

PROFESSOR TECHNOLOGY CO.,LTD..

INTRODUCTION

**5G/LTE Antenna CP14 - 5G/LTE
Permanent Screws Mount (M16x1.5P)
Slotted Nut & Washer**

**Cables : 5G/LTE/4G/3G CFD195 Low loss 6.1M SMA/M
600-960/1710-2170/2500-2700/3200~3800MHz 2-5dBi**

1. GENERAL DESCRIPTION

| Model No | Products P/N |
|-------------------------------|---------------------|
| CP14-5G/LTE-CFD195-6.1M-SMA/M | CP14-5G/LTE-V3 |

Below is a table summarizing the 5G/LTE/4G/3G antenna design specification

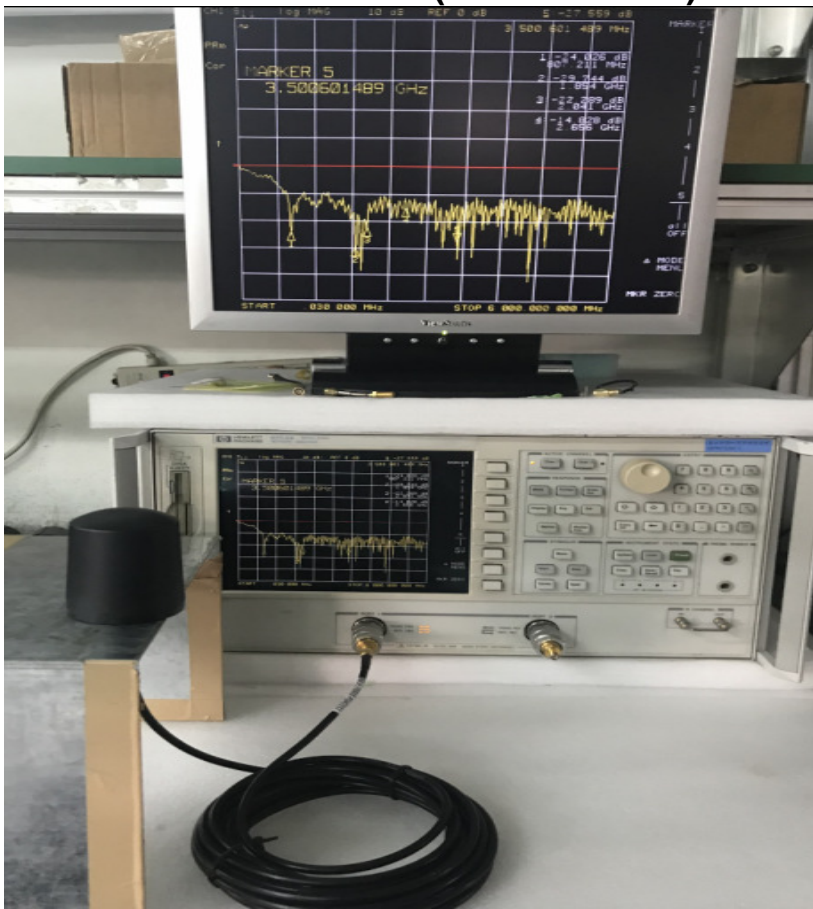


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2.1 5G/LTE/4G/3G Multi-band Antenna Electrical Properties

| Parameter | Description |
|----------------------------------|--|
| Communication System | 5G/LTE/4G/3G/AMPS/GSM/DCS/UMTS |
| Frequency Band (MHz) | 600~960/1710~2170/2500~2700/3200~3800MHz |
| Average Efficiency | 68%/67%/52%64% |
| Average Gain | 2.0~5.0dBi |
| Nominal Impedance | 50 ohm |
| Polarization | Vertical |
| Return Loss (Check test Data) | 800MHz(-21.181dB),1856MHz(-31.99dB),1650(-15.225dB), 3500MHz(-29.716dB) |
| V.S.W.R <1.5:1 | 800MHz(1.191:1),1856MHz(1.052:1),1650(1.419:1),3500MHz(1.168:1) |
| Reflection coefficient | 800MHz(0.087),1856MHz(0.025),1650(0.173),3500MHz(0.033) |

2-2 :5G/LTE/4G/3G Multi-Band Network analyzer test HP8753E (15-Mar-2021)



