

SPECIFICATION FOR APPROVAL

Customer:

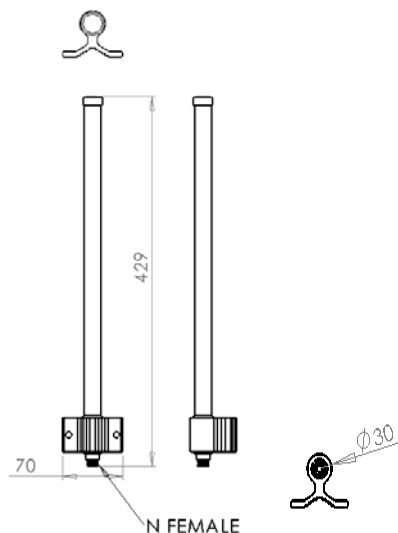
Model No. : AO-1090

Description: 1090MHz OMNI ANTENNA

Date: 2009/02/19

Rev : 1

1. OVERVIEW & SPECIFICATIONS



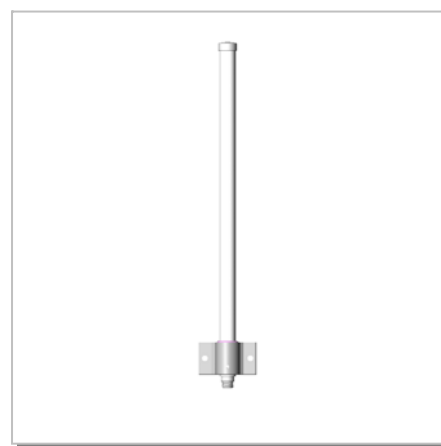
Electrical Specifications:

Frequency Range :	1090MHz
VSWR :	≤ 2.0
Impedance :	$50\Omega \pm 5\Omega$
Gain :	5dBi
Polarization :	Vertical
Power Handling :	10Watt

Mechanical Specifications:

Connector :	N FEMALE
Operation Temp. :	$-30^{\circ}\text{C} \sim +60^{\circ}\text{C}$
Material :	Radome: Fiberglass Base: Aluminum Alloy Mount: Stainless
Dimension (L*W*H) :	$\varnothing 30 \times 429$ mm
Weight :	$260\text{g} \pm 15\text{g}$
Color :	WHITE

3D Illustration



2. TESTING CONDITION

2.1 TEST SETUP

VSWR measurement (S11): Use ROHDE & SCHWARZ ZV8 Network Analyzer with Harbour RG-142 coaxial cable: 1000mm length in free space.

2.1.1 VSWR

The table as below summarizes concern about Return loss measurement according to The frequency band is based on PRO-CELL design. The detail be shown as appendix that is from ROHDE & SCHWARZ ZV8 Network Analyzer

	VSWR Performance
Freq(MHz)	1090
Free space	1.618

3. GAIN MEASUREMENT

3.1 TEST SETUP

The gain of the antenna was measured by **PROCELL** Chamber. The chamber provides less than –30 dB reflectivity from 800 MHz through 6 GHz and a 60cm diameter spherical quiet zone. The measurement results are calibrated using both **SCHWARZBECK** horn standards. A decoupling sleeve is used to reduce feed line radiation

