

# PROFESSOR TECHNOLOGY CO.,LTD..

## INTRODUCTION

**MIMO2x2 Mobile Hotspot External Antenna**

**MHEA-71-5G/LTE-RG174-2M-2xTS-9**

**2x2 MIMO Antenna Kit for 4G LTE/5G**

**Hotspots & Routers with 2xTS-9**

**Connector(Includes clips & suction cups)**

**2-Cables : 2x 5G/LTE 4G (2x2)**

**Cable1~2 5G/LTE/4G/3G RG174A/U Low loss 2M SMA/M to TS-9**

**600-960/1710-2170/2400-2700/3200~3800MHz 3-5.0dBi**

## 1. INERAL DESCRIPTION

Model No	Products P/N
MHEA-71-5G/LTE-RG174-2M-2xTS-9	MHEA-71-V1

Below is a table summarizing the 5G/LTE/4G/3G/GSM (2in1) antenna design specification.



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## **2.Cable 1-2: (2x2) 5G LTE 4G**

### **2.1 5G/LTE/4G/3G/GSM Multi-band Antenna Electrical Properties**

<b>Parameter</b>	<b>Description</b>
Communication System	5G/LTE/4G/3G/AMPS/GSM/DCS/UMTS
Frequency Band (MHz)	600~960/1710~2170/2400~2700/3200~3800MHz
Average Efficiency	75%/85%/80%80%
Average Gain	3.0~5.0dBi
Nominal Impedance	50 ohm
Polarization	Vertical
Return Loss (Check test Data)	828.817MHz(-28.922dB),1762.00MHz(-39.202dB) 2600.00MHz(-23.110dB),3388.00MHz(-30.560dB)
V.S.W.R <1.5:1	828.817MHz(1.074:1),1762.00MHz(1.022:1) 2600.00MHz(1.150:1),3388.00MHz(1.061:1)
Reflection coefficient	828.817MHz(0.036),1762.00MHz(0.011) 2600.00MHz(0.070),3388.00MHz(0.030)

### **2.2 5G/LTE/4G/3G/2G Multi-band Antenna Mechanical Properties**

<b>Parameter</b>	<b>Description</b>
Antenna Type	Panel External Antenna
Compatible with	Modems,Routers and MobileHotspots
Mounting	Clips mount & Window Mbilount
Antenna size	L:156.0mm x W:136.0mm x H:12.2mm
Antenna Material	PC & ABS
Antenna cable	RG174 Low loss cable
Connector Type	2x TS-9 (SMA male to TS-9 male)
Antenna Cable Total Length	2000mm (6.56ft)
Antenna Color	Black
Waterproof	100% water proof.(IP66~P67)
Operating Temperature 1Range	-30 °C~+70 °C
Storage Temperature Range	-40 °C~+80 °C
Shock (Drop Test)	100cm drop on concret

