



Antenna Sample Confirmation From

# 深圳健海通天线技术有限公司

广东健博通  
证券代码: 831958

## 天线规格书

## Antenna Specifications

### Antenna Sample Confirmation From

供应商名称 Vendor Name	深圳健海通天线技术有限公司 Shenzhen kenhaitong antenna technology co, ltd				
客户名称 Customer Name	深圳市蓝晨科技股份有限公司 Shenzhen Bmorn Technology Co., Ltd.				
样品名称 Sample Name	N14PC-WIFI-V02				
产品型号 Part Number	笔记本电脑 Notebook				
样品规格 Specification	26.25*18.14黑色FPC+100mm、1.13黑线、3代同轴线 26.25*18.14 black FPC+100mm, 1.13 black line, 3rd generation coaxial line				
检验项目 Inspection Item	性能测试 Performance	外观检查 Total Appearance	结构 structure	其它 Others	检验结果 Inspection Result
	OK	OK	张焯		OK
备注 Remark					
品质审核 QA Audit	张吉雄	工程审核 Engineer Audit	张焯	业务确认 Sales Confirm	陈丁
以下由客户填写 The following are filled by Customer					
客户意见 Customer Evaluation					

Address: 3rd Floor, West of Building 1, Hezhou Zhongkenuo Industrial Park,  
Hangcheng Street, Baoan District, Shenzhen  
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客户签字/盖章 Signation/ Chapter by Customer	日期/date:
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## Antenna Test Report

测试单位: 深圳健海通天线技术有限公司 Test by : Shenzhen kenhaitong antenna technology co, ltd			
材料 Material	FPC+同轴线+IPEX		
天线类型 Antenna Type	PIFA	极化方式 Polarization mode	Linear
应用场景 Application	visual doorbell		
工作频段 Band	2.4G WIFI	VSWR	≤2
功率 Power	Max : 2W	阻抗 Impedance	50Ω
增益 dBi	≤2.21dBi		
测试设备 Test Equipment	HPE5071C、Shielding Room、3D automatic turntable		

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### Antenna Description: :

1. Grounding processing and picture description: no

2. Need to change the motherboard to match: no

- Test voltage: 3.6V, check the antenna contact is good before testing.
- The RF cable of the integrated tester is kept in a natural state and can not be curled.

Specification: test the specified power level, all indicators must conform to the specifications.



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- 1、项目图片/Project pictures
- 2、天线匹配电路/Antenna Matching Circuit
- 3、暗室测试设备和方法/Darkroom test equipment and methods
  - 3.1 S11 参数/S11 parameters
- 4、无源测试数据/Passive test data
- 5、有源测试 OTA/Active test OTA
- 6、吞吐量/Throughput
- 7、加固固态硬盘测试/Plus SSD test
- 8、天线装配方式/Antenna assembly method
- 9、结构图纸/Structural drawings
- 10、样品尺寸检验报告/Sample size inspection report
- 11、可靠性测试报告/Reliability Test Report
- 12、包装方式/Packing

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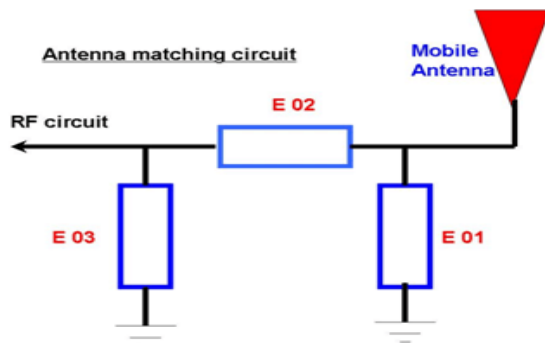
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## 1、项目图片/Project pictures



## 2、天线匹配电路/Antenna Matching Circuit



### 修改点/Modify

E01	E02	E03
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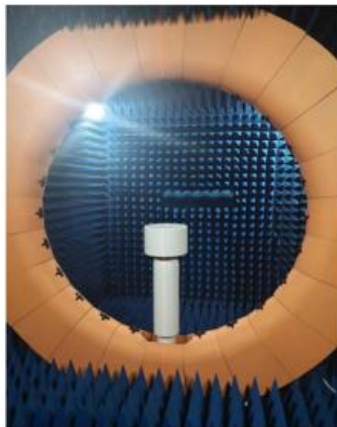
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No	No	No
----	----	----