3.2 TEST RESULT

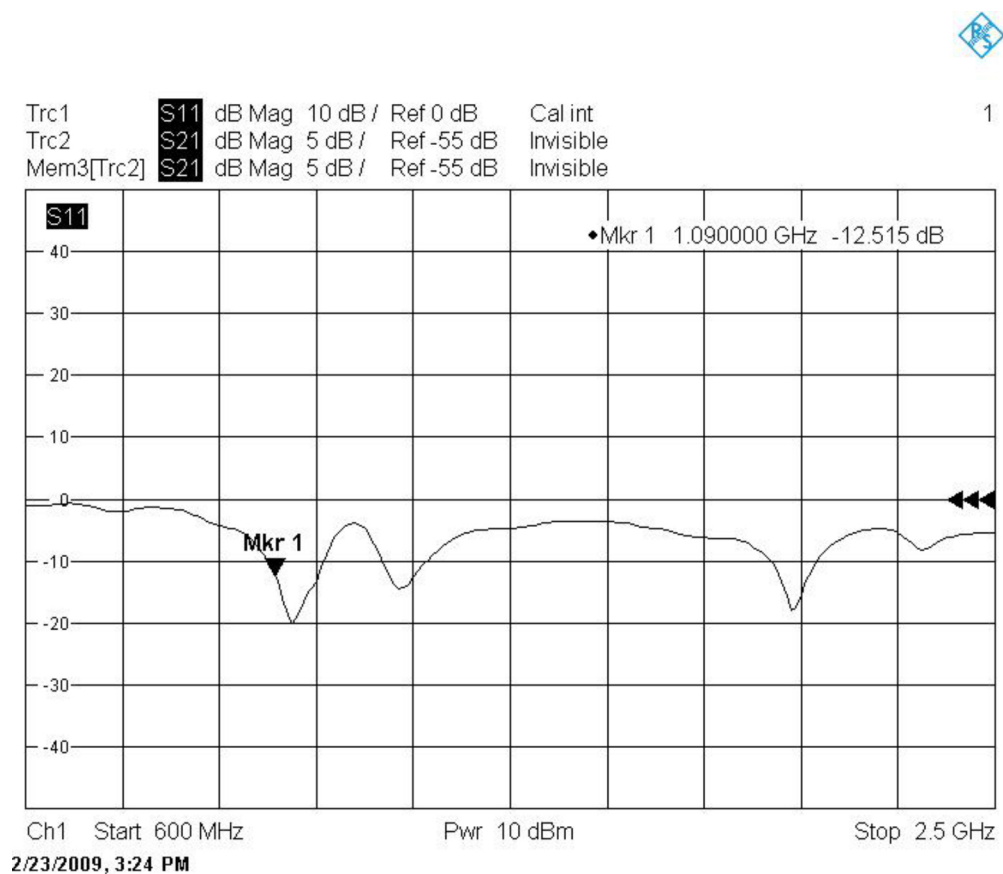
The peak gain is picked up as table list from Network analyzer in Chamber room, the completely gain plots also be shown as appendix.

	Peak Gain(H/E)
Freq(MHz)	1090
Peak Gain	5.5/4.8(dBi)

4. APPENDIX

4.1 RETURN LOSS & VSWR

RETURN LOSS

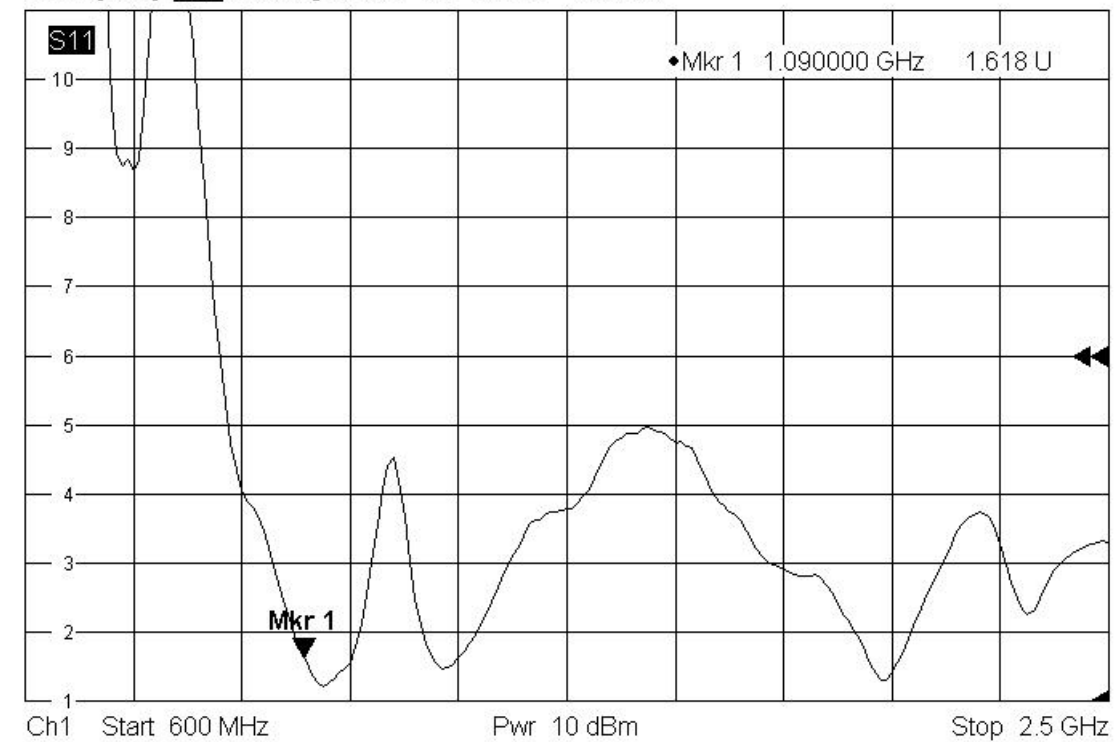


SWR



Trc1 S11 SWR 1 U / Ref 1 U Cal int
Trc2 S21 dB Mag 5 dB / Ref -55 dB Invisible
Mem3[Trc2] S21 dB Mag 5 dB / Ref -55 dB Invisible

