

SIEMENS

SIMATIC NET

Industrial Wireless LAN

Antenna ANT897-5FF for LTE / 5G

Compact Operating Instructions

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.
 WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.
 CAUTION
indicates that minor personal injury can result if proper precautions are not taken.
NOTICE
indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

 WARNING
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

1 Introduction

Scope of validity of the operating instructions

These compact operating instructions apply to the ANT897-5FF antenna.

Product	Article number
ANT897-5FF	6GK5897-5FF00-0AA0

Purpose

The ANT897-5FF antenna is a directional antenna with four antenna ports and weak directivity for indoor and outdoor use in private LTE and 5G mobile networks.

Scope of delivery

The following components are supplied with the antenna:

- One ANT897-5FF antenna with four N-Connect female connectors
- One angle bracket
- One fastening plate
- One U-bolt for mast mounting
- One set of screws consisting of:
 - 2 x M6x12 screws
 - 2 x M6 nuts
 - 2 x spring lock washers
 - 4 washers
- An information sheet

Please check that the consignment you have received is complete. If the consignment is incomplete, contact your supplier or your local Siemens office.

Cybersecurity notes

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept. For more information about industrial security, please visit Industrial Security (<https://www.siemens.com/industrialsecurity>)

Recycling and disposal



The products are low in pollutants, can be recycled and meet the requirements of the WEEE directive 2012/19/EU for the disposal of electrical and electronic equipment.

Do not dispose of the products at public disposal sites.

For environmentally friendly recycling and the disposal of your old device contact a certified disposal company for electronic scrap or your Siemens contact (Product return (<https://support.industry.siemens.com/cs/ww/en/view/109479891>)).

Note the different national regulations.

2 Safety information

WARNING

To avoid injury and damage, note the instructions in the operating instructions before commissioning.

WARNING

Danger due to lightning strikes

Antennas installed outdoors must be within the area covered by a lightning protection system.

- Make sure that all conducting systems entering from outdoors can be protected by a lightning protection potential equalization system.
- When implementing your lightning protection concept, make sure you adhere to the VDE 0182 or IEC 62305 standard.

NOTICE

Improper use

The device (and its components) may only be used for the application described in the catalog or the operating instructions. Combinations with devices or components of other manufacturers are permitted if they have been approved by Siemens. Correct and safe operation of the device is guaranteed only when it is transported, stored, set up, installed, used and maintained according to the recommendations.

3 Mounting

The antenna is suitable for mounting on a mast or rail with a diameter of 20–50 mm. The angle bracket allows the antenna to be tilted by up to 30°.

Note

Observe polarization of the antenna

On the back of the antenna there is a sticker with the positions of the elements and the ports "Port 1", "Port 2", "Port 3" and "Port 4". In a standard alignment of the antenna, element 1 is at the top. With this alignment, elements 1 and 3 are horizontally polarized and elements 2 and 4 are vertically polarized. The antenna has a nominal horizontal and vertical radiating angle of approx. 60 degrees.

Note

Antenna power

To avoid impairing proper operation, you should not mount the antenna close to overhead or high-voltage power lines. Keep a distance of at least 300 mm between the antenna and nearby metal objects and surfaces.

Proceed as follows to mount the antenna:

1. Remove any oil, grease and other contamination from the mounting parts.
2. Attach the angle bracket to the antenna using the two M6 screws and washers provided.
3. Place the U-bolt around the mast and insert the fastening plate at its ends. Note that the bent edges of the fastening plate must face the mast.
4. Insert both ends of the U-bolt into the angle bracket of the antenna and screw the U-bolt to the angle bracket with one washer, one spring lock washer and one nut each.
5. Once the antenna is almost firmly in place, align it to the desired direction. Tighten the U-bolt completely and screw on the angle bracket.
6. Connect the cables to the antenna. The tightening torque at the N-Connect connector is 1.7 Nm.
7. Lay the cables to the router. When doing so, ensure compliance with the applicable bending radii and avoid laying of cables next to existing cables or damaging moving components.
8. When mounting outdoors, seal the antenna ports with weatherproof insulating tape, e.g. self-adhesive tape.

