

# APPROVAL

CUSTOMER : Shenzhen Xunlong Software Co.LTD

DESCRIPTION: **Pi3**

PART NO.: YDWIFITL100

CUS PART NO.:

D A T E: 2020. 5. 27

## YUNDING

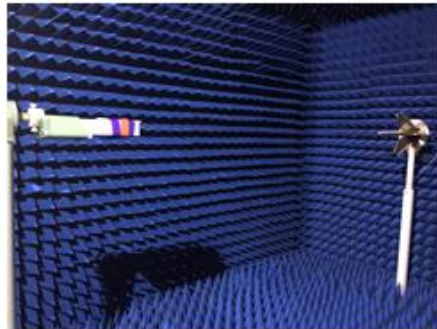
ENGINEERING DEPARTMENT	Q C DEPARTMENT	SALES DEPARTMENT
<b>Shuyi Wu</b>	<b>Li Liu</b>	<b>Hongtao Wang</b>

## CUSTOMER

ENGINEERING DEPARTMENT	Q C DEPARTMENT	PURCHASING DEPARTMENT

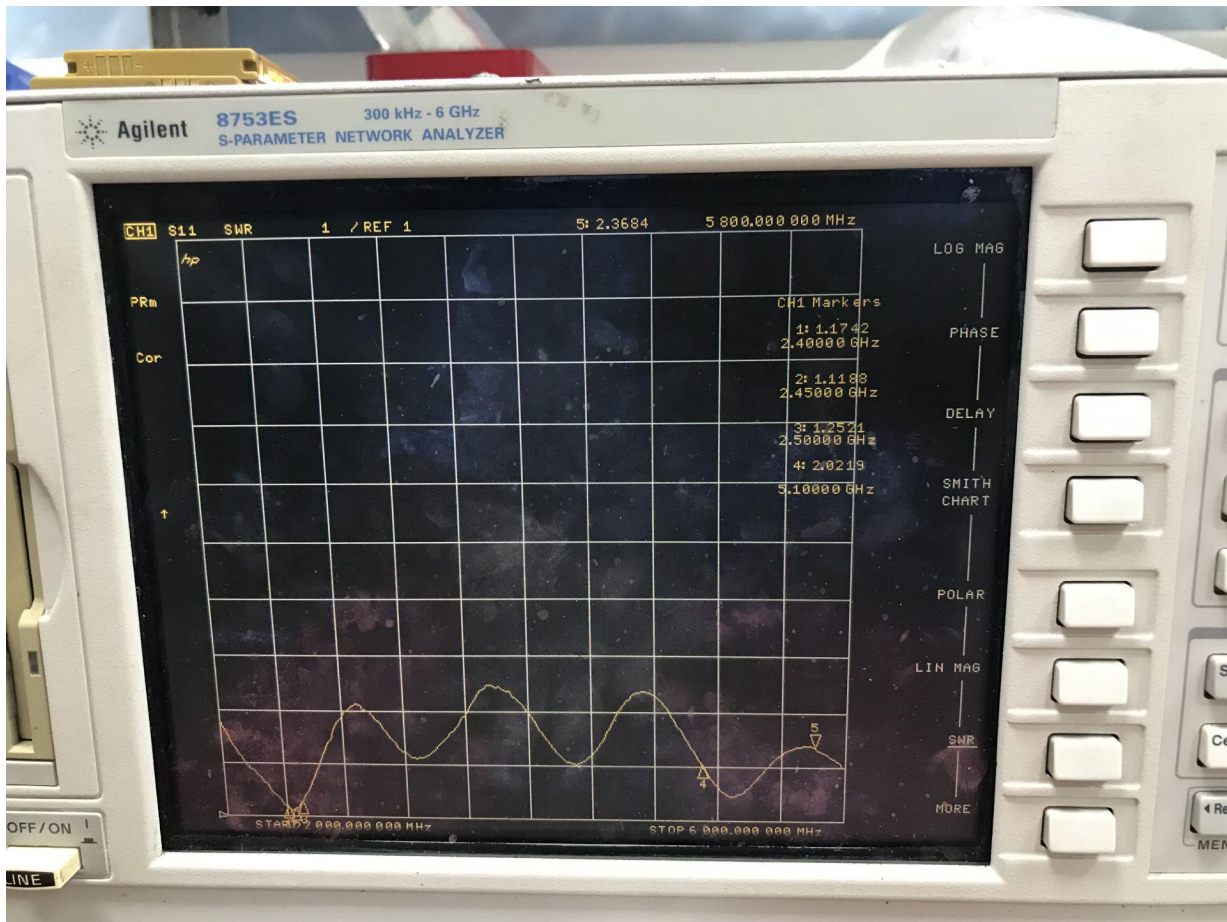
# 1. Test items and equipment

	Test items	equipment
1. (S-parameter)	1. Return Loss 2. VSWR	Network analyzer: Agilent E5071B HP 8753D
2. (Active)	1. TRP 2. TIS	1. darkroom: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. general-purpose tester: Agilent 8960 E5515B x2 StarPoint SP6011
3. (Passive)	1. Gain 2. Efficiency	1. darkroom: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. Network analyzer: Agilent E5071B HP 8753D



