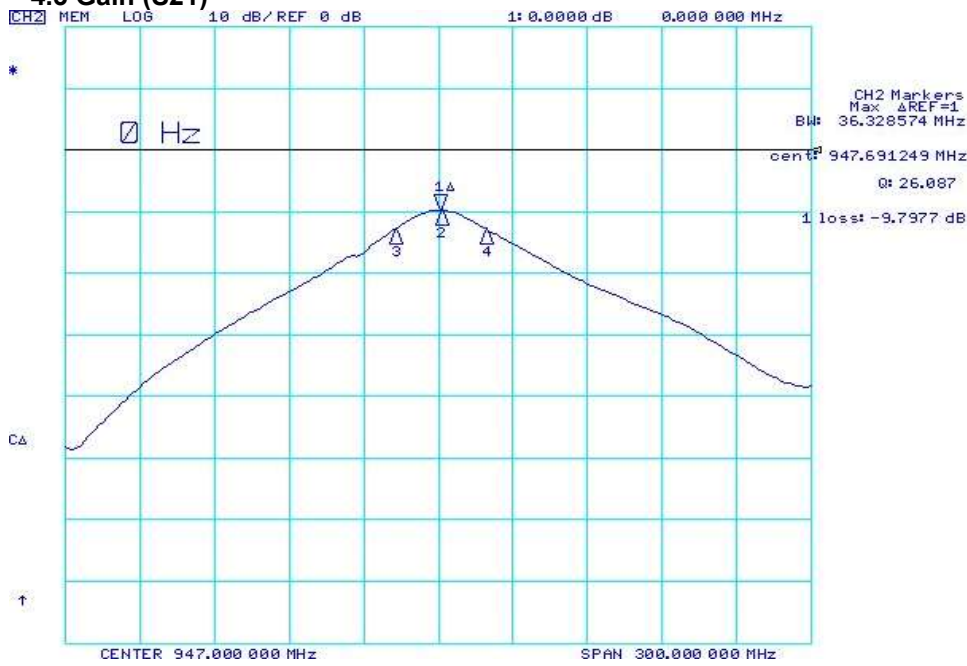
4.1 Return Loss (S11)



4.2 Smith Chart (S11)



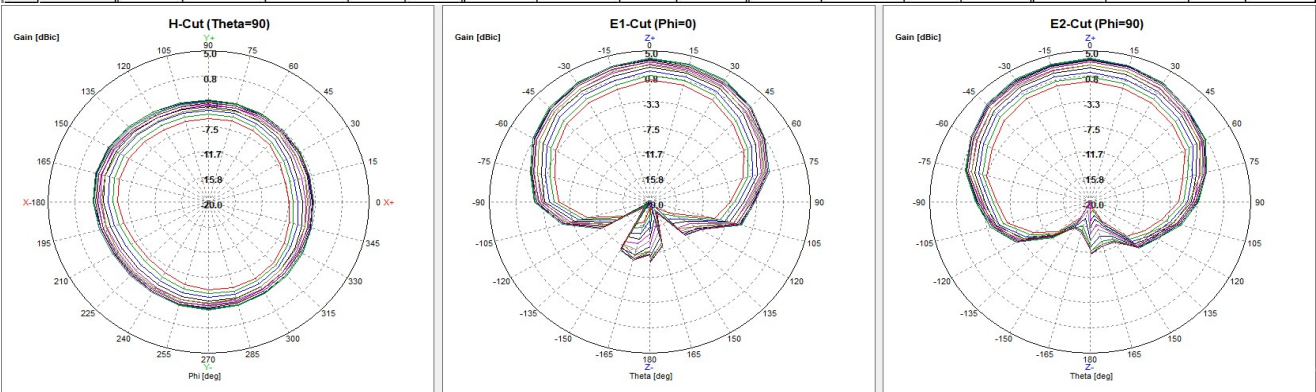
4.3 Gain (S21)



