antenova

DATASHEET

Draco

SREL036 • External Antenna

Features

- Terminal antenna for 4G/3G/2G applications
- LTE, HSPA+, WCDMA, CDMA, GSM, GPRS, DCS1800, PCS1900
- LTE bands: 1-21; 23-30; 33-41
- 698-960MHz, 1427-1660MHz, 1710-2170MHz, 2300-2400MHz, 2500-2690MHz
- High performance dipole design
- Available in three terminal options: swivel, fly lead and fixed 90° (IP67)

1. Description

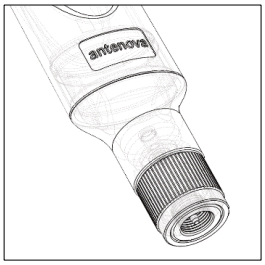
Draco is constructed with an ergonomic blade design to blend well to the outside of a device. Three versions are available, including an IP67 design for outdoor applications. The antenna is designed to work to various GND plane sizes or in free space for ease of integration.

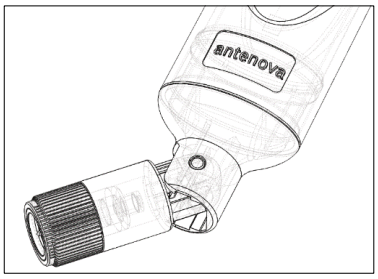
2. Applications

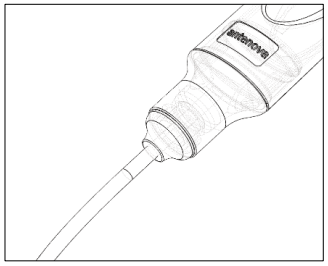
- Routers
- Industrial devices
- Remote devices
- ISM

3. Part number

SREL036 - XXX







Antenna type	XX
IP67 version	IP
Swivel version	S9

Connector	X
SMA Plug	P

Cable length(if fly lead)	XX
1.0 m	10
1.5 m	15
1.7 m	17
2.0 m	20

Non-standard connector types	X
SMA Plug	R
SMA Jack	J
SMA Jack Reverse	K

Note. -xxx refers to options for antenna version, connector type and cable length.

*Please contact Antenova for details on non-standard connector types

4. General data

Frequency	698-960 MHz 1427-1660MHz 1720-2170MHz 2300-2400MHz 2500-2690MHz
Polarization	Linear
Operating temperature	-20°C to +70°C
Impedance with matching	50 Ω
Weight	<21g (Cable not included)
Antenna type	External Antenna
Dimensions (Antenna)	See dimensions from page 18>
Cable length (Fly lead only)	1.0m /2.0m *
Connection	SMA Plug (Standard)
Radome Material	PC

*Please contact Antenova for details on other cable lengths

5. RF characteristics

698 – 960 MHz	Fixed (IP67) 	Hinged 	Fly lead (1.0m) 
Peak gain	2.46dBi	2.18dBi	1.23dBi
Average gain (Linear)	-2.26dBi	-2.32dBi	-3.10dBi
Average efficiency	>55%	>56%	>45%
Maximum return loss	<-5.30dB	<-5.56dB	<-6.65dB
Maximum VSWR	3.30:1	3.25 :1	2.60:1

1420 – 1660 MHz	Fixed (IP67)	Hinged	Fly lead (1.0m)
Peak gain	2.07dBi	1.92dBi	1.23dBi
Average gain (Linear)	-2.63dBi	-2.59dBi	-3.38dBi
Average efficiency	>53%	>55%	>48%
Maximum return loss	<-7.50dB	<-7.50dB	<-14.90dB
Maximum VSWR	2.40:1	2.40:1	1.40:1

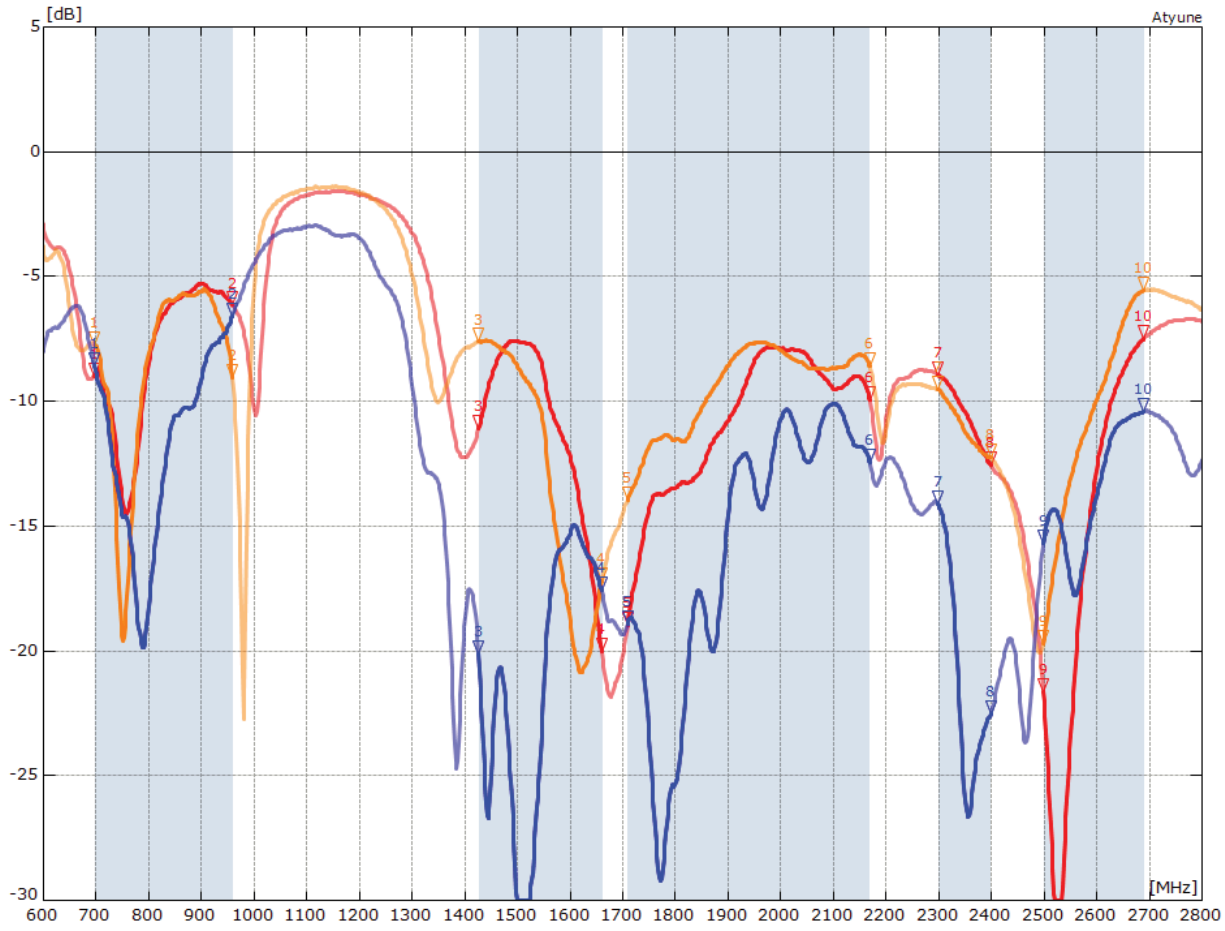
1720 – 2170 MHz	Fixed (IP67)	Hinged	Fly lead (1.0m)
Peak gain	3.33dBi	3.29dBi	1.73dBi
Average gain (Linear)	-2.33dBi	-2.35dBi	-3.33dBi
Average efficiency	>57%	>57%	>46%
Maximum return loss	<-7.80dB	<-7.60dB	<-10.10dB
Maximum VSWR	2.30:1	2.40:1	1.90:1

2300 – 2400 MHz	Fixed (IP67)	Hinged	Fly lead (1.0m)
Peak gain	3.29dBi	3.23dBi	1.51dBi
Average gain (Linear)	-1.81dBi	-2.12dBi	-3.17dBi
Average efficiency	>65%	>60%	>48%
Maximum return loss	<-8.90dB	<-9.40dB	<-14.11dB
Maximum VSWR	2.10:1	2.00:1	1.50:1

2500 – 2690 MHz	Fixed (IP67)	Hinged	Fly lead (1.0m)
Peak gain	4.14dBi	4.08dBi	1.59dBi
Average gain (Linear)	-1.84dBi	-2.17dBi	-3.11dBi
Average efficiency	>65%	>60%	>48%
Maximum return loss	<-7.40dB	<-5.50dB	<-10.30dB
Maximum VSWR	2.50:1	3.20:1	1.90:1

