

Xun Hang ST1 BT Antenna test Report

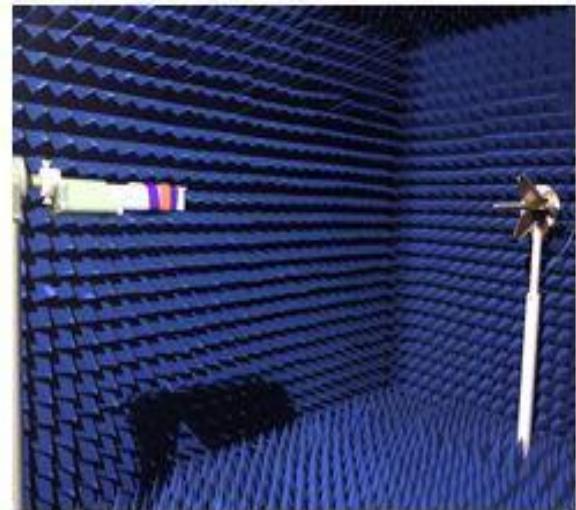
2024-7-20



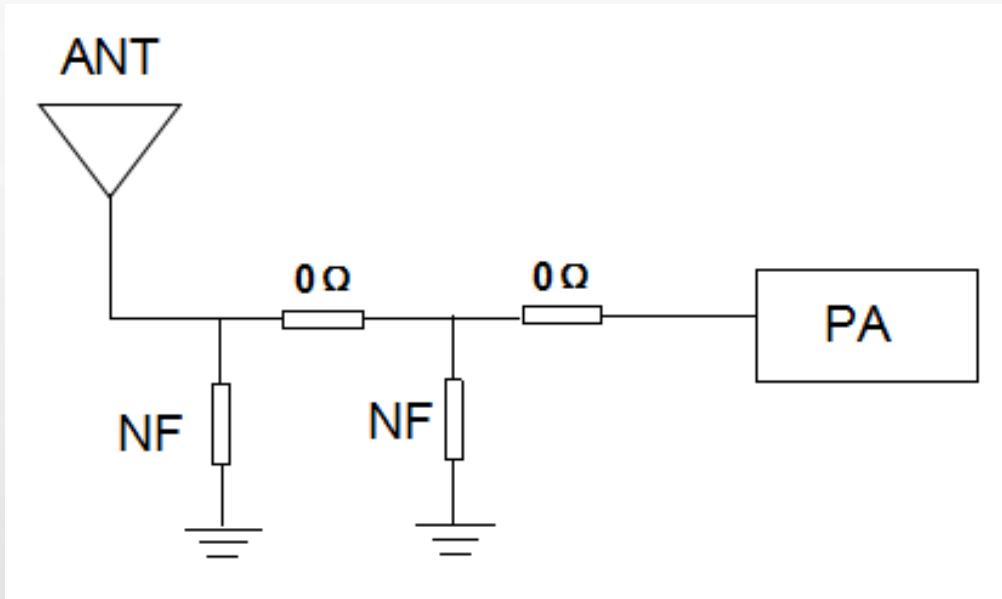
Test Items And Equipment

	Test Project	Equipment
1. S-parameter	1 . Return Loss 2 . VSWR	Network Analyzer: Agilent E5071B HP 8753D
2. Active	1 . TRP 2 . TIS	1 . Darkroom: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. Comprehensive test instrument: Agilent 8960 E5515B × 2 StarPoint SP6011
3. Passive	1. Gain 2. Efficiency	1 . Darkroom: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2 . Network Analyzer : Agilent E5071B HP 8753D





Matching Circuit-BT Antenna



Our company has not made any repairs to the matching circuit



Whole Machine Picture



Bluetooth antenna type: Bluetooth cable (25mm)



Location Layout Diagram

BT antenna placement position (Put it down in the left corner)



