

X-band 16-Channel Standardized Phased Array

Product Features

- Frequency range: 9.2 GHz–9.8 GHz
- 6-bit phase-shifting control
- Supports high-precision attenuation: 5-bit transmit, 6-bit receive
- 50 Ω input/output matching
- Power supply and control

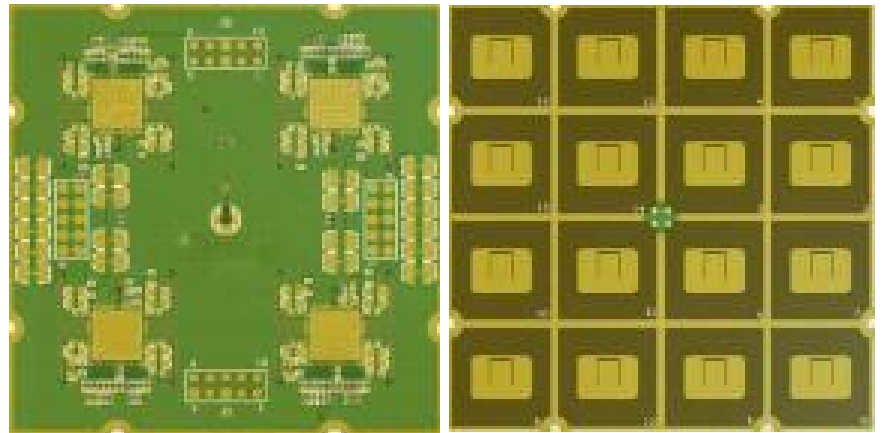
Applications

- Low-altitude anti-jamming
- Precise Detection
- Satellite

Communicatio

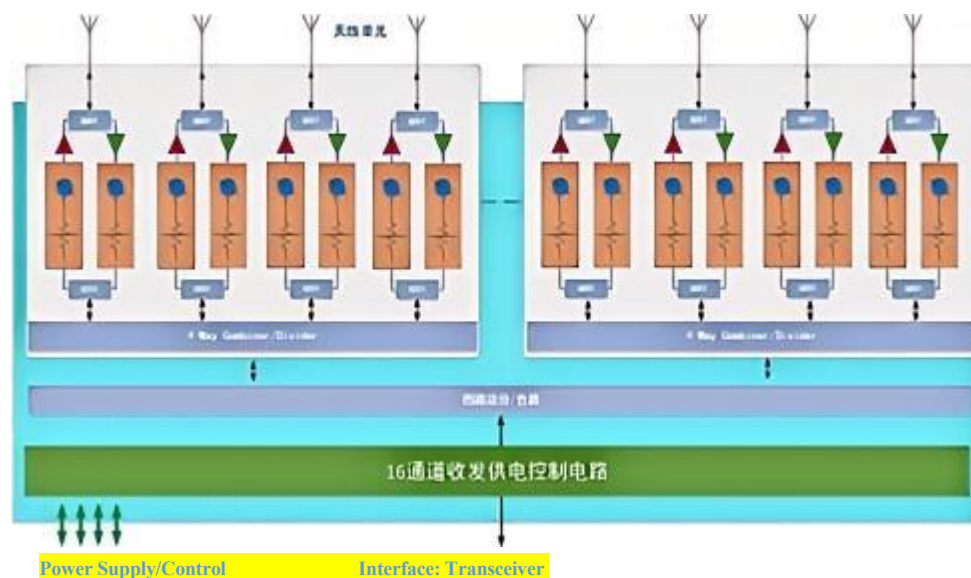
n Product

Description



This product is suitable for the phased array radar domain and can be configured into arrays of specific sizes according to the user's actual application requirements. The subarray integrates 16 transmit-receive channels, enabling functions such as RF signal transmission and reception, beam scanning, and operational state rotation. Utilizing a surface-mount process, this standardized subarray offers superior performance consistency compared to traditional module-packaged phased array T/R modules, features a smaller profile size, and is more suitable for mass production, thereby providing phased array users with a solution that delivers higher cost-effectiveness.

