

Chengdu Sinoscite Technology Co.,Ltd.

Satcome·Waveguide·Coaxial·Switch·Thin-Film Product

SinoSciTe

We must know. We will know.
-D. Hilbert

赛纳赛德



COMPANY PROFILE



Chengdu Sinoscite Technology Co., Ltd. is an innovator in the field of microwave and millimeter wave. The company has long been focusing on the design, production and sales of high-end microwave and millimeter wave devices and systems, and is committed to providing customers with professional customized services.

Sinoscite has obtained GB/T190001 "Quality Management System" certification. It is a National High-Tech Enterprise, SRDI Enterprise in Sichuan Province and a Gazella Enterprise in Chengdu.

Sinoscite has a R&D team with over 30 Bachelor's, Master's and Doctor degrees. While developing rapidly, the company pays special attention to the development and protection of independent intellectual property rights. Since its establishment, it has successfully applied for over 400 patents and retains more than 70 core patents.

Sinoscite's products cover the frequency range of 0.2GHz-220GHz, including various millimeter-microwave, terahertz filters, switches, multiplexers, power dividers, directional couplers, waveguide calibration components, satellite communication devices, etc. The company's integrated waveguide network technology has been used as a necessary solution for low-cost, high-reliability large-scale complex millimeter-wave and terahertz waveguide networks.

The company has cooperated closely with key universities for a long time, vigorously promoting the innovative development of international cutting-edge technologies, and a number of microwave and millimeter wave technologies have ranked the leading level in this field. After striving hard for 20 years, Sinoscite has become a long-term supplier of major universities and research institutes.



Satcom Modules

1. C band anti-interference filter

Filter out signal interference to satellite TV and satellite communications caused by 5G base stations



No./Model		BPF3.8-4GW-2681	BPF3.625-4.2GW-2772	BPF3.7-4.2GW-2797
1	Work Freq.	3.8-4GHz	3.625-4.2GHz	3.7-4.2GHz
2	Insertion Loss	≤0.5dB	≤1dB	≤0.5dB
3	VSWR	≤1.4	≤1.4	≤1.4
4	Rejection	≥60dB@3.65GHz ≥70dB@3.6GHz ≥80dB@4.8-5GHz	≥25dB@3.575GHz ≥60dB@3.475GHz ≥80dB@4.8-5GHz	≥55dB@3.6GHz ≥55dB@3.5GHz ≥80dB@4.8-5GHz
5	Dimensions	120*98.4*70	120*98.4*70	108*98.4*70

TX Freq.	13.75~14.5GHz
RX Freq.	10.75-12.75GHz
10dB beam width	100±10°
Polarization method	linear polarization
VSWR	< 1.5
Cross polarization isolation	> 30dB (axial)
Port isolation	Blocking isolation ≥ 85dB
Insertion loss	<0.5dB (including blocking filter)

2. Ku Band Feed Modules

Corrugated horn+OMT+Blocking transmit filter+Bend waveguide



3. Ka Band Feed Modules

Circular polarizer+Circular polarizer+OMT+Blocking filter



TX Freq.	27.5~31GHz
RX Freq.	19.6~21.2GHz (18.7-20.2GHz)
Insertion loss	≤0.3dB
10dB beam width	100°±10°
Polarization method	Circular polarization
Axial ratio	≤1.5dB (axial)
VSWR	≤1.5
Blocking transmit rejection	≥85dB
Polarization isolation	≥35dB
Interface	TX BJ320(WR28) RX BJ220(WR42)

Acceptance Freq.	19.6-21.2GHz
Transmit Freq.	29.4-31GHz
Polarization isolation	≥30dB
Insertion loss	TX: ≤0.35dB RX: ≤0.3dB
VSWR	≤1.25
Isolation	Blocking transmit: ≥80dB Blocking receive: ≥70dB
Interface	Public: φ11.5 RX: BJ220(WR42) TX: BJ320(WR28)

4. Ka Band Feed Modules

OMT+Blocking filter+Blocking receive filter



5. Ka-band Antenna Feed Component

Transceiver duplexer + Partition circular polarizer + Waveguide transition



Work Freq.	
TX	19.6~23.5GHz
RX	25.25~31GHz
Insertion Loss	
TX	<1dB
RX	<1dB
Port VSWR	<1.5
TX&RX Isolation	>60dB

Waveguide Components

1. Waveguide to coaxial adapters

90° adapter, 180° adapter, ridge adapter, double-ridged adapter,
coaxial interface: N/SMA/SSMA/SMP/2.92/2.4/1.85.

