



赣州市江元电子有限公司

GANZHOU JOYAR ELECTRONICS CO.,LTD

SPECIFICATION FOR APPROVAL

PROVIDER : All things connected Communications Xiangyang Limited

PART NO : WWXL6009295

PART NO :

DESCRIPTION : 2.4GHZ/L=250mm

DESCRIPTION : Network antenna

DATE : 2024-01-18

Please return to us one copy of "SPECIFICATION FOR APPROVAL"

With your approved signatures

APPROVED SIGNATURES			
CUSTOMER		PROVIDER	
Ganzhou Jiangyuan Electronics Co. , Ltd.		Shenzhen all things connected Communication Co.,Ltd.	
CHOP&SIGNATURES		CHOP&SIGNATURES	Tong Xiaoyan
DATE		DATE	2024.01.18

Ganzhou Jiangyuan Electronics Co. , Ltd

69 Golden Avenue, North District, Ganzhou Ganzhou Economic and Technological Development Zones

Tel: 86-755-26737355 26737352

INDEX

cover.....	1
Index.....	2
1、Product pictures.....	3
2、Test parameters.....	3
3、Antenna test environment.....	4
4、Antenna Passive Parameters:	5
1、VSWR	5
2、Gain and efficiency	5
3、2D/3D pattern	6
4、Active data	6
5、Throughput	7
5、Product features.....	7
6、Drawing.....	8
7、Reliability testing.....	9
1. Environmental experiment	9
2. Salt spray test	10
8、Packing instructions.....	11

Shenzhen all things connected Communication Co.,Ltd.

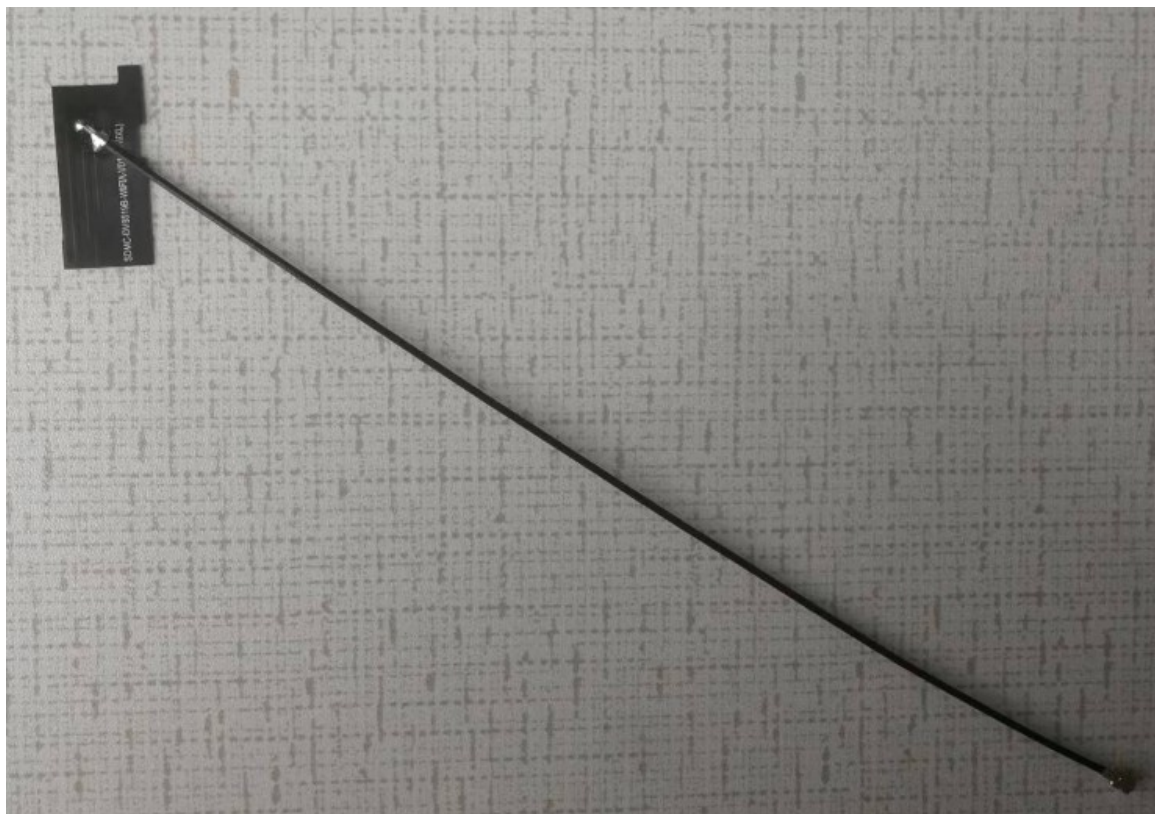
All things connected Communications Xiangyang Limited

Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City

Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

Specification for Antenna

1、Product pictures



2、Test parameters

Name Built-in antenna (WWXL6009295)		ModelType	
ELECTRICAL SPECTFICATIONS		MECHANICAL SPECTFICATIONS	
FrenquencyRange 2400-2500MHz		Dimensions	27.5*12*0.2
Impedance	50 Ω	Connector	IPEX
VSWR	≤ 3.5	linelength	1.13 Black 250 $\pm$ 3mm
Gain	1.03dBi	WorkingTemperature	-45 $^{\circ}$ C - +85 $^{\circ}$ C
Polarization	linear Vertical	Limit Temperature	-45 $^{\circ}$ C - +85 $^{\circ}$ C
Radiation	Omnidirectional		

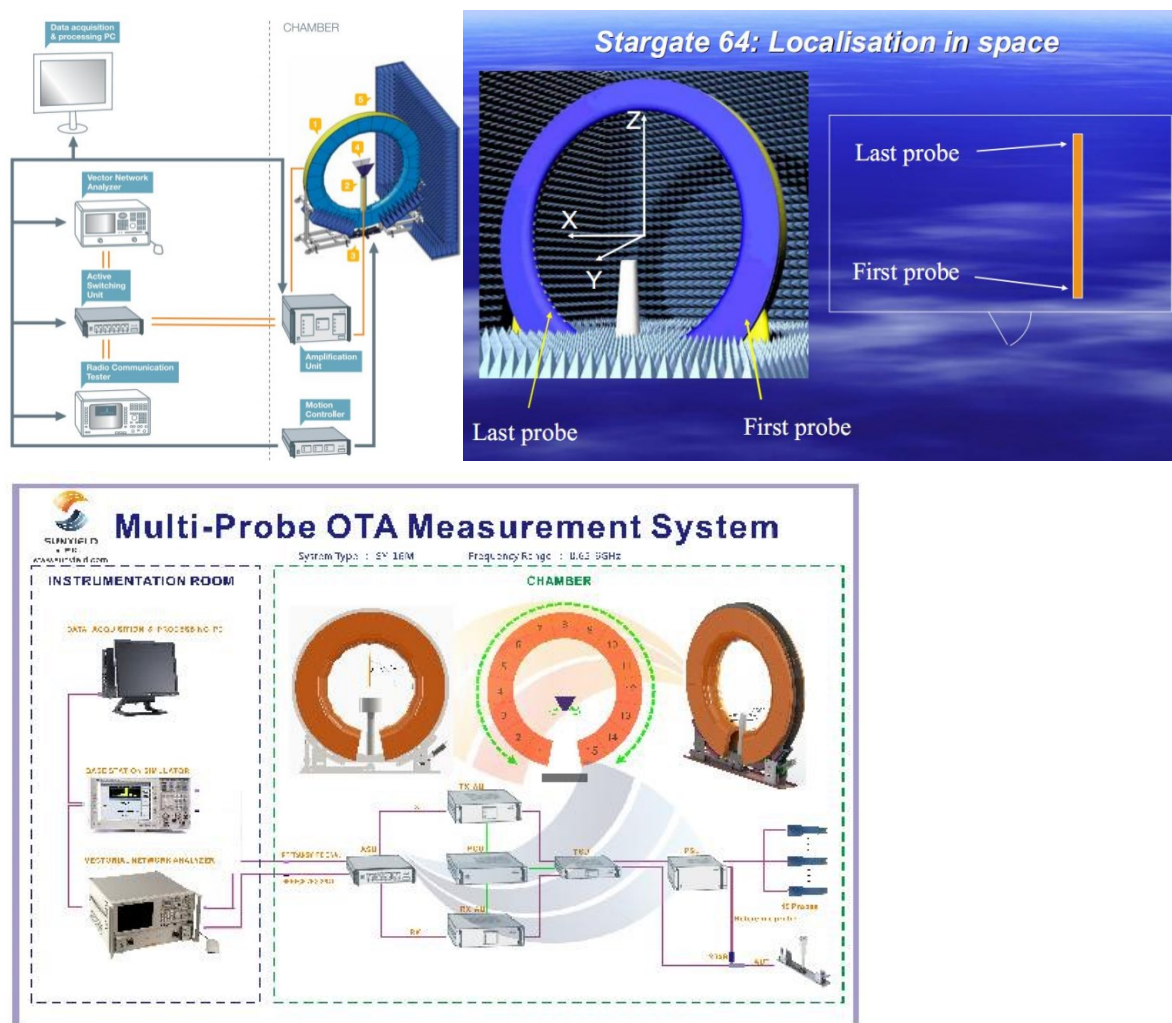
Shenzhen all things connected Communication Co.,Ltd.

