

Flat Panel Array Antenna

27-31 GHz



Product Datasheet

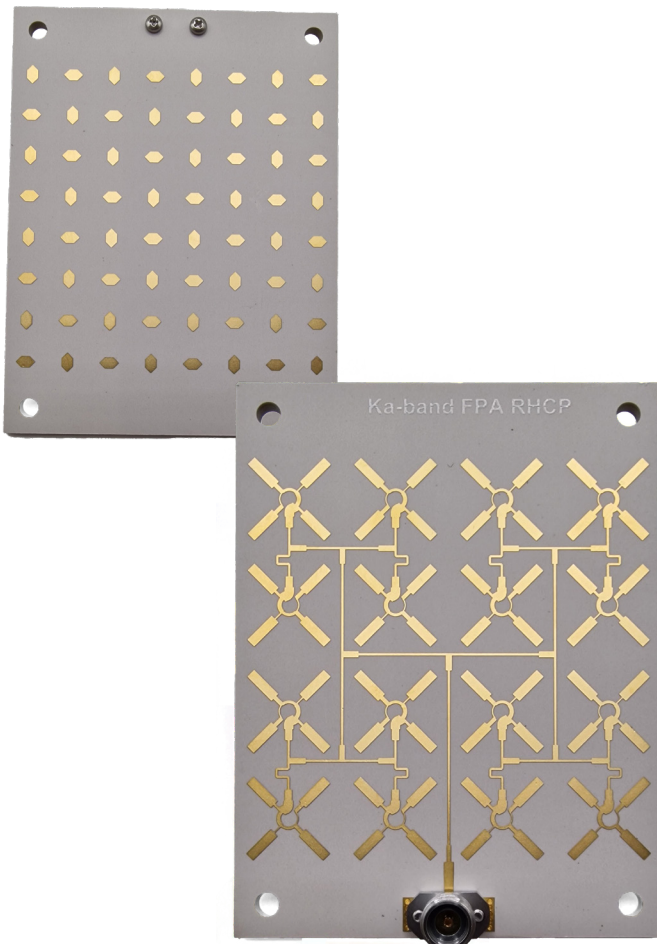
PAN-7053-64-KA

Ka-band Flat Panel Array Antenna.

Overview

The PAN-7053-64-KA flat panel technology developed by ReliaSat is a high-performance solution for modern communication systems.

It can be used for satellite and 5G communication systems, offering a high data rate throughput system. The antenna has a small profile and flat geometry, this technology enables wide operational bandwidth, good polarization purity and high gain in accordance with customer needs. The board is composed of 3 layers.



Features

- 27-31 GHz frequency range
- 29 GHz center frequency
- Polarization RHCP
- Fits cubesats



Applications

- Satellite communications
- Ground - satellite - ground communications (circular polarization)*
- 5G
- High data rate throughput system

Connector Type	Polarization
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70 x 53 K-type vertical connector

