

APPROVAL SHEET

客户名称

CUSTOMER NAME: ZKTECO CO., LTD.

产品名称

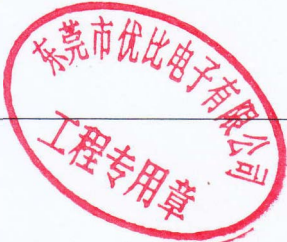
PRODUCT NAME: 2.4G FPC 内置天线 L=93mm+端子

客户料号

CUSTOMER P/N:

优比电子料号

Youbi P/N: UB01C93F2D31a1A REV: A

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
CHECKED BY:		
APPROVED BY:		
DATE:	2022/7/5	

Modification History

Version	Content Revision	Issued by	Date
A	Original version	Eddy	2022 7 5

Content

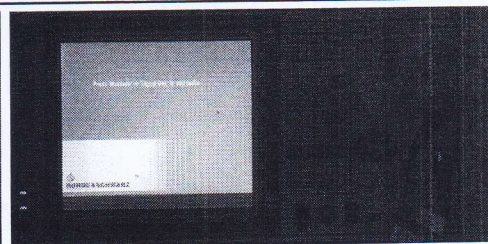
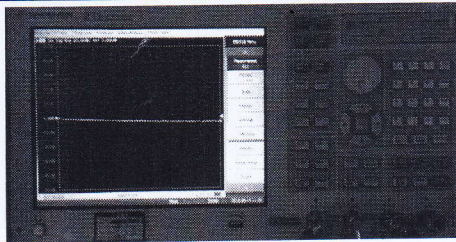
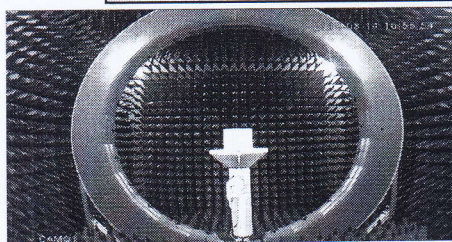
<i>Item</i>	<i>Description</i>
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1. Electrical Specification:

Characteristics	Specifications	Unit
Outline Dimensions	24.2x22.5,L93	mm
Frequency	2400-2500	MHz
Impedance	50	Ω
VSWR	< 2	
Polarization	Linear Polarization	
Gain	2.5±0.5	dBi
Efficiency	>40	%
Connector Type	1.13 MHF-1-Plug	
Operating temperature	-20℃~+85℃	
Storage Temp	-20℃~+50℃	

2. Test Items and Equipment

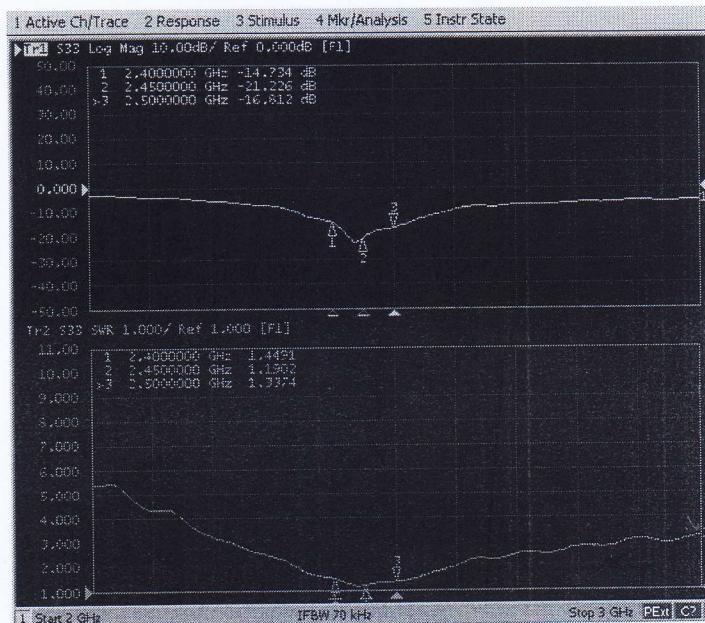
	Test items	Test equipment
S Parameter	1.Return Loss 2.VSWR	Network analyzer (Agilent E5071B)
The whole machine of Passive parameters	1.Frequency 2.Gain 3.Radiation Pattern	1.3D microwave darkroom (5m*5m*5m) 2.Network analyzer (Agilent E5071B)
The whole machine of Active parameters	1.TRP 2.TIS	1.3D microwave darkroom (5m*5m*5m) 2.Comprehensive test instrument (CMW500)