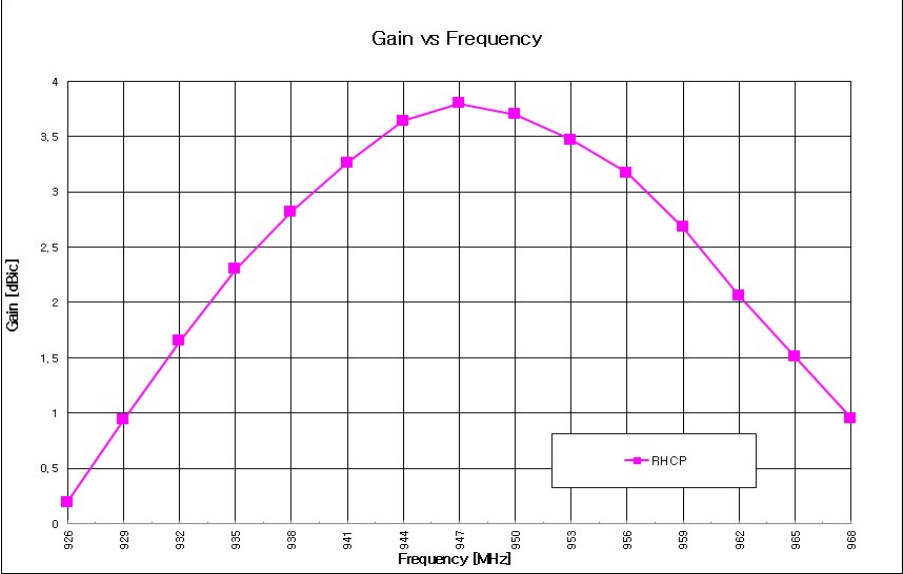
5. Antenna Chamber Data

5.1 RHCP Gain

No.	Freq.	RHCP			Theta[°]	Phi[deg]	H(Theta=0)				E1(Phi=0)				E2(Phi=90)			
		Eff.[%]	Avg.[dBic]	Peak[dBic]			Avg.[dBic]	Peak[dBic]	[deg]	BW[deg]	Avg.[dBic]	Peak[dBic]	Theta[°]	BW[deg]	Avg.[dBic]	Peak[dBic]	Theta[°]	BW[deg]
1	926.000	31.66	-5.00	0.19	0.00	30.00	-6.24	-5.34	285.00	999.00	-4.60	0.17	0.00	114.27	-4.19	-0.03	0.00	131.23
2	929.000	37.61	-4.25	0.94	0.00	15.00	-5.53	-4.73	285.00	999.00	-3.83	0.91	0.00	115.25	-3.44	0.72	0.00	130.87
3	932.000	44.42	-3.52	1.65	0.00	30.00	-4.85	-4.04	165.00	999.00	-3.09	1.62	0.00	115.98	-2.73	1.47	0.00	129.49
4	935.000	51.87	-2.85	2.30	0.00	45.00	-4.22	-3.34	165.00	999.00	-2.39	2.27	0.00	117.28	-2.08	2.15	0.00	129.12
5	938.000	58.79	-2.31	2.82	0.00	45.00	-3.72	-2.78	165.00	999.00	-1.82	2.79	0.00	118.55	-1.55	2.69	0.00	128.87
6	941.000	65.36	-1.85	3.26	0.00	45.00	-3.31	-2.30	165.00	999.00	-1.34	3.20	0.00	120.34	-1.11	3.14	0.00	128.70
7	944.000	71.82	-1.44	3.64	0.00	45.00	-2.93	-1.94	165.00	999.00	-0.91	3.58	0.00	121.71	-0.72	3.55	0.00	128.72
8	947.000	75.36	-1.23	3.80	0.00	60.00	-2.76	-1.80	165.00	999.00	-0.69	3.76	0.00	123.05	-0.53	3.75	0.00	128.58
9	950.000	73.86	-1.32	3.70	0.00	60.00	-2.88	-1.99	165.00	999.00	-0.77	3.64	0.00	124.20	-0.62	3.64	0.00	129.00
10	953.000	70.30	-1.53	3.47	0.00	75.00	-3.12	-2.31	165.00	999.00	-0.99	3.41	0.00	124.51	-0.84	3.44	0.00	128.42
11	956.000	65.80	-1.82	3.17	0.00	300.00	-3.44	-2.70	165.00	999.00	-1.29	3.11	0.00	125.19	-1.12	3.14	0.00	128.64
12	959.000	58.66	-2.32	2.68	0.00	300.00	-3.96	-3.30	270.00	999.00	-1.79	2.62	0.00	124.89	-1.61	2.64	0.00	128.46
13	962.000	50.81	-2.94	2.06	0.00	315.00	-4.61	-3.91	255.00	999.00	-2.43	1.99	0.00	124.81	-2.22	2.02	0.00	128.93
14	965.000	44.64	-3.50	1.51	0.00	300.00	-5.18	-4.45	255.00	999.00	-3.00	1.42	0.00	124.63	-2.77	1.43	0.00	129.46
15	968.000	39.20	-4.07	0.95	0.00	300.00	-5.76	-4.99	255.00	999.00	-3.58	0.85	0.00	124.63	-3.31	0.89	0.00	129.25



