

Technical Description:

NeoPoint NP2000 is a Dual Band Dual Mode digital CDMA/AMPS phone with Personal Digital Assistant (PDA) functionality. It is designed to comply with Part 15, Part 22 and Part 24 of the CFR as well as ANSI J-STD-008, and IS-98C. The PDA functionality of NeoPoint NP2000 allows electronic organizer capabilities and data communications with a PC through a cable.

PCS Band (CMDA):

TX frequencies: 1851.25MHz – 1908.75MHz

RX frequencies: 1931.25MHz – 1988.75MHz

LO frequencies: 1720.87MHz – 1778.37MHz

TCXO frequency: 19.68MHz

Cellular Band (AMPS):

TX frequencies: 824.040MHz – 848.970MHz

RX frequencies: 869.040MHz – 893.970MHz

LO frequencies: 954.42MHz - 979.35MHz

TCXO frequency: 19.68MHz

CDMA Output power: +25dBm (316mW) max or lower per SAR requirement

AMPS Output power: +28dBm (631mW) max or lower per SAR requirement

DC voltages and currents into final RF amp: 4.2V – 3.4V, 800mA – 100mA

Battery voltage: 3.8 V Nominal, 4.2 Max, 3.4 Min. V Li-Ion (Supplied with phone)

Frequency Stabilization:

A voltage controlled temperature compensated crystal oscillator (VCTCXO) is utilized as a frequency reference for all of the transceiver local oscillators. This crystal oscillator is specified to a frequency stability of $\pm 2.5\text{ppm}$ over temperature and voltage variations. The synthesizer lock status is constantly monitored by the microprocessor and transmission is disabled whenever an out of lock condition is detected. The mobile is locked to the base station during operation. The mobile receiver constantly monitors the received signal from the base station and makes necessary frequency adjustment on the VCTCXO to correct any frequency errors between the mobile and the base station.

Suppression of Spurious Radiation:

Spurious and harmonic suppression is achieved by proper design with various filters and sufficient use of EMI shields. Rigorous testing at the factory ensures continuous compliance.

Limiting Power:

Each mobile is individually calibrated at the factory to ensure max power of not more than +25dBm for CDMA and +28dBm for AMPS by employing a proper frequency and temperature compensation schemes for both the TX and RX automatic gain control (AGC) amplifiers. There are also hardware circuitry to monitor TX power and software preset limits to limit maximum TX power.

Limiting Modulation:

The audio input is sampled, digitally limited, and then filtered to amplitude and frequency limit the signal applied to the modulator. The device supports AMPS standard and ANSI J-STD-008 for CDMA operation. The device has an operating temperature range of -30 to +60C. The functions include Compandor, PLL lock detector for received SAT, filtering of received data, audio signal filtering for signals.

Oscillator frequencies:

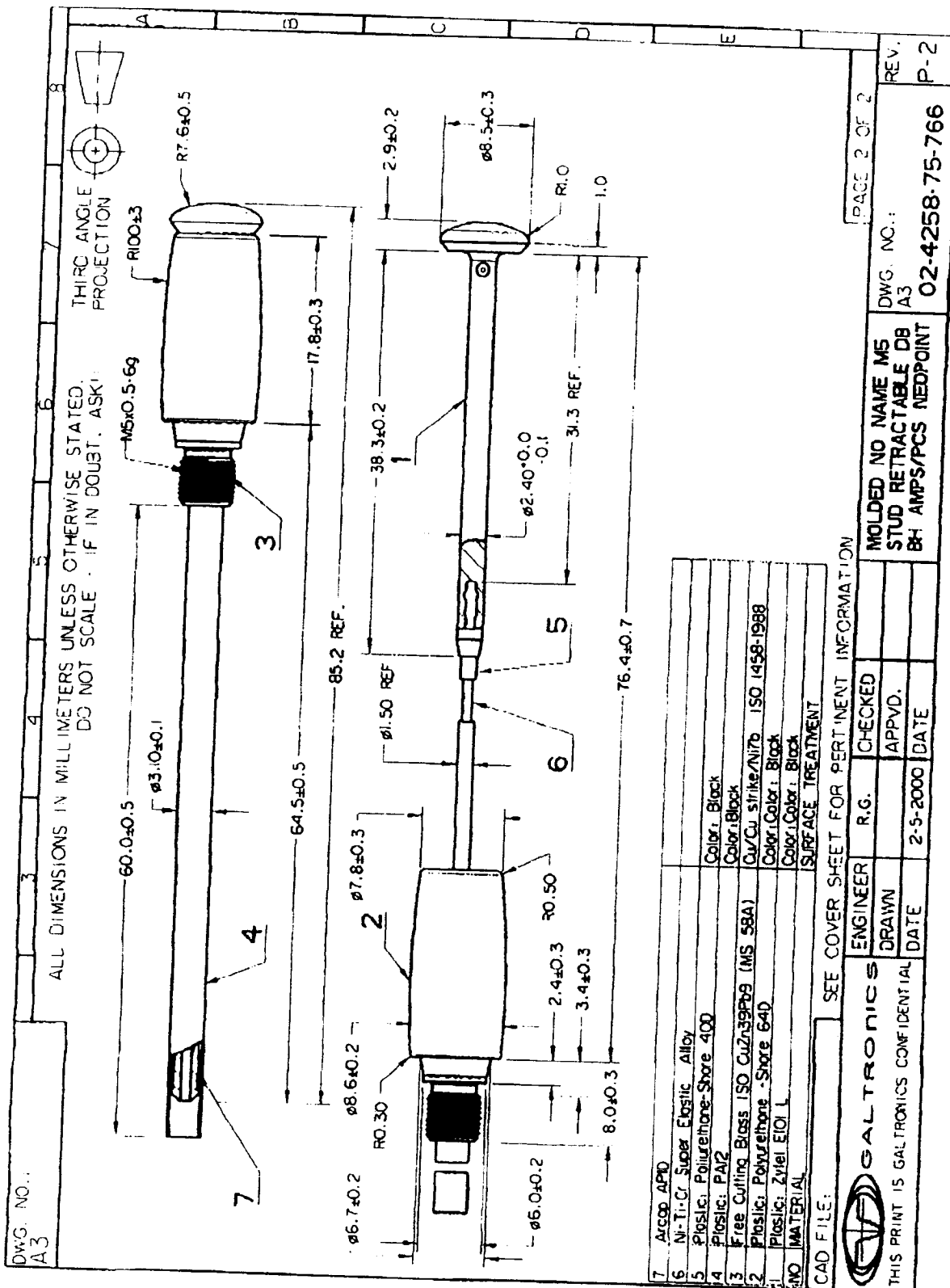
19.68MHz TCXO reference frequency
27MHz resonator frequency for microprocessor
32.768KHz real time clock crystal