备注: 匹配无修改

Note: Match without modification

## 3、暗室测试设备和方法/Darkroom test equipment and methods



### 3.1 S11 参数/S11 parameters





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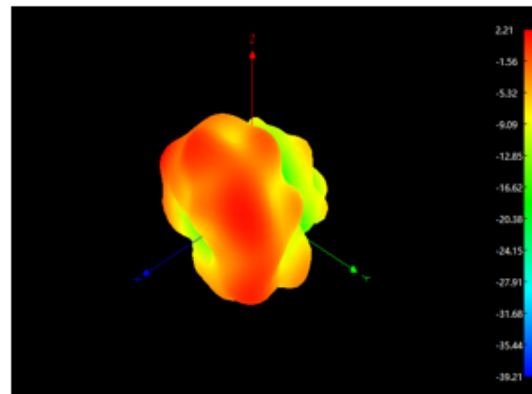
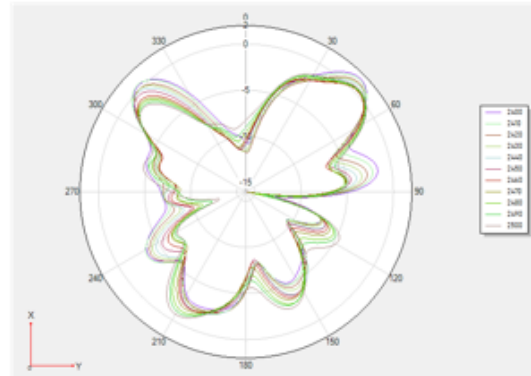
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频率 (MHz)	2400	2450	2500			
驻波比 standing wave ratio	1.3	1.1	1.1			

## 4、无源测试数据/Passive test data

Frequency / MHz	Efficiency / %	Gain/ dB
2400	40.66	2.12
2410	39.9	1.98
2420	39.08	2.16
2430	37.24	2.08
2440	38.11	2.21
2450	37.97	1.99
2460	38.99	1.54
2470	37.08	1.82
2480	37.73	1.62
2490	37.89	2
2500	38.06	1.75
802.11n (MCS7-65Mbps)	M	10.29
	H	10.07



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## 6. 吞吐量 /Through

Item	Azimuth(°)	Rx(Mbps)		
		Atten(dB)	Result	RSSI
1	0	0	110.2	110.2
2	45	0	118.19	118.19
3	90	0	117.55	117.55
4	135	0	117.79	117.79
5	180	0	116.49	116.49
6	225	0	116.12	116.12
7	270	0	117.43	117.43
8	315	0	117.49	117.49

Item	Azimuth(°)	Tx(Mbps)		
		Atten(dB)	Result	RSSI
1	0	0	52.98	52.98
2	45	0	83.25	83.25
3	90	0	93.07	93.07
4	135	0	93.96	93.96
5	180	0	94.11	94.11
6	225	0	88.71	88.71
7	270	0	89.07	89.07
8	315	0	79	79

