

Ewei W211 Project

Antenna RF System Development Report

Antenna RF System Development Report

10 Sixun RF:JunJie Xu
Report Version: 20260411 V2

Antenna manufacture: Shenzhen Eview GPS Technology

Address: Rm 201, building 1-A, Nankechuang Yuangu, Dalang, Longhua District, Shenzhen, China



MVG



GTS



GTS



MVG



MVG



MVG

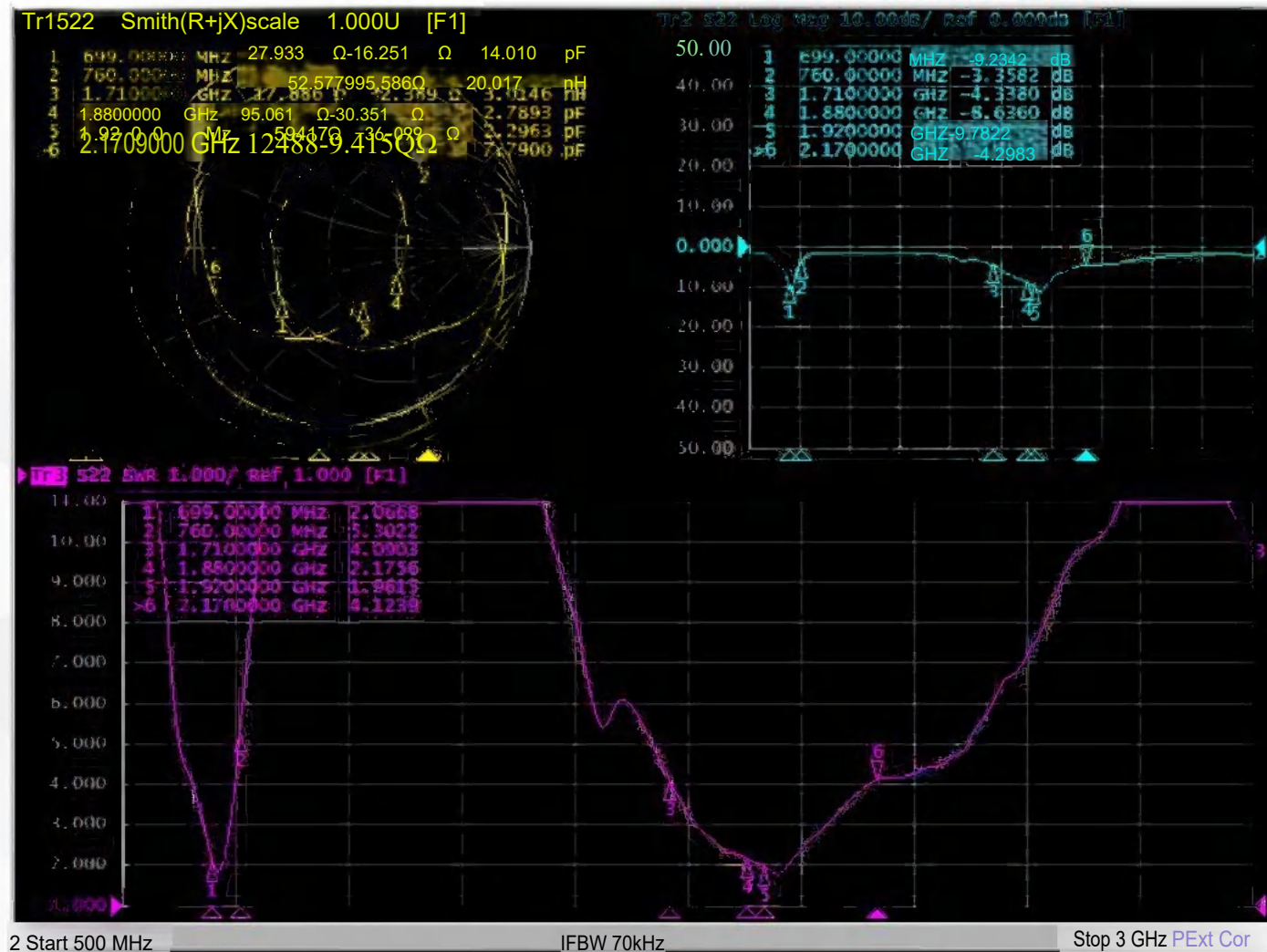
Project Development Overview

Main antenna	Frequency range		Antenna Status	Antenna Type	Design Area	Match Change
	4G	B2/4/12	Hand-made copper-clad antenna	PIFA	Central frame bracket	Have
Other Antennas	WIFI/BT	2.4GHz	Hand-made copper-clad antenna	PIFA	Central frame bracket	Not have
	GPS	1.575GHz	Hand-made copper-clad antenna	PIFA	Central frame bracket	Have
Prototype status	Prototyping device		Environmental Treatment	Have		

Report Version Summary

Edition	Date	Content Overview
V1	20260327	Provide feedback on the initial passive test data for the antenna.
V2	20260411	Feedback on the passive test data after optimizing the low-frequency efficiency of the initial antenna design.

