

CX6A02 Antenna Specification

Project Name	CX6A02 antenna		Frequency band:	700~960 1710~2690	
Internal part number:	Y0090520100KA		Version number:	R:A	
Date:	2025/10/24				
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Remarks					

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1 Specification

This report primarily provides the test status of various electrical and structural performance parameters of the payment antenna CX6A02.

1.1 Electrical specification standards

1.1.1 Electrical performance indicators

The operating frequency band of the antenna is 700MHz-960MHz and 1710MHz-2690MHz. The table below lists the electrical performance indicators of the antennas designed and mass-produced by Shanghai Yongfutong Technology (Shanghai) Co., Ltd.

1.1.2 Matching circuit

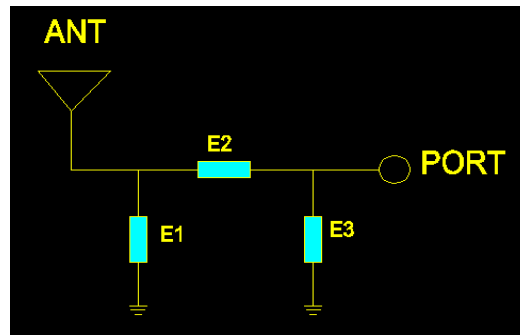


Figure 1: Matching

E1: Disconnected, E3: Disconnected, E2: 0 Ohm.

1.2 Structural specification standards

1.2.1 Performance requirements

- High and low temperature testing: Place the product in a high-temperature environment with a temperature of $80\pm 2^{\circ}\text{C}$ for 24 hours, then store it in a low-temperature environment with a temperature of $-40\pm 2^{\circ}\text{C}$ for 24 hours. After the test is completed, place it in a normal temperature environment for more than 2 hours before conducting an appearance inspection
- Salt spray test: The antenna must remain free from abnormalities such as peeling, corrosion, and discoloration after being continuously atomized in a solution of sodium chloride and distilled or deionized water with a concentration of $5\% \pm 0.1\%$ and a pH value ranging from 6.5 to 7.2 (at $35 \pm 1^{\circ}\text{C}$) for 24 hours.

2 Test

The antenna is debugged using a mobile phone provided by the customer.

2.1 Test of standing wave ratio (VSWR)

2.1.1 Test connection

The VSWR test setup is connected in the following order: Agilent 5071C network analyzer → test line → test fixture.

2.1.2 VSWR

The table below presents the standing wave ratio (SWR) values for the edge frequencies of the antenna's operating band.

Frequency point (MHz)	700	824	960	1710	2690
VSWR	3.9	1.33	3.32	1.81	3.3

2.2 Antenna testing

2.2.1 Test site

Darkroom.

2.2.2 Test results

Active data

Band	TRP	TIS	Band	TRP	TIS
B2-10MHz	20.24		B7-10MHz	18.53	
	19.37			19.73	
	19.3	-93.5		18.2	-93.32
B3-10MHz	20.15		B8-10MHz	19.32	
	19.85			19.38	
	20.19	-93.67		18.42	-92.04
B4-10MHz	20.7		B28-10MHz	18.18	
	20.8			17.95	
	20.43	-94.39		19.23	-91.83
B5-10MHz	19.5		B66-10MHz	19.82	
	19.44			19.32	
	19.53	-92.98		19.5	-93.09