3. S Parameter

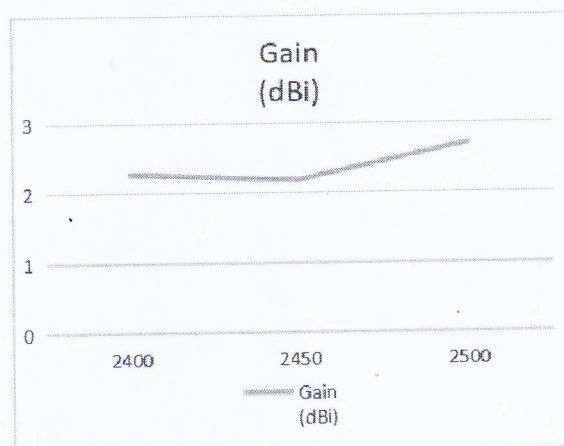
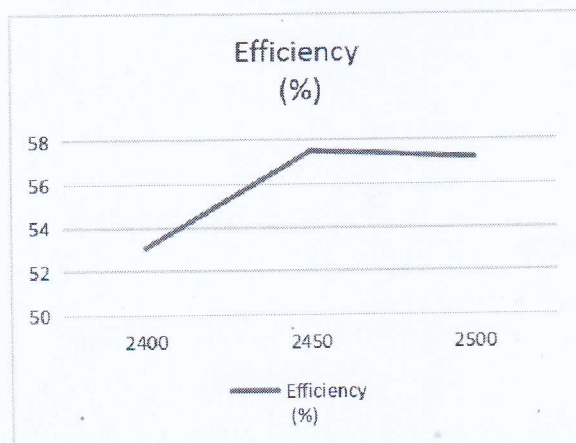
Frequency (MHz)	Return Loss (dB)	VSWR
2400	-14.73	1.44
2450	-21.22	1.19
2500	-16.81	1.33

* Voltage Standing Wave Ratio(VSWR)
Return Loss(RL)
 $RL = 20 * \log_{10}[(VSWR + 1) / (VSWR - 1)]$



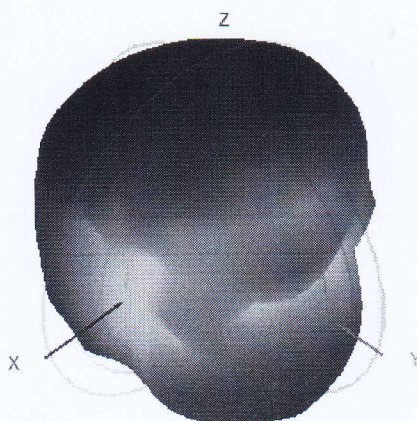
4. Efficiency and Gain

Frequency (MHz)	2400	2450	2500
Efficiency (%)	53.06	57.51	57.2
Gain (dBi)	2.27	2.19	2.71

