



## Marketing Department Product Specification

Product Name: Ka-band Spaceborne Silicon-based  
Phased Array Antenna

## 1 Product Description

The product is an independent transceiver spaceborne phased array antenna, working in Ka-band. The phased array has a miniaturized design and integrates TR components, wave control components, power components, etc. In order to adapt to the space environment, the antenna has a Single-Event Upset Protection design and on-orbit software reconfiguration function and power module has an electromagnetic compatibility design.

## 2 Application Scenarios

Inter-satellite link communication of satellite platform, etc.

## 3 Product Features

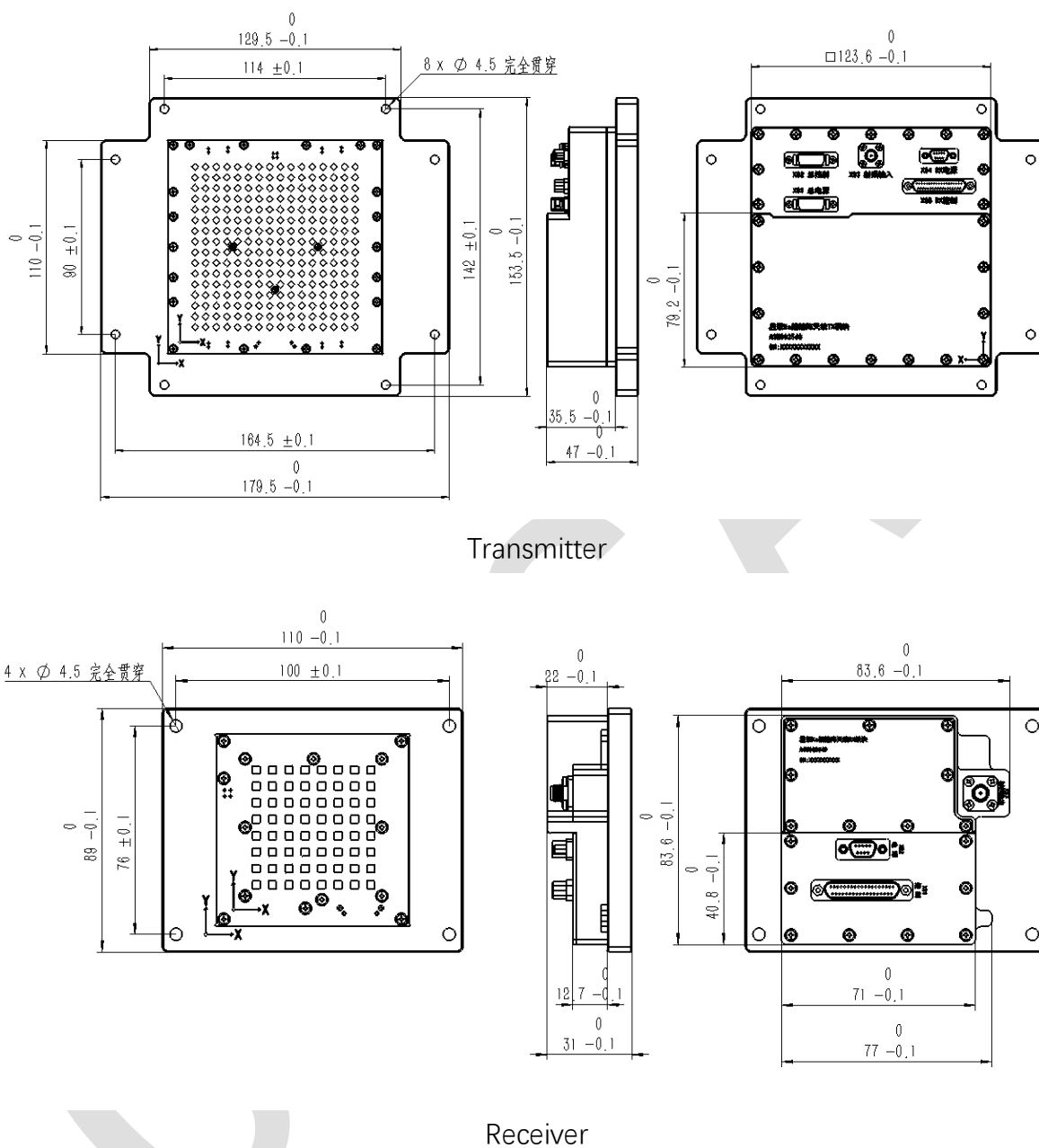
- Low-cost, fully integrated AOB architecture design
- Design for Single-Event Upset Protection in critical components (Radiation Hardening in hardware and software)
- On-orbit software reconfigurability
- Wide voltage input and electromagnetic compatibility (EMC) design

## 4 Technical Parameters

S/N	Items	Parameters	Remarks
1	Tx Phased Array	Working Frequency	25.2 GHz-27.5GHz
2		Beams	1
3		Scanning Range	Azimuth: 360°; Off-axis angle: $\pm 60^\circ$
4		Transmit EIRP	$\geq 41\text{dBW}$ @ $0^\circ$ ; $\geq 36\text{dBW}$ @ scanning range $60^\circ$
5		Polarization	RHCP
6		Axial Ratio	Normal Direction: $\leq 2.0\text{dB}$ ; 3dB Beam Width: $\leq 3.0\text{dB}$ ; Off-axis $60^\circ$ Beam Center: $\leq 4\text{dB}$ ; Off-axis $60^\circ$ Beam Width: $\leq 5\text{dB}$ ;

S/N	Items	Parameters	Remarks
7	Rx Phased Array	Spurious Suppression	$\leq -50\text{dBc}$
8		Input Standing Wave	$\leq 2$
9		Pointing Accuracy	$\leq 1/10$ beam width
10		Working Frequency	22.6 GHz-23.3GHz
11		Beams	1
12		Scanning Range	Azimuth: 360°; Off-axis angle: $\pm 60^\circ$
13		G/T	Normal direction: $\geq -3\text{ dB/K}$ ; Off-axis angle 60°: $\geq -8\text{dB/K}$ ; (Antenna noise temperature: 65K)
14		Polarization	LHCP
15		Axial Ratio	Normal Direction: $\leq 2.0\text{dB}$ ; 3dB Beam Width: $\leq 3.0\text{dB}$ ; Off-axis 60° Beam Center: $\leq 4\text{dB}$ ; Off-axis 60° Beam Width: $\leq 5\text{dB}$ ;
16		Receive Gain	$\geq 60\text{dB}$ (Antenna synthesis gain excluded)
17		Output Standing Wave	$\leq 2$
18		Pointing Accuracy	$\leq 1/10$ beam width
19	Power Supply		+16V ~ +70V
20	Weight		$\leq 2.2\text{kg}$ (External cable excluded)
21	Power Consumption		$\leq 250\text{W}$
22	Dimensions		Transmitter: 179.5*153.5*47mm Receiver: 110*89*31mm

## 5 3 View



## 6 Product Photo