5.2 Gain vs Frequency



6. Measurement within enclosure

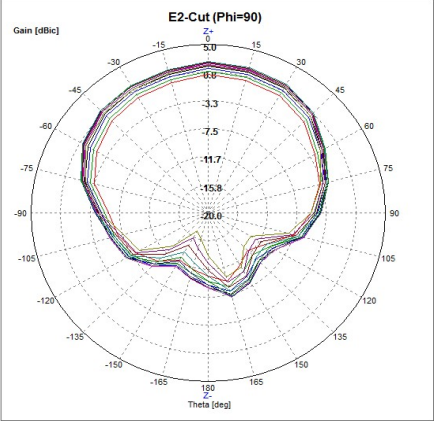
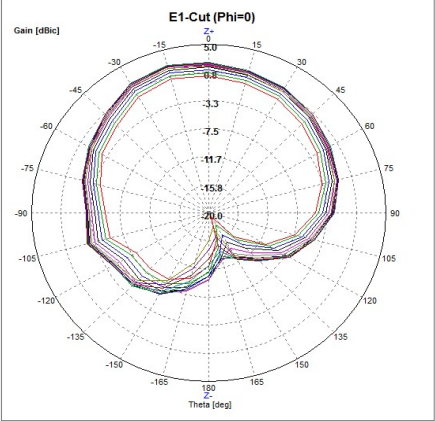
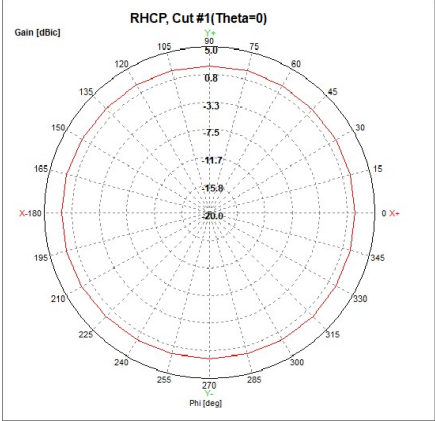
6.1 Reader or Model Name
IDRO900H

6.2 Electrical Specifications

Item		Specifications			
		Min.	Typical	Max.	Unit
Center Frequency (= Fc)		917	921	925	MHz
3dB Bandwidth		26	30		MHz
Return Loss @ Fc				-15	dB
Polarization		R.H.C.P			
Peak Gain	RHCP		2.72		dBic
	H (Theta-Pol)		0.48		dB
	V (Phi-Pol)		0.88		dB
Axial Ratio @ Fc			1.23		

