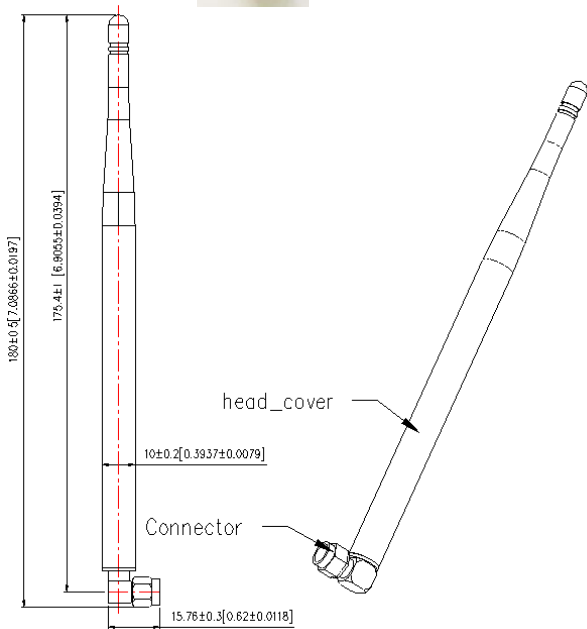


Description: 868-928MHz

Series: Stick Antenna

PART NUMBER: W5021



All dimensions are in mm / inches

### Features:

- 1/4 wave dipole antenna
- Length 180mm
- Gain 2.2 dBi
- Connector Right Angle RP SMA
- High Efficiency >70%
- Power rating 1W
- IP65 rated

### Applications:

- ISM 868 / 915 MHz radios
- IoT, M2M
- Industry automation
- Remote controls
- Toys, Consumer electronics

### Issue: 1637

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Vancouver, WA 98682  
USA  
Tel: 1-360-944-7551

Europe Headquarters  
Pulse GmbH & Do, KG  
Zeppelinstrasse 15  
Herrenberg, Germany  
Tel: 49 7032 7806 0

Pulse (Suzhou) Wireless Products Co, Inc.  
99 Huo Ju Road(#29 Bldg, 4<sup>th</sup> Phase  
Suzhou New District  
Jiangsu Province, Suzhou 215009 PR China  
Tel: 86 512 6807 9998



**Description: 868-928MHz****Series: Stick Antenna****PART NUMBER: W5021****ELECTRICAL SPECIFICATIONS**

Frequency	868-928	MHz
Nominal Impedance	50	$\Omega$
VSWR	2	Max
Average efficiency	70	%
Peak Gain	2.2	dBi +/- 1 dB
Polarization:	Vertical	
Power withstanding	1	W
Connector type	RP-SMA	

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**Description:** 868-928MHz

**Series:** Stick Antenna

**PART NUMBER:** W5021

### MECHANICAL SPECIFICATIONS

Plastic radome	TPEE
Color	Black
Ingress Protection	IP65
Weight	22.8 g
Overall Length	180mm/7.09Inches

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-40/+85° C
-----------------------	------------

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Description: 868-928MHz

Series: Stick Antenna

PART NUMBER: W5021

MECHANICAL DRAWING

NO.	Description	ITEM	Cd	Hg	Pb	Cr+6	PBB	PBDE	OTHERS
1	First Release								
2	Add outdoor antenna requirement								
10	A-Release for MP	PPM<c	100	1000	1000	1000	1000	1000	PPM<max>=200000

