

Specification

Customer Name :Chengdu Heltec Automation Technology Co., Ltd.

Part No. :868Mhz_915Mhz_Helical antenna

Customer P/N :

Manufacturer Name :Chengdu VAE Communication Co., Ltd

Manufacturer Addr.: Room 201-03, 2F, Unit 1, Bldg IC Park, No. 2 Heshun Rd, High-Tech West Zone, Chengdu, Sichuan, China

Manufacturer P/N :671220600501

Made	Check	Approve
Songhao Lin	Guo Dai	Wei Liu
Sample Date	Version	
2025.08.05	V1	

Revise Record

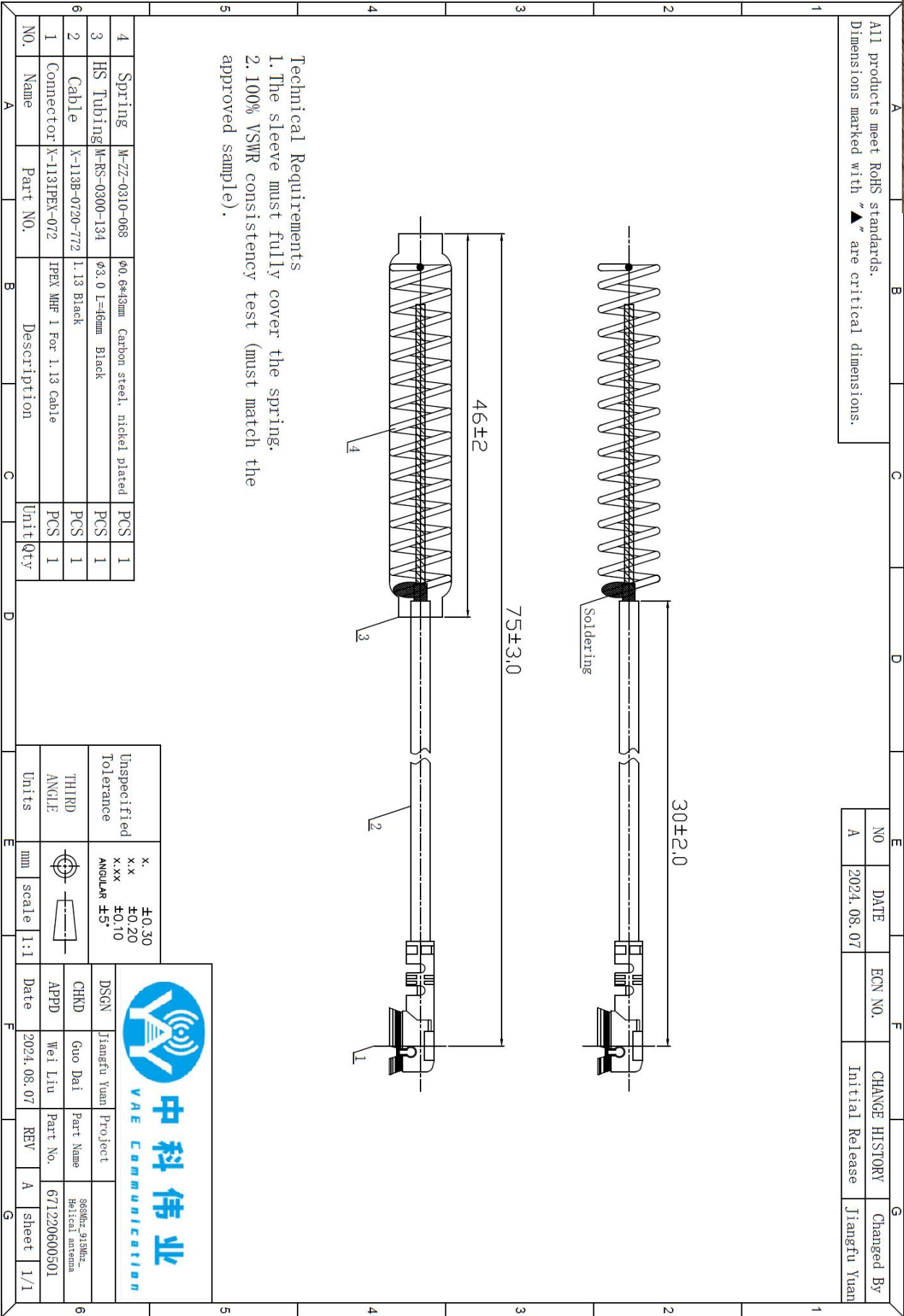
Version	Record of change	Made	Approve	Date
V1	Initial Release	Songhao Lin	Wei Liu	2025.08.05
Note: 1. Rersion will be updated if any changes (V1 updated as V2、V3...)				

