gigaAnt

Installation guide

2.4/5 GHz dual band WLAN antenna

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Features

- Designed for 2.4 and 5 GHz (Bluetooth/WiMedia and WLAN 802.11 a & b/g)
- Intended for screw mounting, other mounting options such as snap-on available on request

General data

Product name	dual band WLAN antenna
Article No	9090B6039-01
Frequency [GHz]	2.39-2.49/4.90-5.90
Polarization	Linear
Operating temp	- 40 to 85 °C
Impedance	50 Ω

Typical Applications

- Notebooks
- Desk tops
- PDA's

READ THIS FIRST

This document is a general guide for installation of the dual band WLAN antenna. Implementing antennas requires extensive antenna experience, and to ensure good performance and a well functional consumer product, please contact gigaAnt for assistance.

Description

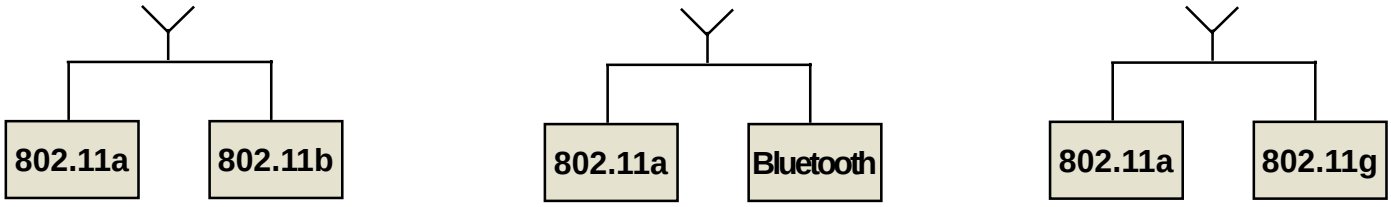
The dual band WLAN antenna is suitable for mounting in all notebooks and desktops of smaller type. The antenna itself measures 27x13x1.5 mm. A cable with connector is attached to the antenna.

Cable: The cable length can be ordered according to customer specific requirements.

Connector: Hirose U.FL. miniature connector, but other connectors can be provided upon customer request.

Mounting: The antenna is designed for screw-mounting, but can also be mounted with snap-in clips.

Possible configurations



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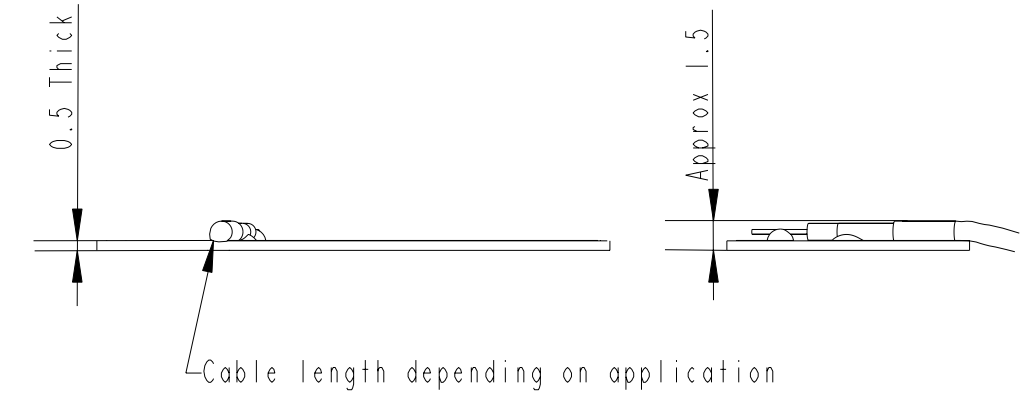
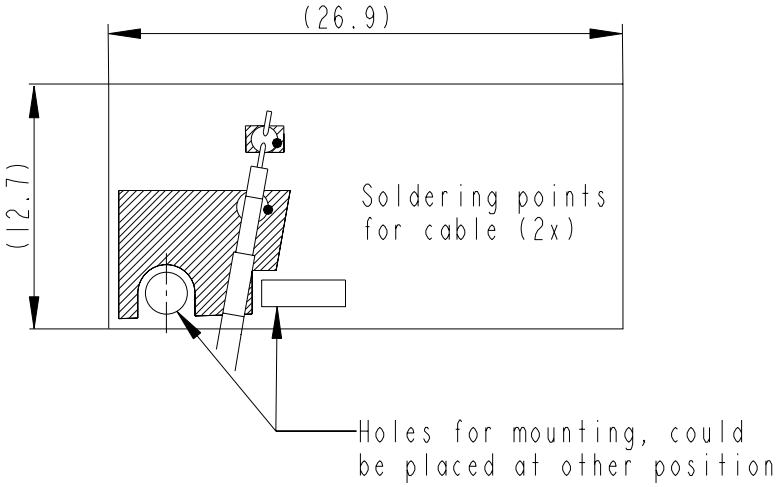
Antenna Dimensions



