

PROFESSOR TECHNOLOGY CO.,LTD..

INTRODUCTION

MIMO Omni Panel Combo Antenna

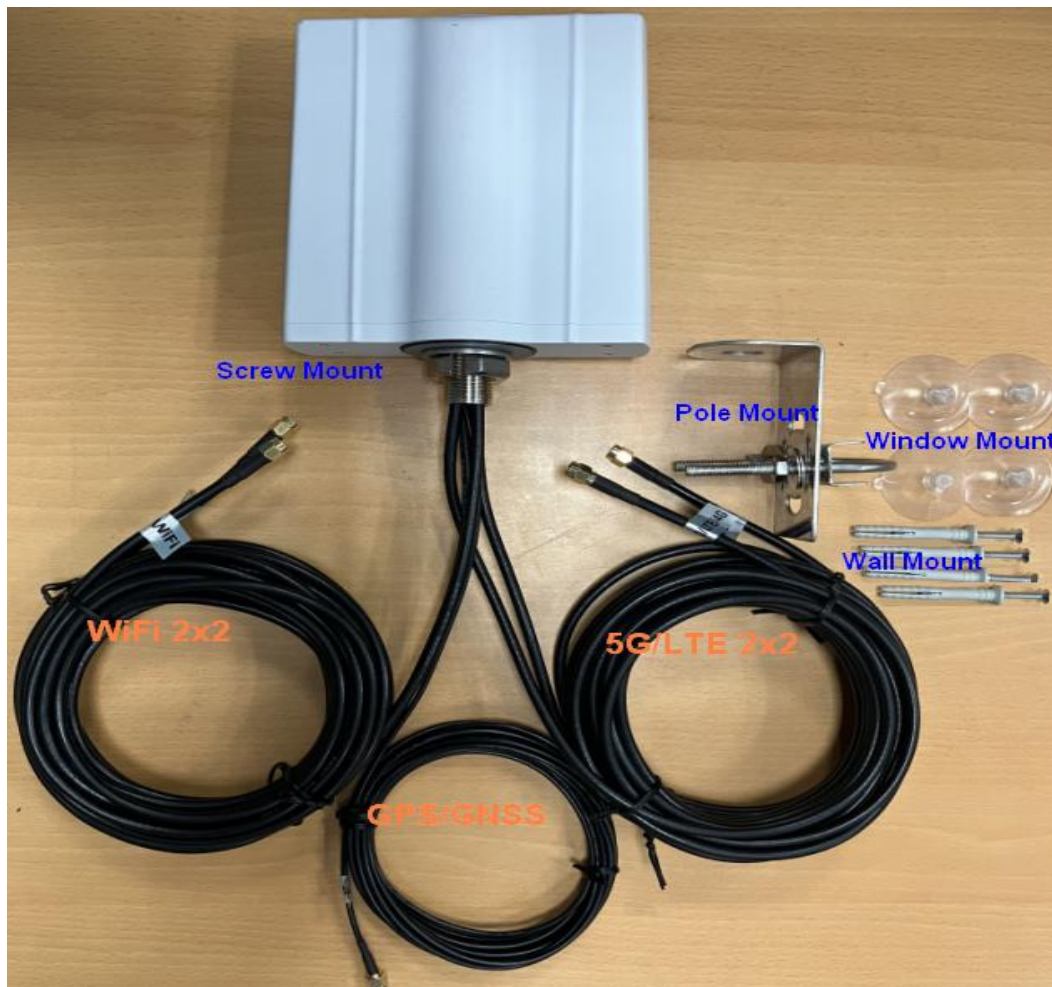
**CPG65(5in1)-GNSS+2x5G/LTE+2xWiFi-CFD195-5M-SMAx5
Permanent Screw (M20x1.5P) and Wall,Pole,Window
mounting Combo Antenna**