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

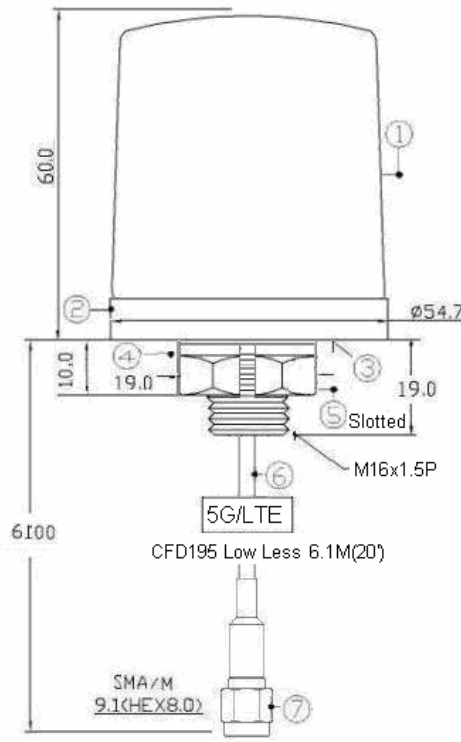
| Parameter | Description |
|-----------------------------|-------------------------------|
| Antenna Type | External Antenna |
| Touch Type | Screw Type (M16x1.5P) Slotted |
| Antenna size | D:54.7mm x H:60.0mm |
| Antenna Material | PC & ABS |
| Antenna cable | CFD195 Low loss |
| Connector Type | SMA 180°(Male) |
| Antenna Cable Total Length | 6100mm |
| Antenna Color | Black |
| Waterproof | 100% waterproof.(IP66~IP67) |
| Operating Temperature Range | -30°C~+70°C |
| Storage Temperature Range | -40°C~+80°C |
| Shock (Drop Test) | 100cm drop on concrete |

3. Antenna Appearance Size:
M16x1.5P Slotted Nut & Washer
Diameter :54.7mm (2.15")
Height : 60.0mm (2.36")



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4.Appearance



Technical drawing showing dimensions and part callouts for the 5G/LTE antenna assembly. Dimensions include a total height of 60.0, a base diameter of $\phi 54.7$, and a cable length of 6100. Callouts 1-8 identify components: 1 (Top Plastic Shell), 2 (Base Housing), 3 (Rubber Adhesive), 4 (Spring washer), 5 (NUT M16x1.5P), 6 (CFD195 Low Loss Cable), and 7 (SMA(M) ST CFD195). The drawing also shows a 5G/LTE label and an SMA/M connector with dimensions 9.1(H) x 8.0.

| | | | | |
|----|-----------------------|-----------------|----------|---|
| 01 | Top Plastic Shell | PC | Black | 1 |
| 02 | Base Housing | PC | Black | 1 |
| 03 | Rubber Adhesive | Rubber | Gray | 1 |
| 04 | Spring washer | Stainless steel | | 1 |
| 05 | NUT M16x1.5P | Stainless steel | | 1 |
| 06 | CFD195 Low Loss Cable | PVC | Black | 1 |
| 07 | SMA(M) ST CFD195 | Brass | AuPlated | 1 |
| 08 | Label LTE | PET | Silver | 1 |

5G/LTE Antenna
CP14-5G/LTE-CFD195-6.1M-SMA/M

ROHS
IP67 Waterproof

| CUSTOMER'S | MODEL | PARTS NUMBER | FREQUENCY | UNIT | SCALE | DATE | VERSION |
|-------------------|------------|--------------|--------------|----------|---------|-------------|----------|
| REI | | CP14-V3 | 5G/LTE | M/M | | 13-Mar-2021 | 1 |
| TOLERANCE | X. XX±0.15 | NAME | PARTS NUMBER | APPROVED | CHECKED | DRAWING | DESIGNED |
| SURFACE ROUGHNESS | S ▽ | APPEARANCE | | Jack | | Jimmy | Jimmy |