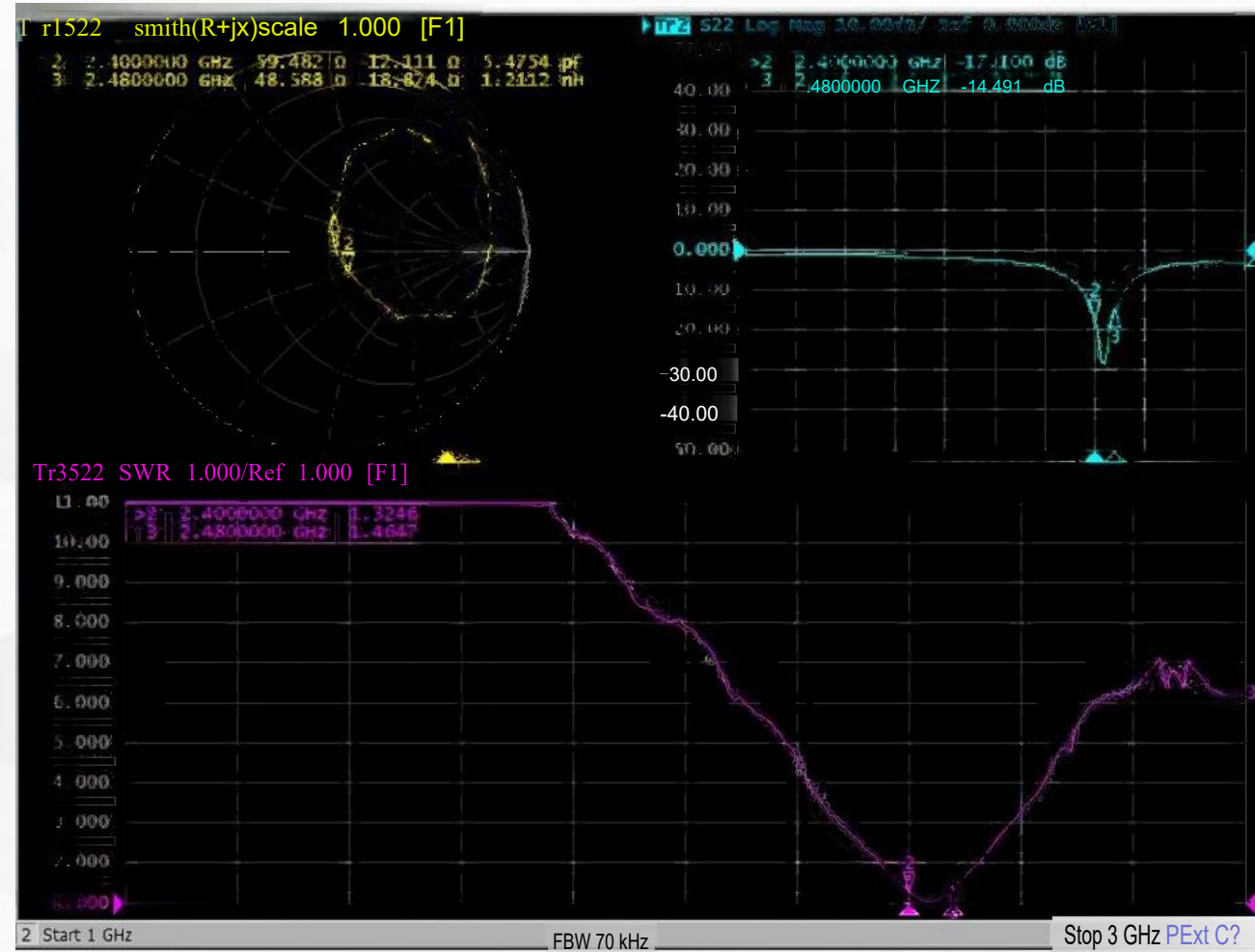
LTE Antenna S-Parameters



Main Antenna Matching Circuit

			Figure number	Match Value
			→ E1	N/A
			E2	N/A
			E3	N/A
			→ E4	0 Ω
			E5	N/A
			E6	N/A
			→ E7	3.6NH