5-Cables :1xGPS/GNSS+2x5G/LTE+2xWiFi

**Cable 1 : GPS/GNSS RG174 Low Loss 5M(16.4') SMA/M S/T
1575.42-1602.00 MHz 5 dBic (27~30dBi)**

**Cable 2~3:5G/LTE/4G/3G CFD195 Low Loss 5M(16.4')SMA/M S/T
600-960/1710-2170/2500-2700/3200~3800MHz 3-5dBi**

**Cable 4~5: WiFi/WLAN CFD195 Low less 5M(16.4ft) RP SMA/M
2.4~2.5/4.9~5.2/5.7~6.0GHz 3-5dBi**



PROFESSOR TECHNOLOGY CO.,LTD..

1.GENERAL DESCRIPTION

Model No
CPG65(5in1)-GPS/GNSS+2xLTE/5G+2xWiFi-CFD195-5M-SMAx5

Below is a table summarizing the GPS/GNSS,5G/LTE/4G/3G,WiFi/WLAN (5in1) White color MIMO Omni Combo antenna design Specification

2.Cable 1:

2-1 GPS/GNSS/GLONASS.. Antenna Electrical Properties

Antenna Gain	90° : 2.0 dBi Min. 20° : -5.0 dBi Min. Mounted on the 60mm*60mm ground plane.
Polarization	RHCP
Axial Ratio	90° : Max 3.0dB Mounted on the 60mm*60mm ground plane.
Input Voltage	2.4V-5.0V
Power Consumption	At 2.4 V Type: 13mA. Max: 16mA. At 5.0 V Type: 18mA. Max: 22mA.
Parameter	Description
GNSS/GPS/GLONASS Center Frequency Band	1575.42 -1602.00 MHz
Transmission Log Mag Check test data	1575.42Mhz(-6.410dB), 1602.00MHz(-8.213dB)
V.S.W.R	<1.5 : 1
Note: Gain includes the cable loss	

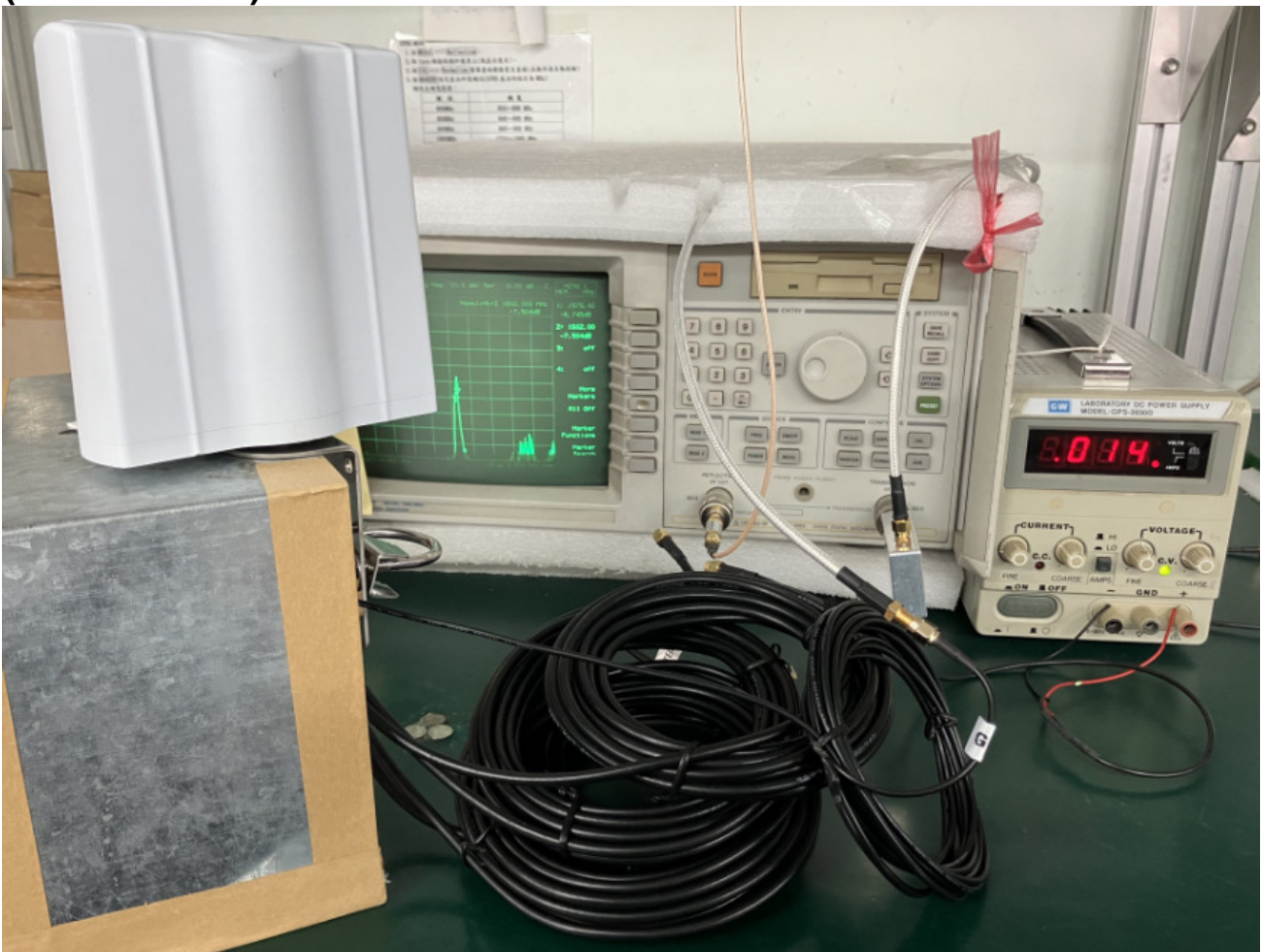
2.2 GPS/GNSS/GLONASS.. LNA Electrical Properties

