

DATE : 2006/01/23

CUSTOMER : CLEVO CO.

APPROVAL SHEET

MODEL	M590K
DESCRIPTION	PIFA For Wireless LAN Antenna 2.4~2.5GHZ /4.9~5.875GHZ
SUPPLIER P/N	K05007001401
CUSTOMER P/N	6-23-7M59K-011
FILE P/N	

FAVORTRON			CUSTOMER	
Manager	Supervisor	Engineer		
Nick	James	James		



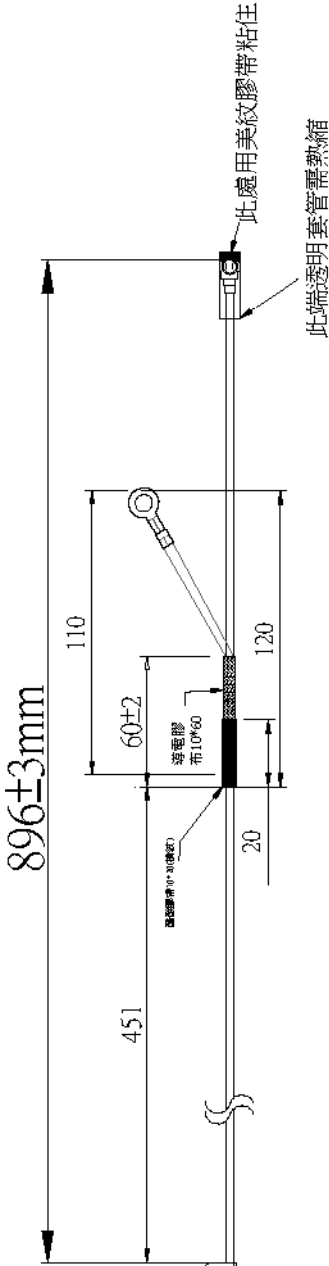
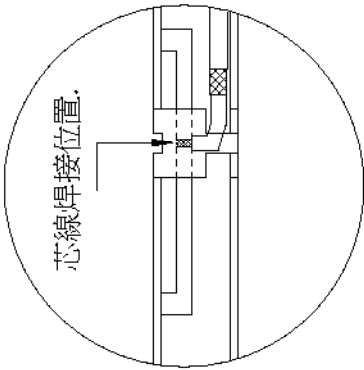
惠寶電子股份有限公司
FAVORTRON CO., LTD

台北縣新店市民權路 108-1 號 4F
4F, No. 108-1, MinChzuan Rd., SHzindian City,
Taipei HZsien 231, Taiwan. R.O.C

TEL: (02) 2218-2189
FAX: (02) 2218-5420
[URL: www.fvc.com.tw](http://www.fvc.com.tw)

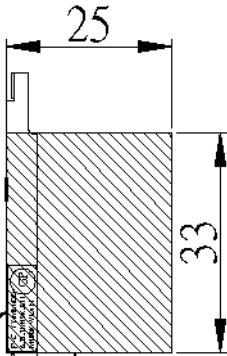
ASSEMBLY

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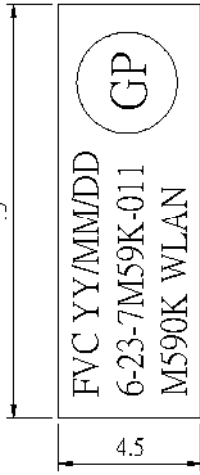
SPONGE

Label
DETAIL A



鋁麥拉膠帶33*25mm
黏貼於鐵件背面.

DETAIL A
3



※未標註公差處，請參照下列標準。

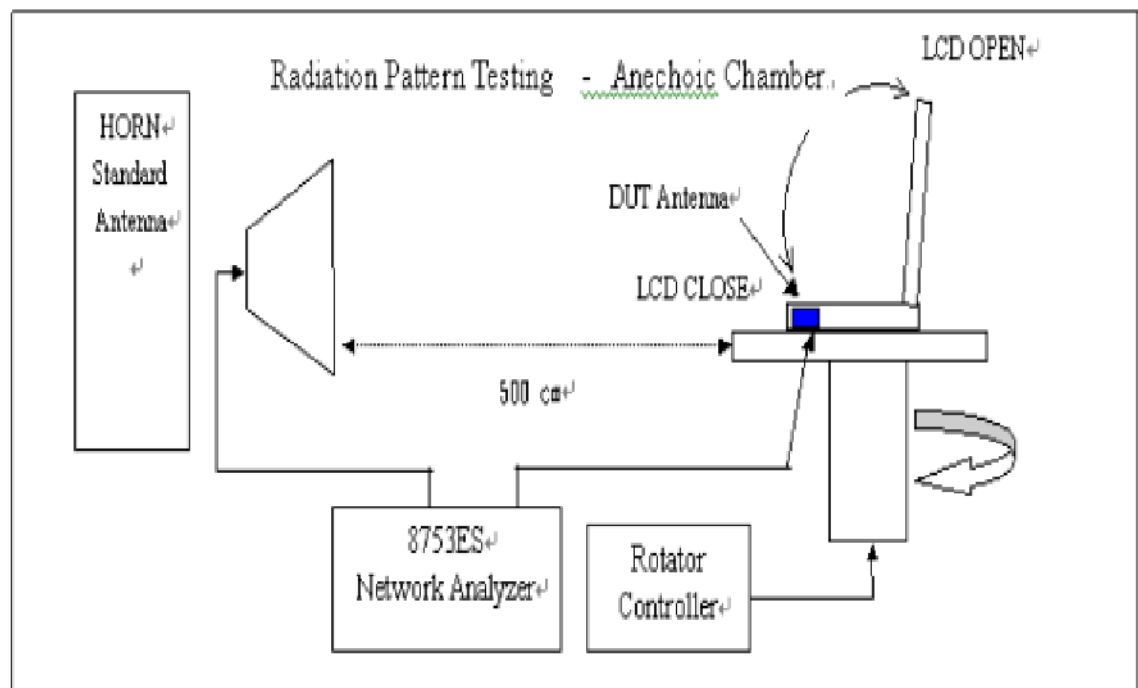
備註	發	行	RANGE	TOLERANCE	Part No.	Draw No.	CUS.Part No.	CUS.Rev.	Approval	Check	Designed
			OVER 101	±3.0	K05007001401	TD-E-50853-A1	6-23-7M59K-011	A1			
			51-100	±2.5							
			31-50	±2.0							
			30 BELOW	±1.5							
			Units	mm	Scale	1:1					
			Size	A4	Date	20060123					
					Sheet	1/1					

FVC 惠寶電子股份有限公司
FAVORTRON CO.,LTD

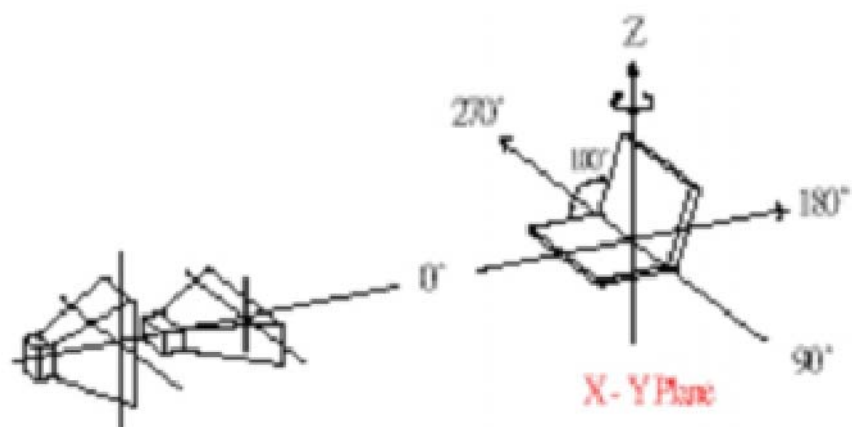
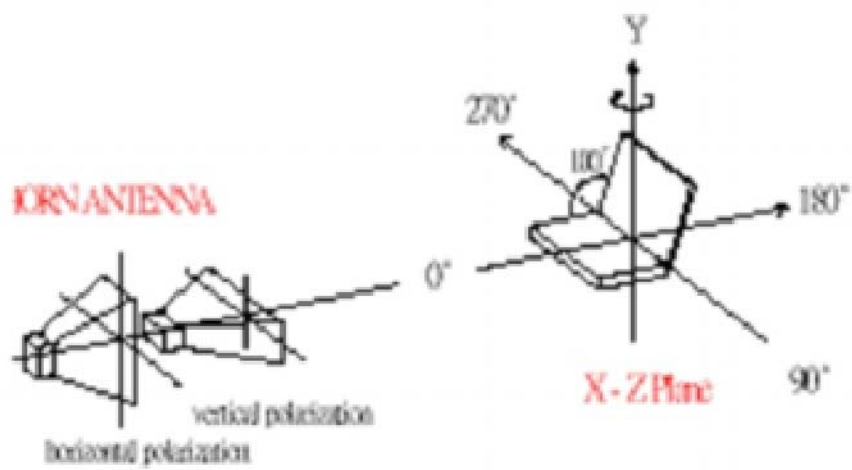
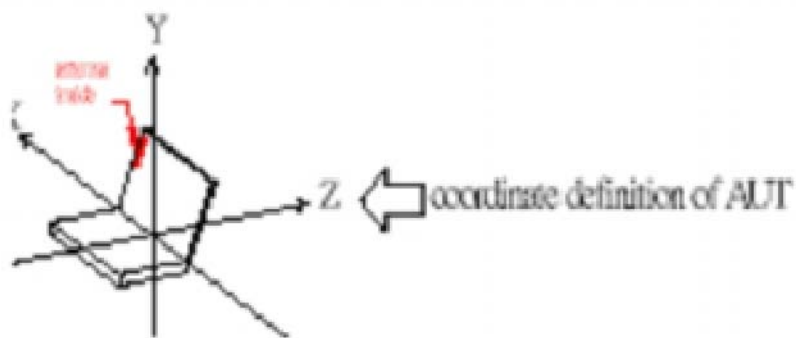
Title: M590K WLAN ANT.成品圖