RHCP

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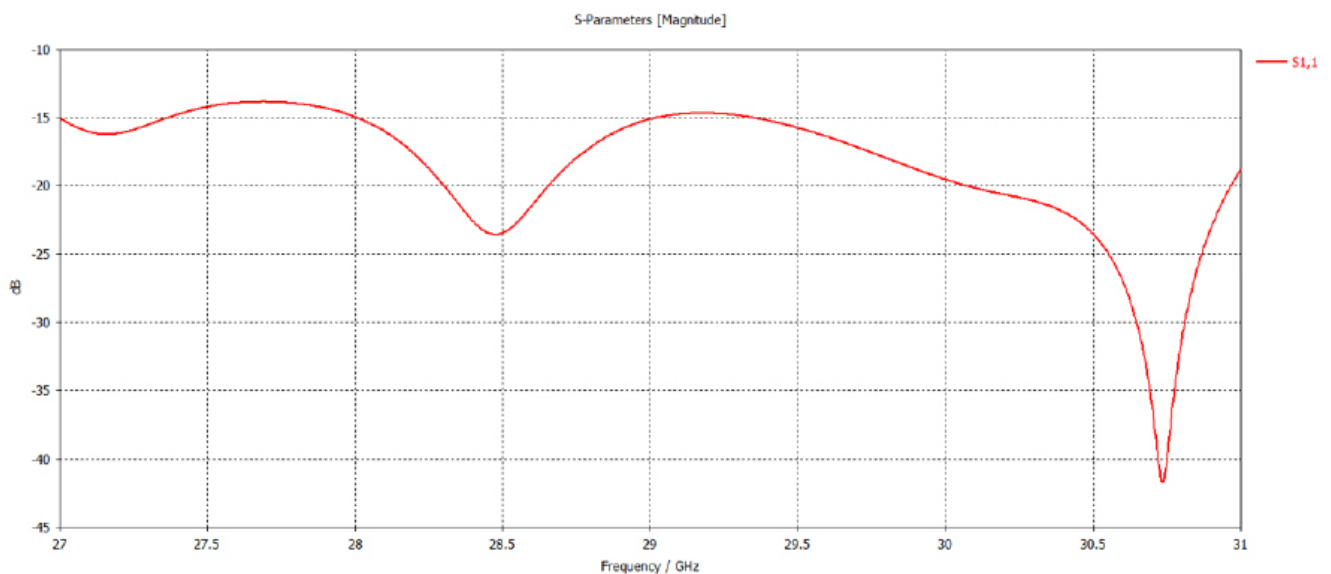


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FPA Specification

Parameter	Value	Unit
Centre Frequency	29	GHz
Matching Frequency Range	27-31	GHz
Polarization	RHCP	
Gain (at central frequency)	20	dBi
3 dB Beamwidth (at central frequency)	10	Degree
Connector	K (rear mounted)	
Impedance	50	Ohm
Dimension	70 x 53	mm

