

DATASHEET

Avia

SRFC025 • flexiiANT®



Features

- Antenna for 3G applications including MIMO systems.
- GSM850, GSM900, DCS1800, PCS1900, WCDMA2100
- 1.13mm diameter RF cable with I-PEX MHF connector
- Self-adhesive mounted
- Quick and simple integration minimizes design cycle
- Available in two standard cable lengths 100mm and 150mm, (other lengths available, MOQs apply)

1. Description

Avia is intended for use with 3G applications. This product specification shows the performance of the antenna to cover a typical penta-band reception: GSM850/900/1800/1900 and WCDMA.

2. Applications

- Smart meters
- Femto / Pico base stations
- Tracker devices
- Remote monitoring
- Machine to Machine
- POS (Point of Sale) terminals

3. Part number

SRFC025-xxx



Part number	Cable length
SRFC025-100	100mm
SRFC025-150	150mm

Note. -xxx refers to cable

4. General data

Frequency	824-960MHz 1710-2170MHz
Polarization	Linear
Operating temperature	-40°C to +85°C
Environmental condition test	ISO16750-4 5.1.1./5.1.2
Impedance	50 Ω
Weight	<0.5g
Antenna type	FPC Self-adhesive 3M 468MP
Dimensions (Antenna)	71.0 x 12.5 x 0.15 (mm)
Connection	I-PEX MHF1 (20278-112R-13)

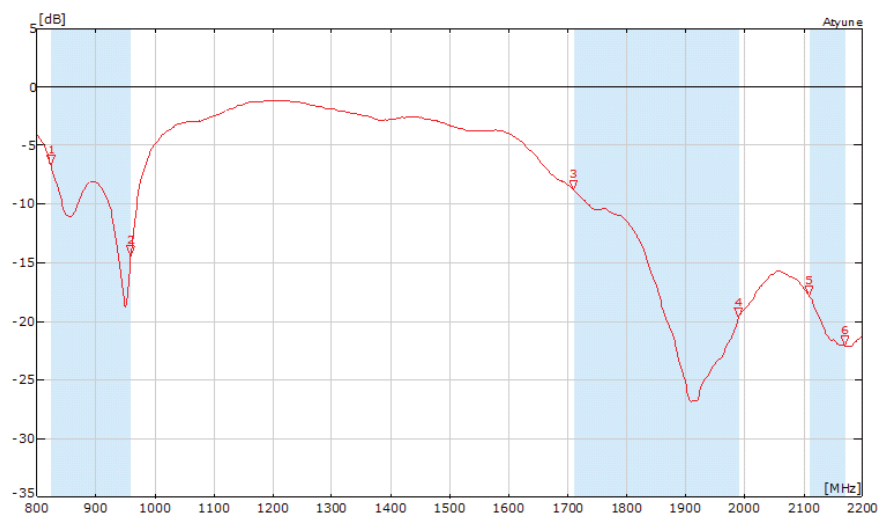
5. RF characteristics

	824 – 960 MHz	1710 – 1990 MHz	2110 – 2170 MHz
Peak gain	4.07dBi	5.44dBi	3.9dBi
Average gain (Linear)	-3.31dBi	-1.1dBi	-1.74dBi
Average efficiency	>45%	>70%	>65%
Maximum return loss	-6.6dB	-8.7dB	-17dB
Maximum VSWR	2.80:1	2.20:1	1.30:1

