

# Airgain Embedded Antenna Product Datasheet

## Profile20

### Model N2420M Series



Coverage. Performance. Smart.

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## Revision History

Revision	Date	Note
189-02-00-001-1 Rev A	March 6 ,2012	Initial Draft
189-02-00-001-1 Rev B	October 9 ,2012	Update Antenna Dimensions

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## Disclaimers

The information in this document is provided in connection with Airgain Antenna products and is proprietary and confidential. Airgain may make changes to at anytime, without notice.

***Please verify with Airgain before finalizing a product design.***

## 1. Model N2420M Embedded Antenna

Based on Airgain's patented technology, the Model N2420M Embedded Antenna provides a high efficiency, low gain, embedded antenna solution for Wi-Fi and ISM band applications, such as WLAN products in Europe. As embedded antenna solutions become the focus of next generation wireless product design, the Model N2420M provides the flexibility of an embedded antenna with top performance. The Model N2420M Embedded Antenna was designed to accommodate most WLAN access point applications, such as routers and gateways. The product can be easily integrated into an ID package design.

## 2. Features

The Model N2420M Embedded Antennas are defined by the following features:

- IEEE 802.11 b/g/n standards
- Case mount
- 2.8 dBi peak gain,
- High efficiency
- Quick integration



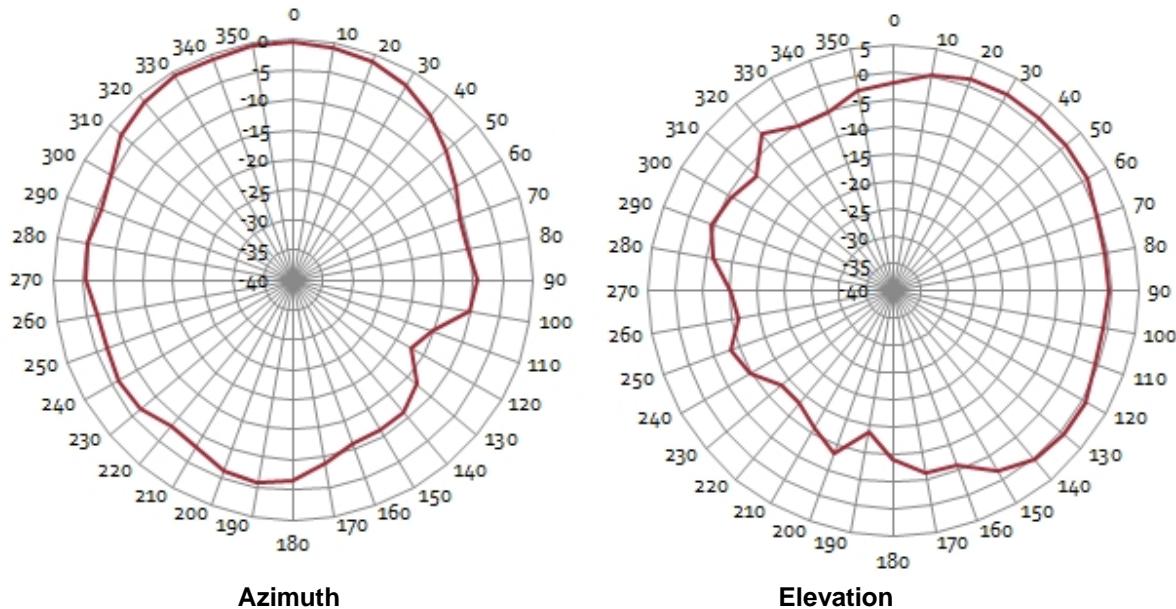
**Figure 1**  
Model N2420M-T Antenna

### 3. Specification and Interface

<b>Standard</b>	IEEE 802.11n and 802.11 b/g
<b>Frequency Range</b>	2.4 to 2.49 GHz
<b>Peak Gain</b>	2.8 dBi
<b>VSWR</b>	2:1
<b>Feed Impedance</b>	50 Ohms
<b>Power Handling</b>	30 dBm
<b>Interface</b>	50 ohm, 1.13mm diameter, micro coax cable, U.FL compatible cable connector (optional), cable mounted EMI ferrites (optional)
<b>Antenna Dimensions</b>	46.0 x 7.3 x 0.5 (mm)
<b>Weight</b>	0.5 g (0.018 oz)

