



**Marketing Department**  
**Product Specification**

Product Name: Ka-band Tx512 Phased Array Antenna

## 1 Product Description

This product is a highly integrated satellite communication phased array antenna, incorporating the antenna, RF network, and control module. It supports multi-subarray tiling for extended applications.

## 2 Application Scenarios

It is designed for satellite communication systems requiring high reliability, low cost, high integration, high data rates, and low power consumption.

## 3 Product Features

- 512-element phased array antenna subarray
- Standard subarray design for flexible scaling into larger arrays
- FDD-mode transmit beamforming RF circuitry
- Low power consumption
- High-power CMOS power amplifiers
- Scanning range:  $\pm 70^\circ$
- 12V power supply input
- RS422 communication interface for control

## 4 Technical Parameters

S/N	Items	Technical Parameters	Remarks
1	Working Frequency	27.5GHz ~ 31GHz	
2	Polarization	LHCP/RHCP, switchable	
3	Scanning Range	$\pm 70^\circ$	
4	EIRP	$\geq 68.5\text{dBm}@29.25\text{GHz}$	Normal direction
5	Scanning Loss @29.25GHz	Off-axis angle $30^\circ$ : $\leq 2\text{dB}$ ;	
		Off-axis angle $45^\circ$ : $\leq 3\text{dB}$ ;	
		Off-axis angle $60^\circ$ : $\leq 5\text{dB}$ ;	

		Off-axis angle 70°: $\leq 6.5\text{dB}$ ;	
6	Sidelobe Suppression @29.25GHz	Normal direction: $\geq 12\text{dB}$ ;	
		Off-axis angle 30°: $\geq 11\text{dB}$ ;	
		Off-axis angle 45°: $\geq 10\text{dB}$ ;	
		Off-axis angle 60°: $\geq 9\text{dB}$ ;	
		Off-axis angle 70°: $\geq 8\text{dB}$ ;	
7	Axial Ratio @29.25GHz	Normal direction: $\leq 2\text{dB}$ ;	
		Off-axis angle 30°: $\leq 3\text{dB}$ ;	
		Off-axis angle 45°: $\leq 4\text{dB}$ ;	
		Off-axis angle 60°: $\leq 5\text{dB}$ ;	
		Off-axis angle 70°: $\leq 6.5\text{dB}$ ;	
8	Input VSWR	$\leq 2$	
9	Operating Voltage	12V	
10	Power Consumption	$\leq 76.5\text{W}$	
11	Working Temperature	-40 °C ~ +55 °C	
12	Storage Temperature	-40 °C ~ +70 °C	
13	Dimensions	244.9mm*73.6mm*2.8mm	

## 5 Product Photo

