product manuals

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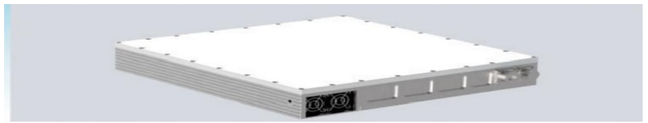
Ku-band one-dimensional phased array antenna
Ku-32



Product Introduction

◆ Functions: The antenna consists of an antenna dome, antenna array components, a wave-control power board, and a heat dissipation assembly, with the following functions:

1.Work mode switching: continuous operation mode, pulse transmission mode, and pulse transmission/reception switching mode;

2. Amplify the transmission power and perform spatial power synthesis; receive and amplify with low noise.

3. Work status reporting, temperature and current monitoring;

4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling fan meets IP68-rated dust and water resistance.

5. Adaptive fan speed.

◆ Features: High integration, lightweight design, high performance, and high reliability.

◆ Applications: Widely applicable in platforms such as anti-radar systems.

name of index	qualification	remarks
Working frequency band	15GHz~17GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Active phased array antenna with two-dimensional scanning	±45° scanning coverage
Polarization Method	vertical polarization	
EIRP	≥78dBm	
Total system reception gain	≥55dB	Antenna gain + Active gain
G/T	≥-2dB/K	weighting
Accept side level	≤-22dB	Weighted depth adjustable
Transmitter side level	≤-12dB	
Scan Down	≤3.5dB	
Maximum duty cycle for emission	25%	
Beam switching time	≤30us	Including the data delivery time
Pulse transmission and reception switching time	≤100ns	representative value
Total power consumption of the device	≤260W	Launch with a 20% duty cycle
Antenna weight	≤3kg	
Overall dimensions of the machine	220mm×310mm×54mm	

ku-band two-dimensional phased array antenna
Ku-256

Product Introduction

◆ Functions: The antenna consists of an dome, antenna array components, a wave-control power supply board, and a heat dissipation assembly, with the following functions:

1. Work mode switching: continuous operation mode, pulse transmission mode, and pulse transmission/reception switching mode;

2. Amplify the transmission power and perform spatial power synthesis; receive and amplify with low noise.

3. Work status reporting and temperature current monitoring;

4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling fan meets IP68-rated dust and water resistance.

5. Adaptive fan speed.

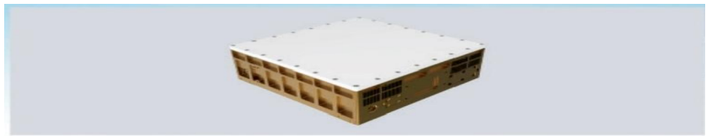
◆ Features: High integration, lightweight design, high performance, and high reliability.

◆ Applications: Widely applicable in platforms such as anti-radar systems.

name of index	qualification	remarks
Working frequency band	15.8GHz~16.8GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Active phased array antenna with one-dimensional scanning	±45° scanning coverage
Polarization Method	horizontal polarization	
EIRP	≥80dBm	
Total system reception gain	≥55dB	Antenna gain + Active gain
G/T	≥2dB/K	weighting
Accept side level	≤-20dB	Weighted depth adjustable
Transmitter side level	≤-12dB	
Scan Down	≤3.5dB	Pitch range ±40°
Maximum duty cycle for emission	30%	
Beam switching time	≤40us	Including the data delivery time
Pulse transmission and reception switching time	≤100ns	representative value
Total power consumption of the device	≤200W	Release with a 30% duty cycle
Antenna weight	≤10kg	Including the rear compartment structure
Overall dimensions of the machine	420mm×400mm×62mm	

Ku-band two-dimensional phased array antenna

Ku-384



Product Introduction

◆Functions: The antenna consists of a radome, antenna array components, a wave-control power supply board, and a heat dissipation assembly, with the following functions:

1. Work mode switching: continuous operation , pulse transmission, and pulse transmission/reception switching ;

2. Amplify the transmission power and perform spatial power synthesis; receive and amplify with low noise.

3. Work status reporting and temperature current monitoring;

4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling fan meets IP68-rated dust and water resistance.

5. Adaptive fan speed.

◆ Features: High integration, lightweight design, high performance, and exceptional reliability.