4 Technical specifications

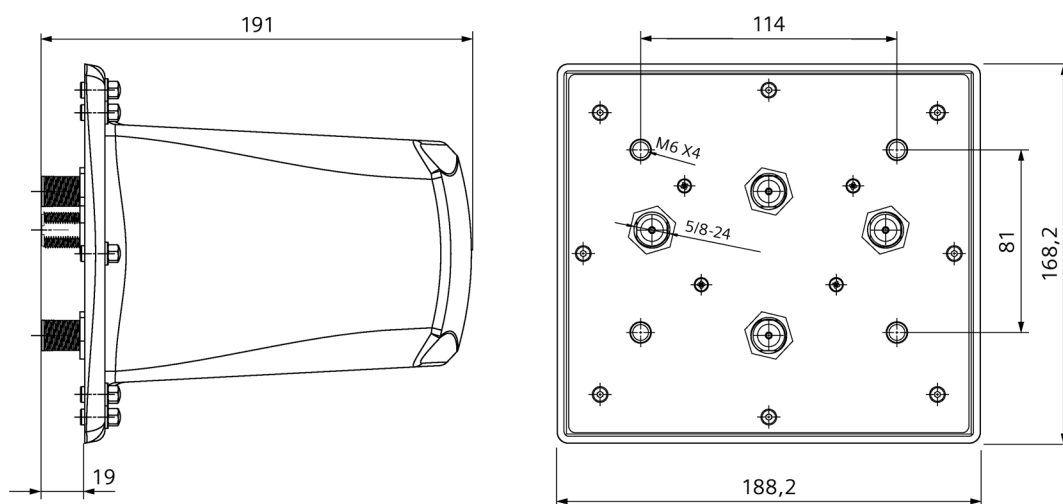
Electrical characteristics		
Frequency range		3.4 ... 4.2 GHz
Typical maximum antenna gain, measured in open space		9.5 dBi
Characteristic		Sector antenna
VSWR		2
Typical horizontal radiating angle		56°
Typical vertical radiating angle		52°
Impedance		50 Ω
Polarization		2 x vertical 2 x horizontal
Mechanical properties / certifications		
Interfaces		4 x N-Connect female
Dimensions	Width	188.2 mm
	Height	168.2 mm
	Depth	191 mm
Weight		1250 g

Mechanical properties / certifications	
Mast diameter	20 ... 50 mm
Material	LEXAN ELX9330
Color	White
Degree of protection	IP66
Operating temperature	-40 °C ... +80 °C
Storage temperature	-40 °C ... +80 °C
Transport temperature	-40 °C ... +80 °C
Shock-resistance according to EN 62262	IK10
Silicone-free	Yes
Certifications	RoHS 2002/95/EC

5 Dimension drawing

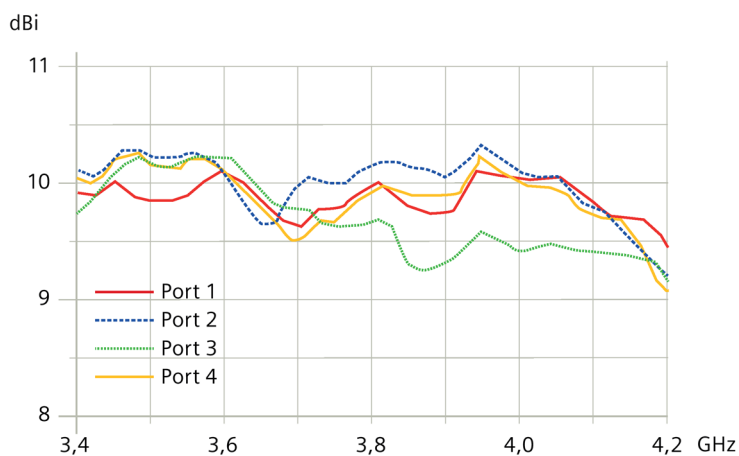
Side and rear view

The dimensions are specified in mm.



6 Antenna gain

The diagram shows the typical maximum antenna gain, measured in open space without connecting cables.



