

深圳市亿圣邦科技有限公司
样品承认书

SPECIFICATION FOR APPROVAL

公司名称 (客户填写): 深圳市普耐尔电子有限公司
物料代码 (客户填写):
规格型号 (客户填写): A1315B
承认日期 (客户填写):
供应商名称 (SLK 填写): 深圳市亿圣邦科技有限公司
供应商名称 (SLK 填写): WIFI+GPS:SLK-PNE-4223H5-R-30111-G-0.81

承 认 签 章					
供 应 商 承 认 (SLK 填写栏)			深圳普耐尔电子有限公司		
工 程 师	审 核	批 准	工 程 师	审 核	批 准
陈仕联	黄震	林美财			
盖章签署		林美财	盖章签署		
日 期		2026-05-20	日 期		
批示: ☐ 接受 ☐ 有条件接受					
备注 (客户填写):					

供应商名称: 深圳市亿圣邦科技有限公司
供应商地址: 深圳市宝安区深圳前湾硬科技产业园 C 栋 101
电 话: 18025305599 电 话: 18666299104

Supplier Name: Shenzhen Yishengbang Technology Co., Ltd. Supplier
Address: Unit 101, Building C, Shenzhen Qianwan Hard Technology
Industrial Park, Bao'an District, Shenzhen Tel: 18025305599 | Tel:
18666299104

WIFI+GPS Antenna (4223H5)

1. Explanation of Product number :

S L K - P N E - 4 2 2 3 H 5 - R - 3 0 I I I - G - 0 . 8 1

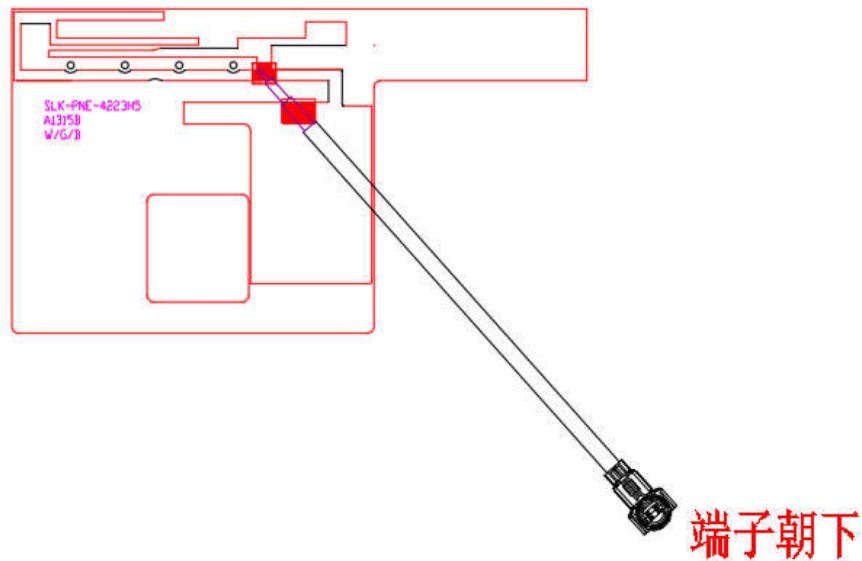
1

2

3

4

5



Product Code:

(1) Customer:

PNE: 普耐尔

(2) Project:

4223H5: SLK-4223H5 (WiFi+GPS antenna)

(3) Welding Position

R: Right

(4) Cable Length:

30III: 30*0.81MM三代端子

(5) Cable Color

G: Gray

2. Features

*Stable and reliable in performances

*Compact size

*RoHS compliance

3. Applications

- * IEEE802.11 (a/b/g/n/ac)
- * Hand-held devices when WIFI (802.11a/b/g/n/ac)GPS functions are needed

4. Description

Holy bond’s FPC antenna series are specially designed for WIFI (802.11 a/b/g/n/ac) GPS applications. Based on Holy bond’s proprietary design and processes, this FPC antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