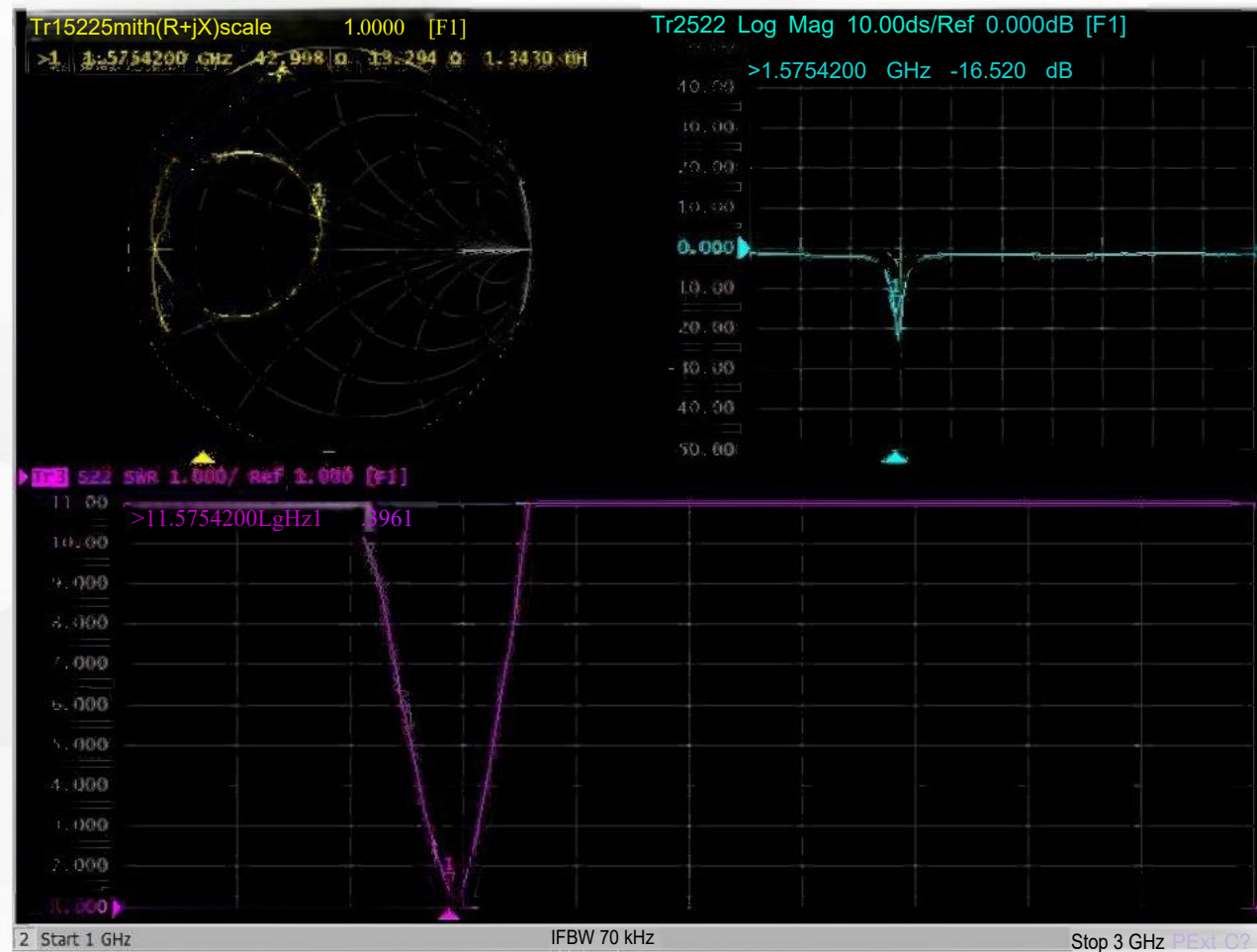
WIFI/BT Antenna S-parameters



WIFI/BT antenna matching circuit

The WIFI Antenna Has Not Been Modified for Antenna Matching.

GPS Antenna S Parameters