Third angle projection
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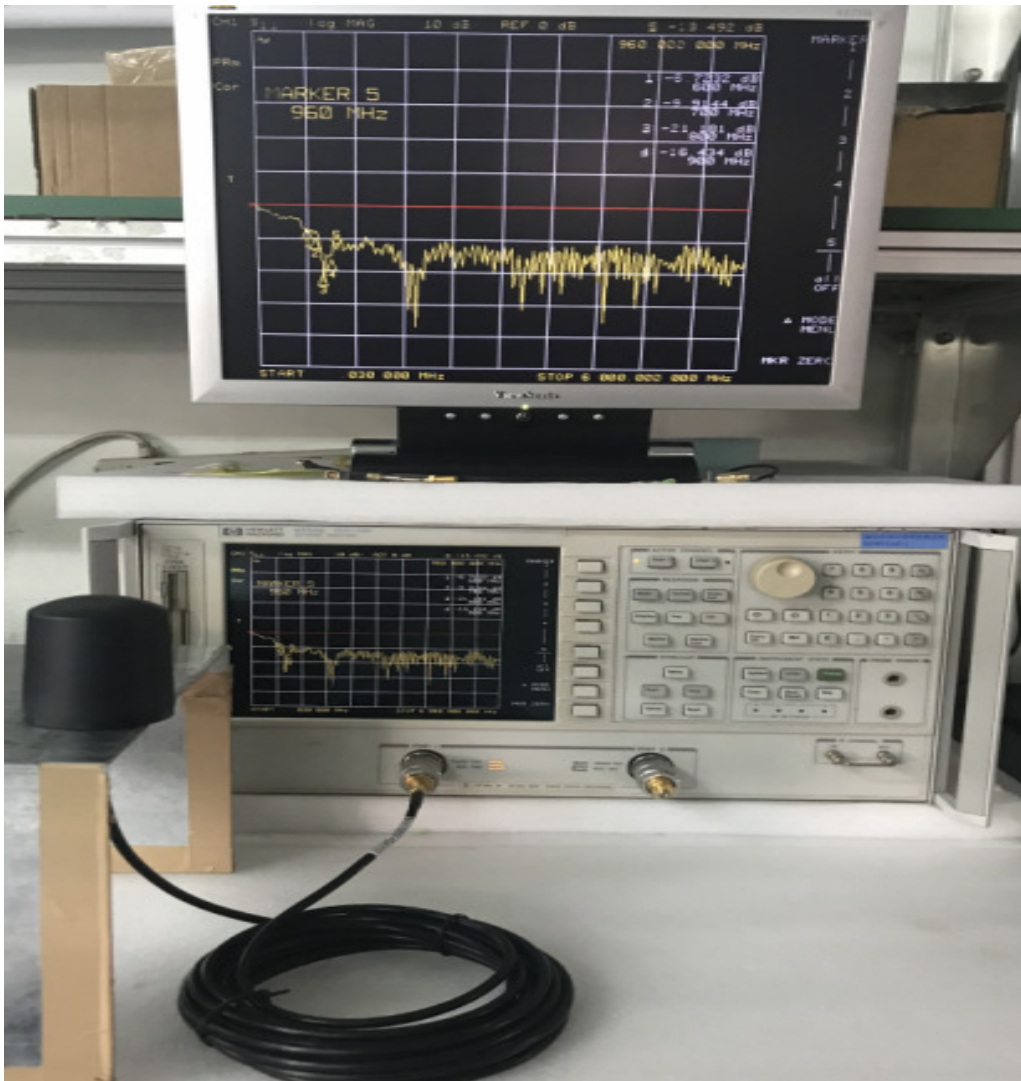
5. 5G/LTE/4G/3G Multi-band Network analyzer test

HP8753E (13-Mar-2021)