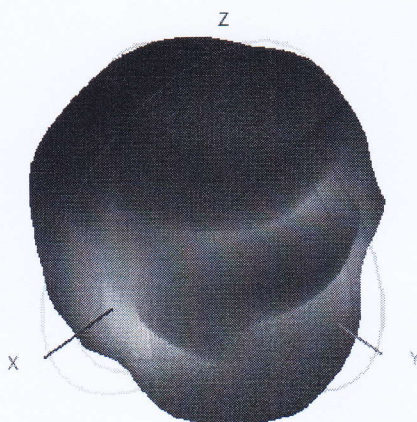


5. Radiation Pattern

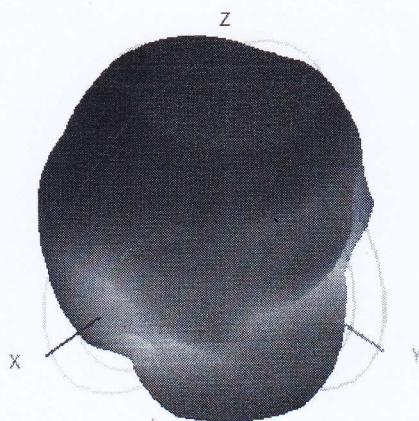
5-1 Antenna 3D Radiation Pattern



2400MHz



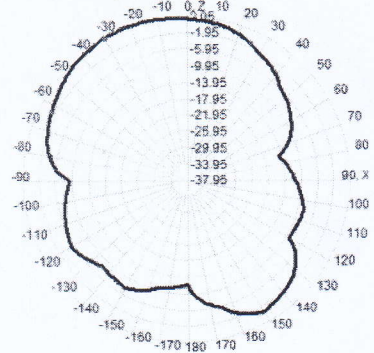
2450MHZ



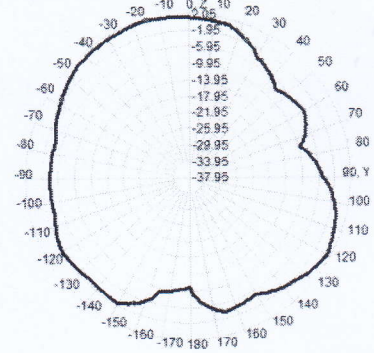
2500MHZ

5-2 Antenna 2D Radiation Pattern

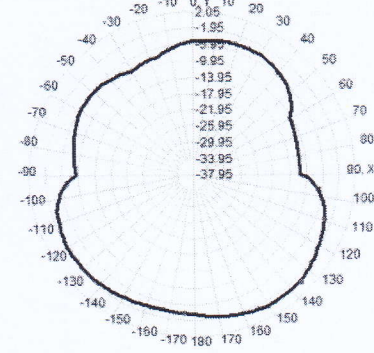
2400.0MHz Total(E1-XZ), Max=2.05dBi



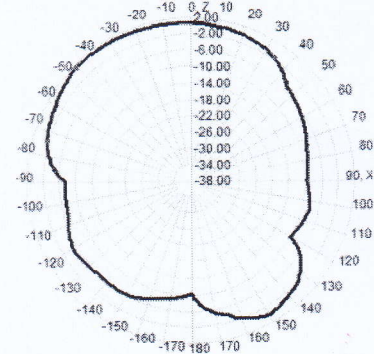
2400.0MHz Total(E2-YZ), Max=1.72dBi



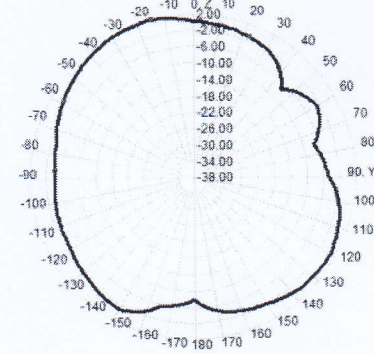
Total(H-XY), Max=-0.95dBi, CirD=10.87



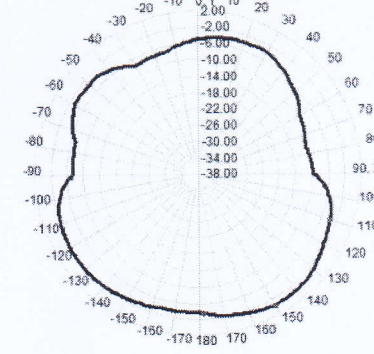
2450.0MHz Total(E1-XZ), Max=1.33dBi



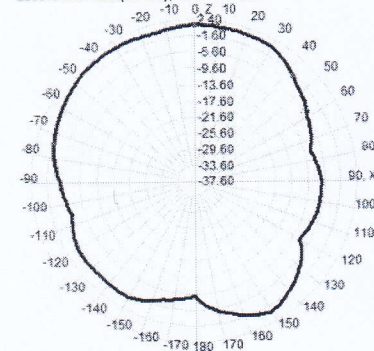
2450.0MHz Total(E2-YZ), Max=2.00dBi



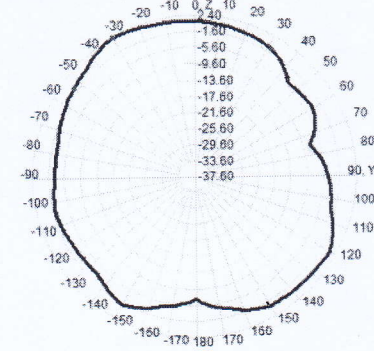
Total(H-XY), Max=-0.80dBi, CirD=10.16



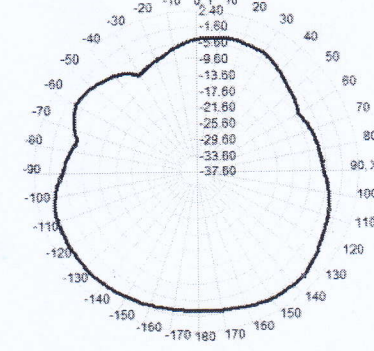
2500.0MHz Total(E1-XZ), Max=1.03dBi



2500.0MHz Total(E2-YZ), Max=2.40dBi



Total(H-XY), Max=-0.78dBi, CirD=9.07



6. Active test data

B 模		
Item	Measurement	Total
1	TRP	16.57
6	TRP	17.25
11	TRP	17.09
1	TIS(EIRP)	-82.78
6	TIS(EIRP)	-83.57
11	TIS(EIRP)	-82.69

N 模		
Item	Measurement	Total
1	TRP	14.99
6	TRP	15.94
11	TRP	15.11
1	TIS(EIRP)	-68.26
6	TIS(EIRP)	-67.18
11	TIS(EIRP)	-68.76

G 模		
Item	Measurement	Total
1	TRP	15.63
6	TRP	16.14
11	TRP	15.80
1	TIS(EIRP)	-69.05
6	TIS(EIRP)	-71.20
11	TIS(EIRP)	-71.49