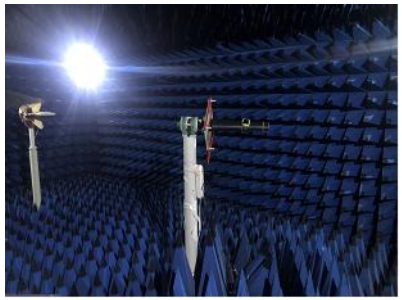
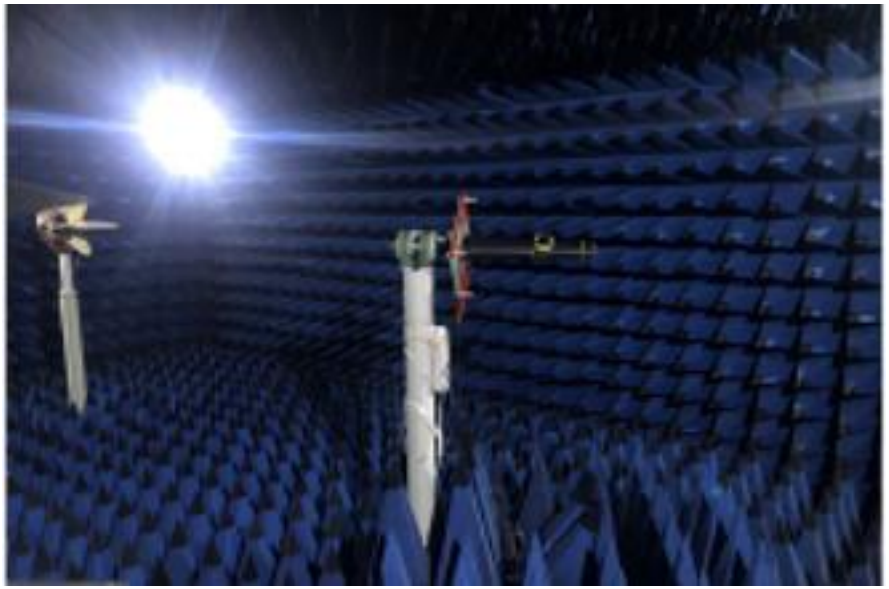
Aidu GT5 Antenna Test Report

RF: Tsang Cheung-ho
Date:2024-3-25
Contact:15112352038



project development environment



We are moving from the Internet era to the smart era, and the country is building a digital society and smart cities. In the next 5-10 years, both the consumer electronics market and the Internet of Things market have great potential for development. Wireless communication field is very diversified, the future Yusheng relying on the antenna main customer platform advantage and its own comprehensive strength, and strive to provide customers with market competitive professional product solutions.

Our products cover almost all wireless terminal equipment antenna applications, including automotive antennas, high-precision measurement and mapping antennas, UAV ground and satellite data navigation, high-precision positioning antennas, wireless transmission of medical equipment, consumer antennas (cell phone antennas, PADs, laptop antennas), base station/indoor distribution antennas, smart wearable antennas (smartwatches, TWS headphones), security home antennas, and a variety of wireless data transmission and wireless control of smart devices antennas and so on. Antennas and a variety of wireless data transmission and wireless control of intelligent equipment antennas.

1. Project Commissioning Profile
2. Outline of the report version
3. antenna passive parameters
4. antenna matching changes
5. antenna environment recommendations and improvements
6. To summarize

Project Commissioning Profile

Models	-			
Board type	-			
band and antenna material	The main antenna	frequency band		Material
		2G	-	
		3G	-	
		4G	-	
	other antennas	GPS	1575.42MHZ	
		BT	2400-2500MHZ	
performance requirements				

Outline of the report version

version of the report	Reporting time	The problem addressed by this antenna development, the
V0.1	2024/3/6	Passive First Edition Preliminary Commissioning
V0.2	2024/3/23	metal ring grounded vs. ungrounded passive comparison test data
V0.3	2024/3/25	Addition of passive directional maps