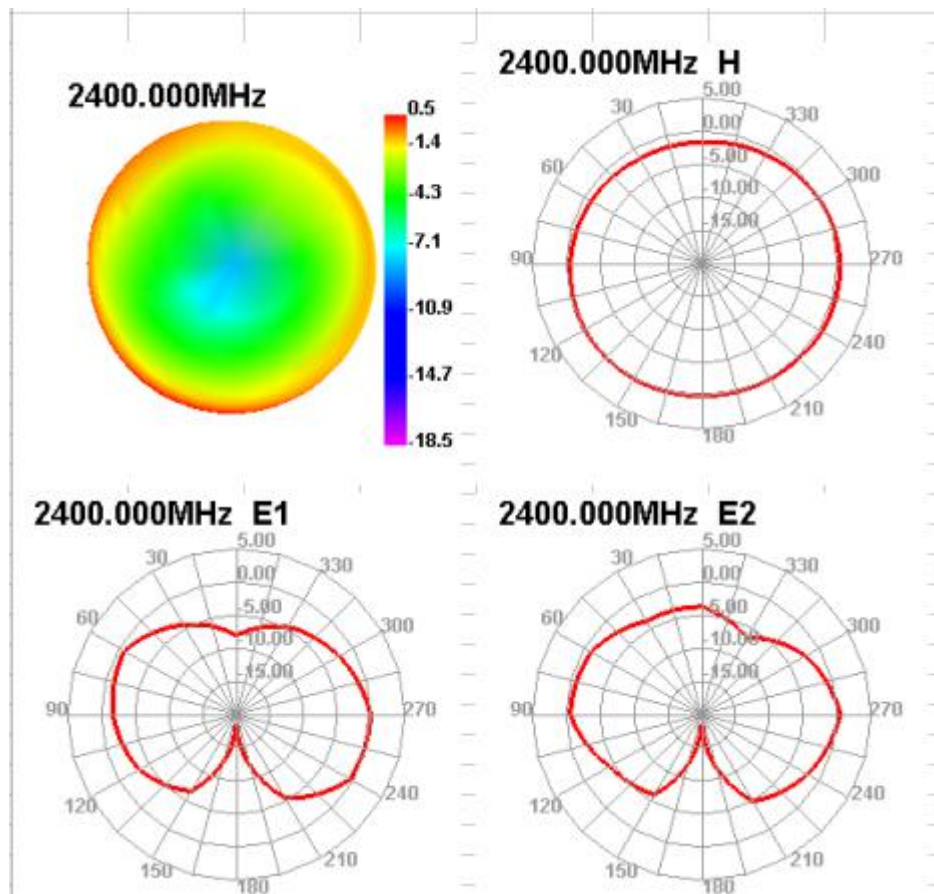
## 2. WiFi antenna performance

SWR



### 3. Antenna tese 3D drawing

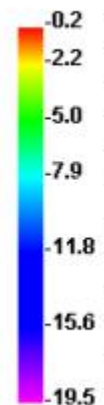
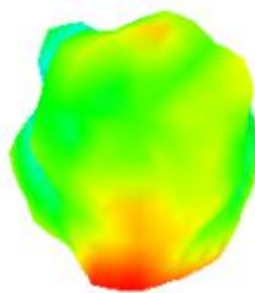
Passive Test For WIFI										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2400	60.96	-2.15	0.48	-1.67	32.335	28.626	0.48	-18.49	48.42	48.27
2410	64.08	-1.93	0.91	-1.24	34.399	29.68	0.91	-18.17	48.62	48.42
2420	65.09	-1.87	1.2	-0.95	35.383	29.704	1.2	-17.66	48.87	48.69
2430	62.77	-2.02	1.25	-0.9	34.395	28.373	1.25	-17.32	48.84	48.66
2440	64.4	-1.91	1.55	-0.6	35.268	29.131	1.55	-16.97	48.95	48.73
2450	65.99	-1.81	1.85	-0.3	35.653	30.332	1.85	-16.43	49.07	48.77
2460	65.67	-1.83	2.02	-0.13	34.799	30.868	2.02	-15.87	49.11	48.76
2470	64.51	-1.9	2.09	-0.06	33.8	30.713	2.09	-15.45	49.11	48.73
2480	65.26	-1.85	2.18	0.03	34.346	30.914	2.18	-15.34	49.41	48.96
2490	70.1	-1.54	2.43	0.28	37.516	32.582	2.43	-16	49.76	49.29
2500	65.97	-1.81	2.01	-0.14	35.898	30.07	2.01	-17.4	49.65	49.12



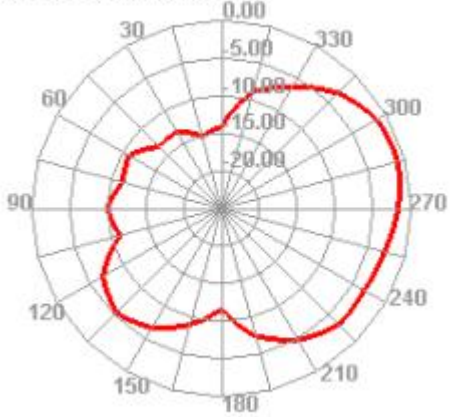