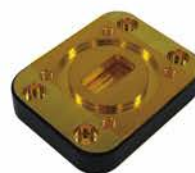


2. Waveguide parts

straight waveguide, bend waveguide, twisted waveguide, twisted
waveguide plate, twisted bend waveguide, waveguide transition.

3. Waveguide sealed windows

High power, Sealed, Anti vibration, Compact



4. Waveguide loads

low-power load, mid-power load, high-power load
Features: full bandwidth, low insertion loss, power as high
as 4kW

5. waveguide filters

bandpass/lowpass/highpass/bandstop
A variety of techniques to achieve
transmission zero: short-circuit branch, dual - mode
technology, cross - coupling
Features: Low loss, high rectangular coefficient,
low VSWR



6. Waveguide duplexer and multiplexers

Features: 2-16 ways, low loss, high isolation, low VSWR

Waveguide Modules

7. Waveguide isolators/ circulators

Features: low loss, low VSWR, high power capacity



8. Waveguide dividers

Various forms of realization:

H-face magic T, E-face magic T, equal amplitude and equal phase power divider, hybrid coupler, chain power divider, ridge waveguide power divider.

Features: 2-n ways, low loss, high isolation, good consistency

9. Waveguide couplers

Waveguide probe coupler: No isolation, small size

Waveguide ring coupler: Suitable for frequency below 20GHz, small size

Waveguide cross coupler: full bandwidth, small size on transmission direction

Waveguide multi-hole directional coupler: full bandwidth, high directivity to 30-40dB



10. Waveguide antennas

Cone horn antenna/corrugated horn antenna



Corrugated horn antenna
Work freq.: 57.5-62.5GHz
Gain: $\geq 10\text{dB}$
Beam width (3dB): 60°



WR2 horn antenna
Work freq.: 325-500GHz
Gain: $\geq 20\text{dB}$



BJ120 horn antenna
Work freq.: 9.84-15GHz
Gain: $\geq 12\text{dB}$

Waveguide Modules

11. Waveguide rotary joints

BJ58 rotary joint
Work freq.: 5-6GHz
VSWR: ≤ 1.25
Insertion loss: $\leq 0.3\text{dB}$



12. Waveguide modules

C band Modules

Planar Magic T+ waveguide isolator
Work freq.: 5.8-6.5GHz
Insertion loss: $\leq 0.6\text{dB}$
VSWR: ≤ 1.35
Isolation: $\geq 20\text{dB}$
Power: 300W(CW)



Ku band Modules

Isolator + double-cross coupler
Work freq.: 13.75-14.5GHz
Insertion loss: $\leq 0.3\text{dB}$
VSWR: ≤ 1.3
Isolation: $\geq 20\text{dB}$
Power: 150W(CW)

Ka band Modules

Twisted waveguide + isolator + double cross coupler
+ sealed waveguide window
Work freq.: 25-31GHz
Insertion loss: $\leq 0.4\text{dB}$
Standing wave: ≤ 1.4
Isolation: $\geq 20\text{dB}$
Power: 30W(CW)



QV band Modules

Three-way power divider + three-way isolator + three-way filter
Work freq.: 37-40 GHz / 47-50 GHz
insertion loss: $\leq 1\text{dB}$ (excluding inherent loss of 4.78 dB)
Standing wave: ≤ 1.3