Passive parameter antenna S11

Labeling: yellow waveform if the metal ring is grounded, blue waveform if the metal ring is not grounded

Antenna passive parameter - FS

Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	-2.98	-6.76	21.10%
2410	-2.7	-6.65	21.60%
2420	-2.7	-6.7	21.40%
2430	-2.37	-6.77	21.00%
2440	-2.3	-7.12	19.40%
2450	-2.34	-7.5	17.80%
2460	-2.47	-7.86	16.40%
2470	-3.21	-8.41	14.40%
2480	-3.25	-8.22	15.10%

Antenna passive parameter - ARM

Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	-5.41	-10.93	8.10%
2410	-5.15	-10.78	8.40%
2420	-4.97	-10.75	8.40%
2430	-4.63	-10.75	8.40%
2440	-4.36	-10.99	8.00%
2450	-4.32	-11.23	7.50%
2460	-4.21	-11.45	7.20%
2470	-4.59	-11.81	6.60%
2480	-4.22	-11.45	7.20%

Antenna passive parameter - FS

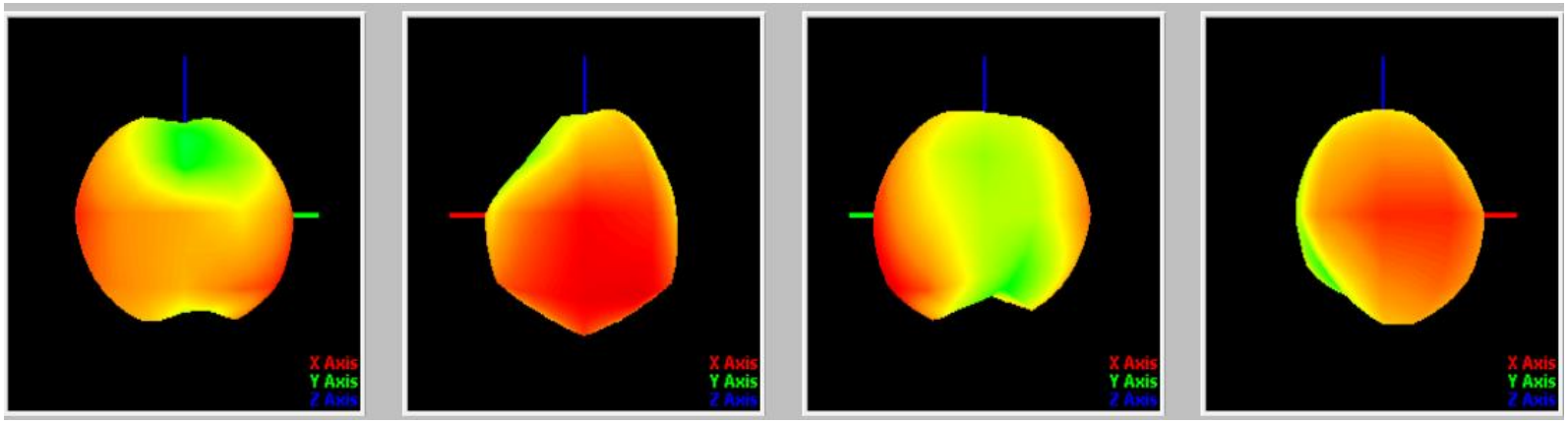
Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
1550	-4.7	-9.1	12.2
1560	-4.8	-9.1	12.1
1570	-4.8	-9.3	12
1580	-4.9	-9.3	11.8
1590	-5.0	-9.3	11.7