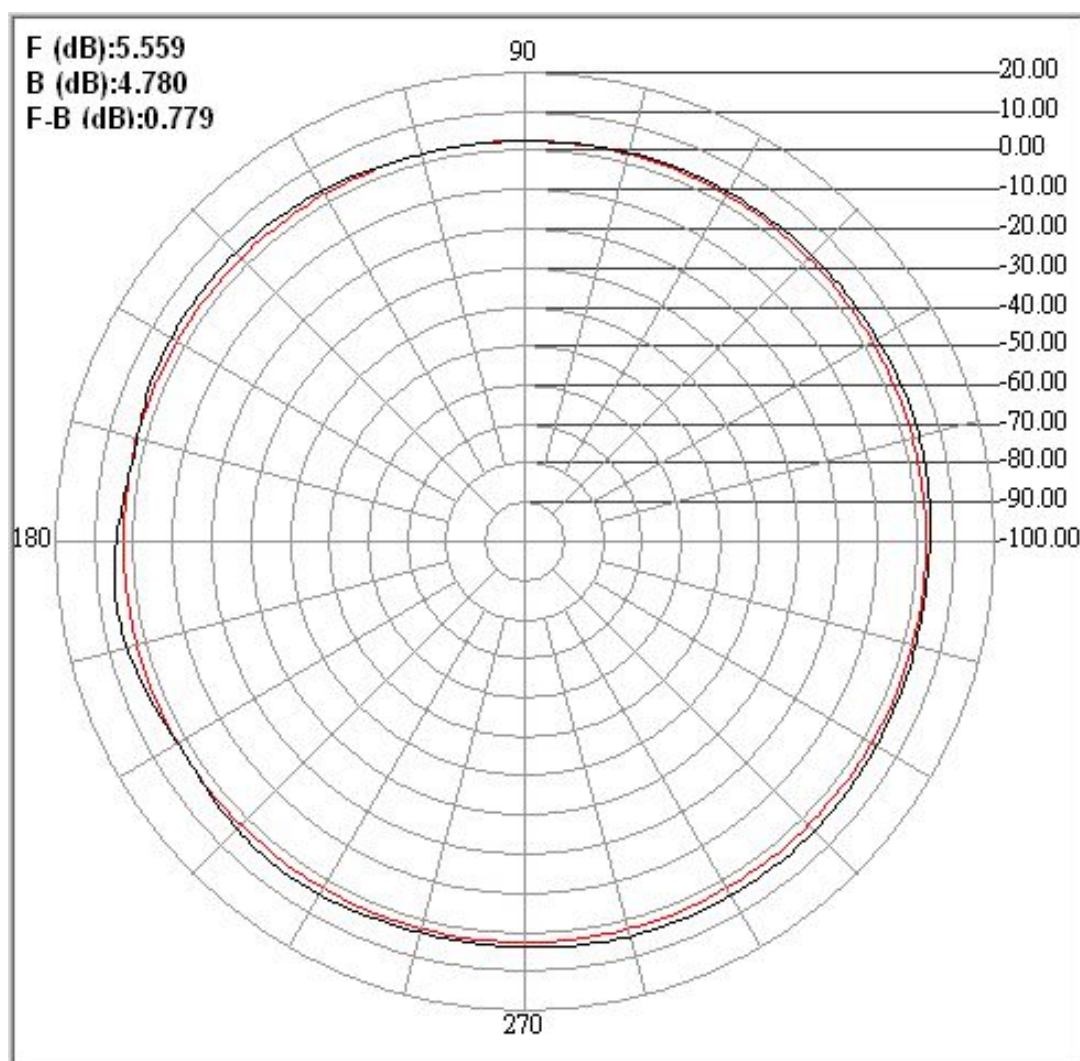
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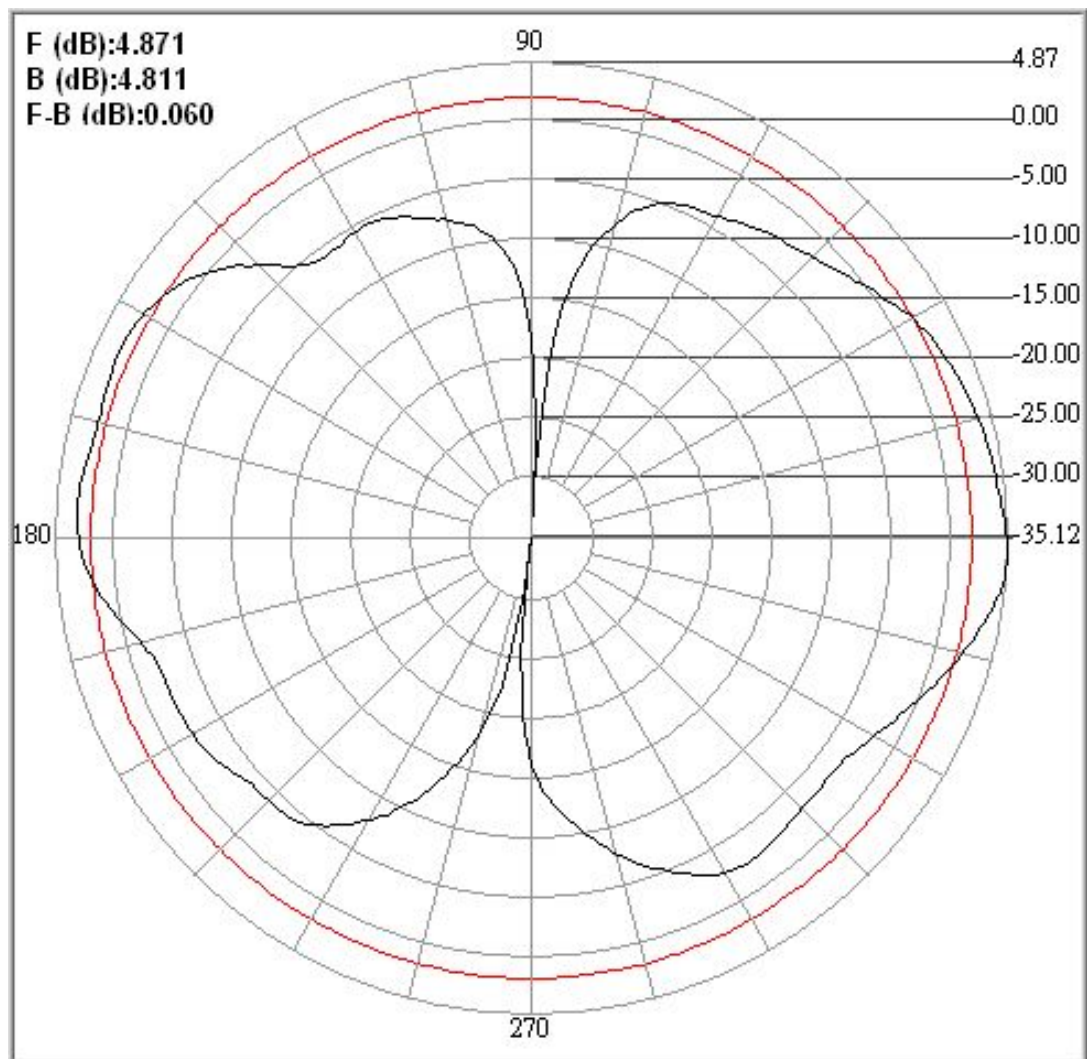
4.2 RADIATION PATTERN

H-PLANE



Center freq.(MHz): 1090	Plane : H Plane	
Max gain(dBi) : 5.56	Min gain(dBi) : 2.35	Avg gain(dBi) : 3.86
-3dB1(°) : 211.80	-3dB2(°) : 170.70	HPB(°) : 360
Front (dB) : 5.559	Back (dB) : 4.780	F B Ratio (dB) : 0.779

E-PLANE



Center freq.(MHz): 1090	Plane : E Plane	
Max gain(dBi) : 4.87	Min gain(dBi) : -35.12	Avg gain(dBi) : -0.30
-3dB1(°) : 390.80	-3dB2(°) : 343.00	HPB(°) : 47.80
Front (dB) : 4.871	Back (dB) : 4.811	F B Ratio (dB) : 0.060