Return Loss



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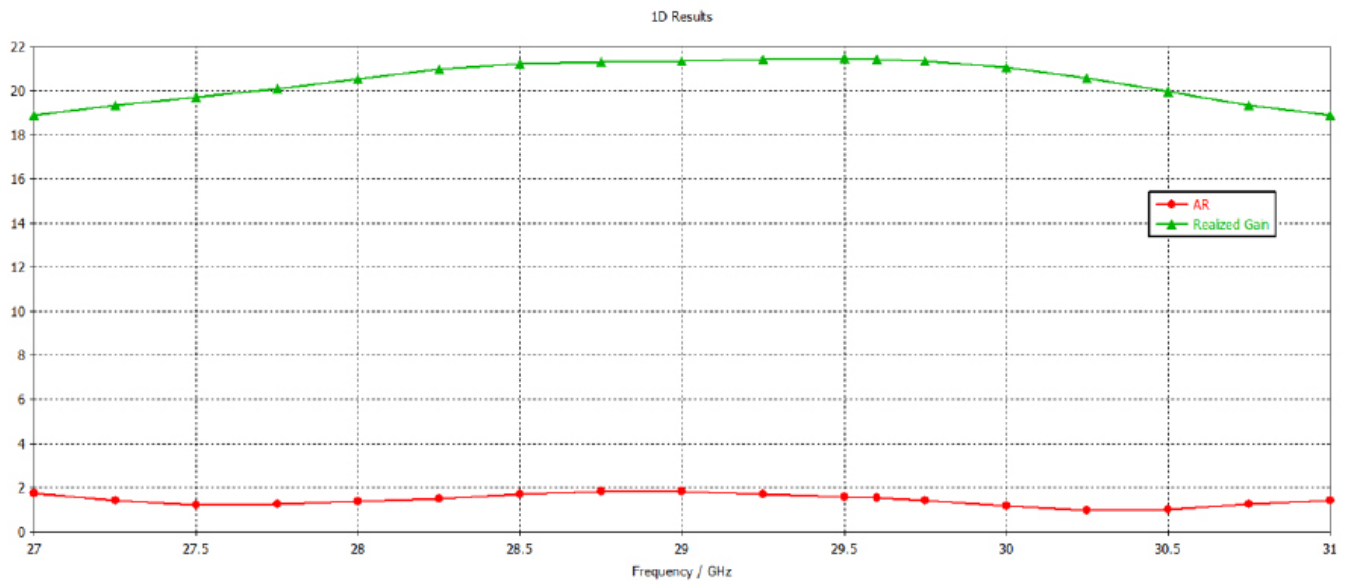
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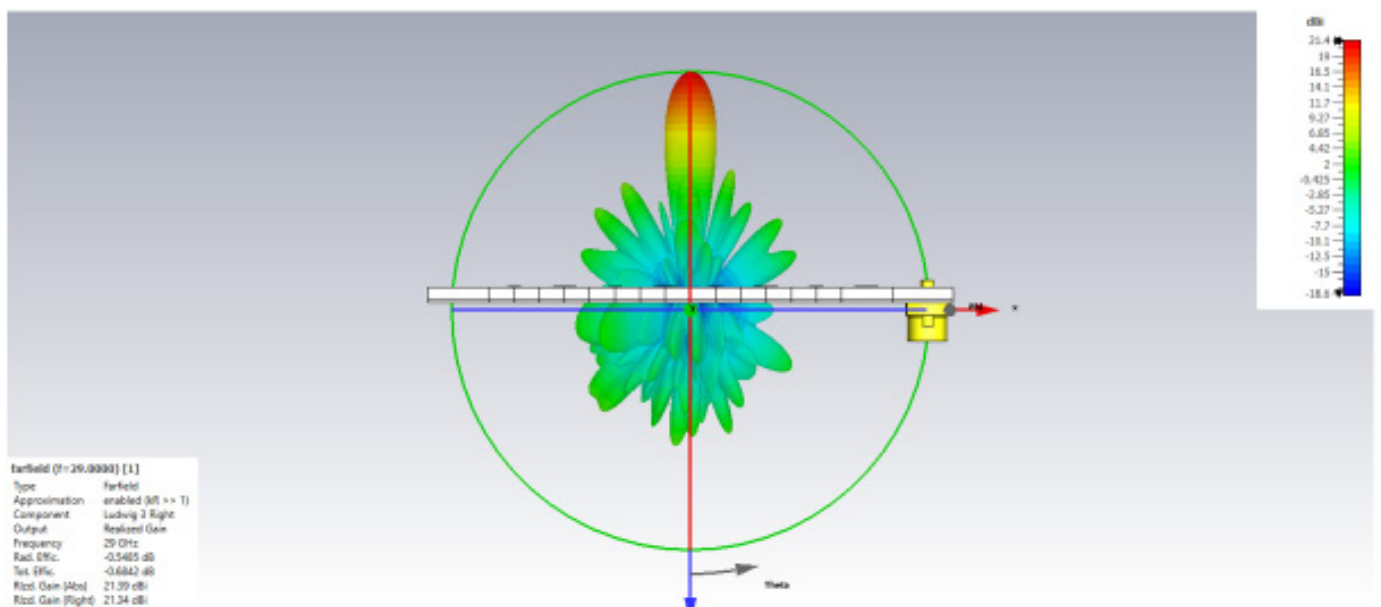
Gain and AR

RHCP vs. Frequency and AR vs. Frequency



3D Radiation Pattern

29 GHz



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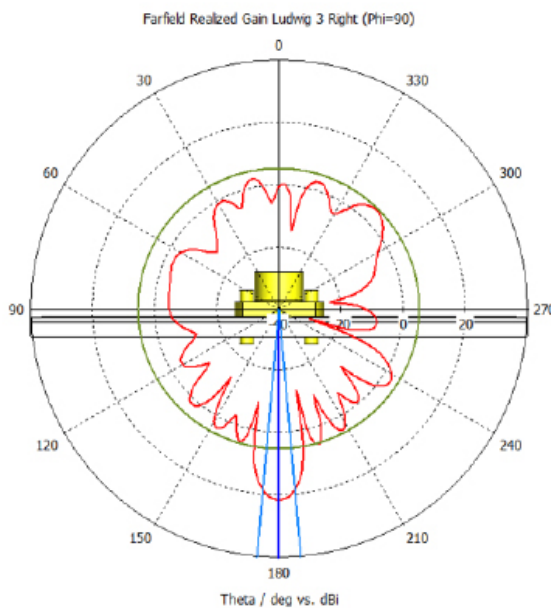
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2D Radiation Pattern

