

Shanghai Shangyuan Communication
Technology Co., LTD

Sample acknowledgment

customer name: Shenzhen Best Technology Co., LTD

Supplier name: EC25-J

specifications and models: 16*193MM black glue stick

stock number: _____

☐fresh material ☐substitute material applicable
models: EC25-J

datelanded: 2025/3/12 sample quantity: 1 Sample signing date:

Supplier acknowledgement		
FICTION	CHECKER	APPROVER

CONFIRMER	EXAMINER i i	CHECKER
APPROVER		
Nature of the instrument of recognition	☒ official recognition ☐ Provisional recognition Temporary period: _____	



上海尚远通讯科技有限公司

Antenna admission book

Customer name: Best		Project name: EC25-J
Working frequency band:		
Motherboard version:		
Shangyuan material specifications		
specifications and models	Shang Yuan material number	Customer material number
Rubber rod antenna	SZ20443WB56	

Change the resume			
Preparation / change date	Change the content	Change the person	edition
2025.03.12	A new release	XuWei	A

Shang Yuan will sign the column				
research and development	structure:	examine verify:	Quality Engineer:	ratify:
	radio frequency:	examine verify:		
The customer will sign the column				
electronic engineer	project manager	construction engineer	Quality engineer	

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CATALOGUE

1. PROJECT PICTURES

2.TEST TOOL

3 MATCH THE CIRCUIT

4 S11 TEST

4.0 S11 DESCRIPTION OF THE TEST METHOD

4.1 S11 PARAMETERS

5 DARK ROOM TEST DATA

6 THE ANTENNA ENVIRONMENT TREATMENT

7 MASS PRODUCTION ANTENNA INDEX

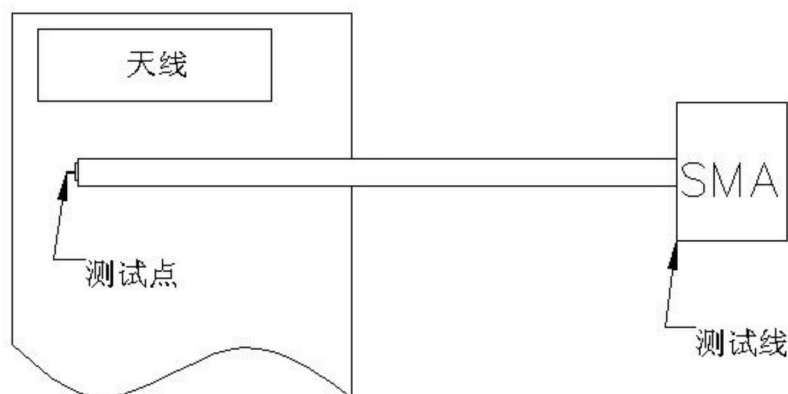
8. STRUCTURAL DRAWINGS

1. PROJECT PICTURES

Note: The customer's final verification antenna performance machine is retained in our company for at least one year, which is convenient to analyze and solve the abnormal situation in the mass production of antennas, and ensure the delivery quality of antennas

2.TEST TOOL

Objective: To test the passive parameters of antenna as accurately as possible. Production method: The sample mechanism is a 50 ohm coaxial cable, one end of which is connected to the test point at the back end of the matching circuit (front end of the RF test hole) of the machine motherboard, and the other end is connected to the SMA connector. The diagram is as