TOLERANCE OF LINEAR DIMENSIONS		TOLERANCE OF ANGULAR DIMENSIONS	
Dimension	Tolerance	Dimension	Tolerance
0.5 - 6	±0.05	0° - 90°	±1'
6 - 30	±0.10	90° - 135°	±1.5'
30 - 120	±0.15	135° - 180°	±2'
120 - 300	±0.20		
300 - 1000	±0.30		
1000 - 3000	±0.40		
3000 - 10000	±0.50		
10000 - 30000	±0.60		
30000 - 100000	±0.70		
100000 - 300000	±0.80		
300000 - 1000000	±0.90		
1000000 - 3000000	±1.00		
3000000 - 10000000	±1.10		
10000000 - 30000000	±1.20		
30000000 - 100000000	±1.30		
100000000 - 300000000	±1.40		
300000000 - 1000000000	±1.50		
1000000000 - 3000000000	±1.60		
3000000000 - 10000000000	±1.70		
10000000000 - 30000000000	±1.80		
30000000000 - 100000000000	±1.90		
100000000000 - 300000000000	±2.00		
300000000000 - 1000000000000	±2.10		
1000000000000 - 3000000000000	±2.20		
3000000000000 - 10000000000000	±2.30		
10000000000000 - 30000000000000	±2.40		
30000000000000 - 100000000000000	±2.50		
100000000000000 - 300000000000000	±2.60		
300000000000000 - 1000000000000000	±2.70		
1000000000000000 - 3000000000000000	±2.80		
3000000000000000 - 10000000000000000	±2.90		
10000000000000000 - 30000000000000000	±3.00		

Packaging shipping Test	1.5m 1 corner,3 edges, 6 flats
Connector Retention	Pull force>20lbsf
Radiator/Radome Pull	Pull force>20lbsf
Vibration	MIL-STD-810F
Mechanical Shock	20g/11ms, Half-Sine
Intrusion IP	IP65
Wind IP (Calculated)	125mph
Handling Drop	NA
Flammability (Rating)	ULV-2 or better
Operating Temperature	-40°C to +85°C
Storage Temperature 24 hrs	-40°C to +85°C
Temperature Shock	NA
Humidity	100%
Chemical resistance	NA
Corrosion	Salt Fog
UV - (Rating)	UL-94V2 or better
Bending Test	NA
Whip retention	20 years
Connector retention	20 years
Adhesive	NA
Insertion Loss	NA
Retention	20 years

Item	Drawing number	Name of Part	Part Version	Standard	Material	Dimension	Pcs
1	W5021_head cover				TPEE		1
1	W5021_01_001 Right Angle connector				Brass		1

Pulse ( Suzhou ) Wireless Products Co., Ltd		99 HUGUO RD,SUZHOU NEW DISTRICT SUZHOU 215009 P.R.CHINA		WWW.PULSEENG.COM/ANTENNAS	
Scale	DESIGN	CHECKED	APPROVED	HANDLING	ISO 2768-f
	Jeanie Fel			ASSOCIATED	20150504
PRODUCT(S)	W5021	DOCUMENT NUMBER	W5021	PART VERSION	V01
ITEM NAME	W5021 Ass'y	DOCUMENT VERSION	10	DATE	20151120
		DATE	2	NAME	Jeanie
		DATE	1	NAME	Jeanie
		DATE	10	NAME	Jeanie

NOTE:  
ELECTRICAL PROPERTIES  
1.DESCRIPTION:1/4 TYPE DIPOLE OUTDOOR ANTENNA RP SMA  
2.FREQUENCY : 868~928MHz  
3.IMPEDANCE : 50 Ohms nominal  
4.V.S.W.R : 2.0 max. IN BAND  
5.GAIN :2.0 dBi, VERTICAL DIRECTION  
6.ADMITTED POWER RADIATION : 1W  
7.TYPE OF RADIATION : TOROIDAL  
8.POLARIZATION : VERTICAL  
9.ELECTRICAL LENGTH : 1/4 ,DIPOLE  
10.RADIATION : Omni

MECHANICAL PROPERTIES  
1.OPERATING TEMPERATURE RANGE : -40°C~+85°C  
2.STORAGE TEMPERATURE RANGE : -40°C~+85°C  
3.Connector : Right Angle RP SMA(male body,female pin)  
4.FINISH COLOR : BLACK  
5.ROHS COMPLIANT  
6.Water Proof :IP65  
7.Head Cover material: TPEE Black  
8.comply with the outdoor requirements table

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Functional Characteristics Key : (Qsk requirement : Qsk>1.67)  
◇ Process Capability Studies required (total 0 pcs)  
◆ Ongoing Statistical Process Control Required (total 0 pcs)