GPS Antenna Matching Circuit

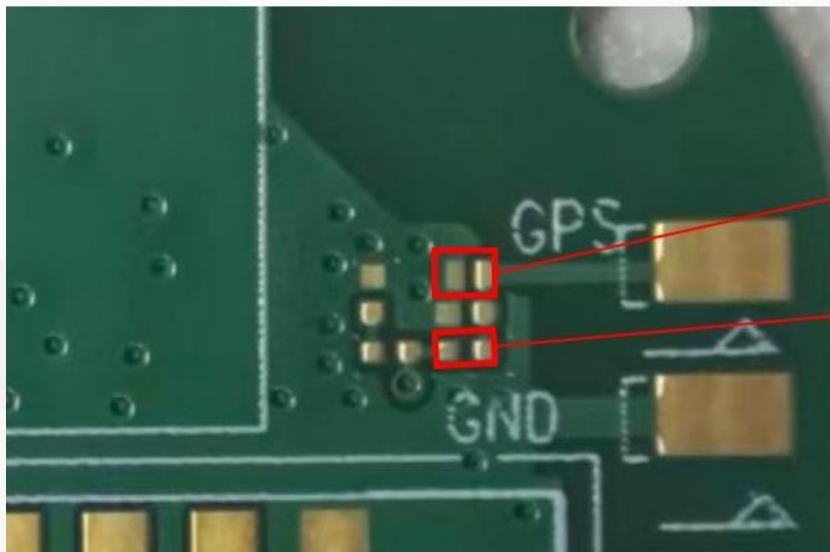


Figure number	Match Value
E1	3.0PF
E2	N/A
E3	0 Ω
E4	N/A
E5	N/A

LTE Antenna Passive Efficiency (arm)