Passive Test For D5										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
5100	31.68	-4.99	-0.86	-3.01	19.412	12.268	-0.86	-19.67	57.95	57.06
5150	40.79	-3.89	0.18	-1.97	25.448	15.346	0.18	-17.97	57.91	57.19
5200	43.74	-3.59	0.71	-1.44	25.995	17.747	0.71	-15.17	57.55	56.83
5250	45.29	-3.44	1.15	-1	25.665	19.626	1.15	-12.48	57.72	56.91
5300	38.98	-4.09	0.58	-1.57	22.523	16.456	0.58	-14.18	57.16	56.32
5350	44.64	-3.5	0.69	-1.46	26.414	18.222	0.69	-15.25	57.61	56.81
5400	52.36	-2.81	0.77	-1.38	29.834	22.528	0.77	-15.12	58.32	57.48
5450	38.76	-4.12	-0.31	-2.46	21.504	17.255	-0.31	-21.89	58.49	57.41
5500	37.8	-5.56	-1.58	-3.73	15.744	12.06	-1.58	-18.13	58.91	57.66
5550	37.41	-5.62	-1.44	-3.59	16.37	11.038	-1.44	-19.6	59.82	58.58
5600	35.87	-4.45	-0.08	-2.23	21.867	13.998	-0.08	-19.9	59.51	58.82
5650	46.98	-3.28	0.87	-1.28	28.378	18.598	0.87	-22.25	60.1	59.5
5700	40.77	-3.9	0.59	-1.56	24.594	16.178	0.59	-19.38	60.54	59.93
5750	37.73	-4.23	0.44	-1.71	23.1	14.627	0.44	-16.41	60.86	60.31
5800	40.43	-3.93	0.98	-1.17	24.824	15.604	0.98	-16.61	61.14	60.57