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Description: 868-928MHz

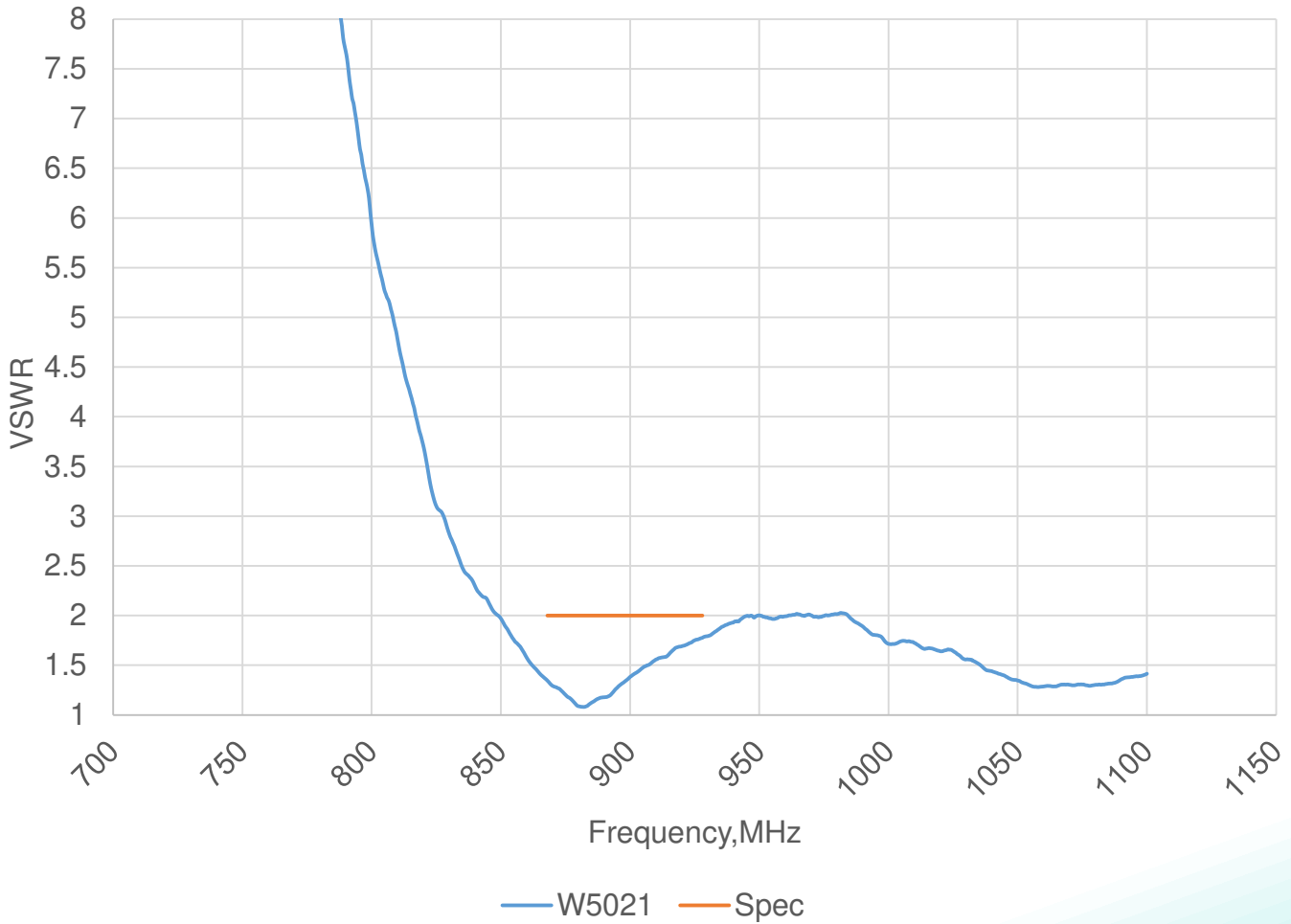
Series: Stick Antenna

PART NUMBER: W5021

CHARTS

VSWR

VSWR vs Frequency measured in free space  