Coaxial components

1. Coaxial filter, diplexer, multiplexer

Implementation form: cavity, LC
Materials: Aluminum alloy, brass, Invar steel
Optional interface: N/SMA/2.92/2.4/1.85



2. Power divider/combiner

Small size, low insertion loss, high isolation
Can achieve 2-64 ways
customized frequency: 0.3-40GHz
Strip line power divider
Features:
Bandwidth: 0.5-6GHz, 1-8GHz
2-18GHz, 18-26.5GHz
26.5-40 GHz
Maximum power capacity $\geq 400W$ (CW)
Microstrip power divider
Features:
Uwb: 0.3-18GHz
0.5-40 GHz
Phase consistency: $\leq \pm 5^\circ$
Amplitude consistency: $\leq \pm 0.4dB$



3. 90°/180°Hybrid coupler

Uwb: 0.5-9GHz, 1-18GHz, 6-40GHz
Good port consistency



4. Coaxial coupler

Uwb: 0.4-20GHz, 1-40GHz
Optical coupling: 10-40dB



Coaxial Modules

5. Coaxial isolator/circulator

Low loss, high isolation, high power capacity



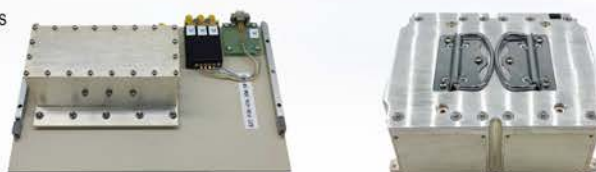
6. Coaxial Modules

Cavity filter+coaxial isolator (patch isolator)



7. Switch filter Modules

Solid state switch/electromechanical switch + cavity filters



8. Switch array 2*16



Electromechanical switches

1.Coaxial electromechanical switches

No.	Description	Freq.	VSWR	Insertion Loss	Isolation
1	Transmission performance	DC-1GHz	1.10	0.10	80
		1-4GHz	1.15	0.15	75
		4-8GHz	1.20	0.20	70
		8-12GHz	1.25	0.25	65
		12-18GHz	1.30	0.30	60
2	Operating voltage	12~36V Optional			
3	Rated current	0.4~1.2A Optional			
4	Switch life	1,000,000 times			
5	Action time	20ms			
6	Operating TEMP	-40℃ ~ +85℃			
7	Storage TEMP	-50℃ ~ +100℃			
8	Salt spray resistance	48h			
9	Other	Power off hold ; power on hold			

No.	Description	Freq.	VSWR	Insertion Loss	Isolation
1	Transmission performance	DC-6GHz	1.20	0.20	80
		6-12GHz	1.30	0.30	75
		12-18GHz	1.50	0.50	70
		18-26GHz	1.70	0.70	65
		26-40GHz	1.80	0.80	60
2	Operating voltage	12/24V			
3	Rated current	1/0.6A			
4	Switch life	500,000 times			
5	Action time	20ms			
6	Operating TEMP	-40℃ ~ +85℃			
7	Storage TEMP	-50℃ ~ +100℃			
8	Salt spray resistance	48h			
9	Other	Power off hold ; power on hold			

No.	Description	Freq.	VSWR	Insertion Loss	Isolation
1	Transmission performance	DC-6GHz	1.30	0.30	80
		6-12GHz	1.40	0.40	75
		12-18GHz	1.50	0.50	70
		18-26GHz	1.70	0.70	65
		26-40GHz	1.90	0.90	60
2	Operating voltage	12/24V			
3	Rated current	1/0.6A			
4	Switch life	500,000 times			
5	Action time	20ms			
6	Operating TEMP	-40℃ ~ +85℃			
7	Storage TEMP	-50℃ ~ +100℃			
8	Salt spray resistance	48h			
9	Other	Power off hold ; power on hold			