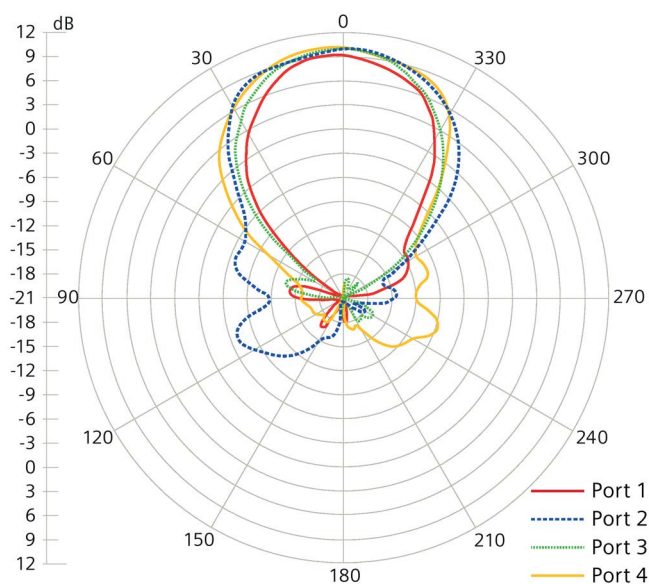
7 Field diagrams

The field diagrams contain characteristic curves for all ports of the antenna. The characteristic curves differ with respect to line type and color. Refer to the legend under the diagrams for an explanation of the characteristic curves.