BT antenna placement position



Bluetooth Distance

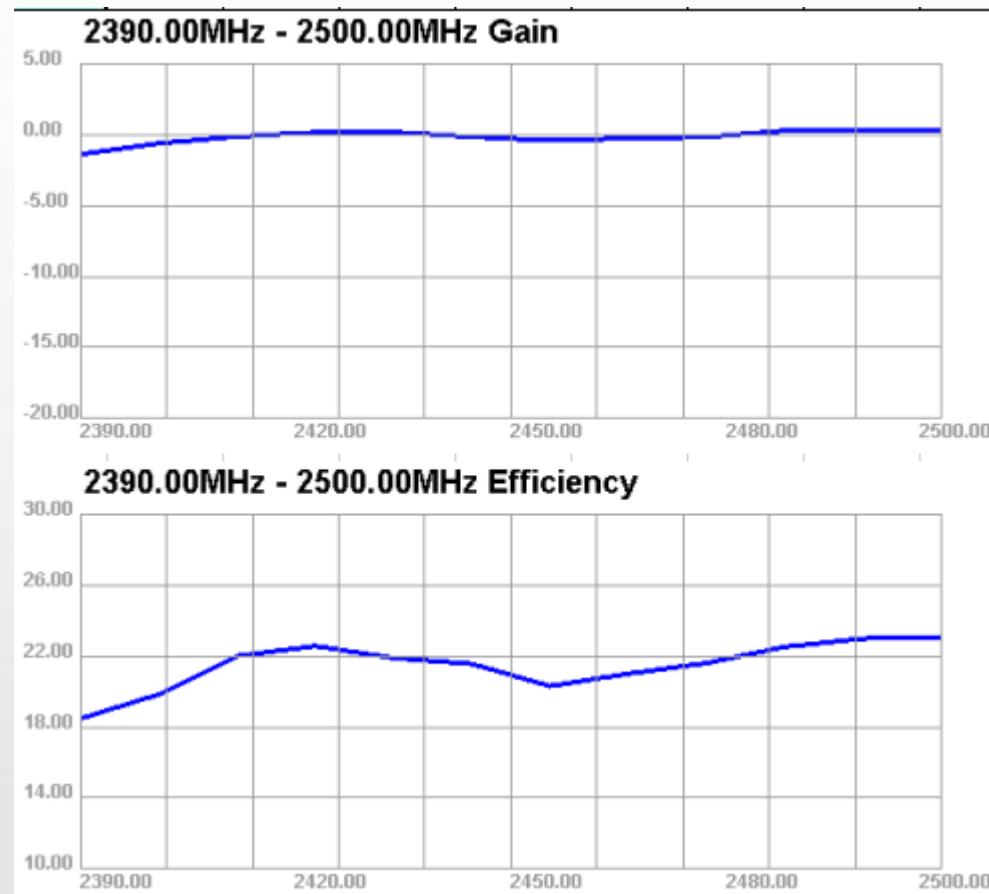
BLE Connection Distance Test	1. After adjusting the antenna, assemble the whole machine: 2. The tester will wear the wristband (or watch) on their wrist, facing the direction of the phone, with their arm naturally hanging down and their palm facing their body. They will hold it still for 2 minutes to test the coverage distance of the Bluetooth disconnection of the wristband (or watch); Cover the body and face the phone in four different directions: 0 ° (360 °), 90 °, 180 °, and 270 ° ; (Distance of reconnection after disconnection) 3. Keep still for 2 minutes to test the coverage distance of Bluetooth disconnection on the wristband (or watch).	Front disconnection distance 0° :≥10m	20M	
		Front reconnection distance 0° :≥10m	18M	
		Reverse disconnection distance 180° :≥5m	7	
		Reverse reconnection distance 180° :≥5m	7	
		Front 0° :≥10m	20M	
BT Connection Distance Test (Audio)	1. After adjusting the antenna, assemble it into a complete machine; 2. The tester will wear a wristband (or watch) on their wrist, raise their wrist to 10cm in front of their chest, face their body towards the direction of the phone, gradually move away from the phone, and test the distance of audio playback without stuttering.1.	Reverse 180° :≥5m	12M	
	1. After adjusting the antenna, assemble it into a complete machine; 2. The tester will wear a wristband (or watch) on their wrist, raise their wrist to their chest, turn their back towards the direction of the phone, gradually move away from the phone, and test the distance of audio playback without stuttering.	Front 0° :≥10m	18M	
BT Connection Distance Test (Call)	1. After adjusting the antenna, assemble the device as a whole: 2. The tester wears a wristband (or watch) with a dry wrist, raises the wrist to 10cm in front of the chest, faces the direction of the phone, gradually moves away from the phone, and tests the distance of no stuttering during calls.	Reverse 180° :≥5	8M	
	1. After adjusting the antenna, assemble it into a complete machine; 2. The tester will wear a wristband (or watch) on their wrist, raise their wrist to 10cm in front of their chest, turn their back towards the direction of the phone, gradually move away from the phone, and test the distance of uninterrupted calls.			

