TRC® Since1985
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Measurement of MPE

1. Foreword

In adopt with the Human Exposure IEEE C95.1, and according to the FCC 1.1310. The *Maximum Permissible Exposure (MPE)* is obligated to measure in order to prove the safety of radiation harmfulness to the human body.

The *Gain* of the antenna used is measured in an *Anechoic chamber*. The *maximum total power to the antenna* is to be recorded. By adopting the ***Friis Transmission Formula*** and the *power gain of the antenna,* we can find the distance right away from the product, where the limit of the MPE is.

2. Description of EUT

Granted FCC ID	**:**	L8G800005
Product name	**:**	802.11b WLAN Access Point
Model name	**:**	8800-710 / 8800-711
Classification	**:**	Mobile Device (i) Under normal use condition, the antenna is at least 20cm away from the user; (ii) Warning statement for keeping 20cm separation distance and the prohibition of operating next to the person has been printed in the user' s manual
Frequency Range	**:**	2.412 GHz ~ 2.462GHz
Antenna Kit	**:**	Inside the housing
Supported Channel	**:**	11 Channel
Modulation Skill	**:**	DBPSK, DQPSK, CCK
Power Type	**:**	Powered by the Switching Power Adaptor Manufacturer: DVE Model: DSA-0151F-05 A I/P: AC 100-120V, 50/60Hz, 40VA O/P: +5V DC, 2.8A

3. Limits for *Maximum Permissible Exposure (MPE)*

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Filed Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	100	6
3.0-30	1842/f	4.89/f	$900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	100	30
1.34-30	824/f	2.19/f	$180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

[The EUT is tested in transmit and receive modes and in the first, middle and the last channel separately. The following shows only our observation have the greatest emissions.]

According to **OET BULLETIN 56 Fourth Edition/August 1999**, **Equation for Predicting RF Fields:**

Friis Transmission Formula: $S = \frac{PG}{4\pi R^2} = \frac{41.879 \times 1.549}{4\pi (20)^2} = 1.291 \times 10^{-2}\, mW/cm^2$

Estimated safe separation: $R = \sqrt{\frac{PG}{4\pi}} = \sqrt{\frac{41.879 \times 1.549}{4\pi}} = 2.272 cm$

Remarks: "The safe estimated separation that the user must maintain from the antenna is at least 2.272 cm."

Where: S = *power density* (in appropriate units, e.g. mW/cm^2)

P = *power input* to the antenna (in appropriate units, e.g., mW)

G = *power gain* of the antenna in the direction of interest relative to an isotropic radiator

