



70. Acceptance of the receiving coil antenna

project name :	70 receiving coil	class :	/		
Internal part number:	393-024-ON-A-02	version number :	R:A		
material code :	/	date :	2024.10.29		
SHENZHEN FREQUENCY EXTENSION IOT TECHNOLOGY CO., LTD. Address: 411, Building A, Jinbolong Science and Technology Innovation Park, Longhua District, Shenzhen, China					
examine and verify	radio freque ncy		design	radio frequenc y	Li Donghai
	engine ering				
	charact er				
	projec t			engineeri ng	Zhong Fangmin
	vocati onal work				
date :					
affirm	radio frequency				
	engineering				
remarks					

We statement that All measurements were performed radiated and therefore additional antenna gain documentation is not required.

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The company reserves all rights to interpret its contents.

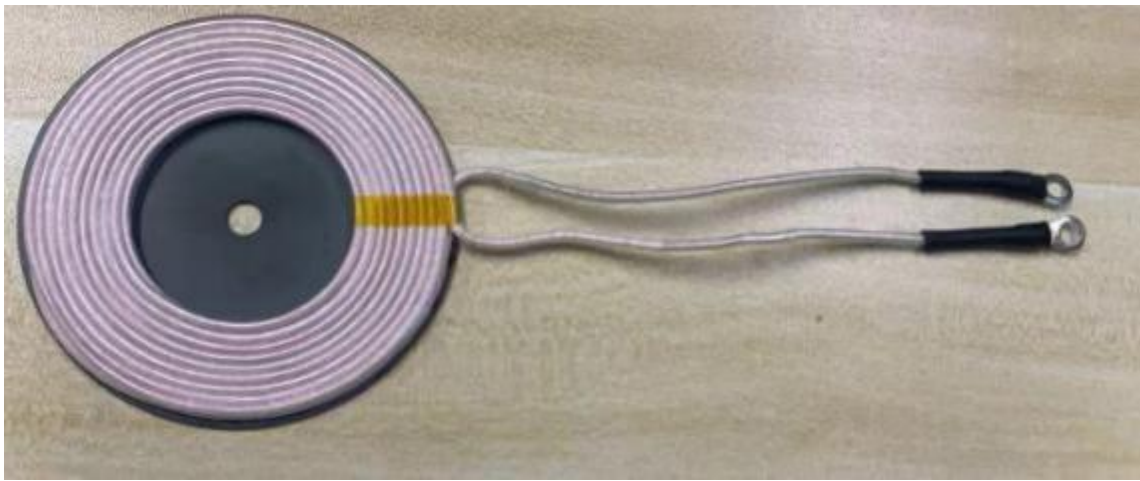


catalogue

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1 finished product image





test macro

Test System

SATIMO , Agilent E5071C , Anristu MT8820C , CMW500





2 Product Features

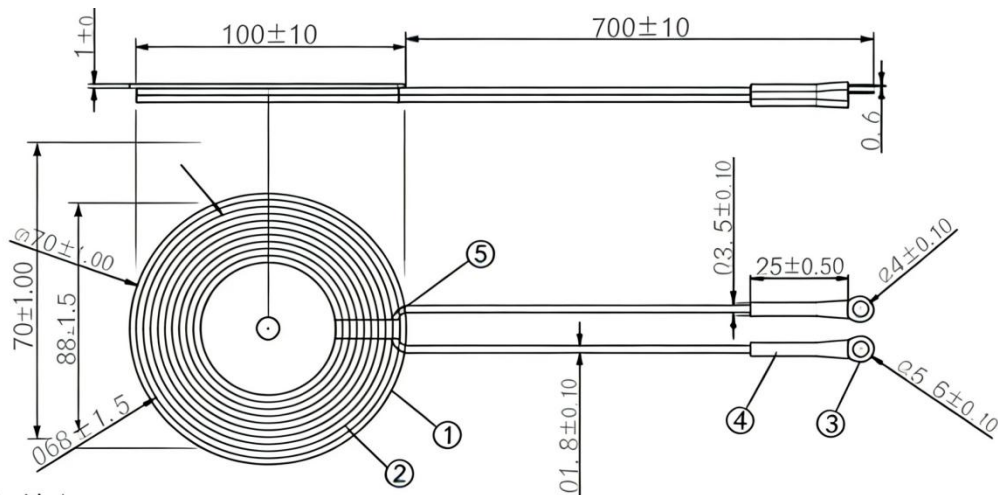
1. The standing wave is good in all frequency bands.
2. The material is ferrite with wire-wrapped conductors, ensuring stable performance.