◆ Applications: Widely applicable in platforms such as anti-radar systems

name of index	qualification	remarks
Working frequency band	15GHz~17GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Active phased array antenna with two-dimensional scanning	±45° scanning coverage
Polarization Method	vertical polarization	
EIRP	≥81.5dBm	
Total system reception gain	≥55dB	Antenna gain + Active gain
G/T	≥0dB/K	weighting
Accept side level	≤-22dB	Weighted depth adjustable
Transmitter side level	≤-12dB	
Scan Down	≤3dB	
Beam switching time	≤30us	Including the data delivery time
Pulse transmission and reception switching time	≤100ns	representative value
Total power consumption of the device	≤300W	Launch with a 20% duty cycle
Antenna weight	≤4kg	
Overall dimensions of the machine	315mm×315mm×39mm	

Ku-band two-dimensional phased array antenna

Ku-576

Product Introduction

◆ Functions: The antenna consists of a radome, antenna array components, a wave-control power supply board, and a heat dissipation assembly, with the following functions:

1. Work mode switching: continuous operation mode, pulse transmission mode, and pulse transmission/reception switching mode;

2. Amplify the transmitted power and perform spatial power synthesis; receive and amplify the signal with low noise.

3. Work status reporting, temperature and current monitoring;

4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling fan meets IP68-rated dust and water resistance.

5. Adaptive fan speed.

◆ Features: High integration, lightweight design, high performance, and high reliability.

◆ Applications: Widely applicable in platforms such as anti-radar systems.

name of index	qualification	remarks
Working frequency band	15GHz~17GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Two-dimensional scanning of an active phased array antenna	±45° scanning coverage
Polarization Method	horizontal polarization	
EIRP	≥86dBm	
Total system reception gain	≥55dB	Antenna gain + integration, lightweight, high performance, and high reliability. Active gain.
G/T	≥3.5dB/K	weighting
Accept side瓣 level	≤-20dB	Weighted depth adjustable
Transmitter side瓣 level	≤-12dB	
Scan Down	≤3.5dB	Pitch range ±40°
Transmit beam width	Direction: 2.9±0.5°@16.2 GHz Pitch: 2.9 ± 0.5° @ 16.2 GHz	
received beam width	Direction: 3.5±0.5°@16.2 GHz Pitch: 3.5±0.5°@16.2 GHz	
Beam switching time	≤40us	Including the data delivery time
Pulse transmission and reception switching time	≤100ns	representative value
Total power consumption of the device	≤1000w	Release with a 30% duty cycle
Antenna weight	≤18kg	Including the rear compartment structure
Overall dimensions of the machine	320mm×360mm×60mm	The overall dimensions include the rear compartment structural components.

Ku-band two-dimensional phased array antenna

Ku-768

Product Introduction

◆ Functions: The antenna consists of a radome, antenna array components, a wave-control power supply board,and a heat dissipation assembly, with the following functions:
1. Work mode switching: continuous operation , pulse transmission, and pulse transmission/reception switching
2. Amplify the transmission power and perform spatial power synthesis; receive and amplify with low noise.
3. Work status reporting, temperature and current monitoring;
4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling fan meets IP68-rated dust and water resistance.
5. Adaptive fan speed.

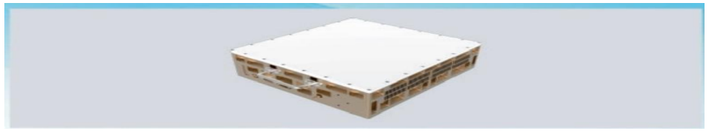
◆ Features: High integration, lightweight design, high performance, and exceptional reliability.