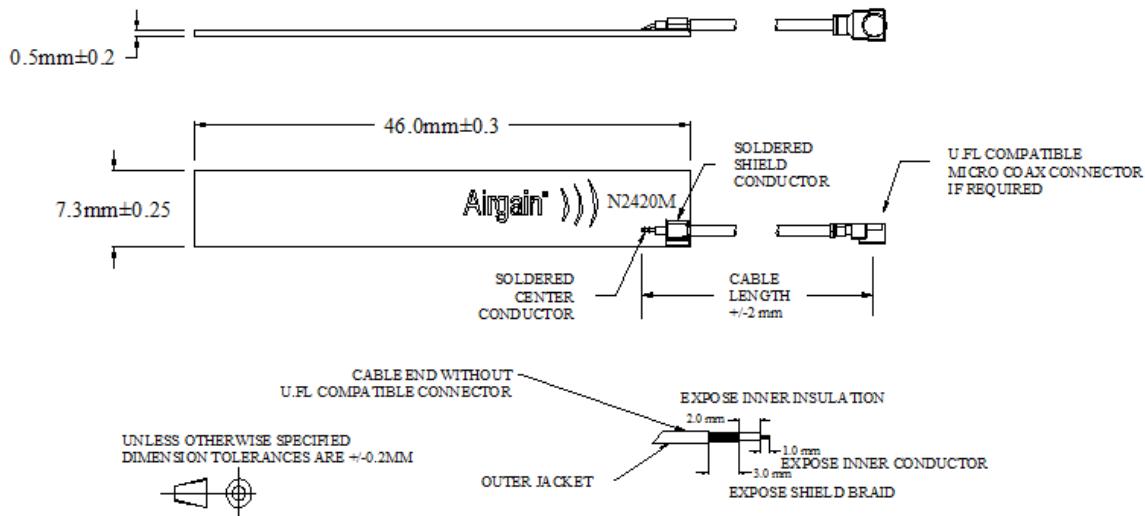
### 4. Radiation Patterns

Patterns taken with Model N2420M mounted in testing AP.



**Figure 2**  
Model N2420M Measured Radiation Patterns

## 5. Dimensions



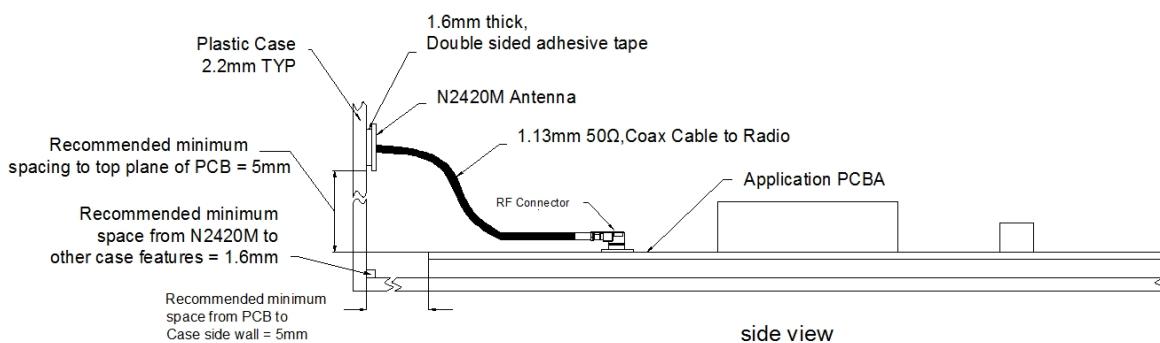
**Figure 3**  
Model N2420M Embedded Antenna Dimensions,  
RF cable connections and connector orientation and cable stripping dimensions, if required