5. Electrical Specifications

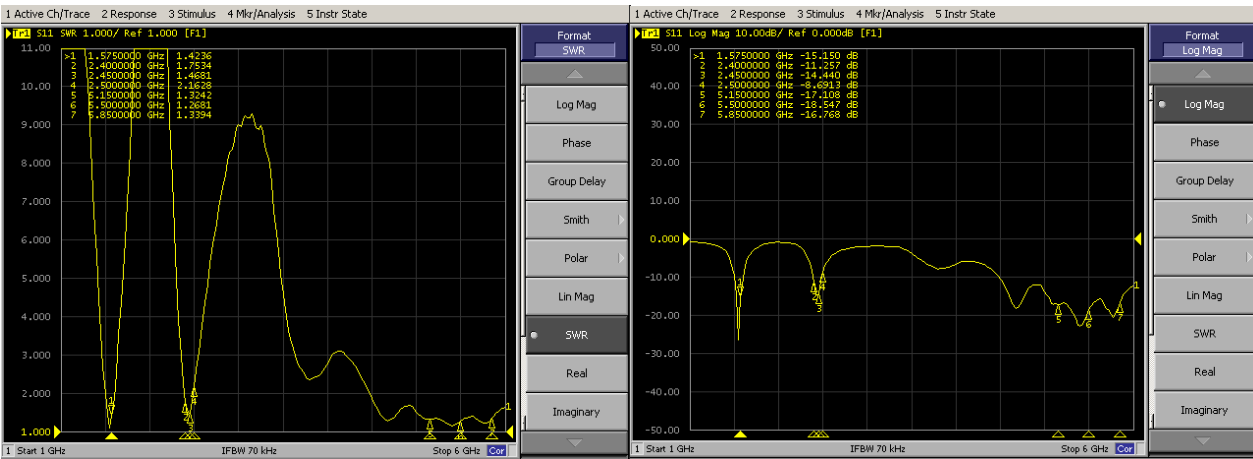
5-1

Characteristics	Specifications	Unit
Outline Dimensions	42.41x 23.92x0.12	mm
Center Frequency	1.575+2.4-2.5+5.15-5.80	GHz
Bandwidth(under-10dB return loss)	130min	MHz
VSWR	3max	

5-2.

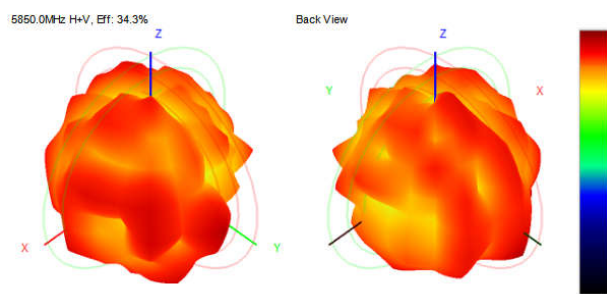
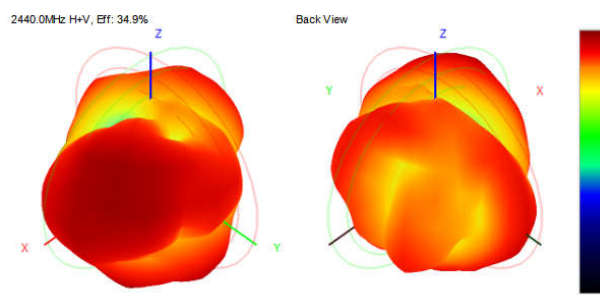
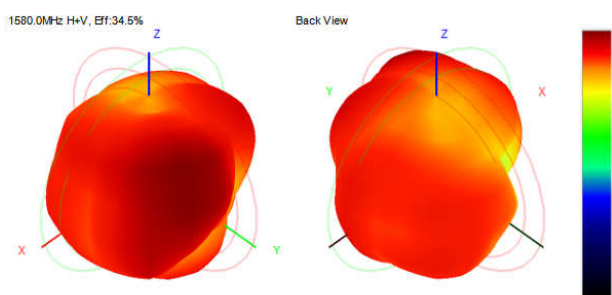
VSWR