ITEM	DESCRIPTION
△	
△	
△	
△	
△	

天線測試方法

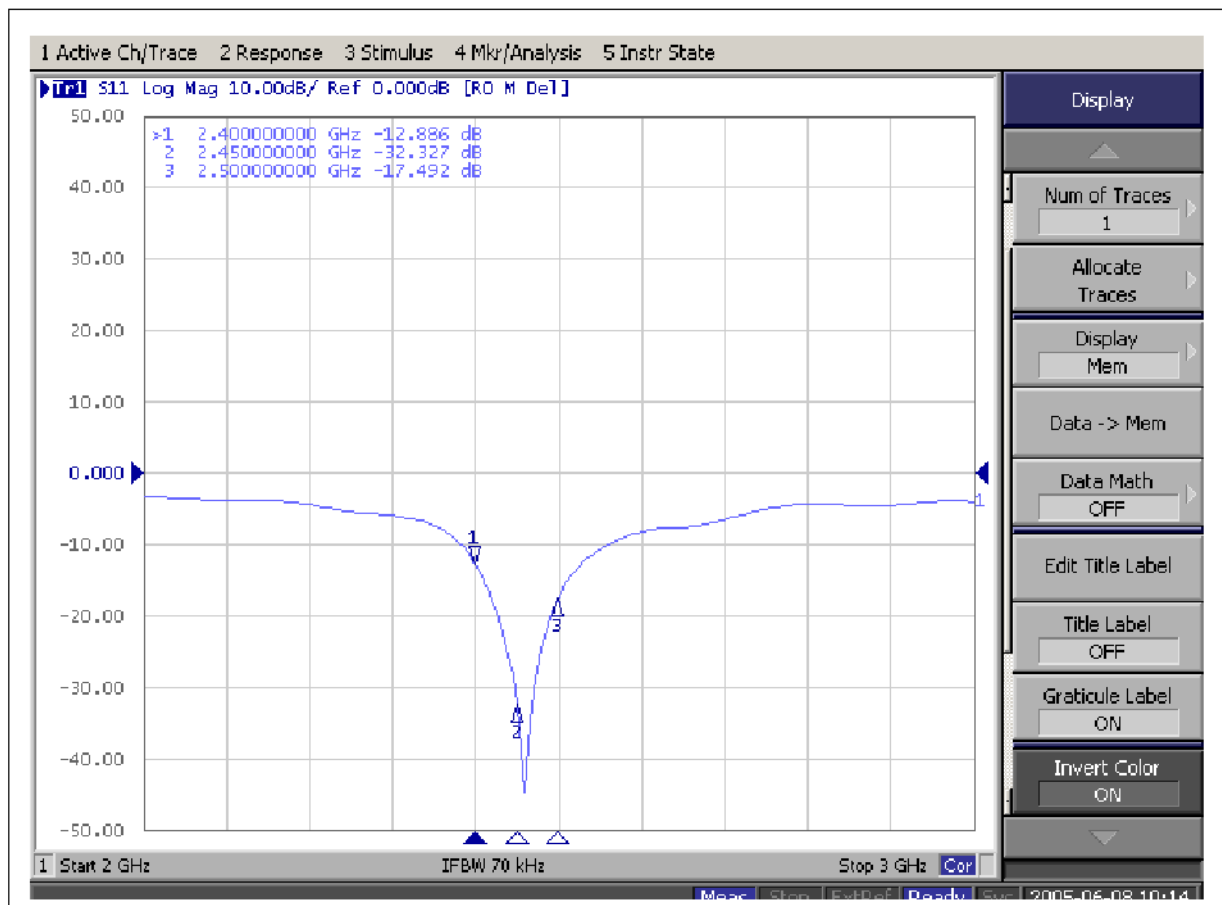


Coordinate Definition

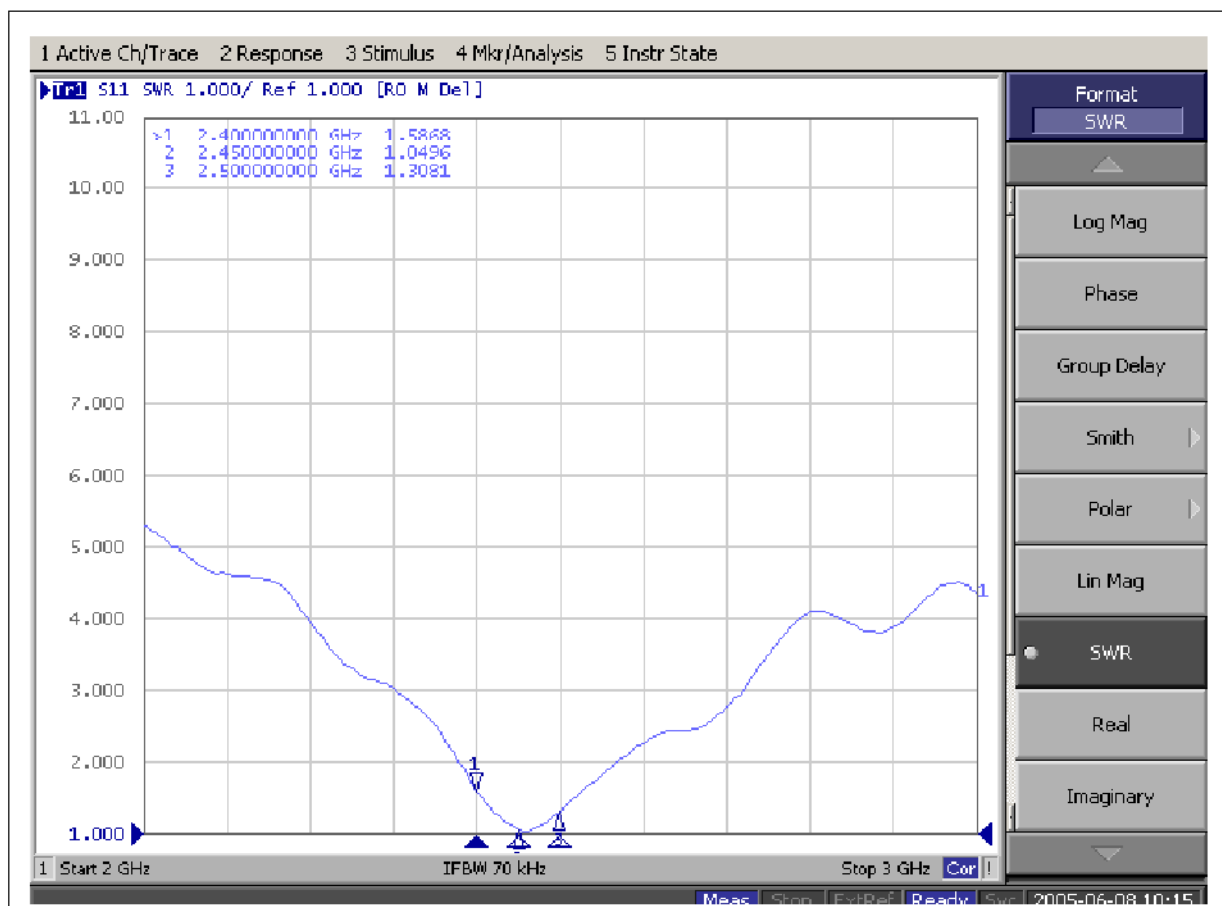


2. WLAN Ant./ (Right)

2.4~2.5GHz / Return Loss

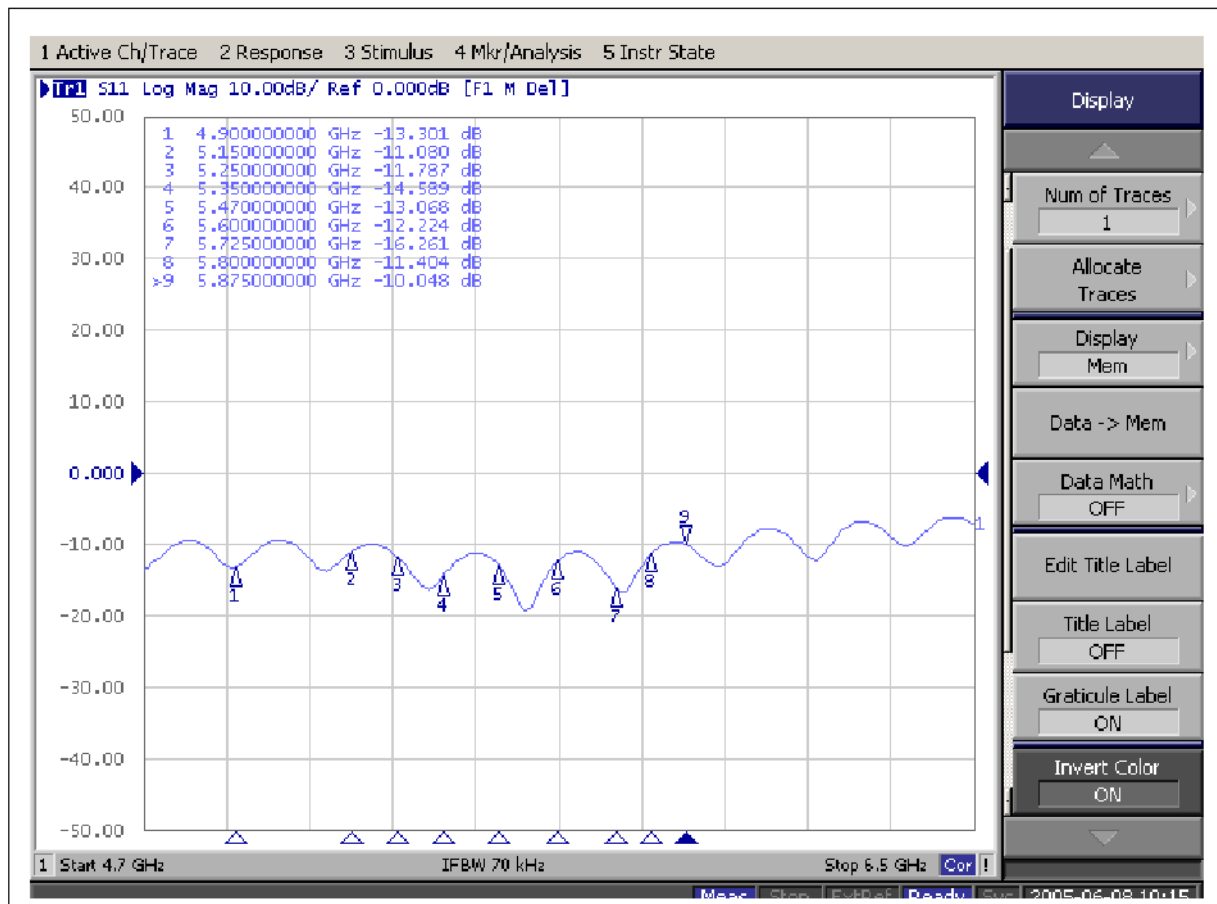


2.4~2.5GHz / VSWR

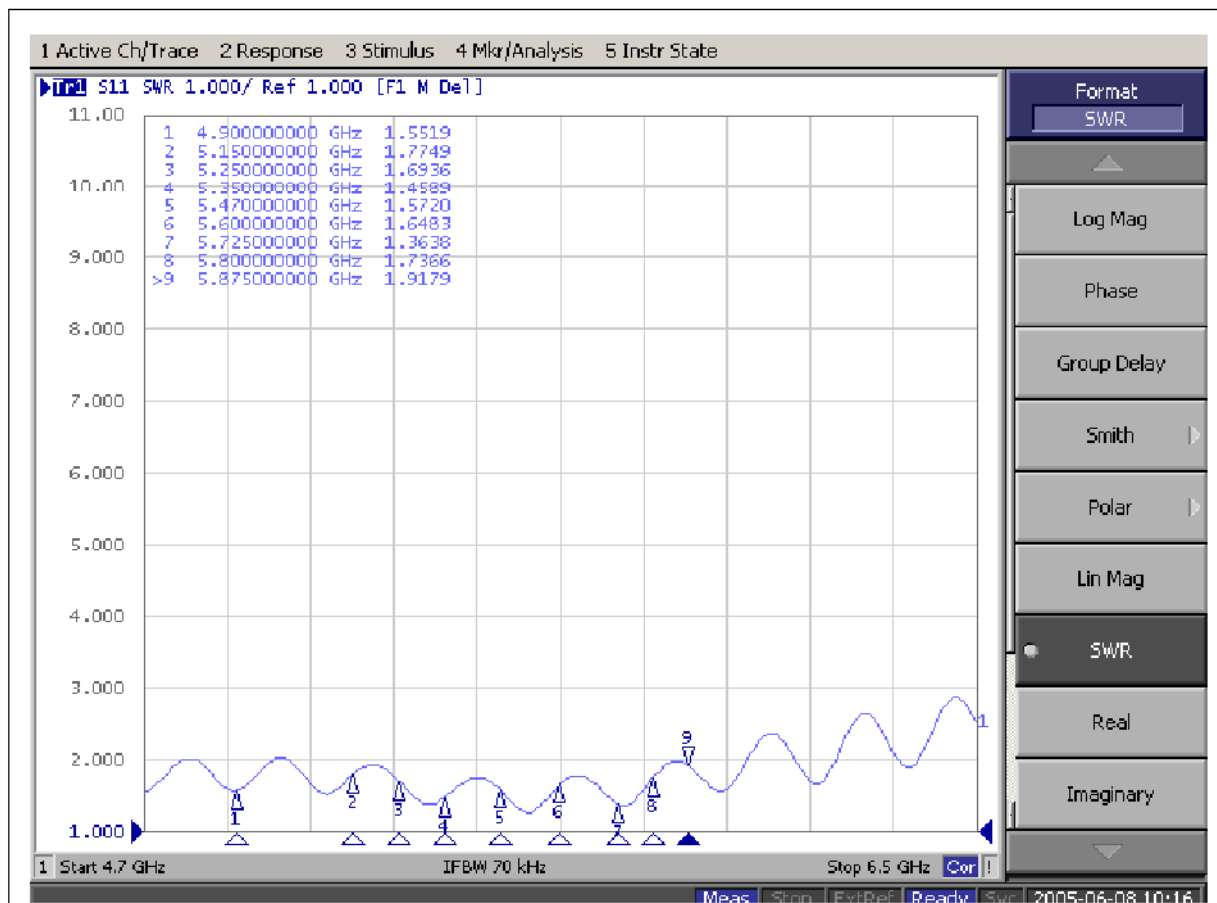


WLAN Ant./ (Right)