Parameter	Description
Frequency Range	1575.42-1602.00 ± 1.023 MHz
Gain	27~30 ± 3.0dBi (+ 25 °C ± 5°C)
27~30 ± 3.0dBi (+ 25 °C ± 5°C)	1.5 dB Max. (+25 °C ± 5°C) 2.2 dB Max. (+85 °C)SMA 180°(Male)

PROFESSOR TECHNOLOGY CO.,LTD..

Out Band Rejection	for = 1575.42 MHz for ± 20 MHz 7dB MIN for ± 30 MHz 12dB MIN for ± 50 MHz 20dB MIN for ± 100 MHz 30dB MIN
Output Impedance	50Ω

2-3 Cable 1: GPS/GNSS RF NETWORK ANALYZER (Agilen8714ET) (20-Jun-2022)



2.4 GPS/GNSS Antenna Mechanical Properties

Parameter	Description
Antenna Mounting	Permanent screws mount (M20 x1.5P)Slotted
Waterproof	100 % waterproof.(IP66~IP67)
Shock 10msec. Half sine wave.	Shock 10 msec. Half sine wave.

PROFESSOR TECHNOLOGY CO.,LTD..

Antenna cable	RG174 Low Loss
Antenna Cable Total Length	5000mm
Antenna Color	ABS (White)
Connector	SMA 180°(Male)
Operating Temperature Range	-30 °C~+70 °C
Storage Temperature Range	-40 °C~+80 °C
Shock (Drop Test)	100cm Drop on concrete