Frequency :600~960/1710~2170/2500~2700/3200~3800MHz

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

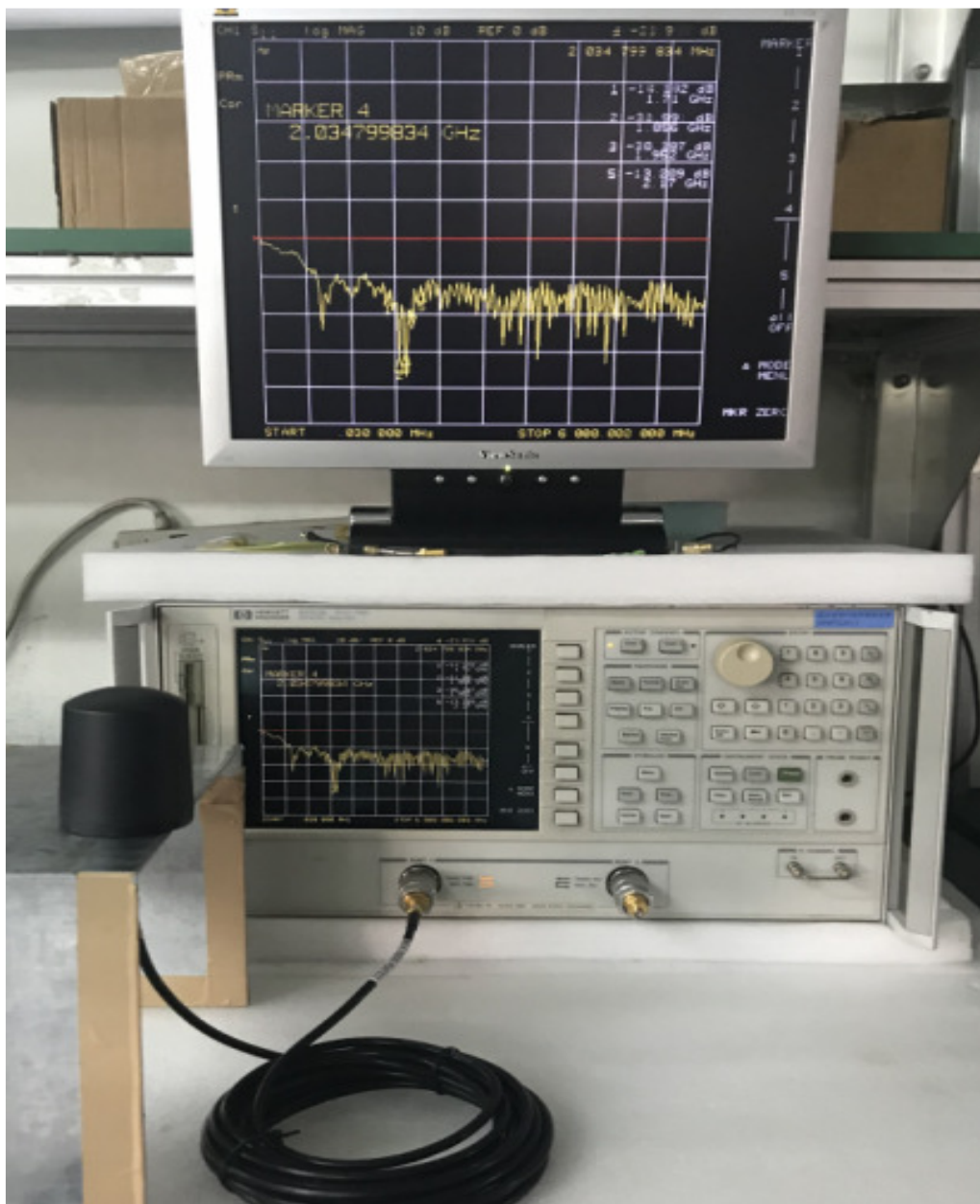
| Frequency | Return loss | V.S.W.R | Reflection coefficient |
|-------------------|--------------------|----------------|-------------------------------|
| 600.000MHz | -6.7273dB | 2.710:1 | 0.461 |
| 700.000MHz | -9.9144dB | 1.938:1 | 0.319 |
| 800.000MHz | -21.181dB | 1.191:1 | 0.087 |
| 900.000MHz | -16.434dB | 1.355:1 | 0.151 |
| 960.000MHz | -13.492dB | 1.537:1 | 0.212 |