5.15~5.875GHZ/Return Loss

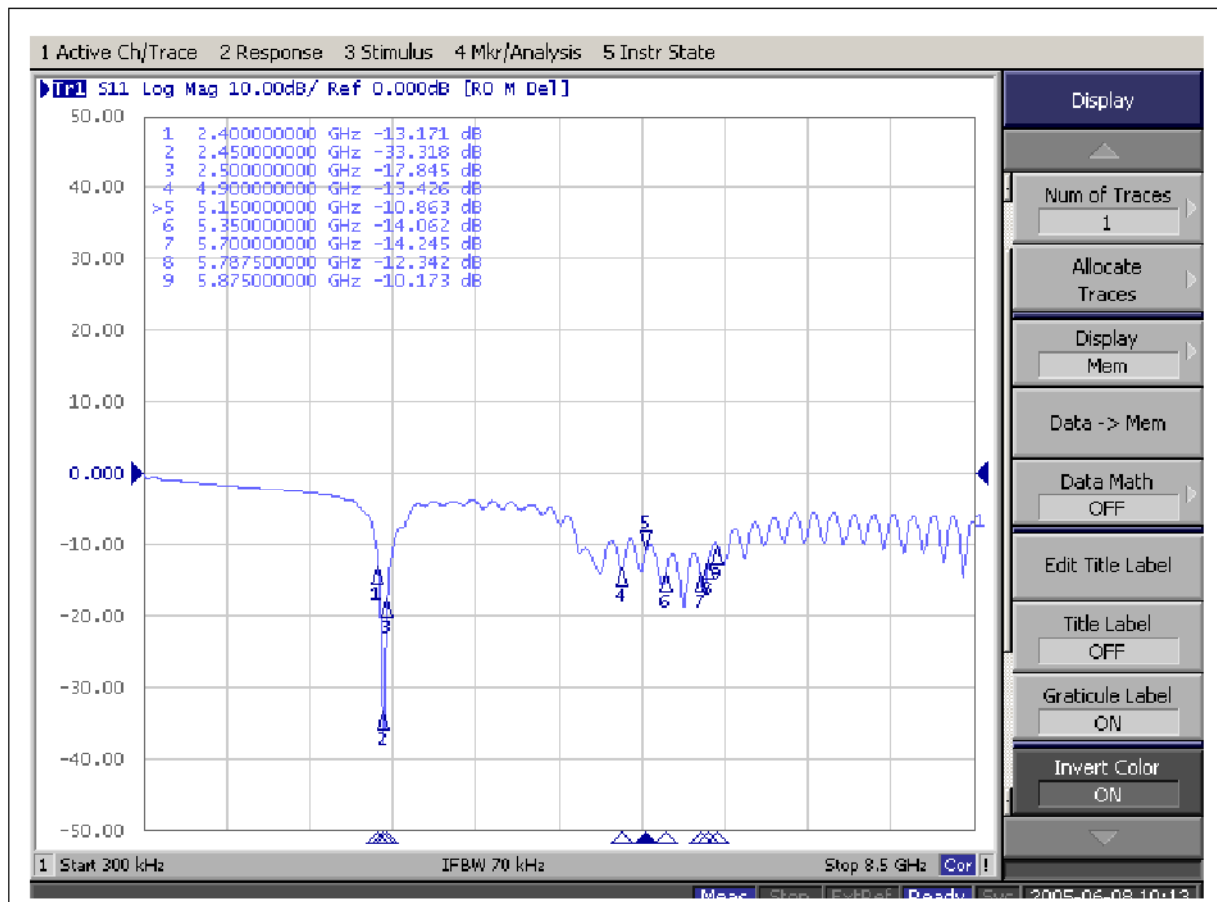


5.15~5.875GHZ/VSWR

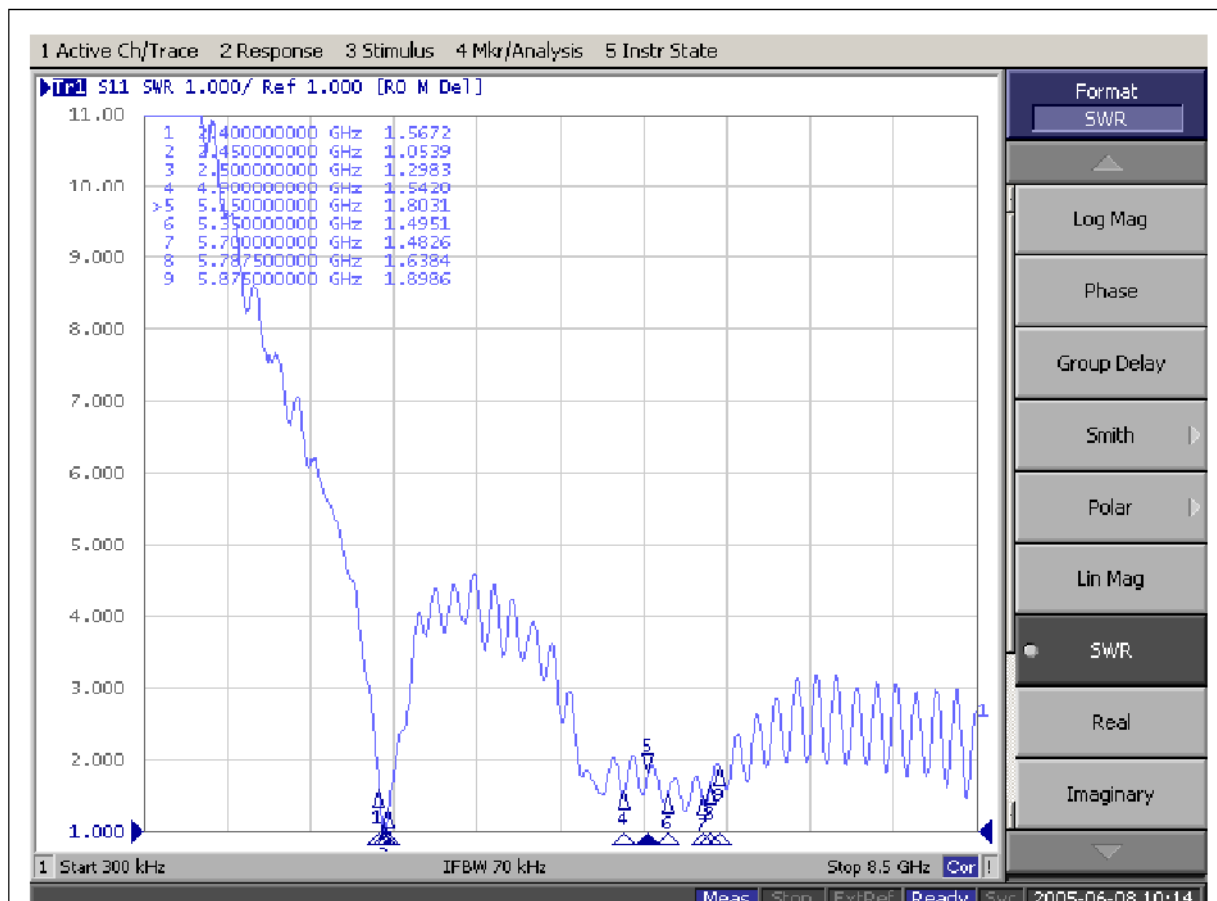


WLAN Ant./ (Right)

2.4~2.5GHZ & 5.15~5.875GHZ / Return Loss



2.4~2.5GHZ & 5.15~5.875GHZ/VSWR



3. Gain & Pattern – WLAN

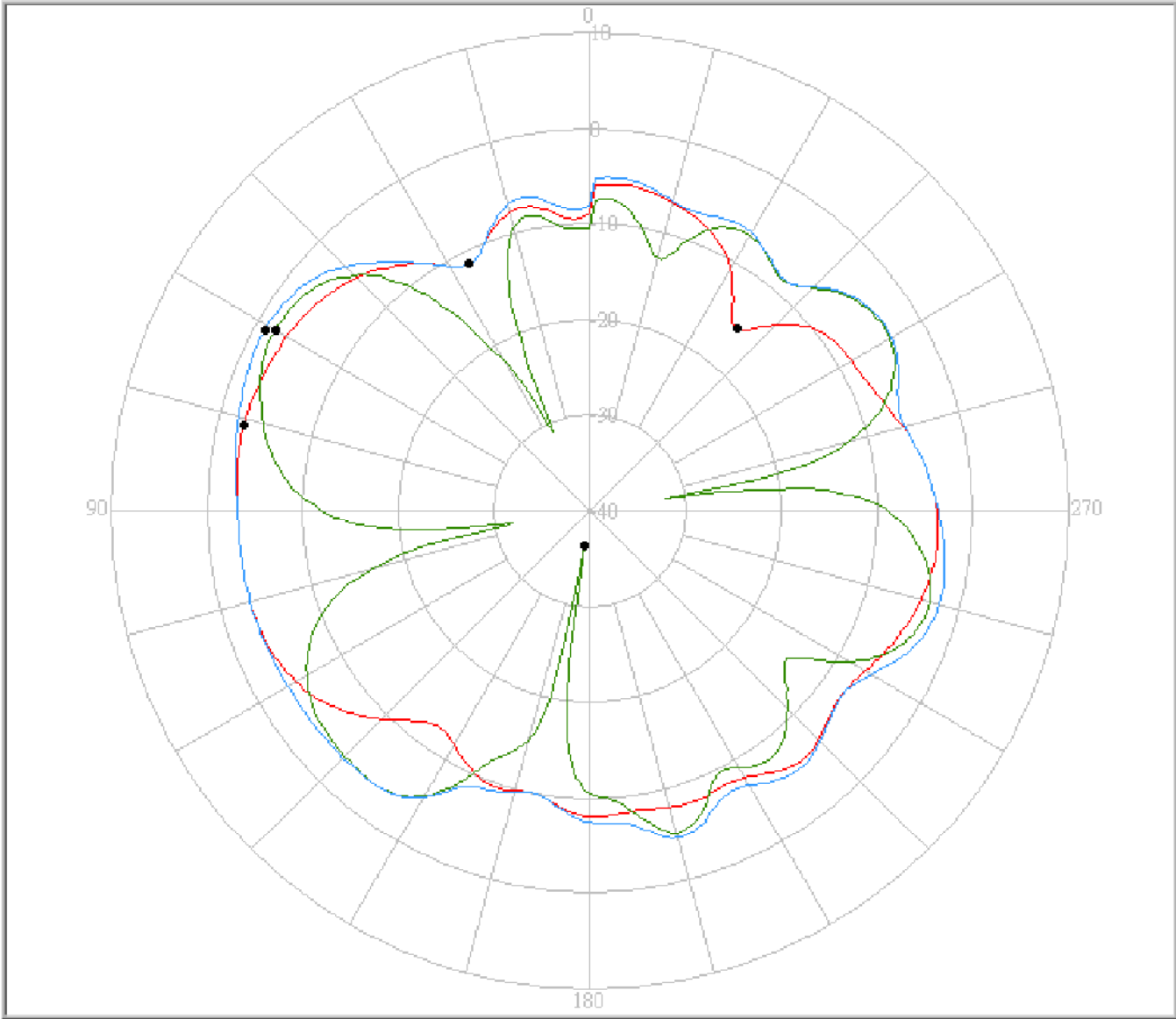
a. 2.4GHz



FAVORTRON Co. Ltd

Antenna Pattern Measurement

4F, No. 108-1, Min Chuan Rd., Hsin-Tien City, Taipei, Taiwan, R.O.C. Tel:886-2-2218-2189,
Fax:886-2-2218-5760



