Specification For Approval

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Version: 1.0

Customer： MTK

Customer P/N： /

INVAX P/N： AN2450-4902BRS

Description： Antenna

康捷電子有限公司 工程課 承認章

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Index:

1. Revision History

Revision	Date	Change Notification	Description
1.0	2024.04.19	初版	

Product Number: AN2450-4902BRS
Product Name: Antenna

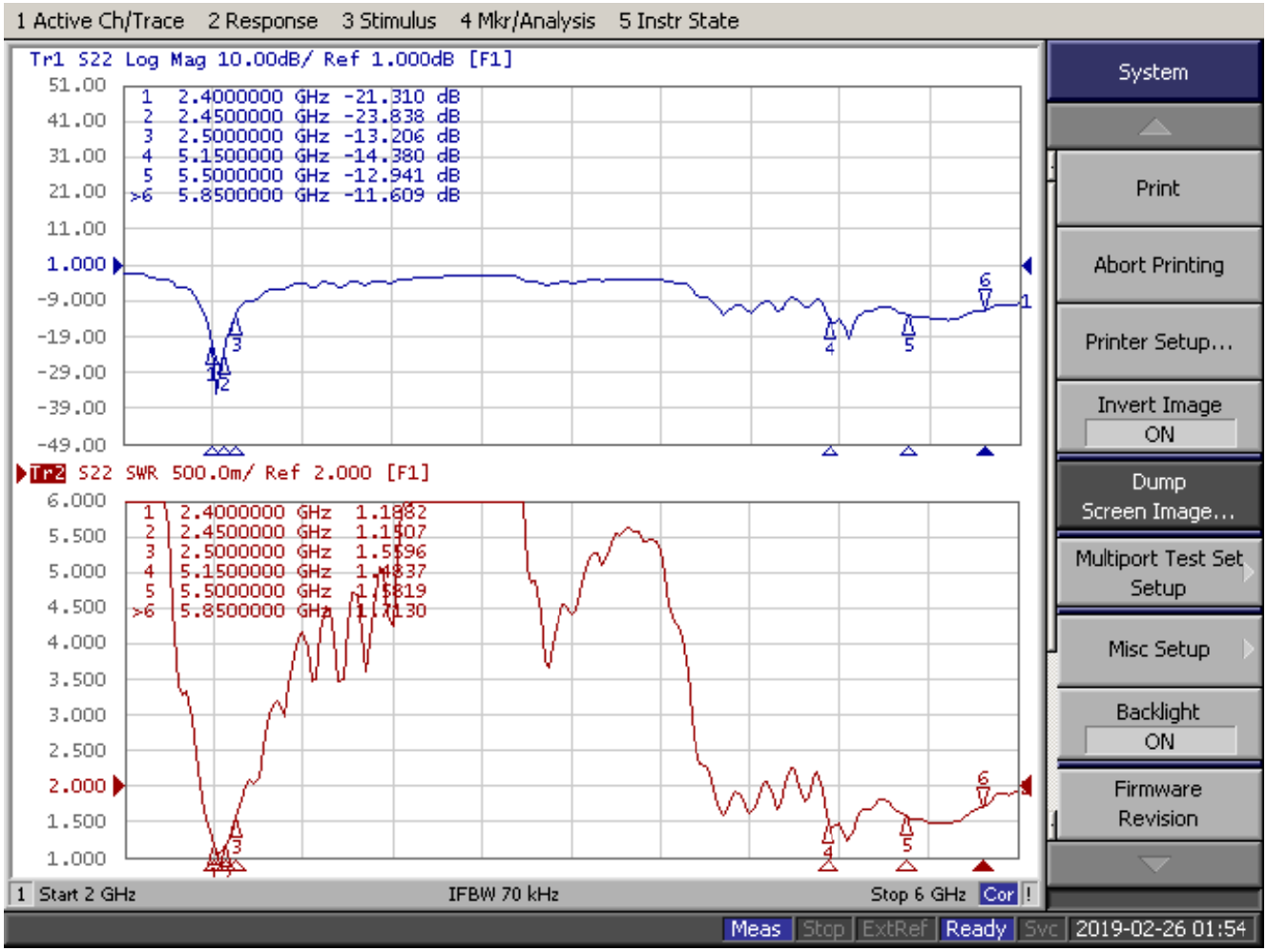
1. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	**2400 ~ 2500 MHz** **5150 ~ 5850 MHz**
V.S.W.R.	**<= 2.0 @ 2400 ~ 2500 MHz** **<= 2.0 @ 5150 ~ 5850 MHz** **The data is tested with 1M cable**
Peak Gain	**2.92 dBi @ 2400 ~ 2500 MHz** **4.67 dBi @ 5150 ~ 5850 MHz**
Efficiency	**68 % @ 2400 ~ 2500 MHz** **50 % @ 5150 ~ 5850 MHz**
Impedance	**50 Ohm**
B. Material & Mechanical Characteristics	
Material of Radiator	**PCB**
Material of Plastic	**ABS / POM**
Cable Type	**RG-178U-03**
Connector Type	**SMA Male Reverse**
C. Environmental	
Operation Temperature	**- 40 ˚C ~ + 65 ˚C**
Storage Temperature	**- 40 ˚C ~ + 80 ˚C**
Antenna Color Storage life	**< 2 year**