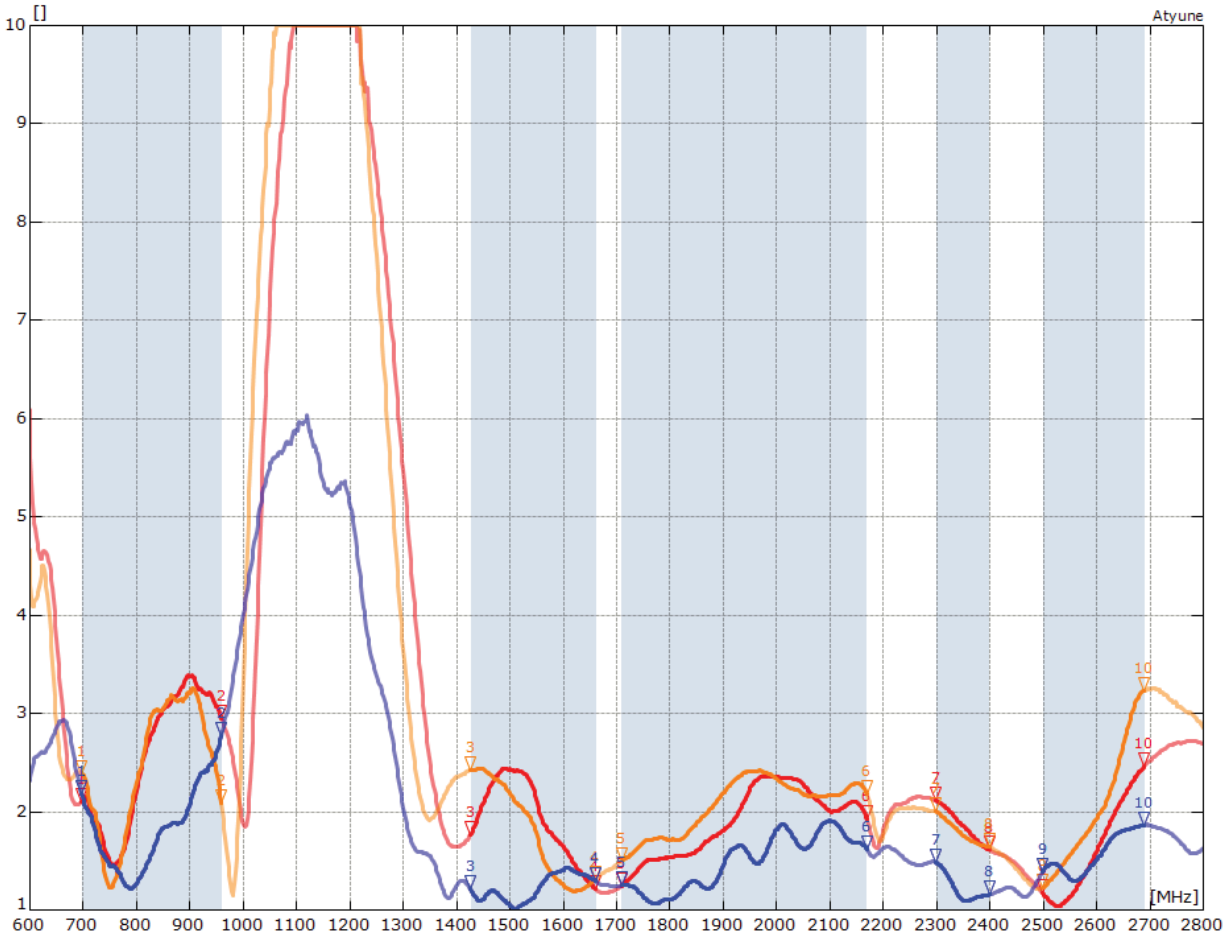
6. RF performance

6.1. Return loss



MARKERS:	MHz	dB	MHz	dB	MHz	dB	MHz	dB	MHz	dB
Fixed.S1P - S11										
	1: 698	-8.96	3: 1427	-11.07	5: 1710	-18.97	7: 2300	-8.91	9: 2500	-21.64
	2: 960	-6.13	4: 1661	-19.98	6: 2170	-9.91	8: 2400	-12.54	10: 2690	-7.47
Hinged.S1P - S11										
	1: 698	-7.73	3: 1427	-7.59	5: 1710	-13.95	7: 2300	-9.49	9: 2500	-19.66
	2: 960	-9.00	4: 1661	-17.19	6: 2170	-8.57	8: 2400	-12.23	10: 2690	-5.55
Flylead.S1P - S11										
	1: 698	-8.58	3: 1427	-20.09	5: 1710	-18.88	7: 2300	-14.11	9: 2500	-15.68
	2: 960	-6.55	4: 1661	-17.55	6: 2170	-12.41	8: 2400	-22.48	10: 2690	-10.38

6.2. VSWR



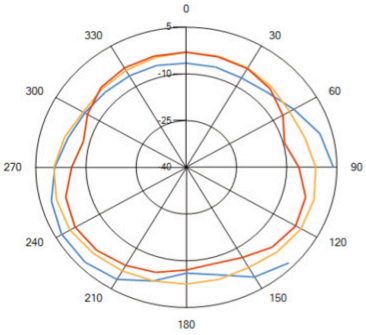
MARKERS:	MHz		MHz		MHz		MHz		MHz	
Fixed.S1P - S11										
	1: 698	2.11	3: 1427	1.78	5: 1710	1.25	7: 2300	2.12	9: 2500	1.18
	2: 960	2.95	4: 1661	1.22	6: 2170	1.94	8: 2400	1.62	10: 2690	2.47
Hinged.S1P - S11										
	1: 698	2.39	3: 1427	2.43	5: 1710	1.50	7: 2300	2.01	9: 2500	1.23
	2: 960	2.10	4: 1661	1.32	6: 2170	2.19	8: 2400	1.65	10: 2690	3.24
Flylead.S1P - S11										
	1: 698	2.19	3: 1427	1.22	5: 1710	1.26	7: 2300	1.49	9: 2500	1.39
	2: 960	2.78	4: 1661	1.31	6: 2170	1.63	8: 2400	1.16	10: 2690	1.87

6.3. Antenna pattern free space

6.3.1. 698 - 960 MHz

Straight Fexed (IP67)

XY



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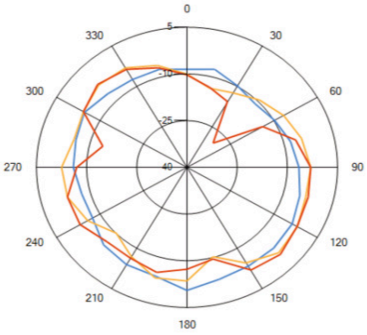

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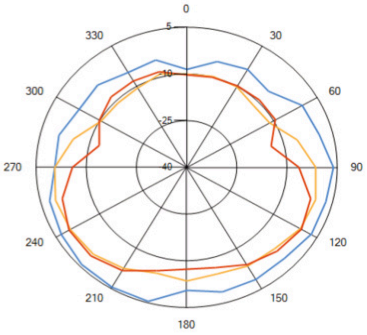
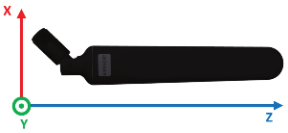


Swivel Hinged



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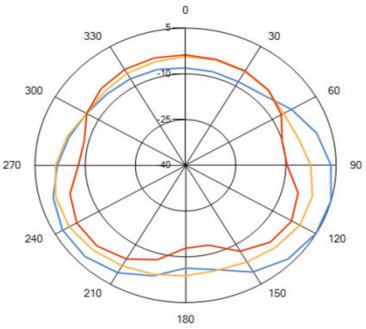

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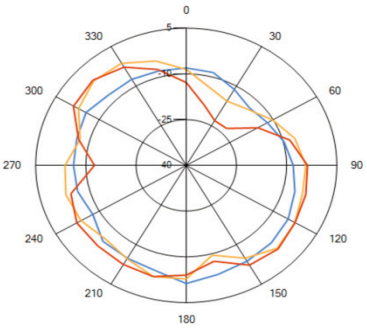

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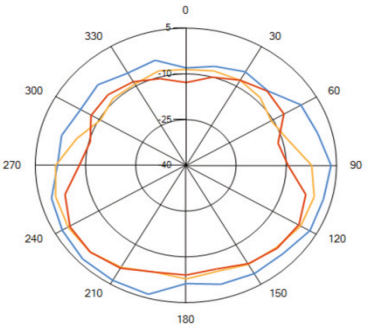
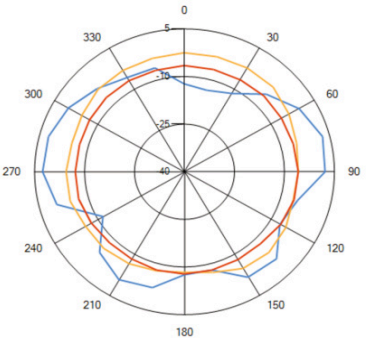


Fly Lead(1.0m)

XY



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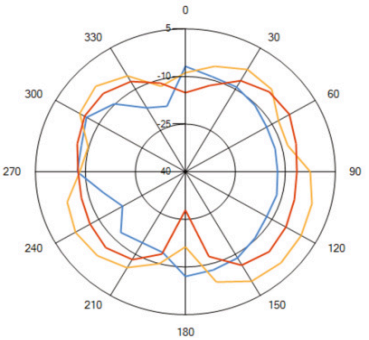