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	2400.00	-2.76 / 76.00	-15.59 / 321.00	-6.21	Ver.	2006/1/20
2	M590K	RIGHT	2400.00	-2.10 / 60.00	-36.30 / 171.00	-7.03	Hor.	2006/1/20
3	M590K	RIGHT	2400.00	-1.17 / 61.00	-11.36 / 26.00	-4.73	V+H	2006/1/20

b. 2.45GHz



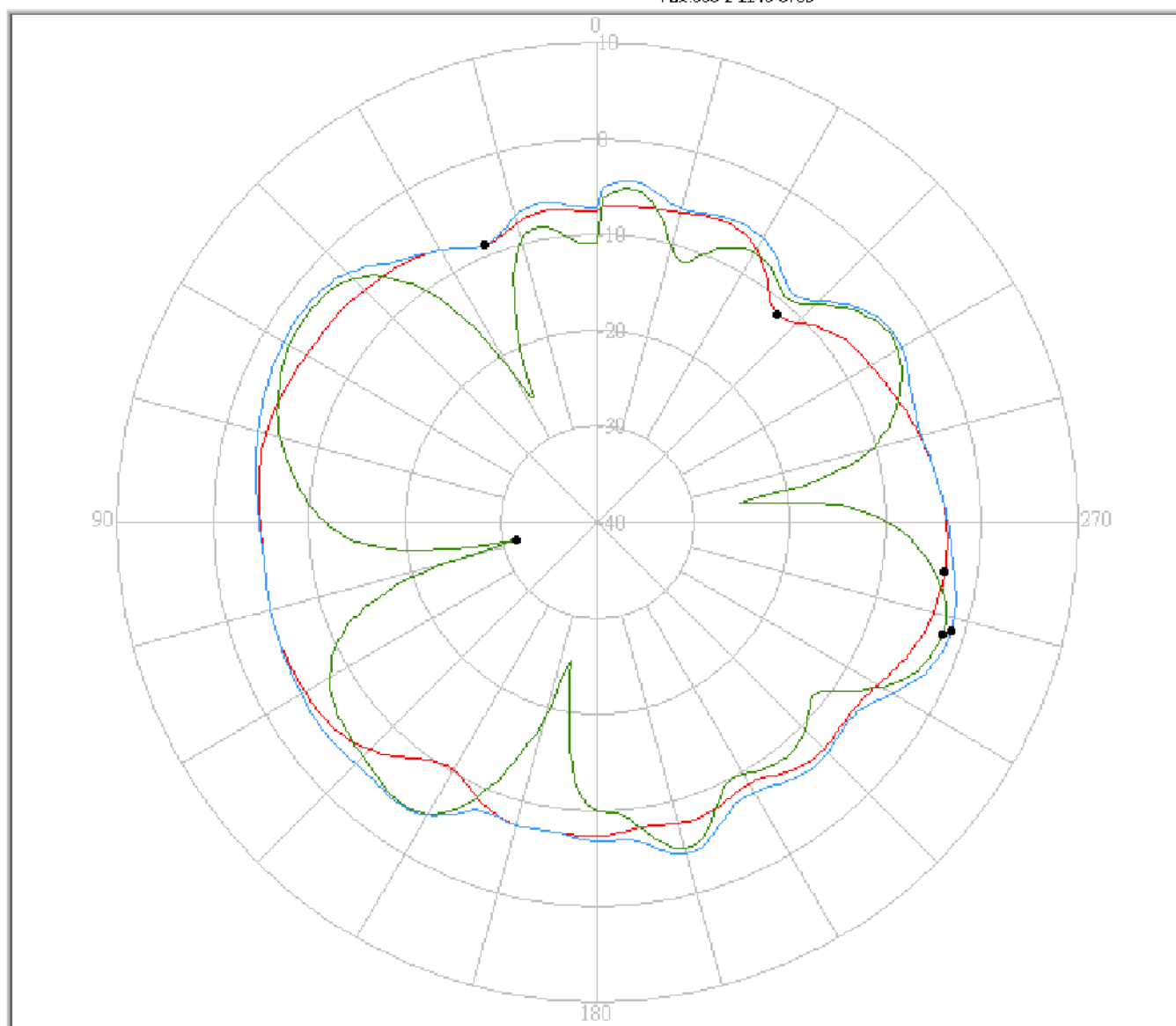
Service for Customer Satisfaction

FAVORTRON

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Fax:886-2-2218-5760



Pattern		Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	■	M590K	RIGHT	2450.00	-3.52 / 262.00	-11.42 / 319.00	-6.21	Ver.	2006/1/20
2	■	M590K	RIGHT	2450.00	-2.27 / 252.00	-31.37 / 102.00	-7.09	Hor.	2006/1/20
3	■	M590K	RIGHT	2450.00	-1.46 / 253.00	-8.82 / 22.00	-4.82	V+H	2006/1/20

c. 2.5GHz



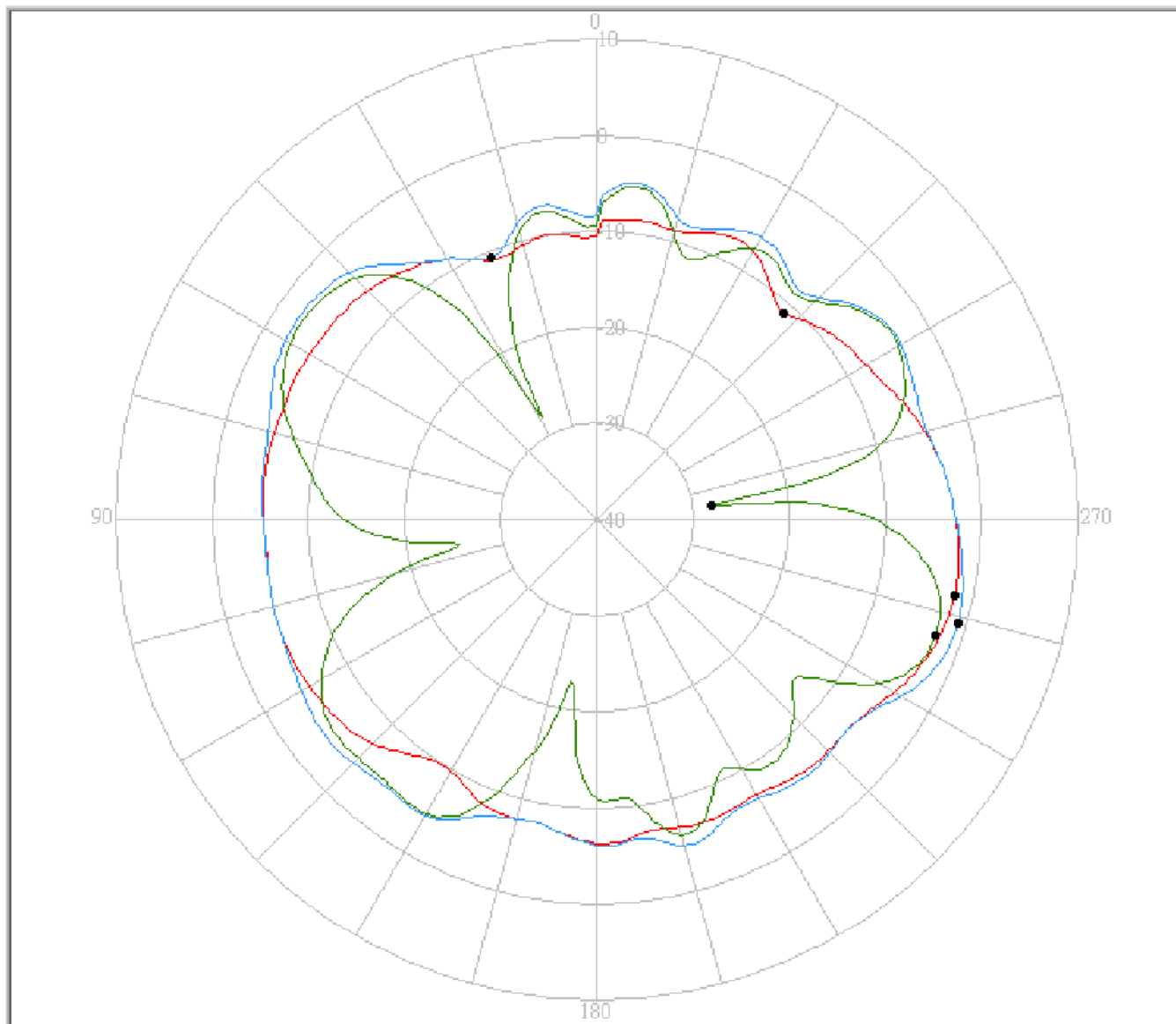
Service for Customer Satisfaction

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Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	2500.00	-1.99 / 258.00	-11.06 / 318.00	-6.17	Ver.	2006/1/20
2	M590K	RIGHT	2500.00	-2.74 / 251.00	-28.07 / 277.00	-7.25	Hor.	2006/1/20
3	M590K	RIGHT	2500.00	-0.97 / 254.00	-10.59 / 22.00	-4.84	V+H	2006/1/20