YOZ plan (Phi=90)

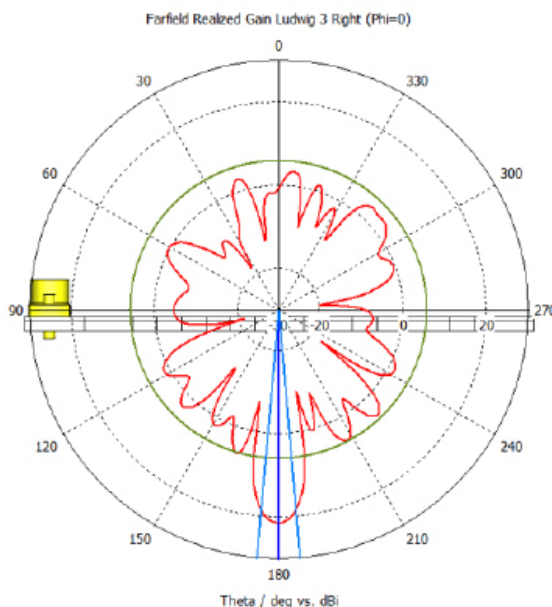


— farfield (f=29.0000) (Mesh ...

Frequency = 29 GHz
Main lobe magnitude = 21.3 dBi
Main lobe direction = 180.0 deg.
Angular width (3 dB) = 10.2 deg.
Side lobe level = -16.0 dB

2D Radiation Pattern

XOZ plan (Phi=0)



— farfield (f=29.0000) (Mesh ...

Frequency = 29 GHz
Main lobe magnitude = 21.3 dBi
Main lobe direction = 180.0 deg.
Angular width (3 dB) = 9.8 deg.
Side lobe level = -15.5 dB

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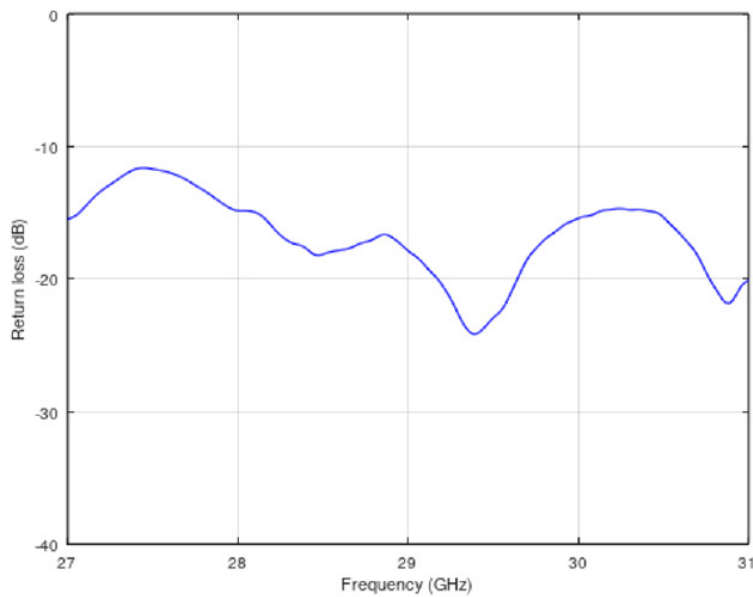
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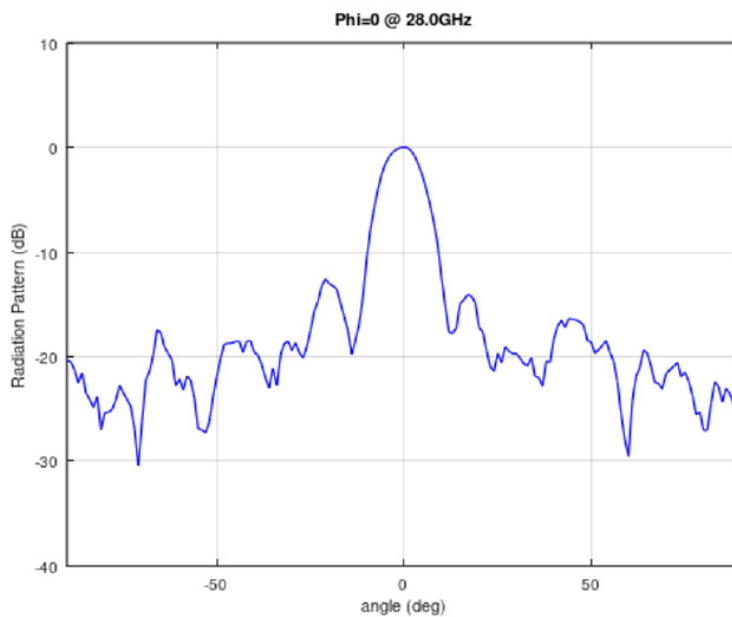
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Measurement Results