Efficiency and Gain

Passive Test For 2400										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2390	18.48	-7.33	-1.39	-3.54	9.91	8.567	-1.39	-26.39	52.25	52.32
2400	19.84	-7.02	-0.62	-2.77	10.662	9.177	-0.62	-20.59	52.52	52.65
2410	22	-6.58	-0.14	-2.29	11.909	10.094	-0.14	-18.27	52.99	53.08
2420	22.57	-6.47	0.16	-1.99	12.37	10.198	0.16	-17.04	53.15	53.24
2430	21.89	-6.6	0.18	-1.97	12.094	9.797	0.18	-17.06	53.1	53.07
2440	21.56	-6.66	-0.16	-2.31	11.957	9.604	-0.16	-19.04	53.21	53.12
2450	20.31	-6.92	-0.42	-2.57	11.291	9.02	-0.42	-22.63	52.87	52.75
2460	21.01	-6.78	-0.26	-2.41	11.681	9.326	-0.26	-29.29	52.98	52.83
2470	21.61	-6.65	-0.17	-2.32	12.136	9.471	-0.17	-25.08	53.13	52.93
2480	22.52	-6.47	0.28	-1.87	12.726	9.794	0.28	-21.92	53.3	53.18
2490	22.99	-6.38	0.26	-1.89	13.191	9.8	0.26	-19.52	53.43	53.31
2500	23.05	-6.37	0.27	-1.88	13.271	9.776	0.27	-20.78	53.38	53.22