## 6. ROHS

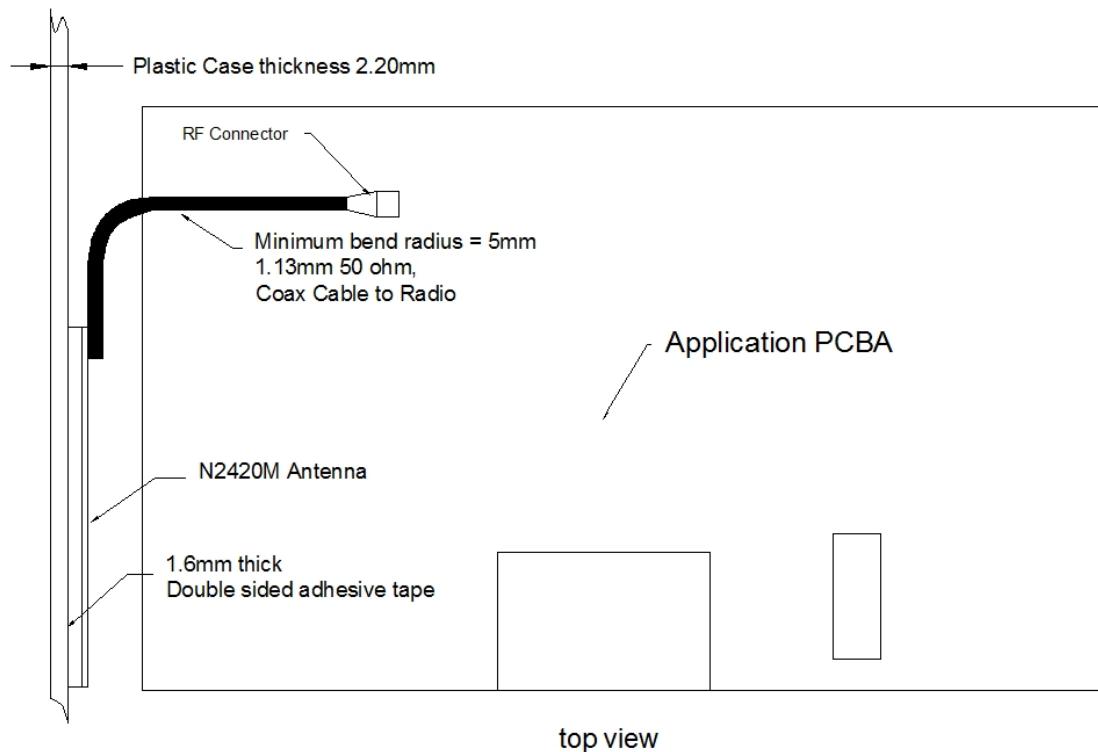
Model N2420M Embedded Antennas are RoHS compliant.

## 7. Mounting Guidelines

Model N2420M Embedded Antennas can be simply mounted on a case. This simplifies ID design and also shortens the product cycle. For a case wall mount, tape mount a N2420M in an application case by using 6.0mm x 46.0 mm x 1.6 mm thick double sided tape placed behind the antenna PCB, as shown in Figure 4 and Figure 5. Place the N2420M on the case side wall at a height where the lowest antenna PCB edge is 5 mm above the application PCBA top plane. A space of 5 mm is recommended between the PCBA edge near the N2420M and the case wall mounting location (Figure 4).