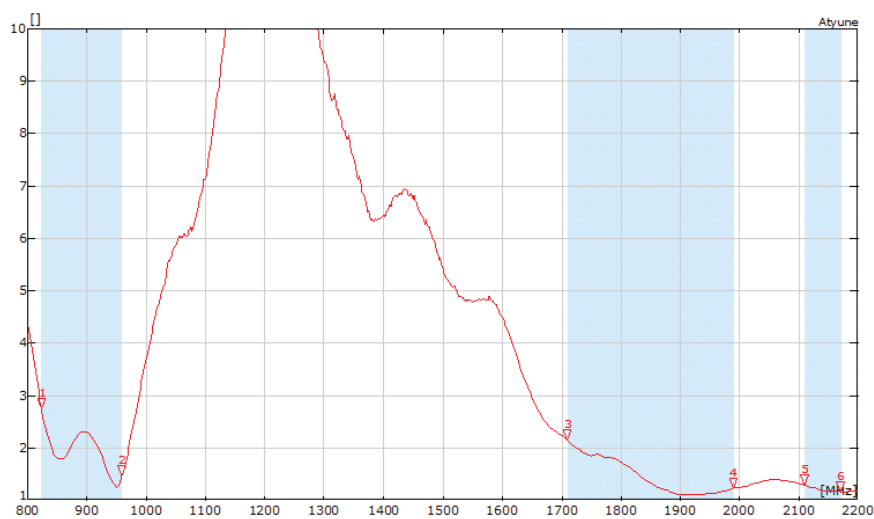
All data measured in a loaded condition adhered to a plastic carrier free space.

