SPECIFICATION

Daxian Communication Technology Limited

Shenzhen Daxian Technology Co., Ltd .

Unimax L13 WIFI-2 antenna

Product specification book

client	Unimax	frequency range	2400MHz-2500MHz 5150MHz-5850MHz
project name	L13	edition	V01
Material number	4L-13XXX-109	pigment	black
RF design	Peng.Hu	architectural design	YeZhi.Bi
QA Manager	ZiYin.Hu	Technical Director	Lei.Zhang
date	2022-11-24		

Customer confirmation:

Does the assembly meet your requirements: ☐ OK ☐ NG

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Change the resume

version number	Change the content	Change reason	Initiate the change party	date	modifier
V1.0	found			2022.11.24	

index of matrix

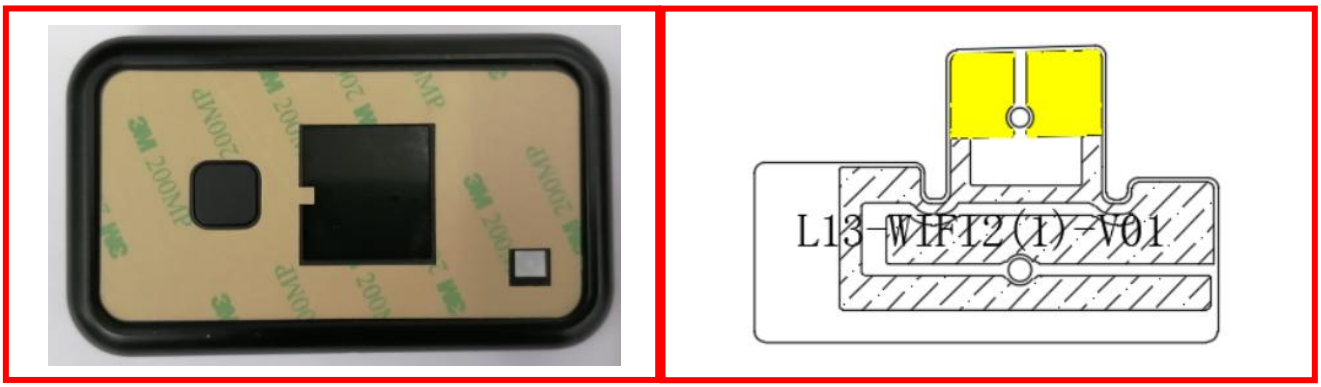
Ⅰ project description

Customer Name:	Unimax
Complete machine type:	MIFI
Antenna band:	2400MHz-2500MHz，5150MHz-5850MHz
Antenna form:	FPC
Feeding form:	welding
Number of feeders:	/
Hardware version:	/

Ⅱ WIFI-2 antenna

1 Specifications

This report mainly provides the router antenna L13 Test status of various electrical and structural performance parameters. The following picture shows the antenna picture of the display design.



Appearance diagram of the whole machine and the antenna appearance diagram

1.1 Electrical specification standard

The frequency range of the antenna is 2400 ~ 2500 MHz. The following table indicates the electrical performance specifications of the antenna. The antenna is designed and manufactured by a large display.

Frequency Range	Frequency (MHz)	VSWR
WIFI-2	**2400 ~ 2500**	≤ 3
WIFI-2	**5150 ~ 5850**	≤ 3

1.2 Antenna composition

The antenna is mainly composed of FPC .

2、 The Equipment of Active Test

Satimo 3D Chamber 6×4×4(m)

Ag ilent 8960 E 5515c

Network analyzer-R&S ZVL

graph 2

3 Test

3.1 Standing Wave (VSWR) test

3.1.1 3. Test connection: The sequential connection of the VSWR test device is: R & S ZVL network analyzer test line test and treatment

Measured (attached)

3.2 Gain and efficiency, power (TRP), sensitivity (TIS) testing

3.2.1 Test Site:

Large display microwave dark chamber. The test frequency range was 400MH z- -6GHz, the static area range was 50cm circumference, and the reflectivity was less than-50 dB.