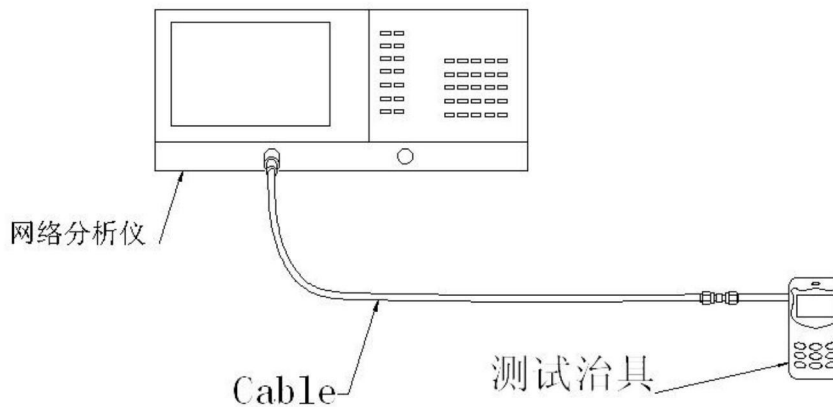


3 MATCH THE CIRCUIT

No matching circuit no change

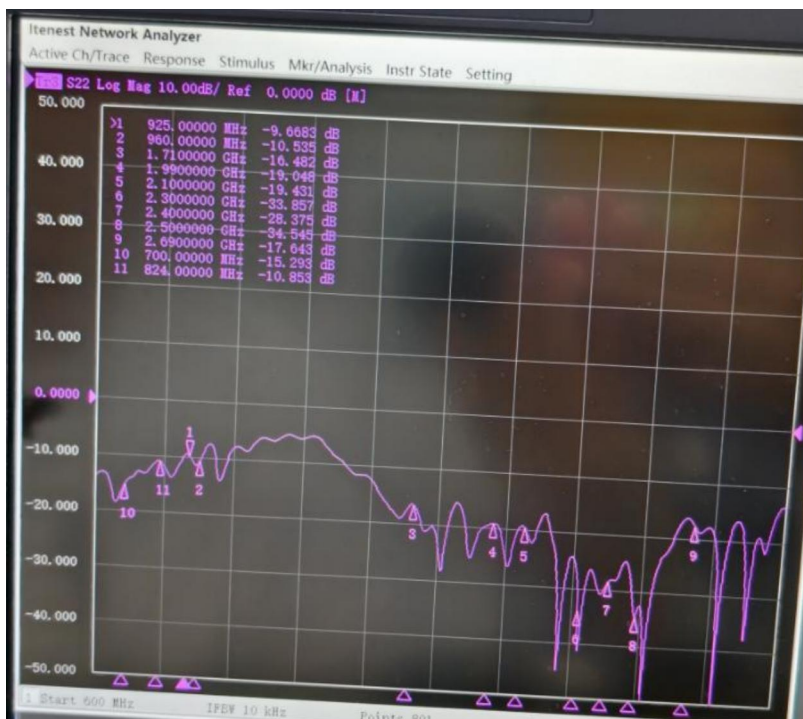
4. S11 测试

4.0 S11 Test Method Description Test equipment: Network analyzer (Agilent E5071C) Test method: a 50 ohm CABLE is exported from the instrument test port, and the SMA connector of the machine tool is connected after calibration with the calibration part, and the return loss and standing wave ratio corresponding to the relevant frequency points are recorded. The test diagram is as follows:



4.1 The project picture is shown as follows:

VSWR



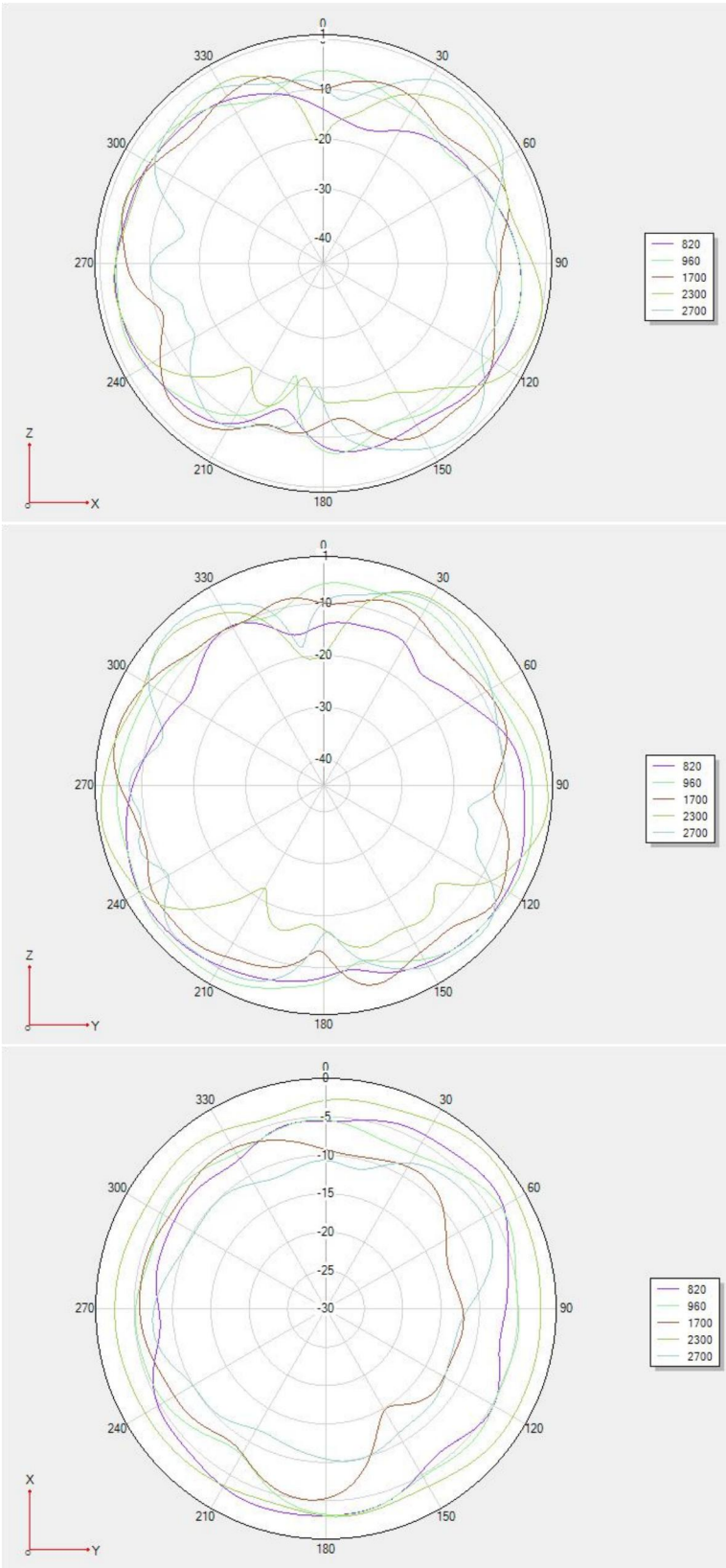
Passive efficiency

Frequency/ Mhz	MaxGain/ dBi	Efficien cy / %	Frequency/ Mhz	MaxGain/ dBi	Efficien cy / %	Frequency/ Mhz	MaxGain/ dBi	Efficien cy / %
600	-3.45	29.24	1700	-2.96	22.39	2380	-3.11	29.38
610	-2.77	29.79	1720	-2.94	22.13	2400	-3.5	28.77
620	-2.39	28.51	1740	-1.73	25.59	2420	-3.61	25.12
630	-0.35	38.82	1760	-1.15	27.8	2440	-2.69	25.12
640	-1.26	27.93	1780	-1.17	29.51	2460	-1.94	26.61
650	-1.18	27.67	1800	-1.4	27.48	2480	-1.99	26.92
660	-0.7	30.2	1820	-1.35	29.17	2500	-1.98	27.04
670	0.13	37.33	1840	-0.4	31.99	2520	-1.27	30.06
680	-0.91	28.91	1860	-0.4	29.04	2540	-1.9	28.71
690	-1	28.25	1880	-1.06	27.67	2560	-1.88	27.54
700	-0.89	28.97	1900	-1.01	25.59	2580	-1.87	26.49
710	0.31	34.91	1920	-0.58	24.55	2600	-2.07	24.1
720	1.37	38.11	1940	-1.07	26.06	2620	-1.67	25