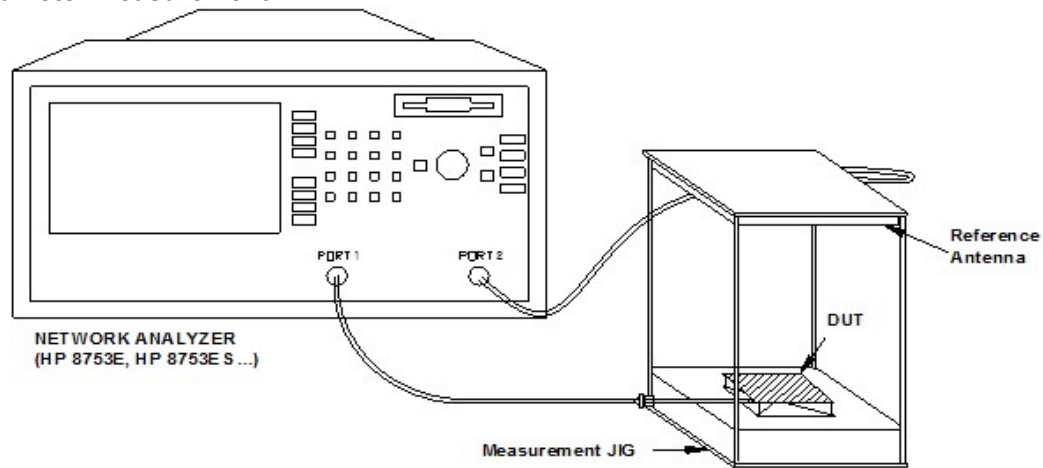
6.3 Antenna Chamber Data within enclosure

RHCP							Theta-Pol							Phi-Pol						
No.	Freq.	Eff.[%]	Avg.[dBic]	Peak[dBic]	Theta[°]	Phi[deg]	No.	Freq.	Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta[°]	Phi[deg]	No.	Freq.	Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta[°]	Phi[deg]
1	907.000	38.04	-4.20	0.67	0.00	165.00	1	907.000	18.64	-7.30	-1.75	15.00	90.00	1	907.000	23.72	-6.25	-1.28	0.00	165.00
2	909.000	42.96	-3.67	1.19	0.00	165.00	2	909.000	21.15	-6.75	-1.20	15.00	90.00	2	909.000	26.71	-5.73	-0.71	0.00	165.00
3	911.000	47.91	-3.20	1.63	0.00	165.00	3	911.000	23.68	-6.26	-0.70	15.00	90.00	3	911.000	29.75	-5.26	-0.22	0.00	165.00
4	913.000	52.53	-2.80	2.01	0.00	180.00	4	913.000	26.07	-5.84	-0.28	15.00	90.00	4	913.000	32.60	-4.87	0.18	0.00	165.00
5	915.000	56.32	-2.49	2.30	0.00	180.00	5	915.000	28.06	-5.52	0.02	15.00	90.00	5	915.000	34.94	-4.57	0.47	0.00	165.00
6	917.000	58.98	-2.29	2.50	0.00	180.00	6	917.000	29.50	-5.30	0.25	15.00	90.00	6	917.000	36.59	-4.37	0.67	0.00	180.00
7	919.000	60.82	-2.16	2.64	0.00	180.00	7	919.000	30.51	-5.16	0.38	15.00	105.00	7	919.000	37.75	-4.23	0.81	0.00	180.00
8	921.000	61.73	-2.10	2.72	0.00	195.00	8	921.000	31.01	-5.08	0.47	15.00	105.00	8	921.000	38.38	-4.16	0.88	0.00	180.00
9	923.000	61.28	-2.13	2.70	0.00	195.00	9	923.000	30.81	-5.11	0.48	15.00	105.00	9	923.000	38.17	-4.18	0.86	0.00	180.00
10	925.000	59.42	-2.26	2.60	0.00	195.00	10	925.000	29.84	-5.25	0.37	15.00	105.00	10	925.000	37.11	-4.30	0.74	0.00	180.00
11	927.000	56.56	-2.47	2.44	0.00	195.00	11	927.000	28.35	-5.47	0.20	15.00	105.00	11	927.000	35.42	-4.51	0.50	0.00	180.00
12	929.000	53.14	-2.75	2.18	0.00	195.00	12	929.000	26.58	-5.75	-0.09	15.00	105.00	12	929.000	33.35	-4.77	0.22	0.00	180.00
13	931.000	49.41	-3.06	1.91	0.00	195.00	13	931.000	24.65	-6.08	-0.38	15.00	105.00	13	931.000	31.08	-5.08	-0.12	0.00	180.00
14	933.000	45.46	-3.42	1.60	0.00	195.00	14	933.000	22.62	-6.46	-0.73	15.00	105.00	14	933.000	28.67	-5.43	-0.47	0.00	195.00
15	935.000	41.41	-3.83	1.23	0.00	210.00	15	935.000	20.54	-6.87	-1.11	15.00	105.00	15	935.000	26.16	-5.82	-0.88	0.00	180.00