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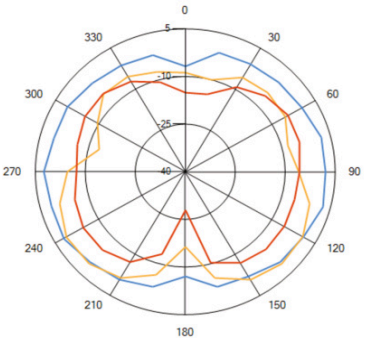
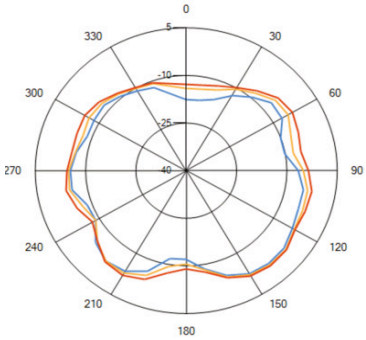


6.3.2. 1427 - 1661 MHz

Straight Fexed (IP67)

XY



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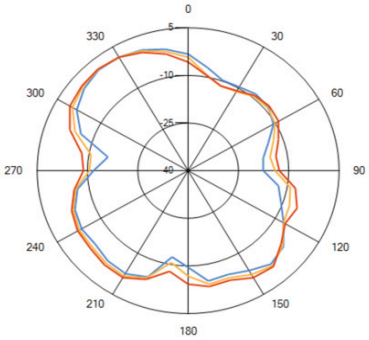

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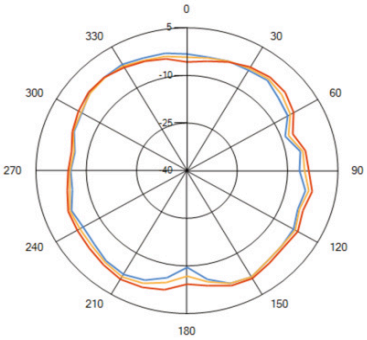
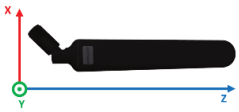


Swivel Hinged



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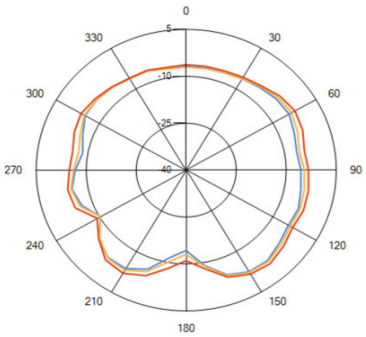

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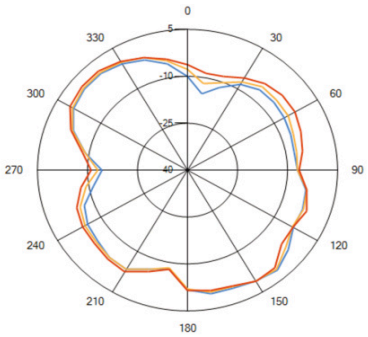

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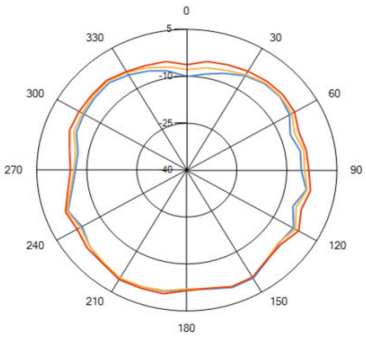
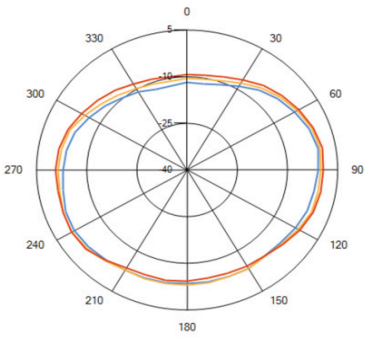


Fly Lead(1.0m)

XY



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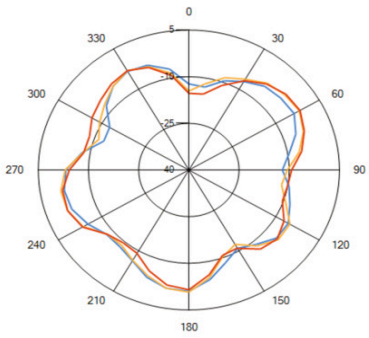

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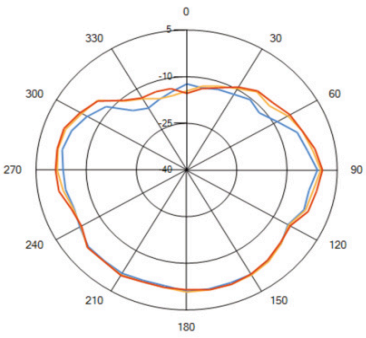
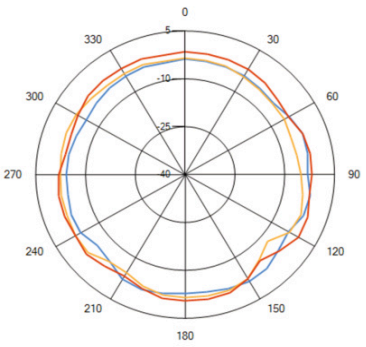


6.3.3. 1710 - 2170 MHz

Straight Fexed (IP67)

XY



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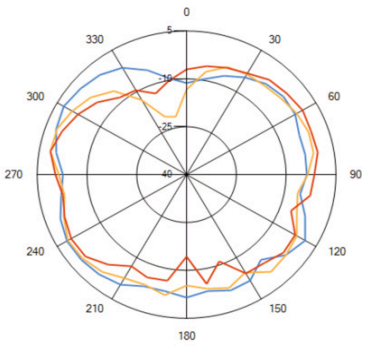

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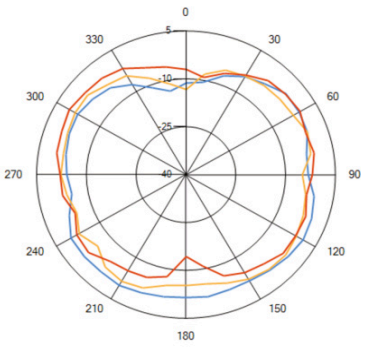
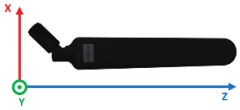
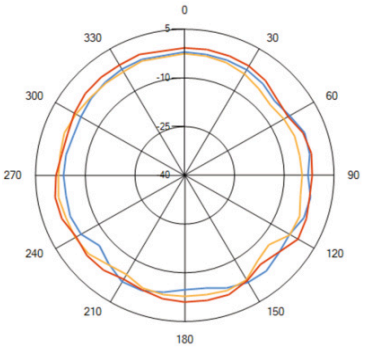


Swivel Hinged



XY



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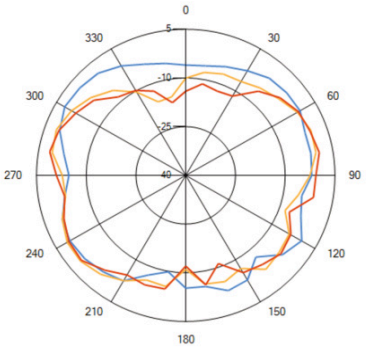

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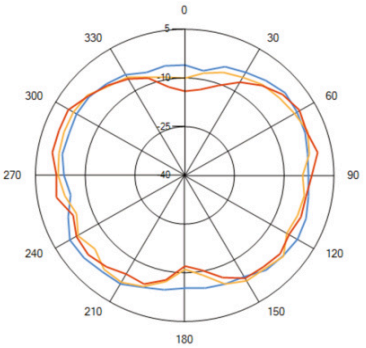
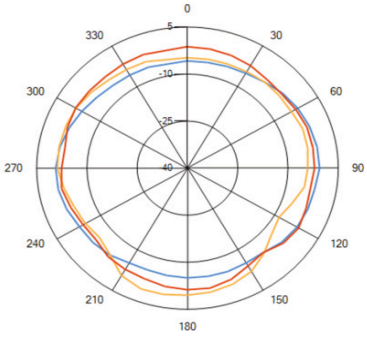


Fly Lead(1.0m)

XY



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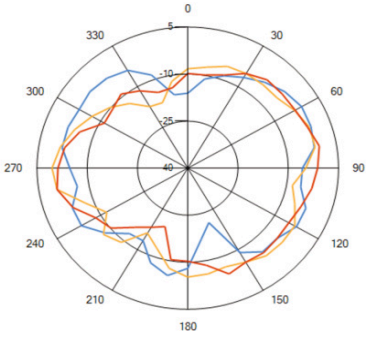