S11



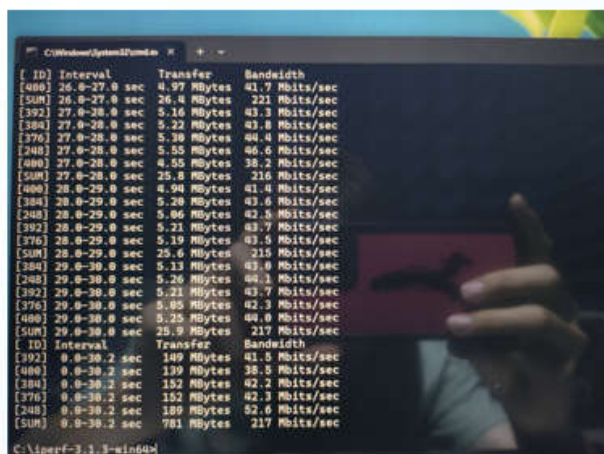
5-3.WIFI +GPS Antenna Gain/Efficiency/Radiation Pattern of 3D

Frequency (MHz)	Efficiency (dBi)	Gain (dBi)	Efficiency (%)	天线增益 (dbi)
1570.0	-4.78	0.61	33.25	0.80
1575.0	-4.68	0.73	34.08	
1580.0	-4.63	0.80	34.46	
2400.0	-4.78	0.89	33.23	1.27
2410.0	-4.76	1.19	33.44	
2420.0	-4.68	1.13	34.01	
2430.0	-4.60	1.12	34.65	
2440.0	-4.58	1.27	34.86	
2475.0	-4.77	0.80	33.34	
2460.0	-4.67	1.16	34.15	
2470.0	-4.75	1.13	33.51	
2480.0	-4.60	0.74	34.64	
2490.0	-4.68	1.02	34.04	
2750.0	-4.70	0.97	33.91	
5175.0	-4.94	1.57	32.03	1.57
5275.0	-4.72	2.07	33.74	2.07
5375.0	-4.86	1.61	32.69	1.61
5575.0	-4.66	1.72	34.21	1.72
5775.0	-4.53	1.51	35.23	1.51
5800.0	-4.65	1.44	34.31	1.44



频段	测试信道	TRP	TIS
B-11MMBps	1	14.9	-81.4
	6	15.05	-80.86
	11	15.42	-80.64
G-54MMBps	1	13.54	-70.08
	6	13.15	-70.44
	11	13.48	-70.22
N-MCS7	1	12.04	-64.01
	6	12.36	-64.45
	11	12.86	-64.21
A-54MMBps	36	10.57	-69.44
	149	10.31	-69.81
	165	10.48	-69.63

吞吐量测试

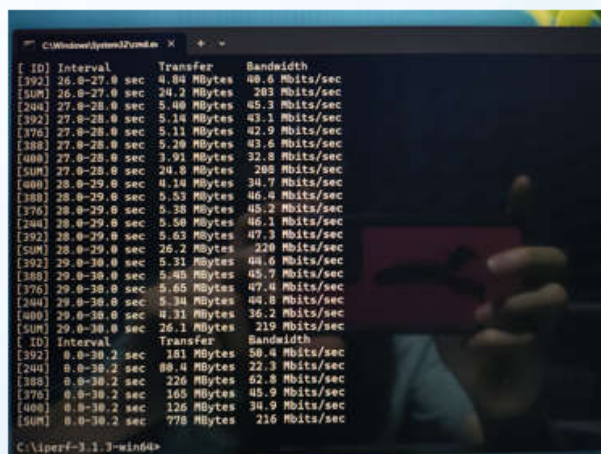


```

C:\Windows\System32\cmd.exe
[ ID] Interval      Transfer      Bandwidth
[400] 26.0-27.0 sec  4.97 MBytes  41.7 Mbits/sec
[SUM] 26.0-27.0 sec  26.4 MBytes  222 Mbits/sec
[392] 27.0-28.0 sec  5.16 MBytes  43.3 Mbits/sec
[384] 27.0-28.0 sec  5.22 MBytes  43.8 Mbits/sec
[376] 27.0-28.0 sec  5.30 MBytes  44.4 Mbits/sec
[248] 27.0-28.0 sec  5.35 MBytes  46.0 Mbits/sec
[400] 27.0-28.0 sec  4.55 MBytes  38.2 Mbits/sec
[SUM] 27.0-28.0 sec  25.8 MBytes  216 Mbits/sec
[400] 28.0-29.0 sec  4.94 MBytes  41.4 Mbits/sec
[384] 28.0-29.0 sec  5.20 MBytes  43.0 Mbits/sec
[248] 28.0-29.0 sec  5.06 MBytes  42.3 Mbits/sec
[392] 28.0-29.0 sec  5.23 MBytes  43.7 Mbits/sec
[376] 28.0-29.0 sec  5.19 MBytes  43.5 Mbits/sec
[SUM] 28.0-29.0 sec  25.6 MBytes  215 Mbits/sec
[384] 29.0-30.0 sec  5.13 MBytes  43.0 Mbits/sec
[248] 29.0-30.0 sec  5.26 MBytes  44.1 Mbits/sec
[392] 29.0-30.0 sec  5.21 MBytes  43.7 Mbits/sec
[376] 29.0-30.0 sec  5.05 MBytes  42.3 Mbits/sec
[400] 29.0-30.0 sec  5.25 MBytes  44.0 Mbits/sec
[SUM] 29.0-30.0 sec  25.9 MBytes  217 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[392] 0.0-30.2 sec  149 MBytes   41.3 Mbits/sec
[400] 0.0-30.2 sec  139 MBytes  38.5 Mbits/sec
[384] 0.0-30.2 sec  152 MBytes  42.2 Mbits/sec
[376] 0.0-30.2 sec  152 MBytes  42.3 Mbits/sec
[248] 0.0-30.2 sec  189 MBytes  52.0 Mbits/sec
[SUM] 0.0-30.2 sec  781 MBytes  217 Mbits/sec
C:\iperf-3.1.3-win64>