Return Loss



Radiation Pattern (Normalized) at Phi=90 and Phi=0

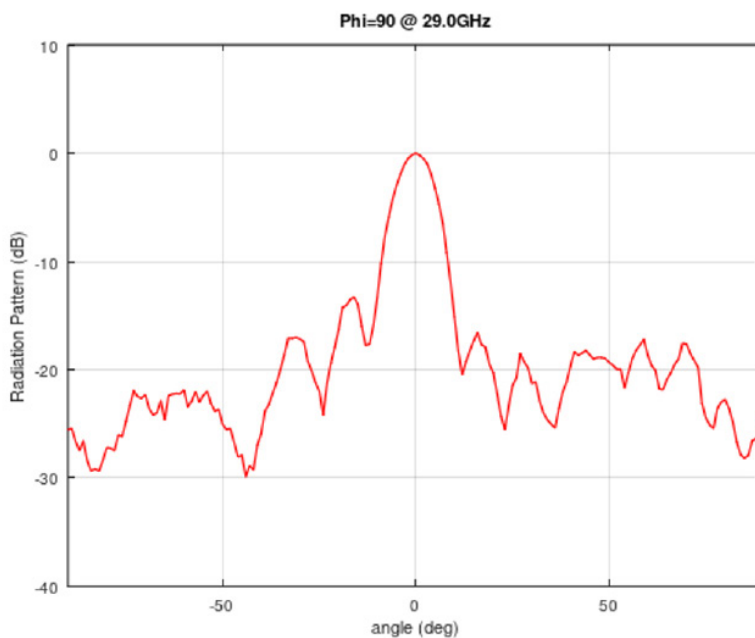
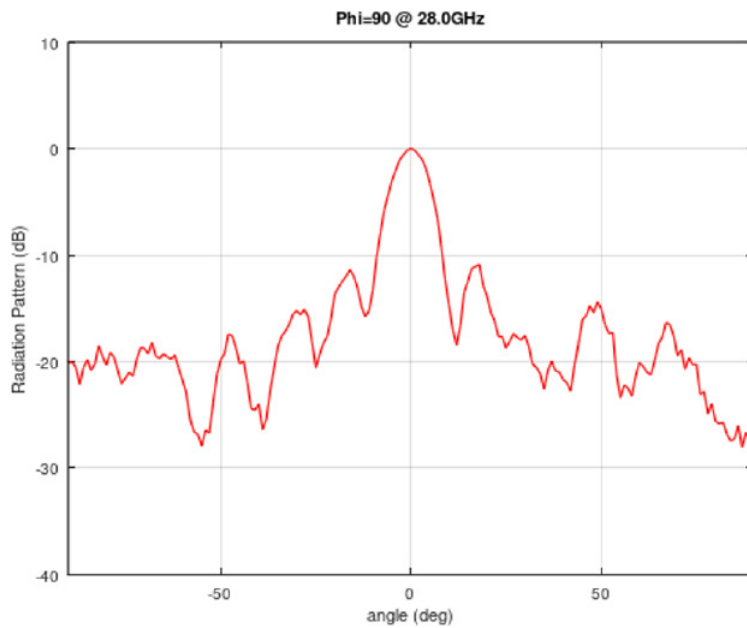