◆ Applications: Widely applicable in platforms such as anti-radar systems.

name of index	qualification	remarks
Working frequency band	15GHz~17GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Active phased array antenna with two-dimensional scanning	±45° scanning coverage
Polarization Method	horizontal polarization	
EIRP	≥89dBm	
Total system reception gain	≥55dB	Antenna gain + Active gain
G/T	≥3dB/K	weighting
Accept side瓣 level	≤-20dB	Weighted depth adjustable
Transmitter side瓣 level	≤-12dB	
Scan Down	≤3.5dB	Pitch range ±40°
Beam switching time	≤40us	Including the data delivery time
Pulse transmission and reception switching time	≤100ns	representative value
Total power consumption of the device	≤1000W	Release with a 30% duty cycle
Antenna weight	≤18kg	Including the rear compartment structure
Overall dimensions of the machine	420mm×400mm×62mm	

Ku-band two-dimensional phased array antenna

Ku-1024



Product Introduction

◆ Functions: The antenna consists of a radome, antenna array components, a wave-control power supply board, and a heat dissipation assembly, with the following functions:
1. Work mode switching: continuous operation mode, pulse transmission mode, and pulse transmission/reception switching mode;
2. Amplify the transmission power and perform spatial power synthesis; receive and amplify with low noise.
3. Work status reporting, temperature and current monitoring;
4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling fan meets IP68-rated dust and water resistance.
5. Adaptive fan speed.

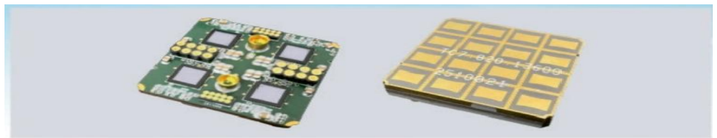
◆ Features: High integration, lightweight design, high performance, and exceptional reliability.

◆Application: Widely applicable in platforms such as anti-radar systems.

name of index	qualification	remarks
Working frequency band	15GHz~17GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Active phased array antenna with two-dimensional scanning	±45° scanning coverage
Polarization Method	vertical polarization	
EIRP	≥91dBm	
Total system reception gain	≥55dB	Antenna gain + Active gain
G/T	≥5dB/K	weighting
Accept side瓣 level	≤-22dB	Weighted depth adjustable
Transmitter side瓣 level	≤-12dB	
Scan Down	≤3.5dB	
Beam switching time	≤40us	Including the data delivery time
Pulse transmission and reception switching time	≤100ns	representative value
Total power consumption of the device	≤1300W	Release with a 30% duty cycle
Antenna weight	≤20kg	Including the rear compartment structure
Overall dimensions of the machine	400mm×420mm×129mm	

Ku-band 16-channel standardized sub array,

Ku-TA83



Product Introduction

◆ Function: The standardized sub-array features an integrated design combining a multi-channel silicon-based chip with a microwave multilayer PCB, incorporating 16 transmit/receive channels. It enables RF signal transmission/reception, beam scanning, operational status feedback, and channel self-diagnosis.

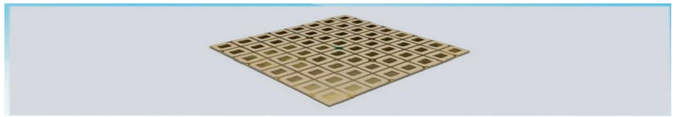
◆ Features: The standardized subarray employs a surface-mount technology. Compared to traditional phased array T/R modules, this standardized subarray offers superior performance consistency and more compact profile dimensions, making it better suited for mass production and providing phased array users with a more cost-effective solution.

◆Application: Widely applicable to various radar and communication platforms.

parameter	unit	least value	representative value	crest value	remarks
frequency	GHz	14		18	
Array Element Count	individual		16		4×4 layout
EIRP	dBm		54		
G/T price	dB/K		-13.8		
Polarization Method			linear polarization		
Channel spacing	mm		8.8		
Beam scanning range	6		±45		
standing wave coefficient				2	
emission efficiency		20%			
Overall dimensions of the machine	mm	35×35			Width and Height

Ku-band 64-channel standardized sub array

Ku-CS4 type



Product Introduction

◆ Function: The standardized sub-array features an integrated design combining a multi-channel silicon-based chip with a microwave multi layer PCB, incorporating 64 transmit/receive channels. It enables RF signal transmission/reception, beam scanning, operational status feedback, and channel self-diagnosis.

◆ Features: The standardized sub array employs a surface-mount technology. Compared to traditional phased array T/R modules, this standardized sub array offers superior performance consistency and more compact profile dimensions, making it better suited for mass production and providing phased array users with a more cost-effective solution.