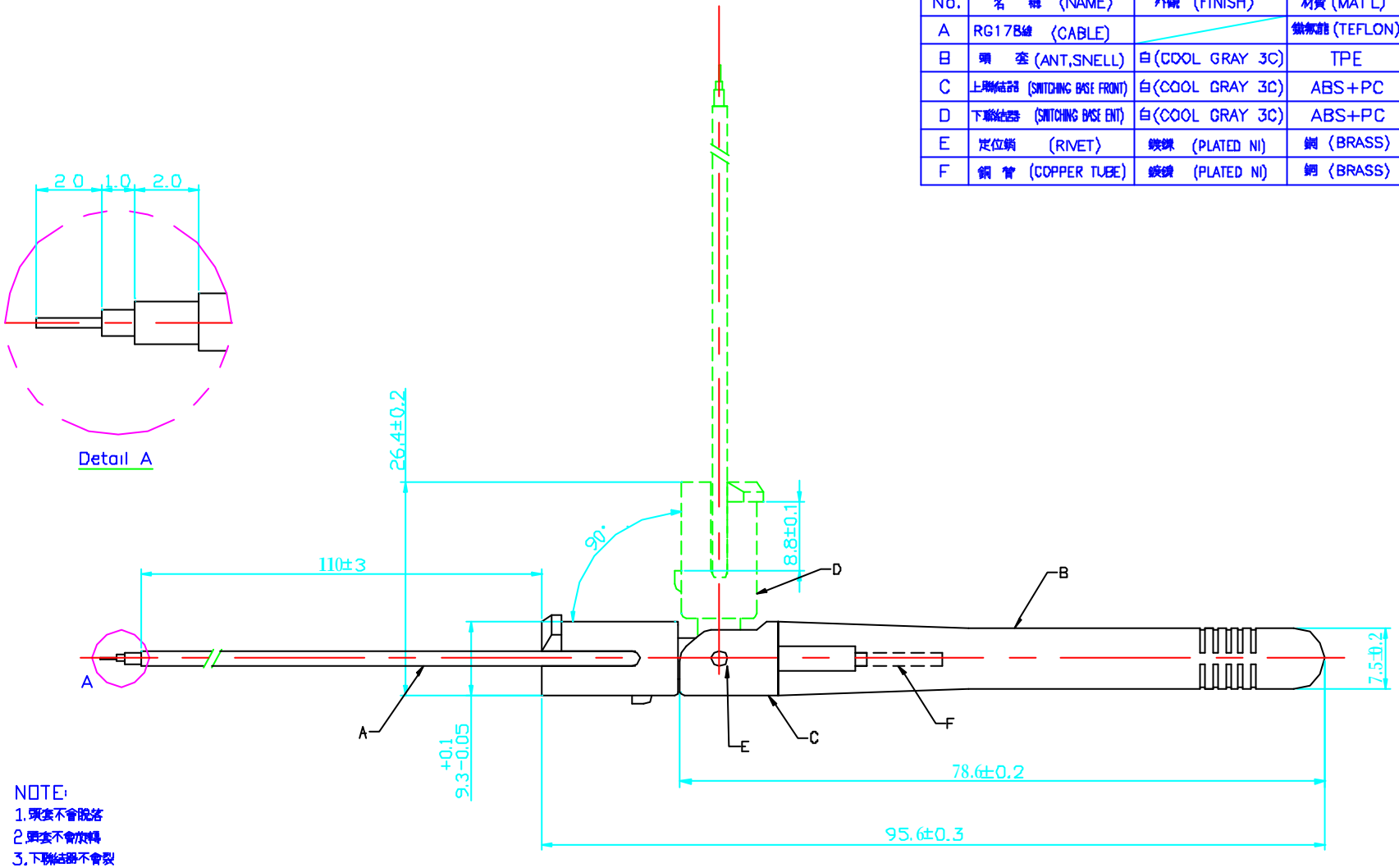
R = *distance* to the center of radiation of the antenna (appropriate units, e.g., cm)

The *Numeric gain G* of antenna with a gain specified in dB is determined by:

G = Log $^{-1}$ (*dB* antenna gain / 10)

G = Log $^{-1}$ (1.90 / 10) = 1.549

No.	名　稱 (NAME)	外觀 (FINISH)	材質 (MAT'L)	數　量 (Q'TY)
A	RG178線 (CABLE)		鐵氟龍 (TEFLON)	01
B	彈　套 (ANT,SNELL)	白(COOL GRAY 3C)	TPE	01
C	上殼結器 (SWITCHING BASE FRONT)	白(COOL GRAY 3C)	ABS+PC	01
D	下殼結器 (SWITCHING BASE ENT)	白(COOL GRAY 3C)	ABS+PC	01
E	定位銷 (RIVET)	鍍鎳 (PLATED NI)	銅 (BRASS)	02
F	銅　管 (COPPER TUBE)	鍍鎳 (PLATED NI)	銅 (BRASS)	01



NOTE:
1.彈套不會脫落
2.彈套不會旋轉
3.下殼結器不會裂
4. COLOR: COOL GRAY 3C

京廣科技股份有限公司
Gincom Technology Corp.