6. RF performance

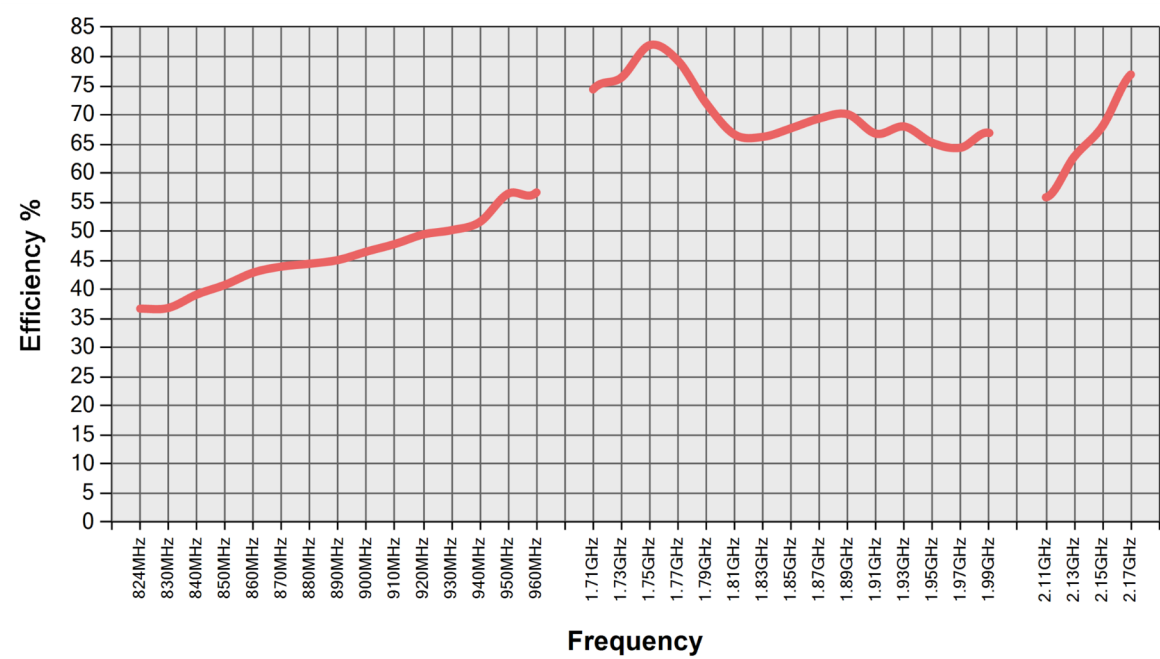
6.1. Return loss



6.2. VSWR



6.3. Efficiency

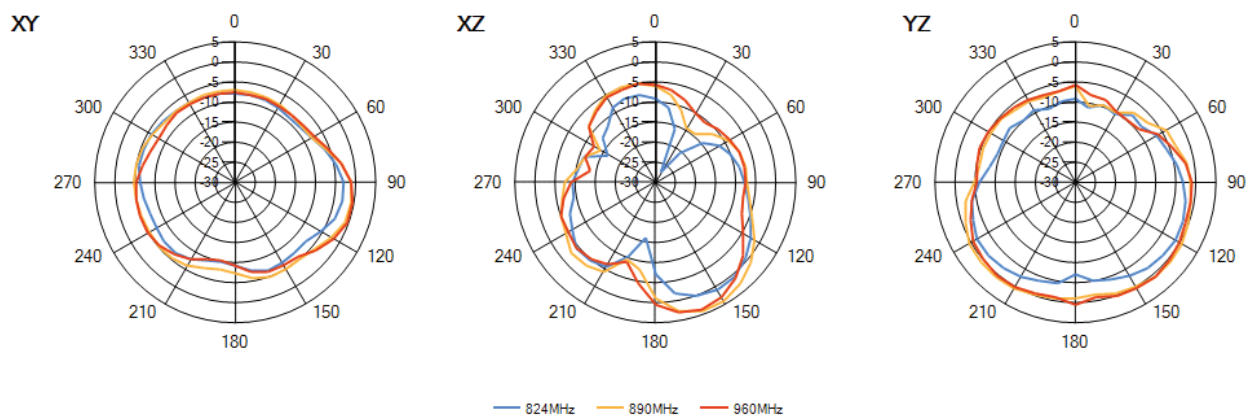


All data measured on SRFC025-100 in a loaded condition adhered to a plastic carrier in free space.