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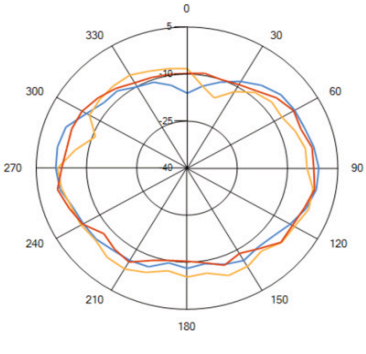
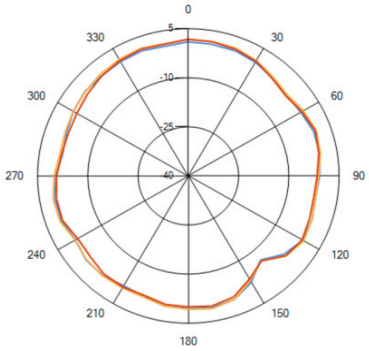


6.3.4. 2300 - 2400 MHz

Straight Fexed (IP67)

XY



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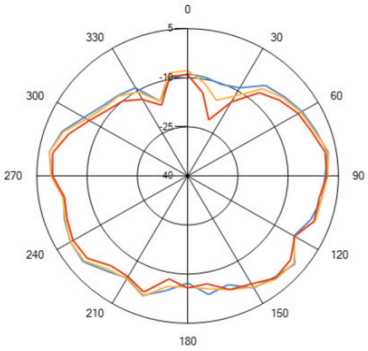

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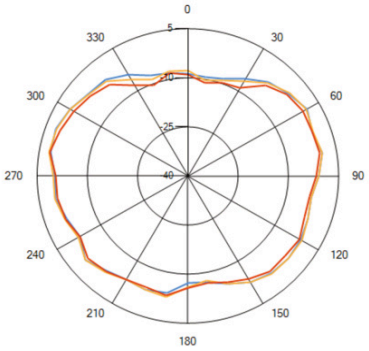
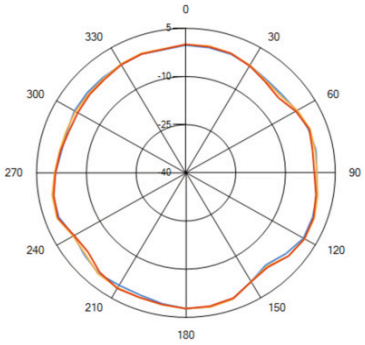


Swivel Hinged

XY



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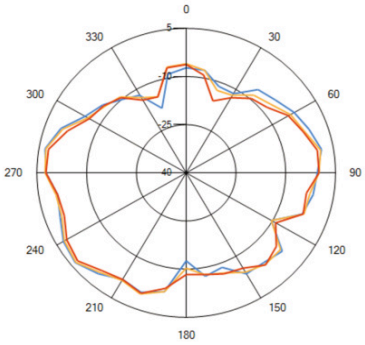

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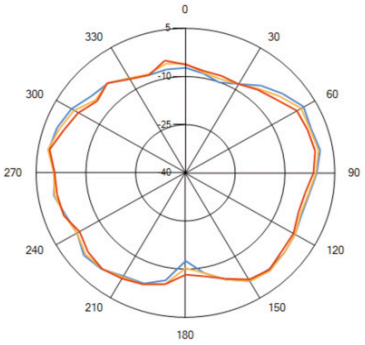
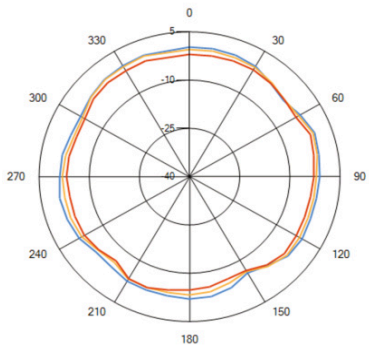


Fly Lead(1.0m)

XY



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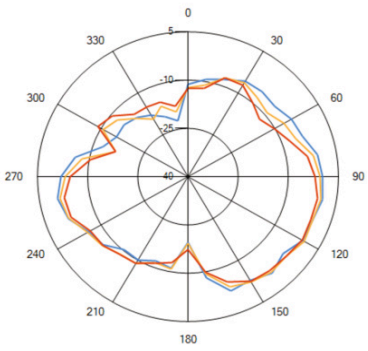

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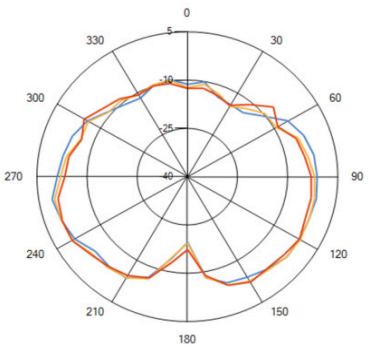
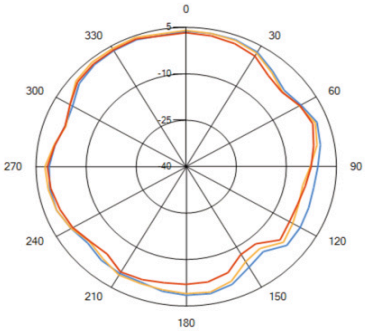


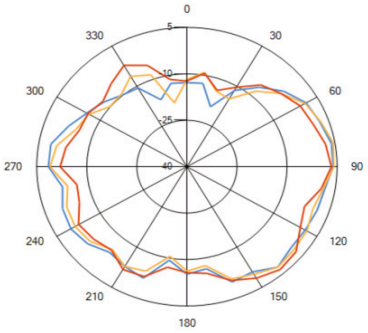
6.3.5. 2500 - 2690 MHz

Straight Fexed (IP67)

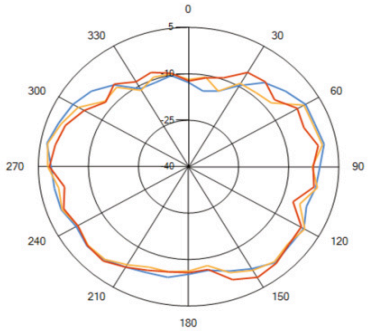
XY



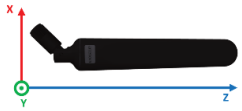
XZ



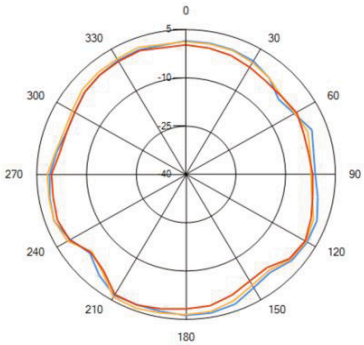
YZ



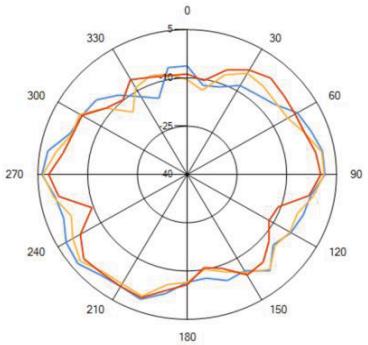
Swivel Hinged



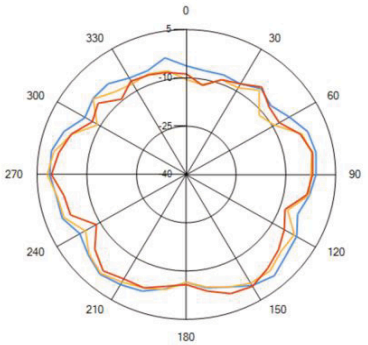
XY



XZ

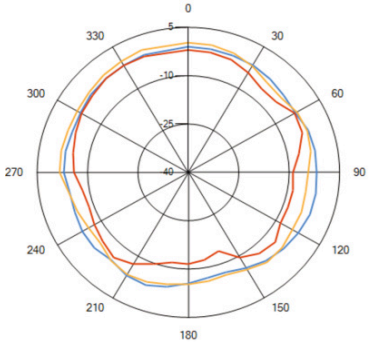


YZ

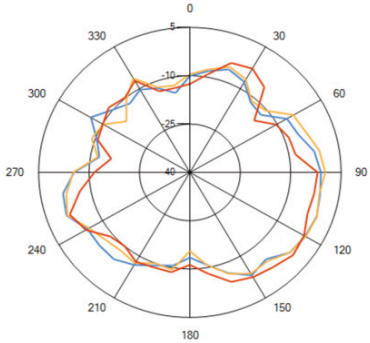


Fly Lead(1.0m)