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1. 2D Drawing & Product Picture



2. Antenna Specification

2.1. Electrical Specification

Electrical Specification	
Operation Frequency (MHz)	860-930
Impedance (Ohms)	50
VSWR	860-930 $\leq$ 2.0
Efficiency (%)	860-930: 48.12
Peak Gain (dBi)	860-930: 3.01
Radiation Properties	Omnidirectional
Polarization	Vertical Polarization
Max input Power (Watts)	50

2.2 Mechanical Parameter

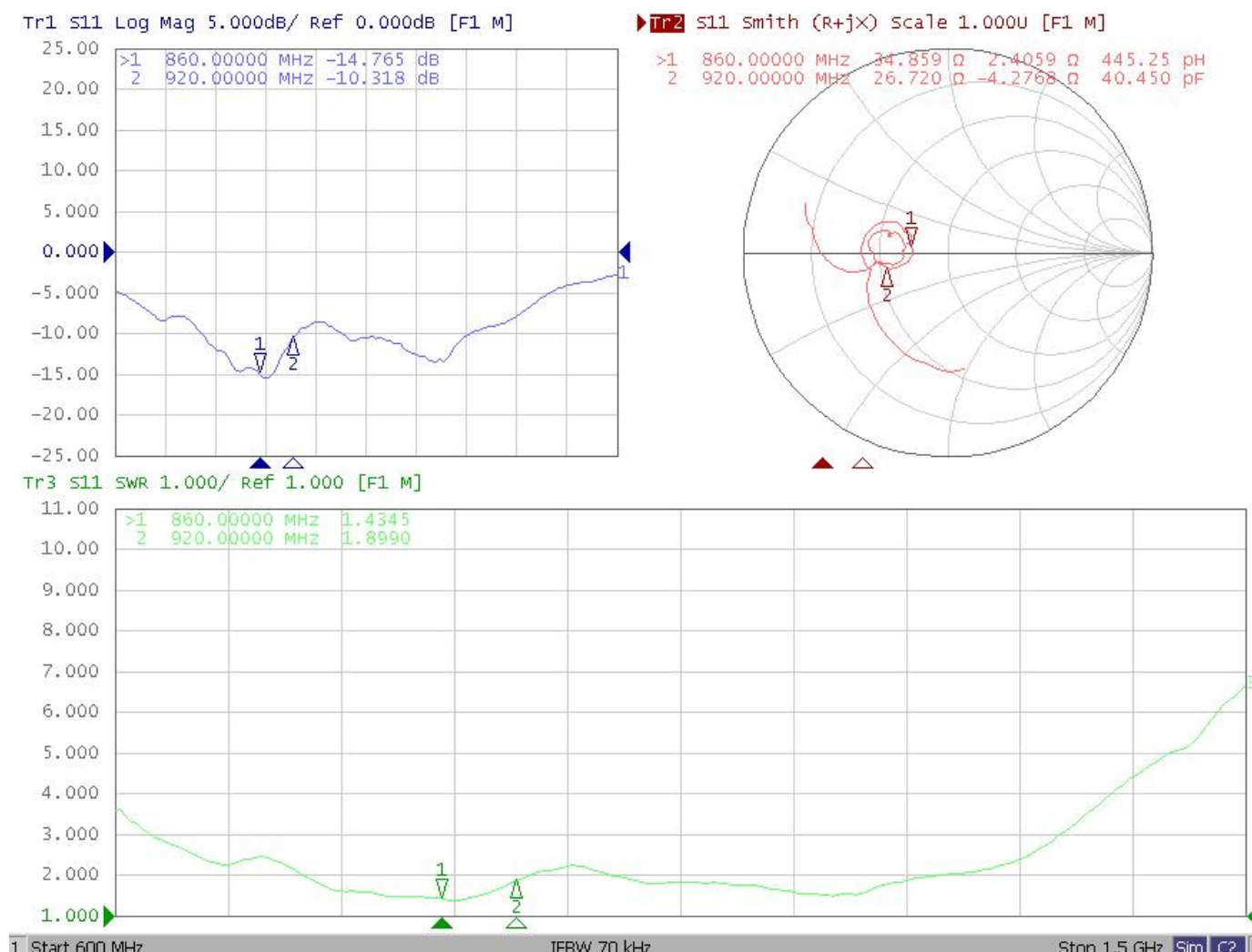
Mechanical Parameter	
Structure Type	Helical antenna
Dimension	L75, 30, 46MM
Material	Carbon steel, nickel plated
Salt Spray	48H