◆ Applications: Widely applicable to various radar and communication platforms.

parameter	unit	least value	representative value	crest value	remarks
frequency	GHz	15		17	
Array Element Count	individual		64		8×8 layout
EIRP	dBm		66.5		
G/T price	dB/K		-7.3		
Polarization Method			linear polarization		
Channel spacing	mm		10		
Beam scanning range	9		±45		
standing wave coefficient				2	
emission efficiency		20%			
Overall dimensions of the machine	mm	79.8×79.8			Width and Height

X-band two-dimensional phased array antenna, X-256

Product Introduction

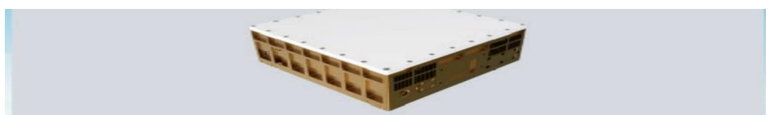
◆ Functions: The antenna consists of an antenna dome, antenna array components, a wave-control power board, and a heat dissipation assembly, with the following functions:
1. Work mode switching: continuous operation mode, pulse transmission mode, and pulse transmission/reception switching mode;
2. Amplify the transmitted power and perform spatial power synthesis; receive and amplify the signal with low noise.
3. Work status reporting, temperature and current monitoring;
4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling fan meets IP68-rated dust and water resistance.
5. Adaptive fan speed.

◆ Features: High integration, lightweight design, high performance, and high reliability.

◆ Applications: Widely applicable in platforms such as anti-radar systems.

name of index	qualification	remarks
Working frequency band	15GHz~17GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Active phased array antenna with two-dimensional scanning	±45° scanning coverage
Polarization Method	vertical polarization	
EIRP	≥78dBm	
Total system reception gain	≥55dB	Antenna gain + Active gain
G/T	≥-2dB/K	weighting
Accept side瓣 level	≤-22dB	Weighted depth adjustable
Transmitter side瓣 level	≤-12dB	
Scan Down	≤3.5dB	
Maximum duty cycle for emission	25%	
Beam switching time	≤30us	Including the data delivery time
Pulse transmission and reception switching time	≤100ns	representative value
Total power consumption of the device	≤260W	Launch with a 20% duty cycle
Antenna weight	≤3kg	
Overall dimensions of the machine	220mm×310mm×54mm	

X-band two-dimensional phased array antenna X576



Product Introduction

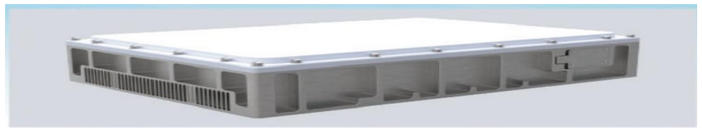
◆ Functions: The antenna consists of a radome, antenna array components, a wave-control power supply board, and a heat dissipation assembly, with the following functions:
1. Work mode switching: continuous operation mode, pulse transmission mode, and pulse transmission/reception switching mode;
2. Amplify the transmission power and perform spatial power synthesis; receive and amplify with low noise.
3. Work status reporting and temperature current monitoring;
4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling fan meets IP68-rated dust and water resistance.
5. Adaptive fan speed.

◆ Features: High integration, lightweight design, high performance, and exceptional reliability.

◆ Applications: Widely applicable in platforms such as anti-radar systems.

name of index	qualification	remarks
Working frequency band	15GHz~16GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Active phased array antenna with two-dimensional scanning	±45° scanning coverage
Polarization Method	vertical polarization	
EIRP	≥81.5dBm	
Total system reception gain	≥55dB	Antenna gain + Active gain
G/T	≥0dB/K	weighting
Accept side瓣 level	≤-22dB	Weighted depth adjustable
Transmitter side瓣 level	≤-12dB	
Scan Down	≤3dB	
Beam switching time	≤30us	Including the data delivery time
Pulse transmission and reception switching time	≤100ns	representative value
Total power consumption of the device	≤300W	Launch with a 20% duty cycle
Antenna weight	≤4kg	
Overall dimensions of the machine	315mm×315mm ×39mm	

X-band two-dimensional phased array antenna
X-1024



Product Introduction

◆ Functions: The antenna consists of an antenna dome, antenna array components, a wave-control power board,
and a heat dissipation assembly, with the following functions:
1. Work mode switching: continuous operation mode, pulse transmission mode, and pulse transmission/reception switching mode;
2. Amplify the transmission power and perform spatial power synthesis; receive and amplify with low noise.
3. Work status reporting, temperature and current monitoring;
4. When combined with the rear compartment, it achieves IP67-rated dust and water resistance, while the cooling
fan meets IP68-rated dust and water resistance.
5. Adaptive fan speed.