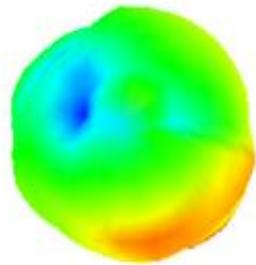


Efficiency and Gain

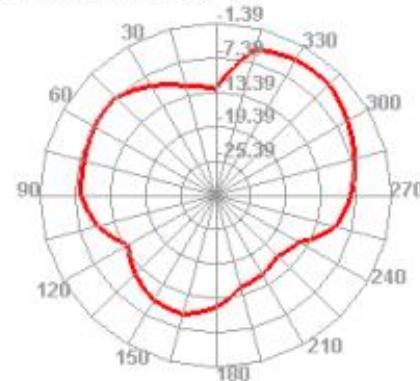


Efficiency and Gain

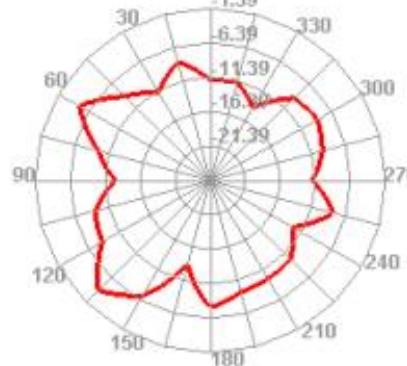
2390.000MHz



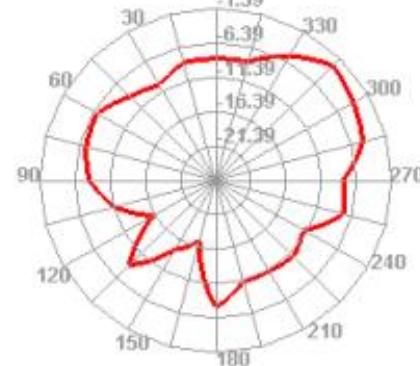
2390.000MHz H



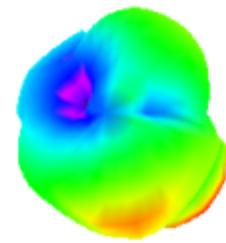
2390.000MHz E1



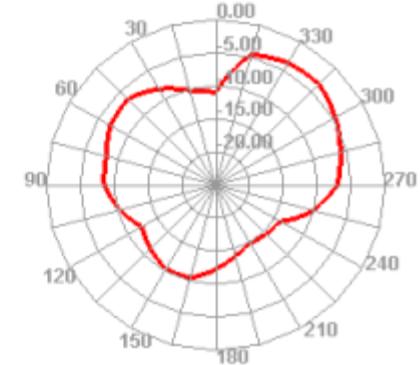
2390.000MHz E2



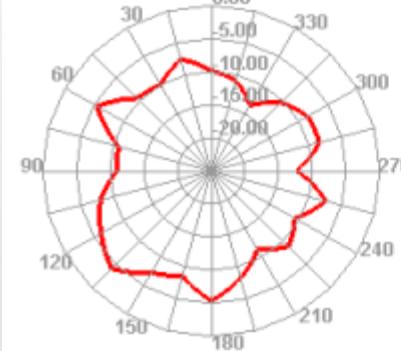
2440.000MHz



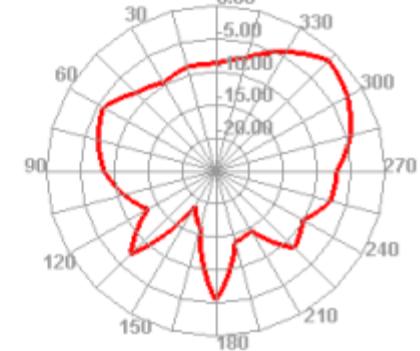
2440.000MHz H



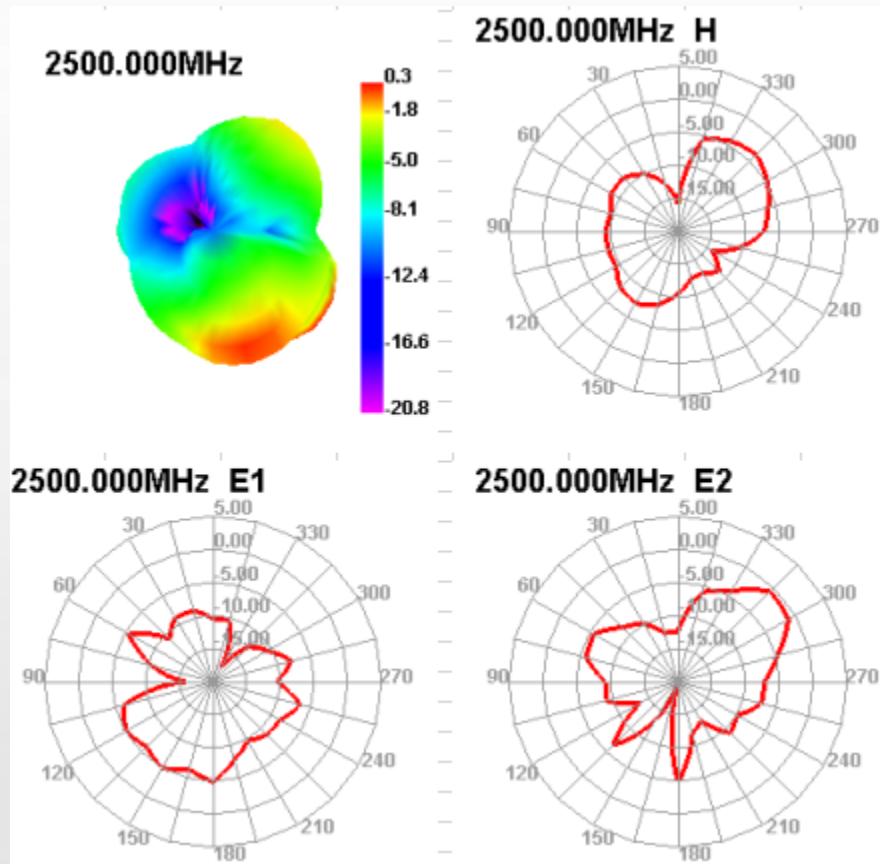
2440.000MHz E1



2440.000MHz E2



Efficiency and Gain



Structural drawings

1 2 3 4 5 6 7 8

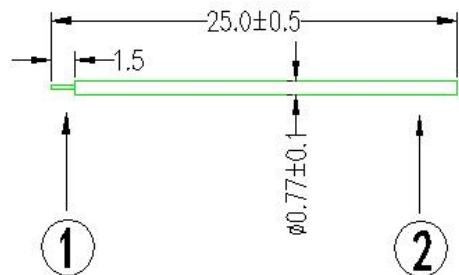
A



B

C

D



Serial number	Product Name	Material Science	Quantity	Describe	Remarks
1	Bluetooth core wire			Copper	
2	Bluetooth cable sheath			Black	
3					

bt wire rod		Design	Liang	Date	2022-5-24
Type of machine					
Item number		Examine	Wang	RF	Jin
Texture of material					
Proportion	FIT	Shenzhen Huaxun Shitong Technology Co., Ltd			
Company	mm				

1 2 3 4

5 6 7 8

Technical and material requirements:

1. Cable color: Black
2. Fully tested conductivity
3. The product must comply with our company's ROHS and other relevant testing requirements
4. If the tolerance of the line size is not specified, it shall be in accordance with SJ/T 106281995 Level 6, and the tolerance value shall be evenly divided by the upper and lower deviations.

Thanks !