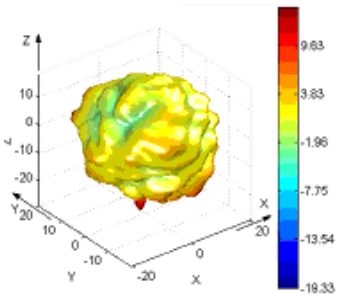


Electrical characteristics

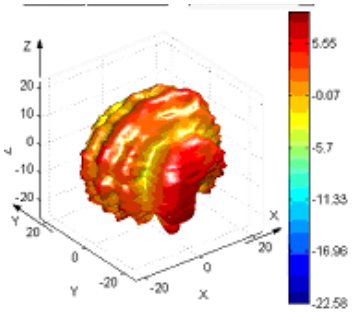
Parameter	Characteristics		Conditions*
	2.39 - 2.49 GHz	4.90 - 5.90 GHz	
Nominal Gain	0-1 dBi	0-1 dBi	Measured in 3D Chamber (near field)
Efficiency	73 %	61 %	Measured in 3D Chamber (near field)
VSWR	<2.0:1	<2.0:1	Measured in Network Analyzer

* Note all data provided in this table are based on a notebook mockup

3D-Radiation

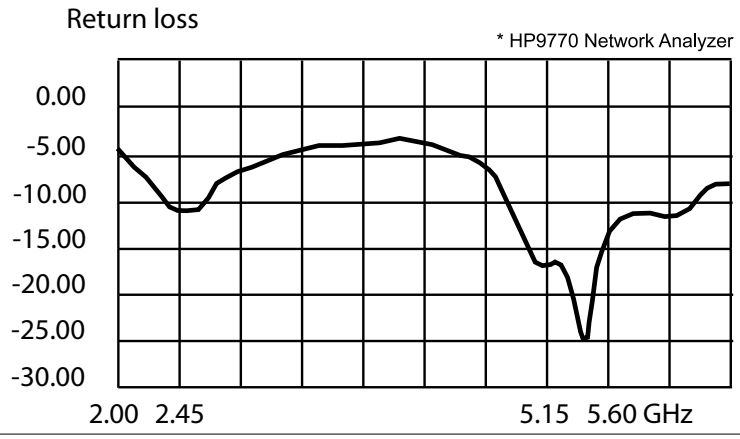


2.45 GHz



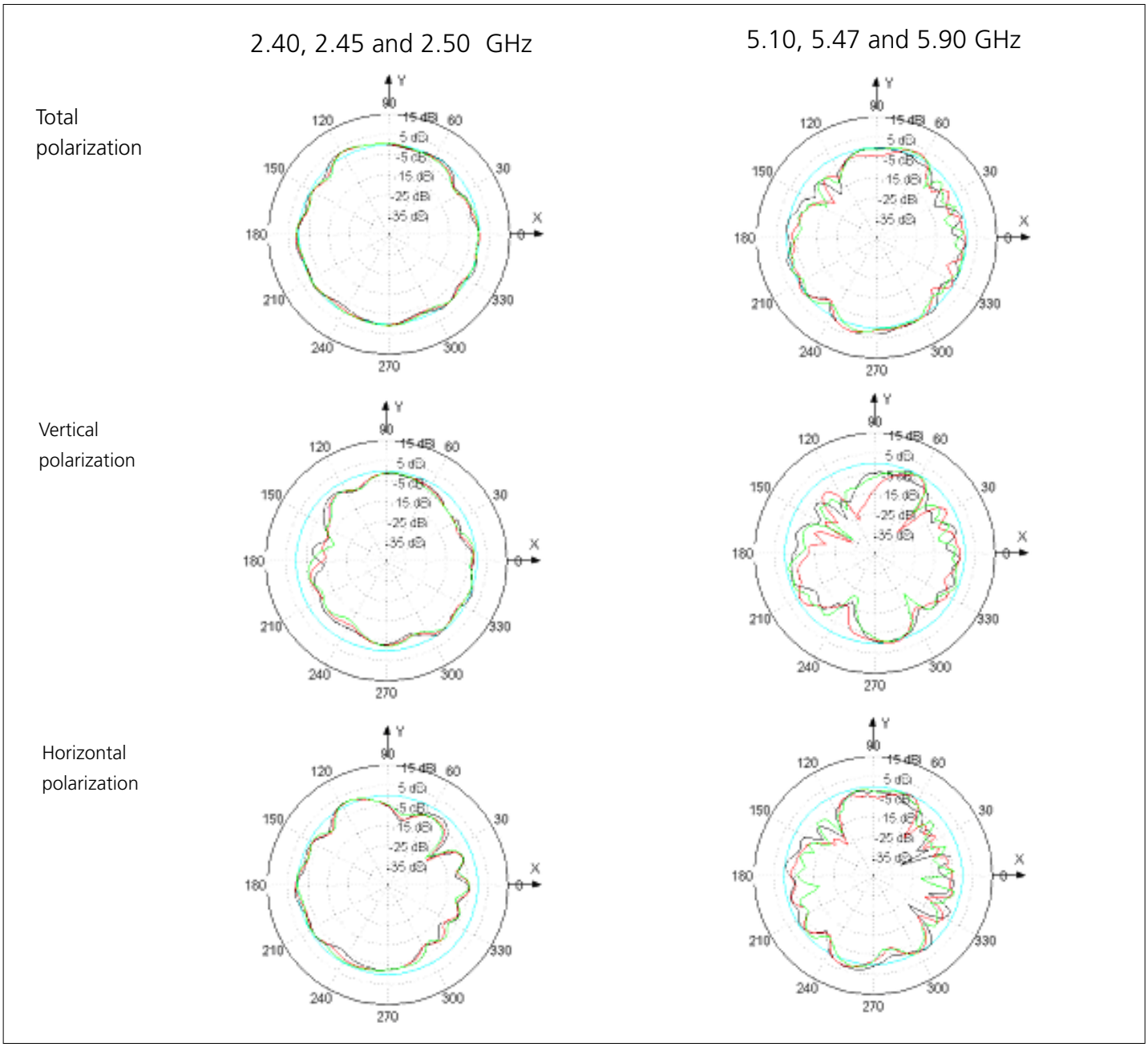
5.10 GHz

Voltage Standing Wave Ratio

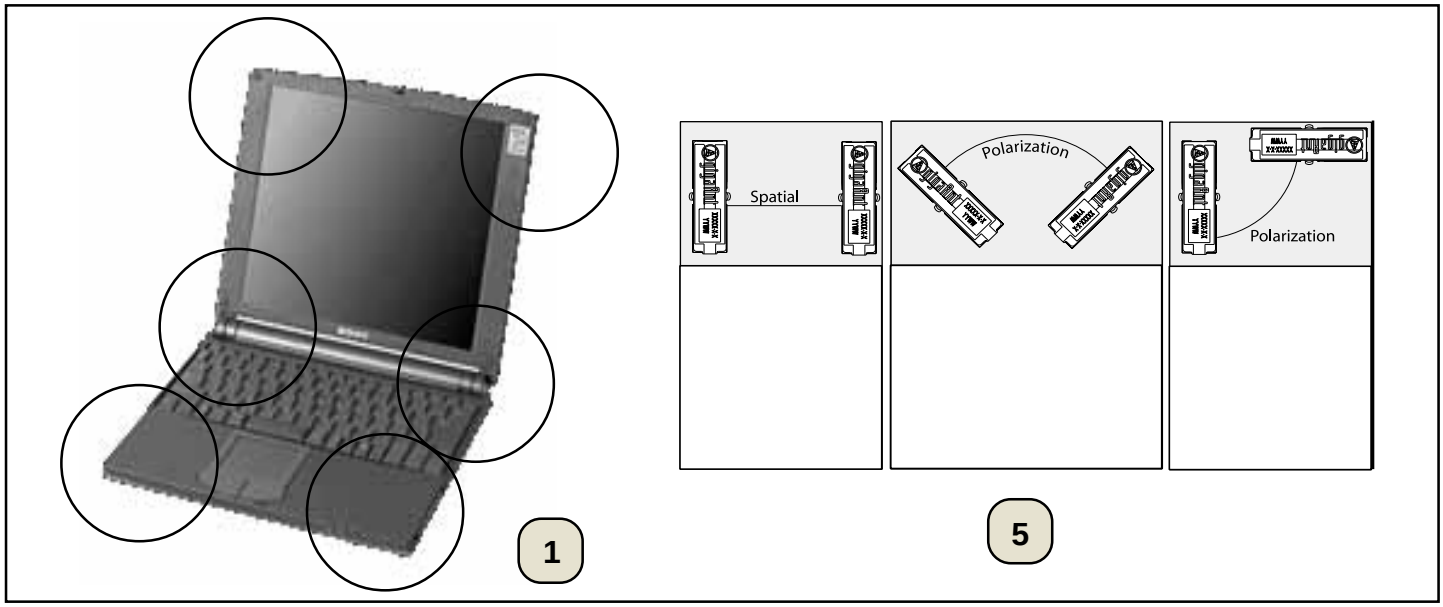


2.39 GHz: -10.1 dB
2.49 GHz: -10.5 dB
4.90 GHz: -11.3 dB
5.10 GHz: -16.0 dB
5.15 GHz: -16.3 dB
5.35 GHz: -20.8 dB
5.47 GHz: -21.1 dB
5.90 GHz: -11.0 dB

Radiation patterns (Horizontal cuts)



Application example