2.3 Environment Specification

Environment Specification	
Operating temperature	-40°C ~ +80°C
Storage temperature	-40°C ~ +80°C

3. Passive Test Data

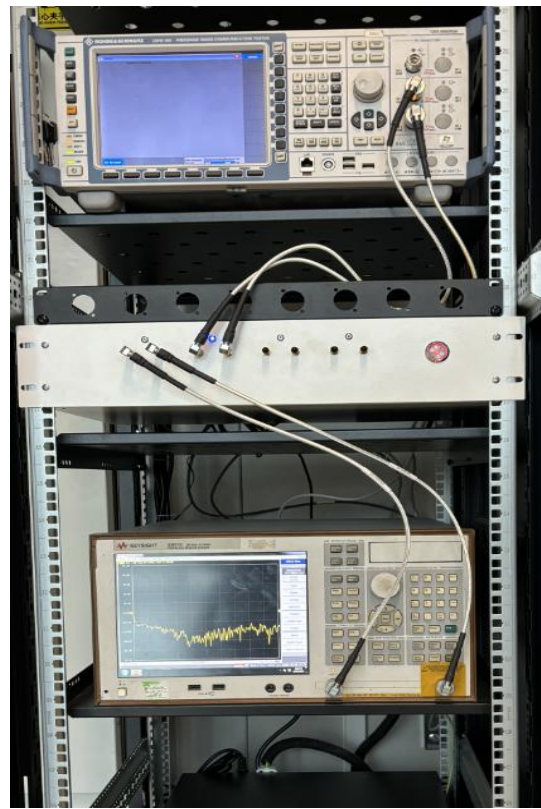
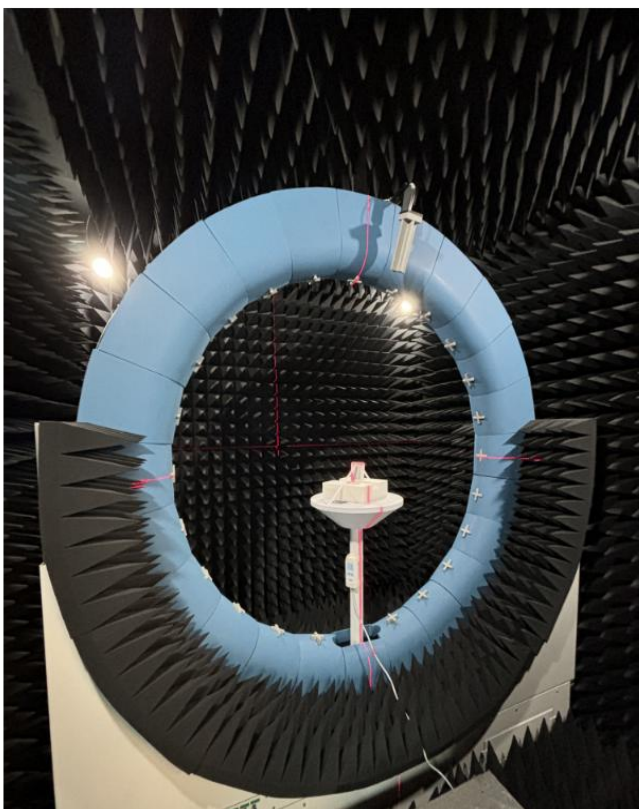
3.1. VSWR / Smith chart / Return loss