◆ Features: High integration, lightweight design, high performance, and exceptional reliability.

◆ Applications: Widely applicable in platforms such as anti-radar systems.performance index.

name of index	qualification	remarks
Working frequency band	9.2GHz~10GHz	The usage frequency can be specified according to customer requirements.
Antenna Type	Active phased array antenna two-dimensional scan	±45° scanning coverage
Polarization Method	vertical polarization	customizable
EIRP	≥92dBm	
Total system reception gain	≥58dB	Antenna gain + Active gain
G/T	≥6.5dB/K	weighting
Accept side瓣 level	≤-22dB	Weighted depth adjustable
Transmitter side瓣 level	≤-12dB	
Scan Down	≤3dB	Scan at ±45°
Beam switching time	≤100us	Including the data delivery time
Pulse transmission and reception switching time	≤150ns	representative value
Total power consumption of the device	≤1000W	Launch with a 20% duty cycle
Antenna weight	≤14kg	
Overall dimensions of the machine	600mm×600mm×65mm	

X-band 16-channel standardized sub array
X-TA88

Product Introduction

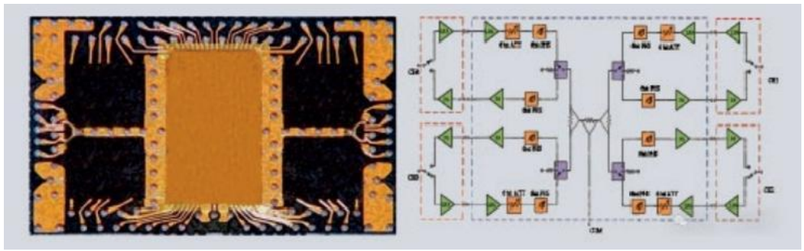
◆ Function: The standardized sub-array features an integrated design combining a multi-channel silicon-based chip with a microwave multilayer PCB, incorporating 16 transmit/receive channels. It enables RF signal transmission/reception, beam scanning, and operational status feedback.

◆ Features: The standardized sub array employs a surface-mount technology. Compared to traditional phased array T/R modules, this standardized subarray offers superior performance consistency and more compact profile dimensions, making it better suited for mass production and providing phased array users with a more cost-effective solution.

◆Application: Widely applicable to various radar and communication platforms.

parameter	unit	least value	representative value	crest value	remarks
frequency	GHz	8.5		10.5	
Array Element Count	individual		16		4×4 layout
EIRP	dBm		54		
G/T price	dB/K		-13		
Polarization Method			linear polarization		
Channel spacing	mm		16.5		
Beam scanning range	9		±45		
standing wave coefficient				2	
emission efficiency		20%			
Overall dimensions of the machine	mm	65.8×65.8			Width and Height

Ku-band 1W SiP module TCGS0101GWP



Product Introduction

◆Function: This SiP module is a Ku-band, wafer-level packaged, four-channel transmit-receive phased array SiP with an output power of 1 W. It integrates circuit units including a power amplifier, low-noise amplifier, switches, amplitude-phase modulation (APM) components, and temperature sensors, enabling time-division operation for both transmission and reception.

◆ Features: High integration, multi functionality, and low cost.

◆Application: Used in Ku-band phased array radar systems.

parameter	unit	least value	representative value	crest value	remarks
service frequency	GHz	14		18	
transmitting gain	dB		28		
transmitting power	dBm		30		
PAE	%		20		
Reception gain	dB		24		
received noise	dB		3.5	4	
Transmission phase shift accuracy (RMS)	∘		3		
received phase shift accuracy (RMS)	∘		5		
Reception attenuation accuracy (RMS)	dB		0.5		
Overall dimensions of the machine	mm		11.1×7.3×0.3		

Building a leading brand in millimeter-wave phased array antennas and detectors

Developing millimeter-wave microsystem technology