Antenna Specifications:

Peak gain @ PCS Band: +1dBi (retracted) and +2dBi(extended)

Peak gain @ AMPS Band: -2dBi (retracted) and 0dBi(extended)

Omnidirectional; VSWR < 3:1





GOLF ELECTRONICS

PART No. : 02-4258-75-766

REPORT FORM

PROJECT No.: 076600

TITLE: Gain Test Results of Retractable antenna tested on phone NEOPOINT (Log#304) NEW PCB

Sample #1		Test condition		GAIN TEST RESULTS (dBi)								File No.		
				Peak (dBi)				AVG (dBi)						
				1850MHz	1910MHz	1930MHz	1990MHz	1850MHz	1910MHz	1930MHz	1990MHz			
Cut	Antenna	Position	Folder	Radio position										
E1 (Side-Side)		Ext			1.75	1.98	1.86	1.45	-2.25	-2.08	-2.11	-2.21	Neoe1ex1	
E1 (Side-Side)		Ret			1.08	0.95	0.80	-0.53	-3.83	-3.87	-3.94	-5.22	Neoe1rt1	

Sample #1			Test condition		GAIN TEST RESULTS (dBi)								File No.
Cut	Antenna	Position	Folder	Radio position	Peak (dBi)				AVG (dBi)				
E2 (front-back)		Ext			1850MHz	1910MHz	1930MHz	1990MHz	1850MHz	1910MHz	1930MHz	1990MHz	
					1.81	1.72	1.42	0.84	-3.73	-3.60	-3.68	-3.89	Neoe2ex1
E2 (front-back)		Ret			0.14	-0.04	-0.39	-2.03	-6.10	-6.26	-6.49	-7.51	Neoe2rt1

Sample #1		Test condition		GAIN TEST RESULTS (dBi)								File No.
				Peak (dBi)				AVG (dBi)				
				1850MHz	1910MHz	1930MHz	1990MHz	1850MHz	1910MHz	1930MHz	1990MHz	
Cut	Antenna	Position	Folder	Radio position								
Neoe1rt1		Ext		0.14	0.55	0.06	-0.38	-1.42	-0.97	-1.13	-1.41	Neoe2rt1
Neoe1rt1		Ret		-3.20	-2.31	-2.54	-3.33	-5.20	-4.30	-4.22	-4.61	Neoe2rt1

The system was calibrated by Standard Gain Horn Antenna from Scientific Atlanta LTD.

Test date 18 April 2000

Test performed by : Guernan Bazanov.

FM014 REV. A

FORM No.:



GOLI THRONICS

REPORT FORM

PART No. : 02-4258-75-766

PROJECT No.: 076600

TITLE: Gain Test Results of Retractable antenna tested on phone NEOPOINT (Log#304) NEW PCB

Sample #1		Test condition		GAIN TEST RESULTS (dBi)										File No.
Cut	Antenna	Position	Folder	Radio position	Peak (dBi)				AVG (dBi)					
E1 side-side		Ext			824MHz	849MHz	869MHz	894MHz	824MHz	849MHz	869MHz	894MHz		
					-0.91	-0.13	-0.20	-0.84	-4.29	-3.70	-3.98	-4.73	Neoe1ext	
E1 side-side		Ret			-3.14	-2.32	-2.00	-2.80	-6.29	-5.54	-5.40	-6.36	Neoe1ret	

Sample #1		Test condition				GAIN TEST RESULTS (dBi)								File No.
						Peak (dBi)				AVG (dBi)				
						Antenna	Position	Folder	Radio position	824MHz	849MHz	869MHz	894MHz	
E2 front-back		Ext				-0.89	0.16	-0.02	-0.79	-4.57	-3.89	-4.15	-4.97	Neoe2ext
E2 front-back		Ret				-2.70	-1.65	-1.49	-2.52	-6.44	-5.61	-5.25	-6.60	Neoe2ret

Sample #1		Antenna		Position	Test condition		GAIN TEST RESULTS (dBi)								File No.
							Peak (dBi)				AVG (dBi)				
							824MHz	849MHz	869MHz	894MHz	824MHz	849MHz	869MHz	894MHz	
Cut			Folder	Radio position											
Azimuth		Ext				-0.96	-1.05	-1.08	-1.30	-2.03	-2.25	-2.57	-3.23	Neonazext	
Azimuth		Ret				-2.82	-2.63	-2.43	-2.85	-3.99	-3.95	-3.85	-4.70	Neonazret	

The system was calibrated by Log Periodic antenna from A.H. Systems LTD.