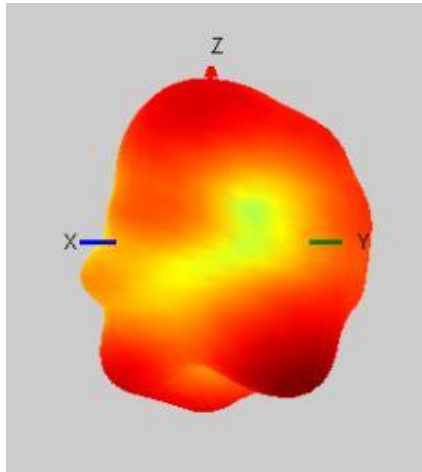
Main: Matching string 0Q; Gnd: 3.6NH; Parasitic: N/A											
Frequency point MHz	Productiveness dB	Gain dBi	Productiveness %	Frequency point MHz	Productiveness dB	Gain dBi	Productiveness %	Frequency point MHz	Productiveness dB	Gain dBi	Productiveness %
700	-12.7	-8.9	5.4	1710	-10.6	-6.1	8.7	2000	-7.3	-2.7	18.6
710	-12.5	-8.9	5.6	1720	-10.3	-5.9	9.3	2010	-7.4	-2.7	18.3
720	-12.4	-8.9	5.8	1730	-10.0	-5.6	9.9	2020	-7.5	-2.7	17.8
730	-12.5	-9.2	5.6	1740	-9.9	-5.4	10.4	2030	-7.6	-2.6	17.4
740	-12.7	-9.6	5.4	1750	-9.7	-5.3	10.8	2040	-7.7	-2.6	17.0
750	-12.9	-9.5	5.1	1760	-9.5	-5.0	11.2	2050	-7.8	-2.5	16.6
760	-13.3	-9.6	4.7	1770	-9.3	-4.9	11.8	2060	-7.8	-2.5	16.6
770	-13.7	-10.0	4.3	1780	-9.1	-4.6	12.2	2070	-7.7	-2.4	16.9
780	-14.0	-10.4	4.0	1790	-9.1	-4.7	12.4	2080	-7.7	-2.3	17.2
790	-14.4	-11.0	3.7	1800	-8.9	-4.5	12.9	2090	-7.6	-2.3	17.6
800	-14.8	-11.9	3.3	1810	-8.6	-4.2	13.7	2100	-7.6	-2.3	17.6
AVG	-13.3	-9.8	4.8	1820	-8.5	-4.2	14.1	2110	-7.6	-2.4	17.4
				1830	-8.4	-4.0	14.6	2120	-7.6	-2.4	17.3
				1840	-8.2	-4.0	15.0	2130	-7.7	-2.5	17.1
				1850	-8.0	-3.8	15.7	2140	-7.7	-2.5	17.1
				1860	-7.9	-3.6	16.4	2150	-7.7	-2.5	17.0
				1870	-7.7	-3.6	16.9	2160	-7.7	-2.5	17.1
				1880	-7.6	-3.5	17.2	2170	-7.7	-2.6	17.1
				1890	-7.6	-3.5	17.4	AVG	-7.6	-2.5	17.3
				1900	-7.5	-3.2	17.9				
				1910	-7.2	-3.0	18.9				
				1920	-7.3	-2.9	18.7				
				1930	-7.3	-2.8	18.6				
				1940	-7.2	-2.5	18.9				
				1950	-7.2	-2.4	19.0				
				1960	-7.1	-2.1	19.5				
				1970	-7.1	-2.2	19.4				
				1980	-7.2	-2.2	19.2				
				1990	-7.1	-2.3	19.3				
				AVG	-8.3	-3.8	15.2				

Passive Efficiency of Each Antenna (arm)

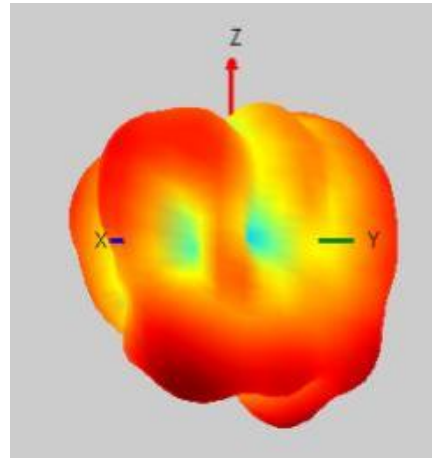
GPS: Matched Parallel 3PF			
Frequency point MHz	Productiveness dB	Gain dBi	Productiveness %
1570	-10.3	-6.0	9.3
1571	-10.3	-6.0	9.3
1572	-10.3	-6.0	9.3
1573	-10.3	-6.0	9.3
1574	-10.3	-6.0	9.3
1575	-10.3	-6.0	9.3
1576	-10.3	-6.0	9.3
1577	-10.3	-6.1	9.2
1578	-10.3	-6.0	9.3
1579	-10.3	-6.1	9.3
1580	-10.3	-6.1	9.3
AVG	-10.3	-6.0	9.3

WIFI/BT: Matching string 0Ω			
Frequency point MHz	Productiveness dB	Gain dBi	Productiveness %
2400	-6.1	-0.9	24.7
2410	-6.1	-0.9	24.7
2420	-6.1	-0.9	24.6
2430	-6.2	-1.0	24.1
2440	-6.3	-1.1	23.4
2450	-6.4	-1.2	23.0
2460	-6.5	-1.3	22.4
2470	-6.7	-1.5	21.5
2480	-6.8	-1.5	21.1
2490	-7.0	-1.7	20.1
2500	-7.1	-1.9	19.4
AVG	-6.5	-1.3	22.6