3.2.2 Test instrument:

R & S ZVL Network Analyzer, Agilent8960 E5515C, Standard Speaker Antenna, French SATIMO-SG24SYSTEM System, Printer, etc.

3.2.3 Test data: In the microwave dark room, the test power and sensitivity-related values are shown in the following table:

OTA Passive Efficiency & Gain-WIFI-2 antenna：

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	30.52	-5.15	0.13
2410	30.31	-5.18	-0.27
2420	32.06	-4.94	-0.21
2430	33.81	-4.71	0.1
2440	36.35	-4.39	0.28
2450	38.93	-4.1	0.37
2460	38.09	-4.19	0.31
2470	40.3	-3.95	0.61
2480	42.45	-3.72	0.49
2490	44.4	-3.53	0.81
2500	44.76	-3.49	0.45

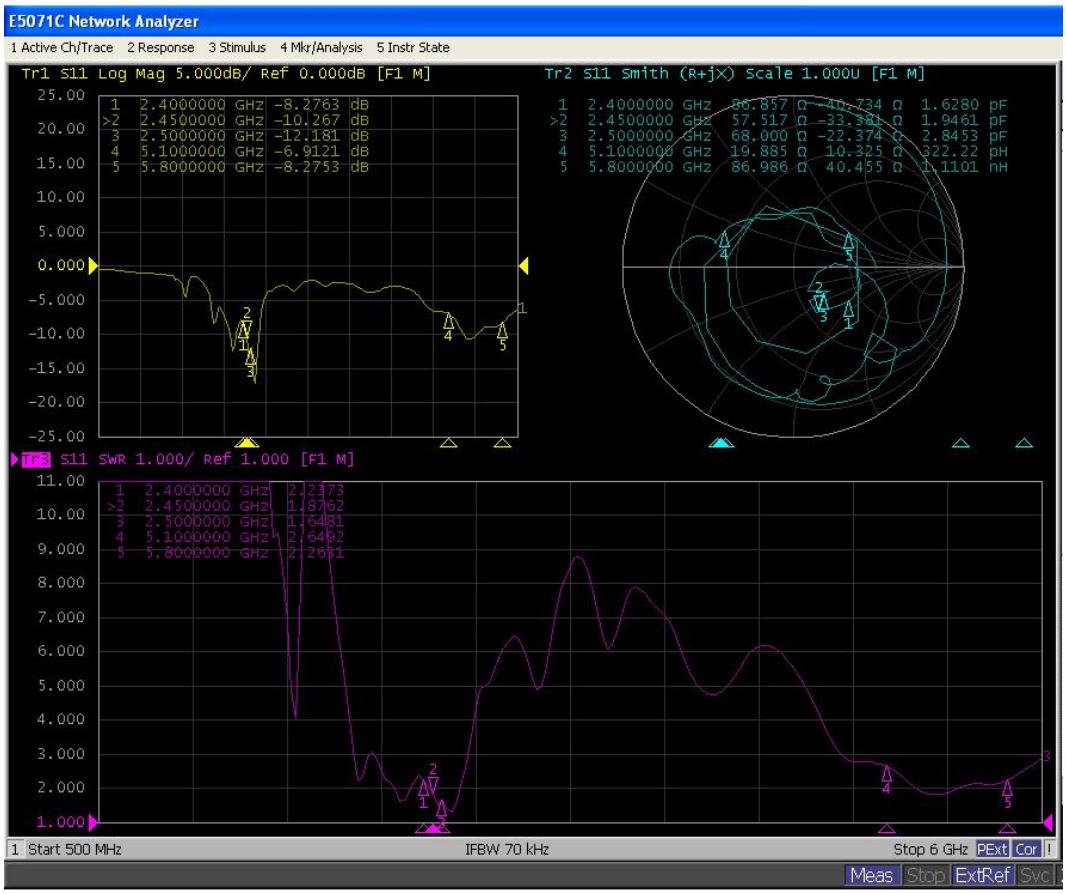
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5200	56.18	-2.5	3.31
5210	55.09	-2.59	3.2
5220	56.68	-2.47	3.39
5230	55.54	-2.55	3.23
5240	55.78	-2.54	3.47
5250	56.09	-2.51	3.49
5260	56.75	-2.46	3.49
5270	55.91	-2.53	3.49
5280	55.15	-2.58	3.36
5290	56.21	-2.5	3.46
5300	54.8	-2.61	3.43
5750	33.15	-4.8	0.24
5760	31.78	-4.98	0.23
5770	33.25	-4.78	0.19
5780	30.89	-5.1	0.26
5790	31.68	-4.99	0.6
5800	31.11	-5.07	0.31

4. Conclusion:

This antenna is designed on the basis of customer-provided prototype. Electrical parameters and structural performance have met the technical requirements. Please confirm!

