

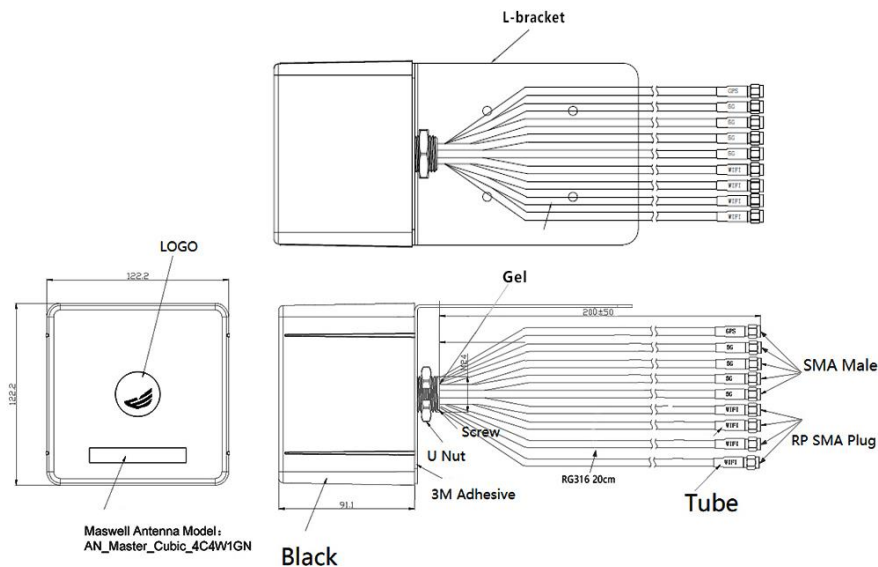


# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN



## Schematic Picture



# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## Specifications

Item		Specifications	
GNSS Antenna (GPS/GLONASS/ Beidou/Gaileo)	Dielectric Antenna	Center Frequency	1561.098~1602MHz
		Polarization	RHCP
		Gain	5dBic@PCB (Zenith)
		V.S.W.R	< 1.5
		Impedance	50Ω
		Axial Ratio	3dB(max)
	LNA	Gain	28±2dB
		Noise Figure	≤1.5dB
		Filter Insertion Loss	< 3dB
		Supply Voltage	3~5V DC
		Current Consumption	< 20mA
Antenna 1: 5G/4G LTE/WiFi6E/UWB	V.S.W.R	< 2.0	
	Frequency Range	600MHz~8.0GHz	
	Polarization	Linear	
	Gain	Up to 6dBi (20cm Cable Length)	
	Radiation Pattern	Omni-directional	
	V.S.W.R	average 3.0	
Antenna 2: 5G/4G LTE/WiFi6E/UWB	Efficiency	>50%	
	Frequency Range	600MHz~8.0GHz	
	Polarization	Linear	
	Gain	Up to 6dBi (20cm Cable Length)	
	Radiation Pattern	Omni-directoinal	
	V.S.W.R	average 3.0	
	Efficiency	>50%	

# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## Specifications

Item	Specifications	
Antenna 3: 5G/4G LTE/WiFi6E/UWB	Frequency Range	600MHz~8.0GHz
	Polarization	Linear
	Gain	Up to 6dBi (20cm Cable Length)
	Radiation Pattern	Omni-directional
	V.S.W.R	average 3.0
	Efficiency	>50%
Antenna 4: 5G/4G LTE/WiFi6E/UWB	Frequency Range	600MHz~8.0GHz
	Polarization	Linear
	Gain	Up to 6dBi (20cm Cable Length)
	Radiation Pattern	Omni-directional
	V.S.W.R	average 3.0
	Efficiency	>50%
Antenna 5: WiFi WiFi 7/WiFi 6E/Bluetooth/Zigbee/Wimax	Frequency Range	2100MHz-7200MHz
	Polarization	Linear
	Gain	4dBi
	Radiation Pattern	Omni-directional
	V.S.W.R	<1.5
	Impedance	50Ω
Antenna 6: WiFi WiFi 7/WiFi 6E/Bluetooth/Zigbee/Wimax	Frequency Range	2100MHz-7200MHz
	Polarization	Linear
	Gain	4dBi
	Radiation Pattern	Omni-directional
	V.S.W.R	<1.5
	Impedance	50Ω



# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

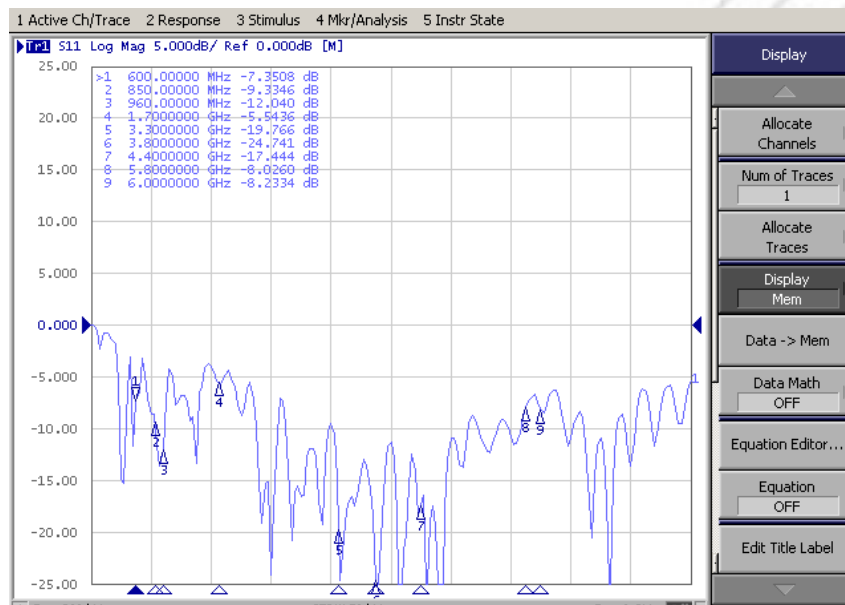
AN\_Master\_Cubic\_4C4W1GN

Item	Specifications	
Antenna 7: WiFi WiFi 7/WiFi 6E/Bluetooth/Zigbee/Wimax	Frequency Range	2100MHz-7200MHz
	Polarization	Linear
	Gain	4dBi
	Radiation Pattern	Omni-directional
	V.S.W.R	<1.5
	Impedance	50Ω
Antenna 8: WiFi WiFi 7/WiFi 6E/Bluetooth/Zigbee/Wimax	Frequency Range	2100MHz-7200MHz
	Polarization	Linear
	Gain	4dBi
	Radiation Pattern	Omni-directional
	V.S.W.R	<1.5
	Impedance	50Ω
Mechanical	Dimension	122mm *122mm*91mm
	Antenna Mount	Screw+L plate U bolt
	Connector	SMA Male for 5G MIMO SMA male for GNSS RP SMA Plug for WIFI MIMO
	Cable	RG316 20cm+LMR 240 equivalent 2 meters
Environmental	Operating Temperature	-40°C~+85°C
	Relative Humidity	Up to 95%
	Waterproof Grade	IP 67 (EURO: EN 60529:1991+A1:2000+A2:2013 +AC:2019 CHINA: GB/T4208-2017)
	Radome Material	ASA/(UL Yellow Card)
	UV Exposure & Water Immersion	F1 (UL746C) UV stabilized
	Vibration	10 to 55Hz with 1.5mm amplitude 2hours
	Environmentally Friendly	ROHS Compliant

