

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=250mm+端子

客户料号

CUSTOMER P/N:

优比电子料号

Youbi P/N: UB01C250F2D31a0A 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

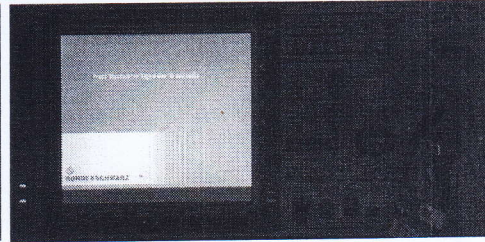
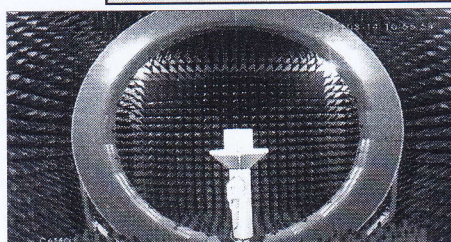
<i>Item</i>	<i>Description</i>
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1. Electrical Specification:

Characteristics	Specifications	Unit
Outline Dimensions	22.9x22.5,L250	mm
Frequency	2400-2500	MHz
Impedance	50	Ω
VSWR	< 2	
Polarization	Linear Polarization	
Gain	2.0 $\pm$ 0.5	dBi
Efficiency	>40	%
Connector Type	1.13 MHF-1-Plug	
Operating temperature	-20 $^{\circ}$ C~+85 $^{\circ}$ C	
Storage Temp	-20 $^{\circ}$ C~+50 $^{\circ}$ C	

2. Test Items and Equipment

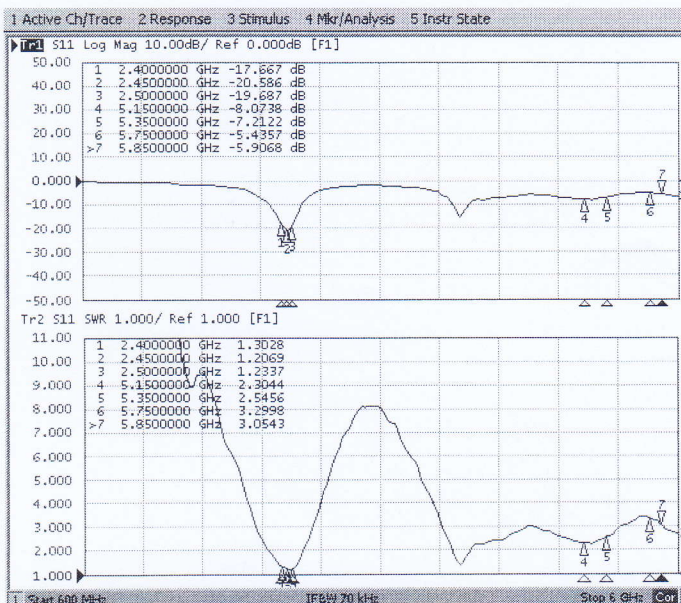
	Test items	Test equipment
S Parameter	1.Return Loss 2.VSWR	Network analyzer (Agilent E5071B)
The whole machine of Passive parameters	1.Frequency 2.Gain 3.Radiation Pattern	1.3D microwave darkroom (5m*5m*5m) 2.Network analyzer (Agilent E5071B)
The whole machine of Active parameters	1.TRP 2.TIS	1.3D microwave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