d. 4.9GHz



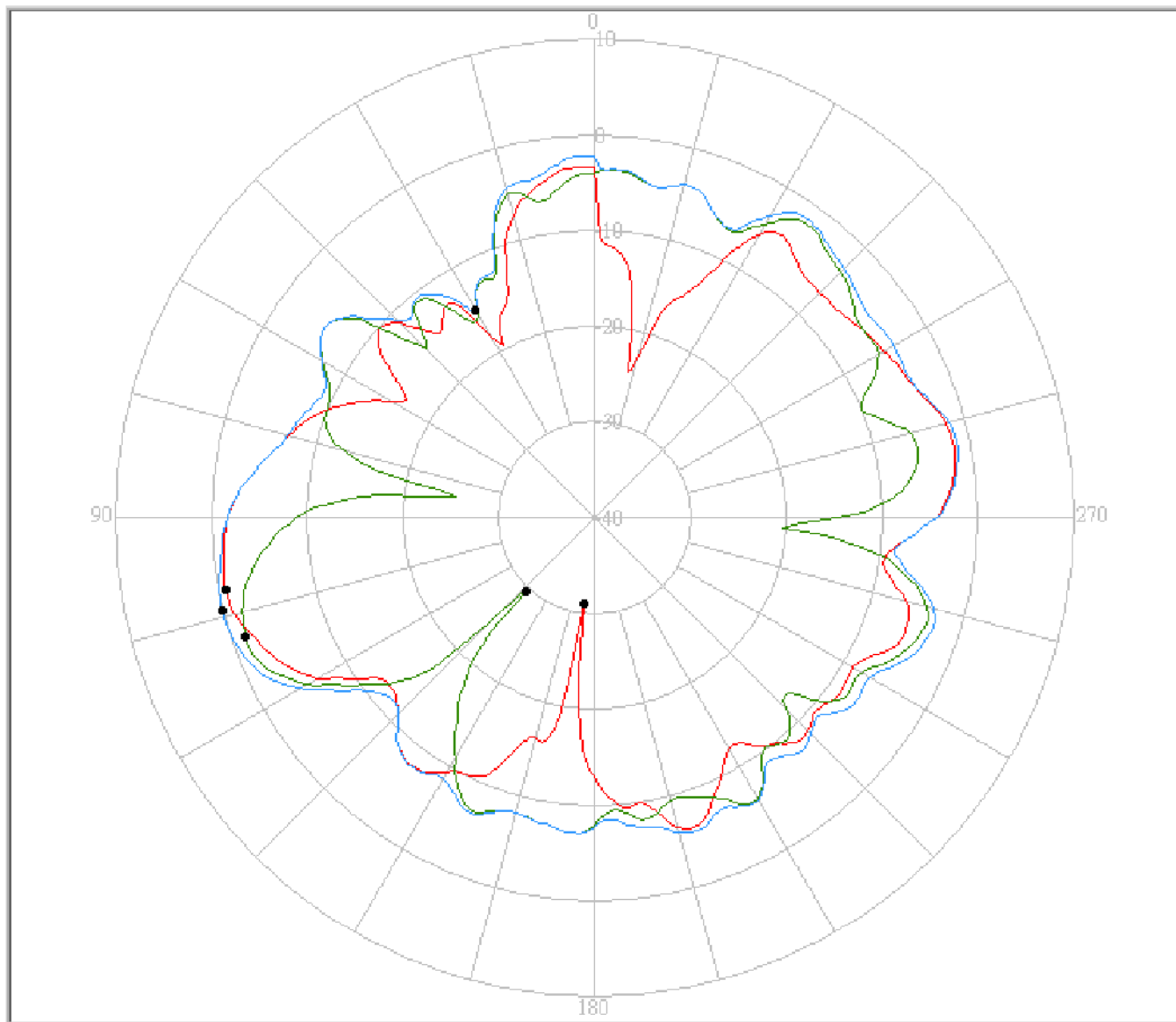
Service for Customer Satisfaction

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Fax:886-2-2218-5760



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	4900.00	-0.82 / 101.00	-31.04 / 173.00	-6.68	Ver.	2006/1/20
2	M590K	RIGHT	4900.00	-1.47 / 109.00	-29.43 / 137.00	-6.74	Hor.	2006/1/20
3	M590K	RIGHT	4900.00	0.02 / 104.00	-15.02 / 30.00	-4.84	V+H	2006/1/20

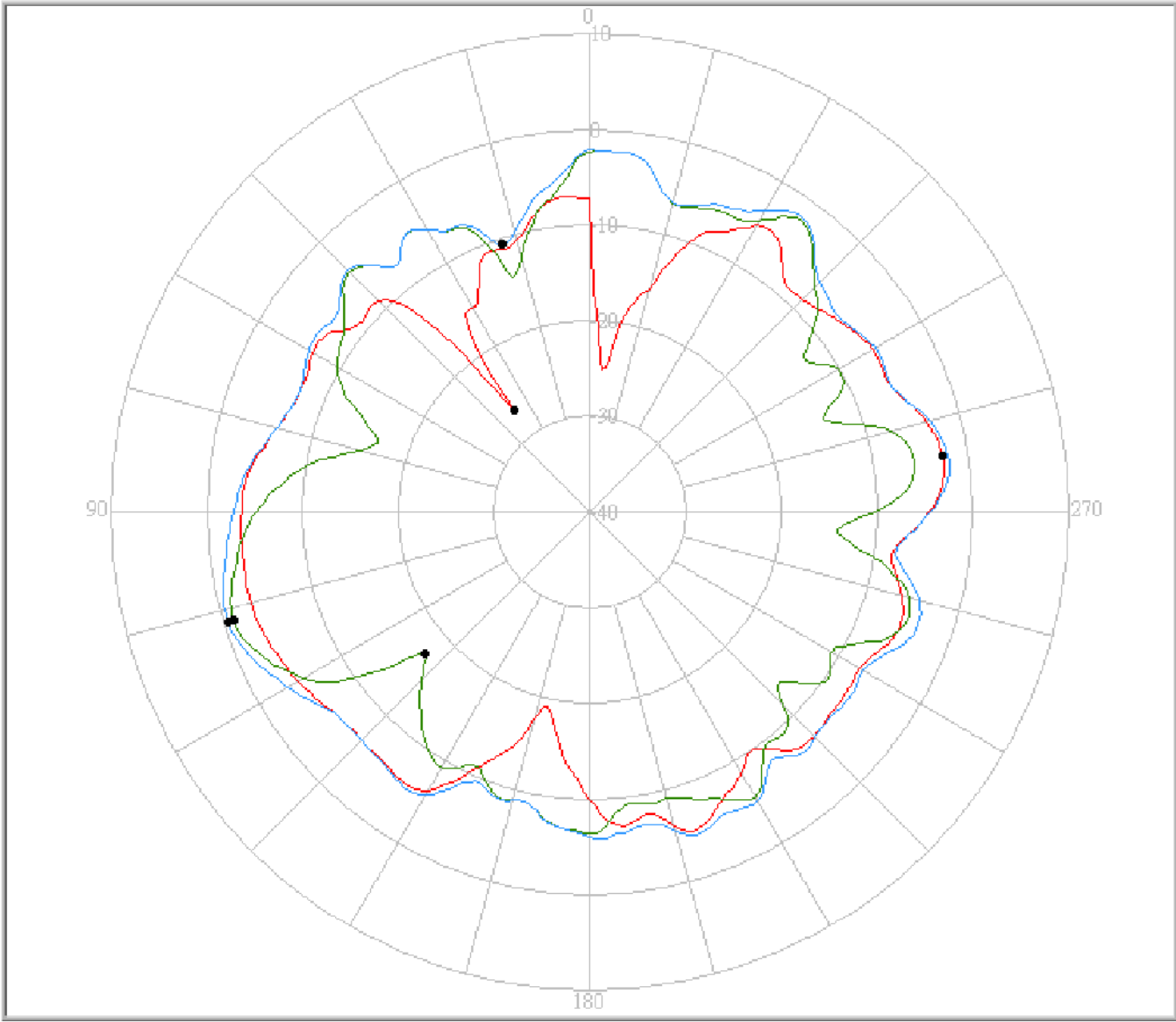
e. 5.075GHz



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Fax:886-2-2218-5760



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	5075.00	-2.64 / 279.00	-26.78 / 37.00	-6.79	Ver.	2006/1/20
2	M590K	RIGHT	5075.00	-1.14 / 107.00	-17.25 / 131.00	-6.77	Hor.	2006/1/20
3	M590K	RIGHT	5075.00	-0.48 / 107.00	-10.58 / 18.00	-4.91	V+H	2006/1/20

f. 5.15GHZ



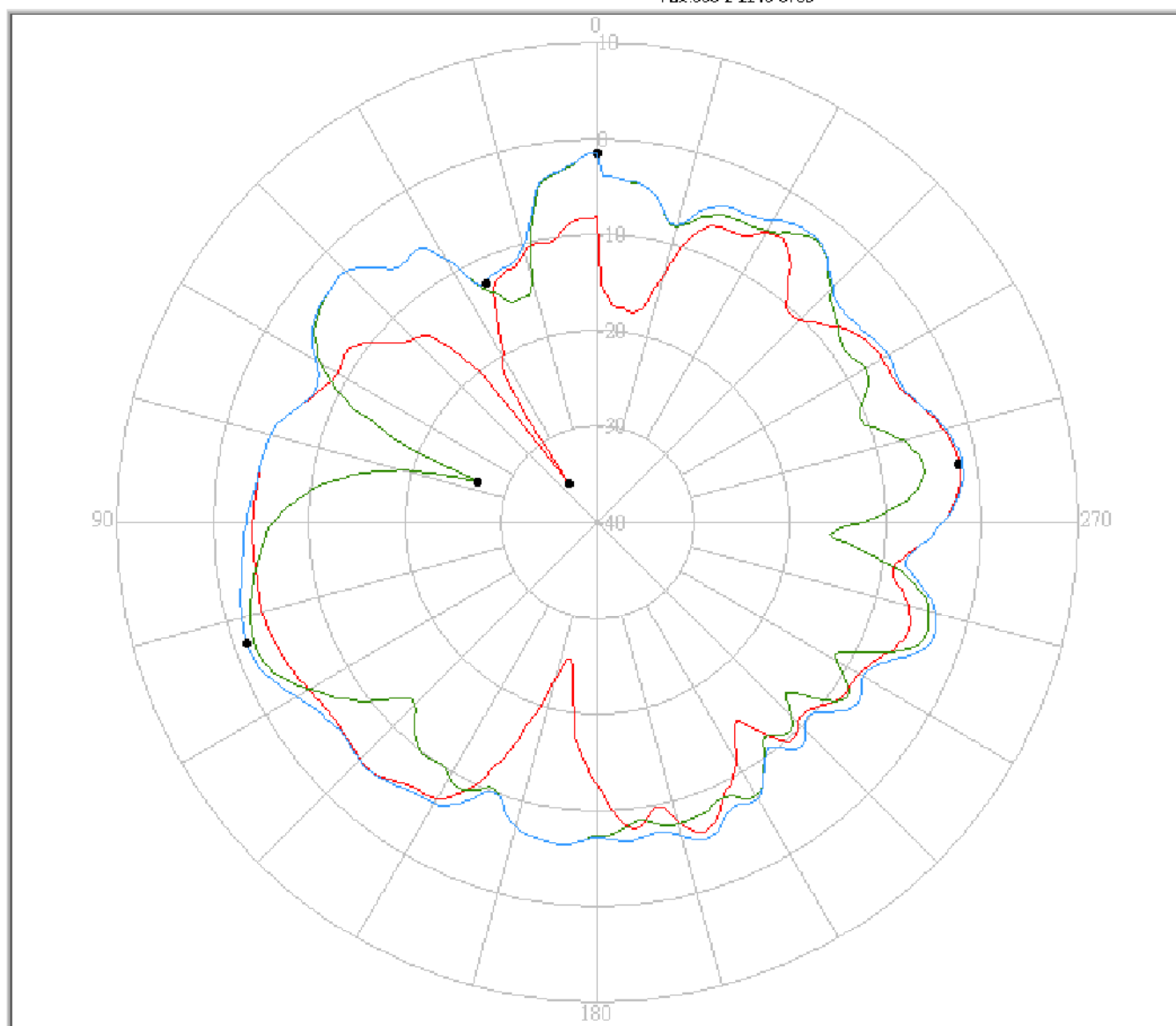
Service for Customer Satisfaction

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Fax:886-2-2218-5760



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	5150.00	-1.90 / 279.00	-35.10 / 36.00	-7.12	Ver.	2006/1/20
2	M590K	RIGHT	5150.00	-1.59 / 0.00	-26.82 / 71.00	-6.65	Hor.	2006/1/20
3	M590K	RIGHT	5150.00	-1.42 / 109.00	-12.50 / 25.00	-4.95	V+H	2006/1/20