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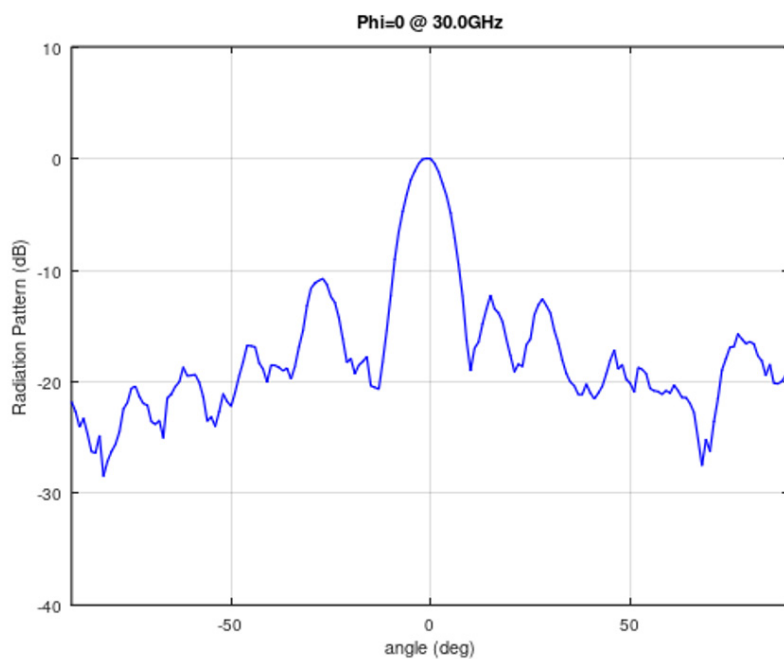
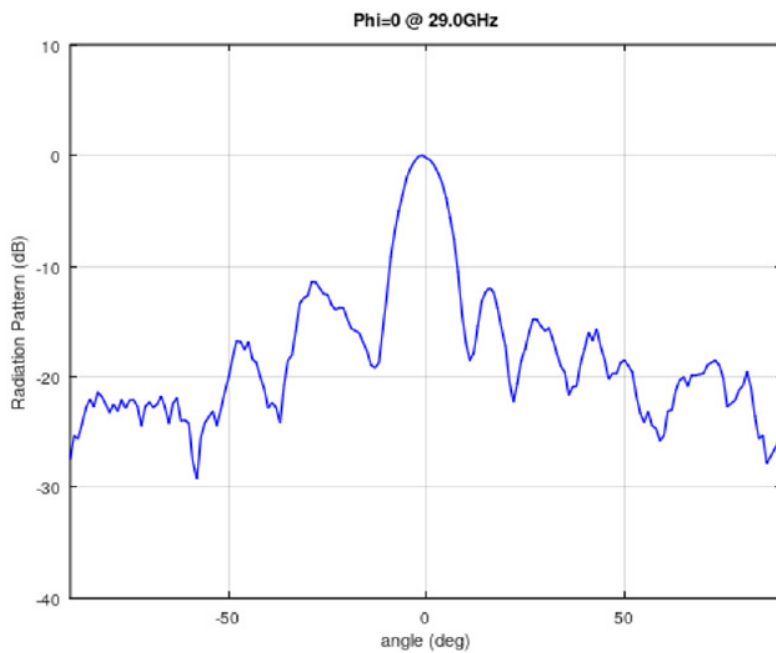


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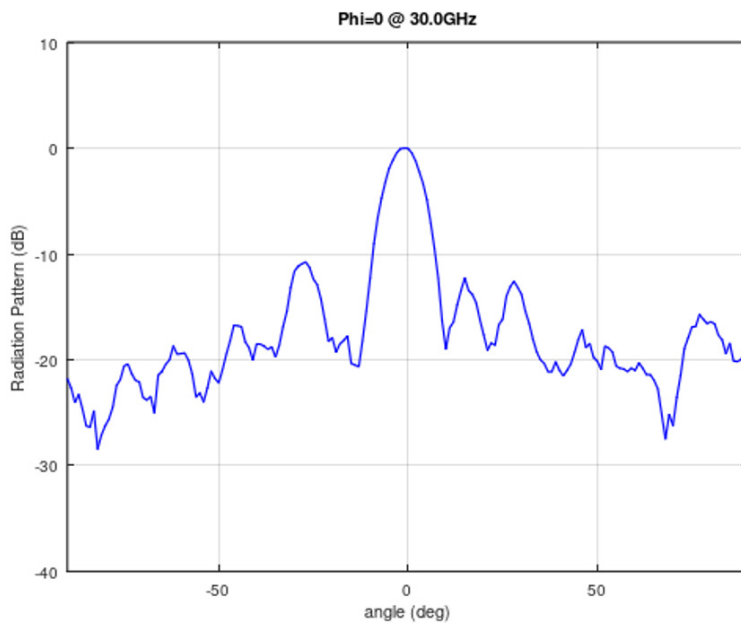