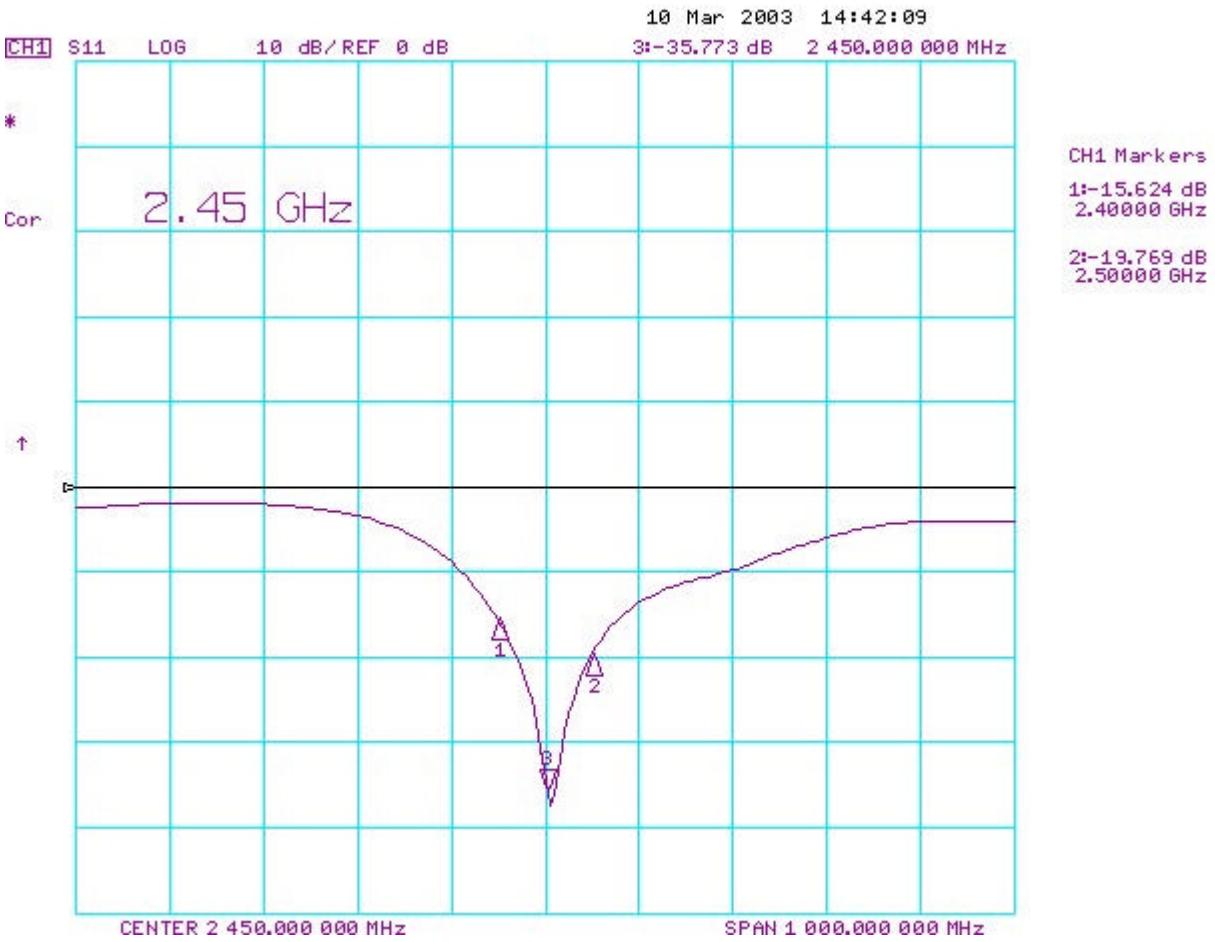
DWN NO.	t103021706	MATERIAL		FINISH		CHECKED	
PART NO.	GAT2-WWS11	SCALE		UNIT	mm	DWN BY	Tim
DATE	02/17/2003	MASS	6g±0.5	SIZE	A4	REV	
DESCRIPTION	外觀圖						

NO.	REVISION		BY	DATE
BASIC	0~30	30~120	120~300	ANOVE 300
X.X	± 0.2	± 0.3	± 0.4	± 0.8
X.XX	± 0.1	± 0.2	± 0.3	± 0.6
X.XXX	± 0.05	± 0.1	± 0.15	± 0.25
表面粗度	▽ ▽▽ ▽▽▽		ANGULAR DIMS ±0.5°	

