



# NETGEAR<sup>®</sup>

5 dBi Omni-directional Antenna  
**ANT2405**



**Installation Guide**

# Introduction

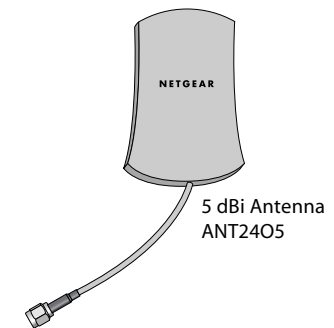
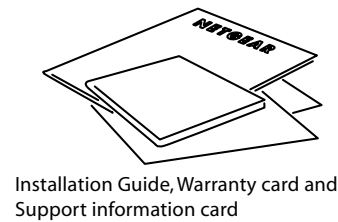
This section introduces the package contents of the NETGEAR 5 dBi Omni-directional Antenna ANT24O5 and related components.

**NOTE:** To obtain optimal results in extending wireless range with antenna installations, it is recommended that a qualified professional installer service is consulted for site survey and proper installation.

To comply with FCC rules the ANT24O5 antenna should only be used with devices that have been FCC approved for use with the ANT24O5. Please check the NETGEAR web site at [http://www.NETGEAR.com/go/antennas\\_fcc](http://www.NETGEAR.com/go/antennas_fcc) for an updated list of FCC approved devices.

For EU, use of any antenna requires careful planning and extra consideration to comply with EU emissions and health standards and regulations. Antenna installation must comply with the maximum level authorized by each country, see page 9.

# Package Contents



The package should contain:

- NETGEAR 5 dBi Omni-directional Antenna ANT24O5 including a 10 cm RG316 cable with a reverse SMA connector for IEEE 802.11b or 802.11g wireless devices
- Ceiling/Wall mount bracket hardware
- Warranty card
- Support information card

## Placement and Other Important Considerations

In order to maximize coverage, antennas must be placed in a good spot. A lot of improvement can be achieved by optimizing the line of sight between antennas. Try to minimize the partitions and partial obstructions if possible. For instance, place the antenna on a wall above the cubicles (cubicles generally include a metal foil). Ideal placement is against a wall, 2m high, or on the ceiling facing the area to cover.

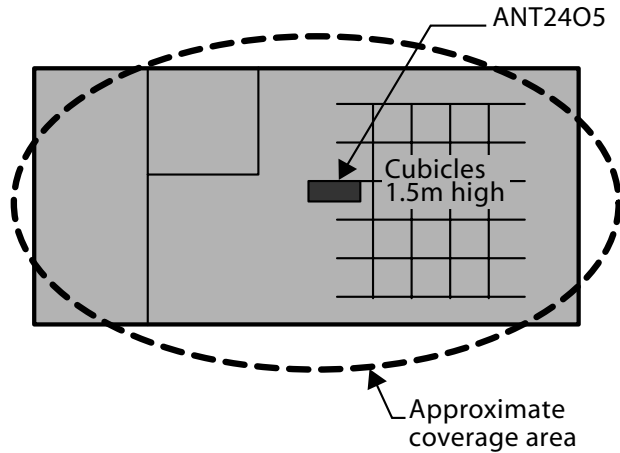


Figure 1: Optimal antenna placement on the ceiling

The longer the antenna cable, the higher the attenuation, or signal loss. This will decrease the range and performance. The best performance is achieved with a short cable between the antenna and the wireless device. The shortest FCC approved antenna cable is the NETGEAR 1.5 M (ACC-10314-01) cable. For optimal performance, use a low-loss NETGEAR antenna cable up to 10 meters long.

If the wireless access point, router or gateway is in an IT room, place the antenna outside of the room close to the ceiling against a wall. Use a NETGEAR antenna cable of up to 10 meters in length to connect the antenna to the wireless access point.