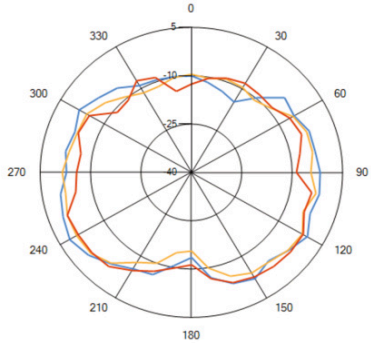
XY



XZ



YZ

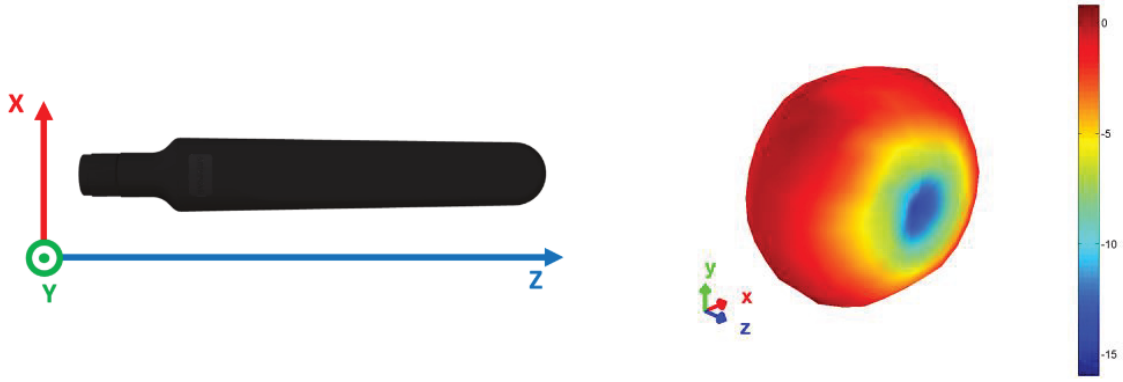


6.4. Antenna pattern free space (3D)

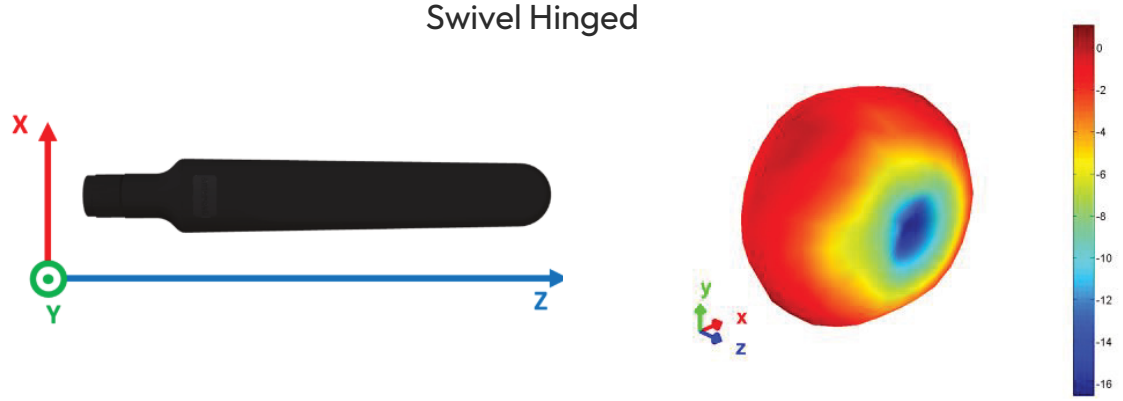
6.4.1. 698- 960 MHz

3D patterns at 746MHz

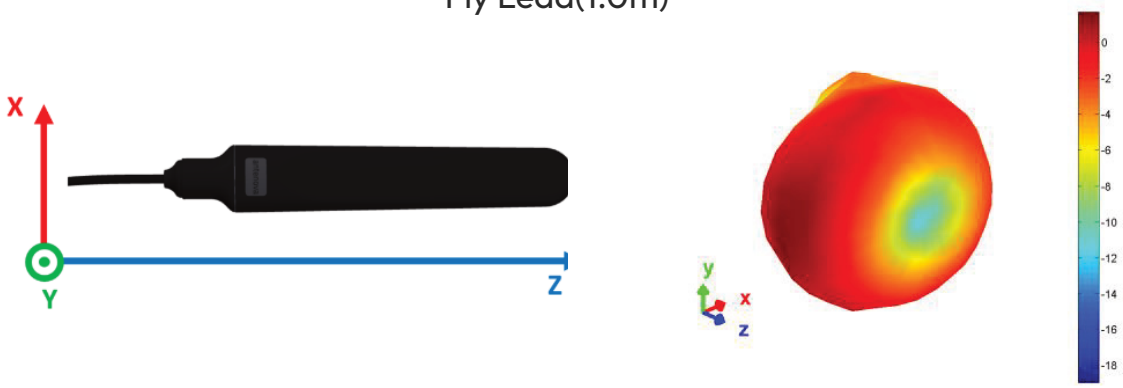
Straight Fexed (IP67)



Swivel Hinged



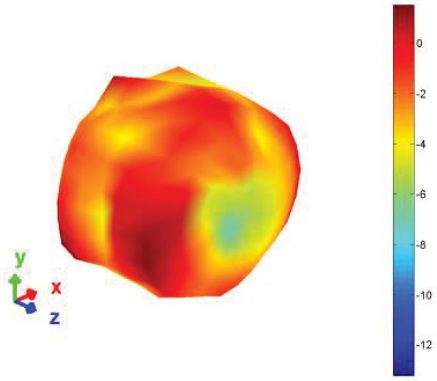
Fly Lead(1.0m)



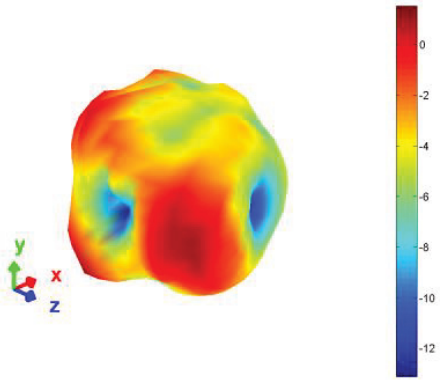
6.4.2. 1427- 1661 MHz

3D patterns at 1500MHz

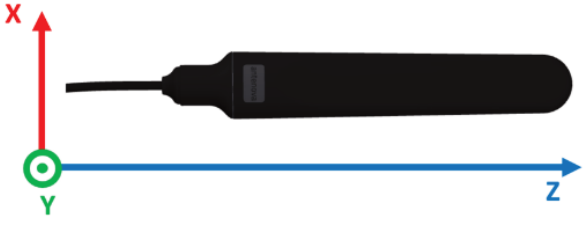
Straight Fexed (IP67)

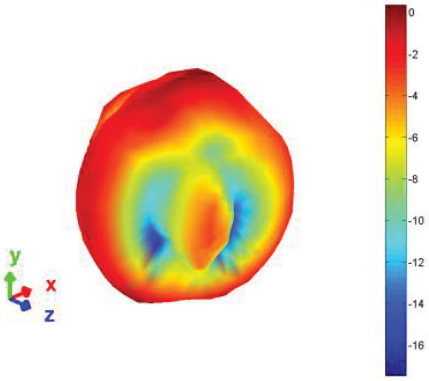


Swivel Hinged



Fly Lead(1.0m)