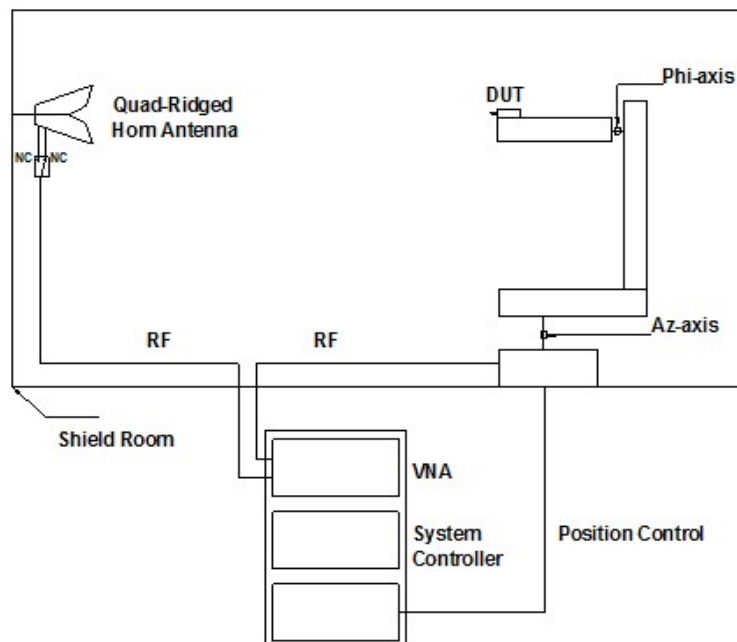


7. Measurement Condition

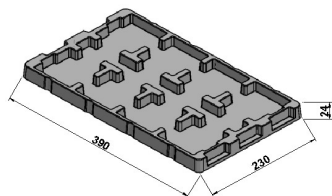
7.1 S-parameter Measurement



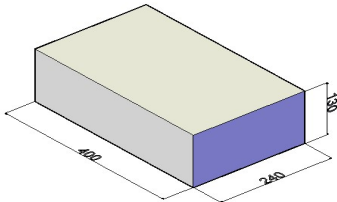
7.2 Gain Measurement



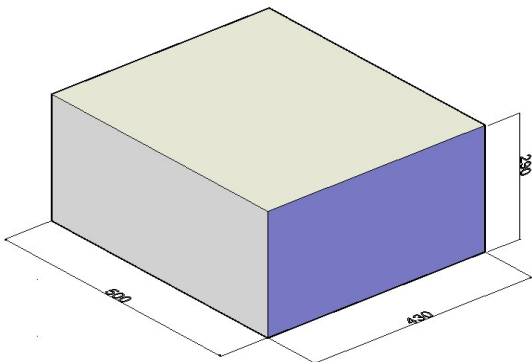
8. Package



8pcs / 1 inner sheet



40 pcs (5 inner sheets)
/ 1 inner box



160 pcs (4 inner boxes)
/ 1 outter box

9. Revision

Revision No.	Originator	Description of Change	Date of Changes
Ver-00	JSKim	Sample Specificaton	19-Jan-24