1. Location of antenna
The antenna shall preferably be placed at the edges of the notebook; sides or top of the lid as well as sides and back of the keyboard would be good locations. Placing the antenna at the bottom of the notebook will cut price for cables (shorter cables) and decrease loss (since the signal will not need to travel long distances in cable). The drawback of placing the antenna in the keyboard area is interference from hands and body.

2. Ground plane
The antenna is dependent on ground plane area to complete the antenna function. The antenna performance is also dependent on the size and location of the ground plane. Part of the antenna have to be connected to ground, while part of the antenna need to have ground free space underneath. For more details, plese contact gigaAnt.

3. Placement of radio module
To avoid losses the module shall be placed as close to the antenna as possible.

4. Clearance area
Avoid metal components and parts close to the antenna. Avoid placing the antenna on the inside of notebook metal chassis.

5. Diversity and isolation
The antenna should be arranged to maximise the diversity effect. This could be achieved by separating the antennas as far as possible and place them perpendicular to each other. Isolation is also improved by placing antennas further a part. To ensure good isolation, please contact gigaAnt for assistance.

6. Casing material
Do not place metal casing in immediate proximity of the antenna, and do not use plastics with metal flakes. Metal based paint or laquer should also be avoided.

Note ! Incorrect implementation of the antenna will affect the performance.
Contact gigaAnt for implementation services.