3 Performance parameters

Winding method: R winding	Wire: BT stranded wire	Number of turns: 19ts
Wire diameter: 0.08*280p	Inductance: 33.5±10% uH	Test frequency: 100KHZ/1V
Disk: 70*5.5*1.0h	Material of magnetic disk: ferrite hard magnet	Disc thickness: 1.0±0.1mm
The thickness of coil and magnetic sheet is 5.0±0.15 mm.	DCR:41±10%MΩ	P / N (Part Number)
	Q value 104±10%	client, custom, customer, consumer
	Date: 2024-10-28	Name: 70 Receiving Coil



4.2D graph



are key dimensions;

1. Dimensions marked with *
2. All components should be flat and clean after assembly, without defects, dirt, scratches, or deformation;
3. Terminal arrangement must match our company's inspection and testing fixtures;
4. Welded with environmentally friendly tin wire, complying with the latest ROHS standards;

Shenzhen Tuopin IoT Technology Co., Ltd.							
Third Angle Projection				Project	Name	H5310X2	日期
0-3	29.00	+	0.01	Product	Name Receiving Coil	Assembly	2024.10.19
3-20	29.00	○	0.01				设计
20-31	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
31-32	29.00	○	0.02				2024.10.15
32-33	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
33-34	29.00	○	0.02				2024.10.15
34-35	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
35-36	29.00	○	0.02				2024.10.15
36-37	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
37-38	29.00	○	0.02				2024.10.15
38-39	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
39-40	29.00	○	0.02				2024.10.15
40-41	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
41-42	29.00	○	0.02				2024.10.15
42-43	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
43-44	29.00	○	0.02				2024.10.15
44-45	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
45-46	29.00	○	0.02				2024.10.15
46-47	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
47-48	29.00	○	0.02				2024.10.15
48-49	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
49-50	29.00	○	0.02				2024.10.15
50-51	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
51-52	29.00	○	0.02				2024.10.15
52-53	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
53-54	29.00	○	0.02				2024.10.15
54-55	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
55-56	29.00	○	0.02				2024.10.15
56-57	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
57-58	29.00	○	0.02				2024.10.15
58-59	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
59-60	29.00	○	0.02				2024.10.15
60-61	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
61-62	29.00	○	0.02				2024.10.15
62-63	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
63-64	29.00	○	0.02				2024.10.15
64-65	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
65-66	29.00	○	0.02				2024.10.15
66-67	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
67-68	29.00	○	0.02				2024.10.15
68-69	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
69-70	29.00	○	0.02				2024.10.15
70-71	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
71-72	29.00	○	0.02				2024.10.15
72-73	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
73-74	29.00	○	0.02				2024.10.15
74-75	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
75-76	29.00	○	0.02				2024.10.15
76-77	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
77-78	29.00	○	0.02				2024.10.15
78-79	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
79-80	29.00	○	0.02				2024.10.15
80-81	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
81-82	29.00	○	0.02				2024.10.15
82-83	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
83-84	29.00	○	0.02				2024.10.15
84-85	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
85-86	29.00	○	0.02				2024.10.15
86-87	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
87-88	29.00	○	0.02				2024.10.15
88-89	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
89-90	29.00	○	0.02				2024.10.15
90-91	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
91-92	29.00	○	0.02				2024.10.15
92-93	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
93-94	29.00	○	0.02				2024.10.15
94-95	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
95-96	29.00	○	0.02				2024.10.15
96-97	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
97-98	29.00	○	0.02				2024.10.15
98-99	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
99-100	29.00	○	0.02				2024.10.15
100-101	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
101-102	29.00	○	0.02				2024.10.15
102-103	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
103-104	29.00	○	0.02				2024.10.15
104-105	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
105-106	29.00	○	0.02				2024.10.15
106-107	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
107-108	29.00	○	0.02				2024.10.15
108-109	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
109-110	29.00	○	0.02				2024.10.15
110-111	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
111-112	29.00	○	0.02				2024.10.15
112-113	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
113-114	29.00	○	0.02				2024.10.15
114-115	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
115-116	29.00	○	0.02				2024.10.15
116-117	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
117-118	29.00	○	0.02				2024.10.15
118-119	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
119-120	29.00	○	0.02				2024.10.15
120-121	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
121-122	29.00	○	0.02				2024.10.15
122-123	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
123-124	29.00	○	0.02				2024.10.15
124-125	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
125-126	29.00	○	0.02				2024.10.15
126-127	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
127-128	29.00	○	0.02				2024.10.15
128-129	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
129-130	29.00	○	0.02				2024.10.15
130-131	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
131-132	29.00	○	0.02				2024.10.15
132-133	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
133-134	29.00	○	0.02				2024.10.15
134-135	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
135-136	29.00	○	0.02				2024.10.15
136-137	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
137-138	29.00	○	0.02				2024.10.15
138-139	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
139-140	29.00	○	0.02				2024.10.15
140-141	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
141-142	29.00	○	0.02				2024.10.15
142-143	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
143-144	29.00	○	0.02				2024.10.15
144-145	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2024.10.15
145-146	29.00	○	0.02				2024.10.15
146-147	29.00	○	0.02	Product	Part Number 373-024-04-A-02	Date	2