GAT2 – WWS11

Specifications

Frequency Range	2.4~2.5GHz
Impedance	50 Ohms nominal
VSWR	≦1.9
Gain	1.9dBi
Radiation	Omni
Polarization	Vertical
Antenna Cover	Polyurethane
Swivel Mechanism	Polycarbonate
Operation Temperature	-20℃~+65℃
Storage Temperature	-30℃~+75℃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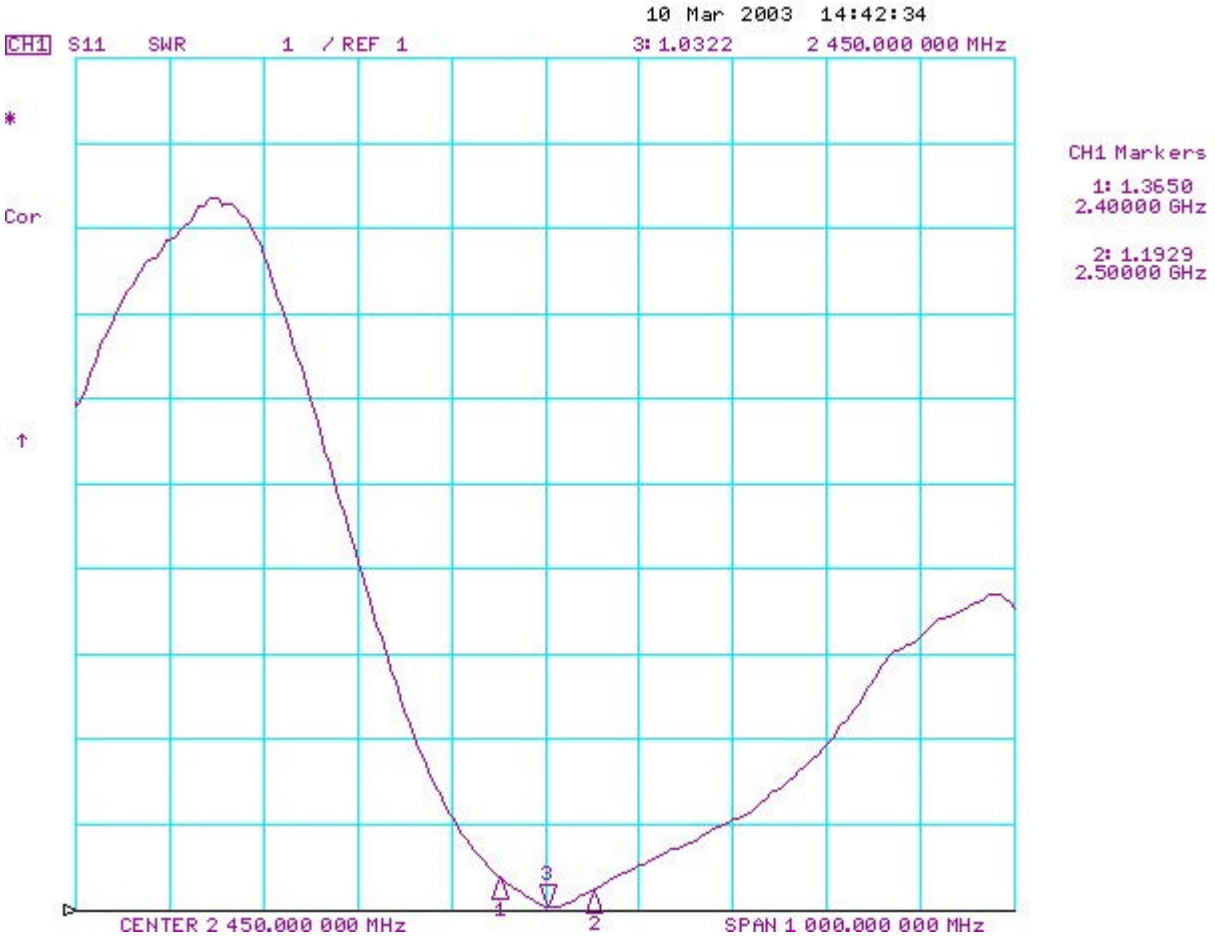
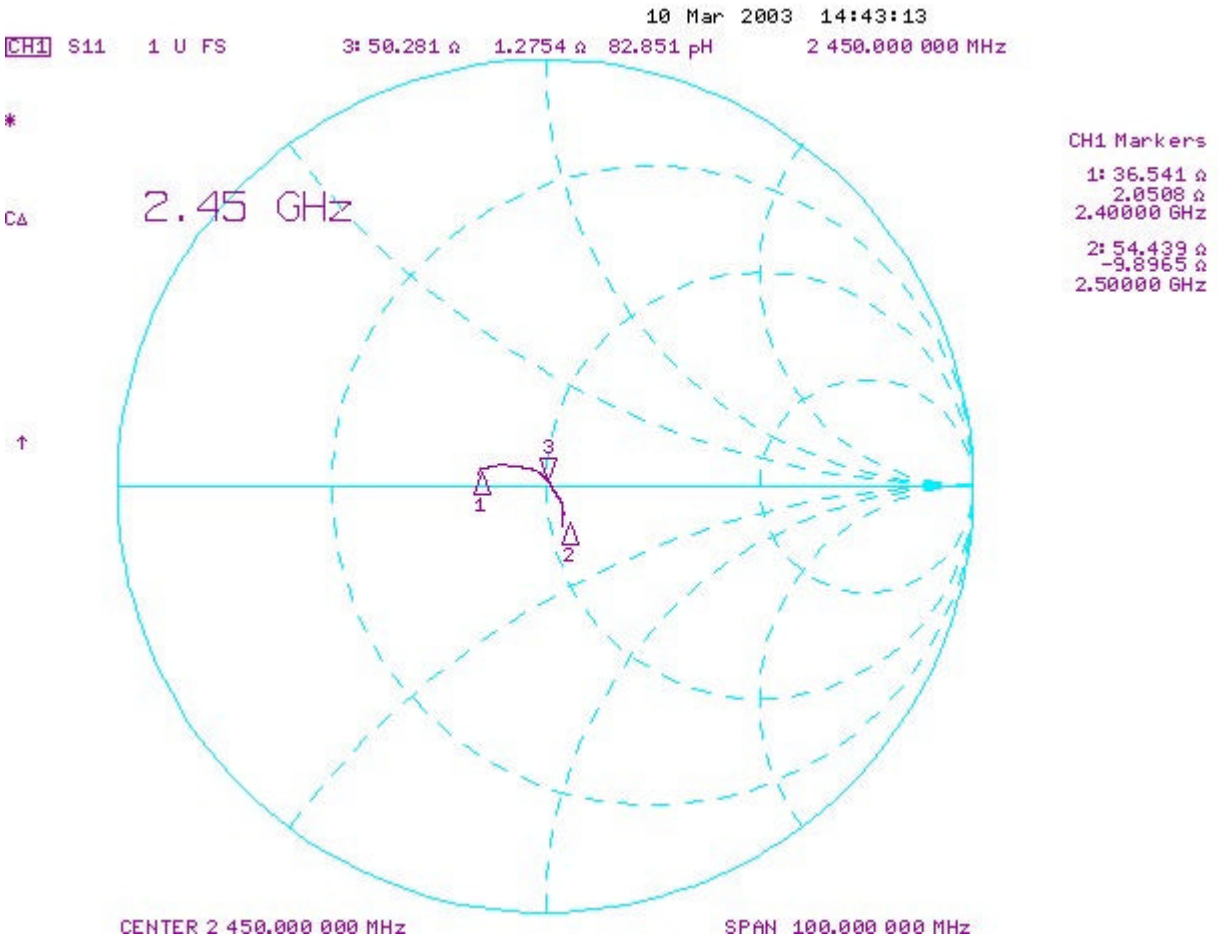