6.4. Antenna pattern

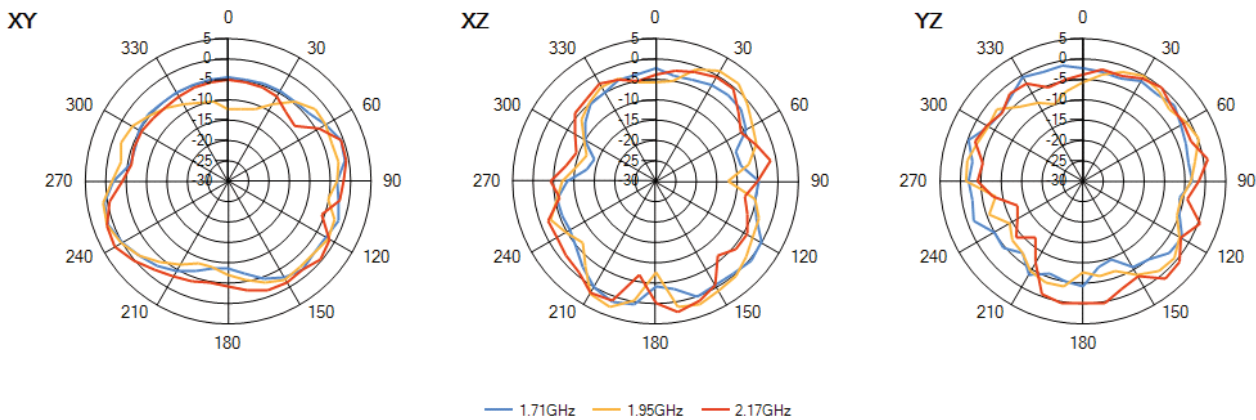
6.4.1. 824 MHz – 960 MHz

3D pattern at 890 MHz



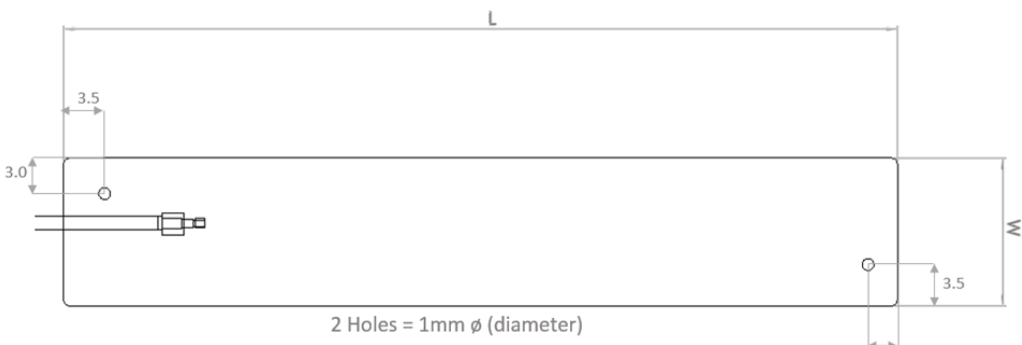
6.4.2. 1710 MHz – 2170 MHz

3D pattern at 1950 MHz



7. Antenna dimensions

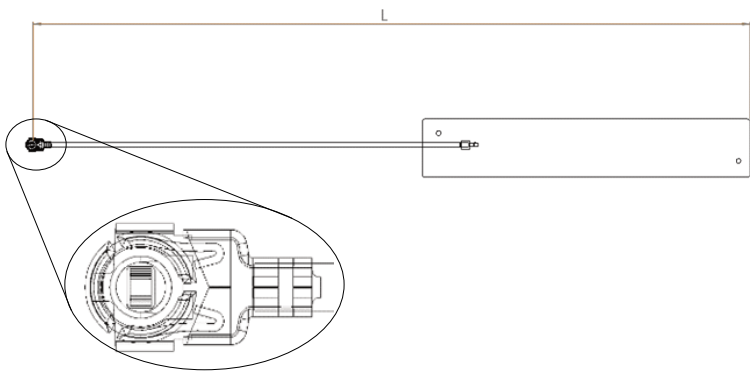
7.1. Dimensions FPC section



L	W	T
Length	Width	Thickness
71.0 $\pm$ 0.2	12.5 $\pm$ 0.2	0.15 (nominal)

All dimensions in (mm)

7.2. Dimensions assembled

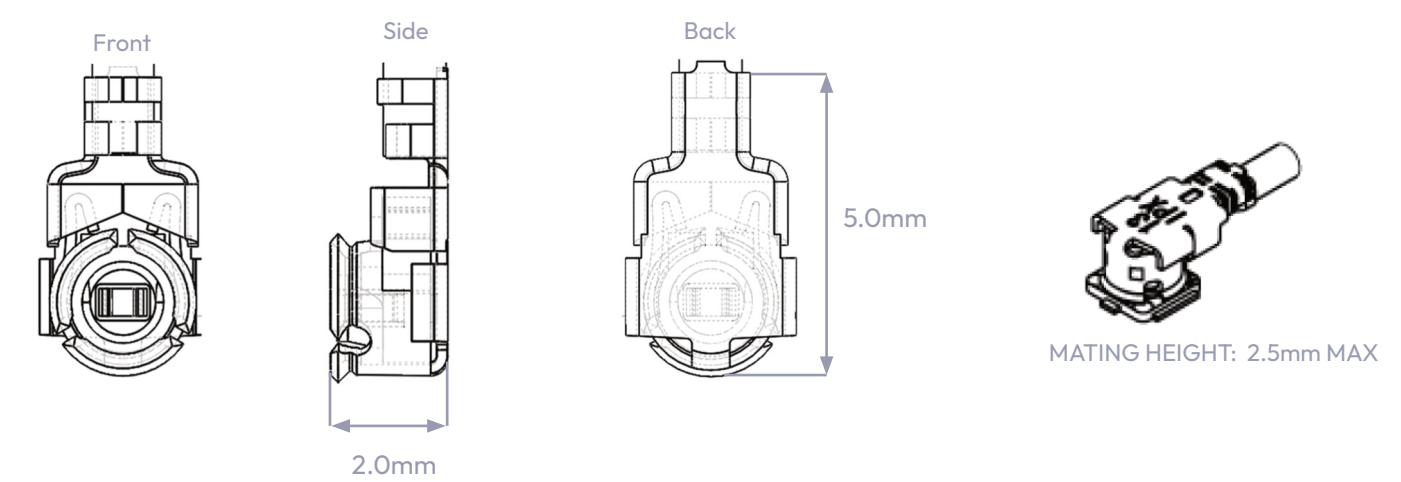


SRFC025-100	SRFC025-150
Length	Length
160 $\pm$ 2.0	210 $\pm$ 2.0

All dimensions in (mm)