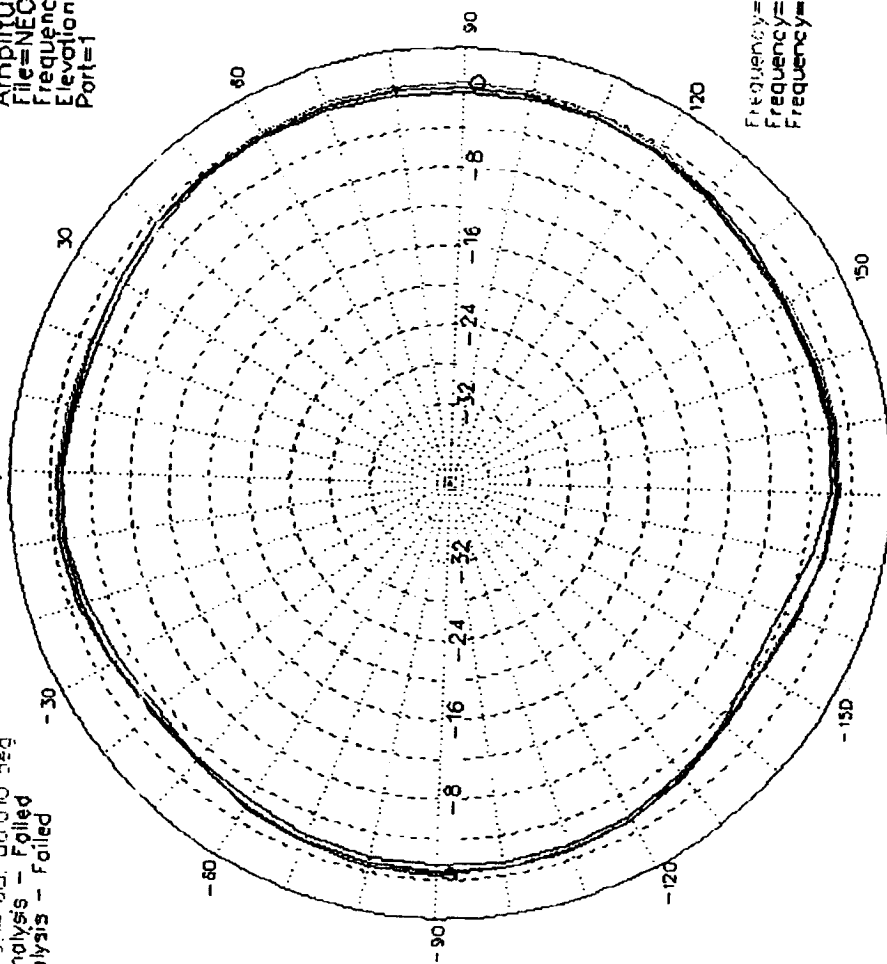
Test date: 18 April 2000

Test performed by: Guerman Bazanov

Galtronics Ltd.

rfq766 S1 AZIMUTH EXT PCS
Beam Peak = 0.14 dB 30.00 deg
Beam Width analysis - Failed
Null Depth analysis - Failed

Amplitude(dB)
File=NECAZEXT1.OPC
Frequency=1.850(GHz)
Elevation=0.000(deg)
Port=1



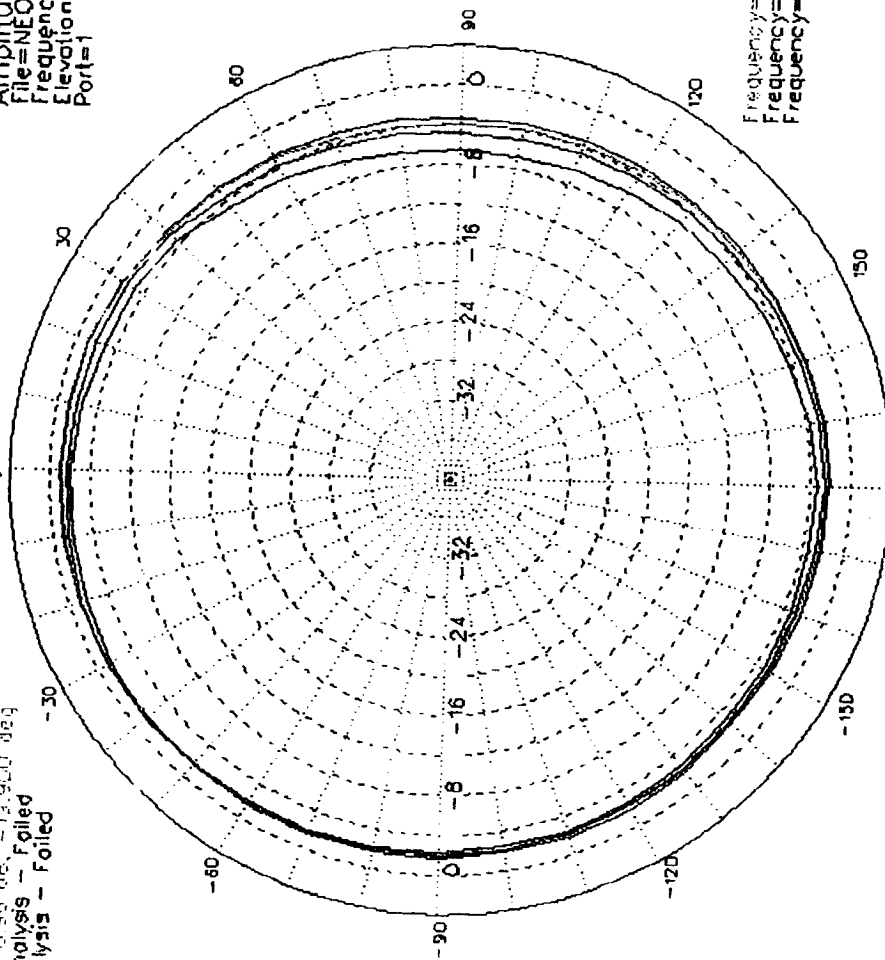
Frequency=1.850(GHz)
Frequency=1.930(GHz)
Frequency=1.990(GHz)

AL2000 Analysis - C:\VAL20... AL2000 Present - c:\...

Galtronics Ltd.

RFQ766 S1 AZIMUTH ext
Gain Peak = -0.96 dB, -13.950 deg
Beam width analysis - Failed
Null Depth analysis - Failed

Amplitude(dB)
File=NEOAZEXT.ORG
Frequency=824.000(MHz)
Elevation=0.000(deg)
Port=1