```

2.4G下载-平均值217Mbits

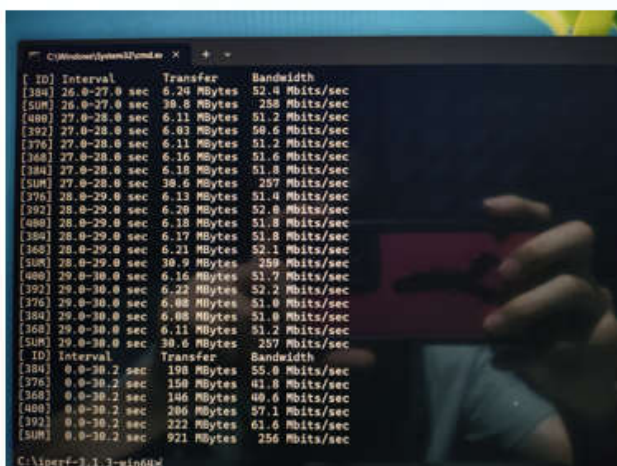


```

C:\Windows\System32\cmd.exe
[ ID] Interval      Transfer      Bandwidth
[392] 26.0-27.0 sec  4.84 MBytes  40.6 Mbits/sec
[SUM] 26.0-27.0 sec  24.2 MBytes  203 Mbits/sec
[248] 27.0-28.0 sec  5.40 MBytes  45.3 Mbits/sec
[392] 27.0-28.0 sec  5.14 MBytes  43.1 Mbits/sec
[376] 27.0-28.0 sec  5.11 MBytes  42.9 Mbits/sec
[388] 27.0-28.0 sec  5.20 MBytes  43.6 Mbits/sec
[400] 27.0-28.0 sec  3.91 MBytes  32.8 Mbits/sec
[SUM] 27.0-28.0 sec  24.8 MBytes  208 Mbits/sec
[400] 28.0-29.0 sec  4.14 MBytes  34.7 Mbits/sec
[388] 28.0-29.0 sec  5.53 MBytes  46.4 Mbits/sec
[376] 28.0-29.0 sec  5.38 MBytes  45.2 Mbits/sec
[248] 28.0-29.0 sec  5.50 MBytes  46.1 Mbits/sec
[392] 28.0-29.0 sec  5.63 MBytes  47.3 Mbits/sec
[SUM] 28.0-29.0 sec  26.2 MBytes  220 Mbits/sec
[392] 29.0-30.0 sec  5.31 MBytes  44.6 Mbits/sec
[388] 29.0-30.0 sec  5.40 MBytes  45.7 Mbits/sec
[376] 29.0-30.0 sec  5.65 MBytes  47.4 Mbits/sec
[248] 29.0-30.0 sec  5.34 MBytes  44.8 Mbits/sec
[400] 29.0-30.0 sec  4.31 MBytes  36.2 Mbits/sec
[SUM] 29.0-30.0 sec  26.1 MBytes  219 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[392] 0.0-30.2 sec  181 MBytes   50.4 Mbits/sec
[248] 0.0-30.2 sec  88.4 MBytes  22.3 Mbits/sec
[388] 0.0-30.2 sec  220 MBytes  62.8 Mbits/sec
[376] 0.0-30.2 sec  165 MBytes  45.9 Mbits/sec
[400] 0.0-30.2 sec  126 MBytes  34.9 Mbits/sec
[SUM] 0.0-30.2 sec  778 MBytes  216 Mbits/sec
C:\iperf-3.1.3-win64>