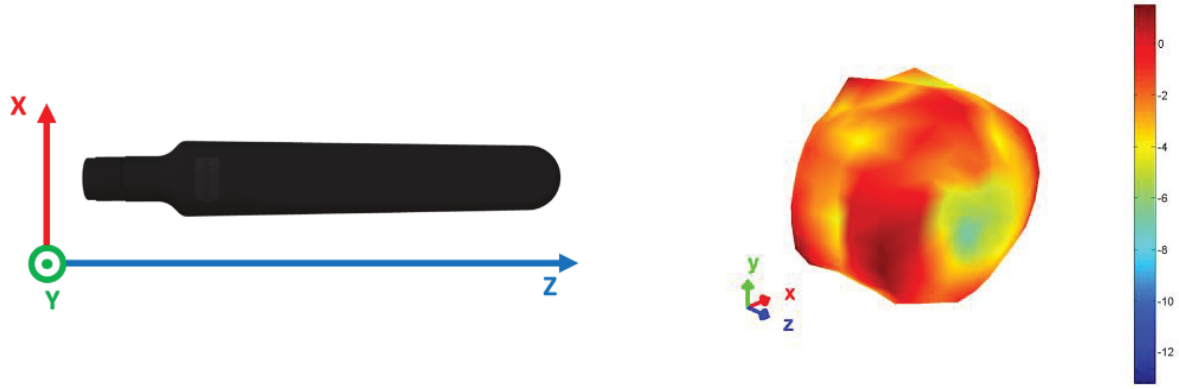




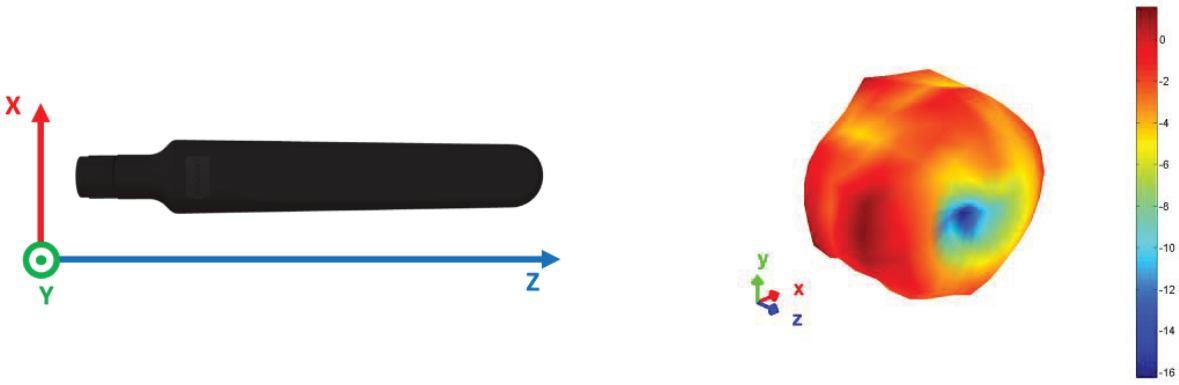
6.4.3. 1710- 2170 MHz

3D patterns at 1930MHz

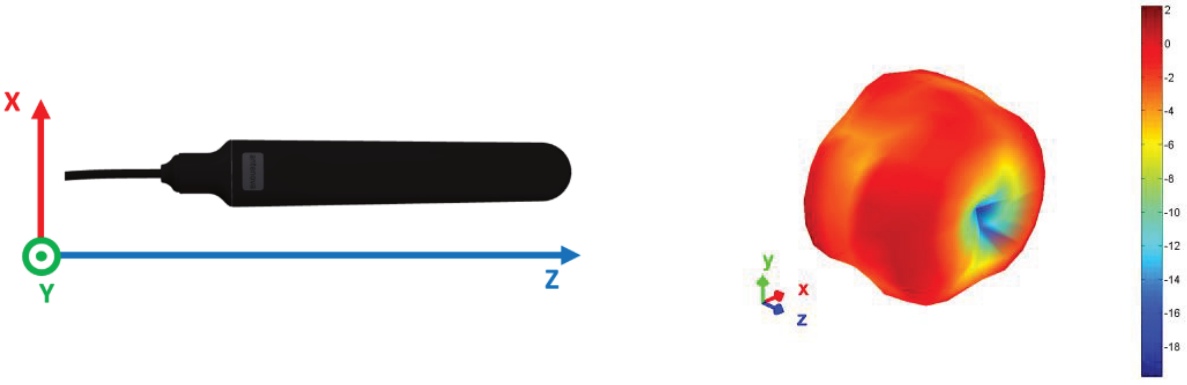
Straight Fexed (IP67)



Swivel Hinged



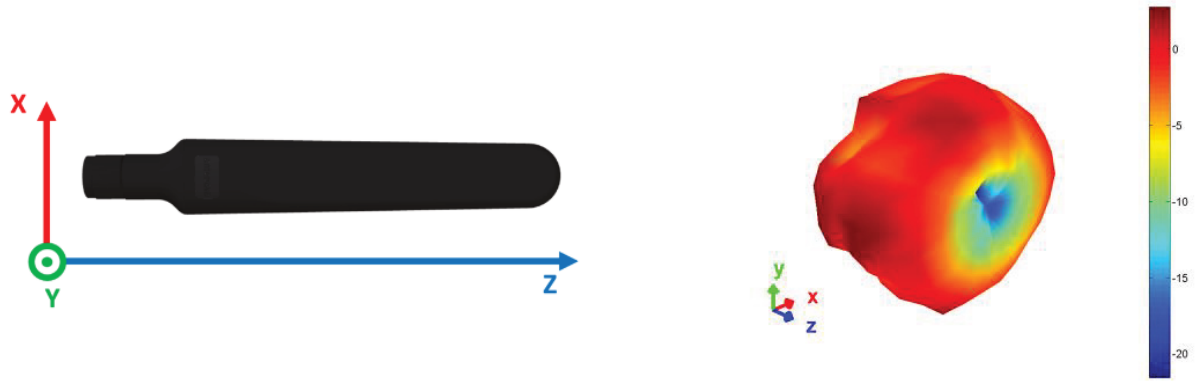
Fly Lead(1.0m)



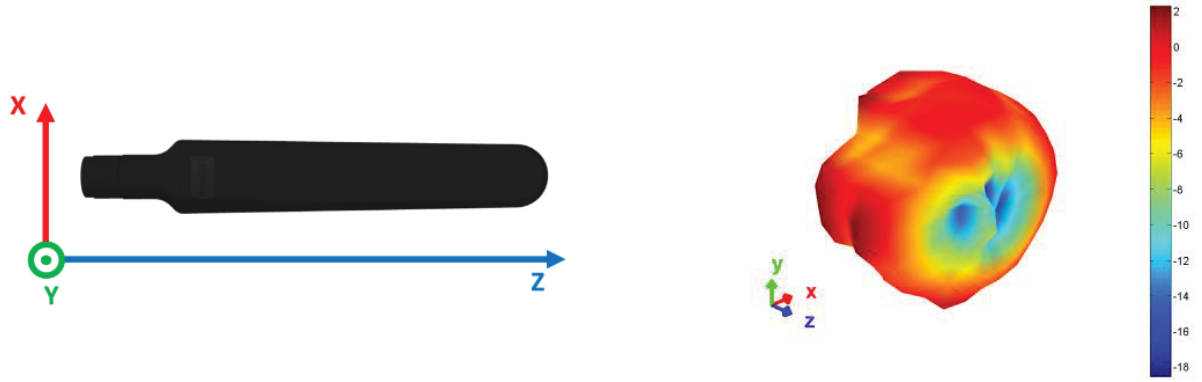
6.4.4. 2300- 2400 MHz

3D patterns at 2350MHz

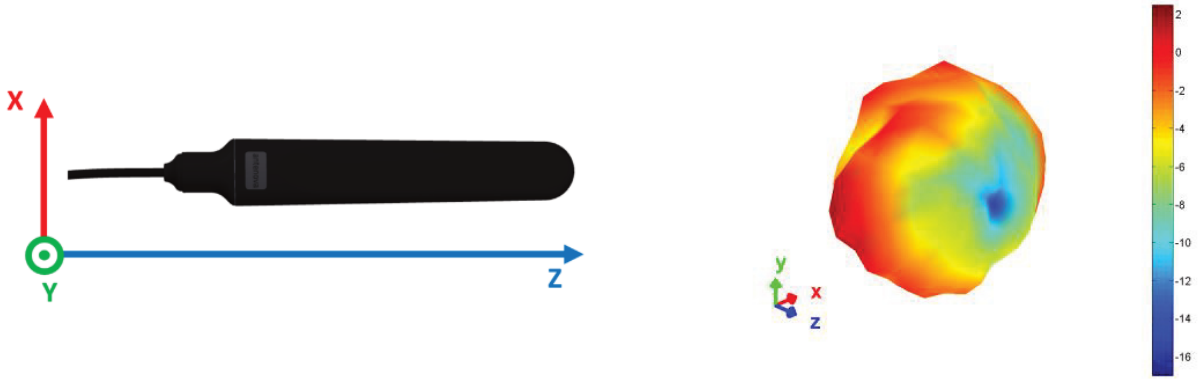
Straight Fexed (IP67)



Swivel Hinged



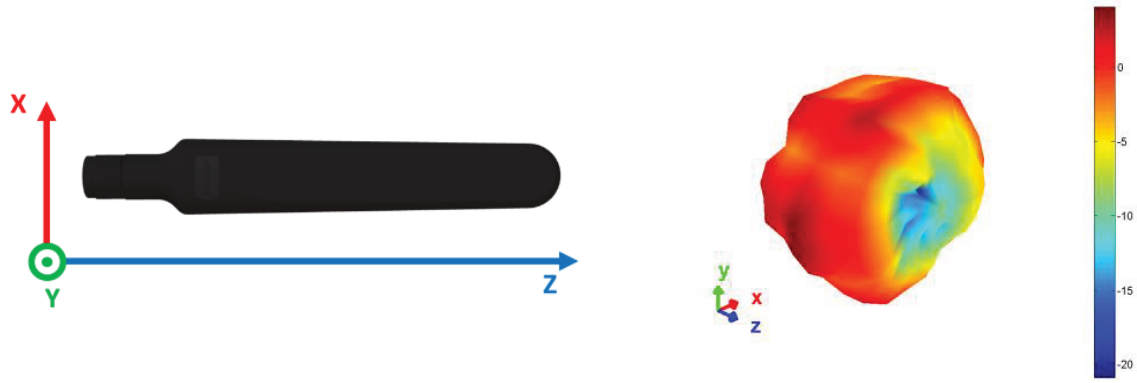
Fly Lead(1.0m)