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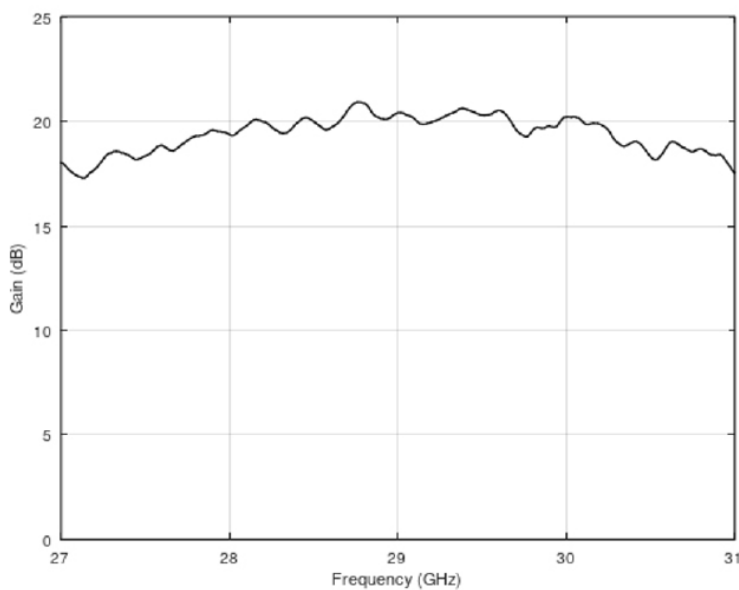
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Gain



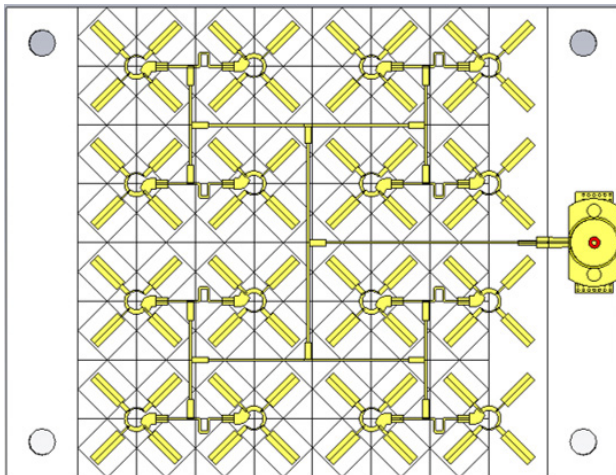
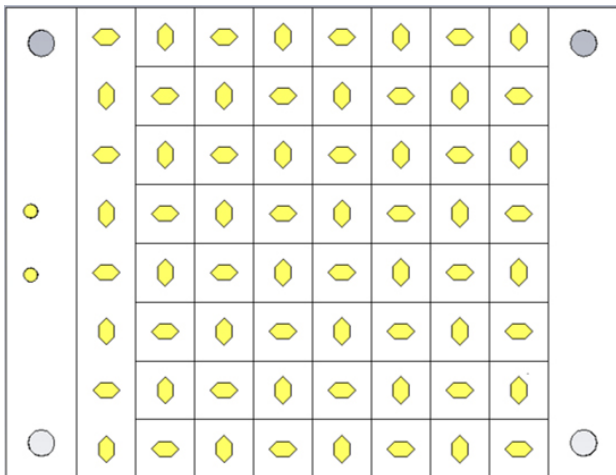
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Board Layout



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