Antenna passive parameter - ARM

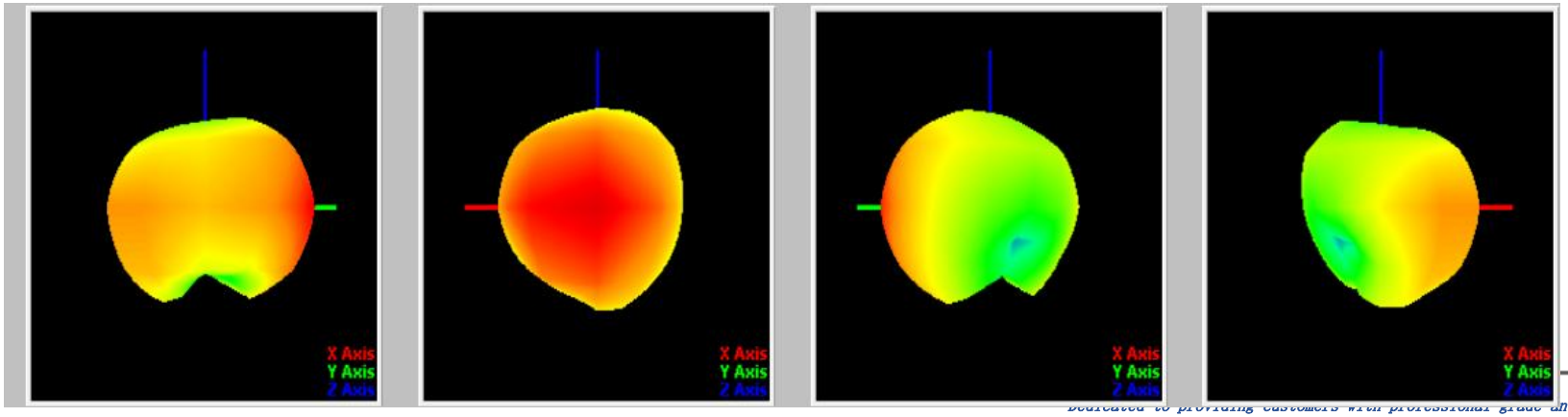
Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
1550	-6.17	-11.62	6.90%
1560	-5.86	-11.45	7.20%
1570	-5.91	-11.36	7.30%
1580	-5.99	-11.38	7.30%
1590	-6.12	-11.54	7.00%