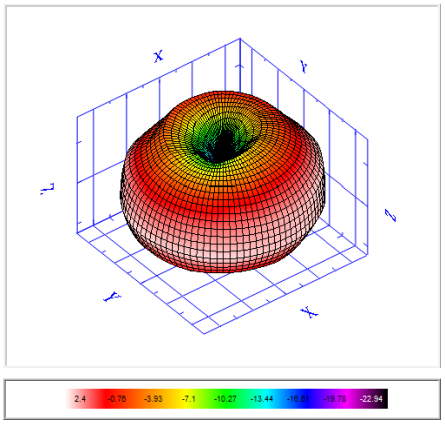
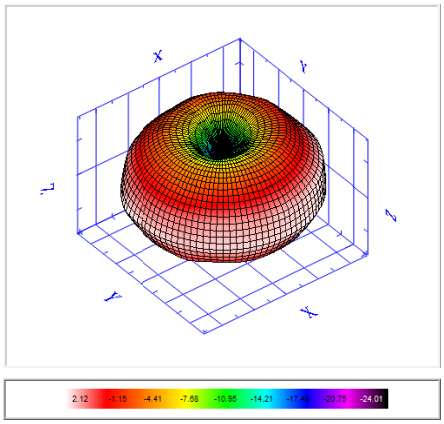
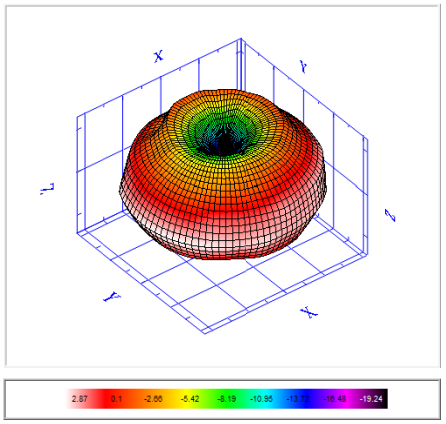
2. Characteristics and Reliability Test