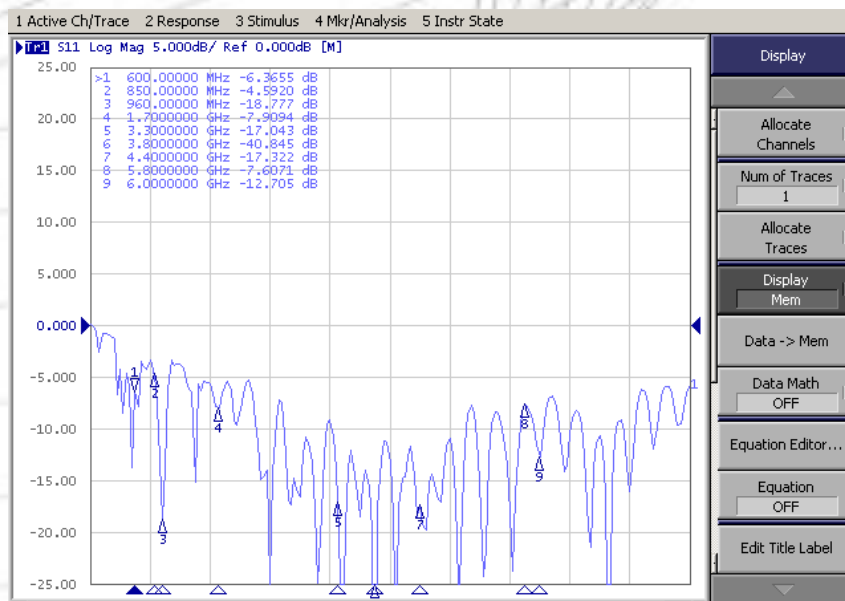
# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## 5G S11 Reflection Coefficient Antenna 1/Cable 1



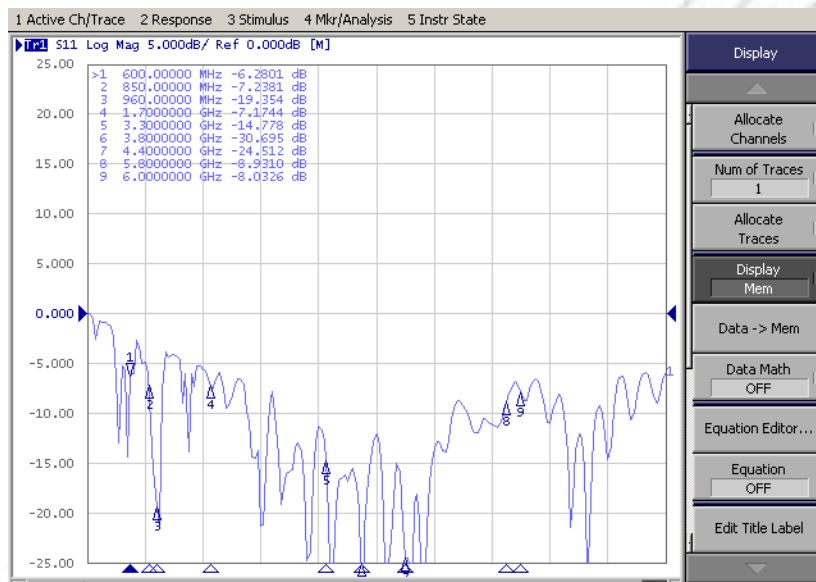
## Antenna 2/Cable 2



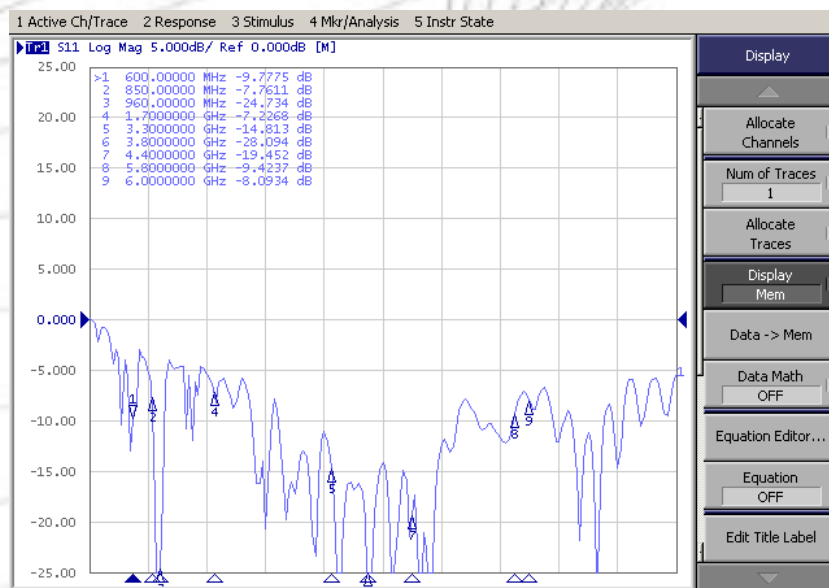
# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## 5G S11 Reflection Coefficient Antenna 3/Cable 3