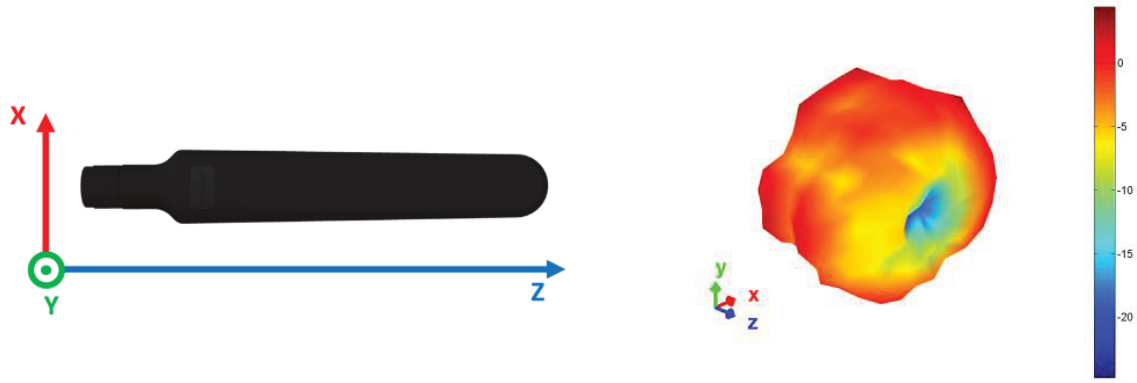
6.4.5. 2500- 2690 MHz

3D patterns at 2600MHz

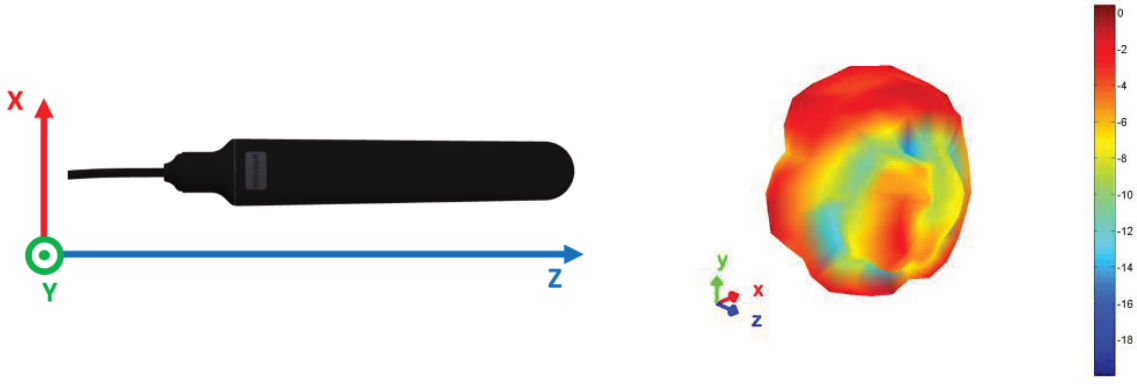
Straight Fexed (IP67)



Swivel Hinged

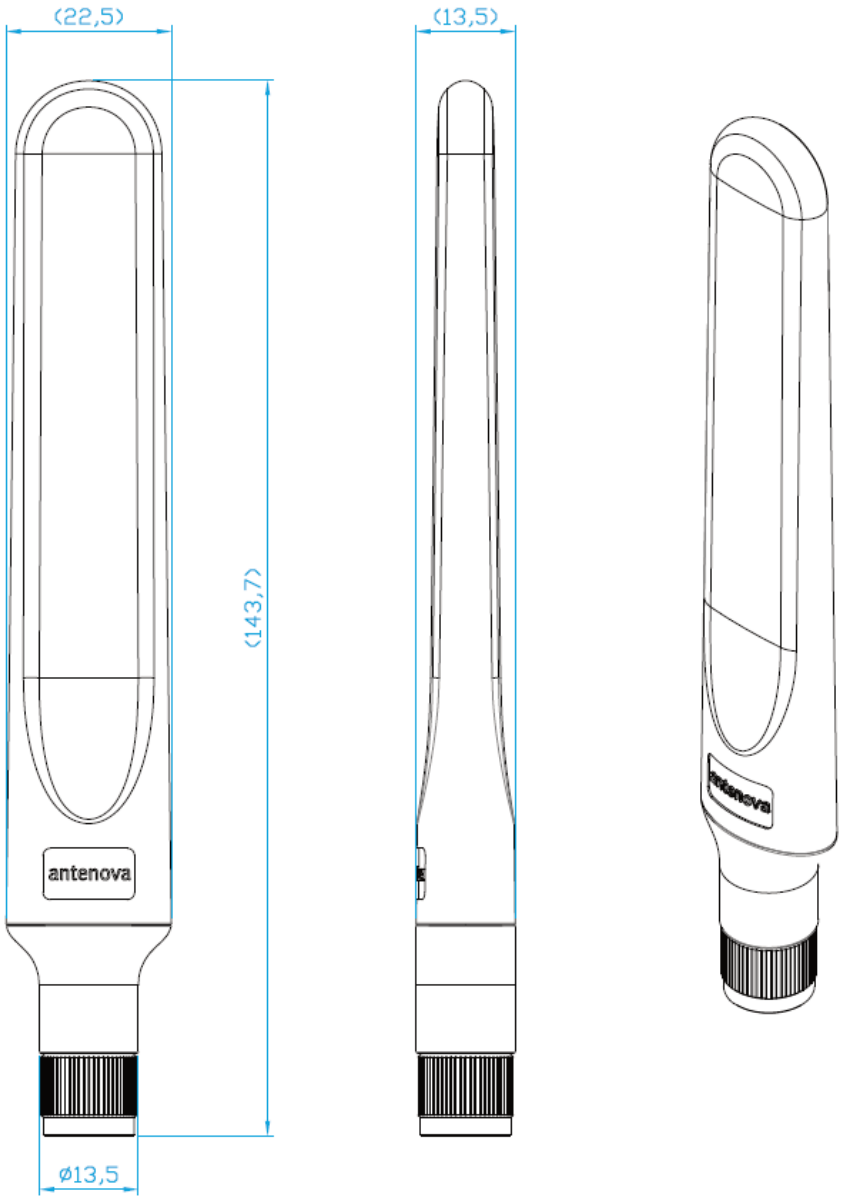


Fly Lead(1.0m)