g. 5.25GHz



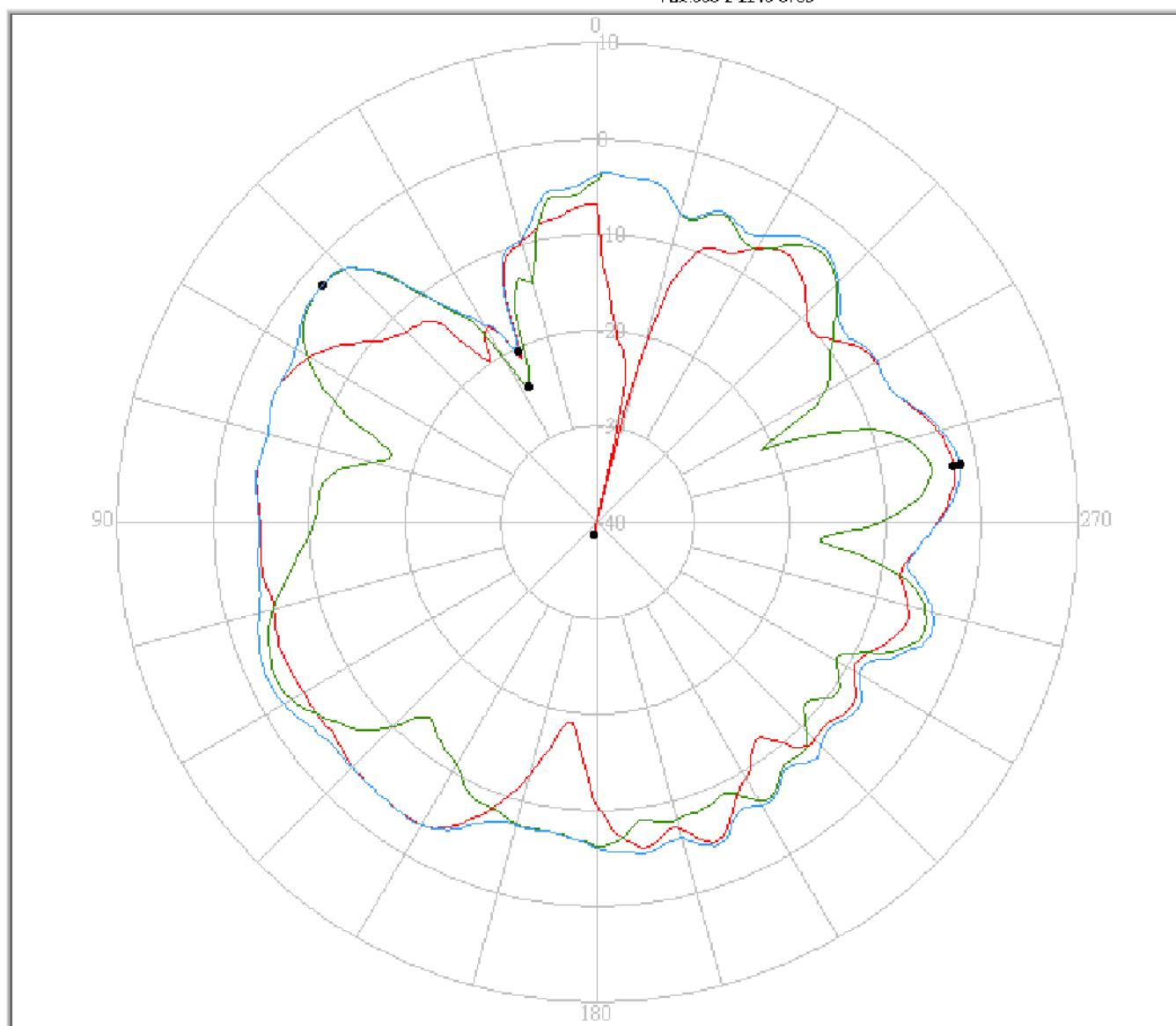
Service for Customer Satisfaction

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Fax:886-2-2218-5760



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	5250.00	-2.46 / 279.00	-41.39 / 347.00	-6.67	Ver.	2006/1/20
2	M590K	RIGHT	5250.00	-2.21 / 49.00	-24.24 / 27.00	-6.99	Hor.	2006/1/20
3	M590K	RIGHT	5250.00	-1.83 / 279.00	-20.43 / 25.00	-4.90	V+H	2006/1/20

h. 5.35GHz



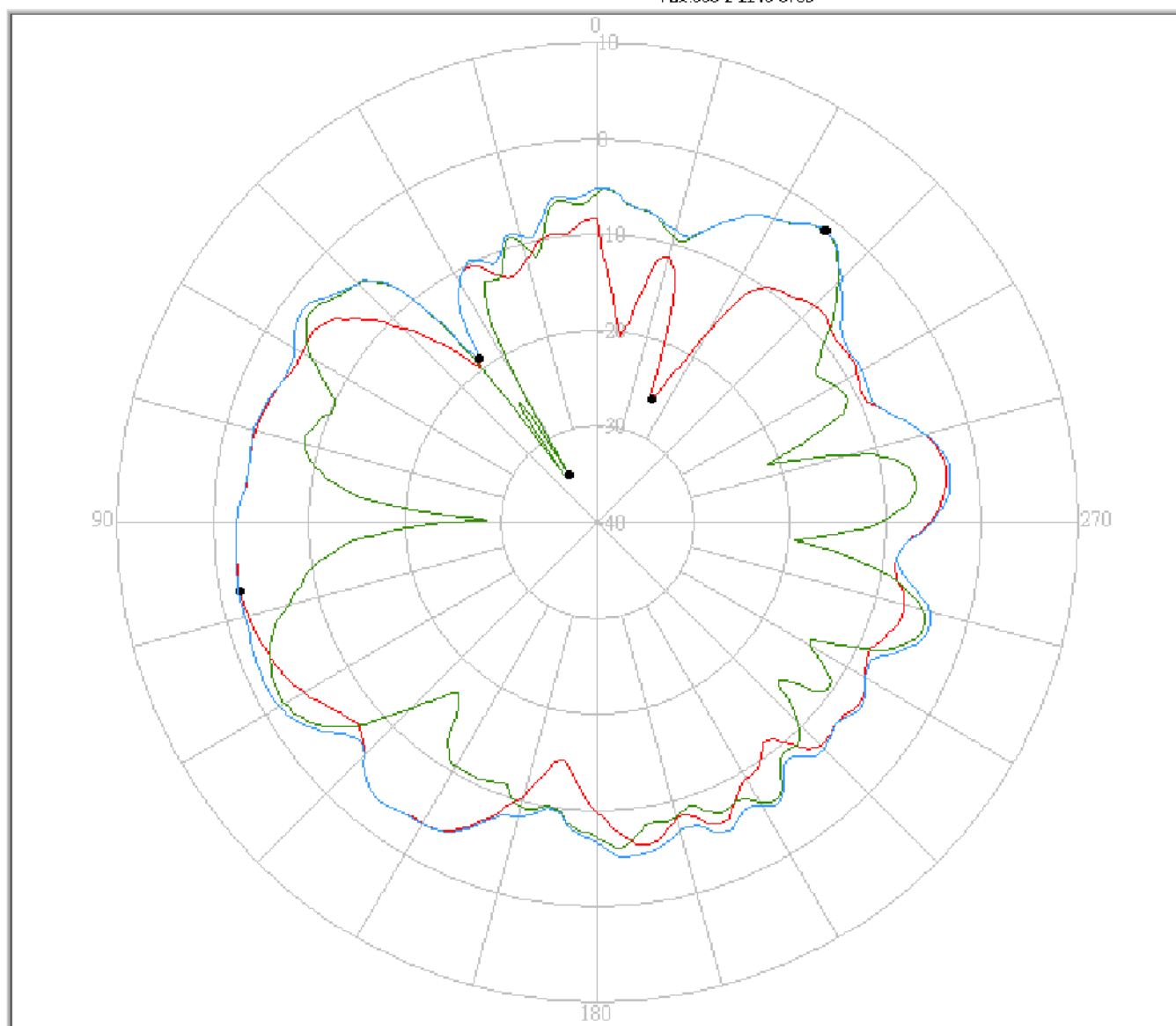
Service for Customer Satisfaction

FAVORTRON

FAVORTRON Co. Ltd

Antenna Pattern Measurement

4F, No. 108-1, Min Chuan Rd., Hsin-Tien City, Taipei, Taiwan, R.O.C. Tel:886-2-2218-2189,
Fax:886-2-2218-5760



Pattern		Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1		M590K	RIGHT	5350.00	-2.11 / 101.00	-25.93 / 336.00	-6.56	Ver.	2006/1/20
2		M590K	RIGHT	5350.00	-1.50 / 322.00	-34.18 / 31.00	-7.43	Hor.	2006/1/20
3		M590K	RIGHT	5350.00	-1.44 / 322.00	-19.01 / 36.00	-4.96	V+H	2006/1/20

i. 5.47GHz



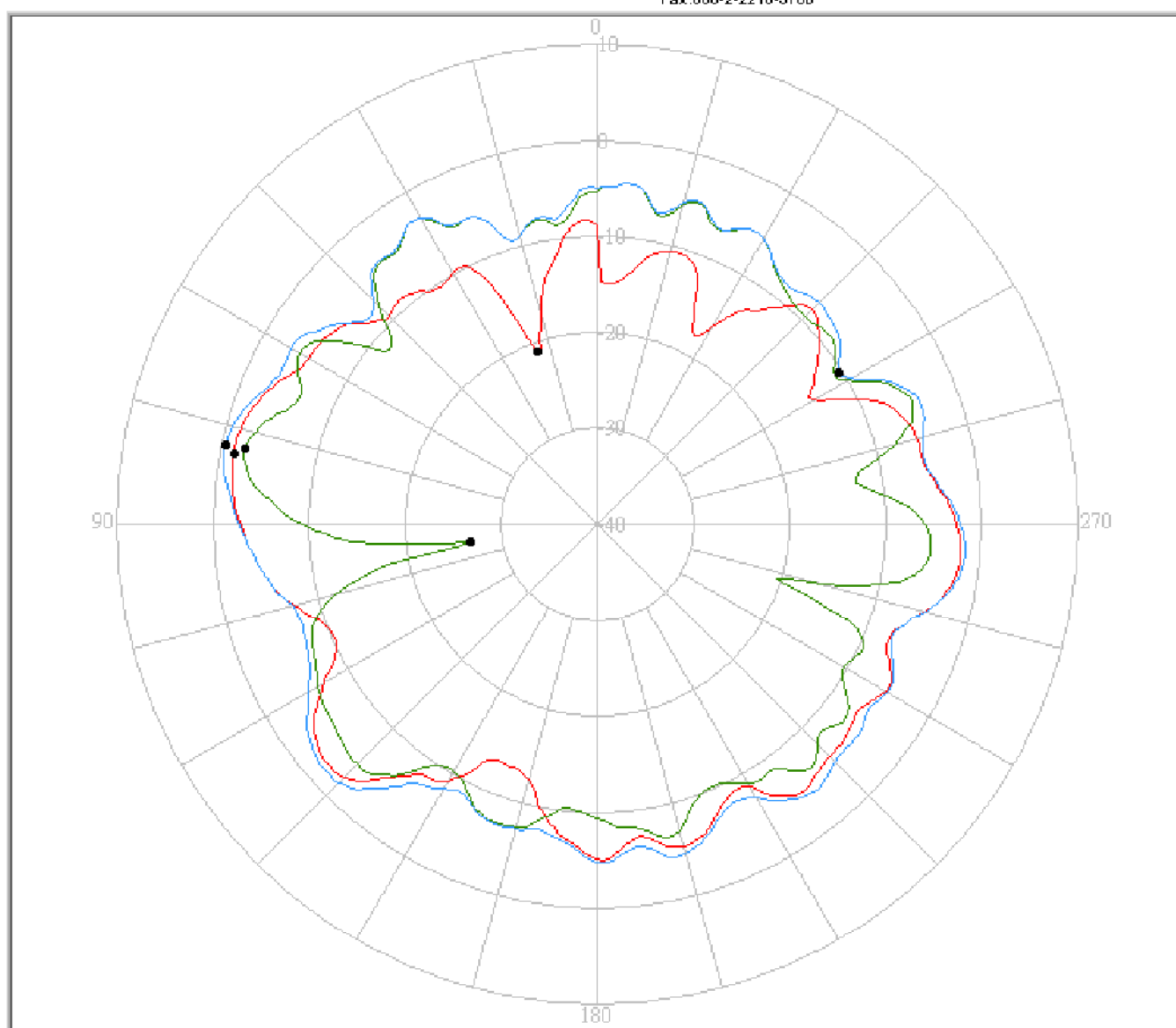
Service for Customer Satisfaction

FAVORTRON

FAVORTRON Co. Ltd

Antenna Pattern Measurement

4F, No. 108-1, Min Chuan Rd., Hsin-Tien City, Taipei, Taiwan, R.O.C. Tel:886-2-2218-2189,
Fax:886-2-2218-5760