All things connected Communications Xiangyang Limited

Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City

Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

3、Antenna test environment

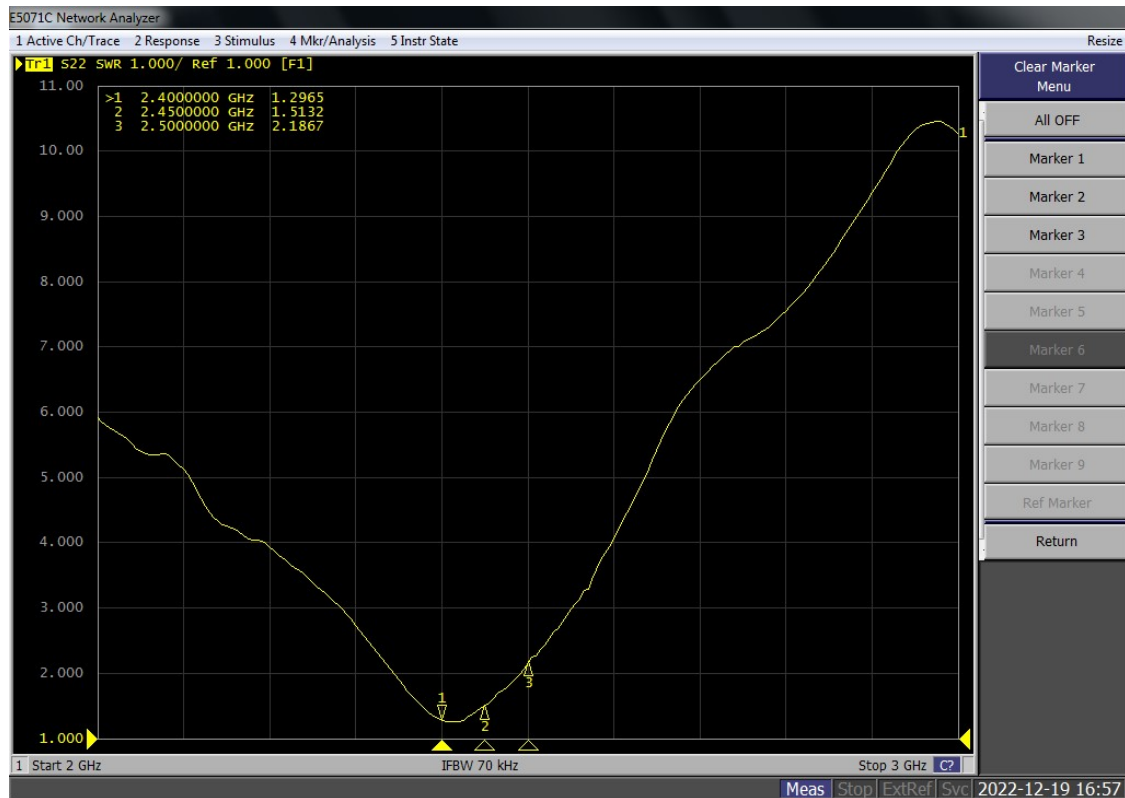


test macro:	SY-16M Antenna measurement system
testing environment:	temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$
testing equipment:	Agilent 5071C Agilent 8960 Comprehensive measuring instrument Agilent CMW500 4G Comprehensive measuring instrument

Shenzhen all things connected Communication Co.,Ltd.
All things connected Communications Xiangyang Limited
Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City
Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

4、Antenna Passive Parameters:

1. VSWR:



2、Gain&Efficiency:

Gain&Efficiency&PhaseCenter								
frequency (MHz)	gain (dBi)	Efficiency (%)	frequency (MHz)	gain (dBi)	efficiency (%)	frequency (MHz)	gain (dBi)	efficiency (%)
2400	1.85	58.29						
2410	1.51	58.28						
2420	1.34	57.89						
2430	1.16	57.26						
2440	1.05	57.18						
2450	0.94	56.11						
2460	0.9	55.74						
2470	0.76	55.31						
2480	0.69	54.21						
2490	0.63	53.82						
2500	0.57	52.89						

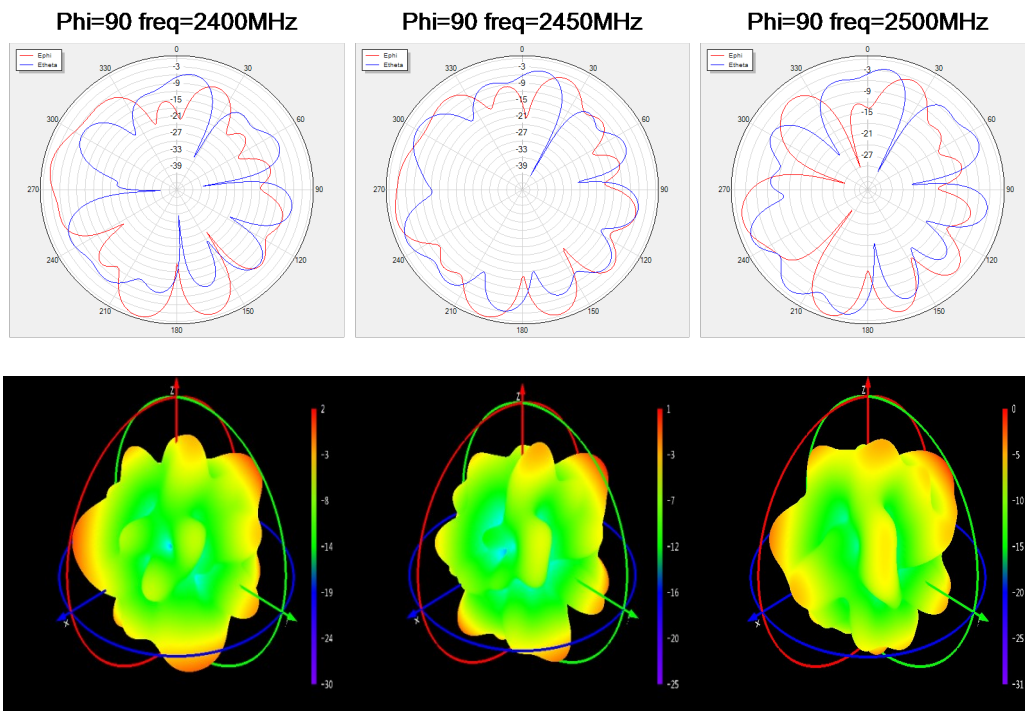
Shenzhen all things connected Communication Co.,Ltd.