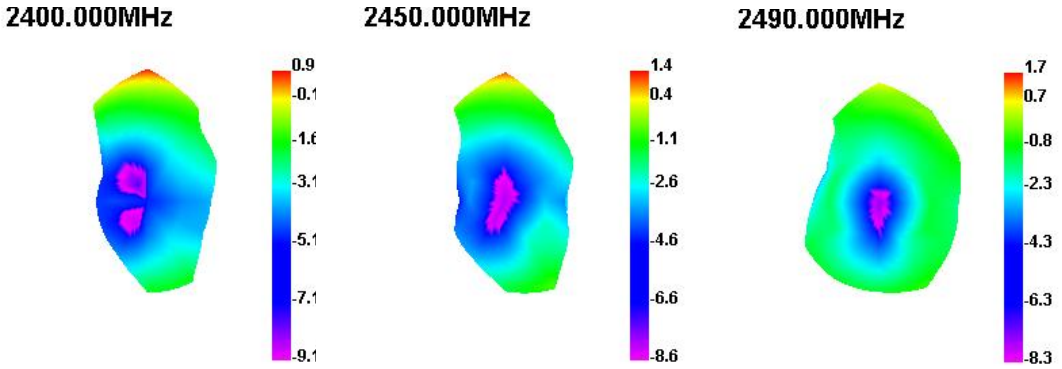
5. Attachment chart

5.1 Parameters of Return Loss and VSWR and impedance diagram- -WiFi-2 antenna

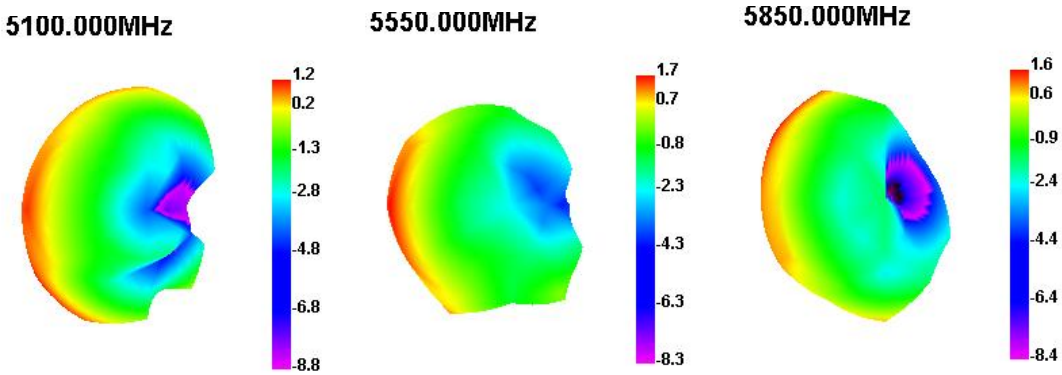


6. 2D&3DPassive field type diagram

2.4G



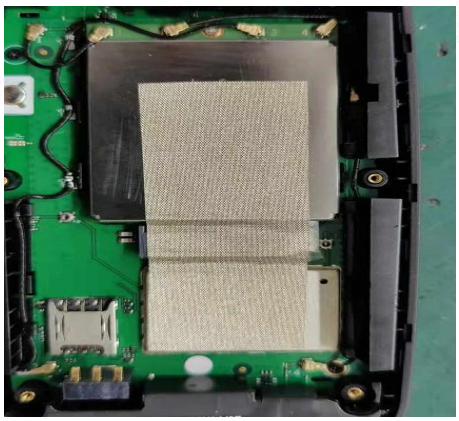
5.8G



7. Environmental treatment

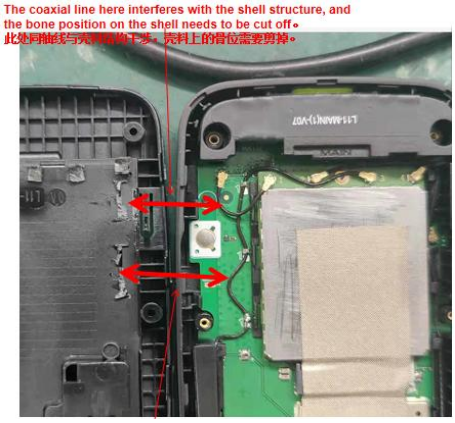
The width of the conductive cloth must be increased, or it will affect the IF TIS. At present, two conductive sponges are pasted to increase the grounding width.

导电布的宽度必须加大，否则对中频 TIS 有影响。目前是贴了两条导电海绵增加接地宽度.



The module should be grounded with the main board shield, otherwise it will have a great impact on the low-frequency TIS. Current conductive cloth size: 23mm * 58mm.

模块要跟主板屏蔽罩接地，否则对低频 TIS 影响很大。目前的导电布尺寸：23mm*58mm.

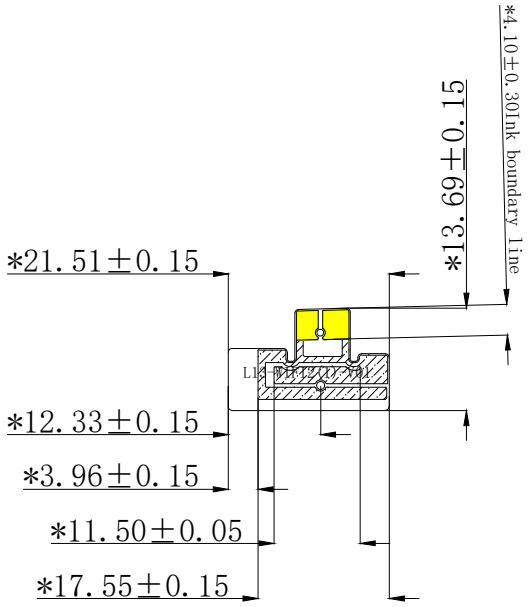


The coaxial line here interferes with the shell material structure, and the bone position on the shell material needs to be reduced. (The coaxial line here is bent to avoid B48 receiving coaxial line being too close to the antenna).