Standard cable length for this antenna is 100mm and 150mm (other lengths are available, MOQs apply)

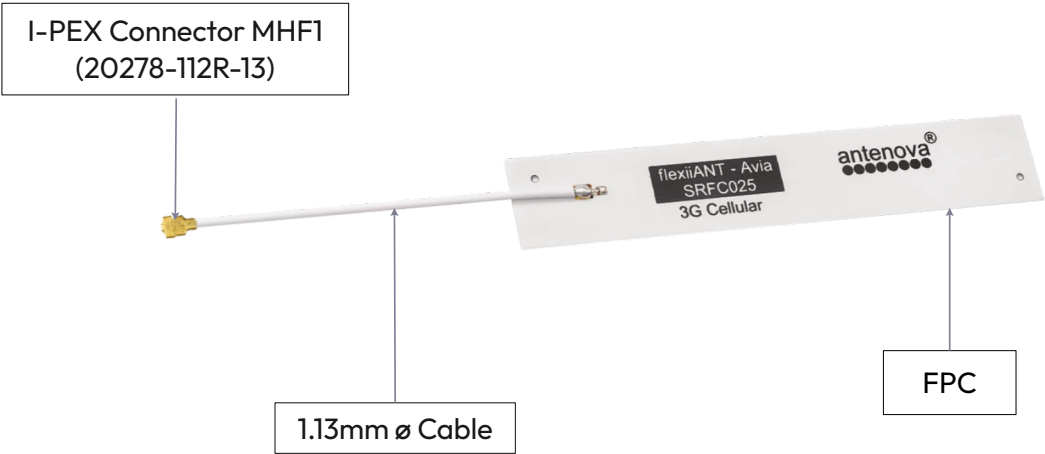
7.3. I-PEX connector MHF1 (20278-112R-13)



I-PEX	
Material	Copper alloy
Plating	Ag

All dimensions in (mm)

7.4. Assembly



8. Electrical interface

8.1. Host interface

The host PCB requires the mating connector which is the I-PEX MHF (UFL) receptacle. The location should be close to the chip/modules pin for the RF. Any feed from this receptacle should be maintained at 50Ω impedance

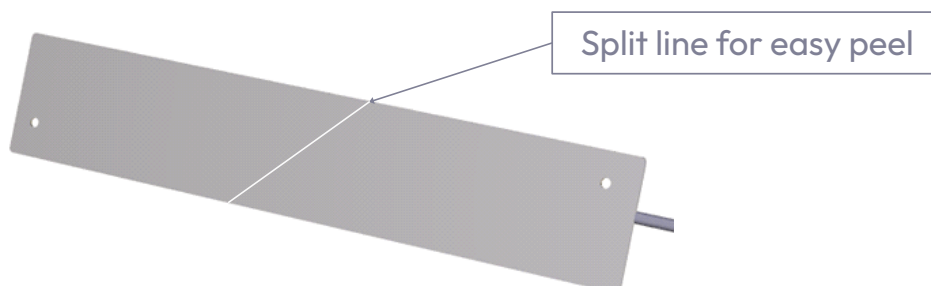
8.2. Transmission line

- Must have a characteristic impedance of 50Ω.
- Length should be kept to a minimum.
- Is recommended to be a co-planar waveguide: log on to [Antenova.com](https://www.antenova.com) and try our [Transmission line calculator](#) to easily calculate the dimensions most suited to your requirements.
- Should have DC blocking capacitor (e.g. 220pF) placed in line to protect the RF front end.

9. Mechanical fixing

The antenna uses 3M 468MP adhesive on the reverse side of the FPC. The antenna has an easy access split line to peel off to reveal the adhesive side. It is designed for a one time fix to a clean smooth surface. The antenna is keyed with two 1mm locating holes for easy positioning.