All things connected Communications Xiangyang Limited

Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City

Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

3、 2D/3D pattern:



4、 Active data

Single antenna 2.4TIS

Test mode: 802.11b11Mbps BW 20M

Test	Wifi 2G TRP				Test	Wifi 2G TIS		
CH	1	6	11		CH	1	6	11
Frequency (MHz)	2412	2437	2472		Frequency (MHz)	2412	2437	2472
TRP(dBm)	14.81	16.72	16.46		TIS(dBm)	-81.98	-80.19	-80
					TIS(dBm)	-80.2	-81.21	-81.63

Test mode: 802.11a 54Mbps BW 20M

Test	Wifi 5G TRP				Test	Wifi 5G TIS		
CH	36	100	161		CH	36	100	161
Frequency (MHz)	5180	5500	5825		Frequency (MHz)	5180	5500	5825
TRP(dBm)	17.72	17.12	17.89		TIS(dBm)	-80.58	-80.16	-79.77

Shenzhen all things connected Communication Co.,Ltd.

All things connected Communications Xiangyang Limited

Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City

Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

5. Throughput Test

40M	2. 4G-WIFI		
Band	Channel	TX	RX
B mode	1	102.7	103.8
	6	92.3	99.3
	11	97.2	100.1

80M	5. 8G-WIFI		
Band	Channel	TX	RX
A mode	36	272.5	275.3
	100	261.1	270.5
	161	278.3	282.5

Band	angle	Channel					
		1		6		11	
		TX	RX	TX	RX	TX	RX
2. 4G/B mode	0	98.6	103.5	95	100.1	95.5	95.1
	30	106.8	105.9	93.5	101.3	98.4	104.1
	60	106	107.3	94.9	98.3	102.5	98.2
	90	100.1	100	85.5	97.3	95.8	99.9
	120	105.2	103.1	95.3	99.1	94	98
	150	103.6	102.9	89.4	101	98.1	105
	180	98.7	104.5	92.5	98.4	96.4	101

Band	angle	Channel					
		36		100		161	
		TX	RX	TX	RX	TX	RX
5. 8G/A mode	0	274.4	275.4	261	272.4	278.4	284.4
	30	269.9	276.4	266.4	267.9	279.4	282
	60	274.2	276.7	257.3	272.2	279.7	284.1
	90	274	267.8	256.3	272	270.8	281.9
	120	274.4	277	262.9	272.4	280	283.1
	150	272.1	276.9	265.6	270.1	279.9	282
	180	269.1	277.2	258.6	267.1	280.2	280.3

5、Product characteristics

1. Choose high-quality RF cable with small attenuation;
2. Stable performance;
3. Stable performance.

6、Drawing

Shenzhen all things connected Communication Co.,Ltd.