730	2.21	41.69	1960	-1.51	26.49	2640	-1.79	23.82
740	2.15	41.88	1980	-1.48	26.61	2660	-1.57	21.53
750	1.94	45.92	2000	-1.97	28.71	2680	-1.4	21.38
760	0.64	39.99	2020	-2.65	29.11	2700	-0.89	22.91
770	0.13	40.46	2040	-1.85	28.84			
780	-1.13	32.51	2060	-0.35	26.24			
790	-1.31	32.43	2080	-0.08	28.18			
800	-2.21	26.18	2100	0.1	30.97			
830	-1.18	43.85	2120	0.2	33.42			
840	-0.69	46.88	2140	-0.55	32.43			
850	-0.56	45.39	2160	-1.32	29.17			
860	-0.57	44.16	2180	-1.27	28.91			
870	0.19	47.64	2200	-0.8	31.7			
880	0.65	49.77	2200	-0.8	31.7			
890	0.27	49.32	2220	-1.09	29.92			
900	-0.67	46.45	2240	-0.97	28.64			
910	-1.53	43.95	2260	-0.5	31.12			
920	-1.95	42.07	2280	-0.03	34.04			
930	-1.82	41.11	2300	0.16	34.67			
940	-1.34	41.11	2320	-0.97	30.9			
950	-1.67	37.07	2340	-2.25	30.13			
960	-1.56	36.64	2360	-2.93	31.48			

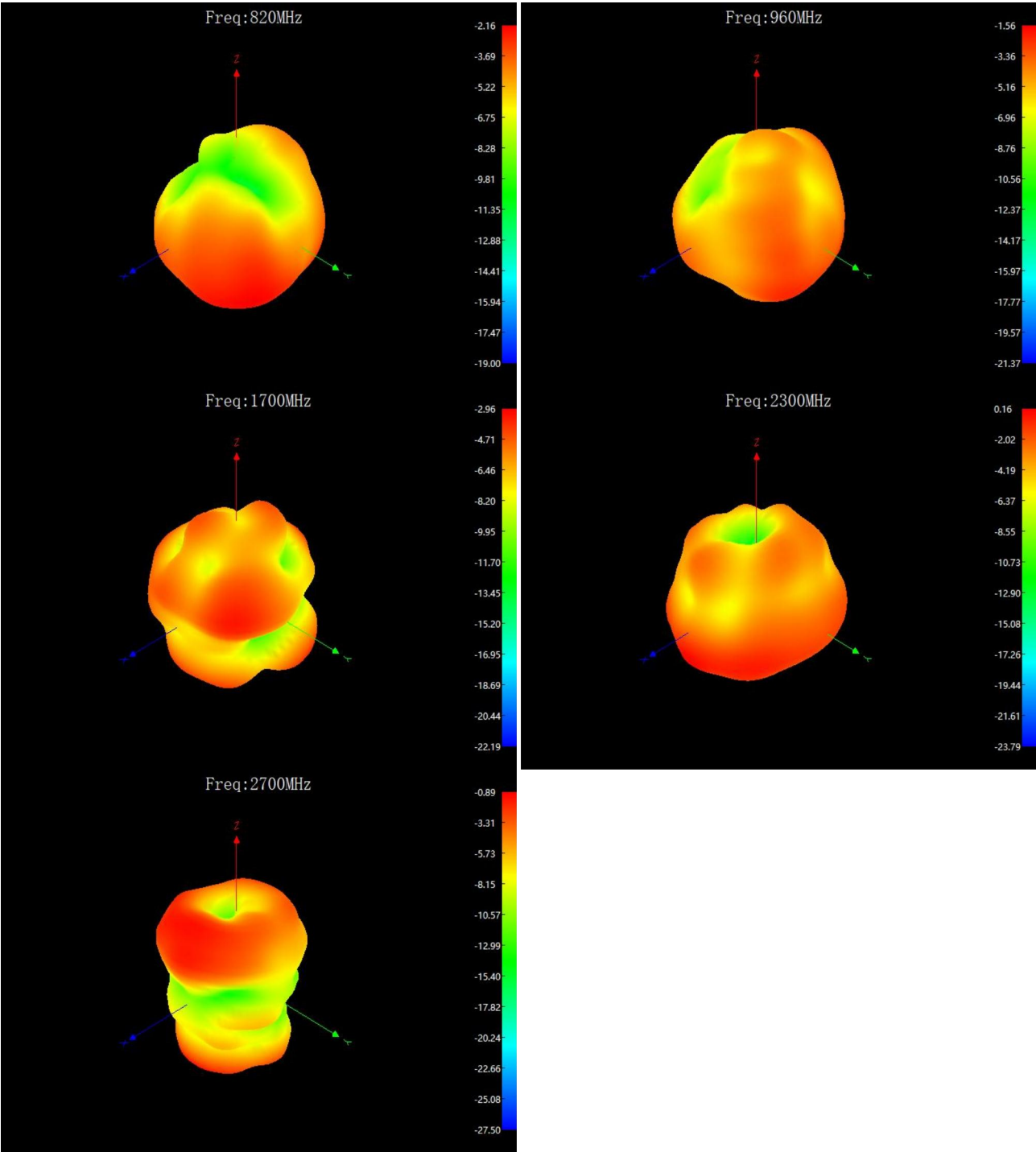
Shanghai Shangyuan Technology Co., LTD. antenna letter