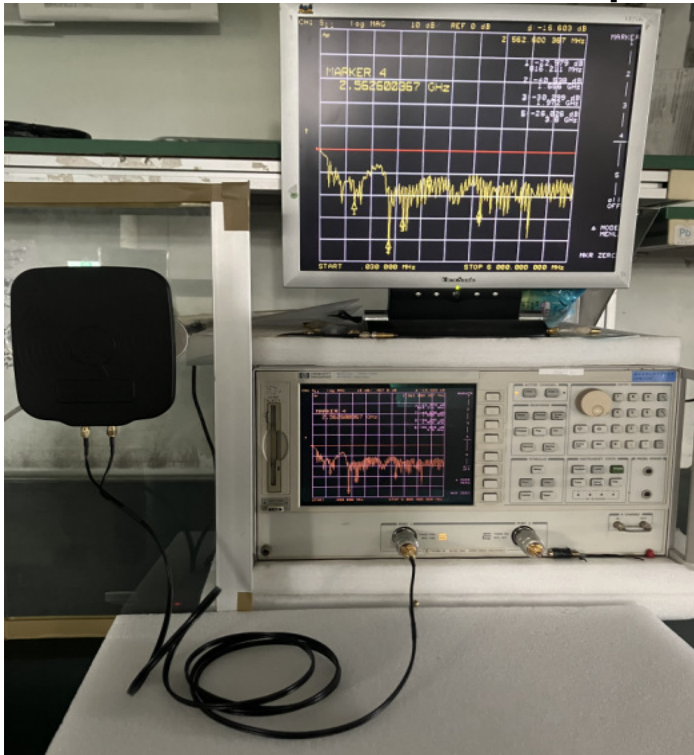
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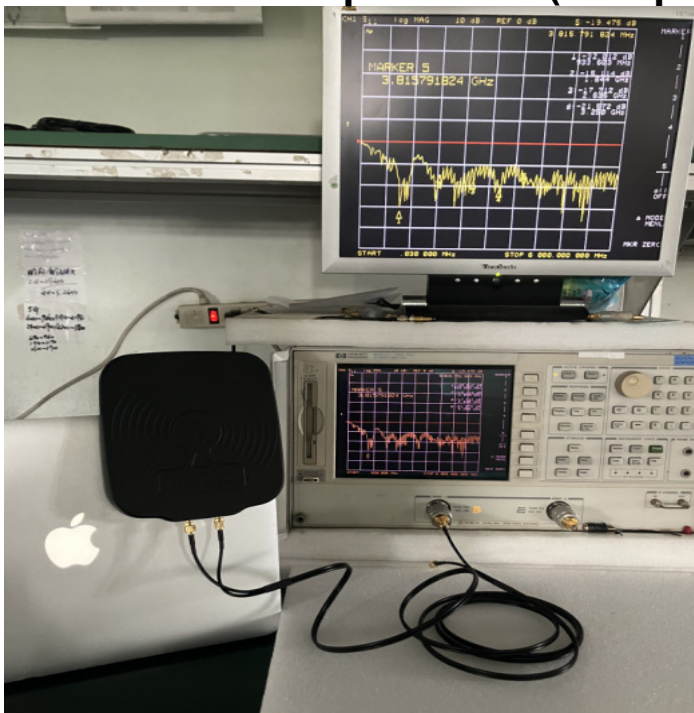
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**Cable 1 & 2: 5G/LTE/4G/3G/GSM Multi-Band Network analyzer test HP8753E with suction cups Window mount(16-Apr-23)**



**Cable 2: 5G/LTE/4 G/3G/GSM Multi-Band Network analyze test HP8753E with clips mount (16-Apr-2023)**



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## **3. Antenna Appearance Size:**

**Length:156.0mm (6.14")**

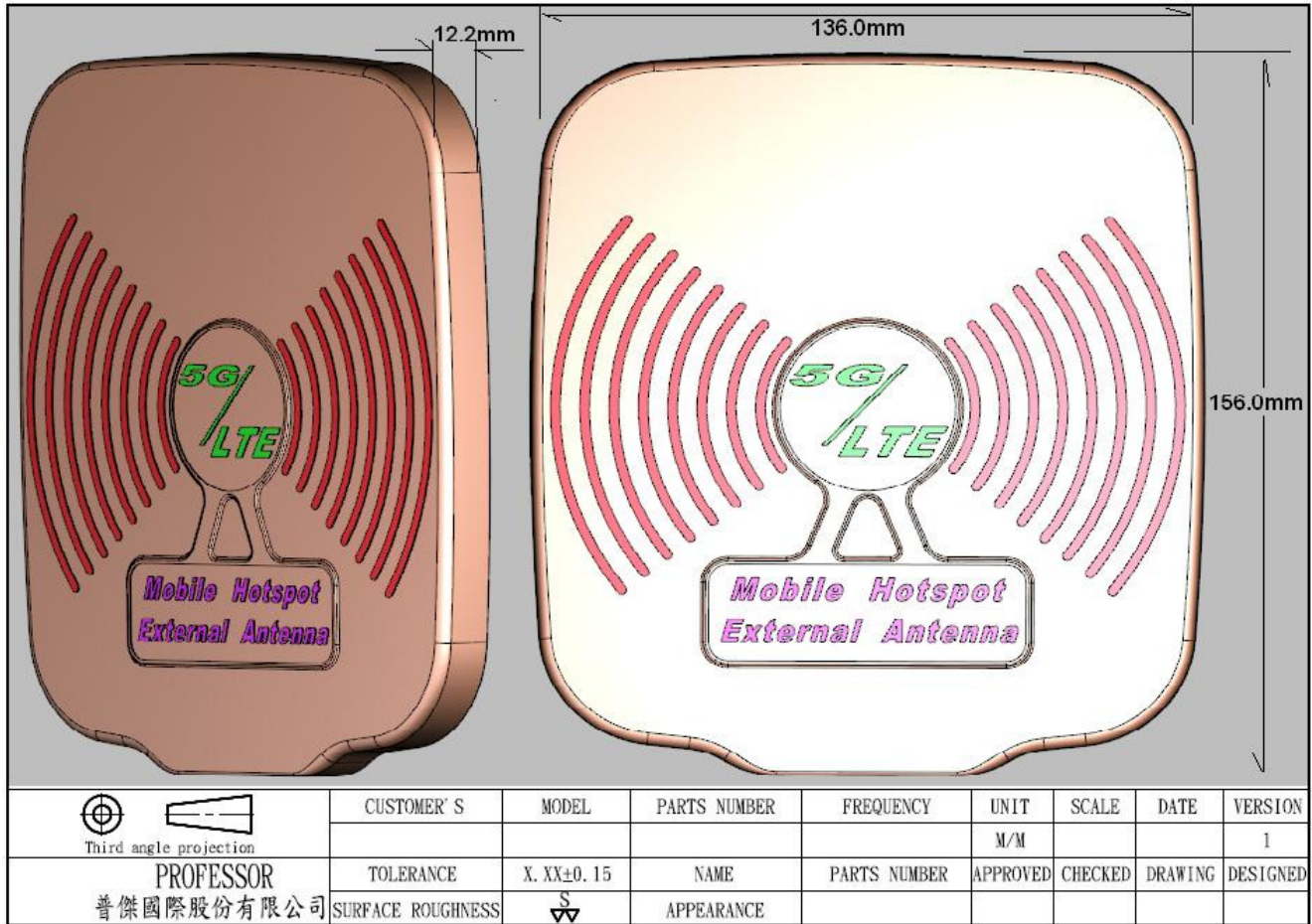
**Width:136.0mm (5.35")**

**Height :12.2mm (0.48")**



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## 4.Appearance



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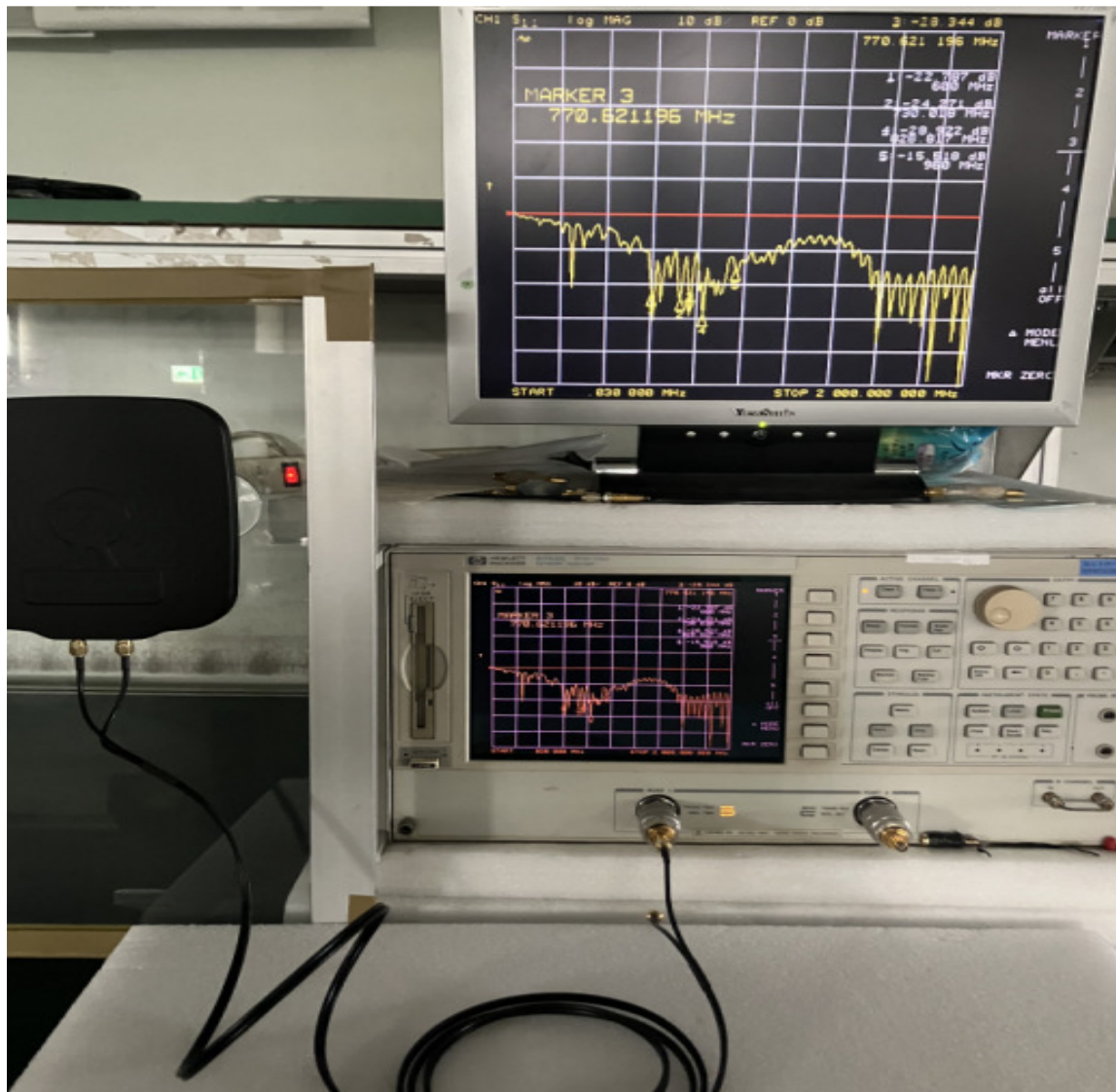
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## **5. 5G/LTE/4G/3G/GSM Multi-band Network analyzer test HP8753E (16-Apr-2023)**

**Frequency :600~960/1710~2170/2400~2700/3200~3800MHz**

**5-1 Detail band test - frequency : 600~960MHz**

<b>Frequency</b>	<b>Return loss</b>	<b>V.S.W.R</b>	<b>Reflection coefficient</b>
<b>600.000MHz</b>	<b>-22.787dB</b>	<b>1.156:1</b>	<b>0.073</b>
<b>730.018MHz</b>	<b>-24.274dB</b>	<b>1.130:1</b>	<b>0.061</b>
<b>770.621MHz</b>	<b>-28.344dB</b>	<b>1.080:1</b>	<b>0.038</b>
<b>828.817MHz</b>	<b>-28.922dB</b>	<b>1.074:1</b>	<b>0.036</b>
<b>960.000MHz</b>	<b>-15.518dB</b>	<b>1.402:1</b>	<b>0.168</b>

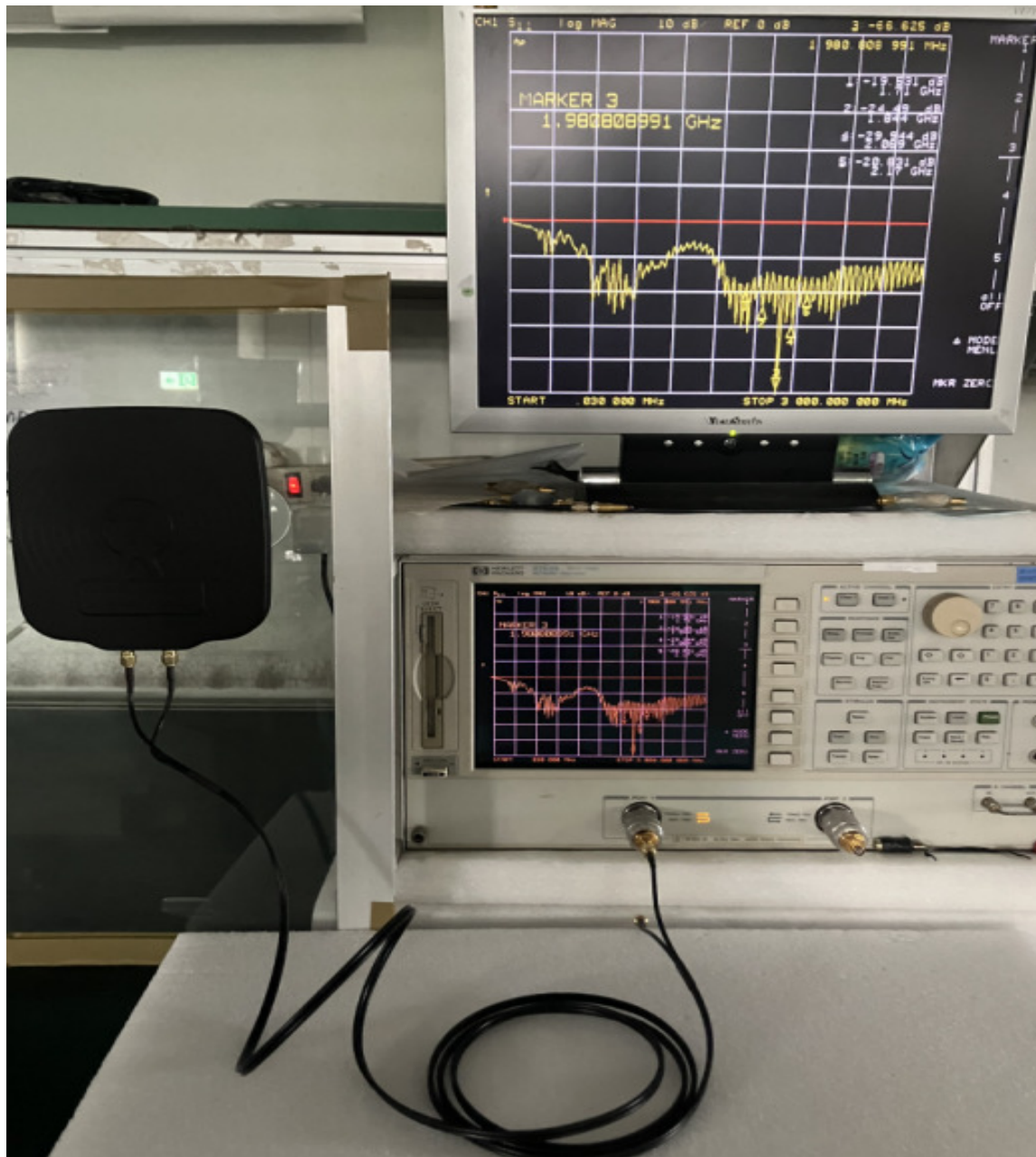


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## **5-2 Detail band test - frequency : 1710~2170MHz**

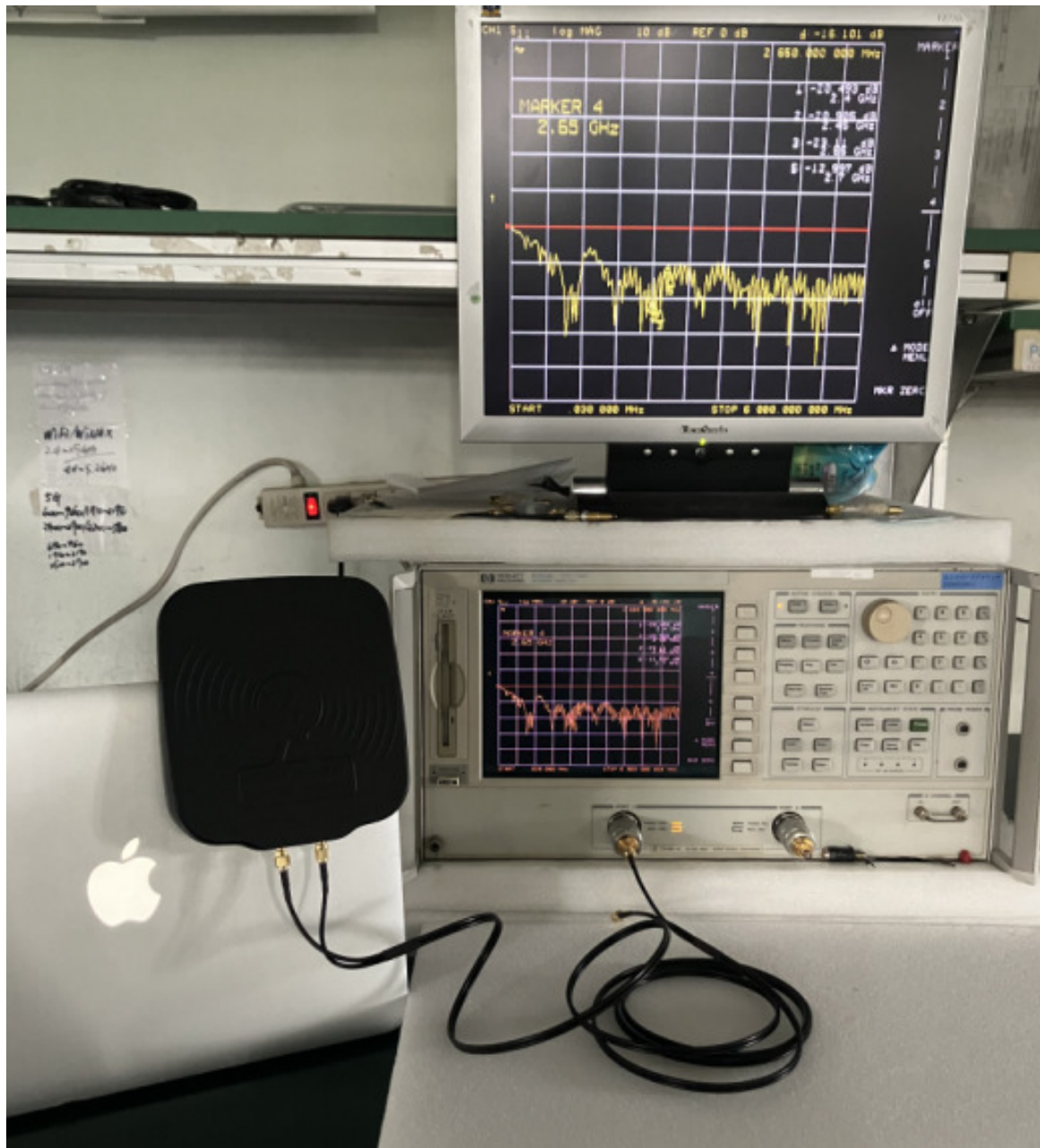
<b>Frequency</b>	<b>Return loss</b>	<b>V.S.W.R</b>	<b>Reflection coefficient</b>
1710.00MHz	-16.780dB	1.339:1	0.145
1762.00MHz	-39.202dB	1.022:1	0.011
1865.00MHz	-29.203dB	1.072:1	0.035
1948.20MHz	-25.629dB	1.110:1	0.052
2170.00MHz	-17.809dB	1.295:1	0.129



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## **5-3 Detail band test - frequency : 2400-2700MHz**

<b>Frequency</b>	<b>Return loss</b>	<b>V.S.W.R</b>	<b>Reflection coefficient</b>
<b>2400.00MHz</b>	<b>-20.493dB</b>	<b>1.209:1</b>	<b>0.094</b>
<b>2450.00MHz</b>	<b>-20.905dB</b>	<b>1.198:1</b>	<b>0.090</b>
<b>2600.00MHz</b>	<b>-23.110dB</b>	<b>1.150:1</b>	<b>0.070</b>
<b>2650.00MHz</b>	<b>-16.101dB</b>	<b>1.372:1</b>	<b>0.157</b>
<b>2700.00MHz</b>	<b>-12.997dB</b>	<b>1.577:1</b>	<b>0.224</b>





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## **5-4 Detail band test - frequency : 3200-3800MHz**

<b>Frequency</b>	<b>Return loss</b>	<b>V.S.W.R</b>	<b>Reflection coefficient</b>
<b>3200.00MHz</b>	<b>-19.761dB</b>	<b>1.229:1</b>	<b>0.103</b>
<b>3388.00MHz</b>	<b>-30.560dB</b>	<b>1.061:1</b>	<b>0.030</b>
<b>3481.39MHz</b>	<b>-23.055dB</b>	<b>1.151:1</b>	<b>0.070</b>
<b>3659.00MHz</b>	<b>-22.981dB</b>	<b>1.153:1</b>	<b>0.071</b>
<b>3800.00MHz</b>	<b>-11.965dB</b>	<b>1.675:1</b>	<b>0.252</b>