3. Cable 2-3: MIMO (2x2) 5G/LTE

3-1 5G/LTE/4G/3G/GSM Multi-band Antenna Electrical Properties

Parameter	Description
Communication System	5G/LTE/4G/3G/AMPS/GSM/DCS/UMTS
Frequency Band (MHz)	450~960/1710~2170/2500~2700/3200-3800MHz
Average Efficiency	75%/80%/70%80%
Average Gain	3.0~5.0dBi
Nominal Impedance	50 ohm
Polarization	Vertical
Return Loss (Check test Data)	686.8MHz(-23.879dB),1954MHz(-28.229dB), 2639.99MHz (-27.273dB),3388MHz(-27.748dB)
V.S.W.R <1.5:1	686.8MHz(1.137:1),1954MHz(1.081:1), 2639.99MHz(1.090:1),3388MHz(1.085:1)
Reflection coefficient	686.8MHz(0.064),1954MHz(0.039), 2639.99MHz(0.043),3388MHz(0.041)

3.2 5G/ LTE/4G/3G/2G Multi-band Antenna Mechanical Properties

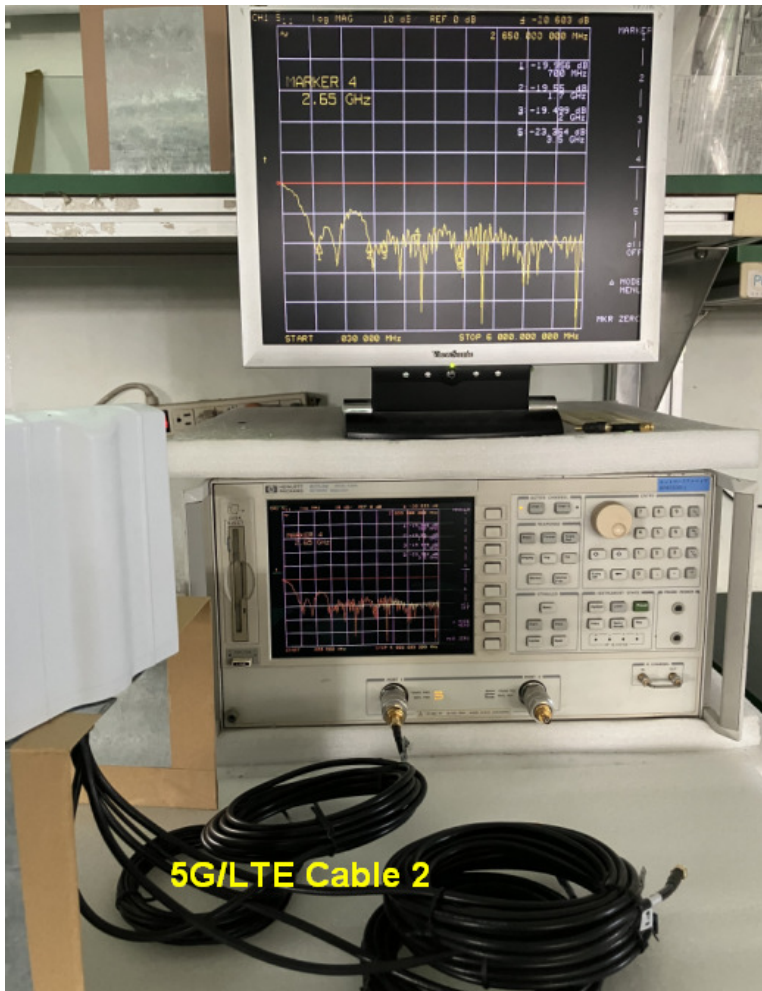
Parameter	Description
Antenna Type	External Antenna
Touch Type	Screw Type (M20x1.5P) Slotted
Antenna cable	CFD195 Low Loss
Connector Type	SMA 180°(Male)

PROFESSOR TECHNOLOGY CO.,LTD..