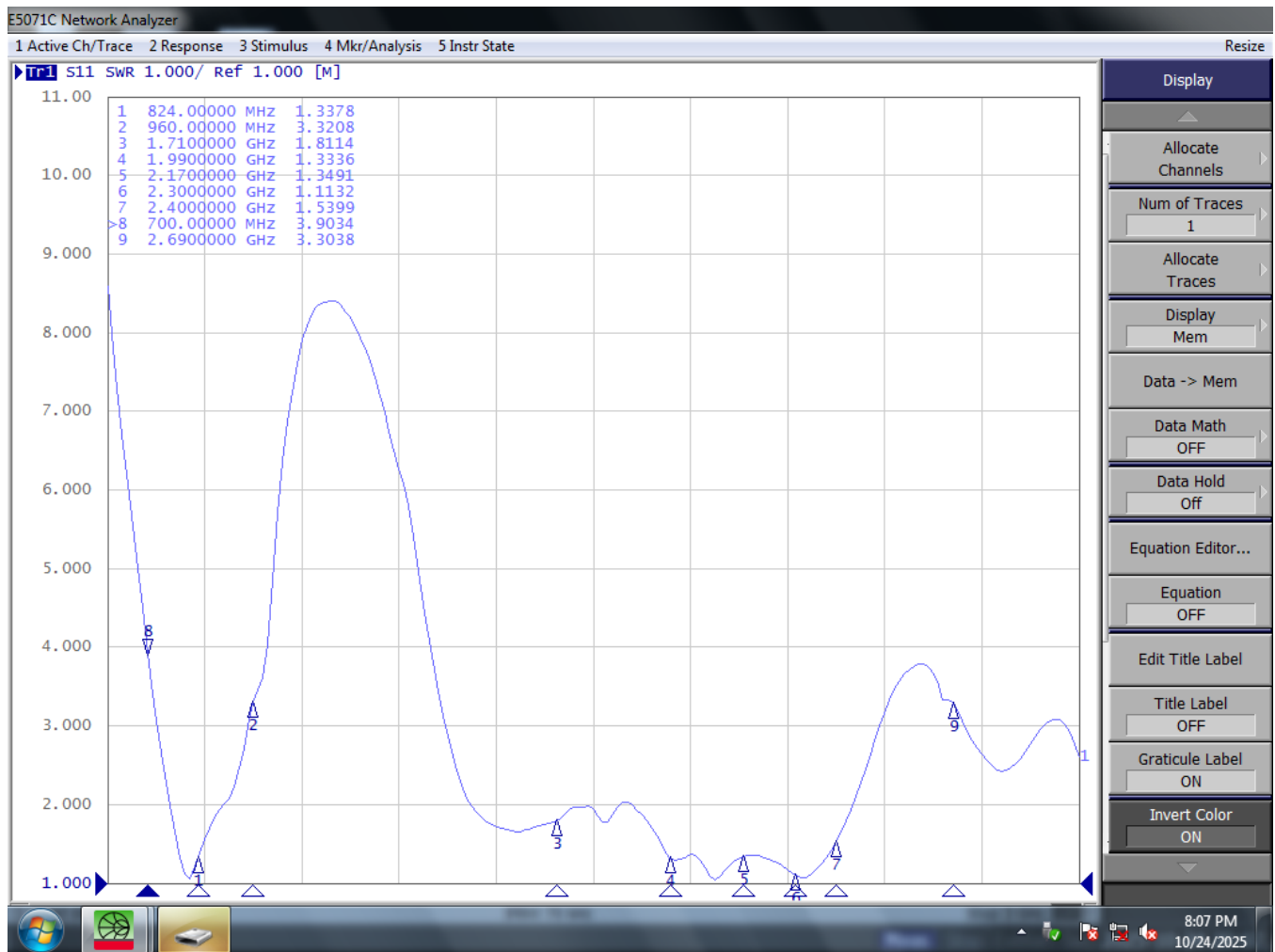
3 Conclusion

This antenna is designed based on the prototype provided by the customer, and its electrical parameters and structural performance have met the technical requirements. Please confirm.

4. Attached charts

4.1 Passive parameters

4.1.1 S11 parameter (frequency range 0.6-3GHz)



4.1.2 Efficiency

Frequency (MHz)	Gain (dBi)	efficiency (in percentage)	Frequency (MHz)	Gain (dBi)	efficiency (in percentage)	Frequency (MHz)	Gain (dBi)	efficiency (in percentage)
700	-3.63	22.87	1710	3.13	49.66	2300	2.75	57.25
720	-2.83	24.35	1730	2.8	46.66	2320	2.82	57.40
740	-2.25	27.56	1750	2.68	47.41	2340	3.02	59.66

760	-1.49	30.12	1770	2.97	49.56	2360	3.47	59.88
780	-1.21	30.29	1790	2.99	50.25	2380	3.43	57.16
800	-0.15	39.05	1810	2.97	48.65	2400	3.51	56.14
820	0.59	45.81	1830	3.29	45.30	2420	3.72	59.96
840	0.16	45.71	1850	3.11	42.70	2440	3.53	57.03
860	0.91	47.00	1870	3.47	45.24	2460	3.25	52.94
880	1.32	45.15	1890	3.27	46.18	2480	3.38	53.67
900	0.54	42.03	1910	3.57	49.27	2500	3.34	55.02
920	-0.18	38.46	1930	3.6	51.90	2520	3.04	50.58
940	-0.71	31.84	1950	3.6	54.30	2540	2.42	41.71
960	-1.39	25.04	1970	3.25	53.07	2560	1.74	40.71
			1990	3.04	55.05	2580	0.81	38.13
			2010	2.95	57.80	2600	0.15	35.41
			2030	3.26	57.18	2620	-0.31	33.67
			2050	3.2	58.31	2640	-0.64	34.75
			2070	3.13	56.64	2660	-0.95	33.75
			2090	2.98	53.82	2680	-0.41	31.68
			2110	2.81	53.69	2690	-0.48	32.08
			2130	2.99	56.25	2700	-0.43	32.89
			2150	2.99	57.24			
			2170	2.85	58.23			