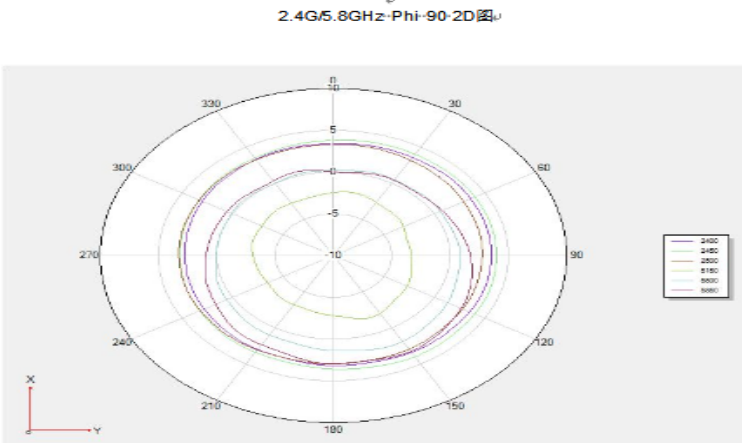
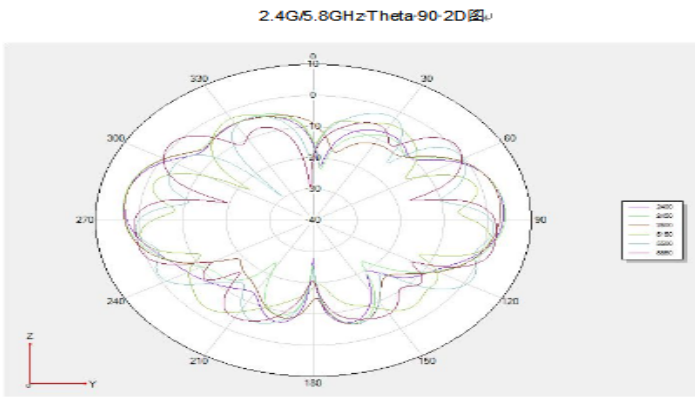
Frequency/Mhz	Efficiency/ %	MaxGain/dBi
2400	61.52	3.97
2410	63.24	4.26
2420	65.01	4.33
2430	66.83	4.28
2440	65.46	4.15
2450	67.14	4.32
2460	67.76	4.41
2470	68.08	4.30
2480	66.83	4.22
2490	65.31	4.13
2500	62.37	3.81
AVG	65.41	4.20
5150	43.65	1.83
5200	40.74	2.24
5250	39.72	2.22
5300	44.26	2.84
5350	46.34	3.07
5400	54.95	3.51
5450	53.21	2.75
5500	57.28	2.76
5550	59.70	2.51
5600	61.09	2.53
5650	62.95	2.36
5700	62.66	2.33
5750	64.71	2.06
5800	64.27	2.28
5850	64.86	3.35
AVG	54.69	2.58