```

2.4G上传-平均值216Mbits

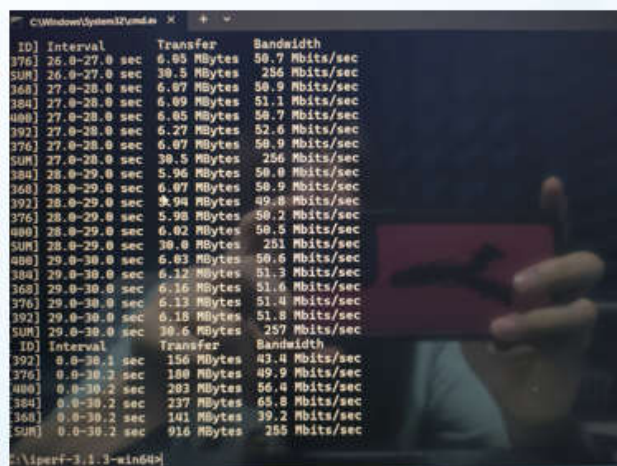


```

C:\Windows\System32\cmd.exe
[ ID] Interval      Transfer      Bandwidth
[384] 26.0-27.0 sec  6.24 MBytes  52.4 Mbits/sec
[SUM] 26.0-27.0 sec  38.8 MBytes  258 Mbits/sec
[400] 27.0-28.0 sec  6.11 MBytes  51.2 Mbits/sec
[392] 27.0-28.0 sec  6.03 MBytes  50.6 Mbits/sec
[376] 27.0-28.0 sec  6.11 MBytes  51.2 Mbits/sec
[368] 27.0-28.0 sec  6.16 MBytes  51.6 Mbits/sec
[384] 27.0-28.0 sec  6.18 MBytes  51.8 Mbits/sec
[SUM] 27.0-28.0 sec  38.6 MBytes  257 Mbits/sec
[376] 28.0-29.0 sec  6.13 MBytes  51.4 Mbits/sec
[392] 28.0-29.0 sec  6.20 MBytes  52.0 Mbits/sec
[400] 28.0-29.0 sec  6.18 MBytes  51.8 Mbits/sec
[384] 28.0-29.0 sec  6.17 MBytes  51.8 Mbits/sec
[368] 28.0-29.0 sec  6.21 MBytes  52.1 Mbits/sec
[SUM] 28.0-29.0 sec  38.9 MBytes  259 Mbits/sec
[400] 29.0-30.0 sec  6.16 MBytes  51.7 Mbits/sec
[392] 29.0-30.0 sec  6.22 MBytes  52.2 Mbits/sec
[376] 29.0-30.0 sec  6.08 MBytes  51.0 Mbits/sec
[384] 29.0-30.0 sec  6.08 MBytes  51.0 Mbits/sec
[368] 29.0-30.0 sec  6.11 MBytes  51.2 Mbits/sec
[SUM] 29.0-30.0 sec  38.6 MBytes  257 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[384] 0.0-30.2 sec  198 MBytes  55.0 Mbits/sec
[376] 0.0-30.2 sec  159 MBytes  41.0 Mbits/sec
[368] 0.0-30.2 sec  146 MBytes  40.6 Mbits/sec
[400] 0.0-30.2 sec  206 MBytes  57.1 Mbits/sec
[392] 0.0-30.2 sec  222 MBytes  61.6 Mbits/sec
[SUM] 0.0-30.2 sec  921 MBytes  256 Mbits/sec
C:\iperf-3.1.3-win64>