2. Waveguide switches

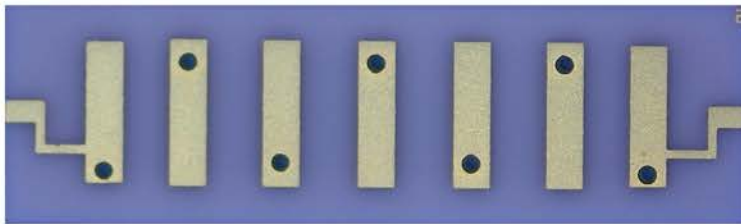
Operating frequency	33 ~ 50GHz
VSWR	≤1.2
Insertion loss	≤0.2 dB
Isolation	≥50 dB
Switch time	≤50ms
Power tolerance	300W
Life	100000 times

Operating frequency	40 ~ 60GHz
VSWR	≤1.2
Insertion loss	≤0.2 dB
Isolation	≥50 dB
Switch time	≤50ms
Power tolerance	300W
Life	100000 times

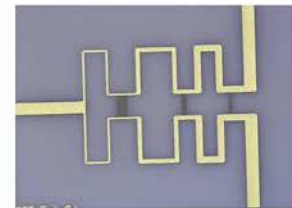


Thin-Film Products

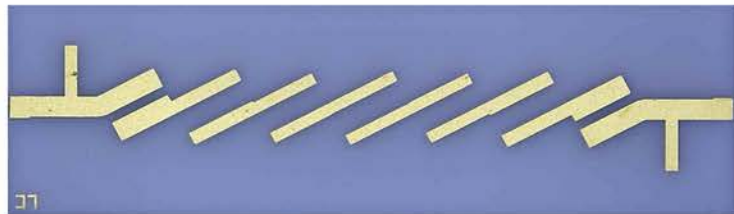
- Substrate: alumina, aluminum nitride, beryllium oxide, ferrite, glass, quartz
- Using high precision film processing technology
- Customized design, super small size
- Applicable frequency :2 ~ 43.5GHz
- The same way chips are used, **they are bonded with gold wire**
- Conventional thickness: $0.127\pm0.025/0.254\pm0.025/0.381\pm0.050/0.508\pm0.050$



Bandpass filter

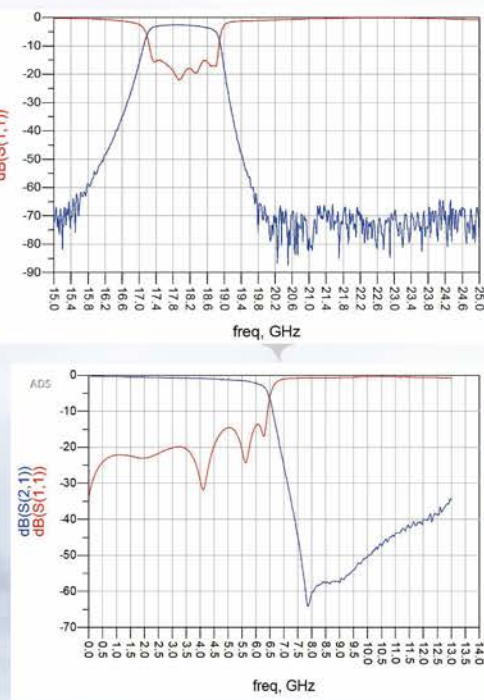
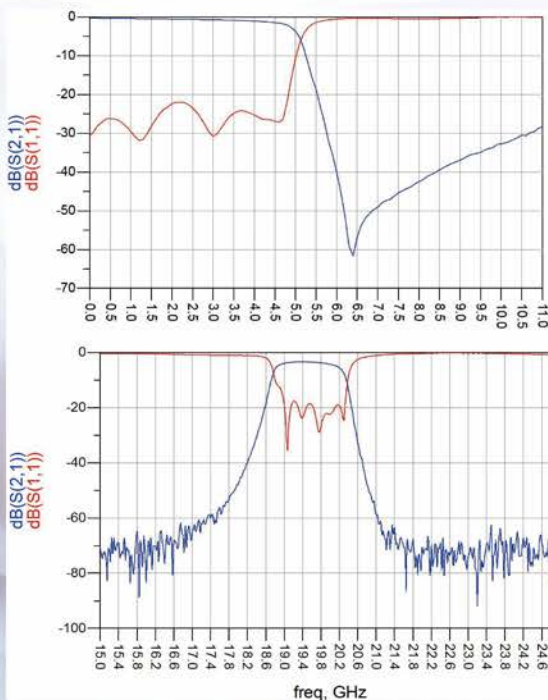