## Antenna 4/Cable 4

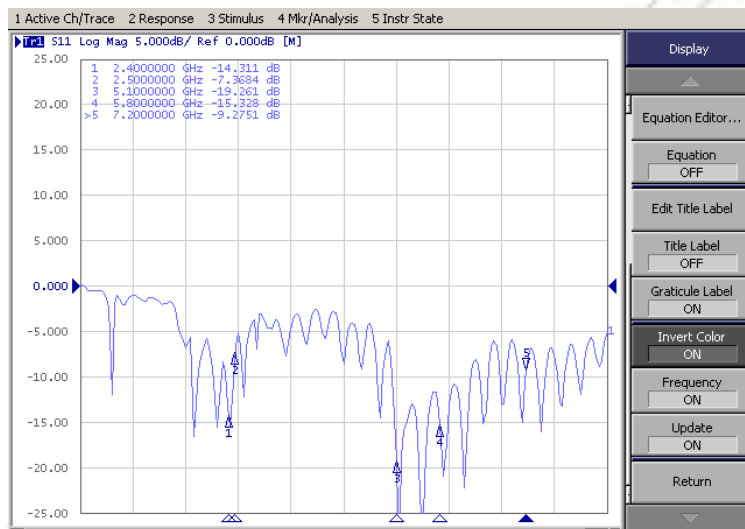


# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

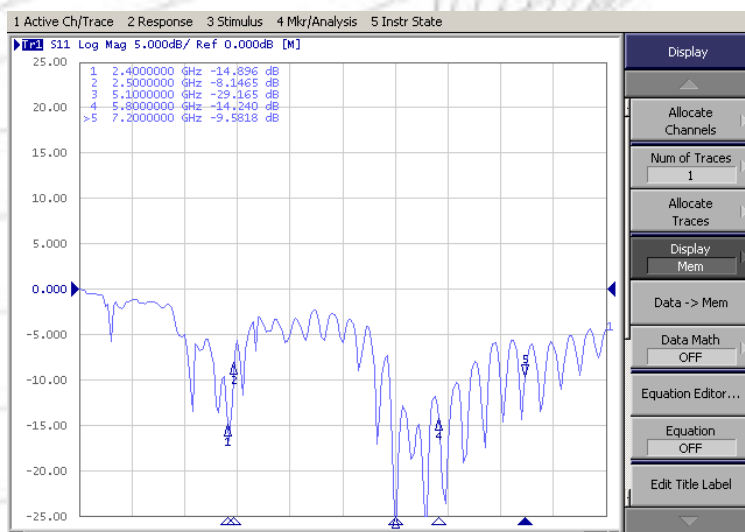
AN\_Master\_Cubic\_4C4W1GN

## WiFi S11 Reflection Coefficient

### Antenna 5/Cable 5



### Antenna 6/Cable 6



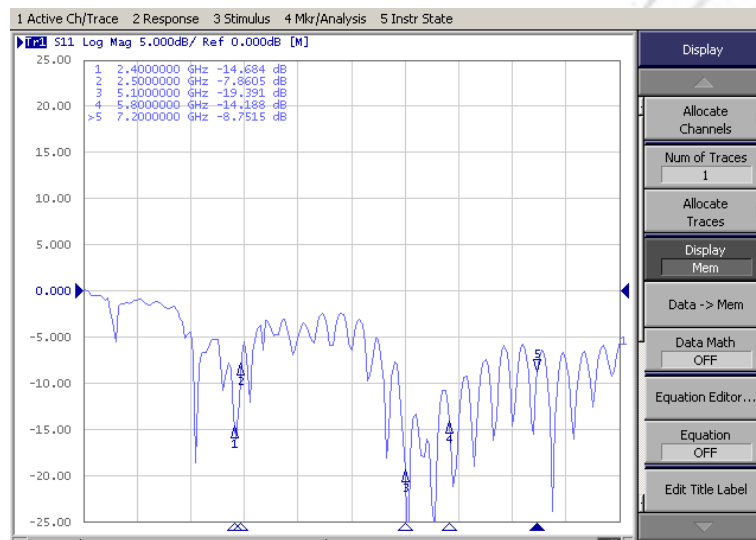


# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

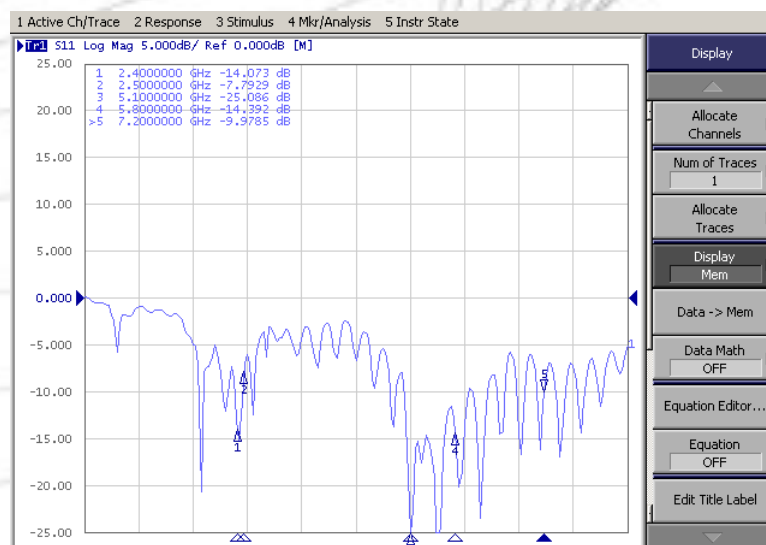
AN\_Master\_Cubic\_4C4W1GN

## WiFi S11 Reflection Coefficient

### Antenna 7/Cable 7



### Antenna 8/Cable 8



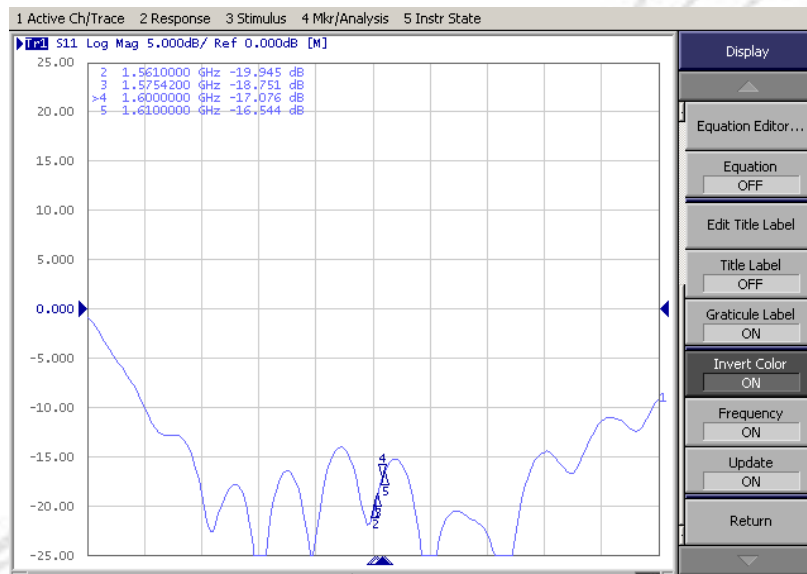


# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## GNSS/GPS S11 Reflection Coefficient

### Antenna 9/Cable 9



**Antenna 1/Cable1 -Antenna 4/Cable 4:5G/4G Radiators**

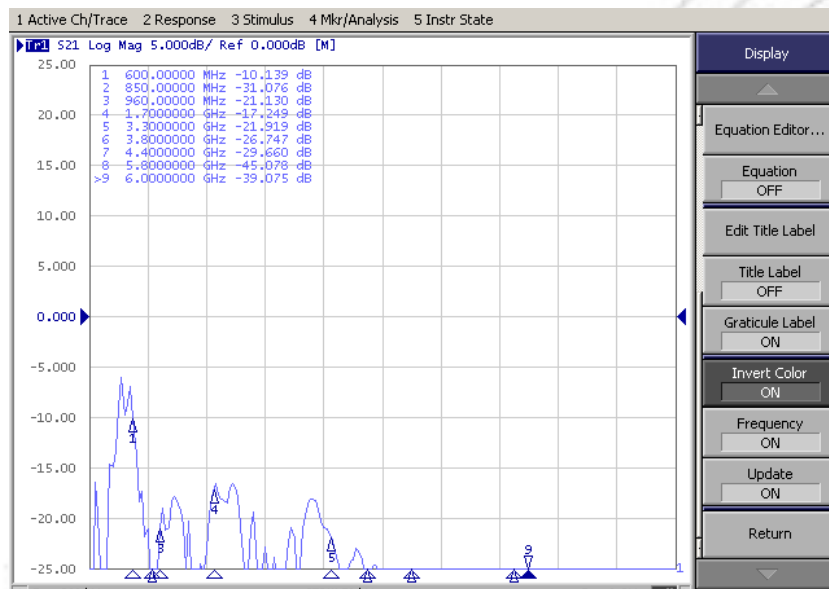
**Antenna 5/Cable 5-Antenna 8/Cable 8: WiFi/Bluetooth/Zigbee Radiators**

**Antenna 9/Cable 9: GPS/GNSS Radiator**

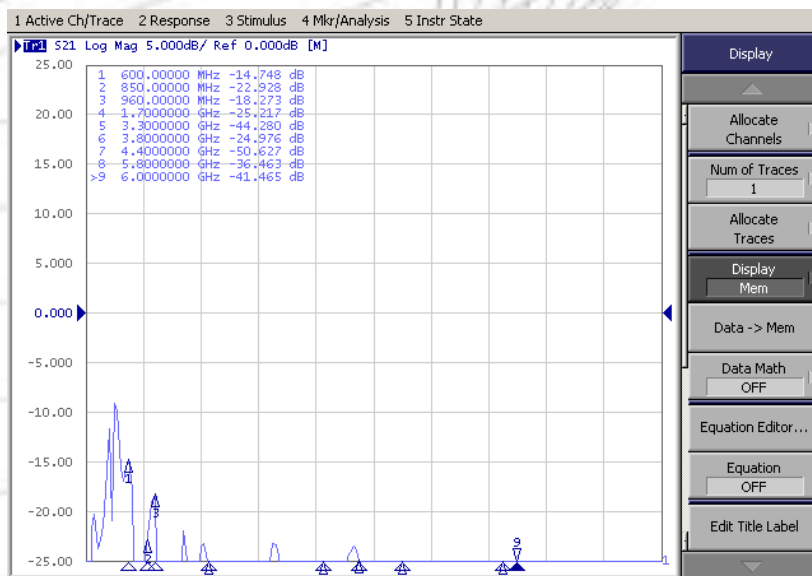
# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## Isolation (5G Leads) Antenna 1 to Antenna 2