```

5G下载-平均值256Mbits



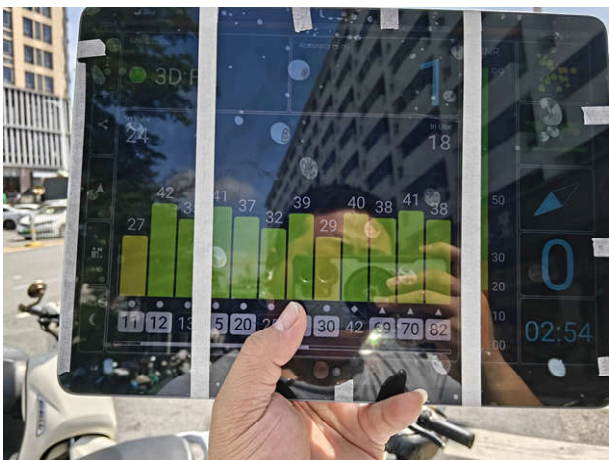
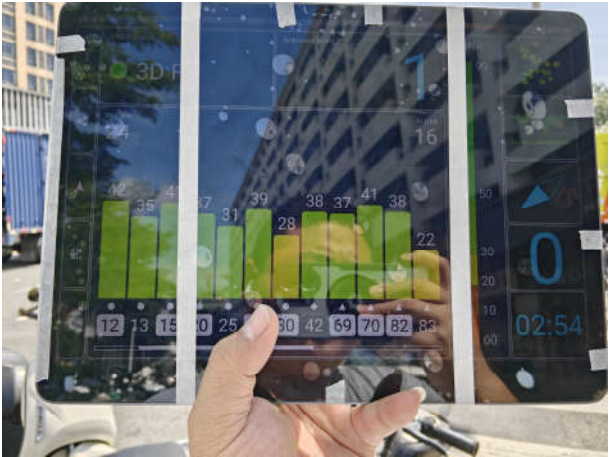
```

C:\Windows\System32\cmd.exe
[ ID] Interval      Transfer      Bandwidth
[376] 26.0-27.0 sec  6.05 MBytes  50.7 Mbits/sec
[SUM] 26.0-27.0 sec  38.5 MBytes  256 Mbits/sec
[368] 27.0-28.0 sec  6.07 MBytes  50.9 Mbits/sec
[384] 27.0-28.0 sec  6.09 MBytes  51.1 Mbits/sec
[400] 27.0-28.0 sec  6.05 MBytes  50.7 Mbits/sec
[392] 27.0-28.0 sec  6.27 MBytes  52.6 Mbits/sec
[376] 27.0-28.0 sec  6.07 MBytes  50.9 Mbits/sec
[SUM] 27.0-28.0 sec  38.5 MBytes  256 Mbits/sec
[384] 28.0-29.0 sec  5.96 MBytes  50.0 Mbits/sec
[368] 28.0-29.0 sec  6.07 MBytes  50.9 Mbits/sec
[392] 28.0-29.0 sec  5.94 MBytes  49.8 Mbits/sec
[376] 28.0-29.0 sec  5.98 MBytes  50.2 Mbits/sec
[400] 28.0-29.0 sec  6.02 MBytes  50.5 Mbits/sec
[SUM] 28.0-29.0 sec  38.0 MBytes  251 Mbits/sec