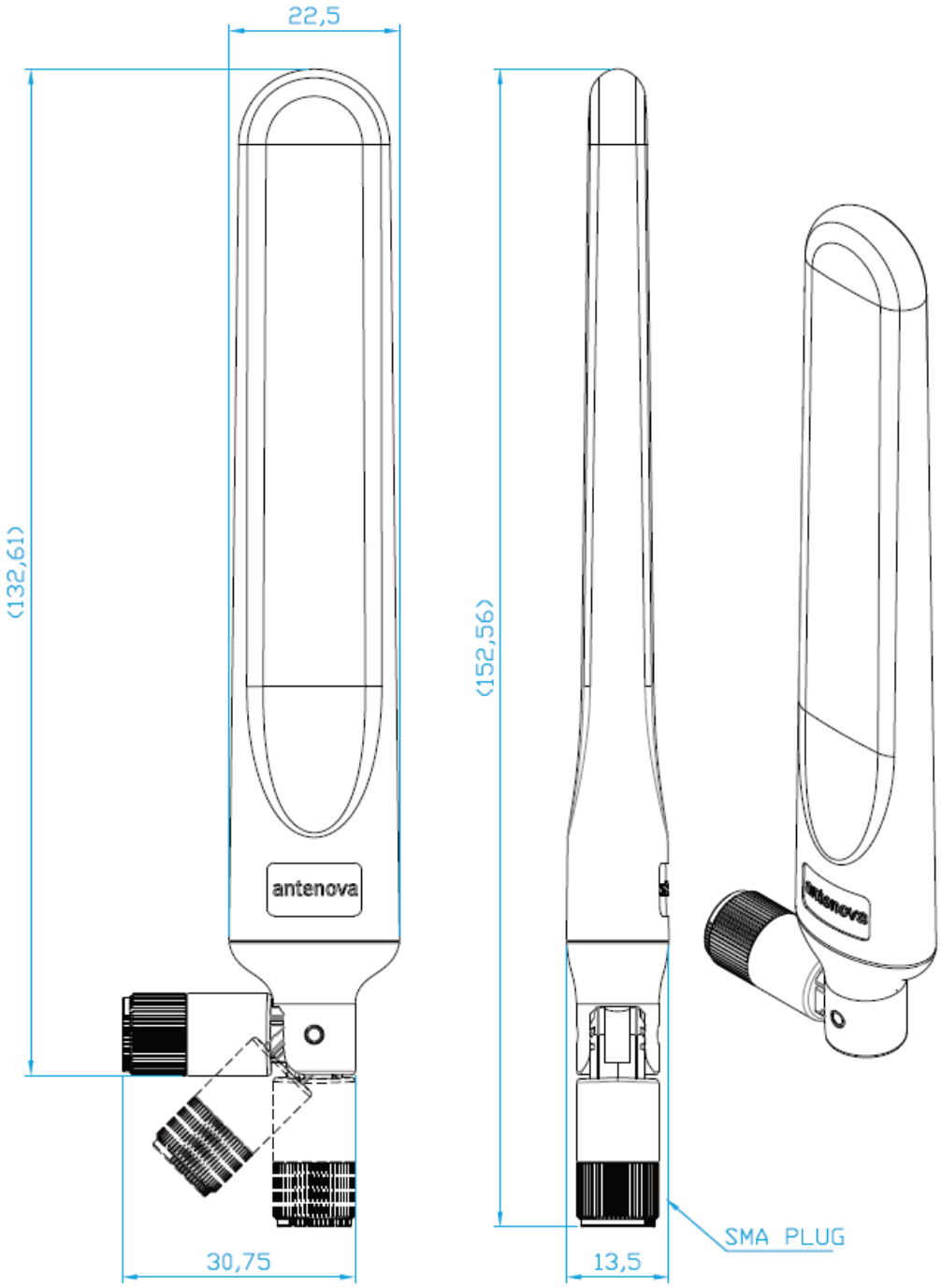
7. Antenna dimensions

7.1. Dimensions straight fixed (SREL036-IPP)



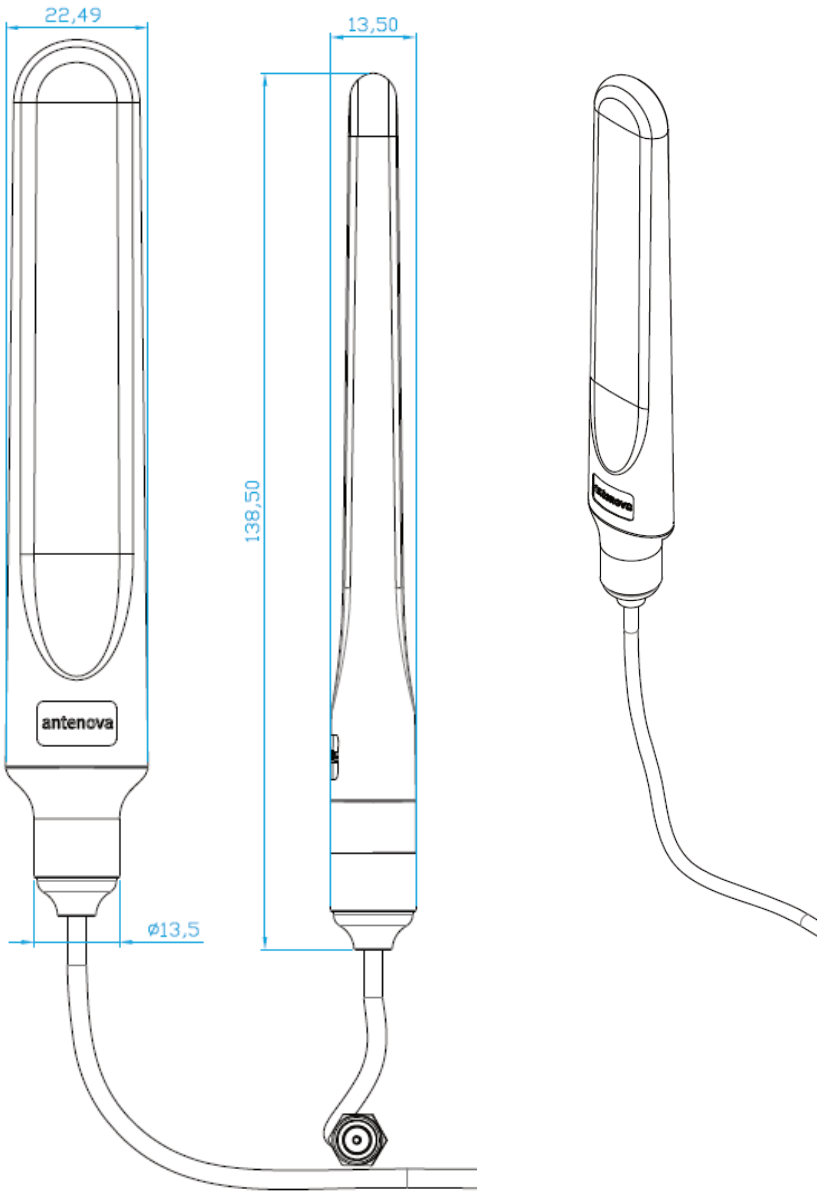
All dimensions in (mm)

7.2. Dimensions Swivel Hinged (SREL036-S9P)



All dimensions in (mm)

7.3. Dimensions Fly lead (SREL036-10P)



All dimensions in (mm)

8. Electrical interface

8.1. Transmission line

All transmission lines should be designed to have a characteristic impedance of 50Ω.

- The length of each transmission lines should be kept to a minimum
- All other parts of the RF system like transceivers, power amplifiers, etc, should also be designed to have a 50 Ω impedance

A co-planar transmission line can be designed using an online transmission line calculator tool, see TOOL at https://www.antenova.com/.

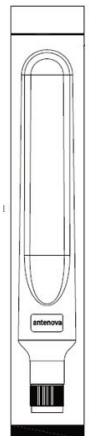
The PCB thickness, copper thickness and substrate dielectric constant are entered, then the tool calculates the transmission line width and gaps on either side of the track to give a 50 Ω impedance.

9. Hazardous material regulation conformance

The antenna has been tested to conform to RoHS and REACH requirements. A certificate of conformance is available from Antenova's website.

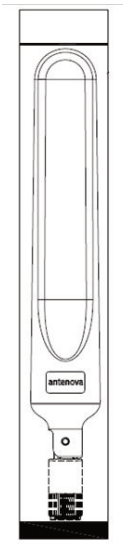
10. Packaging

10.1. Straight Fixed (SREL036-IPP)



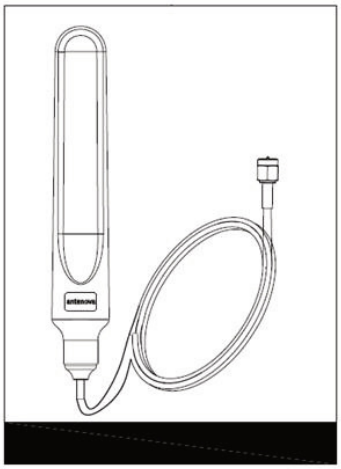
The antennas are supplied in individual polythene bags. Twenty-five small bags are packed in one larger bag. The outer box contains fifty antennas.

10.2. Swivel Hinged (SREL036-S9P)



The antennas are supplied in individual polythene bags. Twenty-five small bags are packed in one larger bag. The outer box contains fifty antennas.

10.3. Fly lead (SREL036-10P)

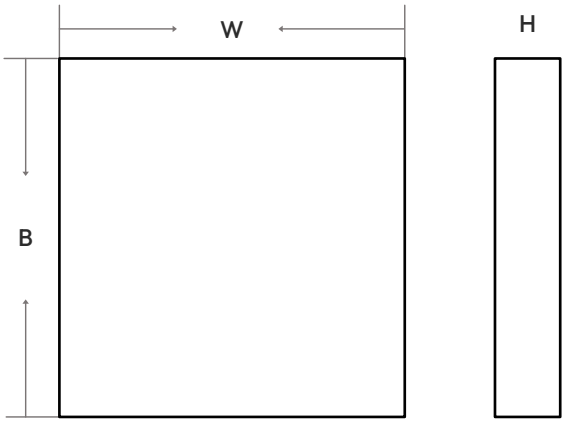


The antennas are supplied in individual polythene bags. Twenty-five small bags are packed in one larger bag. The outer box contains fifty antennas.

11. Optimal storage conditions

Temperature	-10°C to 40°C
Humidity	Less than 75% RH
Shelf life	18 Months
Storage place	Away from corrosive gas and direct sunlight
Packaging	Antennas should be stored in unopened sealed manufacturer's plastic packaging.

11.1 Box dimensions



Width (W)	Breadth (B)	Thickness (H)
280mm	190 mm	70mm

12. Reel label information

Quality statements

Antenova's products conform to REACH and RoHS legislation. For our statements regarding these and other quality standards, please see antenova.com.

Data sheet

2.01 release 29th June 2026

Antenna design, integration and test resources

Product designers – the details contained in this datasheet will help you to complete your embedded antenna design. Please follow our technical advice carefully to obtain optimum antenna performance.

We aim to support our customers to create high performance wireless products. You will find a wealth of design resources, calculators and case studies to aid your design on our website.

Antenova's design laboratories are equipped with the latest antenna design tools and test chambers. We provide antenna design, test and technical integration services to help you complete your design and obtain the required certifications.

If you cannot find the antenna you require in our product range, please contact us to discuss creating a custom antenna to meet your exact requirements.

Share knowledge with RF Experts around the world

ask.antenova is a global forum for designers and engineers working with wireless technology

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Request a volume quotation for antennas:

sales@antenova.com

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