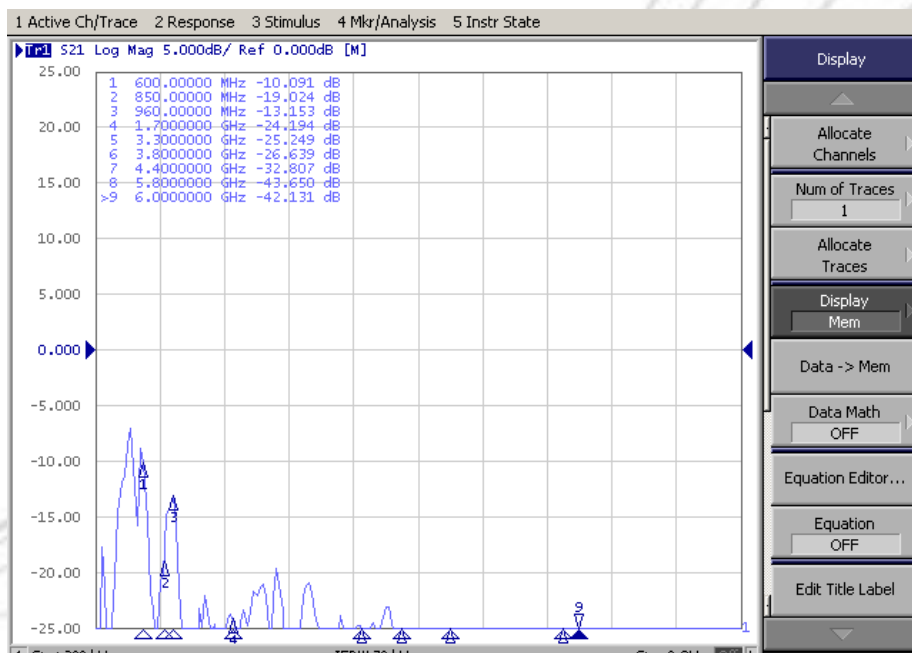
## Antenna 1 to Antenna 3



# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## Isolation (5G Leads) Antenna 1 to Antenna 4

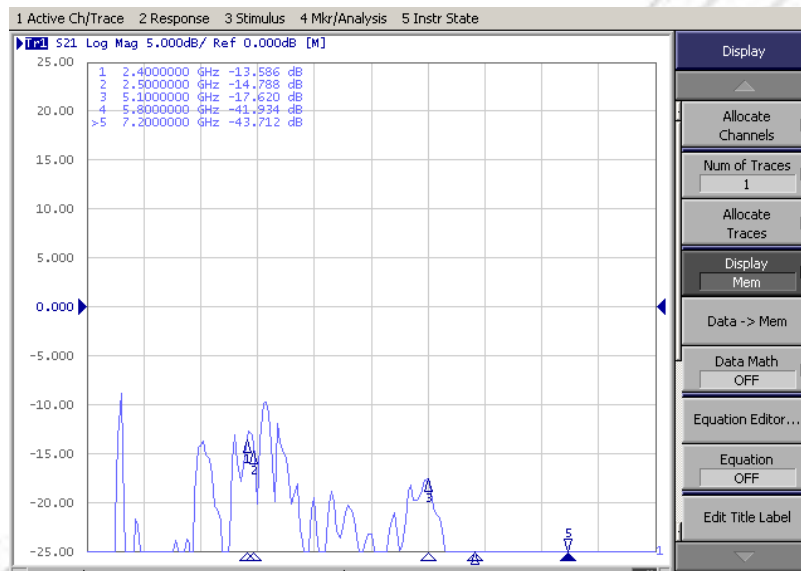


# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

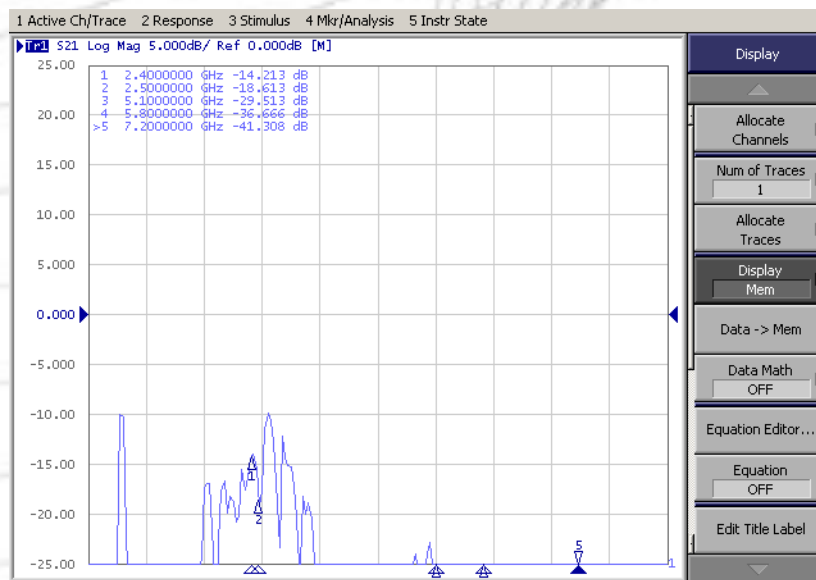
AN\_Master\_Cubic\_4C4W1GN

## Isolation (WiFi Leads)

### Antenna 5 to Antenna 6



### Antenna 5 to Antenna 7



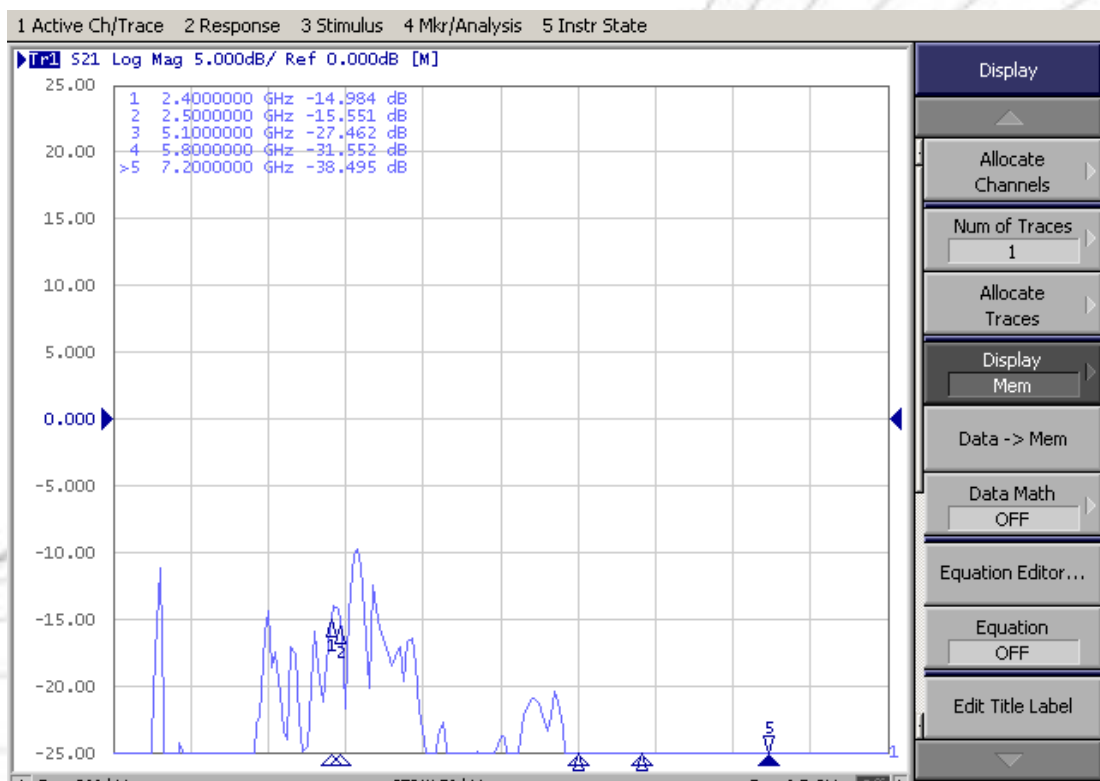


# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## Isolation (WiFi Leads)