Pattern		Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1		M590K	RIGHT	5470.00	-1.49 / 79.00	-21.03 / 19.00	-6.39	Ver.	2006/1/20
2		M590K	RIGHT	5470.00	-2.55 / 78.00	-26.73 / 98.00	-7.08	Hor.	2006/1/20
3		M590K	RIGHT	5470.00	-0.45 / 78.00	-10.45 / 302.00	-4.88	V+H	2006/1/20

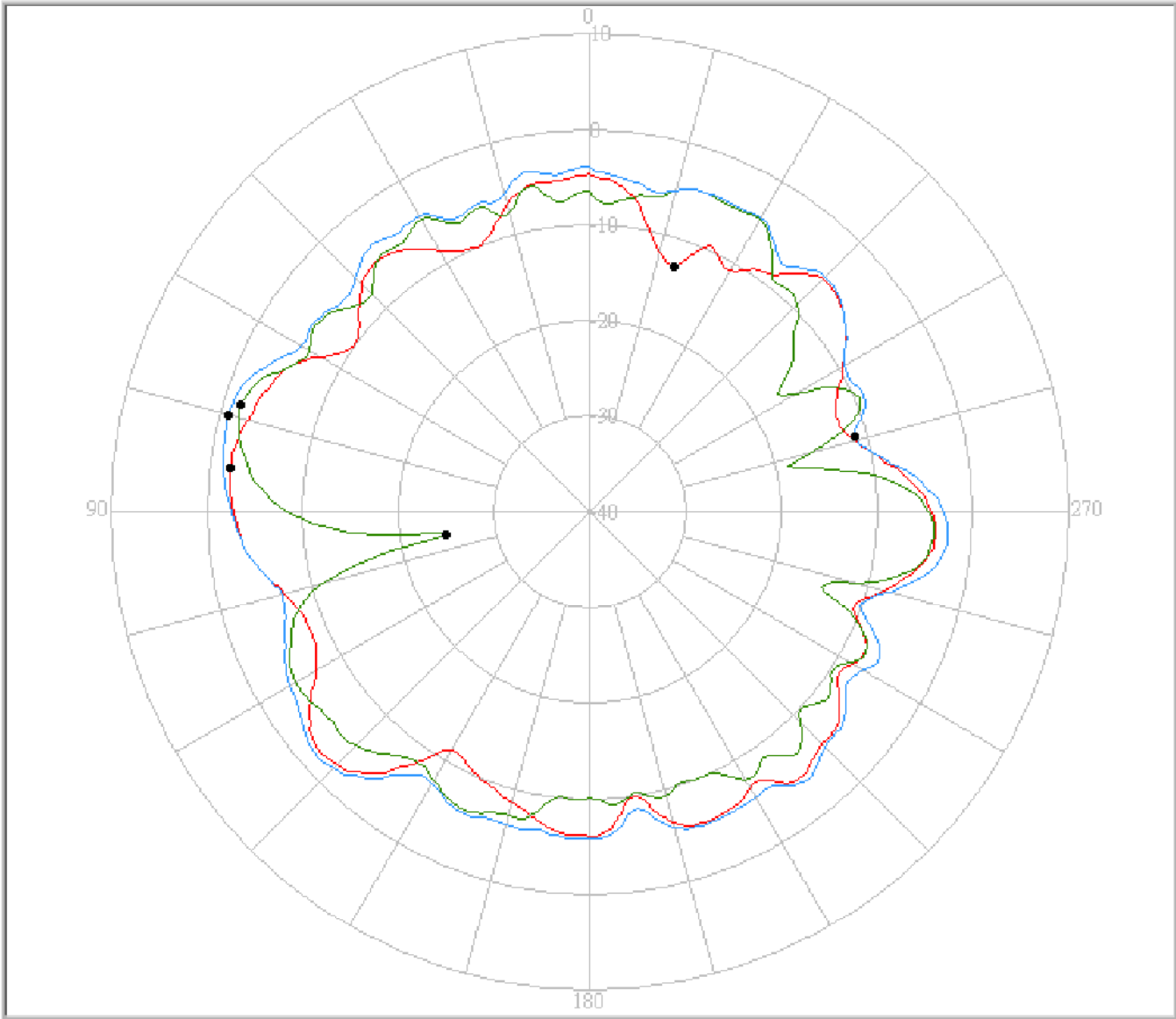
j. 5.597GHz



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Fax:886-2-2218-5760



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	5597.50	-2.14 / 83.00	-12.92 / 341.00	-6.33	Ver.	2006/1/20
2	M590K	RIGHT	5597.50	-1.96 / 73.00	-24.78 / 99.00	-6.96	Hor.	2006/1/20
3	M590K	RIGHT	5597.50	-0.95 / 75.00	-11.22 / 286.00	-4.91	V+H	2006/1/20

k. 5.725GHz



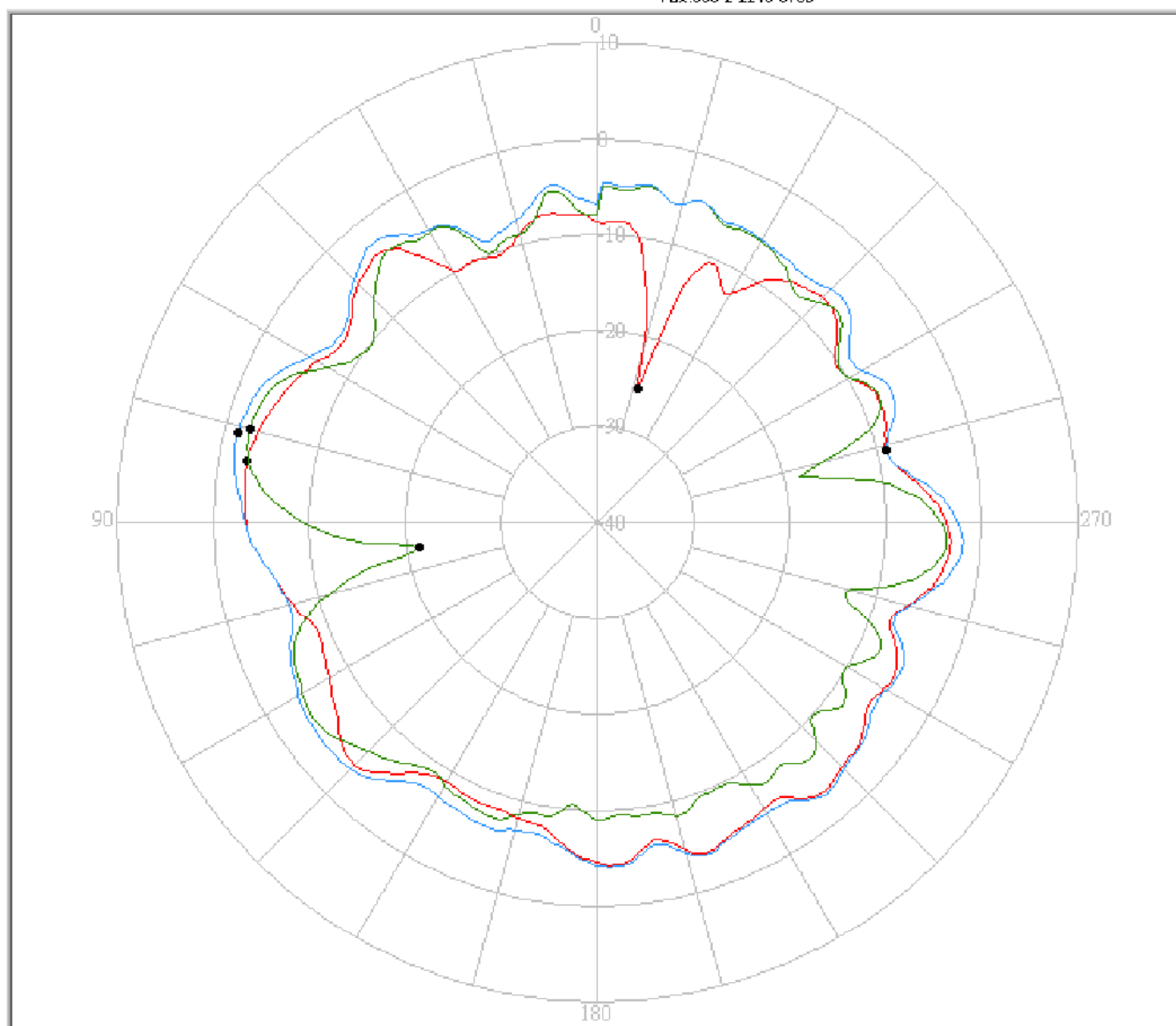
Service for Customer Satisfaction

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Antenna Pattern Measurement

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Pattern		Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1		M590K	RIGHT	5725.00	-3.02 / 80.00	-25.37 / 343.00	-6.25	Ver.	2006/1/20
2		M590K	RIGHT	5725.00	-2.59 / 75.00	-21.34 / 98.00	-7.02	Hor.	2006/1/20
3		M590K	RIGHT	5725.00	-1.45 / 76.00	-9.08 / 284.00	-4.87	V+H	2006/1/20