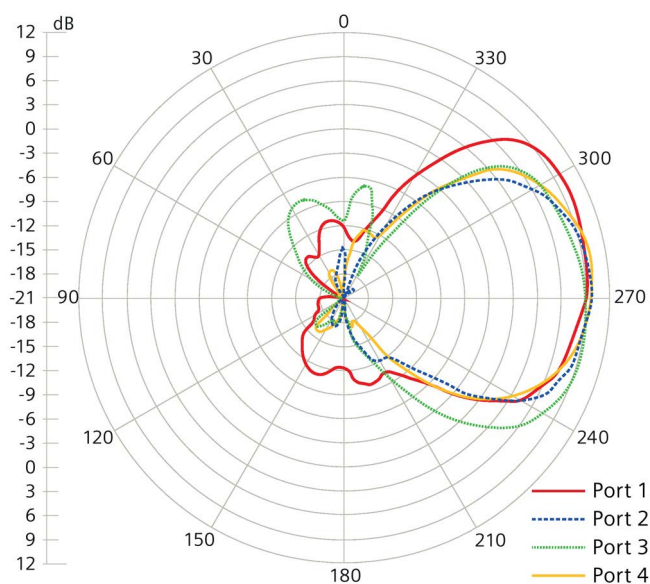
7.1 Field diagrams 3.4 GHz

Measured in open space

Horizontal



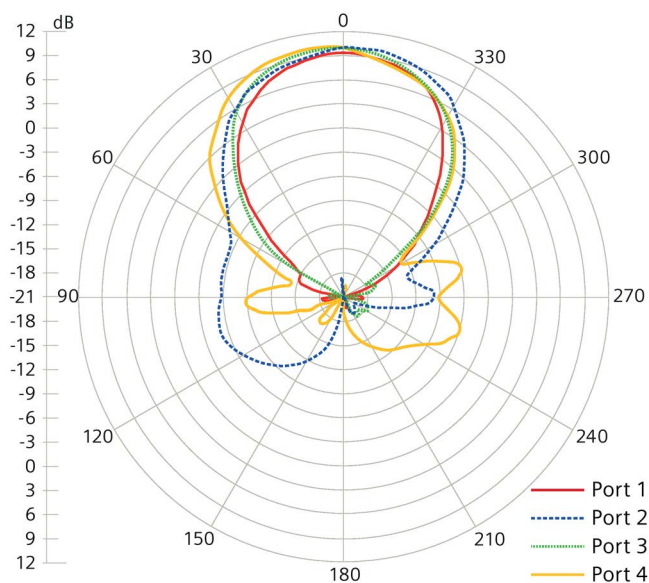
Vertical



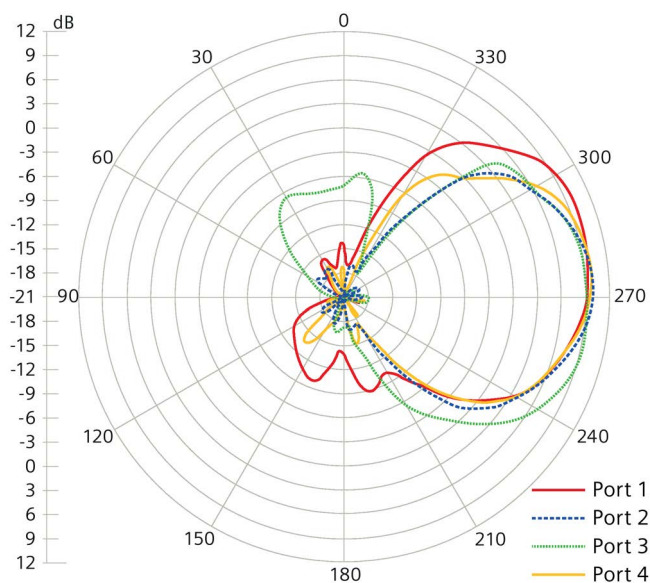
7.2 Field diagrams 3.8 GHz

Measured in open space

Horizontal



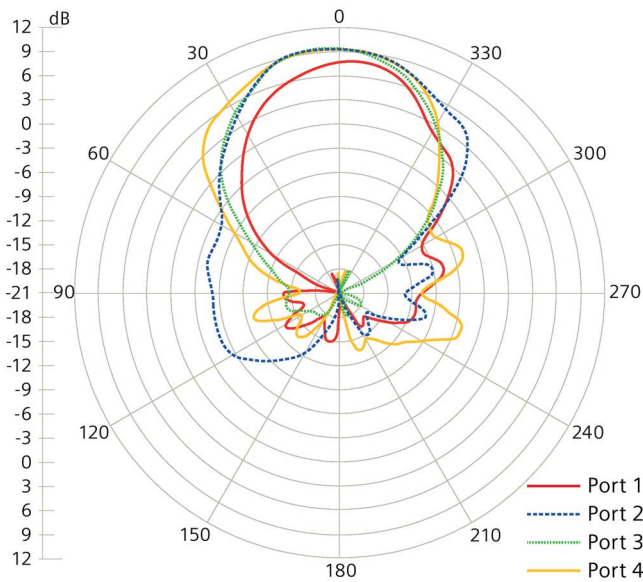
Vertical



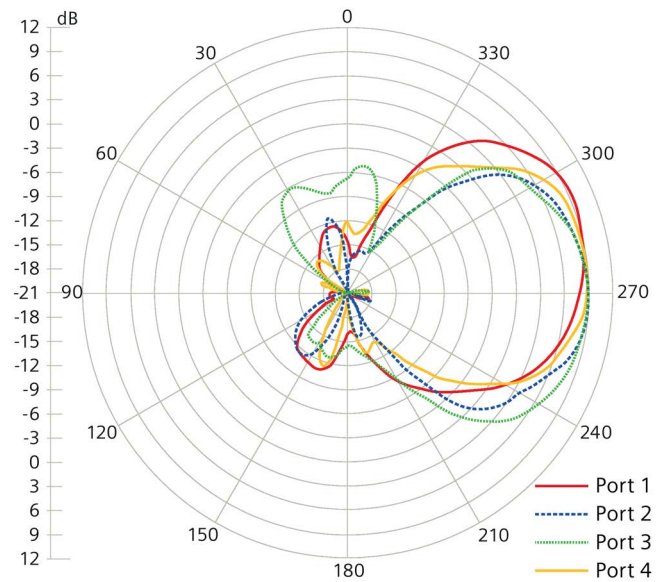
7.3 Field diagrams 4.2 GHz

Measured in open space

Horizontal



Vertical



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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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