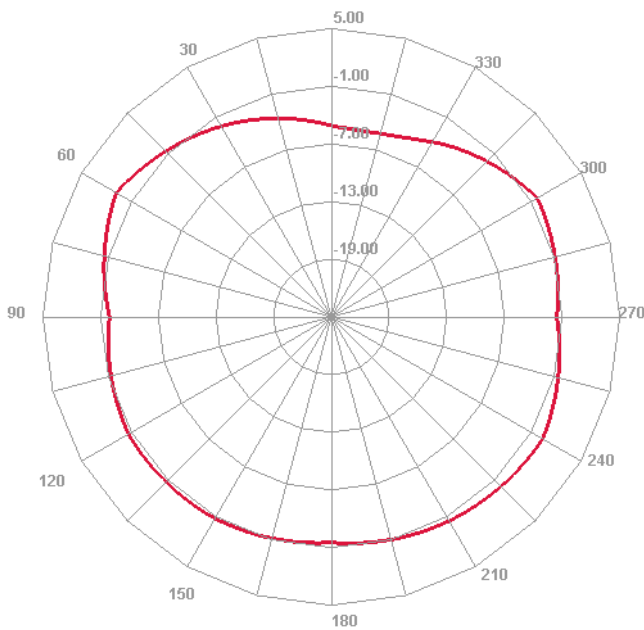
## Antenna 5 to Antenna 8



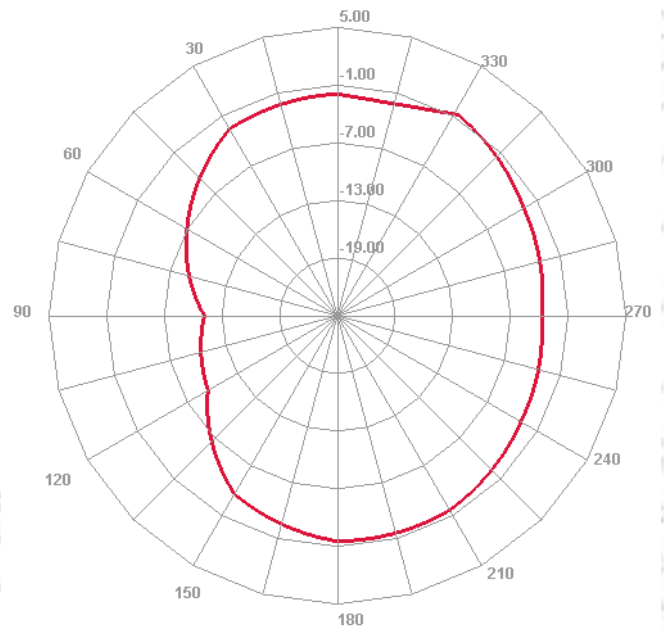
# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

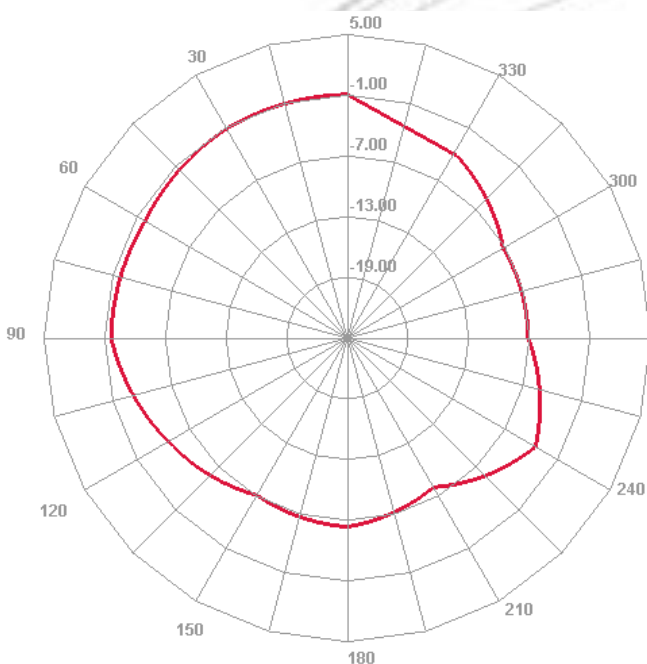
## Radiation Pattern (5G)