W5021 measured in PSU



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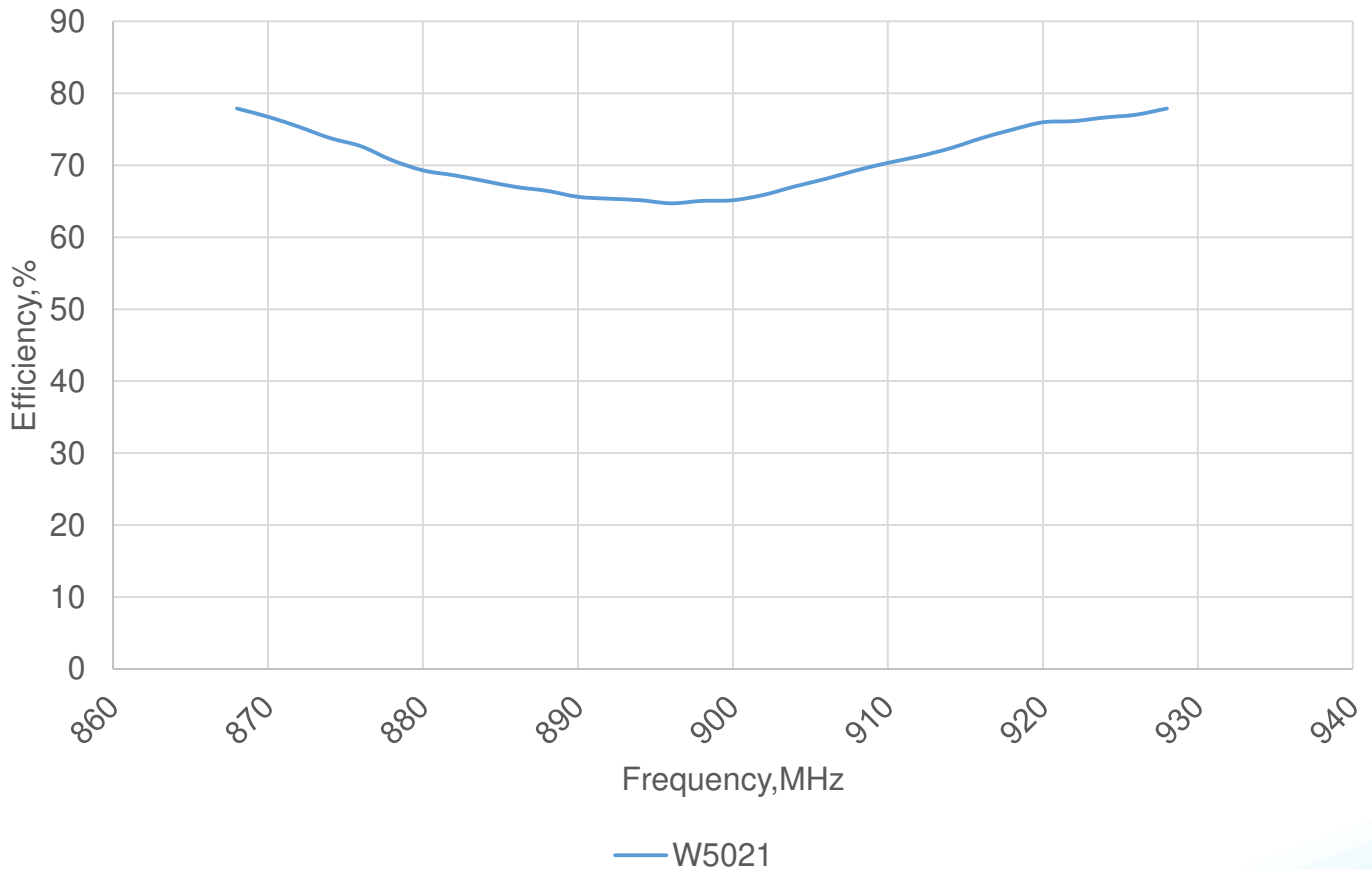
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PART NUMBER: W5021