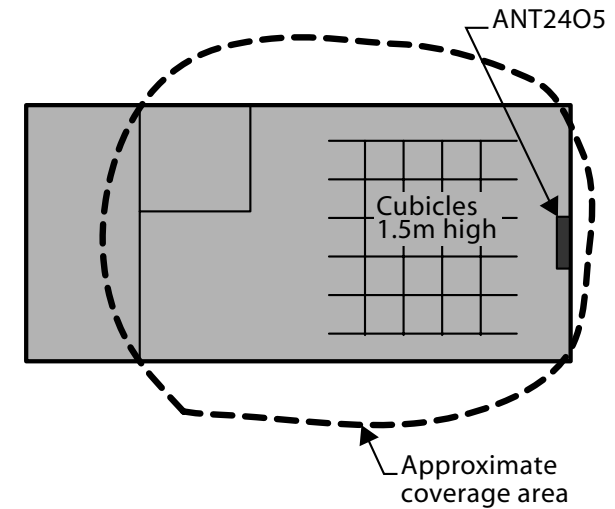


Figure 2: Optimal antenna placement on an interior wall

Figures 1 and 2 show where one could place the ANT24O5 for best coverage in an office. In Figure 1, the ANT24O5 is placed on the ceiling in the middle of the area to cover. In Figure 2, the ANT24O5 is placed in an elevated location on an interior wall, above and facing the indoor coverage. Notice that the area close to the antenna, behind or beside it, will still be covered because the dynamic range of the WLAN transmitter/receiver and antenna is approximately 100dB. So, even with 20dB to 40dB of attenuation, the signal strength is still strong and communication is maintained.

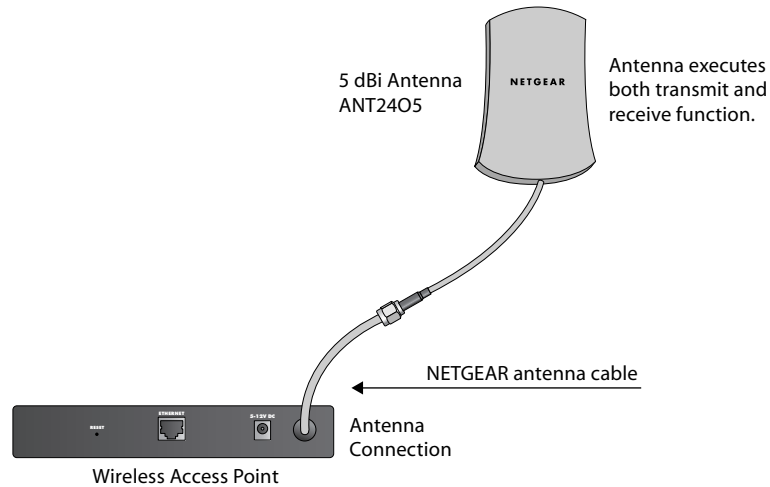
# Installing the Antenna

The instructions below cover these scenarios:

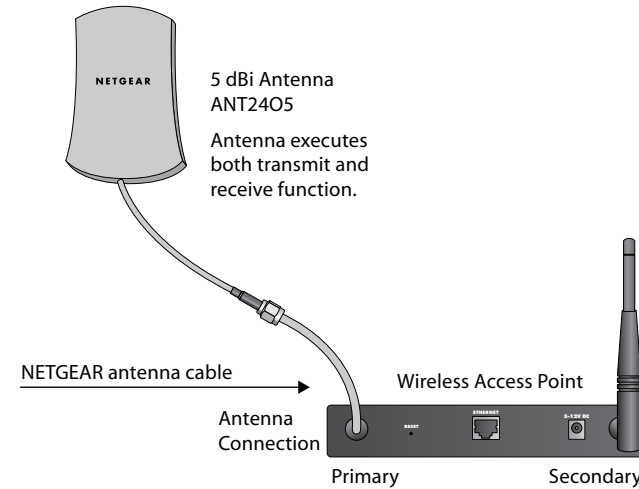
- Wireless device with a single antenna
- Wireless device with two antennas, but replacing only the primary antenna
- Wireless device with two antennas, but replacing both the primary and secondary antennas

Turn off your wireless unit, locate the scenario below that fits your equipment, and connect your wireless accessories according to the illustration. After attaching your new antenna, reconnect your wireless device to the network and turn it on.