Antenna Cable Total Length	5000mm (16.4ft)
Antenna Color	White color
Waterproof	100% waterproof.(IP66~IP67)
Shock (Drop Test)	25CM drop on concret
Shock (Drop Test)	100cm drop on concrete

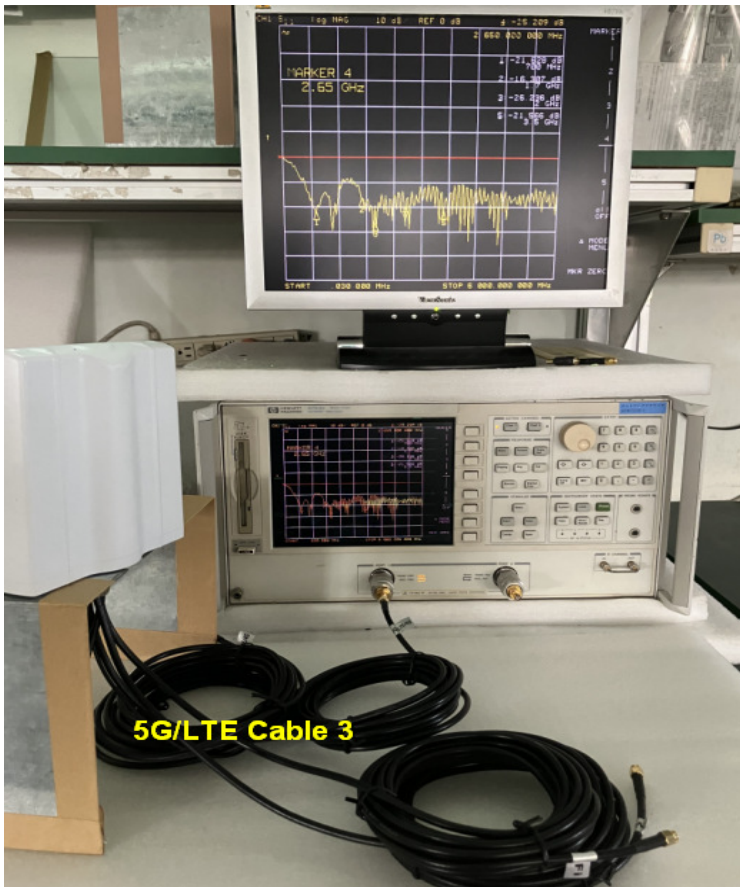
4. 5G/LTE/4G/3G/GSM Multi-Band Network analyzer test HP8753E (20-Jun-2022) cable 2 and 3

Cable 2: 5G/LTE/4G/3G/GSM Multi-Band Network analyzer test



Cable 3: 5G/LTE/4G/3G/GSM Multi-Band Network analyzer test

PROFESSOR TECHNOLOGY CO.,LTD..



5. Cable 4-5: MIMO(2x2) WiFi/WLAN

5.1 WiFi/WLAN 2.4/5.0/5.8 GHz Antenna Electrical Properties

Parameter	Description
WiFi/WLAN	Wireless LAN (2.4/5.0/5.8 GHz)
Frequency Band	2.4~2.5 /5.0~5.2 /5.8~6.0GHz
Nominal Impedance	50 ohm
Polarization	Vertical
Antenna Gain	3.0~5.0 dBi
Return Loss	2450MHz (-24.932dB),5100MHz(-27.345dB),5800MHz(-24.907dB)
V.S.W.R <1.5:1	2450MHz (1.120:1),5100MHz(1.090:1),5800MHz(1.121:1)
Reflection coefficient	2450MHz (0.057),5100MHz(0.043),5800MHz(0.057)