2.4 launch  
2.4发射

2.4accept  
2.4接收

```
C:\WINDOWS\system32\cmd.exe - iperf3 -s
5] 39.00-40.00 sec 110 Bytes 879 bits/sec
5] 40.00-41.00 sec 115 Bytes 919 bits/sec
5] 41.00-42.00 sec 110 Bytes 882 bits/sec
5] 42.00-43.00 sec 110 Bytes 919 bits/sec
5] 43.00-44.01 sec 110 Bytes 876 bits/sec
5] 44.01-45.00 sec 110 Bytes 884 bits/sec
5] 45.00-46.00 sec 110 Bytes 880 bits/sec
5] 46.00-47.00 sec 110 Bytes 880 bits/sec
5] 47.00-48.00 sec 110 Bytes 879 bits/sec
5] 48.00-49.00 sec 110 Bytes 880 bits/sec
5] 49.00-50.00 sec 115 Bytes 921 bits/sec
5] 50.00-51.00 sec 110 Bytes 880 bits/sec
5] 51.00-52.00 sec 115 Bytes 920 bits/sec
5] 52.00-53.02 sec 85.0 Bytes 668 bits/sec
5] 53.02-54.02 sec 50.0 Bytes 398 bits/sec
5] 54.02-55.00 sec 45.0 Bytes 368 bits/sec
5] 55.00-56.00 sec 45.0 Bytes 360 bits/sec
5] 56.00-57.00 sec 65.0 Bytes 520 bits/sec
5] 57.00-58.00 sec 110 Bytes 879 bits/sec
5] 58.00-59.00 sec 115 Bytes 920 bits/sec
5] 59.00-60.00 sec 115 Bytes 921 bits/sec
5] 60.00-60.02 sec 0.00 Bytes 0.00 bits/sec

ID | Interval | Transfer | Bandwidth | sender | receiver
5] 0.00-60.02 sec 0.00 Bytes 0.00 bits/sec
5] 0.00-60.02 sec 6.07 KBytes 828 bits/sec

Server listening on 5201
```

```
Administrator: C:\WINDOWS\system32\cmd.exe - iperf3 -s
5] 39.01-40.01 sec 105 Bytes 840 bits/sec
5] 40.01-41.01 sec 105 Bytes 836 bits/sec
5] 41.01-42.01 sec 105 Bytes 840 bits/sec
5] 42.01-43.01 sec 105 Bytes 840 bits/sec
5] 43.01-44.01 sec 110 Bytes 880 bits/sec
5] 44.01-45.01 sec 100 Bytes 800 bits/sec
5] 45.01-46.01 sec 105 Bytes 840 bits/sec
5] 46.01-47.01 sec 105 Bytes 840 bits/sec
5] 47.01-48.01 sec 105 Bytes 840 bits/sec
5] 48.01-49.01 sec 100 Bytes 800 bits/sec
5] 49.01-50.01 sec 105 Bytes 840 bits/sec
5] 50.01-51.01 sec 105 Bytes 840 bits/sec
5] 51.01-52.01 sec 105 Bytes 840 bits/sec
5] 52.01-53.01 sec 105 Bytes 840 bits/sec
5] 53.01-54.01 sec 105 Bytes 840 bits/sec
5] 54.01-55.01 sec 105 Bytes 840 bits/sec
5] 55.01-56.01 sec 105 Bytes 840 bits/sec
5] 56.01-57.01 sec 105 Bytes 840 bits/sec
5] 57.01-58.01 sec 110 Bytes 880 bits/sec
5] 58.01-59.01 sec 105 Bytes 840 bits/sec
5] 59.01-60.01 sec 105 Bytes 841 bits/sec
5] 60.01-60.01 sec 0.00 Bytes 0.00 bits/sec

ID | Interval | Transfer | Bandwidth | sender | receiver
5] 0.00-60.01 sec 0.00 Bytes 0.00 bits/sec
5] 0.00-60.01 sec 6.11 KBytes 834 bits/sec

Server listening on 5201
```

AS SSD Benchmark 2.0.6485.19676

C: Generic ARV21X 1 GB

Generic ARV21X	读取:	写入:
1.0		
sdstor - OK		
119808 K - OK		
115.24 GB		
<input checked="" type="checkbox"/> 顺序	287.35 MB/s	227.00 MB/s
<input checked="" type="checkbox"/> 4K	14.10 MB/s	49.81 MB/s
<input checked="" type="checkbox"/> 4K 64 线程	45.35 MB/s	57.62 MB/s
<input checked="" type="checkbox"/> 访问时间	0.092 ms	0.223 ms
得分:	88	130
	266	

