星航通信
SATNAVCOM

Expert in Infrared Thermal Imaging Technology
& RF-Microwave Products

Ku-band Low Sidelobe Transmit-Receive Phased Array Antenna

JL2.944.0019

Transmit-Receive Antenna Technical Data Sheet



Features

- Ku-band Signal Transmitting and Receiving
- Frequency Range 16.4~16.6 GHz
- Left Port and Right Port in Azimuth Plane
- Equipped with 48 Array Elements in Elevation Plane
- Sum and Difference Beam in Azimuth Plane
- Beam Scanning in Elevation Plane
- Integrated Bandpass Filters

Applications

Test & Measurement	Radar	Military and Space	Satellite
Microwave Radio Systems		Communication Systems	

Description

The Transmit-Receive Phased Array Antenna consists of two arrays arranged on the left and right sides. On the azimuth plane, the left array and the right arrays are combined to form a sum beam or a difference beam. The sum beam features low sidelobes. On the elevation plane, the left arrays and the right arrays provide 48 output ports. Through analog / digital weighting, beam scanning can be realized.

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Technical Specifications

Electrical	
Frequency Range	16.4-16.6 GHz
Array Size	48 Array Elements in Elevation Plane Left Element and Right Element in Azimuth Plane
Sum Beam Beamwidth in Elevation Plane	1.9°～2.2°(0°) ≤3.0°(±45°)
Polarization	Vertical
Cross Polarization Level	-30 dB
VSWR	≤ 2.0
Isolation	≥ 20 dB
Channel Amplitude Mismatch in Elevation Plane	± 0.5 dB
Channel Amplitude Mismatch in Elevation Plane	±2°
Sum Beam Beamwidth in Azimuth Plane	1.63°～1.81°
Sidelobe in Azimuth Plane	-25 dB
Sum Beam Gain in Elevation Plane	37dBi (0°) @ 16.5 GHz±0.1 GHz 33.5dBi (±50°) @ 16.5 GHz±0.1 GHz -0.11dB (0°) @15.9 GHz～16.1 GHz -100dB (0°) @10GHz～20GHz
Difference Beam Null	-30 dB
Connectors	SMP-J
Mechanical	
Dimensions	840mm x 500mm x 27mm (Antenna) 482.5mm x 23mm x 75mm (Filters)
Weight	18.2 kg
Operating Temperature	-40℃ to+65℃
Fireproof	UL94
Waterproof	IP67

Notes:
Values at 25℃, sea level.