CHARTS

Efficiency

Efficiency vs Frequency measured in free space  
W5021 measured in PSU



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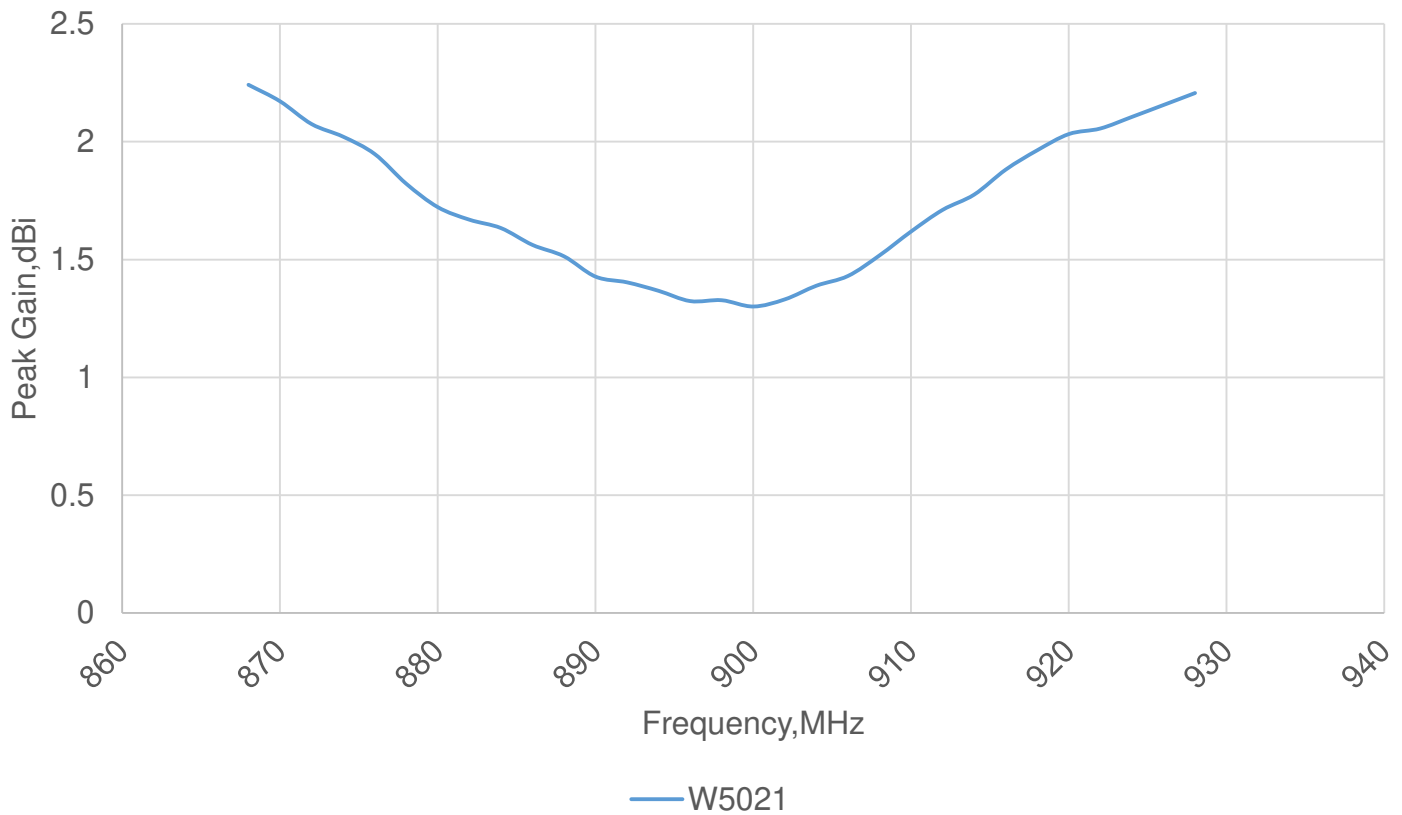
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PART NUMBER: W5021