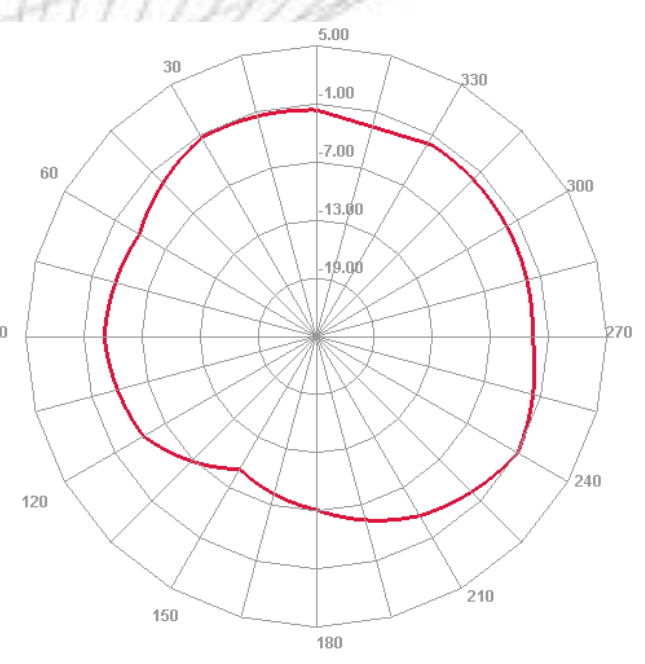
900 MHz E plane



900MHz H plane



1800MHz E plane

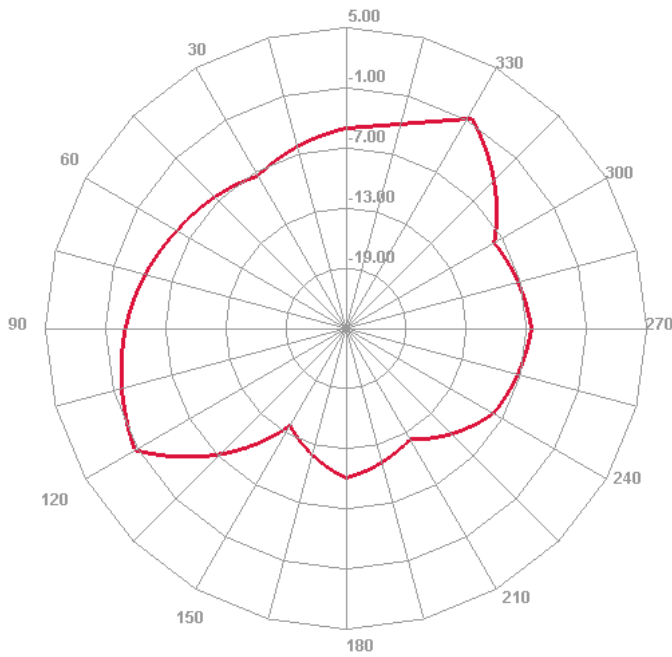


1800MHz H plane

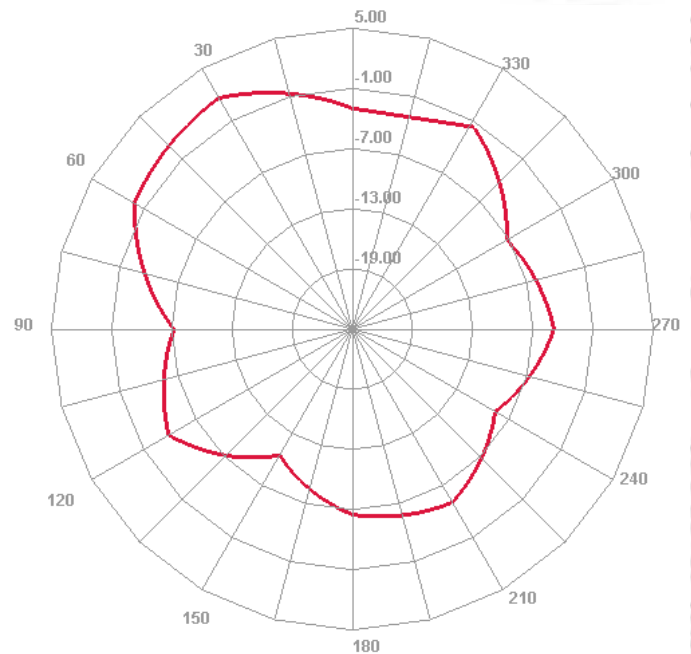
# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

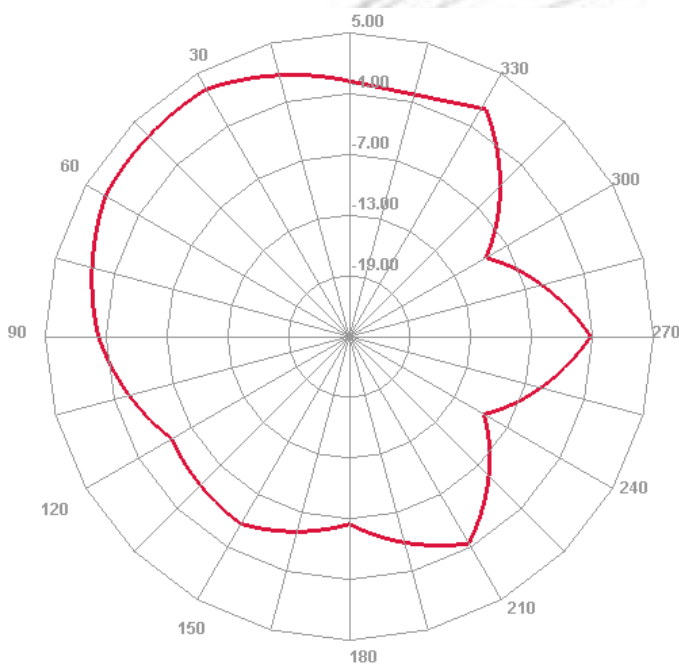
## Radiation Pattern (5G)



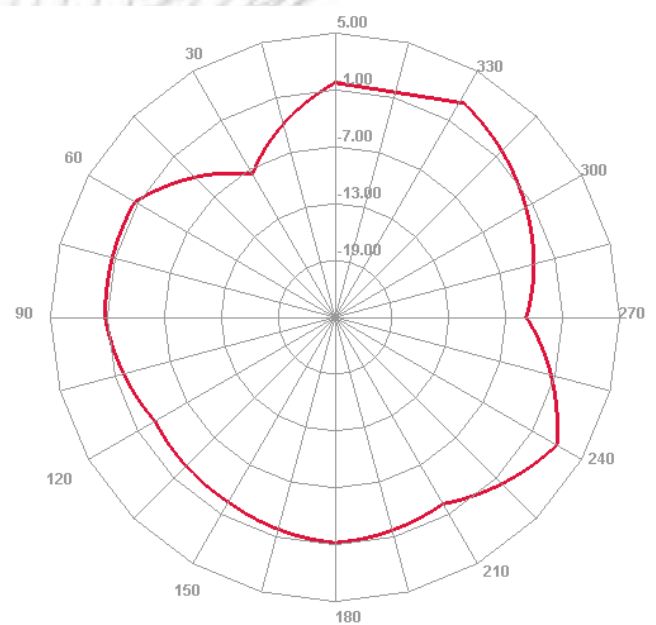
2600 MHz E plane



2600MHz H plane



3500MHz E plane

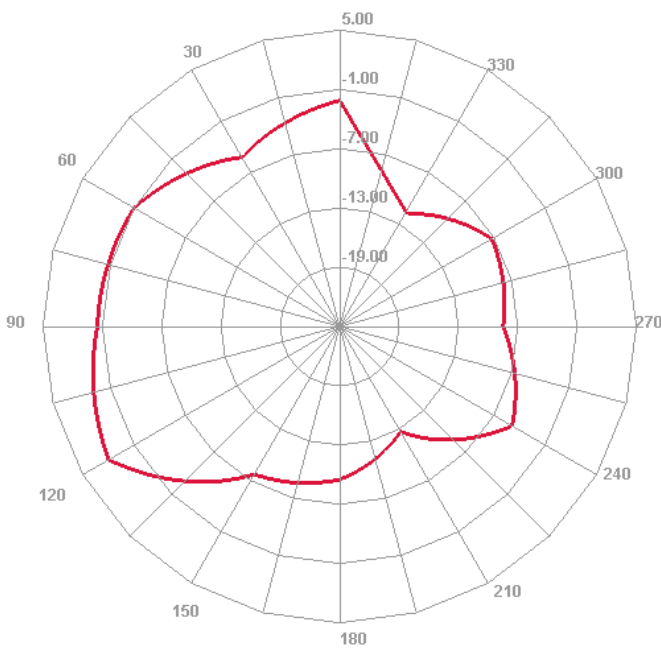


3500MHz H plane

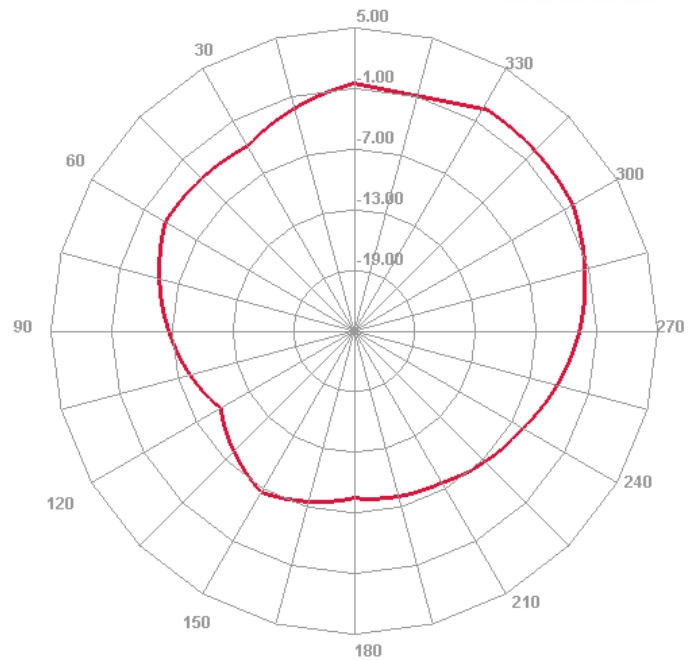
# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