5.2 WiFi /WLAN 2.4/5.0/5.8GHz Antenna Mechanical Properties

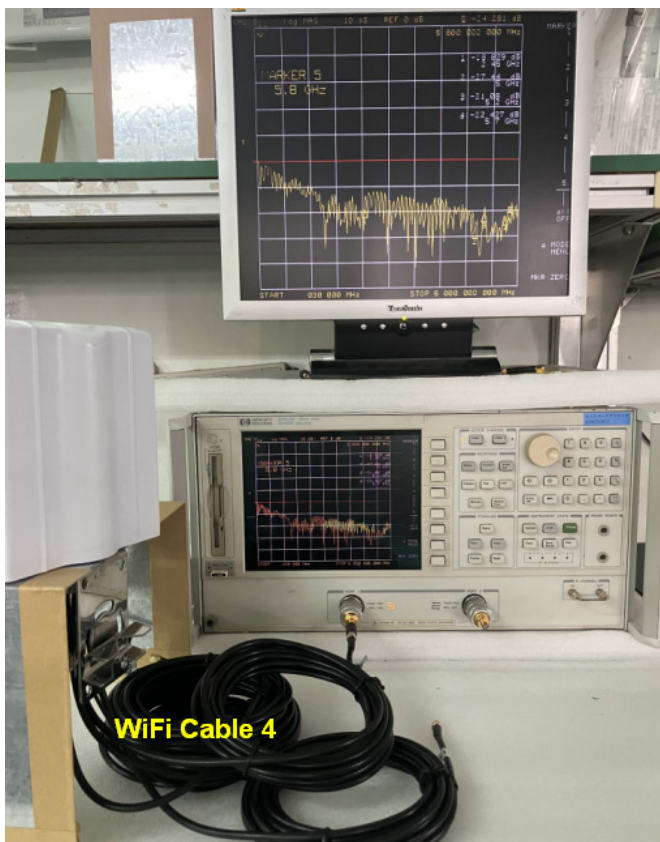
Parameter	Description
Antenna Type	External Antenna

PROFESSOR TECHNOLOGY CO.,LTD..

Touch Type	Screw Type (M20x1.5P) Slotted
Mounting	Screw,Wall,Pole and Window
Antenna size	L:140mm x W:52.4mm x H:148mm
Antenna Material	PC & ABS
Antenna cable	CFD195 Low loss
Connector Type	RP SMA 180°(Male)
Antenna Cable Total Length	5000mm (16.4ft)
Antenna Color	White
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

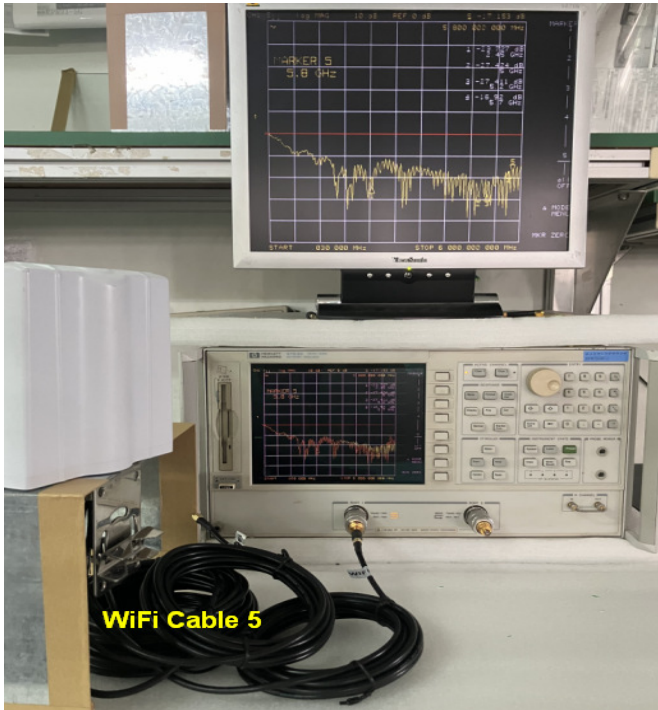
6.WiFi/WLAN 2.4/5.0/5.8GHz Multi-Band Network analyzer test HP8753E(20-Jun-2022) cable 4 and 5

Cable 4 :WiFi/WLAN 2.4/5.0/5.8GHz Multi-Band Network analyzer



PROFESSOR TECHNOLOGY CO.,LTD..

Cable 5 :WiFi/WLAN 2.4/5.0/5.8GHz Multi-Band Network analyzer



7. Antenna Appearance Size: M20x1.5P Slotted Nut & Washer
Length:140mm (5.51")
Width:52.4mm (2.05")
Height : 148mm (5.82")