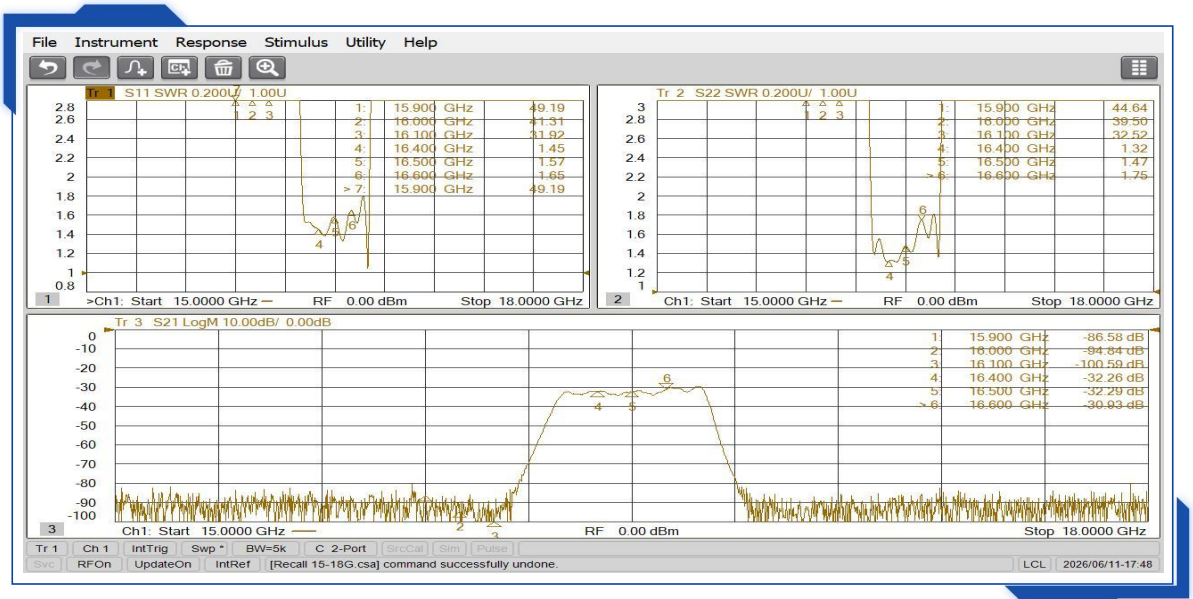
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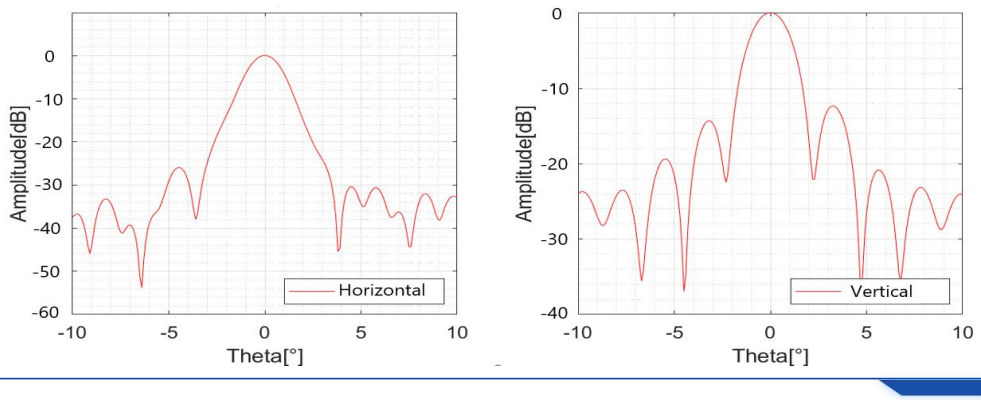
Transmit-Receive Antenna Technical Data Sheet



Typical Performances



Performance Curve VSWR and Isolation



Performance Curve 16.4GHz Vertical & Horizontal Plane

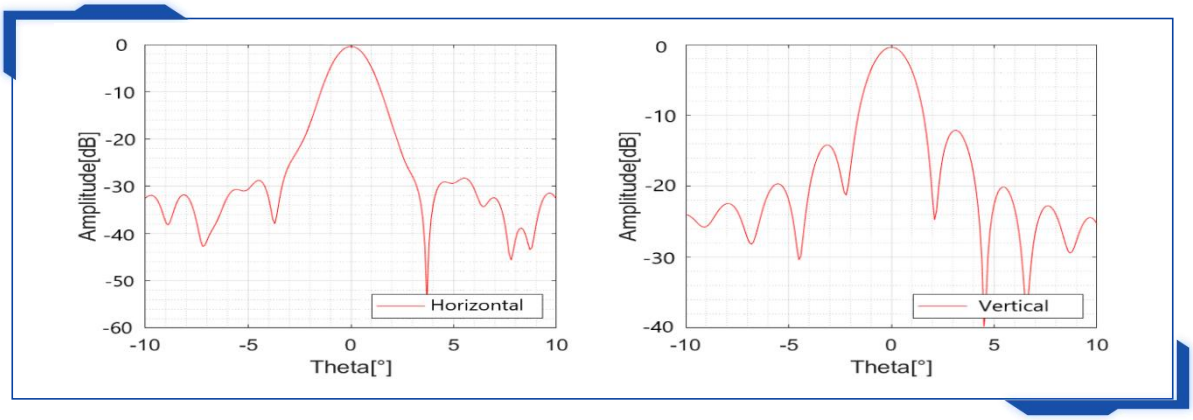
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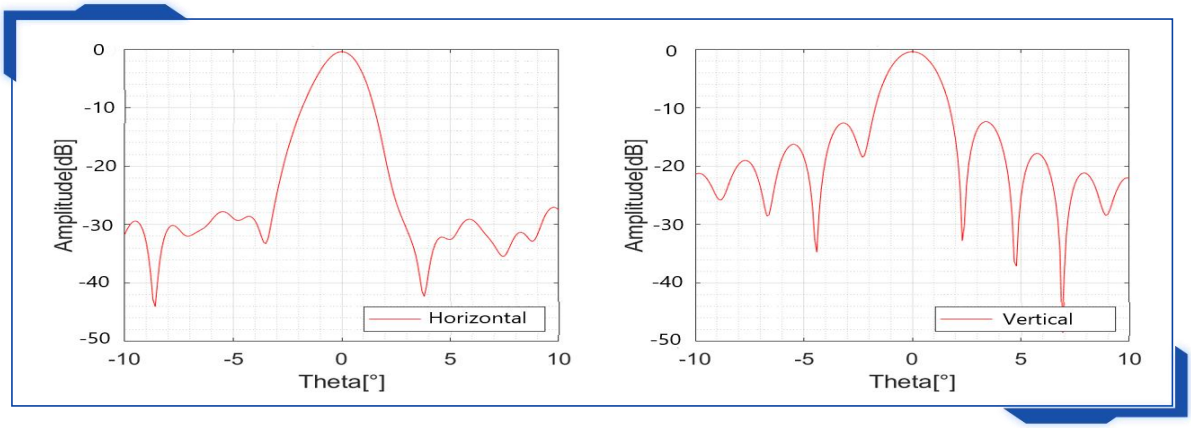
Transmit-Receive Antenna Technical Data Sheet