FPC back side



10. Antenna integration guide

We recommend the following during the design phase to maximise antenna performance and minimize noise:

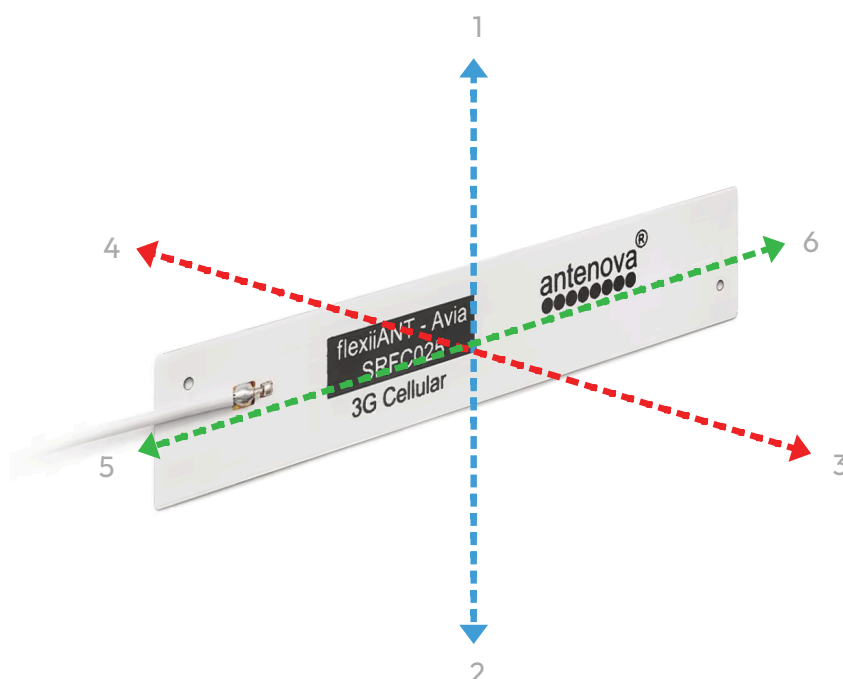
- Minimum 4 layer PCB
- Route signals and power internally where possible
- Flood all layers with ground
- Knit ground on all layers together with plenty of vias

Follow placement guidance carefully. Antenova provide technical support to help you with your design, and also provide design assistance on PTCRB certification. Register for an account on <https://ask.antenova.com/> to access technical support.

10.1. Antenna placement

For FPC antennas the host PCB size is not critical to performance, however consideration must be given to placement. Using six spatial directions, as shown below, the antenna should ideally maintain a minimum of three directions free from obstruction in order to radiate effectively. Where there are obstructions (e.g. PCB, metal parts, battery etc.) a minimum clearance should still be maintained. These minimum clearances are described later in this section.

Six spatial directions relative to FPC

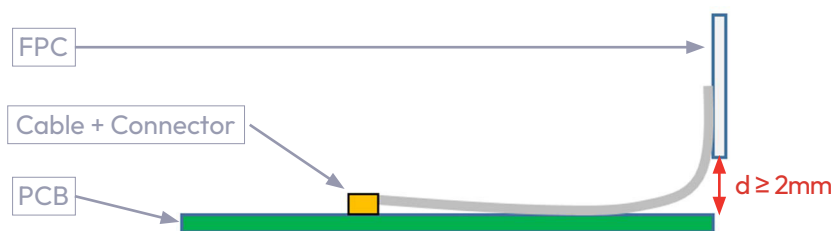


10.2. Orientation of FPC

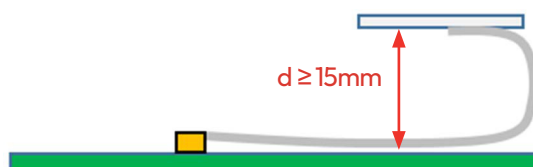
The orientation of the FPC with respect to the host PCB should be defined depending on the unit. The proximity of the GND will have an influence on the antenna so the PCB location relative to the antenna should be considered.