Functional block diagram



Performance Parameters: @Ta = 25°C, port impedance: 50 Ω

Test conditions: Pulse width = 100 μs, duty cycle = 10%, Ta = 25 °C, transmitted input power = +21 dBm

Parameter	Description
service frequency	9.2GHz~9.8GHz
Channel spacing	17.4mm
Number of channels	16 (4×4)
Polarization method	linear polarization
Beam scanning range	±45°
Maximum duty cycle	100%
Single-channel transmission power (typical value)	27dBm
Received noise figure (typical value)	3.0dB
Normal EIRP (Typical Value)	55.5dBm
Normal G/T value (typical value)	-12dB/K
External dimensions (typical values)	69.4 mm × 69.4 mm × 2.9 mm(excluding component height)
VSWR	2
working voltage	VDD =+3.3V, NV5=-5V
emission efficiency	24%

Recommended Working Environment

Working Temperature	-40°C~+60°C
Storage Temperature	-55°C~+85°C

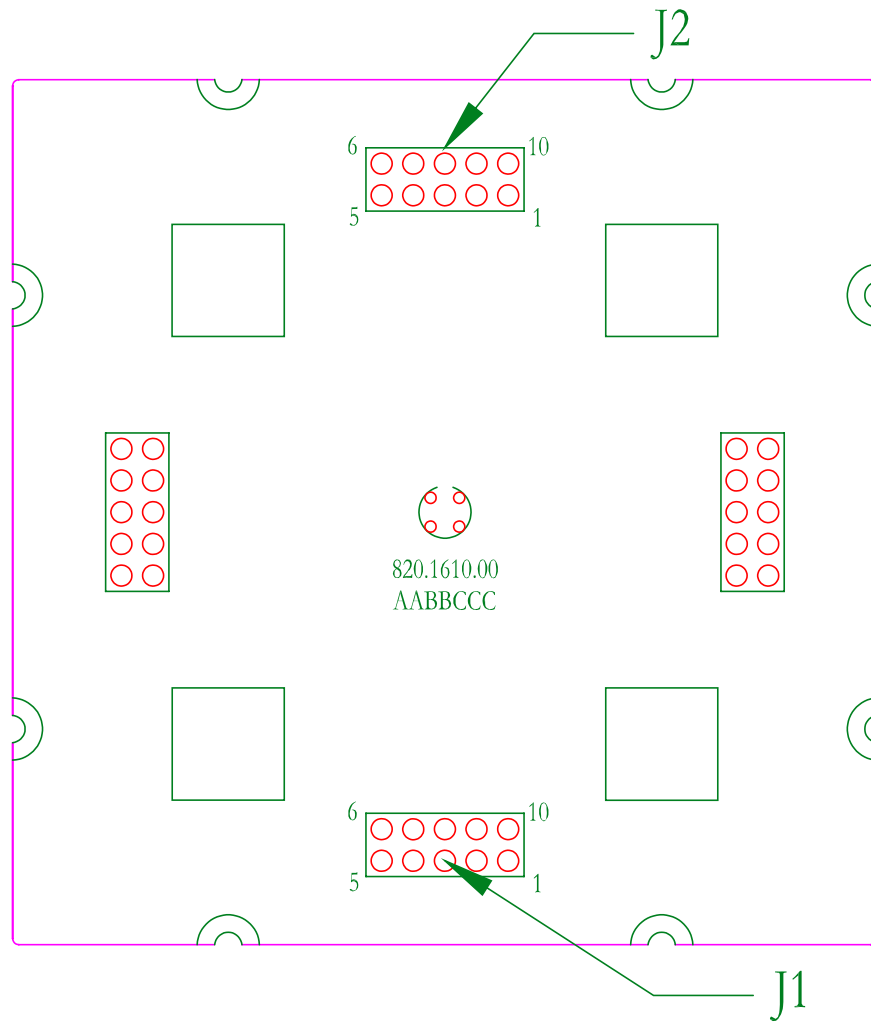
Connector

DC & Control Signal Connector	2.54mm Pogo 10 Pin*4
RF Connectors	SMP (MALE)

SPI Interface: 2.54mm Pogo connector x 2 (J1 & J2)