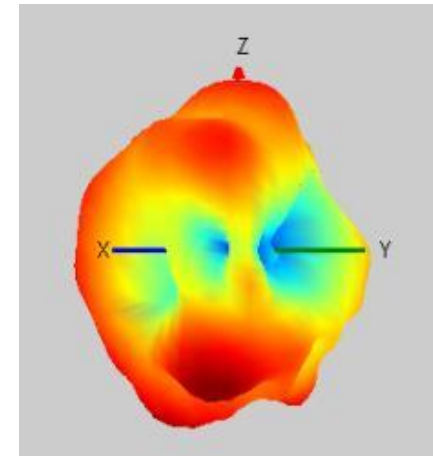
Band 2



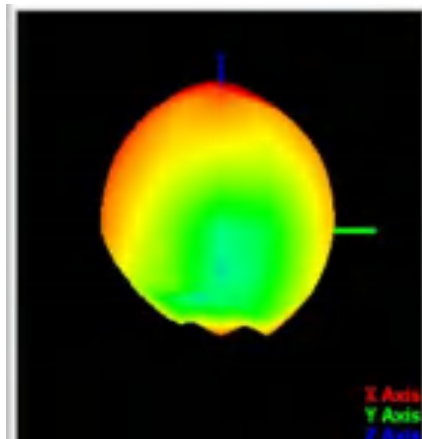
Band 4



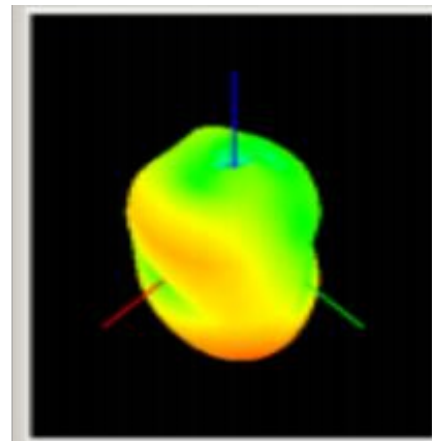
Band 12



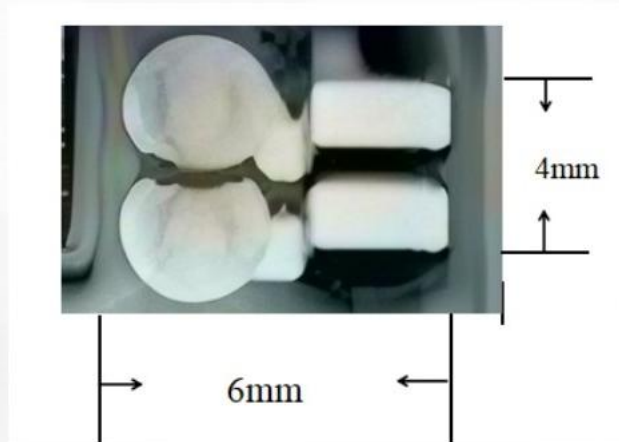
BT/2.4G WiFi



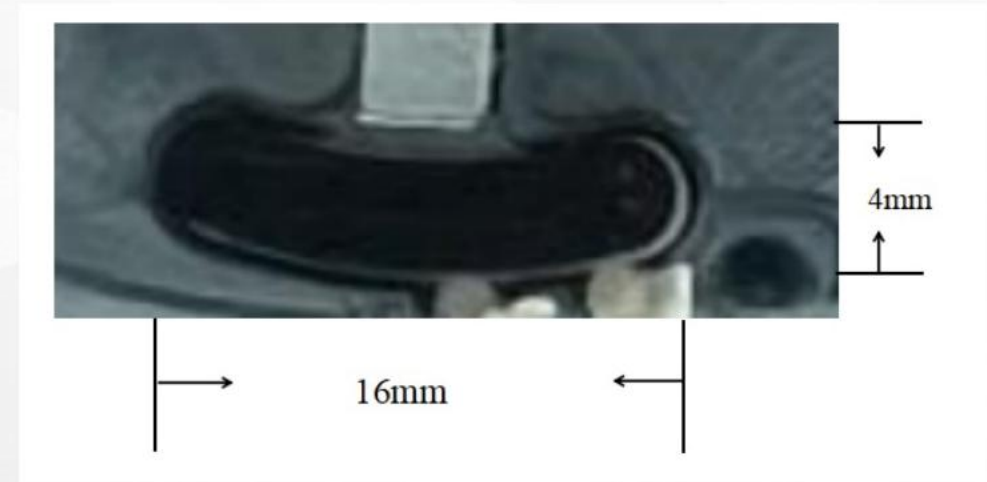
GPS



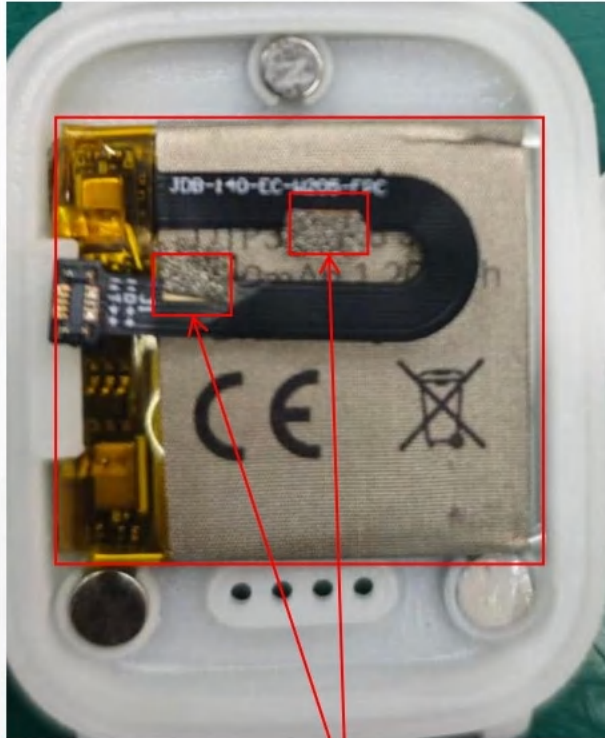
BT/2.4G WiFi antenna



LTE ANTENNA



Environmental Treatment Description



Note 1: The battery body is wrapped with conductive fabric and grounded to the motherboard; the two exposed copper areas on the battery's FPC are grounded using conductive sponge.