The FPC will normally be placed in one of the three following options for orientation. In each option a distance (d) is the critical dimension to consider. The diagram below shows the minimum value of (d) for each. Other obstructions may increase this dimension.

Vertical mounted



Co-planar to PCB



Planar to PCB (Same plane)

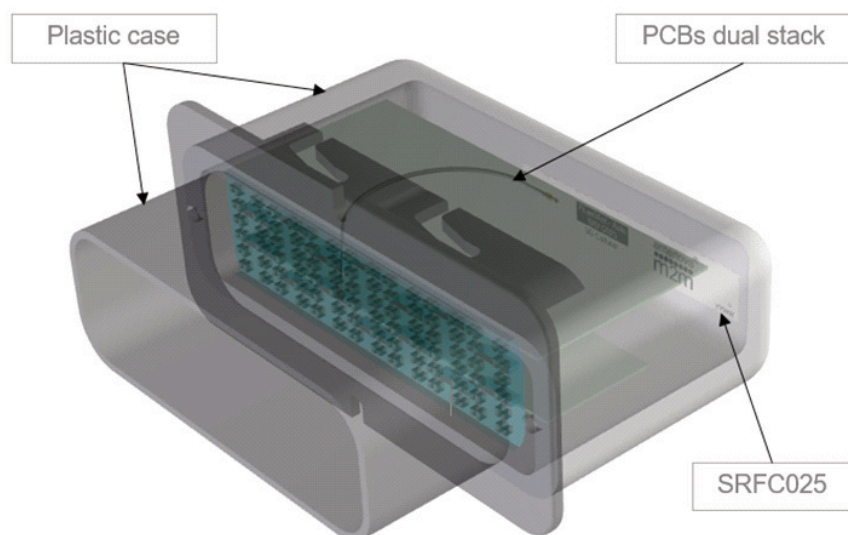


10.3. Host PCB size

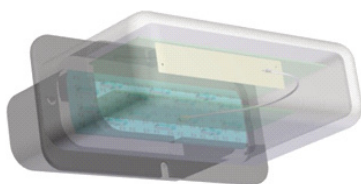
The host PCB size has a large effect on the performance. It is recommended for the host PCB to be $>1600\text{mm}^2$. Any PCB which is smaller is advised to use Antenna SRFC011 as a suitable cellular FPC.

10.4. Device integration example

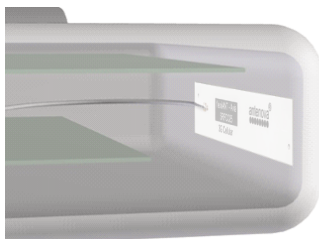
An example of integration within a telematics device: the FPC is shown adhered to the inside of the device's plastic housing. The cable routing is along the edge of the PCB so as not to interfere with any other component. The length of the cable is sufficient to allow ease of assembly when produced (SRFC025-100). The FPC is kept at maximised distance away from the PCB.



Antenna fitted in the corner location to enhance performance.



Placement on the plastic case is furthest away from the PCBs.



11. 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.

12. Packaging

The antennas are stored within a plastic bag of 100 pcs.

Single antenna per bag



100 units per bag (Labelled)



12.1. 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.

Note: The shelf life of the antenna is 18 months, provided the bag of 100 pieces remains factory- sealed.

12.2. Label information

Antenova Limited

antenova

www.antenova.com

DESCRIPTION: AVIA 100mm

PART NUMBER: SRFC025-100

QTY: 100 pcs

DATE CODE: YYWW

RoHS

Compliant

HALOGEN

FREE

flexiiANT®



Antenova Limited

antenova

www.antenova.com

DESCRIPTION: AVIA 150mm

PART NUMBER: SRFC025-150

QTY: 100 pcs

DATE CODE: YYWW

RoHS

Compliant

HALOGEN

FREE

flexiiANT®



Quality statements

Antenova's products conform to REACH and RoHS legislation. For our statements regarding these and other quality standards, please see [antenova.com](https://www.antenova.com).

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Datasheet version

2.01 release 12th 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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evaluation boards, and read our
antenna resources

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