

# Shenzhen Kinghelm Electronics Co., Ltd"

**Customer:** \_\_\_\_\_

**Model:** \_\_\_\_\_ KH-2400-2M-XP \_\_\_\_\_

**Product Name:** \_\_\_\_\_ 2.4G Sucker Antenna \_\_\_\_\_

**Specification:** \_\_\_\_\_ SMA (ZJ) -2.4G Sucker Antenna 174-Cable 2m \_\_\_\_\_

**Company P/N:** \_\_\_\_\_

Approval Signature					
Manufacture Approval			Customer confirmation		
Engineer	Checked	Approved	Engineer	Checked	Approved
				CHOP&SIGNATURES	
Date	Dec. 28, 2020		Date		
Comments: Accept <input type="checkbox"/> YES <input type="checkbox"/> NO					
Remarks:					

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History of Revision			
Edition	Revision	Engineer	Date
A0	New	Zhan	12. 28. 2020

### 3. Appearance Dimensions

Requirements:

1. The rubber housing shall be free of scratching
2. The joint is well-electroplated and locked smoothly
3. The product is 100% OK with the network distribution test
4. The finished product is 100% OK with the inspection
5. Adopt the environmental-friendly production process
6. The inspection shall lay emphasis on the dimensions marked with @

Technical drawing of an SMA antenna. The drawing shows a side view of the antenna with the following dimensions: SMA connector, 18mm length for the connector section, a total length of 2000±10MM, a base width of 29.5±1mm, and an antenna height of 110±3mm. A label 'RD-174A' is present near the antenna base.

Marks	Number of Revised	Section	Revised Document Number			Model
			Signature	Mm / DD / yy		
Designed	(Signature)	(Mm / DD / yy)	Stage mark	Scale	Product Name	SMA (ZJ) -2.4G Sucker Antenna- 1.3M
Checked				1:01	SHENZHEN KINGHELM ELECTRONIC CO., LTD.	
Approved				Unit		
Craft				MM		

(Frequency Range)	2400-2500MHz
(Gain)	2dBi
(VSWR)	<2.0
(Polarization)	Linear
(Impedance)	50 ohm

#### 4. Mechanical Parameters

Appearance Dimension	Ø29.5*110mm	Mounting	Magnetic installation
Weight	/	Connector Model	Gold-plating SMA-J
Colour of Housing	Black	Cable	RG-174 Cable-3m

#### 5. Antenna Properties Parameters

ITEM	Characteristics	Unit
Frequency Range	2400~2500	MHz
Output Impedance	50	Ω
SWR	≅2.0	---
Gain	≥2	dBi
Polarization	Vertical	
Radiation	Omnidirectional	
Max Power input	10	W
Working Temp	-40~+80	°C
Storage Temp	-45~+55	°C

#### 6. Connector specifications Material and Plating

Serial Number	Part Name	Material	Plating	Remarks
1	Inner Conductor	Brass	Gold-plating	
2	Insulator	PTFE		
3	Housing	Brass	Gold-plating	

#### Electrical Properties

Serial Number	Testing Item	Technical Criteria	Remarks
1	Characteristic Impedance	50 Ω	
2	Temp Range	-55~+155°C	
3	Frequency Range	0~3GHZ	
4	Dielectric Strength	1000V (rms)	
5	Contact Resistance	Inner Conductor ≤ 3mΩ Outer Conductor ≤ 2mΩ	
6	Insulation Resistance	≥ 5000MΩ	
7	VSWRL	≤ 1.25 (soft cable)	

## 7. Cable Specifications

RG 174					
<b>Structure parameters</b>					
Part Name	Material		Diameter (mm)		
1. Inner Conductor	Bare Copper Wire		7/0.16		
2. Insulator	PE		1.50±0.05		
3. Outer Conductor	Copper-clad aluminum (64 volumes)		64/0.12		
4. Sheath	Black PVC		2.80±0.1		
<b>Electric properties Parameters</b>					
Capacitance (pF/m)			101.05		
Impedance (ohm)			50		
Rate (%)			66		
Bending radius (mm)			10		
Max working voltage (VMS)			1500		
Max frequency (MHz)			3000		
Working temp (°C)			-40 to +85		
Percentage of elongation of braided filament (%)			≥ 10		
Pulling force of finished cable (N)			≤ 140		
Jamming signal masking rate of finished cable (%)			≥ 95		
<b>Attenuation</b>					
Frequency (MHz)			Attenuation (≧ dB/m)		
100			0.276		
400			0.558		
1000			0.899		
2000			1.530		
3000			2.165		

## 8. Environmental Test

<b>Product Name</b>	4G Sucker Antenna			
<b>Test Item</b>	High-low temperature test, humidity test			
<b>Test Equipment</b>	Humidity Chamber	Sample size	3	
<b>Test Standard</b>	1. The plating on the metal surface shall be free of defects such as falling off, cracks and wrinkles; non-metallic parts shall be free of discoloration, cracks, deformation, degumming etc.			
<b>Test Name</b>	Test Item	Criteria	Test Mode	Result
High Temperature Test	Temperature (°C) Time to test temperature (h) Test duration (h)	85±3 1 24	Steps: a) Put the tested part into the test chamber, and then adjust the temperature to 85 °C ± 3 °C, and monitor the time.	Acceptable

	Recovery time (h)	1	b) After the test, place it at room temperature for 1 hour for routine inspection.	
Low Temperature Test	Temperature (°C) Time to test temperature (h) Test duration (h)	-45±3 1 24 1	Steps: a) Put the tested part into the test chamber, and then adjust the temperature to -40 °C± 3 °C, and monitor the time. b) After the test, place it at room temperature for 1 hour for routine inspection.	Acceptable
Humidity Test	Temperature (°C) Relative humidity (%) Test duration (h) recovery time (h)	+40±3 90-95 24 1	Put the tested part into the test chamber, and then adjust the temperature and humidity of the test chamber to + 40 °C± 3 °C and 90-95% respectively, and monitor the time. b) After the test, place it at room temperature for 1 hour for routine inspection.	Acceptable
<b>Test Item</b>	<b>Free Fall Test</b>			
Test Equipment	Desktop with height of 1m	Sample Size	3	
Test Standard	1. If the product is falls at a height of 1m, it shall be free from falling off, cracks, defects, and appearance deformation etc.			
Test Name	Test Item	Criteria	Test mode	Result
Free Fall Test	Dropping height 1000mm	Drop 2 times from both sides	Step: a) Drop the tested part at a height of 1000mm and conduct routine inspection after the test.	Acceptable
<b>Test Item</b>	<b>Salt Spray Test</b>			
Test Equipment	Salt spray testing machine	Sample Size	3	
Test Standard	1. The plating on the metal surface shall not falls off; the appearance shall be free of rust, corrosion, oxidation etc.			
Test Name	Test Item	Criteria	Test Mode	Result
Salt Spray Test	1. NaCl concentration: 2. Air pressure: 3. PH value: 4. spray amount: 5. Temperature of brine test Setting a. Laboratory temperature: b. Pressure tank temperature: 6. Time:	40-60g/1kg 1.0±0.01kgf m² 6.5-7.2 1.0- 2.0ml/80c/h. 35±1°C 47±1°C 12H	Steps: a) Set the salt spray testing machine to the relevant test conditions. b) Put the tested part into the salt spray testing machine for 24 hours. After the test, rinse it with clean water, visually inspect the appearance of the tested part and conduct routine inspection.	Acceptable
Inspector:	Checked:		Approved:	

9. Properties Test Chart



10. Product Image