CHARTS

Peak Gain

Peak Gain vs Frequency measured in free space  
W5021 measured in PSU



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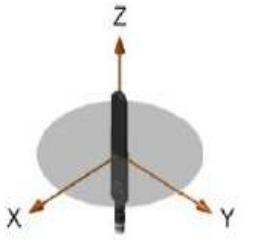
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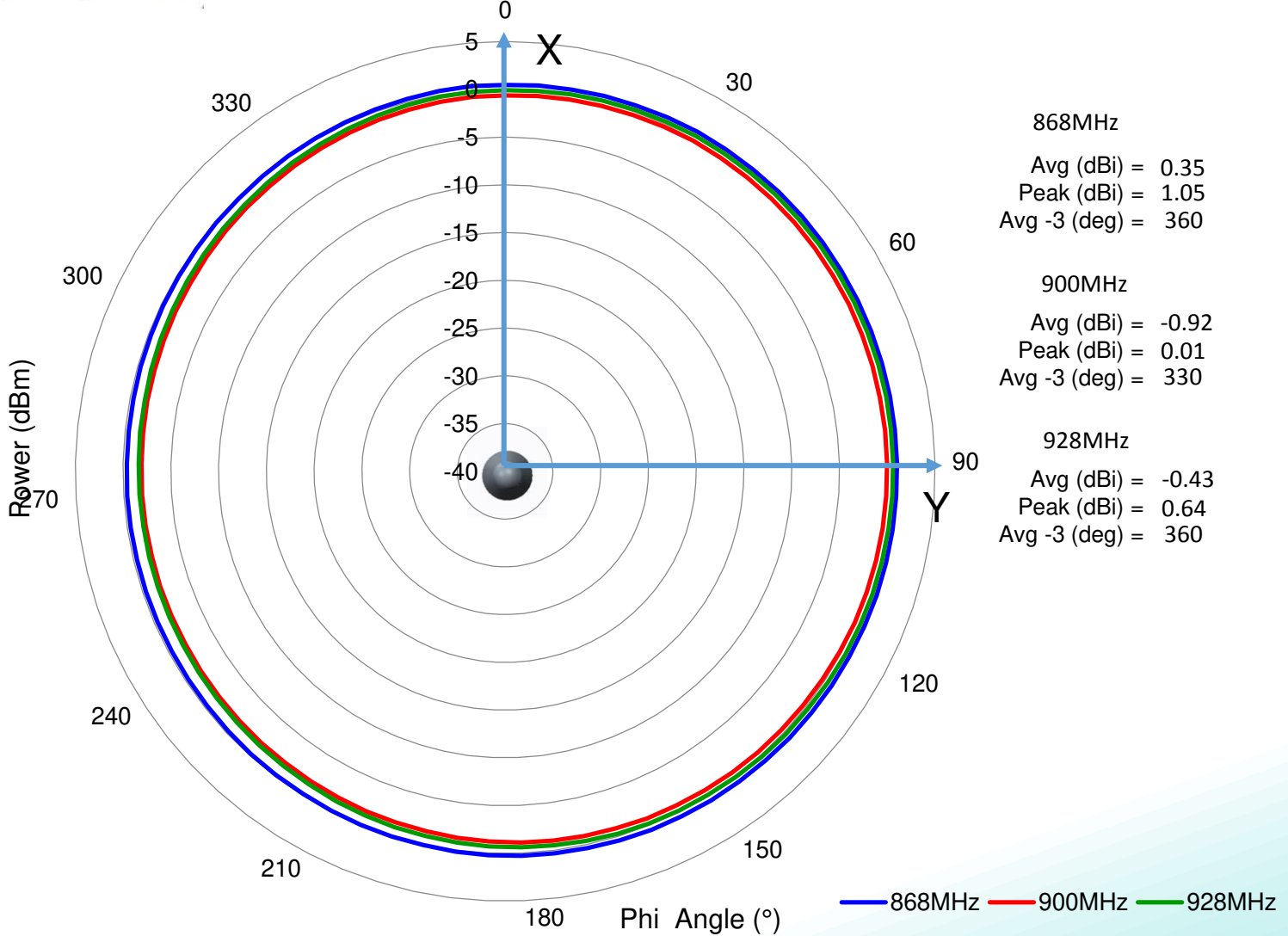
PART NUMBER: W5021

CHARTS



Gain Plots

XY Plane



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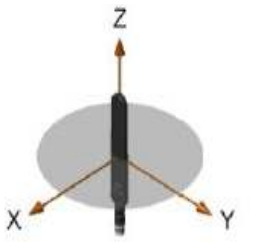