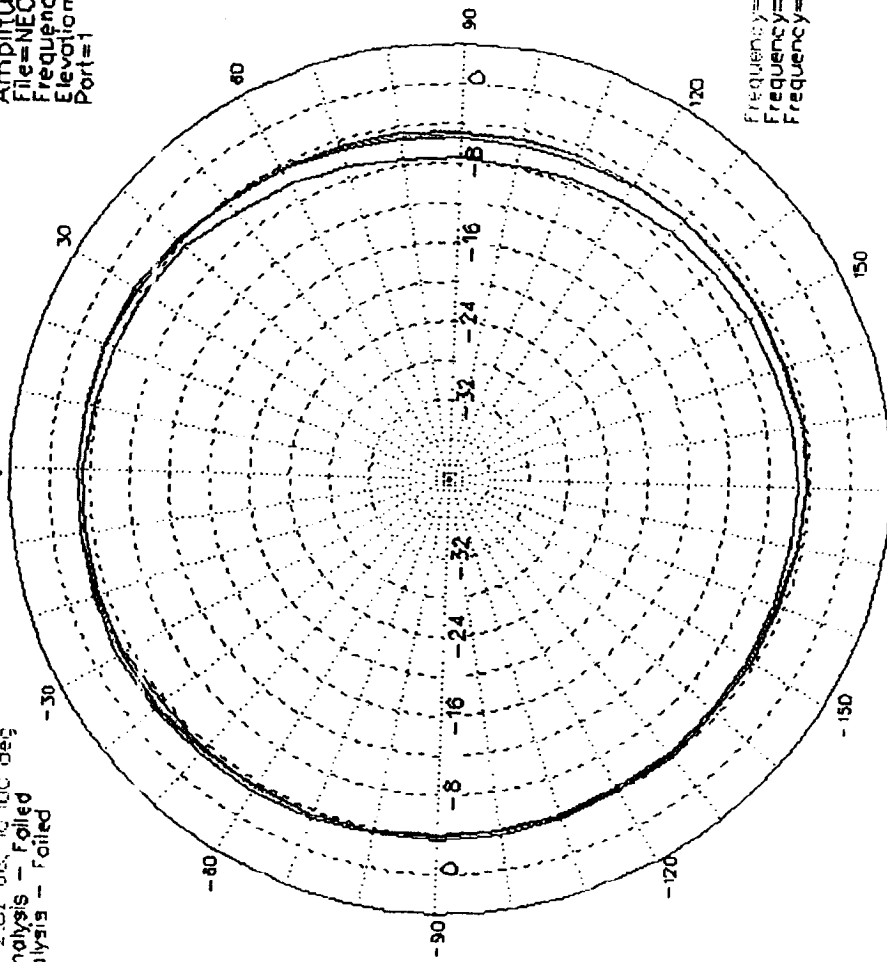
Frequency=849.000(MHz)
Frequency=869.000(MHz)
Frequency=894.000(MHz)

AL2000 Analysis - C:\AL20... AL2000 Present - c:\...

Galtronics Ltd.

RF0766 S1 AZIMUTH ret
Beam Peak = -2.82 dB, 10 100 deg
Beam Width analysis - Failed
Null Depth analysis - Failed

Amplitude(dB)
File=NEOAZ RET. ORC
Frequency=824.000(MHz)
Elevation=0.000(Deg)
Port=1



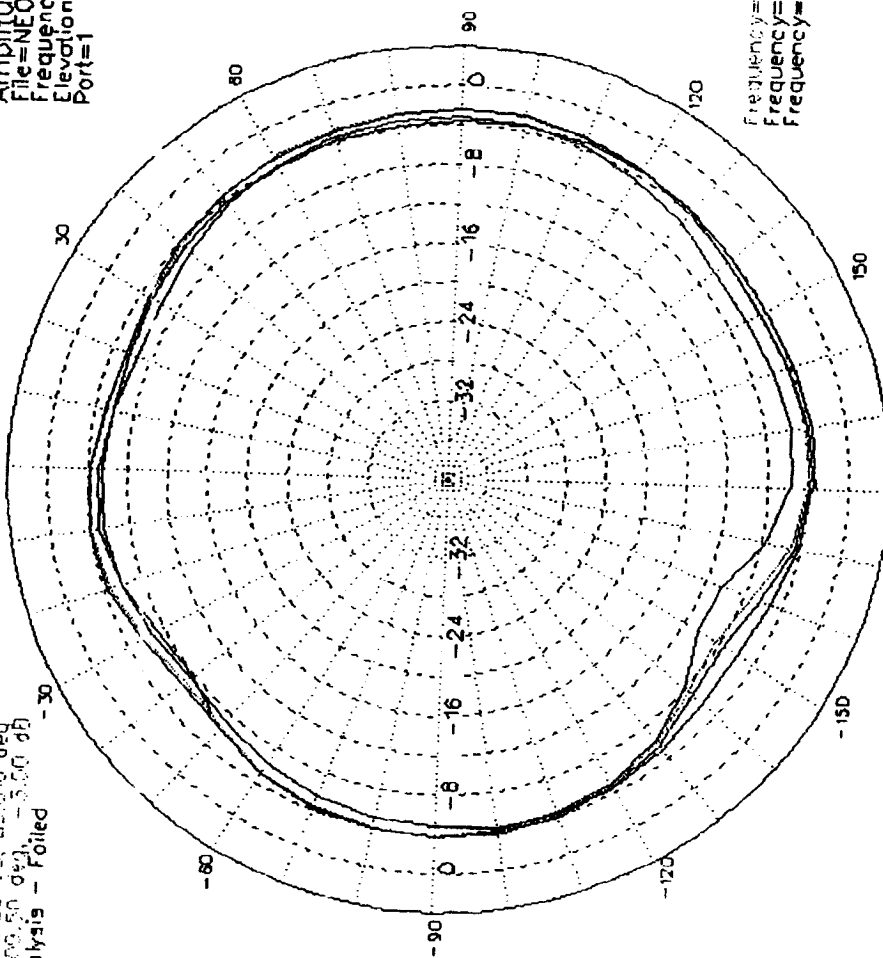
Frequency=824.000(MHz)
Frequency=869.000(MHz)
Frequency=894.000(MHz)

AL2000 Analysis - C:\AL20... AL2000 Present - c:\...

Galtronics Ltd.

rfq766 S1 AZIMUTH ret PCS
Beam Peak = -5.00 dB, 80.00 deg
Beam Width = 100.50 deg, -5.00 dB
Null Depth analysis - Failed