Antenna pattern – FS

GPS

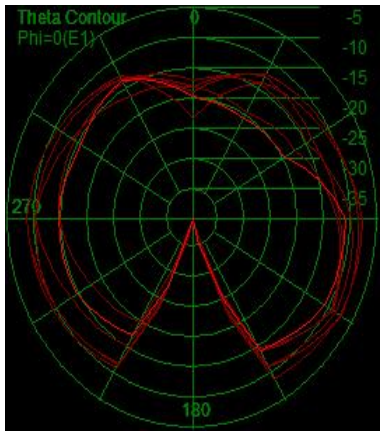


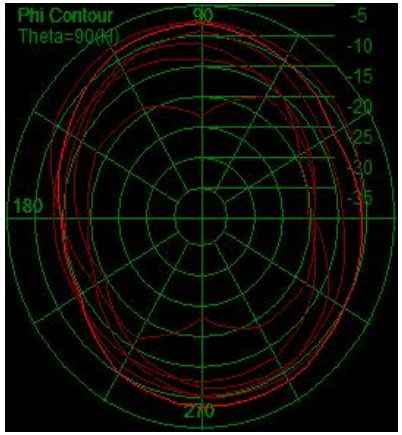
BT

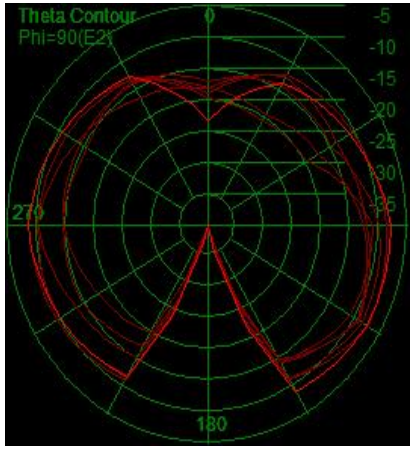


Antenna plan - FS

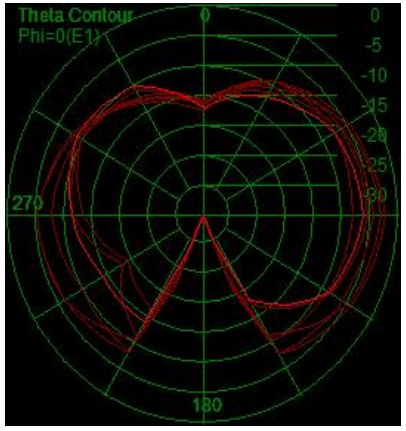
GPS

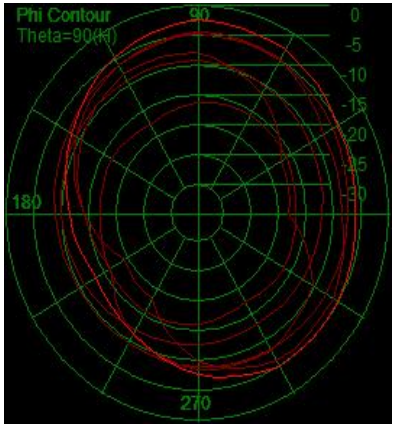


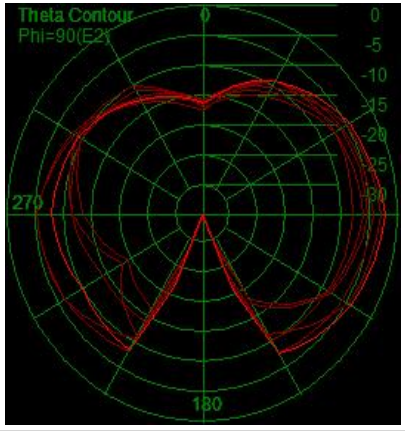




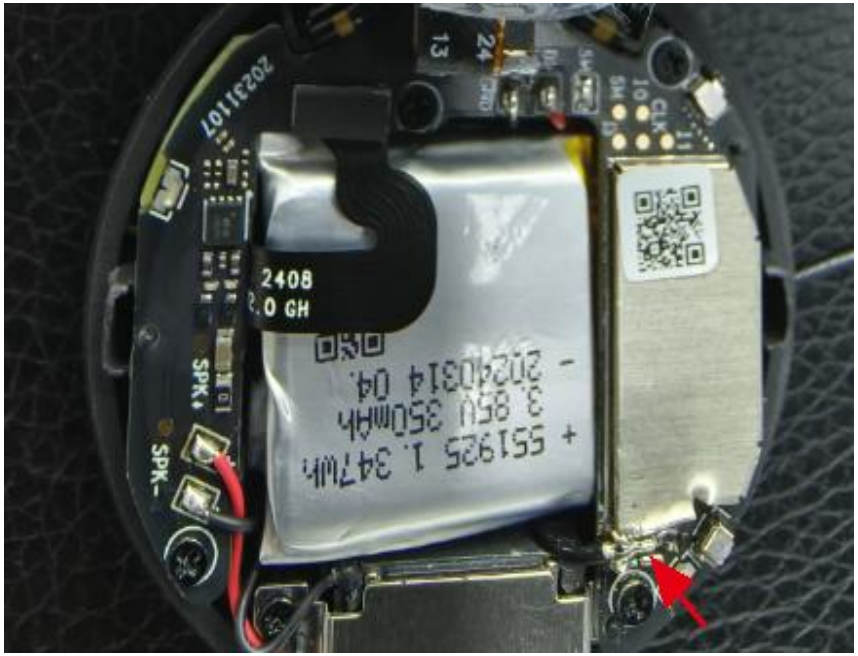
BT







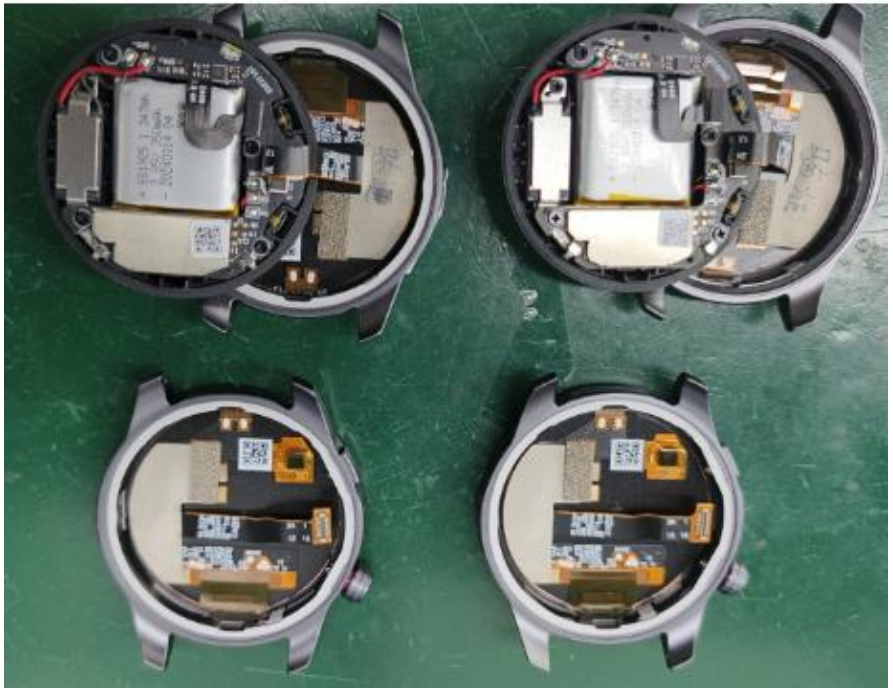
antenna matching changes



The shunt inductance has not been changed here