Test Items		Test Condition and Procedure	Requirements
C1	S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
M1	Vibration	GB / T2423 . 48-1997 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.<= 5%
M2	Random Drop	GB / T2423.8-1995 Height: 1.0 Meter; 3 directions; 1 time for each direction	1. No parts separated 2. Frequency Tol.<= 5%
M4	Terminal-Pull Test	Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M5	Terminal-Torque Test	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M6	Dimension	Inspection of dimension, color, material, package, surface process	Directive DUT specification
E1	Salt Spray	GB / T 2423 . 17- 93 Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E2	Humidity	GB / T 2423 . 4 - 93 Temp: 80°C / 12 H; -40°C / 12H RH: >= 90%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E3	Thermal Shock	GB / T 2423 . 22 - 87 1 Cycle: - 40°C (30 minutes) to + 80°C (30 minutes) Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E4	Life (High Temp.)	GB /T 2423 . 2 - 89 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
R1	RoHS	With Reference to IEC 62321:2008 with flow chart	Directive RoHS 2015/863/EU
R2	PFOS	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2015/863/EU

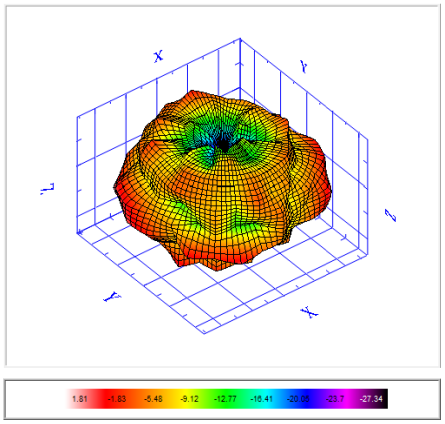
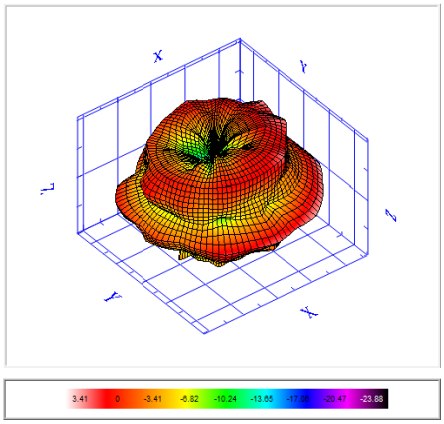
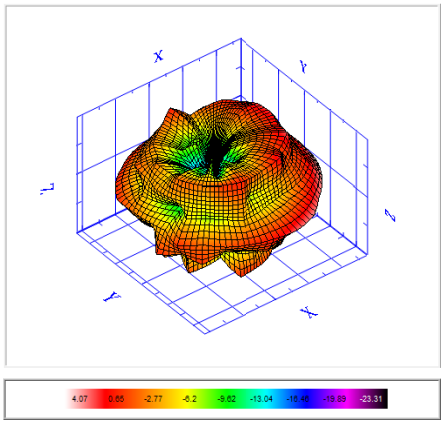
3. Antenna - S Parameter Test Data



4. Antenna - Radiation Pattern Test Data

2400 MHz	2450 MHz	2500 MHz
		

Frequency	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
E-Total Peak Gain (dBi)	2.4	2.29	2.58	2.36	2.45	2.12	1.98	2.41	2.92	2.77	2.87
Efficiency (%)	65.74	65.55	69.86	68.03	67.93	63	64.21	68.72	76.29	72.32	74.74
Average Gain (dB)	-1.82	-1.83	-1.56	-1.67	-1.68	-2.01	-1.92	-1.63	-1.18	-1.41	-1.26

5150 MHz	5500 MHz	5850 MHz
		

Frequency	5150	5200	5250	5350	5470	5500	5600	5700	5725	5785	5800	5850
E-Total Peak Gain (dBi)	1.81	0.93	2.4	2.31	2.87	3.41	3.68	2.61	2.78	4.61	4.67	4.07
Efficiency (%)	37.34	39.81	45.04	42.49	55.14	52.55	54.96	55.34	55.9	62.94	61.33	59.87
Average Gain (dB)	-4.28	-4	-3.46	-3.72	-2.59	-2.79	-2.6	-2.57	-2.53	-2.01	-2.12	-2.23