Bandpass filter



Banspass filter

Tested Curve



Standard Rectangular Waveguide Data

Freq. Band	Type Number		Freq. Range (GHz)	Internal Dimension(mm)		Thickness (mm)	External Dimension(mm)		Theoretical Attenuation (dB/m)	
	China Standard	EIA- International Standard		Width a	Height b		Width A	Height B	Aluminum	brassy
L	BJ14	WR-650	1.14-1.78	165.1	82.55	2.03	169.16	86.61	0.009	0.010
S	BJ18	WR-510	1.45-2.20	129.54	64.77	2.03	133.6	68.83	0.013	0.015
	BJ22	WR-430	1.72-2.61	109.22	54.61	2.03	113.28	58.67	0.016	0.019
	BJ26	WR-340	2.17-3.30	86.36	43.18	2.03	90.42	47.24	0.023	0.027
	BJ32	WR-284	2.60-3.95	72.14	34.04	2.03	76.2	39.1	0.031	0.037
	BJ40	WR-229	3.22-4.90	58.17	29.08	1.625	61.42	32.33	0.042	0.050
C	BJ48	WR-187	3.94-5.99	47.549	22.149	1.625	50.8	25.4	0.059	0.070
	BJ58	WR-159	4.64-7.05	40.386	20.193	1.625	43.64	23.44	0.072	0.086
	BJ70	WR-137	5.38-8.17	34.849	15.799	1.625	38.1	19.05	0.095	0.114
	BJ84	WR-112	6.57-9.99	28.499	12.624	1.625	31.75	15.88	0.131	0.156
X	BJ100	WR-90	8.20-12.5	22.86	10.16	1.27	25.4	12.7	0.182	0.217
Ku	BJ120	WR-75	9.84-15.0	19.05	9.525	1.27	21.59	12.06	0.222	0.265
	BJ140	WR-62	11.9-18.0	15.799	7.899	1.015	17.83	9.93	0.294	0.351
	BJ180	WR-51	14.5-22.0	12.95	6.477	1.015	14.99	8.51	0.396	0.473
Ku	BJ220	WR-42	17.6-26.7	10.668	4.318	1.015	17.7	6.35	0.607	0.723
	BJ260	WR-34	21.7-33.0	8.636	4.318	1.015	10.67	6.35	0.728	0.868
Ka	BJ320	WR-28	26.3-40.0	7.12	3.556	1.015	9.14	5.59	0.974	1.162
Q	BJ400	WR-22	32.9-50.1	5.69	2.845	1.015	7.72	4.88	1.362	1.624
U	BJ500	WR-19	39.2-59.6	4.775	2.388	1.015	6.81	4.42	N/A	2.112
V	BJ620	WR-15	49.8-75.8	3.759	1.88	1.015	5.79	3.91	N/A	3.023
E	BJ740	WR-12	60.5-91.9	3.0988	1.5494	1.015	5.13	3.58	N/A	4.040
W	BJ900	WR-10	73.8-112	2.54	1.27	1.015	4.57	3.3	N/A	5.444
	BJ1200	WR-8	90-140	2.032	1.016	0.76	3.556	2.54	N/A	N/A
	BJ1400	WR-7	110-170	1.651	0.8255	0.76	3.175	2.35	N/A	N/A
	BJ1800	WR-5	140-220	1.2954	0.6477	0.76	2.819	2.172	N/A	N/A
	BJ2200	WR-4	170-260	1.0922	0.5461	0.76	2.616	2.07	N/A	N/A
	BJ2600	WR-3	220-325	0.8636	0.4318	0.76	2.388	1.956	N/A	N/A



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