Amplitude(dB)
File=NEOAZR11.0RC
Frequency=1.850(GHz)
Elevation=0.000(deg)
Port=1



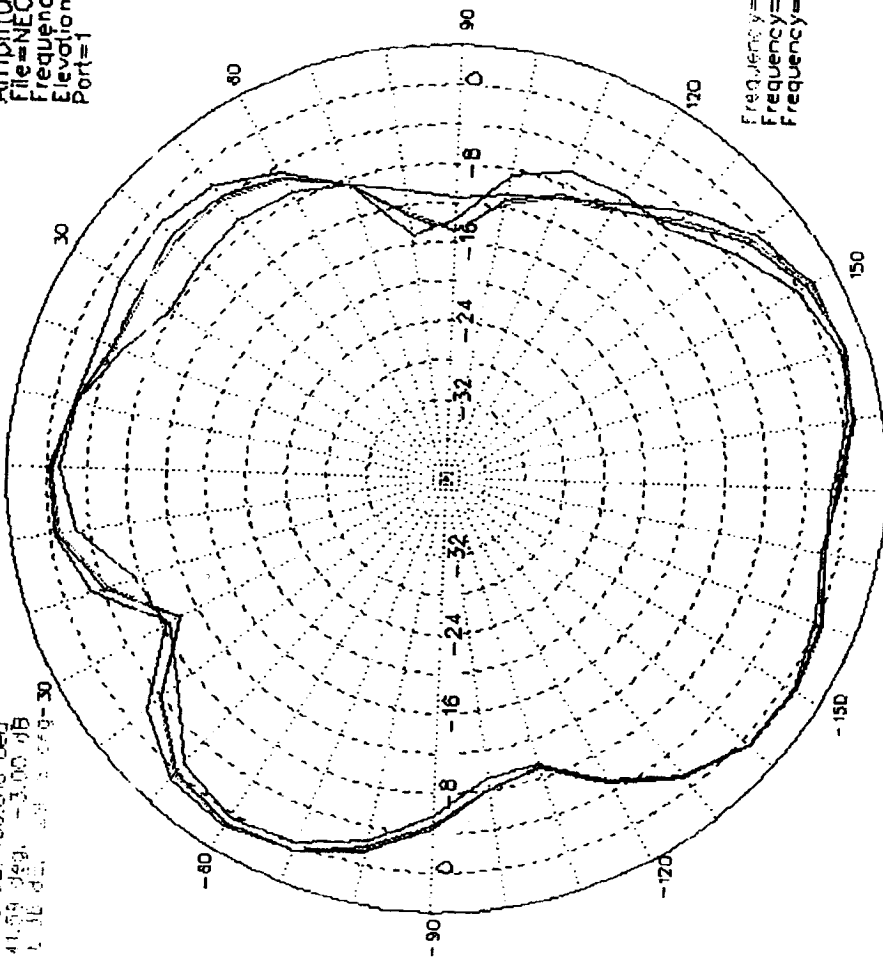
Frequency=1.850(GHz)
Frequency=1.930(GHz)
Frequency=1.990(GHz)

AL2000 Analysis - C:\VAL20\... AL2000 Present - c:\...

Galtronics Ltd.

rlq766 S1 E1s-s ext PCS
Beam Peak = 1.75 dB, 180.010 deg
Beam Width = 41.59 deg, -3.00 dB
Beam Offset = 1.10 deg, -3.00 dB

Amplitude(dB)
File=NEOE1EXT.ORG
Frequency=1.850(GHz)
Elevation=0.000(Deg)
Port=1



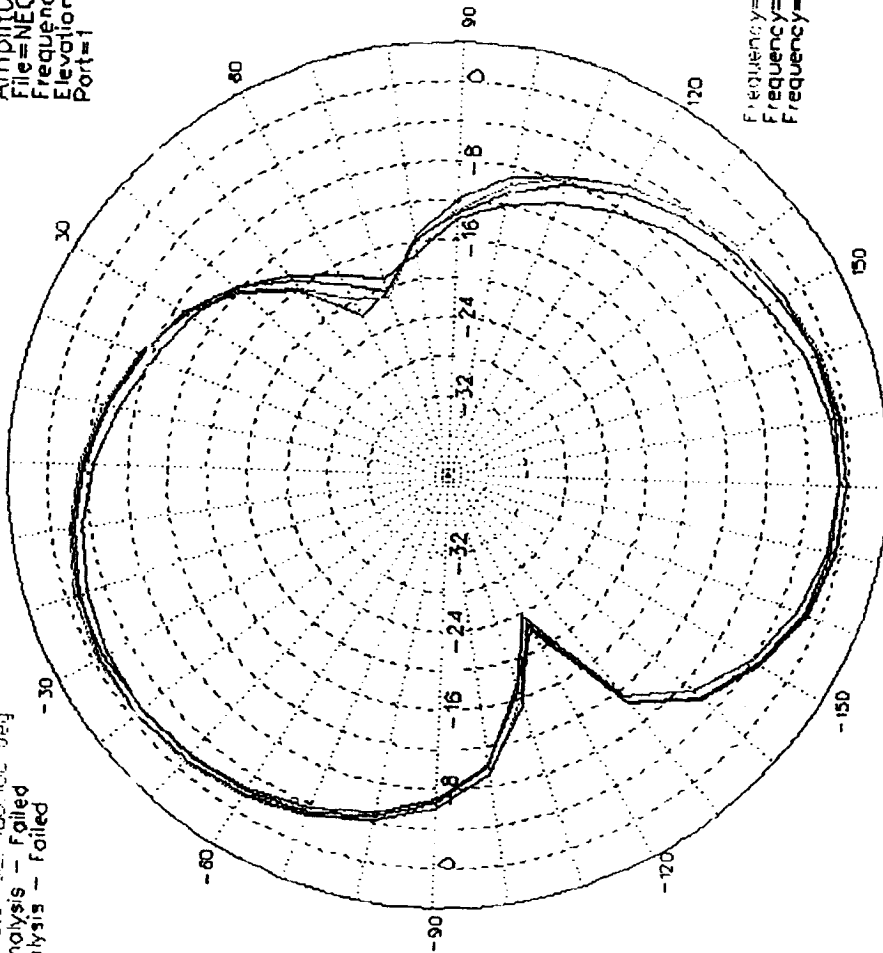
Frequency=1.850(GHz)
Frequency=1.930(GHz)
Frequency=1.990(GHz)

AL2000 Analysis - C:\AL20...
AL2000 Present - c:\...

RFQ766 S1 E1s-s ext
Beam Best = -0.91 dB, 180 100 deg
Beam Width analysis - Failed
Null Depth analysis - Failed

Galtronics Ltd.