开始 中止

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en  
64





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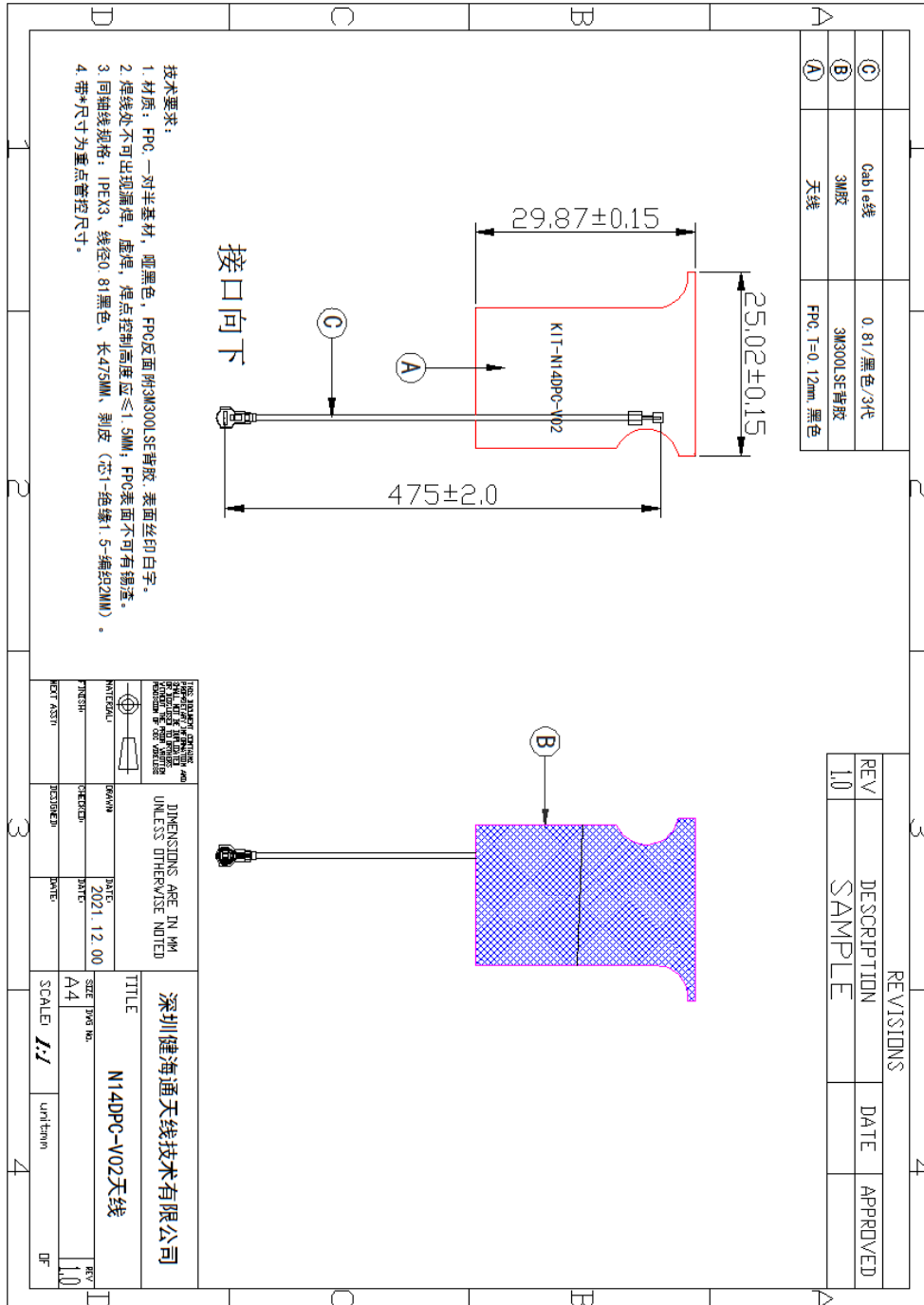
## 8、天线装配方式/Antenna assembly method



天线摆放位置

Antenna placement

## 9、结构图纸/Structural drawings





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## 10、样品尺寸检验报告/Sample size inspection report

### 样品尺寸检验报告

### Sample size inspection report

机种型号 N14DPC-V02

Model number N14DPC-V02

日期: 2022-07-13

Date: 2022-07-13

检测项目 Test items	标准 standard	样品检验状况 (值) Sample inspection status (date)					判定 determination	备注 Remark	
		1	2	3	4	5			
		结构尺寸 structure size	A1	25.02±0.15mm	25.05	25.04			25.00
	A2	29.87±0.15mm	29.86	29.89	29.87	29.87	29.90	合格 qualified	
	A3	475±2.0mm	474.5	474.8	475	474.6	475	合格 qualified	
	A4								
	A5								
	A6								

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	A7								
	A8								
	A9								
	A10								
	A11								

核准: CZY

审核: CXM

测试: JXB

Approved: CZY

Reviewed: CXM

Tested: JXB

## 11、可靠性测试报告/Reliability Test Report

### 盐雾检测报告

### Salt spray test report

编号: 20220713001

No.: 20220713001

产品名称 product name	N14DPC-V02		测试数量 test quantity	5set			
产品料号 Product part number			测试标准 standard test	GB2423.17			
检验日期 Inspection date	2022.07.13		货品素材 product material	FPC+IPEX CABLE			
测试时间: 2022.07.12-2022.02.13 Test time: 2022.07.12-2022.02.13							
测试项目 Test items	要求标准 Requirements standard	实际数值 actual value	判定 determin ation	测试项目 Test items	要求标准 Requirements standard	实际数值 actual value	判定 determina tion