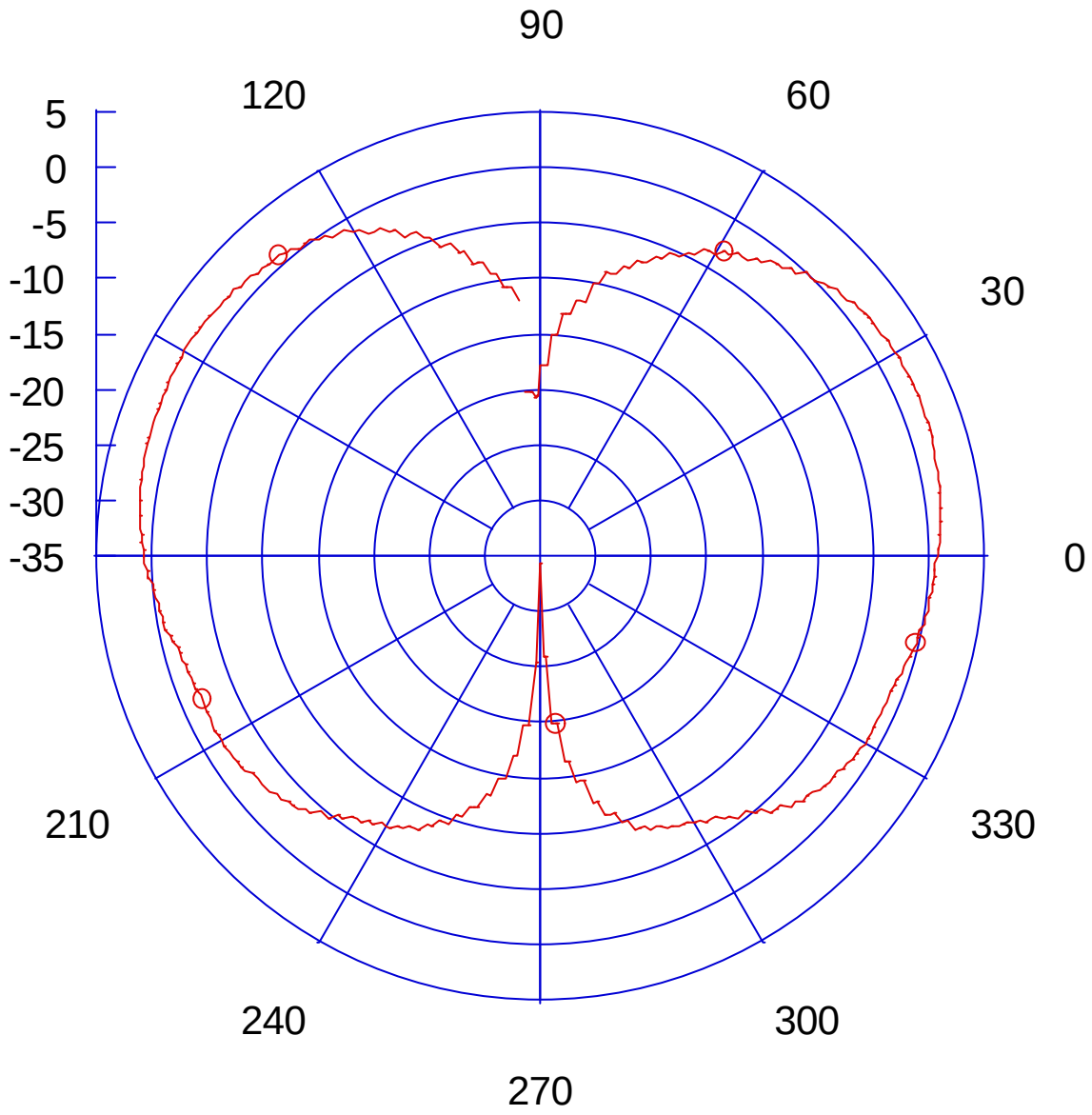
CH1 S11 LOG 10 dB/ REF 0 dB
3:-35.773 dB 2 450.000 000 MHz
2.45 GHz
Cor
CH1 Markers
1:-15.624 dB
2.40000 GHz
2:-19.769 dB
2.50000 GHz
CENTER 2 450.000 000 MHz
SPAN 1 000.000 000 MHz