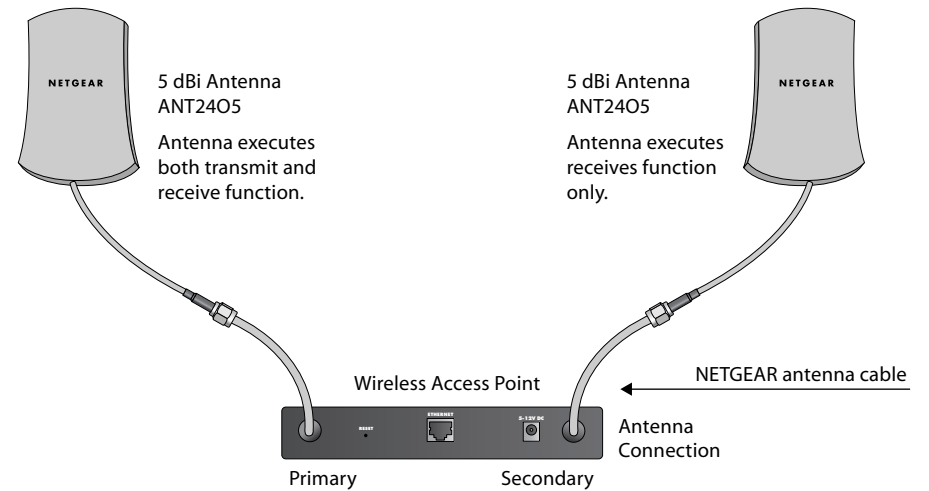
## Wireless device with a single antenna



## Wireless device with two antennas, but replacing only the primary antenna



## Wireless device with two antennas, but replacing both the primary and secondary antennas



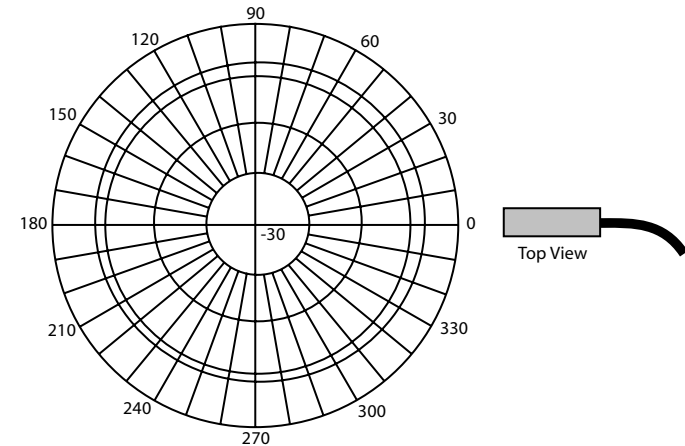
# Specifications

<b>Description</b>	<b>ANT2405, 5 dBi Omni-directional Antenna with a 10cm RG318 cable and reverse female jack SMA connector</b>
Frequency Range	2450 ± 50MHz
Type	Patch
Impedance	50 ± 5 Ohms
Maximum Input Power	20W (without N/SMA adapter)
SWR	2.0 maximum
Return Loss	-10 dB
Gain	5 dBi
Radiation	Directional
Polarization	Vertical
Beam Degree	HORZ 120 ° VERT 110 °
Connector Type	SMA Female reverse
Material	PC+ABS
Color	WHITE
Mounting Base	STEEL
Operation Temperature	-20 to 65° C (-4 to 149° F)
Storage Temperature	-30 to 80° C (-22 to 176° F)
Device Size (l x w x h)	99.2 x 53.9 x 27.5 mm/3.91 x 21.2 x 1.08 in
Weight	55 g/.12 lb.
Warranty	2 years