此处同轴线与壳料结构干涉，壳料上的骨位需要减掉。（此处同轴线折弯，避免 B48 接收同轴线离天线太近）.

The third perspective			
Unit	mm	Proportion	1:1

	0~10	10~30	30~50	50~	Angle	○	◎	⊥	▱
	0.05	0.10	0.15	0.20	1°	0.02	0.02	0.03	0.05



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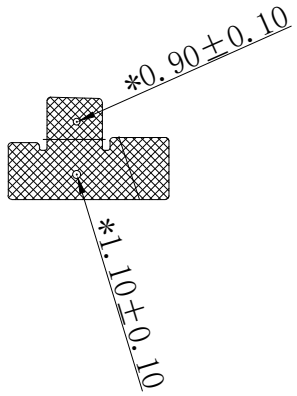

bottom

Note:

1. "*" for the key size;
2. FPC Material Science:Electrolytic copper
3. 3m300 series double-sided adhesive tape is pasted on the back of the product
4. No tolerance dimension is marked, and the tolerance of die stamping dimension is ± 0.1
5. ■ Gold plated area, ▨ Copper foil area, ▩ Gum;

version	Description	Date	Remark
A	New Figure		

TOPANT

Shenzhen Daxian Technology Co., Ltd.

Model	L13	Product color	black	Date	2022/11/23
Project Coding	BL-13XXX-109	Mol dsurfacetreat ment		Structural Design	biyezhi
Part Name	DIV FPC			RF design	胡鹏
Parts coding	4L-13XXX-109-1			Check	zhoukang
Material	PI Electrolytic copper			Approve	zhanglei
Save Path				current version	A