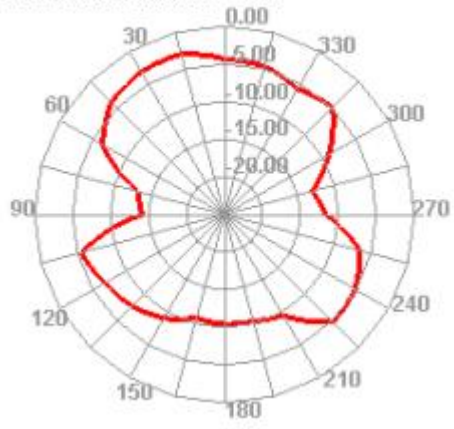
5100.000MHz



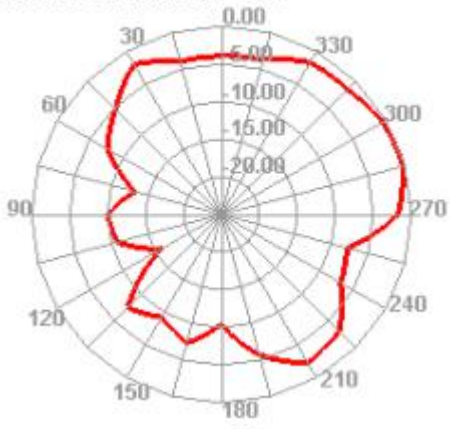
5100.000MHz H



5100.000MHz E1



5100.000MHz E2



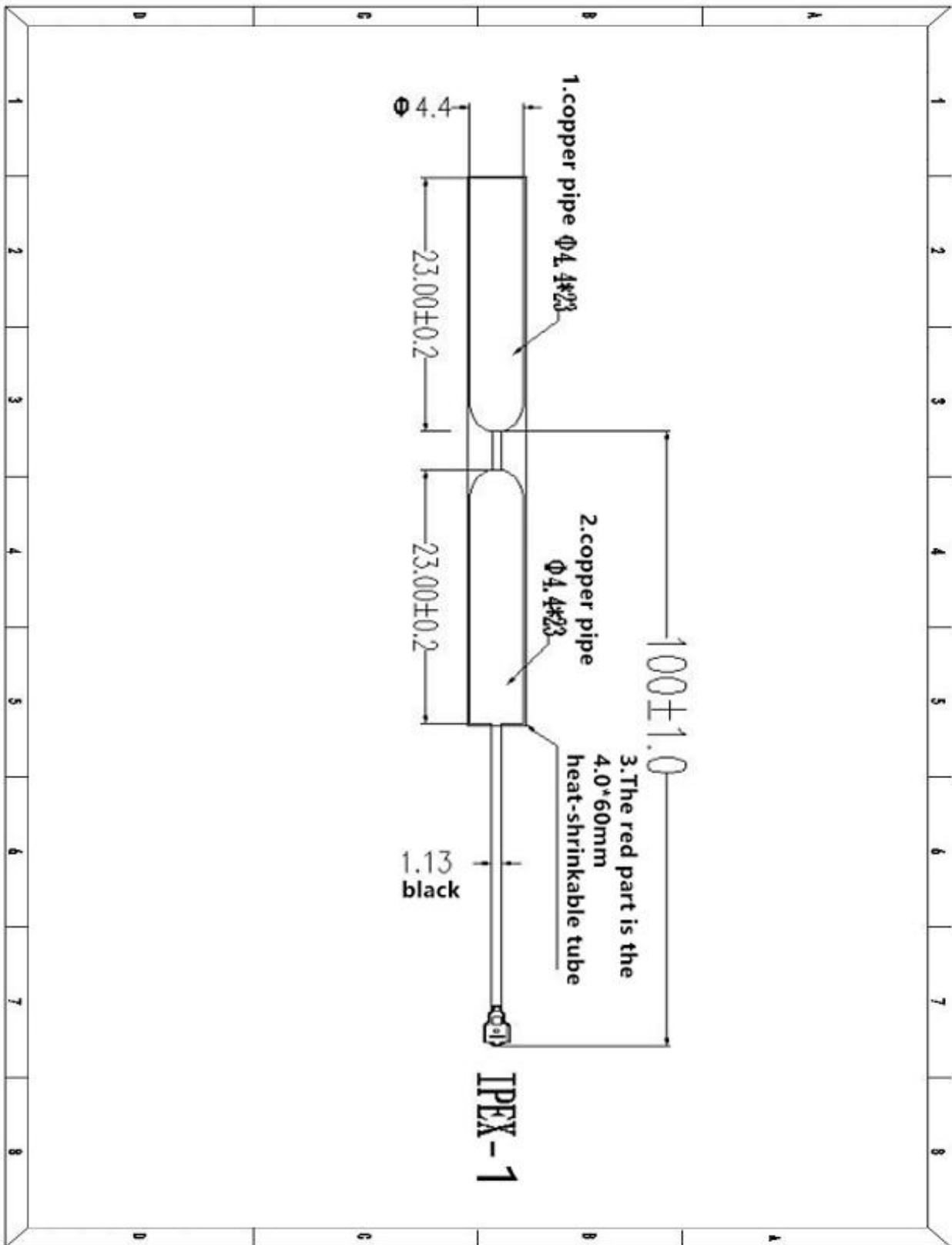
#### 4. Antenna active test data

Test Result	Wifi 2G TRP			Test Result	Wifi 5G TRP		
	1	6	11		36	64	161
Frequency (MHz)	2412	2437	2462	Frequency (MHz)	5180	5320	5805
Txp Ave (dBm)	13.3	13.78	14.96	Txp Ave (dBm)	8.78	9.85	12.26
NHPRP (dBm)	NULL	NULL	NULL	NHPRP (dBm)	NULL	NULL	NULL
MAX (dBm)	15.92	16.44	17.55	MAX (dBm)	12.71	13.01	15.27
EIRP peak	15.92	16.44	17.55	EIRP peak	12.71	13.01	15.27
Min (dBm)	-1.4	0.35	2.72	Min (dBm)	-6.8	-1.74	4.29
Attenuation Horizontal	14.38	14.18	15.19	Attenuation Horizontal	22.86	23.43	24.12
Attenuation Vertical	14.28	14.09	14.82	Attenuation Vertical	22.58	22.88	23.29

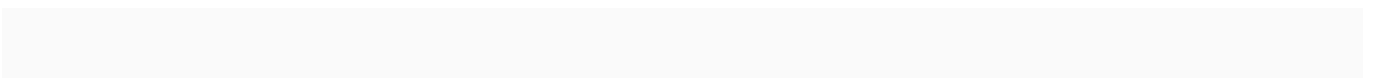
  

Test Result	Wifi 2G TIS	Test Result	Wifi 5G TIS
	11		161
Frequency (MHz)	2462	Frequency (MHz)	5805
Sens Ave (dBm)	-83.6	Sens Ave (dBm)	-72.03
NHPIS (dBm)	NULL	NHPIS (dBm)	NULL
RSSI Ave	15.4	RSSI Ave	11.06
MaxPosRSSI	17.93	MaxPosRSSI	13.59
MaxPosSens	-86.13	MaxPosSens	-74.56
MAX (dBm)	17.99	MAX (dBm)	13.78
EIS peak	17.99	EIS peak	13.78
Min (dBm)	3.2	Min (dBm)	1.5
Attenuation Horizontal	15.63	Attenuation Horizontal	23.06