Amplitude(dB)
File=NEOE1EXT.ORG
Frequency=824.000(MHz)
Elevation=0.000(Deg)
Port=1



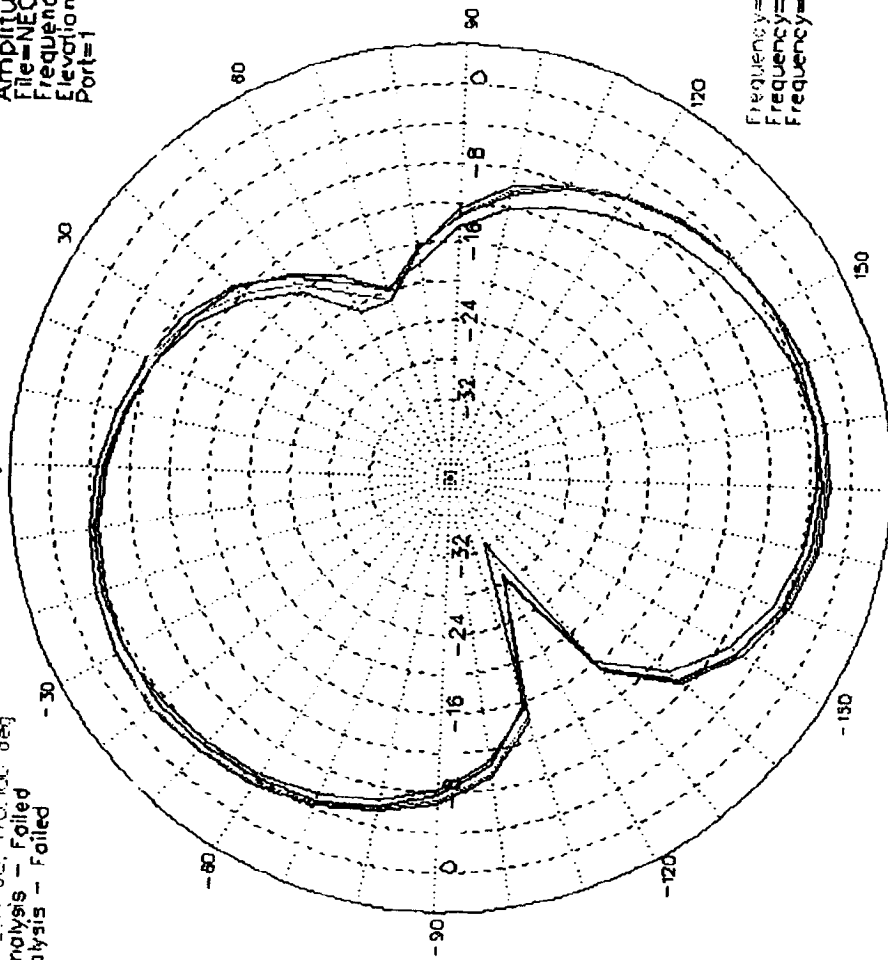
Frequency=849.000(MHz)
Frequency=869.000(MHz)
Frequency=894.000(MHz)

AL2000 Analysis - C:\AL2000\Present - c:\...

Galtronics Ltd.

RFQ766 S1 E1s-s rel
Beam Peak = -3.12 dB, 170.000 deg
Beam Width analysis - Failed
Null Depth analysis - Failed

Amplitude(dB)
File=NEOE IREF. ORC
Frequency=824.000 (MHz)
Elevation=0.000 (Deg)
Port=1



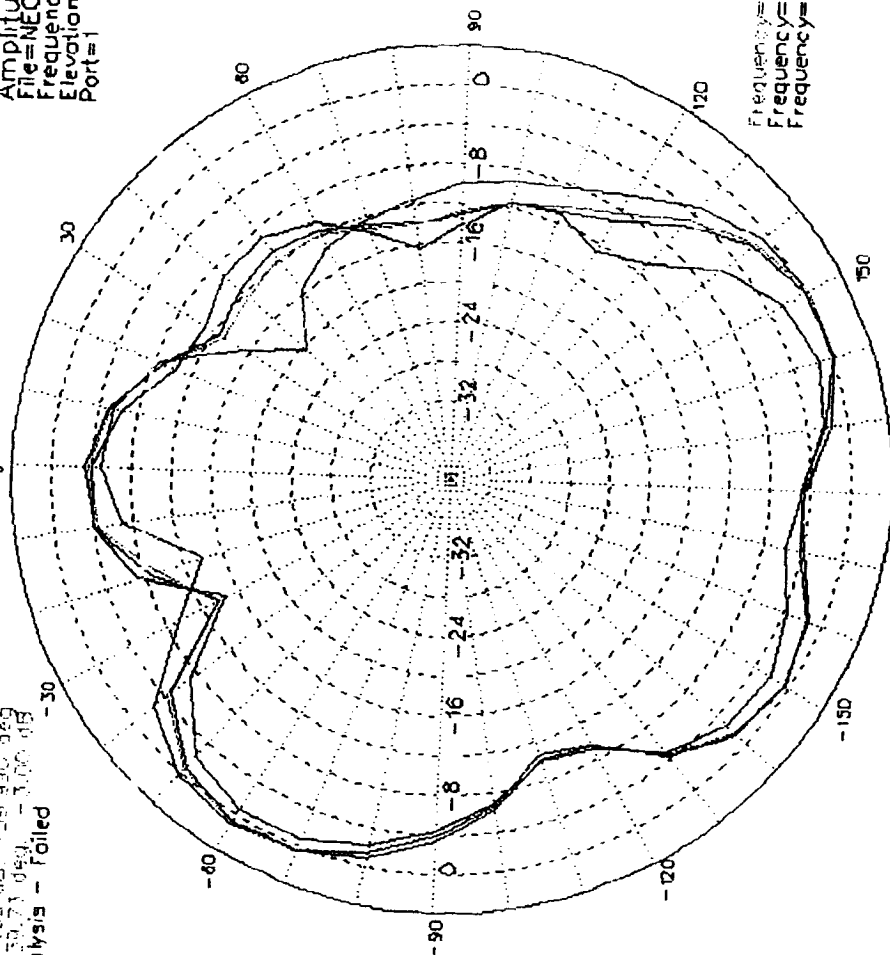
Frequency=849.000 (MHz)
Frequency=869.000 (MHz)
Frequency=894.000 (MHz)

AL2000 Analysis - C:\AL2000 Present - c:\...