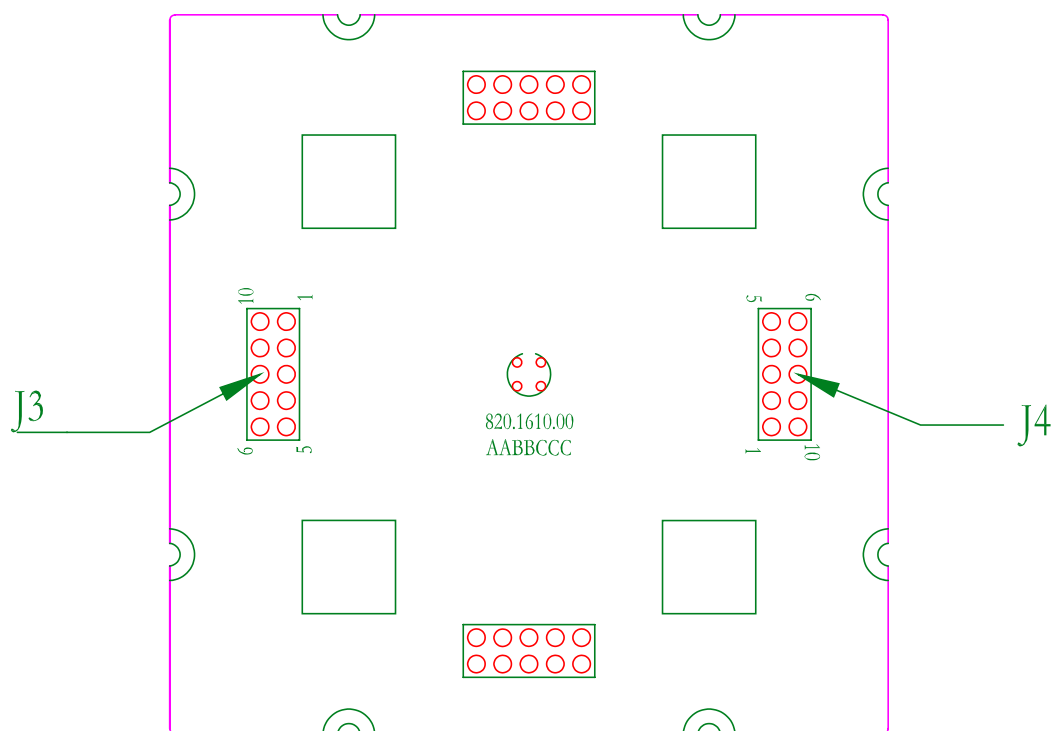
NO.	Name	I/O	Description
1	DIN_1	Input	
2	DIN_2	Input	
3	GND		Ground
4	CLK	Input	10MHz
5	GND		Ground
6	FIN	Input	
7	FEN	Input	
8	SET	Input	
9	DOUT_2	Output	
10	DOUT_1	Output	

NO.	Name	I/O	Description
1	DIN_3	Input	
2	DIN_4	Input	
3	GND		Ground
4	DEN	Input	
5	TR2	Input	
6	TR1	Input	
7	NV5	Input	-5 Power Supply
8	GND		Ground
9	DOUT_4	Output	
10	DOUT_3	Output	