1. 5.785GHz



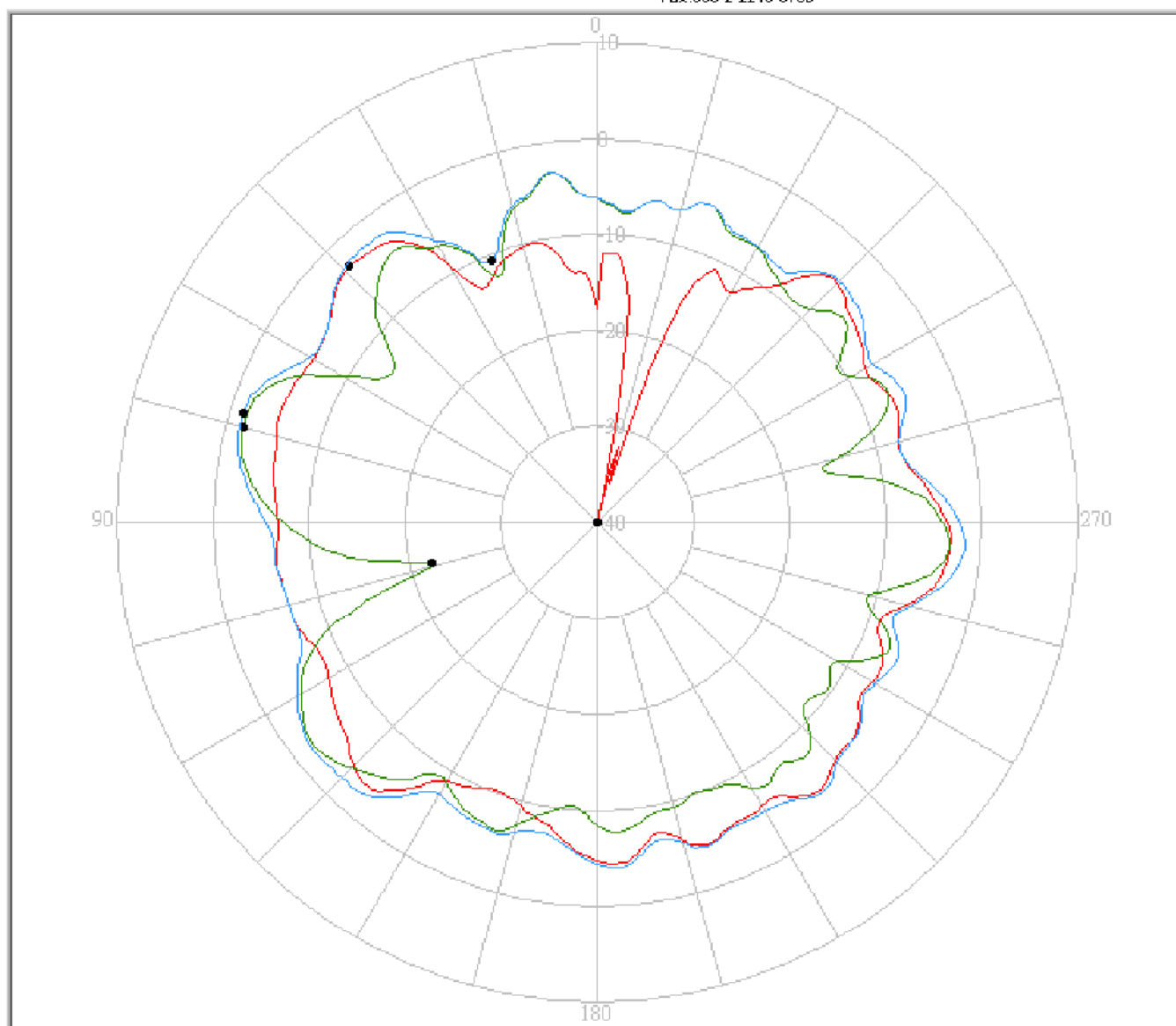
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Pattern		Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1		M590K	RIGHT	5785.00	-2.90 / 44.00	-44.50 / 347.00	-6.51	Ver.	2006/1/20
2		M590K	RIGHT	5785.00	-1.80 / 75.00	-22.32 / 104.00	-6.81	Hor.	2006/1/20
3		M590K	RIGHT	5785.00	-1.42 / 73.00	-10.61 / 22.00	-4.84	V+H	2006/1/20

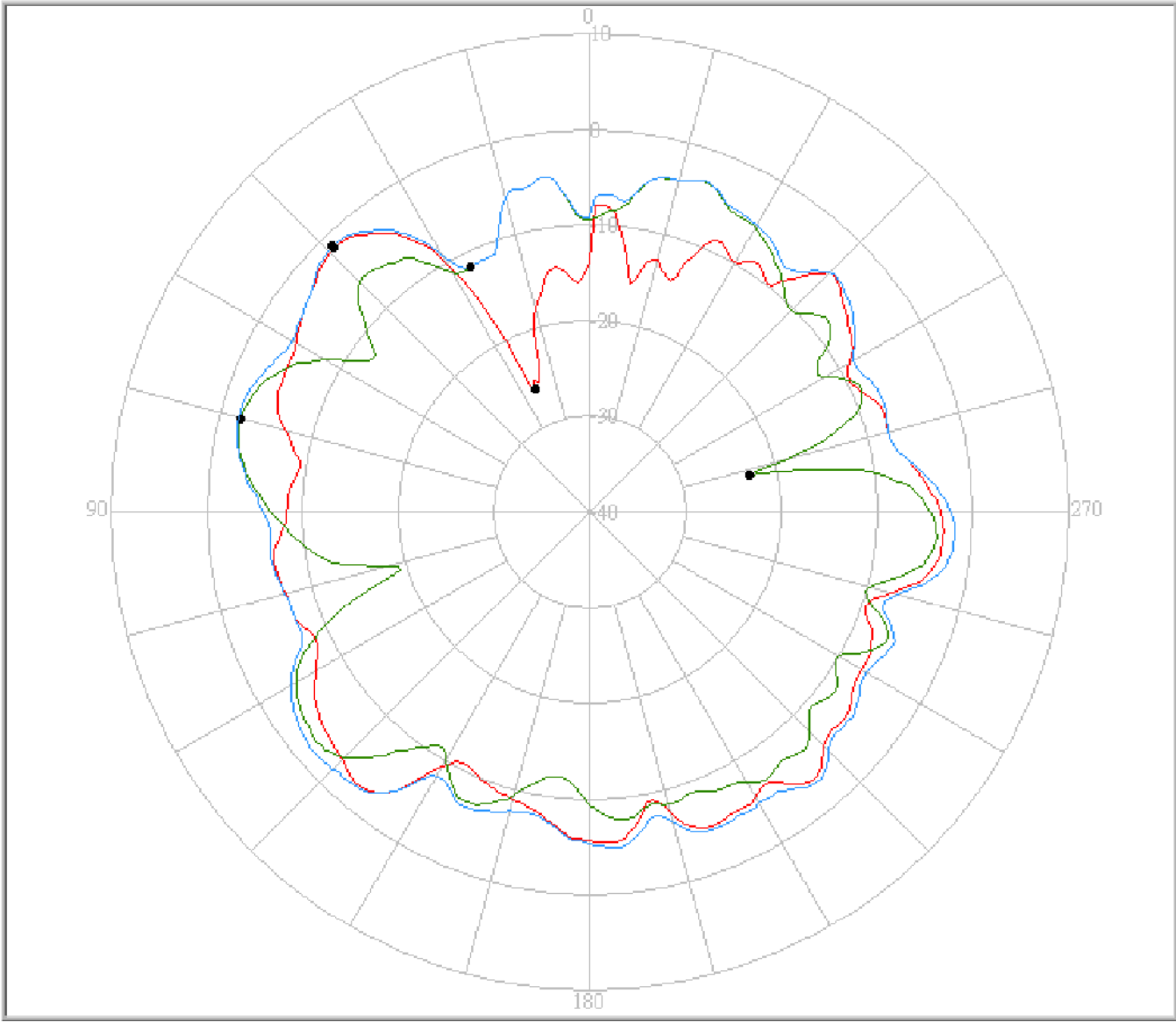
m. 5.85GHz



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Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	5850.00	-1.60 / 44.00	-25.99 / 24.00	-6.41	Ver.	2006/1/20
2	M590K	RIGHT	5850.00	-2.31 / 75.00	-22.85 / 283.00	-6.99	Hor.	2006/1/20
3	M590K	RIGHT	5850.00	-1.31 / 44.00	-11.50 / 26.00	-4.85	V+H	2006/1/20

n. 5.875GHz



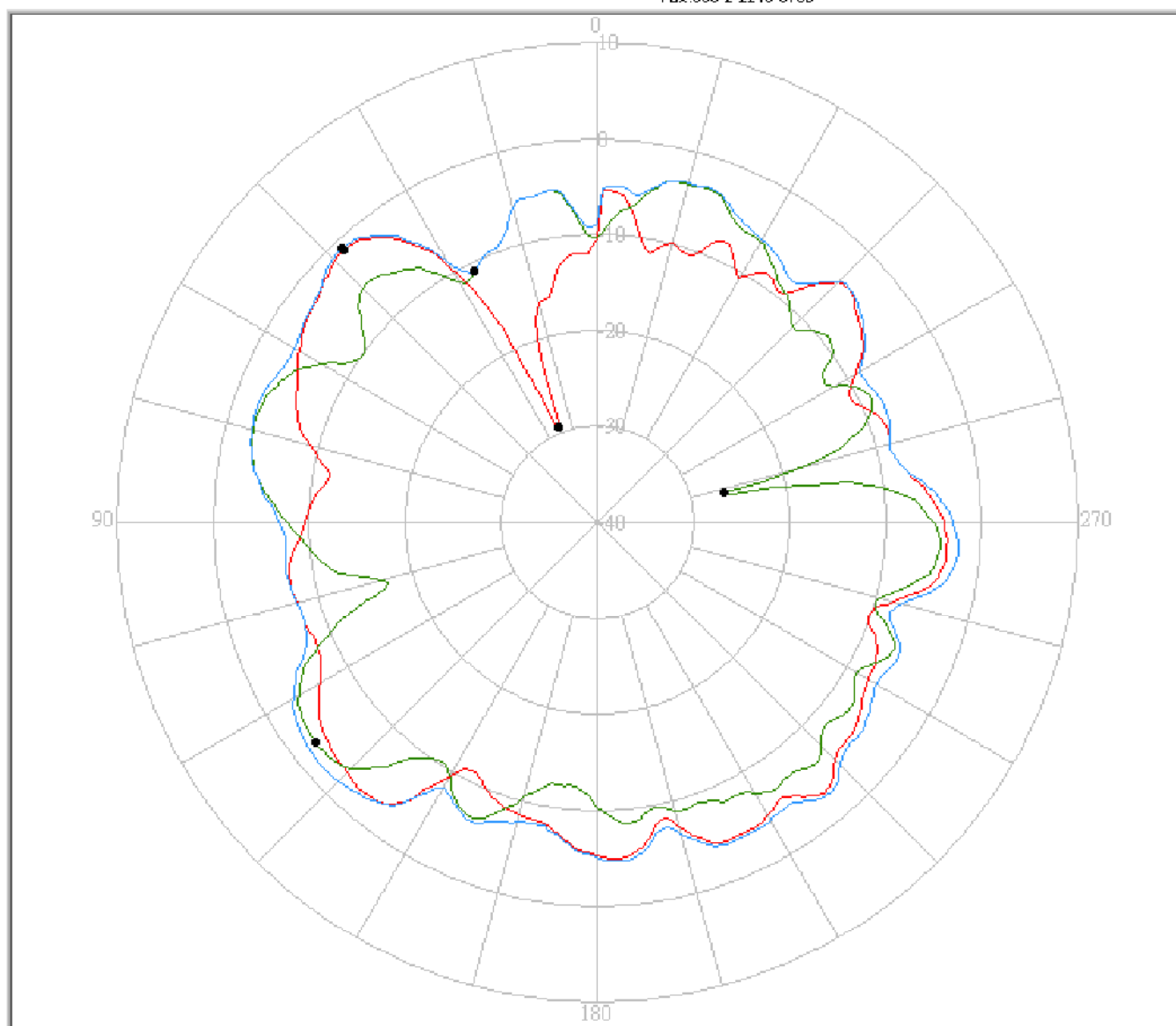
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Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	M590K	RIGHT	5875.00	-1.28 / 43.00	-29.41 / 22.00	-6.32	Ver.	2006/1/20
2	M590K	RIGHT	5875.00	-2.87 / 128.00	-26.40 / 283.00	-7.04	Hor.	2006/1/20
3	M590K	RIGHT	5875.00	-0.98 / 43.00	-10.93 / 26.00	-4.83	V+H	2006/1/20

4. SPECIFICATIONS:

Electrical Properties

Frequency Range : 2.4~2.5GHz & 4.9~5.875GHz

Impedance : 50 ohm

VSWR : ≤ 2.0

Peak Gain : $\leq 3\text{dBi}$

Average Gain : $> -5\text{dBi}$