Attenuation Vertical	15.32	Attenuation Vertical	22.19

5. Antenna structure:



6. Antenna coaxial cable structure diagram:



## Electrical Specifications

Frequency Range	2400~2500/5100~5800MHz
VSWR	≤2.0
Input Impedance	50 Ω
Gain	3 DBI
Radiation direction	omnidirectional

## Mechanical Specifications

Antenna Color	Black
Input connector	IPEX
Cable length	100mm
Working Temperature	-40℃~+85℃
Working Humidity	20~80%



### 1. Scope

This specification covers the construction and the electrical properties of wire.

#### Coaxial Wire AWG 32

### 2. Construction

Unit: mm

	Item	Unit	Details
Conductor	Material	-	Silver-coated copper wire
	Composition	(No./mm)	7/0.08
	OD.	mm	0.24
	Orientation	-	S
Insulation	Material	-	FEP
	Insulation color	-	Natural
	Thickness	mm	0.22
	OD.	mm	0.69
Braid Shield	Material	-	Tinned copper wire
	Composition	(No./mm)	16/4/0.05
	Coverage	(%)	>=90
Jacket	Material	-	FEP
	Nom. Thickness	mm	0.12
	OD.	mm	1.13±0.10

### 3. Electrical Properties (at 20°C)

Item	Unit	Details
Conductor Resistance	$\Omega/\text{km}$	571 (Max. )
Insulation Resistance	$\text{M}\Omega \cdot \text{km}$	100 (Min. )
Dielectric Strength(AC)	V/ 1 Min	500
Impedance	$\Omega$	$50 \pm 3$
Temperature	$^{\circ}\text{C}$	200
rated voltage	V	30

### 4. Schematic diagram:

