

# ***PROFESSOR TECHNOLOGY CO.,LTD.***

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## **INTRODUCTION YAGI Antenna 450~6000MHz Wall/Bracket/Pole Mount**

**CPR21F-450~6000MHz-RG58A/U-5M-SMA/M  
440~460/600~960/1710~2170/2400~2700/3200-3800  
4500~5200/5600~6000MHz**

### **1. GENERAL DESCRIPTION**

<b>Model No</b>	<b>Products P/N</b>
<b>CPR21F-450~6000MHz-5M-SMA/M</b>	<b>CPR21-Full -5M-SMA</b>

Below is a table summarizing the Full Band 450~6000MHz YAGI Antenna design specification.

#### **1.1 Electrical Properties**

<b>Parameter</b>	<b>Description</b>
<b>Frequency Band</b>	<b>440~460/600~960/1710~2170/2400-2700/3200 ~3800/4500~5200/5600~6000MHz</b>
<b>Antenna system</b>	<b>5G/4G/3G/450/WiFi/WLAN/LTE/GSM/GPRS/WCDMA</b>
<b>Nominal Impedance</b>	<b>50 ohm</b>
<b>Polarization</b>	<b>Vertical</b>
<b>Return Loss</b>	<b>450.0MHz(-26.231dB),739.4MHz(-33.752dB) 2069MHz(-35.868dB),2430MHz(34.291dB) 2600MHz(-26.078dB),3426MHz(-36.736dB) 4976MHz(-52.384dB),5700MHz(-42.915dB)</b>
<b>V.S.W.R</b>	<b>450.0MHz(1.103:1),739.4MHz(1.042:1) 2069MHz(1.033:1),2430MHz(1.039:1) 2600MHz(1.105:1),3426MHz(1.030:1) 4976MHz(1.005:1),5700MHz(1.014:1)</b>
<b>Reflection coefficient</b>	<b>450.0MHz(0.499),739.4MHz(0.021) 2069MHz(0.016),2430MHz(0.019) 2600MHz(0.050),3426MHz(0.015) 4976MHz(0.002),5700MHz(0.007)</b>
<b>Antenna Average Gain</b>	<b>7~10dB</b>
<b>Ground Plane Independent</b>	<b>No</b>
<b>Note: Gain includes the cable loss</b>	

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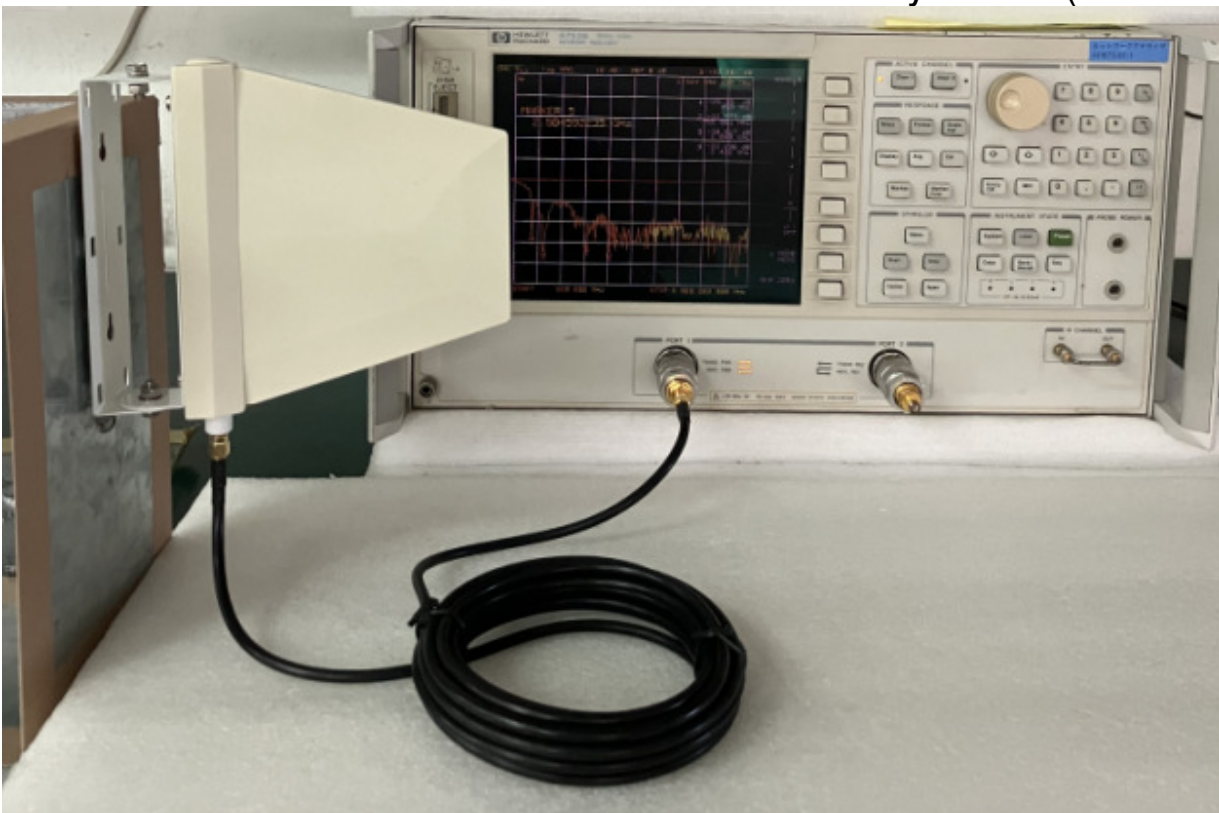
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## **1.2 Mechanical Properties**

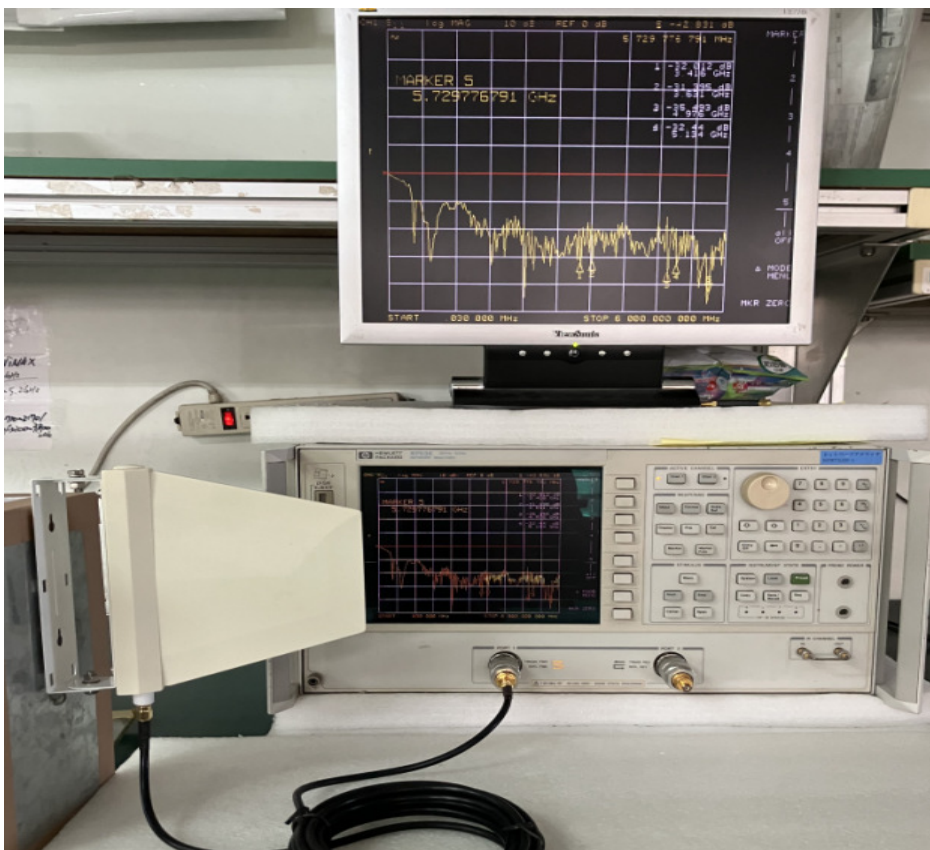
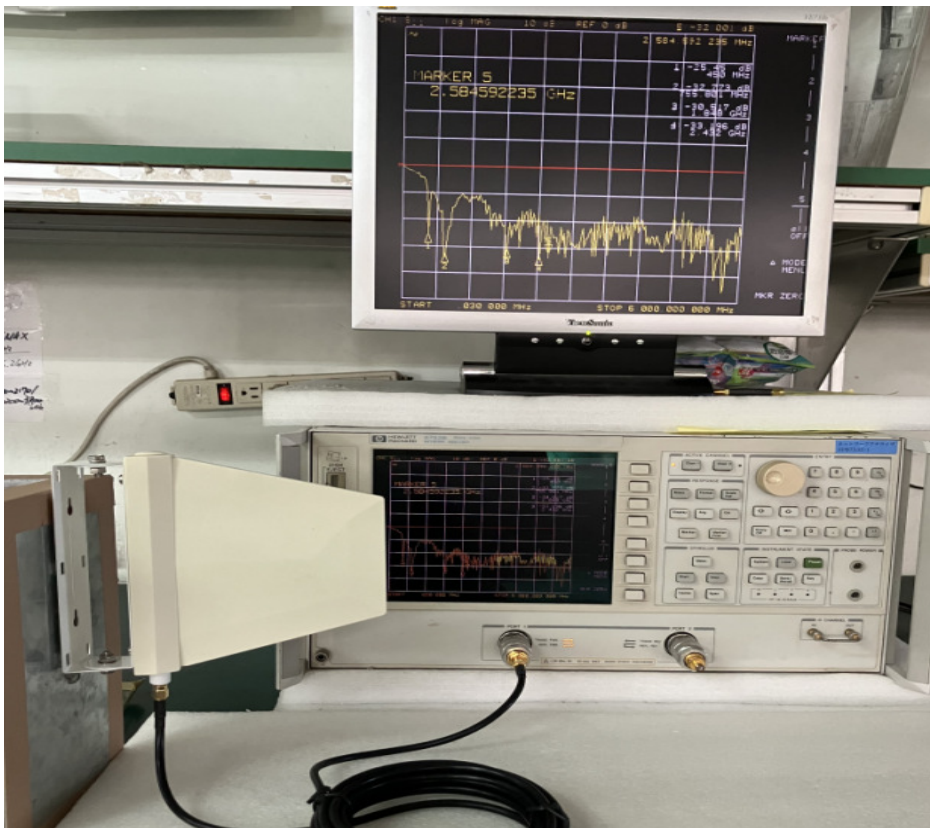
<b>Parameter</b>	<b>Description</b>
<b>Antenna Type</b>	<b>External Antenna</b>
<b>Antenna Material</b>	<b>PCB &amp; ABS Plastic</b>
<b>Antenna Size</b>	<b>L:176mm x W:147mm x H:27mm</b>
<b>Touch Type</b>	<b>Wall bracket</b>
<b>Connector Type</b>	<b>SMA/Female &amp; SMA/Male</b>
<b>Antenna Cable</b>	<b>RG58A/U Low Loss</b>
<b>Antenna Cable Total Length</b>	<b>5000mm ± 50mm</b>
<b>Antenna Color</b>	<b>ABS White color</b>
<b>Operating Temperature Range</b>	<b>-35°C~+75°C</b>
<b>Storage Temperature Range</b>	<b>-40°C~+80°C</b>
<b>Waterproof</b>	<b>100% waterproof (IP66~IP67)</b>
<b>Weight</b>	<b>430g (includes the cable 5M)</b>

CPR21F-450~6000MHz Multi-band Network analyzer test(21-Jul-2022)



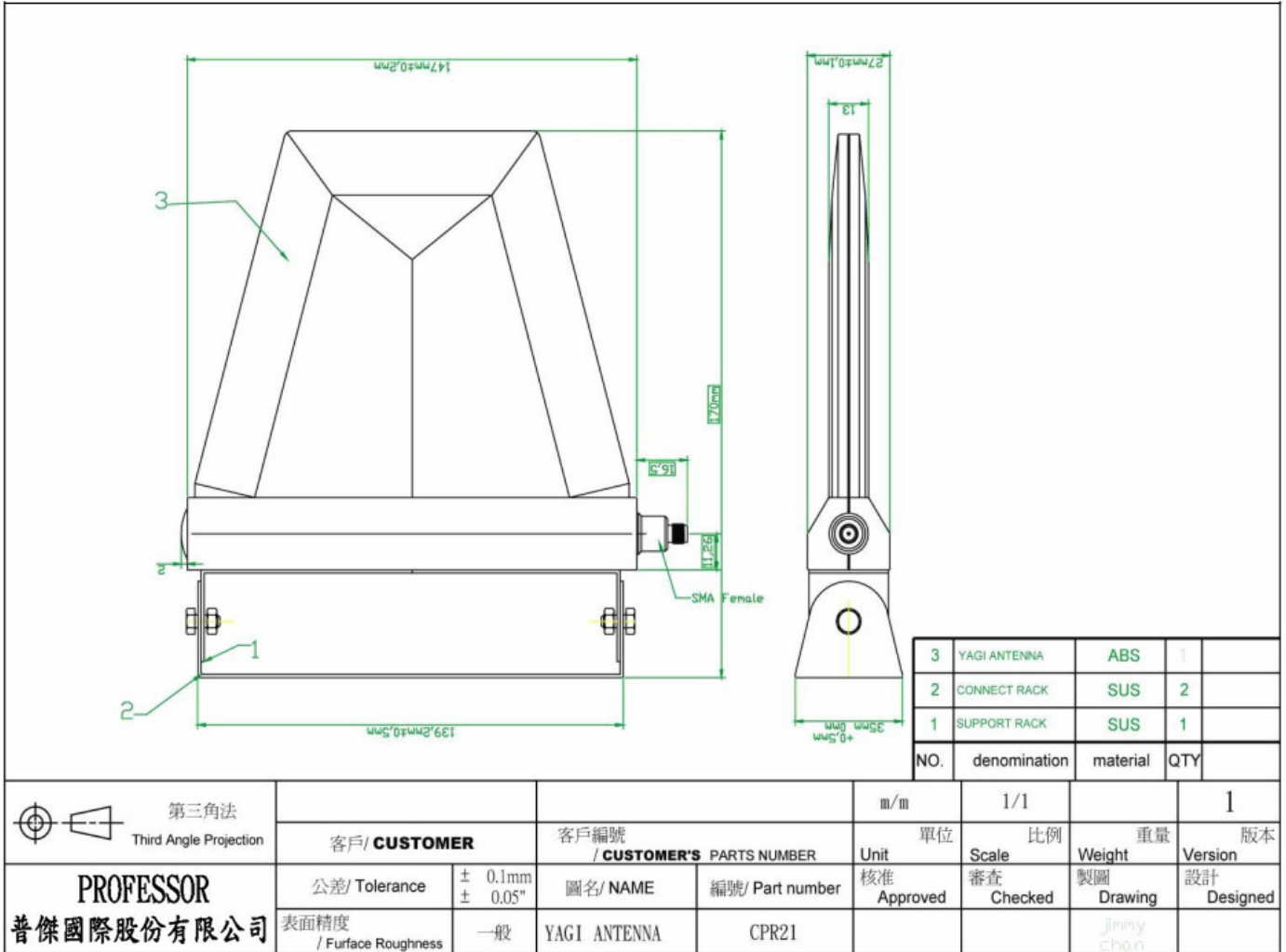
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## 2-1.Appearance



MINI Antenna CPR21-LTE 5G/4G/3G/GSM Full Band+RG58U-5M-SMA/M

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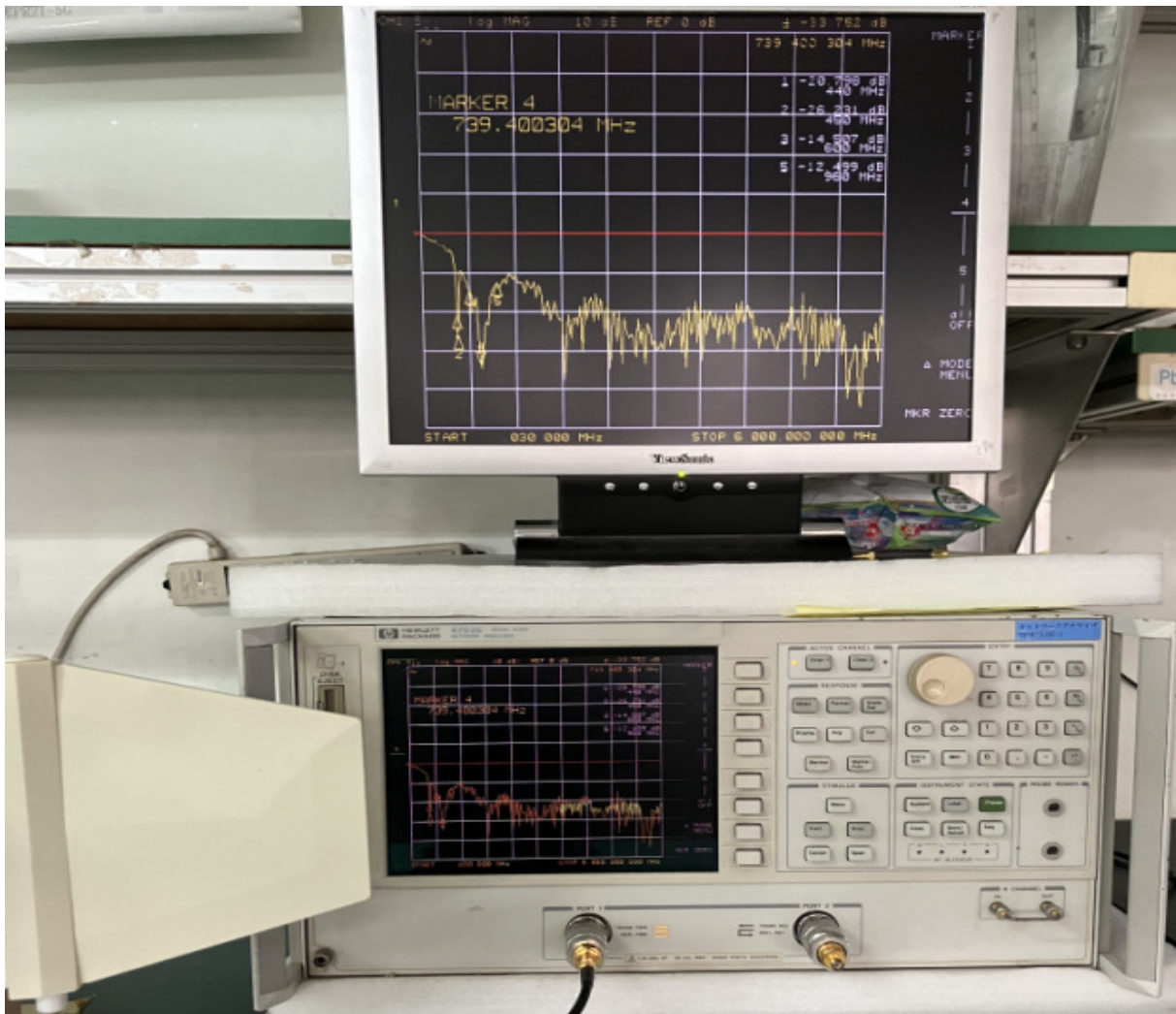
## **2. FREQUENCY**

**Mini Yagi antenna CPR21F with HP 8753E30kHz-6Ghz  
Network analyzer test (21-Jul-2022)**

**Frequency:440~460/600-960/1710-2170/2400-2700/3200-3800/4500~5200/5600~6000Mhz**

**3-1 Detail band test - Frequency : 440~960/MHz (LTE 5G)**

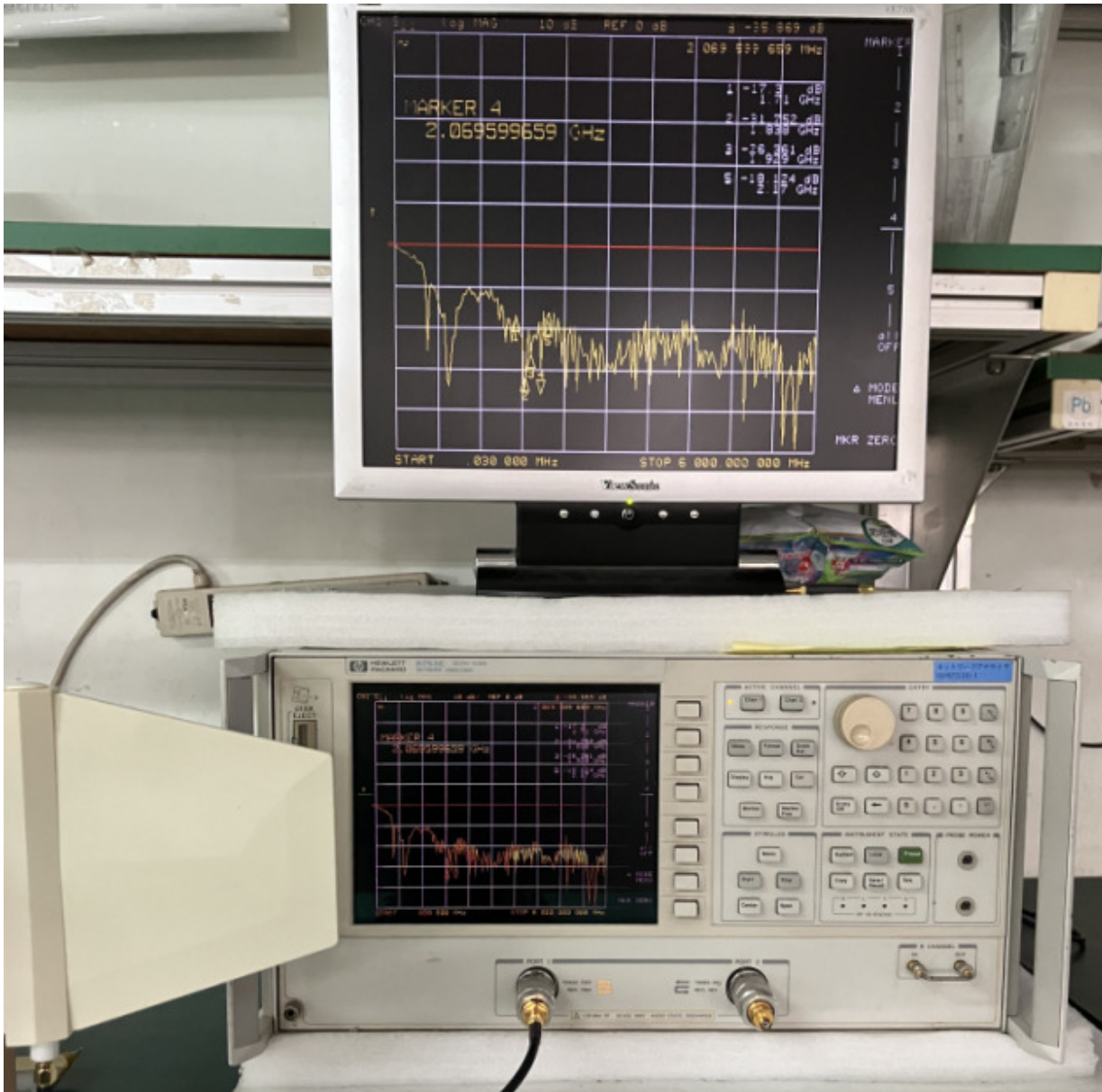
<b>Frequency</b>	<b>Return loss</b>	<b>V.S.W.R</b>	<b>Reflection coefficient</b>
<b>440.000MHz</b>	<b>-20.798dB</b>	<b>1.201:1</b>	<b>0.091</b>
<b>450.000MHz</b>	<b>-26.231dB</b>	<b>1.103:1</b>	<b>0.049</b>
<b>600.000MHz</b>	<b>-14.507dB</b>	<b>1.464:1</b>	<b>0.188</b>
<b>739.400MHz</b>	<b>-33.752dB</b>	<b>1:042:1</b>	<b>0.021</b>
<b>960.000MHz</b>	<b>-12.499dB</b>	<b>1.622:1</b>	<b>0.237</b>



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## **3-2 Detail band test - Frequency : 1710-2170MHz (LTE)**

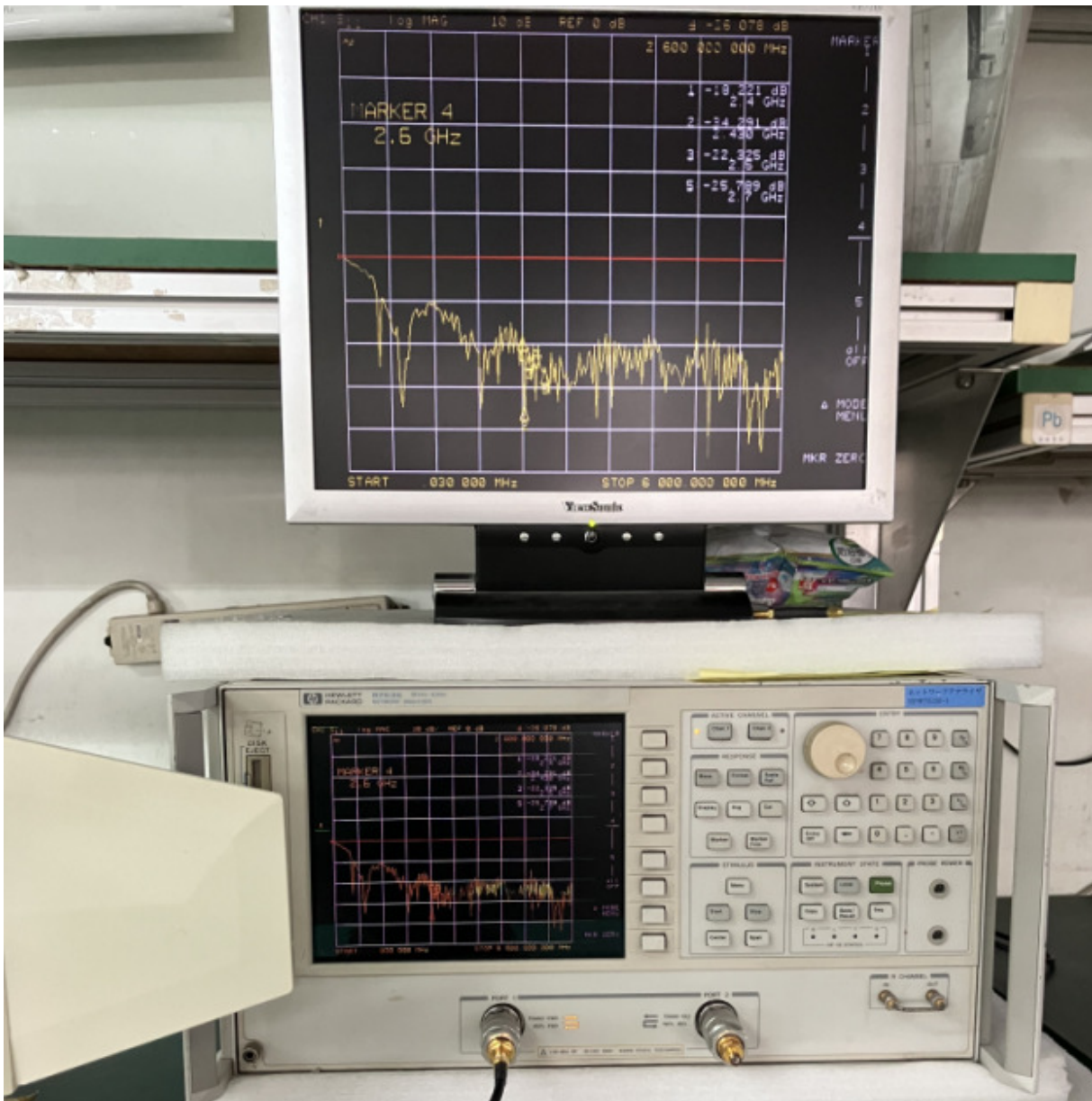
<b>Frequency</b>	<b>Return loss</b>	<b>V.S.W.R</b>	<b>Reflection coefficient</b>
<b>1710.00MHz</b>	<b>-17.300dB</b>	<b>1.316:1</b>	<b>0.136</b>
<b>1838.00MHz</b>	<b>-31.752dB</b>	<b>1.053:1</b>	<b>0.026</b>
<b>1929.00MHz</b>	<b>-26.361dB</b>	<b>1.101:1</b>	<b>0.048</b>
<b>2069.59MHz</b>	<b>-35.868dB</b>	<b>1.033:1</b>	<b>0.016</b>
<b>2170.00MHz</b>	<b>-18.124dB</b>	<b>1.283:1</b>	<b>0.124</b>



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## 3-3 Detail band test- Frequency:2400-2700MHz (5G 2600)

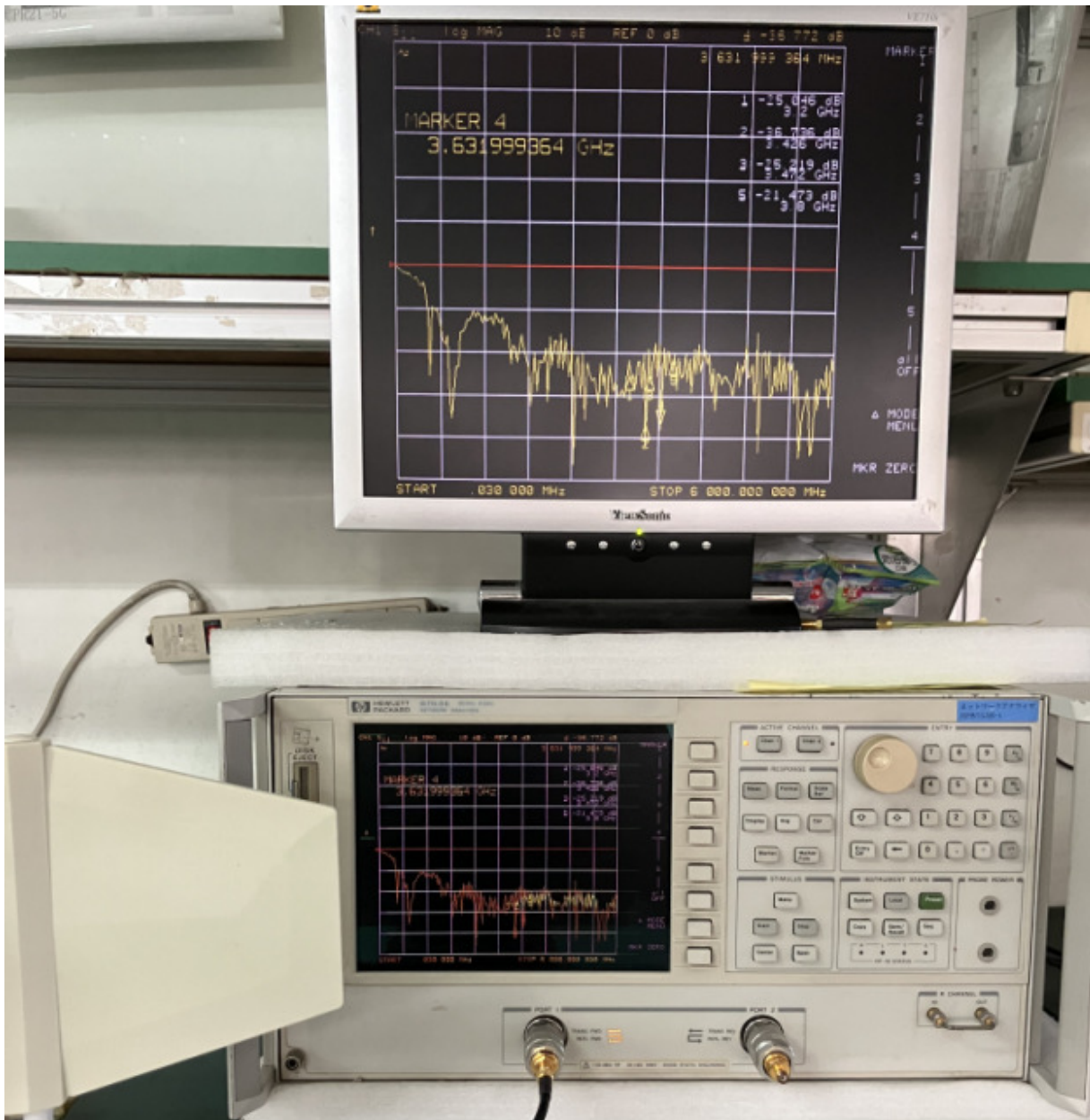
Frequency	Return loss	V.S.W.R	Reflection coefficient
2400.00MHz	-18.221dB	1.280:1	0.123
2430.00MHz	-34.291dB	1.039:1	0.019
2500.00MHz	-22.325dB	1.166:1	0.077
2600.00MHz	-26.078dB	1.105:1	0.050
2700.00MHz	-25.789dB	1.108:1	0.051



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## **3-4 Detail band test- Frequency:3200-3800MHz (5G 3300)**

<b>Frequency</b>	<b>Return loss</b>	<b>V.S.W.R</b>	<b>Reflection coefficient</b>
<b>3200.00MHz</b>	<b>-25.046dB</b>	<b>1.119:1</b>	<b>0.056</b>
<b>3426.00MHz</b>	<b>-36.736dB</b>	<b>1.030:1</b>	<b>0.015</b>
<b>3572.00MHz</b>	<b>-25.219dB</b>	<b>1.116:1</b>	<b>0.055</b>
<b>3631.99MHz</b>	<b>-36.722dB</b>	<b>1.029:1</b>	<b>0.015</b>
<b>3800.00MHz</b>	<b>-21.473dB</b>	<b>1.184:1</b>	<b>0.084</b>

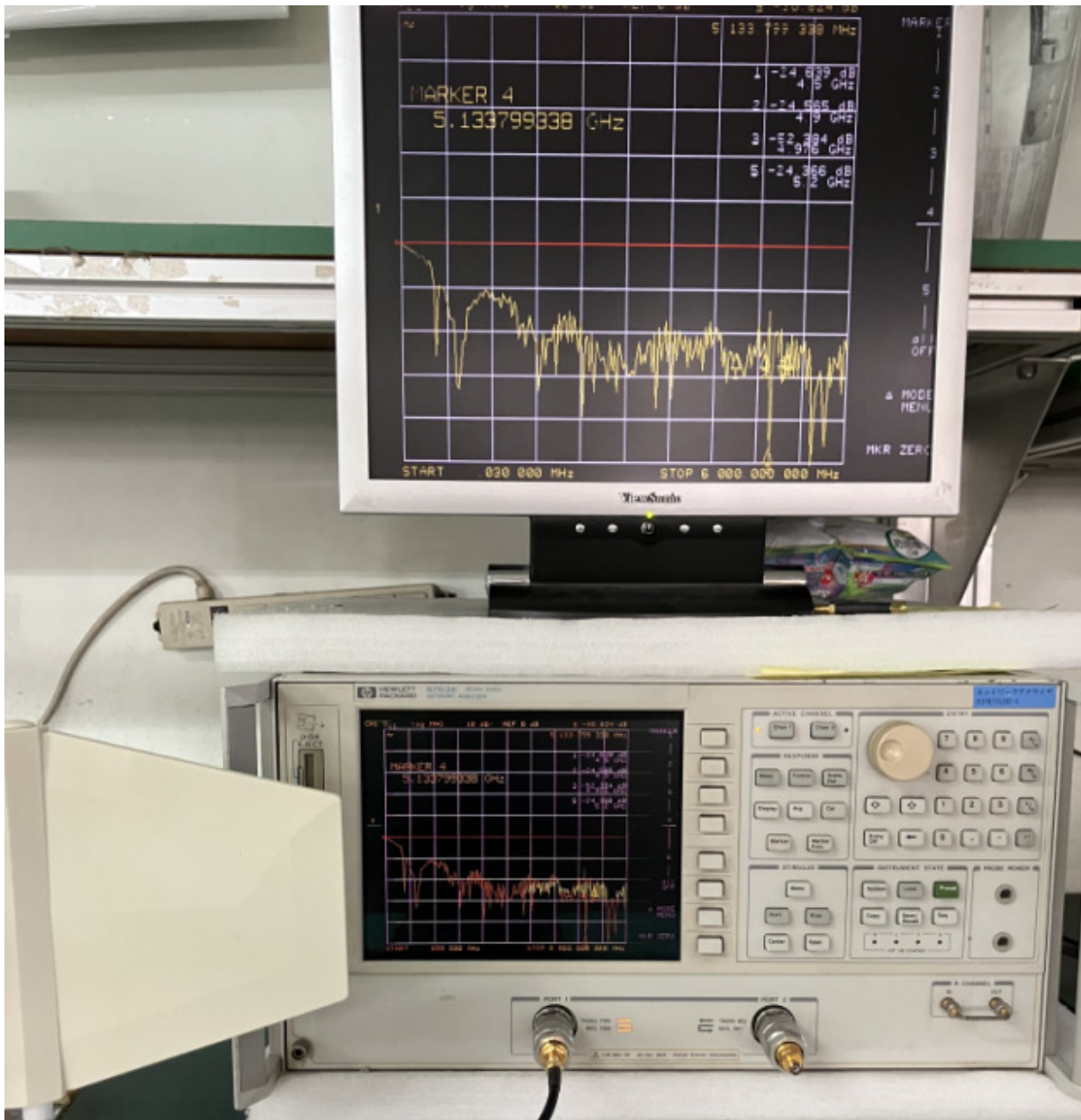




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## 3-5 Detail band test- Frequency:4500-5200MHz (WiFi 5.0G)

Frequency	Return loss	V.S.W.R	Reflection coefficient
4500.00MHz	-24.639dB	1.125:1	0.059
4900.00MHz	-24.565dB	1.126:1	0.059
4976.00MHz	-52.384dB	1.005:1	0.002
5133.79MHz	-30.824dB	1.059:1	0.029
5200.00MHz	-24.366dB	1.129:1	0.060



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## **3-5 Detail band test- Frequency:5600-6000MHz (WiFi 5.8G)**

<b>Frequency</b>	<b>Return loss</b>	<b>V.S.W.R</b>	<b>Reflection coefficient</b>
<b>5600.00MHz</b>	<b>-32.981dB</b>	<b>1.046:1</b>	<b>0.049</b>
<b>5700.00MHz</b>	<b>-42.915dB</b>	<b>1.014:1</b>	<b>0.007</b>
<b>5800.00MHz</b>	<b>-31.217dB</b>	<b>1.057:1</b>	<b>0.027</b>
<b>5901.79MHz</b>	<b>-24.415dB</b>	<b>1.128:1</b>	<b>0.060</b>
<b>5950.00MHz</b>	<b>-28.023dB</b>	<b>1.083:1</b>	<b>0.040</b>