Typical Performances

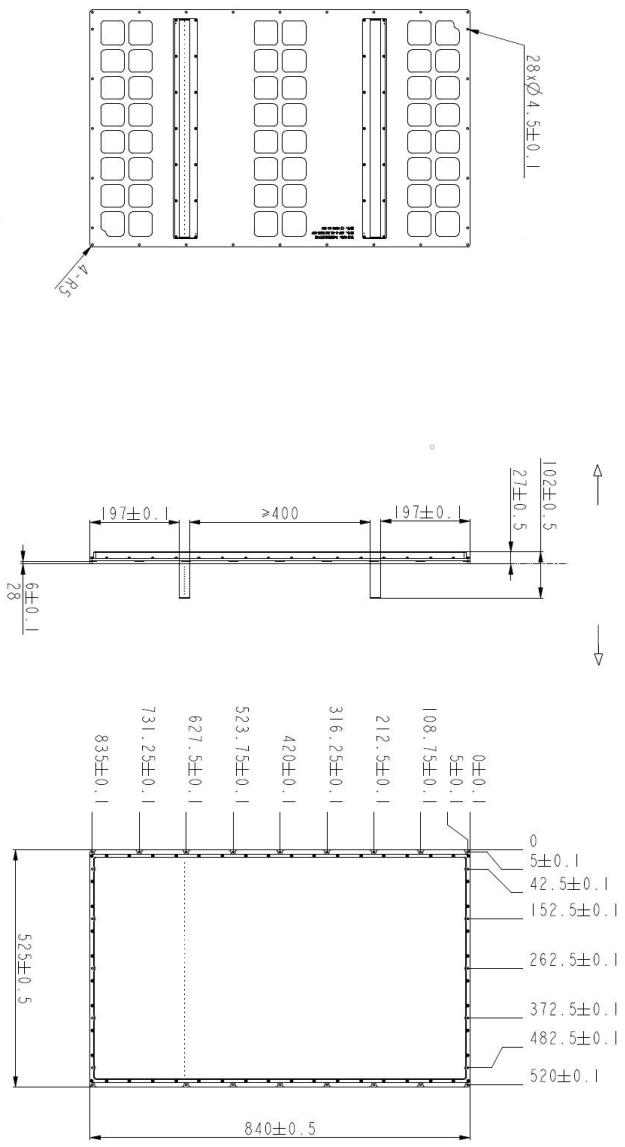


Performance Curve 16.5GHz Vertical & Horizontal Plane



Performance Curve 16.6GHz Vertical & Horizontal Plane

Outline Drawing:



NOTES:

1.UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.

2.ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

3.DIMENSIONS ARE IN mm.

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