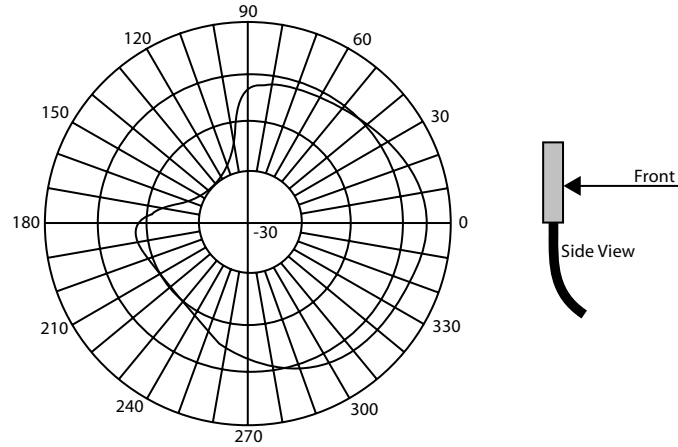
The ANT2405 built-in cable specifications are listed here.

<b>Description</b>	<b>10cm RG318</b>
Type	RG318
Length	10 cm = 3.9 in
External Diameter	2.5 mm
Impedance	50 ± 5 Ohms
SWR	1.5 maximum
Loss	138 dB/100 m = 42 dB/100 ft @ 2.4 GHz
Minimum bend radius	13 mm = 0.5 in

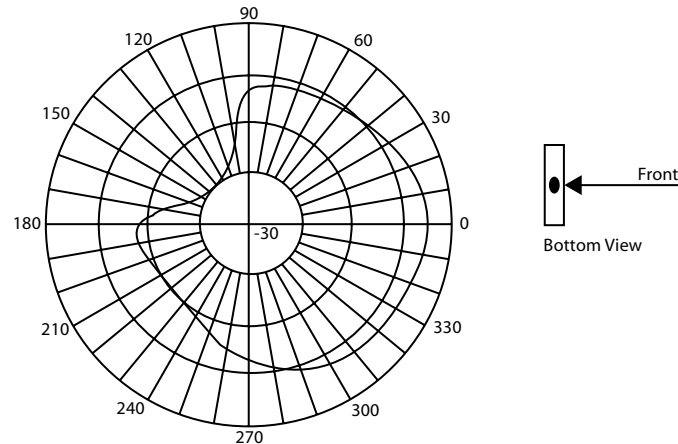
## Horizontal Plane Radiation Pattern (X-Y, Azimuth)



## Vertical Plane Radiation Pattern (X-Z, Elevation)



## Radiation Pattern (Y-Z, Elevation)



## Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, NETGEAR reserves the right to make changes to the products described in this document without notice. NETGEAR does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

## Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: (1) Reorient or relocate the receiving antenna, (2) Increase the separation between the equipment and receiver, (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, (4) Consult the dealer or an experienced radio/TV technician for help. Devices approved for the ANT2405 are listed at [www.NETGEAR.com/go/antennas\\_fcc](http://www.NETGEAR.com/go/antennas_fcc).

## Federal Communications Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation. This device should not be co-located with other transmitters.

For EU, use of any antenna requires careful planning and extra consideration to comply with EU emissions and health standards and regulations. It is recommended that a qualified professional installer service is consulted for site survey and proper installation. Antenna installation must comply with the maximum level authorized by each country. Devices that comply with EU regulations to work with the ANT2405 are listed at [www.NETGEAR.com/go/antennas\\_eu](http://www.NETGEAR.com/go/antennas_eu).

# Technical Support

PLEASE REFER TO THE SUPPORT INFORMATION CARD THAT SHIPPED WITH YOUR PRODUCT.

By registering your product at *www.NETGEAR.com/register*, we can provide you with faster expert technical support and timely notices of product and software upgrades.

NETGEAR, INC.

## Support Information

Phone: 1-888-NETGEAR (For US & Canada only) - 24x7 phone support

See Support Information card for other countries.

E-mail: [support@NETGEAR.com](mailto:support@NETGEAR.com) (24x7 online support)

[www.NETGEAR.com](http://www.NETGEAR.com)

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