[400] 29.0-30.0 sec  6.03 MBytes  50.6 Mbits/sec
[384] 29.0-30.0 sec  6.12 MBytes  51.3 Mbits/sec
[368] 29.0-30.0 sec  6.16 MBytes  51.6 Mbits/sec
[376] 29.0-30.0 sec  6.12 MBytes  51.4 Mbits/sec
[392] 29.0-30.0 sec  6.15 MBytes  51.8 Mbits/sec
[SUM] 29.0-30.0 sec  38.6 MBytes  257 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[392] 0.0-30.1 sec  156 MBytes  43.4 Mbits/sec
[376] 0.0-30.2 sec  180 MBytes  49.9 Mbits/sec
[400] 0.0-30.2 sec  203 MBytes  56.4 Mbits/sec
[384] 0.0-30.2 sec  237 MBytes  65.0 Mbits/sec
[368] 0.0-30.2 sec  241 MBytes  39.2 Mbits/sec
[SUM] 0.0-30.2 sec  916 MBytes  255 Mbits/sec
C:\iperf-3.1.3-win64>

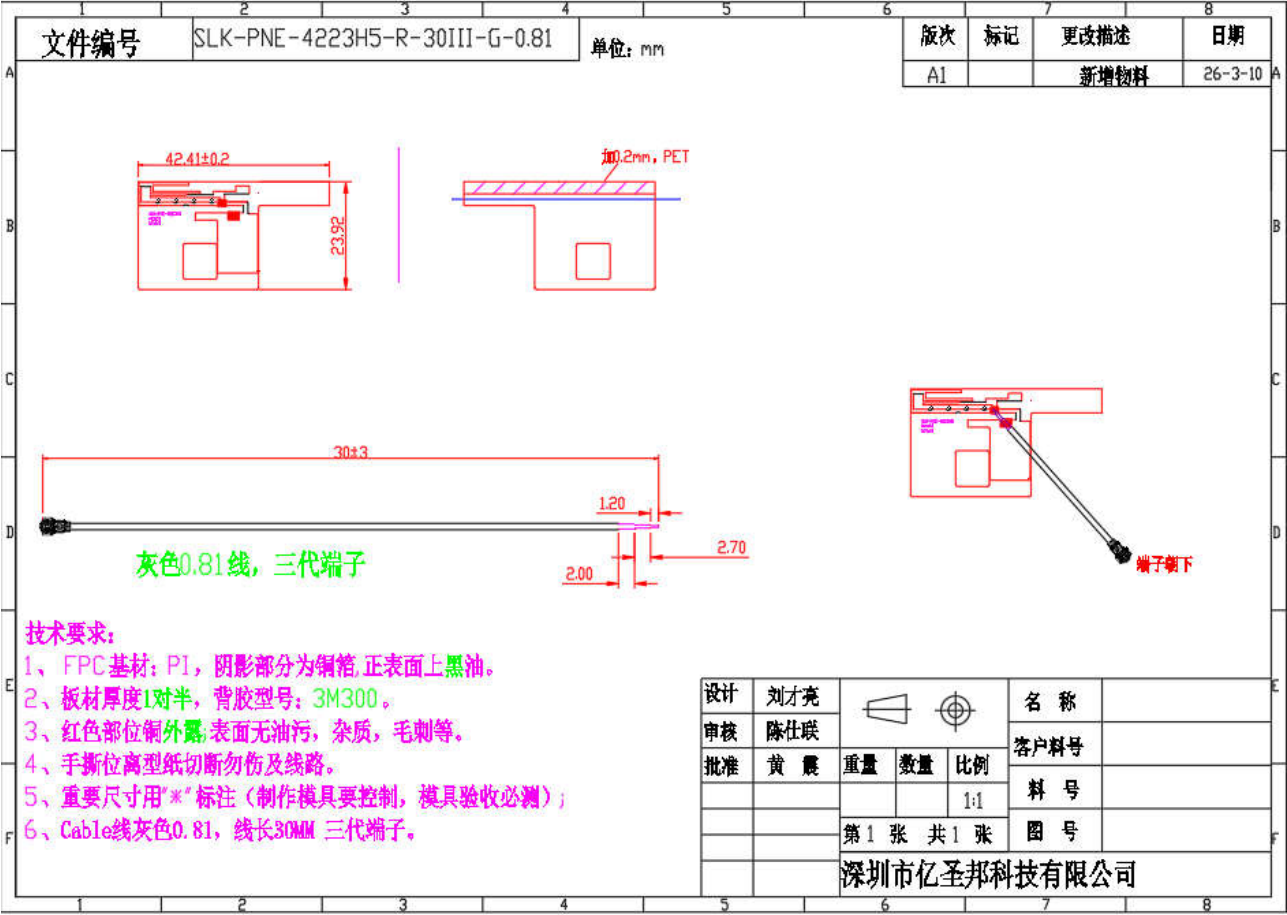
```

5G下载-平均值255Mbits

GPS test



6. Antenna Dimensions (unit: mm)



6. Antenna Picture



如图所示：

- 1.在屏蔽罩贴导电海绵与屏接地处理。
- 2.屏排线包一条导电布屏蔽干扰处理