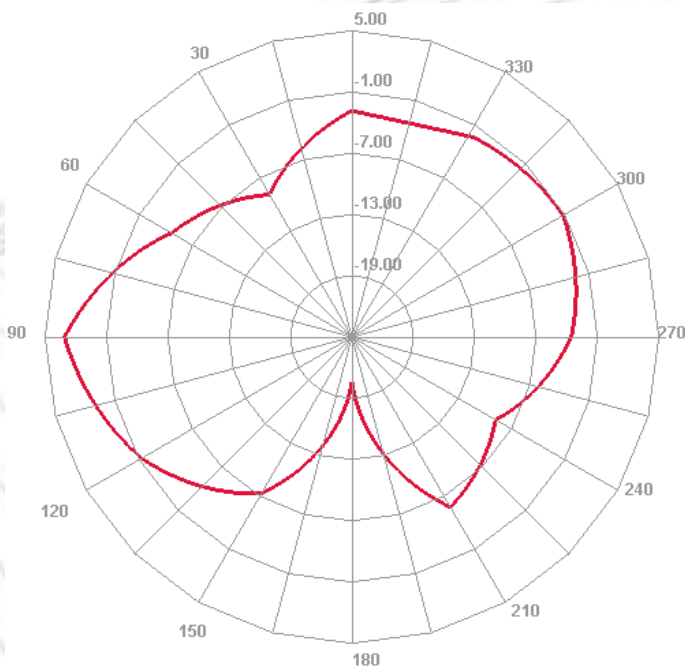
## Radiation Pattern (5G)



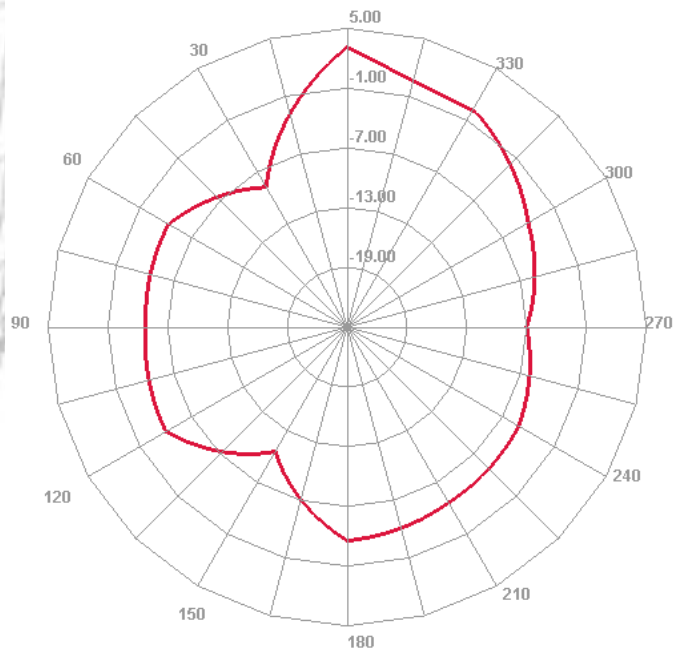
4800 MHz E plane



4800MHz H plane



6000MHz E plane



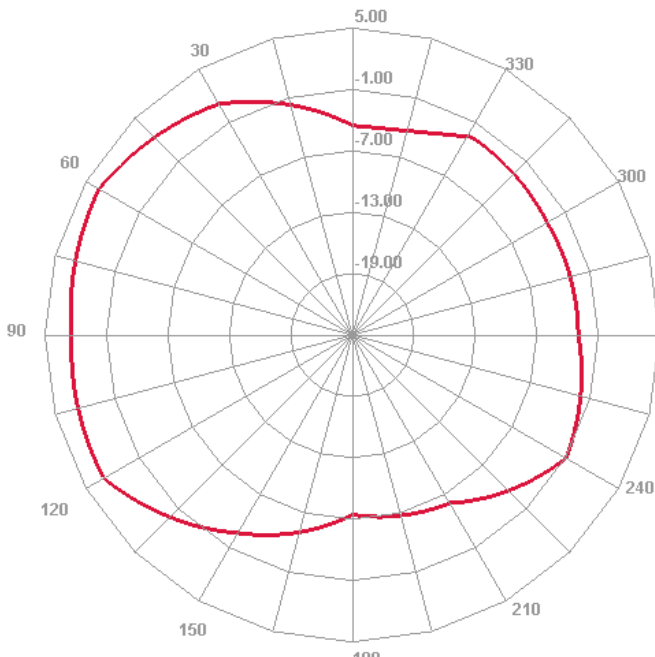
6000MHz H plane



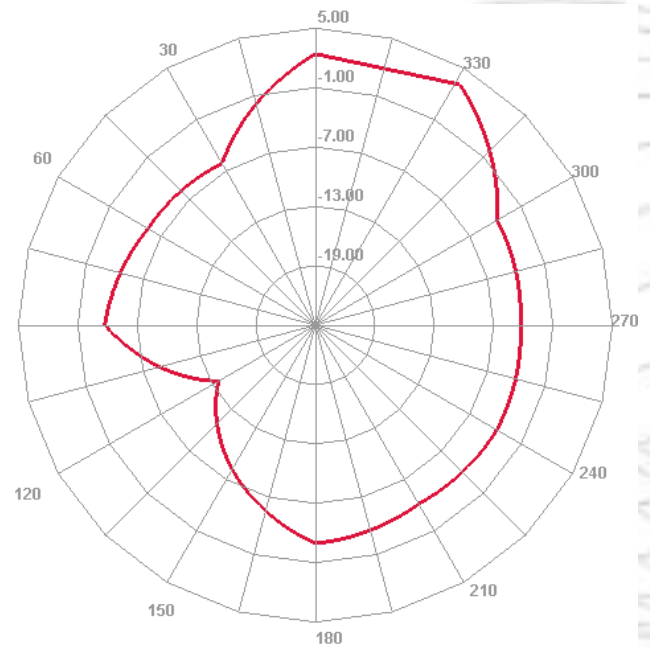
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AN\_Master\_Cubic\_4C4W1GN

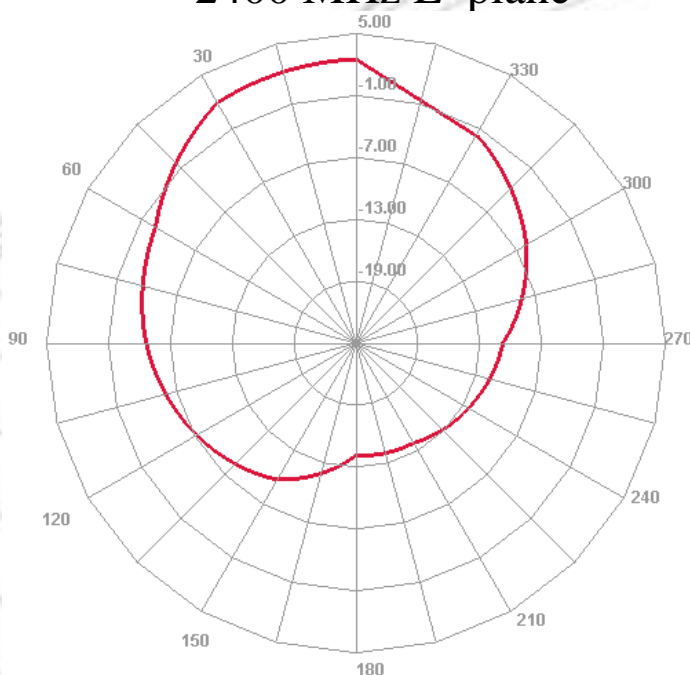
## Radiation Pattern (WiFi)