3. S Parameter

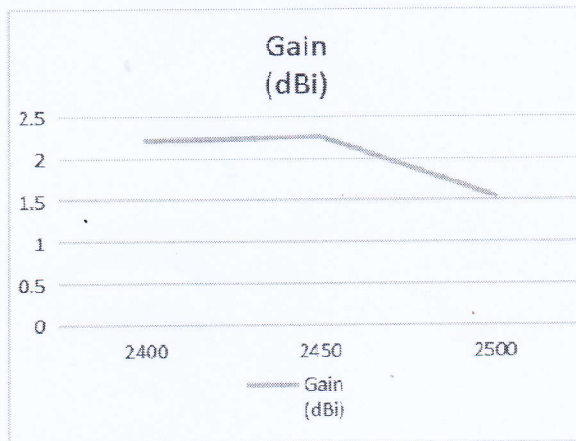
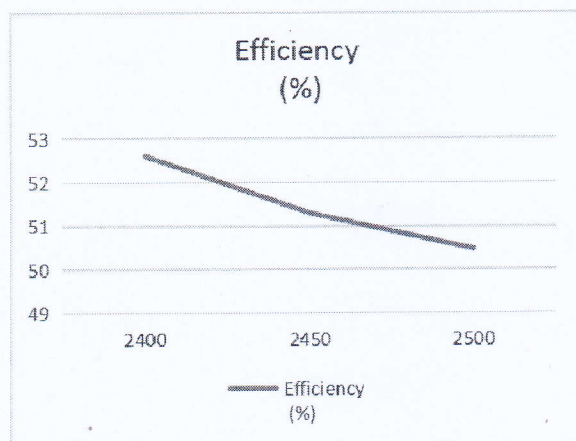
Frequency (MHz)	Return Loss (dB)	VSWR
2400	-17.66	1.30
2450	-20.58	1.20
2500	-19.68	1.23

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



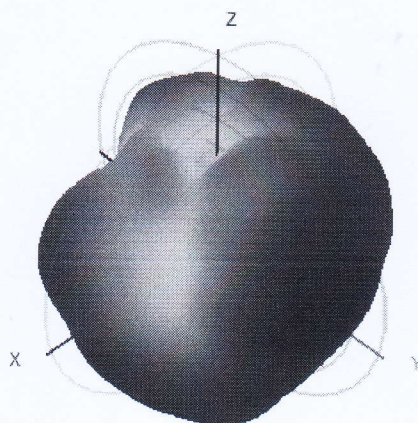
4. Efficiency and Gain

Frequency (MHz)	2400	2450	2500
Efficiency (%)	52.6	51.29	50.46
Gain (dBi)	2.21	2.26	1.55