Description: 868-928MHz

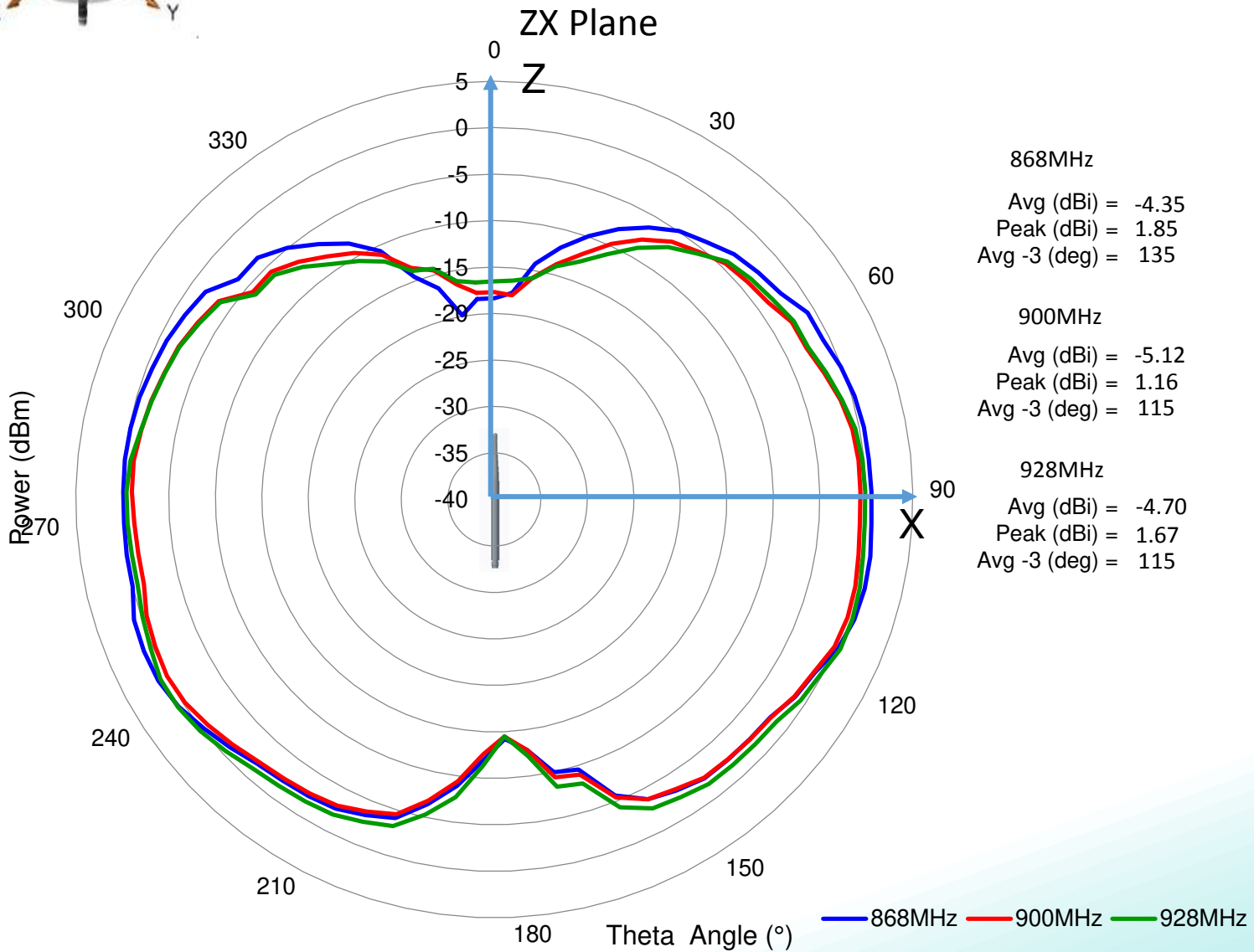
Series: Stick Antenna

PART NUMBER: W5021

CHARTS



Gain Plots



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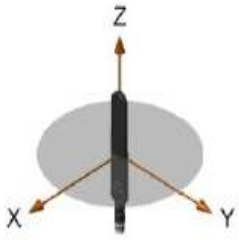
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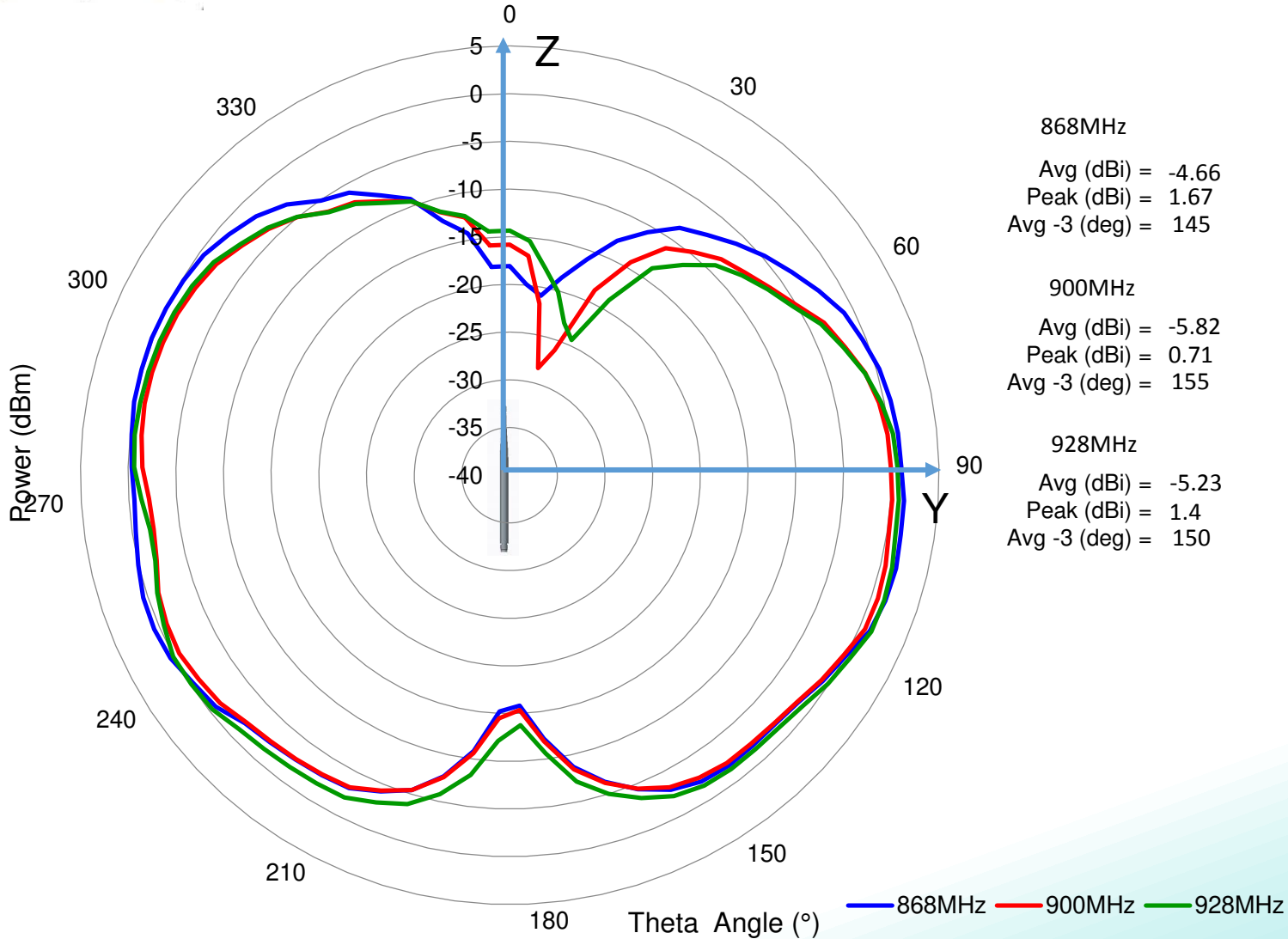
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CHARTS



Gain Plots

YZ Plane



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**Description: 868-928MHz**

**Series: Stick Antenna**

**PART NUMBER: W5021**

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## PACKAGING

600PCS/Carton box

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