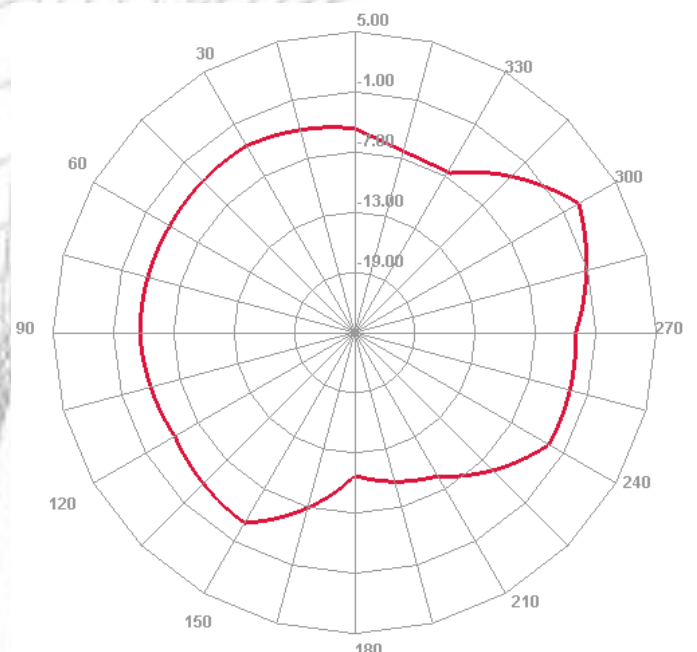
2400 MHz E plane



2400MHz H plane



6000MHz E plane

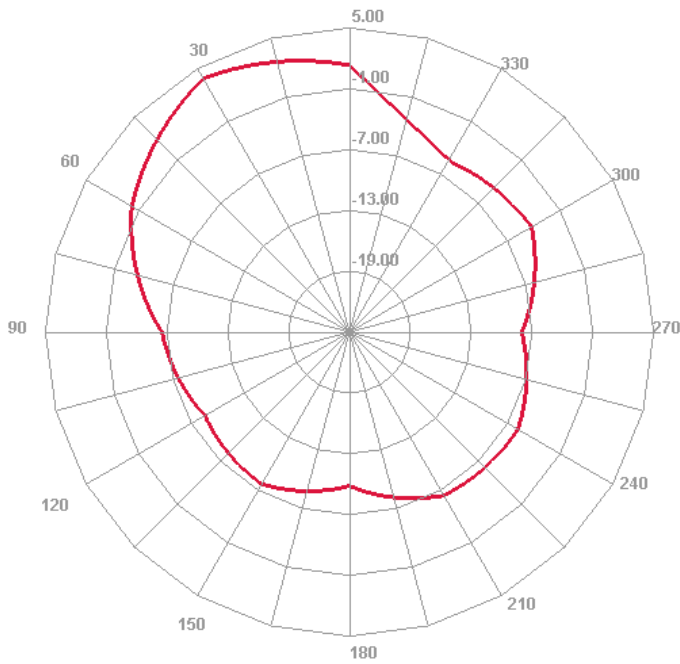


6000MHz H plane

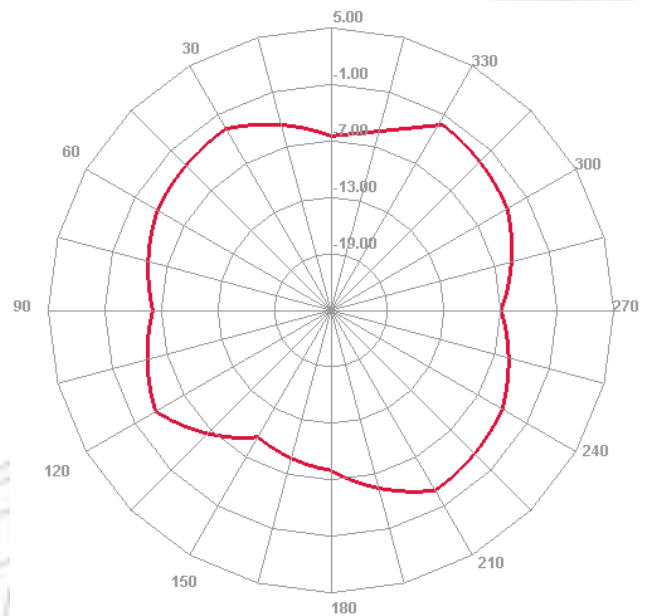
# Maswell 5G 9-in-1 ComboAntenna 4X4 MIMO 5G , 4X4 MIMO WiFi and GNSS L Plate and Screw Mount

AN\_Master\_Cubic\_4C4W1GN

## Radiation Pattern (WiFi)



7100 MHz E plane



7100MHz H plane

**TEST REPORT**

EN 60529

**Degrees of protection provided by enclosures(IP code)**

Report reference No..... : CTB231113016Q

Date of issue..... : 2023-11-16

**Testing laboratory**

Name Shenzhen CTB Testing Technology Co., Ltd.

Address..... : 1&amp;2/F., Building A, No.26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China

Testing location..... : Same as above

**Client**

Applicant..... : Suzhou Maswell Communication Technology Co.Ltd

Address..... : Room 403,Building 1,No.88 Zhenbei Road,High-tech District,Suzhou 215153,Jiangsu,China

**Test specification**

Standard..... : EN 60529:1991+A1:2000+A2:2013+AC:2019

Procedure deviation..... : N/A

Non-standard test method.... : N/A

Object under test..... : Maswell MIMO Cubic Antenna Series

Model/Type reference..... : AN\_Master\_Cubic\_4C/AN\_Master\_Cubic\_2C2W/AN\_Master\_Cubic\_4W and Variants

Others Model..... : /

Trade mark..... : Maswell

Manufacturer..... : Suzhou Maswell Communication Technology Co.Ltd

Address..... : Room 403,Building 1,No.88 Zhenbei Road,High-tech District,Suzhou 215153,Jiangsu,China

IP degrees..... : IP67

**Possible test case verdicts**

- test case does not apply to the test object..... : N/A(Not Applicable)

- test object does meet the requirement..... : P(Pass)

- test object does not meet the requirement..... : F(Fail)

Date of receipt of test item..... : 2023-11-10

Date(s) of performance of tests..... : 2023-11-13 to 2023-11-15

Laboratory sample number..... : 2231110007-1,14



# Model PW-957(+)(f1)

File Number: E56070



### COMPANY

#### CHI MEI CORPORATION

No 398 Sec 1 Zhongzheng Rd  
Rende District  
Tainan City, 717010 Taiwan

### MODEL INFO

PW-957(+)(f1)

Acrylonitrile Styrene Acrylate (ASA) "KIBILAC", furnished as pellets

(f1) – Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

(+) – Indicate 0~0.5% acid scavengers.

FLAMMABILITY PROPERTIES	VALUE	TEST METHOD
<b>Flammability</b>		ANSI/UL 94
1.5 mm, Color: ALL	HB	
3.0 mm, Color: ALL	HB	
ISO/IEC FLAMMABILITY PROPERTIES	VALUE	TEST METHOD
<b>Flammability</b>		IEC 60695-11-10
1.5 mm, Color: ALL	HB75	
3.0 mm, Color: ALL	HB40	
ELECTRICAL PROPERTIES	VALUE	TEST METHOD
<b>Hot-wire Ignition (HWI)</b>		UL 746A
1.5 mm	PLC 4	
3.0 mm	PLC 3	
<b>High Amp Arc Ignition (HAI)</b>		UL 746A
1.5 mm	PLC 0	



3.0 mm	PLC 0	
<b>Comparative Tracking Index (CTI)</b>	PLC 0	UL 746A
<b>High Voltage Arc Tracking Rate (HVTR)</b>	PLC 3	
<b>High Voltage, Low Current Arc Resistance</b>	PLC 6	
<b>THERMAL PROPERTIES</b>	<b>VALUE</b>	<b>TEST METHOD</b>
<b>Relative Thermal Index - Electrical Strength</b>		UL 746B
1.5 mm	90 °C	
3.0 mm	90 °C	
<b>Relative Thermal Index - Mechanical Impact</b>		UL 746B
1.5 mm	90 °C	
3.0 mm	90 °C	
<b>Relative Thermal Index - Mechanical Strength</b>		UL 746B
1.5 mm	95 °C	
3.0 mm	95 °C	
<b>PHYSICAL PROPERTIES</b>	<b>VALUE</b>	<b>TEST METHOD</b>
<b>UV Exposure &amp; Water Immersion</b>	f1	UL 746C

Report Date: 2006-08-31

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