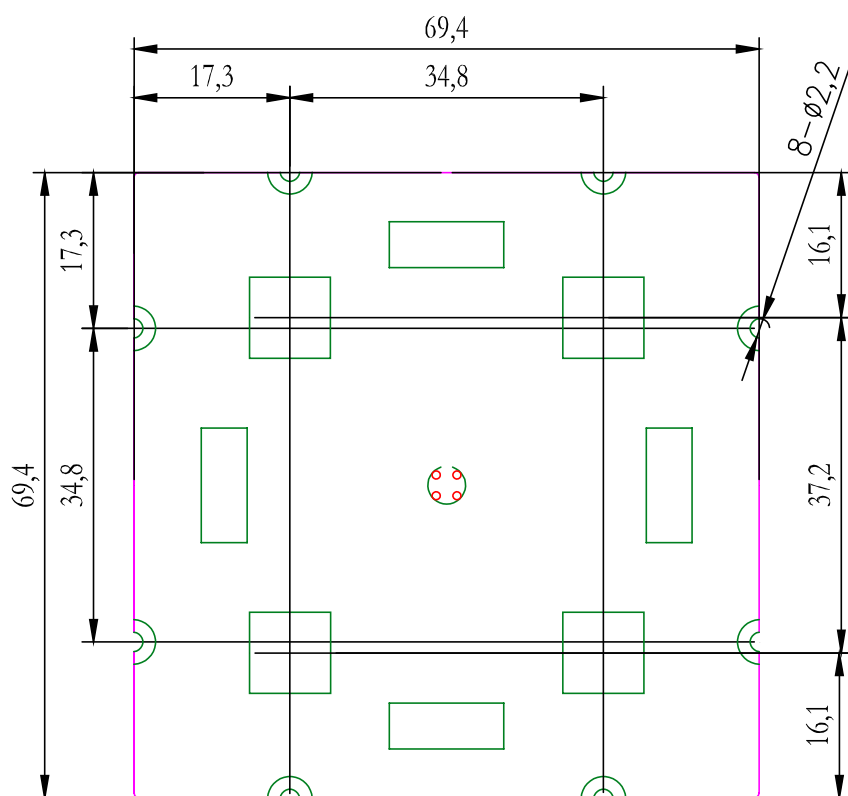


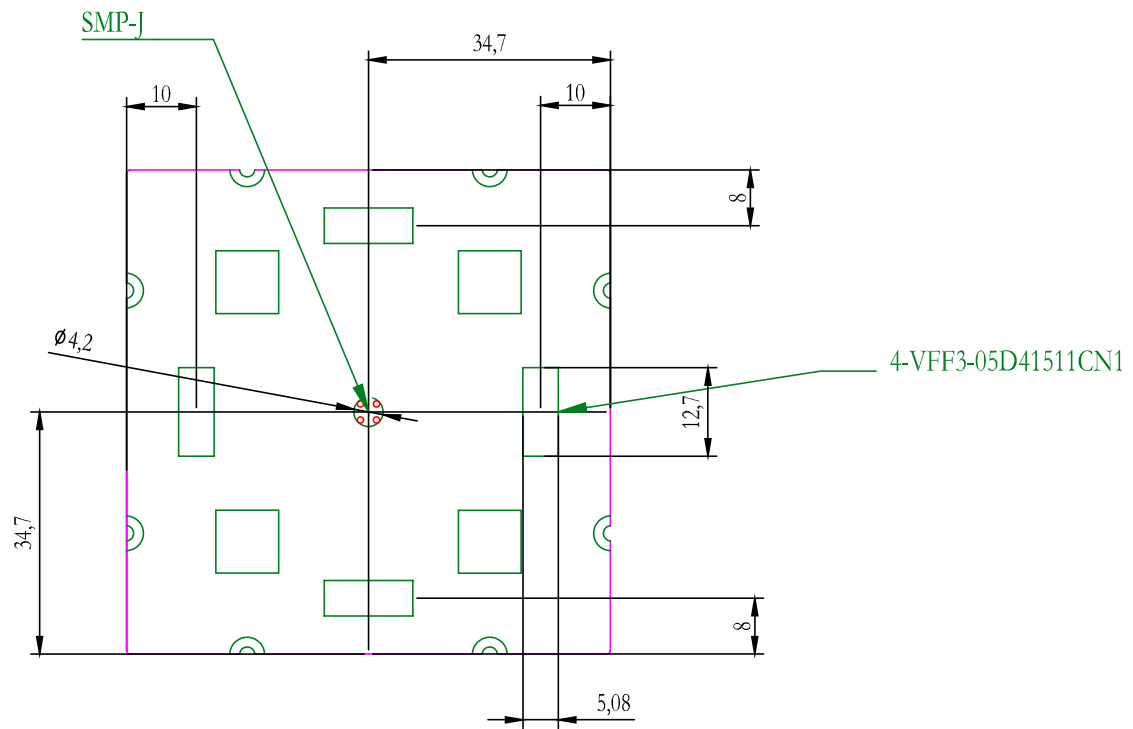
Power supply interface: 2.54mm Pogo connector (J3 & J4)

NO.	Name	I/O	Description
1-3,9-10	VDD_FE	IN	+3.3V
4-5,6-8	GND		Grand



Product Diagram(Unit: mm; Tolerance: ± 0.1 mm)





Installation Requirements

1. On the top of the daughter board, the four multi-functional chips must be cooled via contact with metal pins; the recommended dimensions for these metal pins are 9×9 mm. If only the receiving function is to be used, the use of metal pins for heat dissipation may be omitted. A thermal interface material should be used between the thermal metal pin and the chip to provide a transitional buffer for contact; it is recommended that the thermal conductivity coefficient of the thermal interface material be 5 W/(m . K)
2. The inter-board low-frequency mating connector utilizes a female terminal VFF3-05D41511CN1 and a male terminal VFM3-05D314D11S1; the height of the female terminal is 5.1 mm, with an embedded depth of 0.2 mm; the length of the male terminal is 7 mm, with a compression of 0.8 mm during mating; a soldering allowance of 0.05 mm is reserved between the connector and the substrate, resulting in a final inter-board distance of 11.2 mm