5 Environmental Reliability Testing

order number	class	Test parameter indicators	Test status	Conclusion
M1	solderability	Temp: $260\pm 5^{\circ}\text{C}$; 5 seconds	The upper layer is evenly and fully filled.	OK
M2	pull test	holding with individual specification; force applied to the axis of the terminal.	1.Directive DUT specification 2.Frequency TOL. $\leq 5\%$ Complies with the test object specifications. Frequency offset $\leq 5\%$	OK
M3	Torque Test	Hold with individual specification; apply clockwise and counterclockwise torque to the terminal axis.	1.Directive DUT specification 2.Frequency TOL. $\leq 5\%$ Complies with the test object specifications. Frequency offset $\leq 5\%$	N/A
M4	Dimension	Inspection of dimension,color,material,package,surface Process. Check size, color, material, packaging, and surface treatment.	Directive DUT specification: The tested item complies with the specified requirements.	OK
M5	Waterproof	With reference to IEC60529 IP code definition	Directive DUT specification: The tested item complies with the specified requirements.	N/A
M6	Salt Spray salt spray	GB/T2423.17-2008 Test conditions: 24 hours at 35°C , $\geq 95\%$ relative humidity, $\geq 5\%$ saline solution concentration, and $\geq 5\%$ saline humidity.	1.NO Visual Damage 2.Frequency TOL. $\leq 5\%$ No visible surface defects; frequency deviation $\leq 5\%$	OK
M7	Temperature and Humidity Chamber (constant temperature and humidity)	GB/T2423.3-2006 Temp $80^{\circ}\text{C}/12\text{H}$; $-40^{\circ}\text{C}/12\text{H}$; RH : $\geq 90\%$; Time: 24H Test at 80°C for 12 hours, then transfer to -40°C for 12 hours; humidity $\geq 90\%$ for 24 hours.	After 2 Hours Recovery 1.NO Visual Damage 2.Frequency TOL. $\leq 5\%$ No significant adverse effects were observed after 2 hours of recovery; frequency shift $\leq 5\%$	OK
M8	Thermal shock	GB/T2423.22-2008 -40°C (30 minutes) to $+80^{\circ}\text{C}$ (30 minutes); Cycles: 24 Test at -40°C for 30 minutes, then rotate to 80°C for 30 minutes per cycle; total 24 cycles	After 2 Hours Recovery 1.NO Visual Damage 2.Frequency TOL. $\leq 5\%$ No significant adverse effects were observed after 2 hours of recovery; frequency shift $\leq 5\%$	OK
M9	Aging test	GB/T 2423.2-2008 TEMP: 80°C ; Time: 24 hours The temperature was 80°C and the test lasted 24 hours.	After 2 Hours Recovery 1.NO Visual Damage 2.Frequency TOL. $\leq 5\%$ No significant adverse effects were observed after 2 hours of recovery; frequency shift $\leq 5\%$	N/A
M10	High Temp	Temp. $270\pm 10^{\circ}\text{C}$; Times: 120 seconds The temperature was $270\pm 10^{\circ}\text{C}$ and the test time was 120 seconds	NO Visual Damage: No visible signs of damage.	N/A

R1	ROHS	With reference to IEC 62321:2008 and flowchart, the testing process follows the IEC 62321 standard.	Directive RoHS 2011/65/EU complies with the RoHS 2011/65/EU standard	OK
R2	PFOS	Reference to USA EPA 3550C:1996 by LC/MS and test procedure	Directive RoHS 2011/65/EU complies with the RoHS 2011/65/EU standard	OK



6 Material Report BOM

Supplier Material Compositions Table									
Component	Lower-level Material Name	Lower-level Material Code	Lower-level Material Brand	Substances	CAS NO.	Content (%)	Submission Unit	Report Date	Inspection Institution
Upper Clad laminate	SHISEI 313MT	Laijunge Di	Epoxy Resin	25068-25-3	15%		SHABC2001939104	2020.3.2	CTI
			Polyimide Film	25038-81-7	25%				
			Copper Foil	7440-50-8	60%				
			Epoxy Acrylic Derivative Resin	28064-14-4	45%				
Mask Ink	PSM-800FSHEL 6	Youli	Copper Sulfate	7757-43-7	25%		CE/2019/A0149 CE/2019/A0157	2019.10.14	SGS
			Aromatic Solvent	64742-94-5	10%				
			Silicon Dioxide	7631-86-9	5%				
			Dipropylene Glycol Methacrylate	34590-94-8	15%				



7 Packaging Reference Diagram