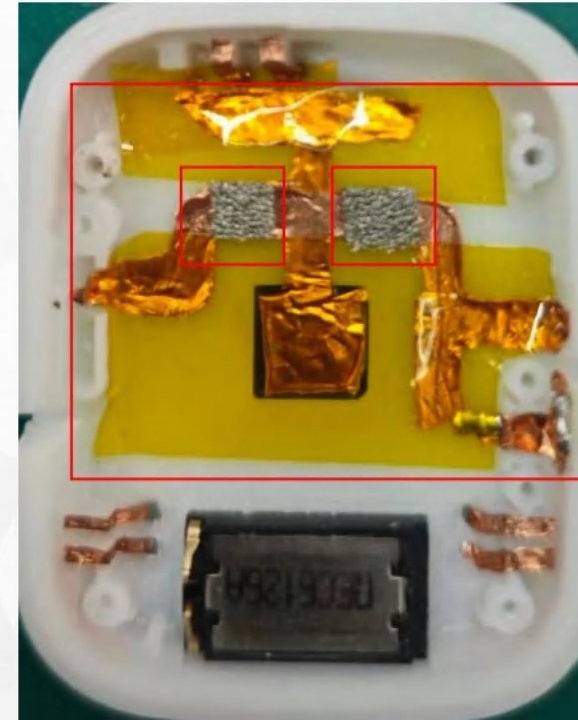


Note ②: The motherboard shielding cover incorporates a conductive sponge for battery grounding, while the copper layer simulates an FPC cable and is soldered onto the motherboard.

Environmental Treatment Description



Note 3: A conductive sponge has been added to the copper exposure area on the motherboard, connecting it to the speaker body's ground terminal.



Note ④: Two additional conductive sponges have been installed at the exposed copper areas on the copper foil simulation FPC board to ground it to the motherboard.