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

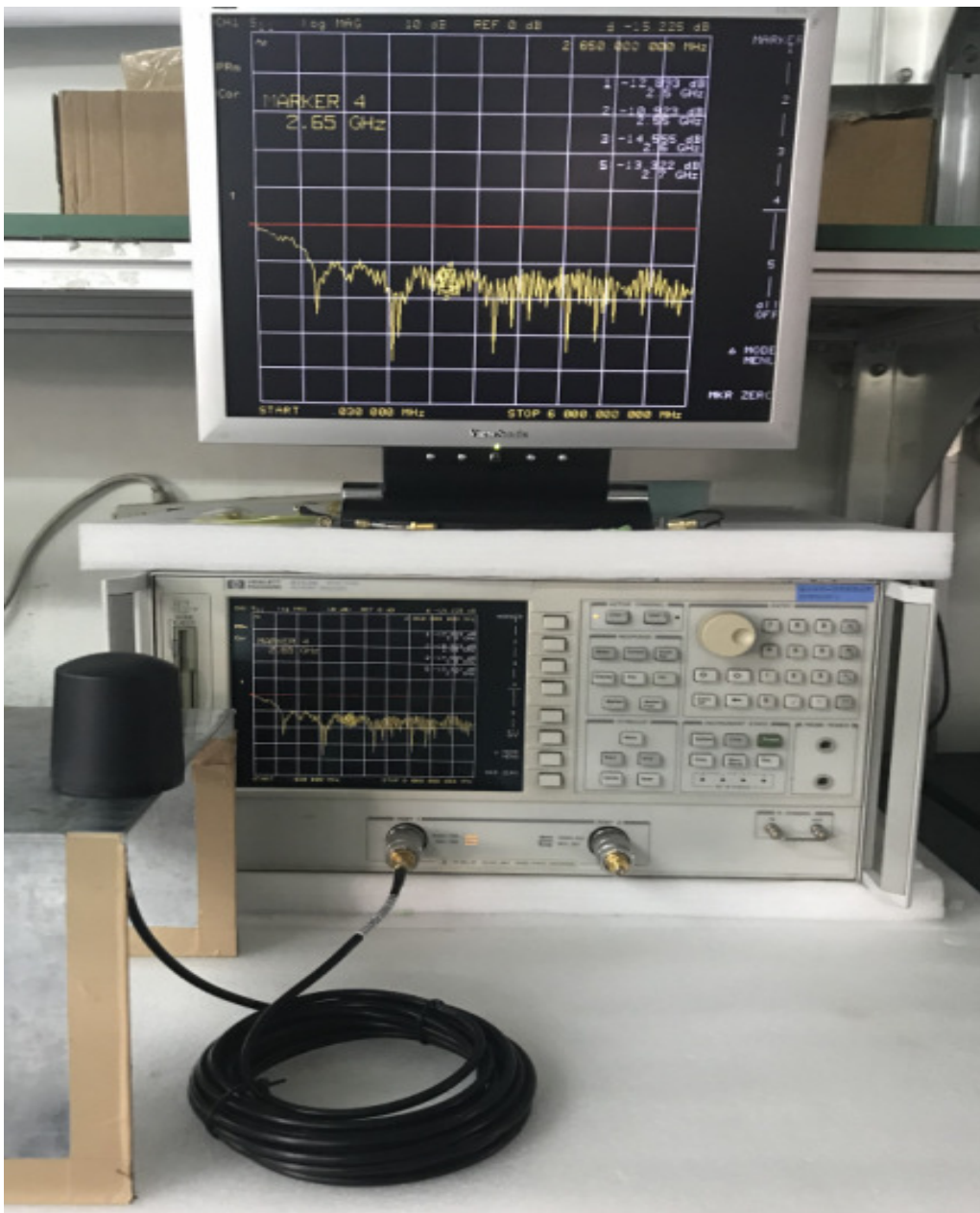
| Frequency | Return loss | V.S.W.R | Reflection coefficient |
|------------------|--------------------|----------------|-------------------------------|
| 1710.00MHz | -16.892dB | 1.334:1 | 0.143 |
| 1856.00MHz | -31.990dB | 1.052:1 | 0.025 |
| 1952.00MHz | -30.387dB | 1.062:1 | 0.030 |
| 2034.00MHz | -21.900dB | 1.175:1 | 0.080 |
| 2170.00MHz | -13.209dB | 1.559:1 | 0.219 |



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5-3 Detail band test - frequency : 2500-2700Mhz

| Frequency | Return loss | V.S.W.R | Reflection coefficient |
|-------------------|--------------------|----------------|-------------------------------|
| 2500.00MHz | -12.893dB | 1.586:1 | 0.227 |
| 2550.00MHz | -10.923dB | 1.795:1 | 0.284 |
| 2600.00MHz | -14.565dB | 1.460:1 | 0.187 |
| 2650.00MHz | -15.225dB | 1.419:1 | 0.173 |
| 2700.00MHz | -13.322dB | 1.550:1 | 0.216 |



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5-4 Detail band test - frequency : 3200-3800Mhz

| Frequency | Return loss | V.S.W.R | Reflection coefficient |
|-------------------|--------------------|----------------|-------------------------------|
| 3200.00MHz | -16.998dB | 1.329:1 | 0.141 |
| 3400.00MHz | -16.677dB | 1.344:1 | 0.147 |
| 3500.00MHz | -29.716dB | 1.068:1 | 0.033 |
| 3600.00MHz | -22.525dB | 1.162:1 | 0.075 |
| 3800.00MHz | -15.153dB | 1.423:1 | 0.175 |