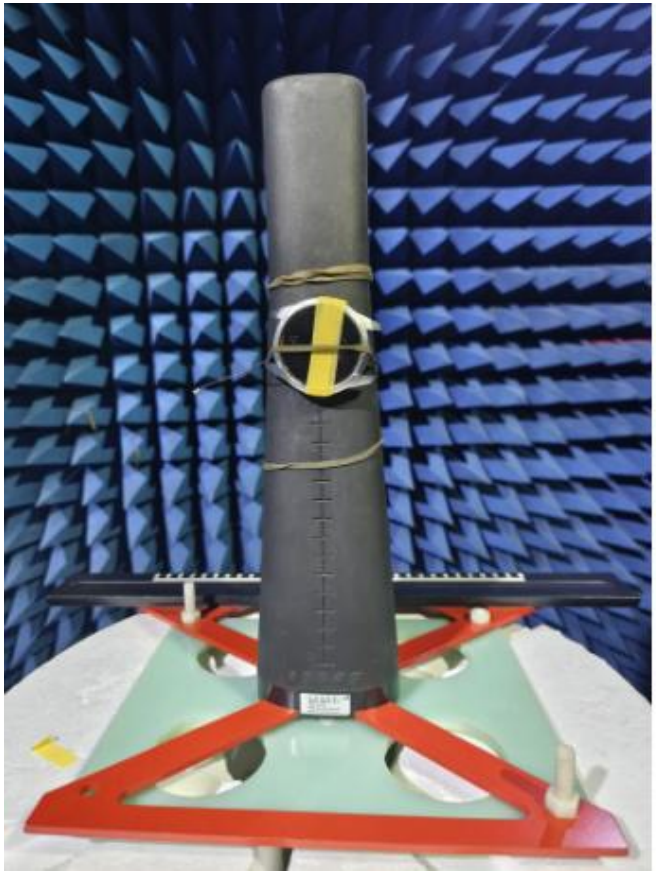
Currently the antenna uses these two shrapnel, matched in series with 0 ohm, ground pin empty sticker

Pictures of antenna prototypes



Compare and contrast grounded and ungrounded metal rings

antenna test environment



Thank you!

Shenzhen Address:4th Floor, Building 2, South Taiyun Chuanggu, Guangming Avenue, Guangming New District, Shenzhen, China

Tel:0755-23984257

Fax:0755-86090455