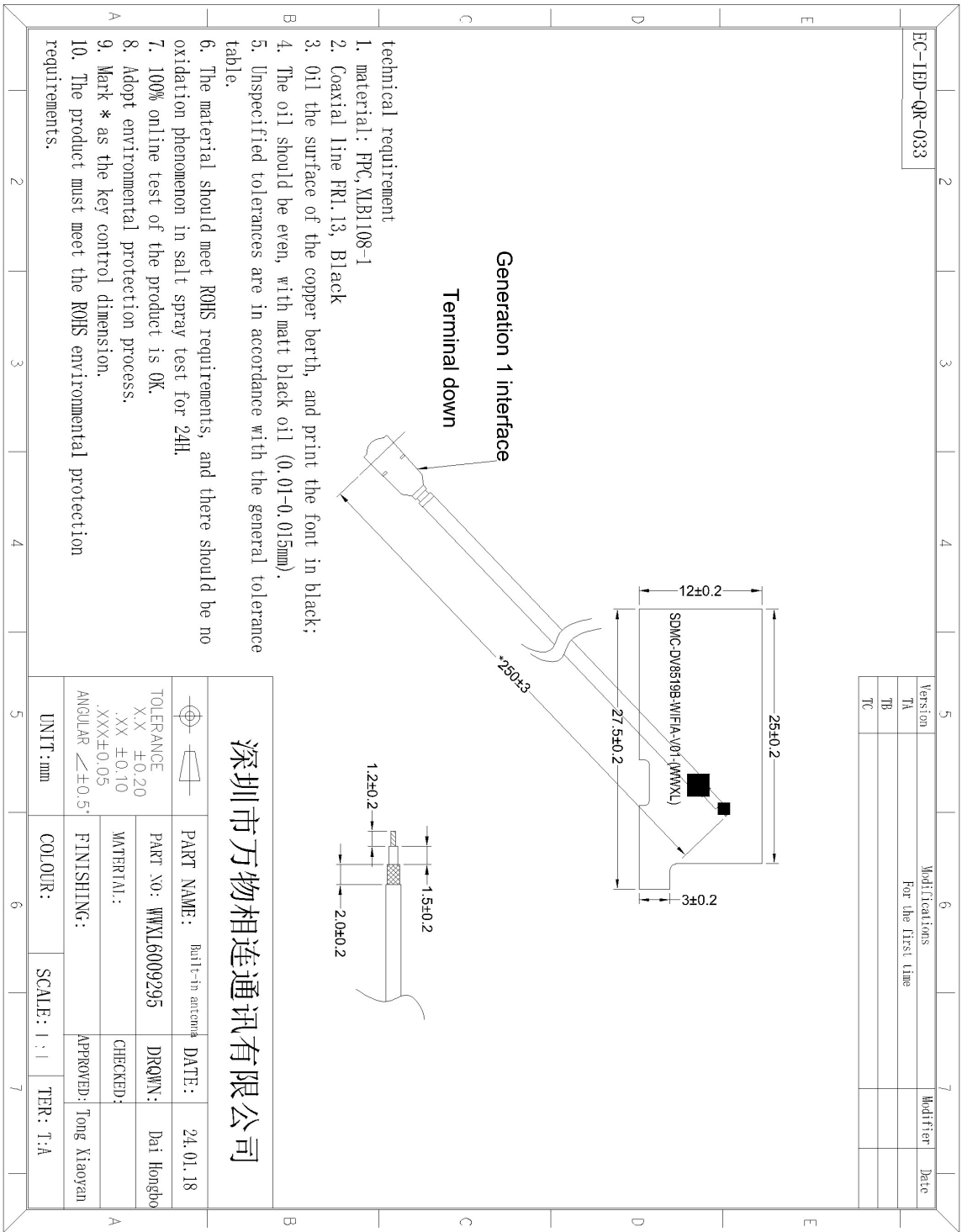
All things connected Communications Xiangyang Limited

Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City

Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

由 Autodesk 教育版产品制作

由 Autodesk 教育版产品制作



由 Autodesk 教育版产品制作

7、Reliability testing

Shenzhen all things connected Communication Co.,Ltd.
All things connected Communications Xiangyang Limited
Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City
Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

1 Environmental experiment

High and low temperature and humidity test report						
test project	High temperature, low temperature and constant humidity test					
name	Built-in antenna (WWXL6009295)			date	2024.01.18	
device	Constant temperature and humidity test box network analyzer			Quantity	5PCS	
Inspectin standards	1. There are no defects such as peeling off, cracks, wrinkles, etc. on the metal surface; non-metal parts must not have defects such as discoloration, cracking, deformation, degumming. 2. The electrical test meets the design requirements; the voltage standing wave ratio test is satisfactory.					
Test name		request	experiment method	Actual test data	result	
					sample	Assessm ent result
High temperature test	Pilot projects Temperature (°C) Test sample temperature stabilization time (H) Test duration (h) Recovery time (h)	+85±3 1 2 1	9 according to GB2423. 1-89 Method	+87 1.2 2.3 1	1	qualified
					2	qualified
					3	qualified
					4	qualified
					5	qualified
Low temperature test	Temperature (°C) Test sample temperature stabilization time (h) Test duration (h) Recovery time (h)	-45±3 1 2 1	8th in accordanc e with GB2423. 1-89 Method	-46 1.2 2.4 1.1	1	qualified
					2	qualified
					3	qualified
					4	qualified
					5	qualified
Constant Damp	Temper ature		According to GB2423.		1	qualified
					2	qualified

Shenzhen all things connected Communication Co.,Ltd.