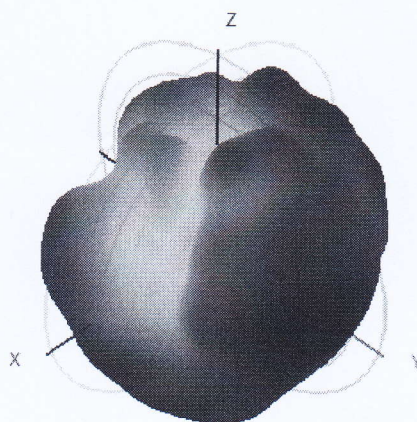


5. Radiation Pattern

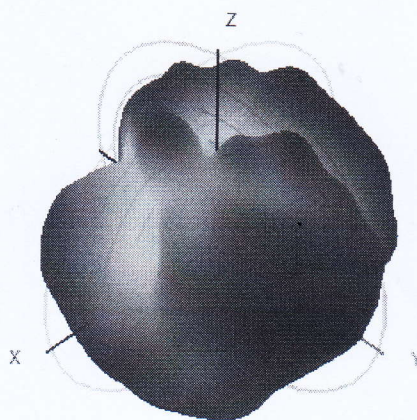
5-1 Antenna 3D Radiation Pattern



2400MHz



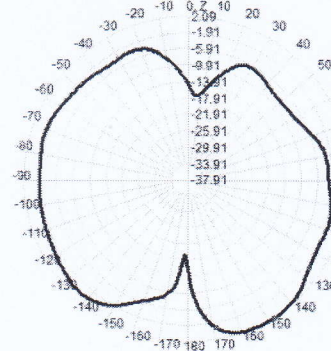
2450MHZ



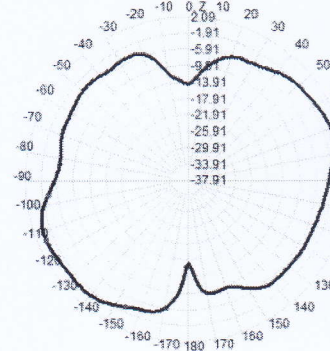
2500MHZ

5-2 Antenna 2D Radiation Pattern

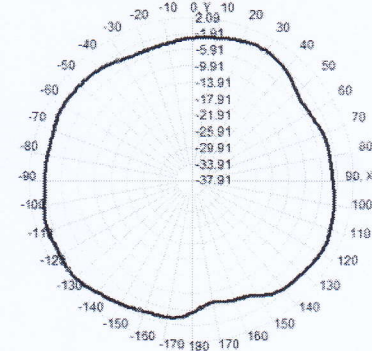
2400.0MHz Total(E1-XZ), Max= 2.09dBi



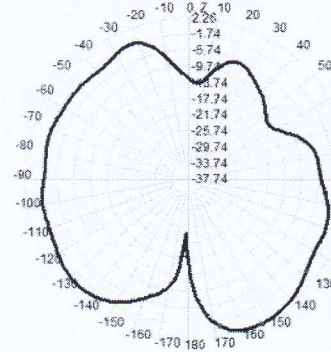
2400.0MHz Total(E2-YZ), Max= -0.25dBi



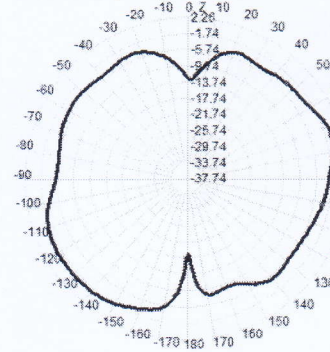
Total(H-XY), Max= -0.50dBi, CirD=6.96



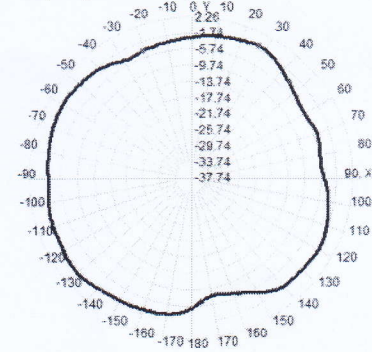
2450.0MHz Total(E1-XZ), Max= 2.26dBi



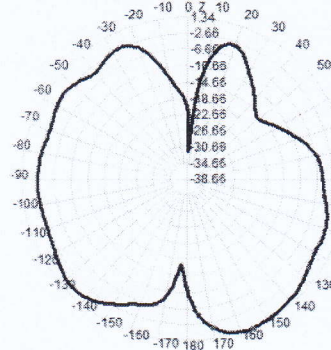
2450.0MHz Total(E2-YZ), Max= -0.62dBi



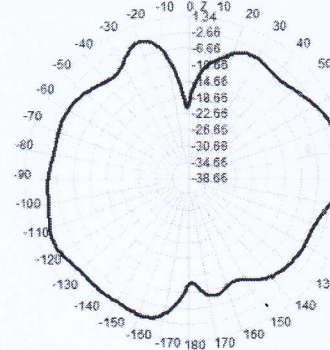
Total(H-XY), Max= -0.98dBi, CirD=7.22



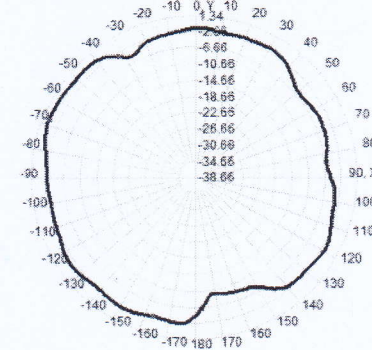
2500.0MHz Total(E1-XZ), Max= 1.34dBi



2500.0MHz Total(E2-YZ), Max= -1.00dBi



Total(H-XY), Max= -0.26dBi, CirD=9.77



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