

SPECIFICATION

315MHZ(弹簧)天线 Antenna Specification

Product name	315MHz Antenna		
Product model	6.129-1801541-00	Ver	A1
Manufacturer	Zhejiang Bernal Electric Co., Ltd		
Address: No. 188, Punan 5th Road, Economic Development Zone, Yueqing City, Zhejiang Province			
R F Test	Kets Wei		
Design	XiaoXia		
Approved	Lei	DATA	2023-03-27

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1. Antenna Picture



2. Antenna Parameters

Parameters			
产品名称(Name)	315 Antenna	产品型号(Model Type)	弹簧天线7313BTX
电 性 能 指 标 (Electrical Specifications)			
频率范围 (Frenquency Range)	315MHz	极化方式 (Polarization)	垂直 (Vertical)
输入阻抗(Impedance)	50 Ω	辐射方向	All directional
驻波比 (VSWR)	≤ 1.8	功率容量(Power)	1W
增益(Gain)	1dBi	带宽 (Bandwidth)	1Mhz
机 械 指 标 (Mechanical Specifications)			
尺寸 (Dimensions)	31mm	天线颜色(Chassis Color)	红色
连接器型号 (Connector)	焊接 (Solder)		
天线材料 (Chassis Material)	AWG #24 410mm 红色单芯		
工作温度 (Working Temperature)	-40℃ -+85℃	存放温度 (Limit Temperature)	-40℃ -+85℃