All things connected Communications Xiangyang Limited

Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City

Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

Heat Test	(°C)	+40±2	3-93	+42	3	qualified
	Relative humidity (%)	90-95	Section 5 Method	92	4	qualified
	Test duration (h) Recovery time (h)	21		22	5	qualified
		1		1.1		

2. Salt spray test

Salt fog test report				
Test item	Salt spray test			
Name	Built-in antenna (WWXL6009295)		date of observation	2024.01.18
Device name	Salt spray corrosion test box		Test quantity	5 PCS
Test method	The test samples were put into the modulated salt solution test chamber and salt spray corrosion chamber for continuous spray test			
Salt solution concentration	52g/L	PH Value of Salt Solution: 6.5-7.2		Test cycle: 24h
Actual test data	55g/L	PH Value of Salt Solution: 6.8		Test cycle: 26h
Test standard	Tests were carried out according to GB/T10125 "Artificial Atmosphere Corrosion Test and Salt Spray Test"; Results According to GB/T6461-2002 "Metal and other inorganic coatings on metal substrates after corrosion test are samples and specimens			
Test result				
NO	Corrosion resistance grade	Actual test data	Assessment result	Remarks
1	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	

Shenzhen all things connected Communication Co.,Ltd.

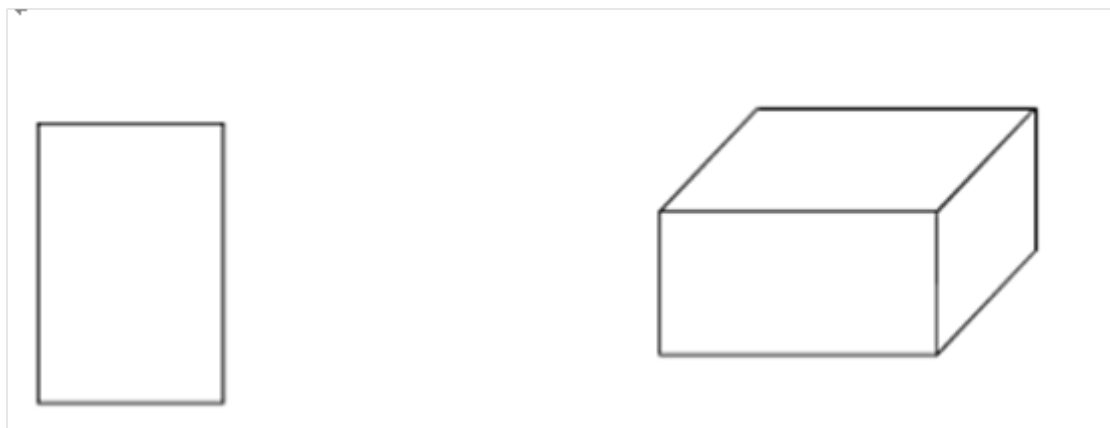
All things connected Communications Xiangyang Limited

Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City

Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,

2	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	
3	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	
4	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	
5	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	

8、Packing instructions:



100PCS/Pouch

30Pouch/1Caron

Shenzhen all things connected Communication Co.,Ltd.
All things connected Communications Xiangyang Limited
Add: Room 1101,Building 4,Fangdacheng,No2,longxhu 4th Road, Nanshan District, Shenzhen City
Add: Hubei Xiangyang Gucheng County 1-3 Shuang Yang Road Taoyuan Street,All things connected industrial park,