10 Mar 2003 14:42:34
CH1 S11 SWR 1 / REF 1
3: 1.0322
2 450.000 000 MHz
*
Cor
↑
CH1 Markers
1: 1.3650
2.40000 GHz
2: 1.1929
2.50000 GHz
1
2
3
CENTER 2 450.000 000 MHz
SPAN 1 000.000 000 MHz


10 Mar 2003 14:43:13
CH1 S11 1 U FS
3: 50.281 Ω 1.2754 Ω 82.851 pH
2 450.000 000 MHz
2.45 GHz
CH1 Markers
1: 36.541 Ω
2.0508 Ω
2.40000 GHz
2: 54.439 Ω
-9.8965 Ω
2.50000 GHz
CENTER 2 450.000 000 MHz
SPAN 100.000 000 MHz


90
120
60
5
0
-5
-10
-15
-20
-25
-30
-35
30
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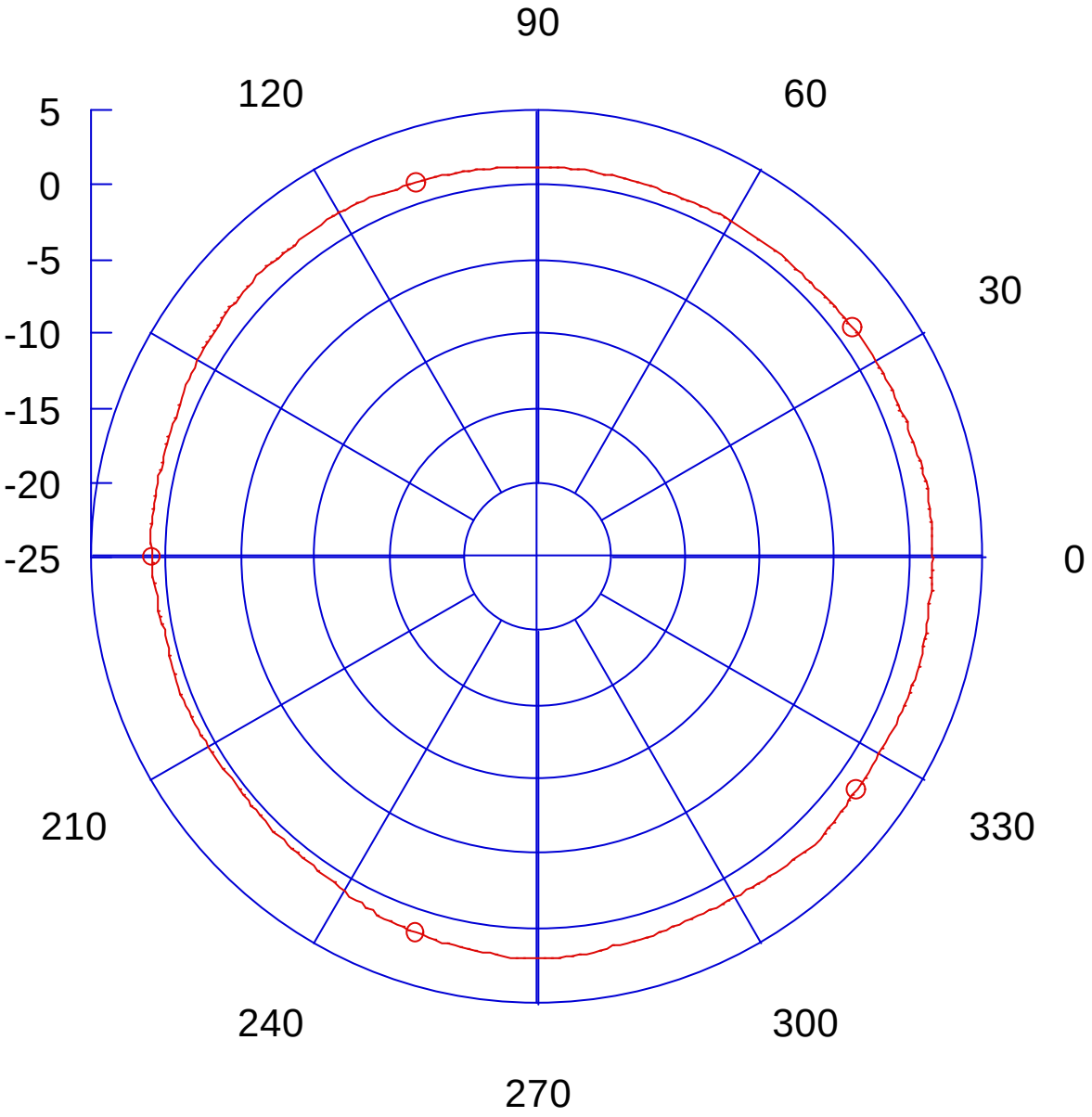
210
330
240
300
270


90
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270