860MHz-930MHz

3.2 Test System

Multi-probe spherical near-field anechoic chamber test system that meets the relevant international regulations such as CTIA and 3GPP, a multi-functional wireless test system with excellent performance in radio frequency, absorption, and mechanical structure. The system has high integration and reliability. It supports pendulum sampling frequency-doubling technology and can be adapt to the testing needs of small multi-lobed antennas. It is suitable for the wireless testing of small high-integration electronic devices such as IoT devices, drone modules, car machine modules, smart home devices, and mobile communication equipment. It can also meet the testing needs of ceiling antennas, miniature base stations, and embedded routers, etc., which have high dependence on the passive performance of antennas.

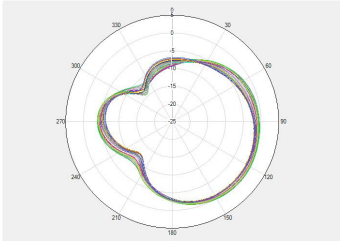
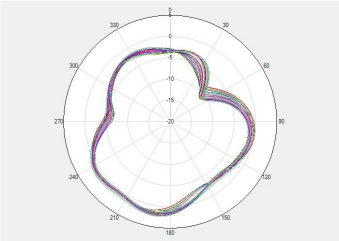
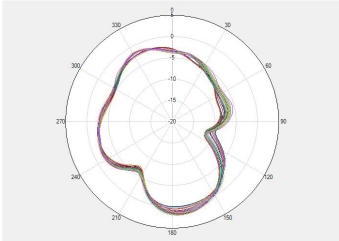


Supported Band	600MHz-9GHz (Expand. 12GHz)
Test Item	Passive: Gain/Efficiency/2D/3D radiation/non-circularity/axial ratio... Active: TRP/TIS/EIRP/EIS
Test Standard	2G/3G/4G/5G/Wi-Fi b/g/n/a/ac/ax/BT /NB-IOT /Cat-M (eMTC)/GPS/BEIDOU/GLONASS/ZigBee/LoRa(Non-signaling)...

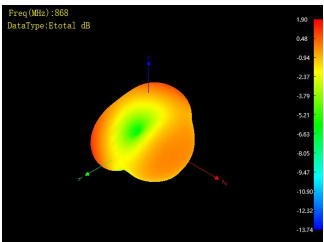
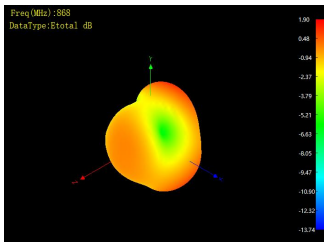
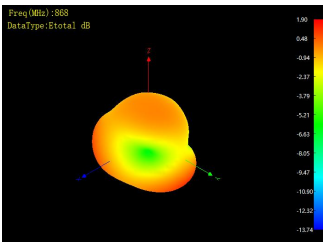
3.3. Efficiency & Gain

Frequency(MHz)	Gain(dBi)	Efficiency(%)
860	1.9	52.48
862	1.84	51.52
864	1.86	51.05
866	1.9	51.29
868	1.91	51.52
870	1.85	50.58
872	2.09	51.52
874	2.23	47.32
876	2.53	47.97
878	2.73	49.55
880	3.01	52.12
882	2.81	50.35
884	2.7	48.64
886	2.68	47.86
888	2.66	47.42
890	2.49	46.13
892	2.6	46.34
894	2.6	45.92
896	2.45	44.98
898	2.31	44.57
900	2.39	46.13
902	2.39	46.99
904	2.37	47.32
906	2.33	47.21
908	2.3	46.88
910	2.22	46.03
912	2.21	46.03
914	2.21	46.45
916	2.15	46.45
918	2.06	46.34
920	2.15	46.77
922	2.27	46.99
924	2.15	46.67
926	2.09	46.56
928	2.01	45.81
930	2.1	46.34

3.4. 2D Ridiation Model

Frequency(MHz)	XOY-plane	XOZ-plane	YOZ-plane
860-930			

3.5. 3D Ridiation Model

Frequency(MHz)	XOY-plane	XOZ-plane	YOZ-plane
868			
916	