Galtronics Ltd.

rfq766 S1 E1s-s rel PCS
Beam Peak = 108 dB - 58.900 deg
Beam Width = 30.71 deg - 3.00 dB
Null Depth analysis - Failed

Amplitude(dB)
File=NEOE_IRT1.0RC
Frequency=1850(GHz)
Elevation=0.000(Deg)
Port=1



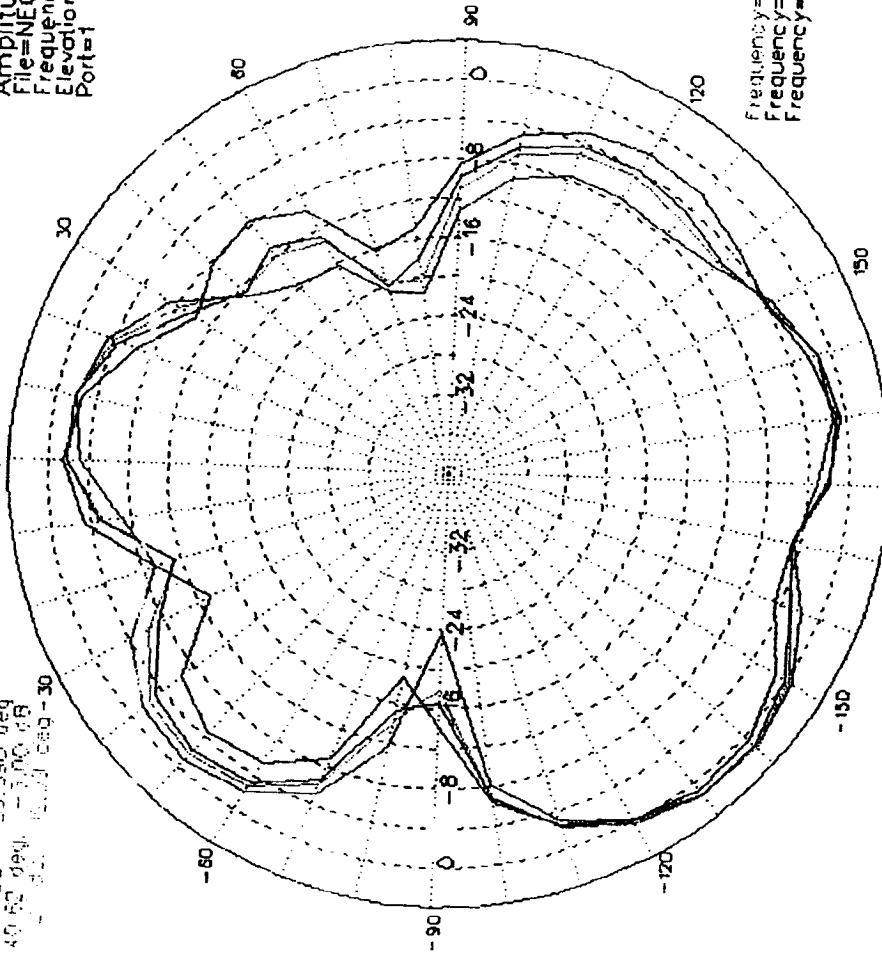
Frequency=1.910(GHz)
Frequency=1.930(GHz)
Frequency=1.950(GHz)

AL2000 Analysis - C:\AL2000 Present - c:\...

Galtronics Ltd.

rfq766 S1 E2f-b ext PCS
beam peak = 131 dB -139.990 deg
beam width = 40.62 deg -3.00 dB
1.121 -2.21 0.00 deg -30

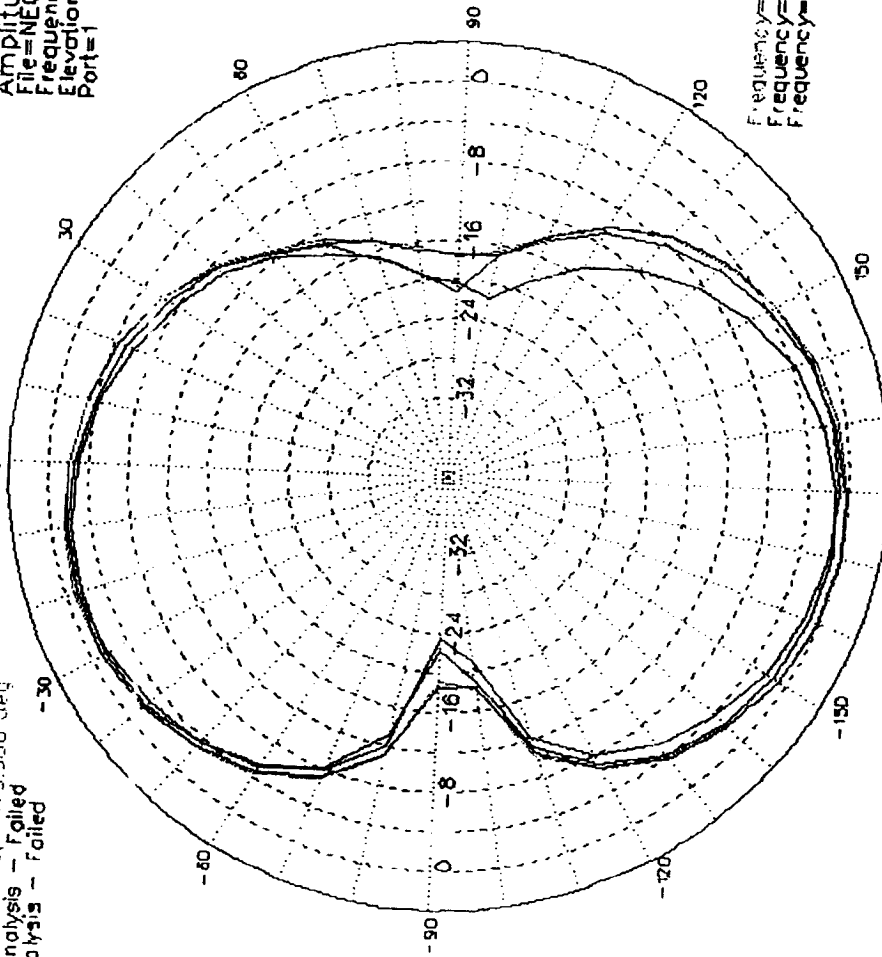
Amplitude(dB)
File=NEOE2f10PC
Frequency=1.850(GHz)
Elevation=0.000(Deg)
Port=1



Frequency=1.850(GHz)
Frequency=1.900(GHz)
Frequency=1.950(GHz)

AL2000 Analysis - C:\AL20... AL2000 Present - c:\...