Passive direction diagram



Radiation Apple Figure





ϕ 2400MHz	
ϕ 2450MHz	
ϕ 2500MHz	
ϕ 5150MHz	
ϕ 5850MHz	

5 Darkroom test data

Test equipment Test system: shielded darkroom test environment: Temperature 22 ± 3 °C, humidity $50\% \pm 15\%$ Test equipment: When testing passive data, use the network analyzer AgilentE5062C test active data, use the integrated tester 8820C, CMW500



Active efficiency of external antenna:

Measurement	Band	Channel	Total		Measurement	Band	Channel	Total
TRP	FDD_B1(10MHz)	18050	17.08		TRP	FDD_B26(10MHz)	26740	18.76
TRP	FDD_B1(10MHz)	18300	16.98		TRP	FDD_B26(10MHz)	26865	16.82
TRP	FDD_B1(10MHz)	18550	17.58		TRP	FDD_B26(10MHz)	26990	18.35
TIS(RSSI)	FDD_B1(10MHz)	550	-94.83		TIS(RSSI)	FDD_B26(10MHz)	8990	-94.75
TRP	FDD_B3(10MHz)	19250	16.91		TRP	TDD_B41(20MHz)	40340	18.62
TRP	FDD_B3(10MHz)	19575	15.72		TRP	TDD_B41(20MHz)	40620	18.24
TRP	FDD_B3(10MHz)	19900	15.12		TRP	TDD_B41(20MHz)	41140	15.25
TIS(RSSI)	FDD_B3(10MHz)	1900	-96.48		TIS(EIRP)	TDD_B41(20MHz)	41140	-96.24
TRP	FDD_B8(10MHz)	21500	19.63		TRP	WCDMA_B1	9612	18.3
TRP	FDD_B8(10MHz)	21625	20.39		TRP	WCDMA_B1	9750	18.82
TRP	FDD_B8(10MHz)	21750	20.33		TRP	WCDMA_B1	9888	18.44
TIS(RSSI)	FDD_B8(10MHz)	3750	-95.33		TIS(RSSI)	WCDMA_B1	10838	-110.23
TRP	FDD_B18(10MHz)	23900	19.28		TRP	WCDMA_B8	2712	20.38
TRP	FDD_B18(10MHz)	23925	19.02		TRP	WCDMA_B8	2787	20.22
TRP	FDD_B18(10MHz)	23950	17.76		TRP	WCDMA_B8	2863	20.32
TIS(RSSI)	FDD_B18(10MHz)	5950	-94.48		TIS(RSSI)	WCDMA_B8	3088	-109.36
TRP	FDD_B19(10MHz)	24050	18.54		TRP	WCDMA_B19	312	20.41
TRP	FDD_B19(10MHz)	24075	18.16		TRP	WCDMA_B19	335	20.6
TRP	FDD_B19(10MHz)	24100	19.09		TRP	WCDMA_B19	437	20.4
TIS(RSSI)	FDD_B19(10MHz)	6100	-95.88		TIS(RSSI)	WCDMA_B19	837	-106.69

6 THE ANTENNA ASSEMBLY AND ENVIRONMENTAL HANDLING

External antenna is directly connected to SMA without additional environmental treatment

7. Mass production antenna index

When the antenna is mass-produced, the standing wave ratio is used as the test standard for mass production.

Based on the differences of the project itself, the following criteria are given:

frequency	Mass production standards
704MHz~960MHz	VSWR (mass production performance) <VSWR (recognized performance) ± 0.5
1710MHz~2690MHz	VSWR (mass production performance) <VSWR (recognized performance) ± 0.5

[illegible]