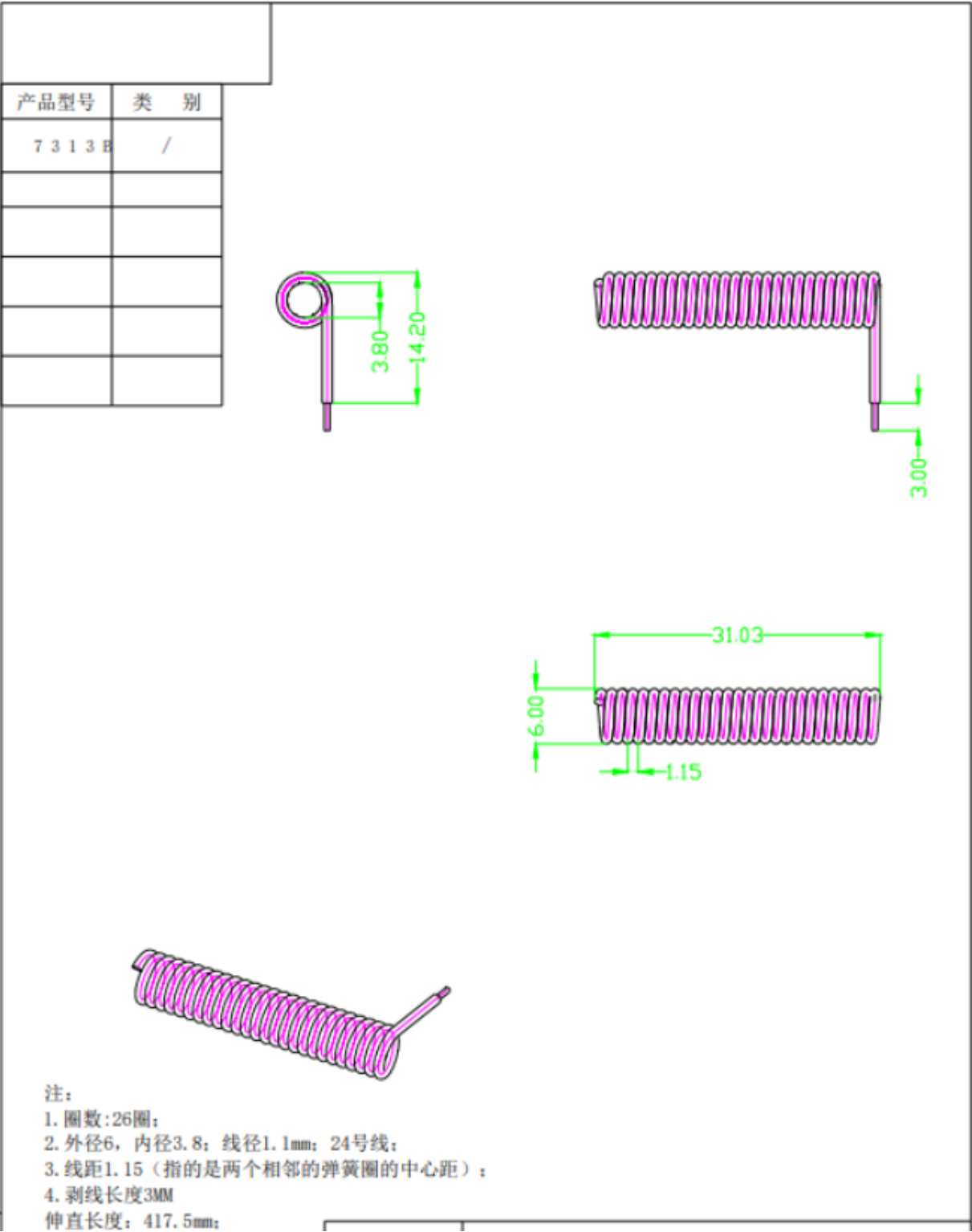
3. Antenna S11



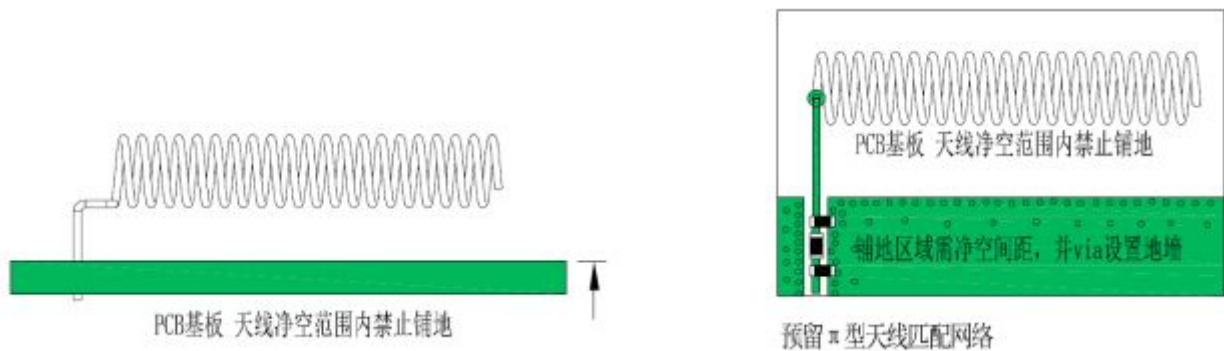
4. Antenna Gain

315MHZ		
Freq (MHz)	Effi (%)	Gain (dBi)
315	22.12	1

5. Antenna Dimensions



6. Antenna Design Apply



Note: In the antenna design process, it is necessary to combine the product shape structure, the position of the RF module signal input and output interface, and the location of the interference source inside the product to determine the placement position, angle, spacing from the floor, height from the PCB substrate, etc. Reserve a π -type network to match the antenna, and be sure to provide a complete set of product shells and internal PCBA function boards when debugging the antenna, and calculate the external interference sources and parasitic capacitance into the matching, so that the antenna can achieve the best performance indicators and work efficiency. The image on the left is a side view and the image on the right is a top view. The PCB trace reference of the matching network is 0.5mm line width, and the floor reference on both sides of the network is 0.35mm spacing to maintain good impedance characteristics.

7. Test Condition

Test Item	Test conditions	Specification
Storage environment	The temperature, humidity, and barometric pressure are tested without specifying as follows: 1. The temperature is $-30^{\circ}\text{C}\sim 80^{\circ}\text{C}$ 2. Relative humidity is 45%-85% 3. The air pressure is 86kpa-106kpa	Normal electrical and mechanical properties
High and low temperature test	5 cycles between 70°C and 40°C , then under normal conditions 1-2H, check the appearance quality.	The dimensions shall meet the regulations and shall meet the requirements in mechanical and electrical properties
Constant humid heat	Relative humidity $95\pm 3\%$, test temperature: 40°C . After continuous 2H action, the electrical properties are measured within 5min after the sample is taken out, and the sample is 1-2H under normal conditions to check the appearance quality	The dimensions shall meet the regulations and shall meet the requirements in mechanical and electrical properties
Vibration test	Vibration frequency range: 10-55HZ, displacement amplitude: 0.35MM, acceleration amplitude: 50.0M/s, frequency sweep cycles: 30 times	Normal electrical and mechanical performance
Drop test	Free fall 3 times from a height of 1M in mutually perpendicular axial directions	Normal electrical and mechanical performance