Amplitude(dB)
File=NEOE2EXT.BRC
Frequency=824.000(MHz)
Elevation=0.000(Deg)
Port=1



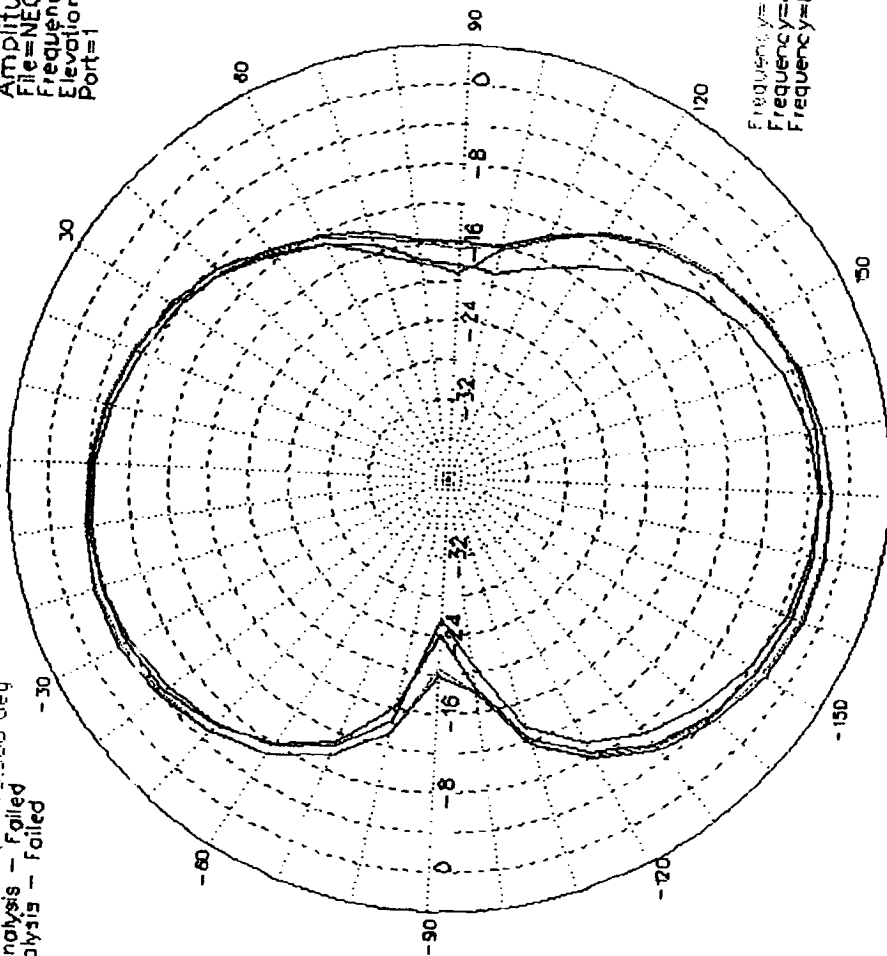
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Frequency=859,000{MHz}
Frequency=869,000{MHz}
Frequency=894,000{MHz}
```

AL2000 Analysis - C:\AL2000 Present - c:\...

RFQ766 S1 E21-b ret
Beam Peak = -2.70 dB, -179.900 deg
Beam Width analysis - Failed
Null Depth analysis - Failed

Galtronics Ltd.

Amplitude (dB)
File=NEOE2 REF ORC
Frequency=824.000(MHz)
Elevation=0.000(Deg)
Port=1



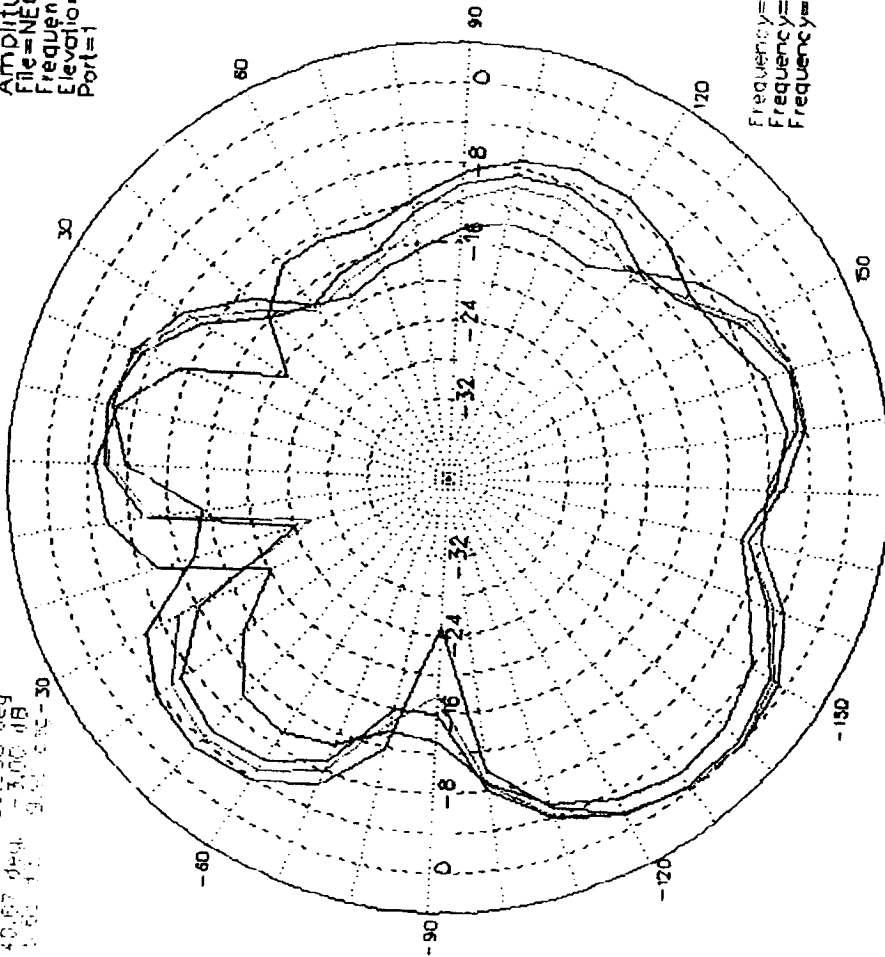
Frequency=849.000(MHz)
Frequency=869.000(MHz)
Frequency=894.000(MHz)

AL2000 Analysis - C:\AL2000\Present - c:\...

Galtronics Ltd.

rfq766 S1 E2f-b ret PCS
0.00m Phase= 0.14 dB -139.990 deg
0.00m Width= 40.00 deg -3.000 dB
0.00m Gain= 1.00 1.00 9.00 dB -30

Amplitude (dB)
File=NEOE2RT1.DBC
Frequency=1.850(GHz)
Elevation=0.000(Deg)
Port=1



Frequency=1.910(GHz)
Frequency=1.930(GHz)
Frequency=1.990(GHz)

AL2000 Analysis - C:\AL20... AL2000 Present - c:\...