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测试仪器规格 Test Instrument Specifications	KD-60	KD-60	OK	测试时间 testing time	48H	48H	OK
盐雾测试类型 Types of Salt Spray Tests	NSS 中性 NSS neutral	NSS 中性 NSS neutral	OK	盐雾箱温度 Salt spray chamber temperature	35°C	35°C	OK
盐水 PH 值 brine pH	6.5-7.2	6.5-7.2	OK	盐雾沉降量 Salt spray deposition (H. 80C)	1-2ml	1.8ml	OK
喷雾方式 spray method	连续喷雾 Continuous spray	连续喷雾 Continuous spray	OK	货品材质 Goods material	FPC	FPC	OK
盐水成份 Brine ingredients	5%NaCl	5%NaCl	OK	压缩空气节压力 Compressed air pressure	1± 0.1KG/CM <sup>2</sup>	1	OK
饱和温度 Saturation temperature	47°C	47°C	OK	试样放置角度 Specimen placement angle	45°	45°	OK
测试观察时间 test observation time	观察现象 observation phenomenon						
4H	无异常 No abnormality						
8H	无异常 No abnormality						
12H	无异常 No abnormality						

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16H	无异常 No abnormality				
20H	无异常 No abnormality				
24H	无异常 No abnormality				
判定标准: 依国标 5944-86 评级方法判定, 9 级以上为合格 Judgment standard: according to the national standard 5944-86 rating method, grade 9 or above is qualified					
最终判定结果 Final judgment	合格 qualified				不合格 Failed
测试人员 Testers	CGL	审核 audit	CXM	审批 approval	JXB
备注: 常用的盐雾试验方法有: NSS 中惦盐雾试验, AASS 乙酸盐雾试验, CASS 铜乙酸加速试验。 Remarks: Commonly used salt spray test methods are: NSS medium salt spray test, AASS acetic acid salt spray test, CASS copper acetic acid accelerated test.					

## 12、包装方式/Packing

<p style="text-align: center;">广东健博通科技股份有限公司 产品包装作业规范 Guangdong Jianbotong Technology Co., Ltd. Product Packaging Operation Specifications</p>					
客户: 蓝晨 Client: Bmorn		包装品名: N14DPC-V02 Package name: N14DPC-V02		包装编号: Packing number:	
				包装版本: TEST: A Package Version: TEST: A	
包材明细	编号	品名	规格	用量	包装产品图示

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Packaging material details	NO.	PN	Specification	Dosage	Packaging product icon
	PE	封口袋 Closure pockets	120*85*0.12	1/100	
	SYC-BZ-01	纸箱 carton	280*230*170	1/10000	
作业步骤 work procedure	<p>1. 准备所需包材放于有利作业之位置。 1. Prepare the required packaging materials and place them in a favorable position for operation.</p> <p>2. 按照产品包装作业规范, 用纸箱/PE袋, 包装。 2. According to the product packaging operation specification, use carton/PE bag to pack.</p> <p>100PCS/包, 每箱100包共10000PCS。</p> <p>3. 每箱放100包, 共10000PCS, 装满箱后, 用透明胶带封箱。 3. Put 100 packs in each box, a total of 10000PCS. After the box is full, seal the box with transparent tape.</p>				注意事项 Precautions
					<p>1. 作业员须带手套操作。 1. Operators must wear gloves to operate</p> <p>2. 注意装箱数量, 不可多装, 少装。 2. Pay attention to the number of boxes, do not pack more or less.</p> <p>尾数必须注明。 The mantissa must be specified.</p> <p>3. 纸箱不可堆放过高。以防重压溢胶。 3. The cartons cannot be stacked too high. to prevent overload glue.</p>

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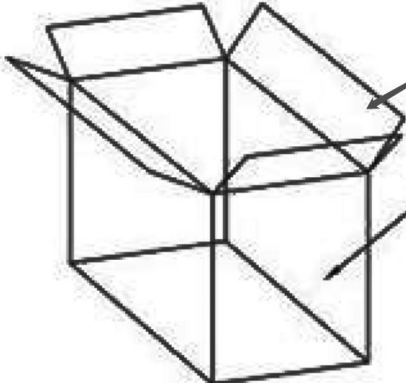


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图示说明 Illustration	 <p>100 packs per pack, total 10000pcs Remarks: The quantity is subject to the actual packaging, this is the reference quantity</p> <p>每箱放100包, 共10000PCS</p> <p>备注: 数量以实际包装为准, 此为参考数量。</p>		
备注 Remark			
核准 Approved	审核 audit	制作 make	日期 date
JSB	DS	LSY	2022.07.13

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