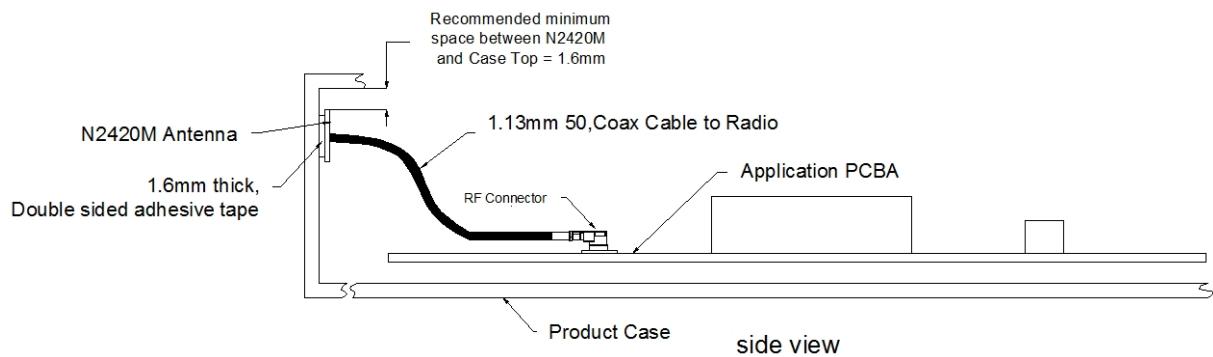


**Figure 4**  
Side View: Case side wall mounting considerations for Model N2420M



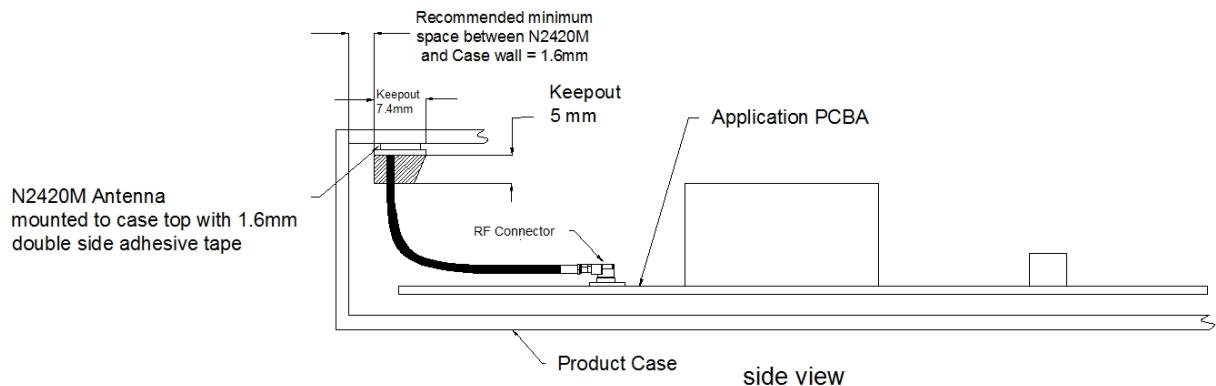
**Figure 5**  
Top View: Case side wall mounting considerations when mounting Model N2420M

Ensure that a space of 1.6 mm minimum is maintained between the N2420M and any case walls or case top as shown in Figure 6.



**Figure 6**  
Case top considerations when wall mounting Model N2420M

For a case top location, ensure that a space of 1.6 mm minimum is maintained between the N2420M and the case top. A tall component keep-out area beneath the N2420M antenna is defined in Figure 7 below. No portion of any tall components on the application PCBA should come within 5 mm of the N2420M. This helps assure a quality antenna performance.



**Figure 7**  
Side View: Clearance considerations when top mounting Model N2420M

## 8. Supporting Documents

The following design documents are used as references for design implementation of the Airgain Model N2420M Embedded Antenna products:

Assembly Drawings	189-07-00-001-1_A_ASSY.pdf
Cable Datasheet	000-22-00-006-1E Colored RF Cable Datasheet.pdf

## 9. Feature and Options Information

Airgain Model N2420M Series antennas are equipped with a RF cable I/O interface. Optional cable termination such as U.FL compatible micro coax connectors and cable mounted EMI ferrite cores are available. A -T- suffix specifies tape, typically 1.6 mm thick, applied for mounting in bottom antenna as shown in the diagram below.



**Figure. 8**  
Dimension of N2420M-T

## 9.1. Part number information

The Model N2420M series antennas are equipped with an RF cable I/O interface attached to the antenna. Airgain standard RF cables use 1.13 mm diameter, micro coax cables, and are available in a variety of lengths and interface options.

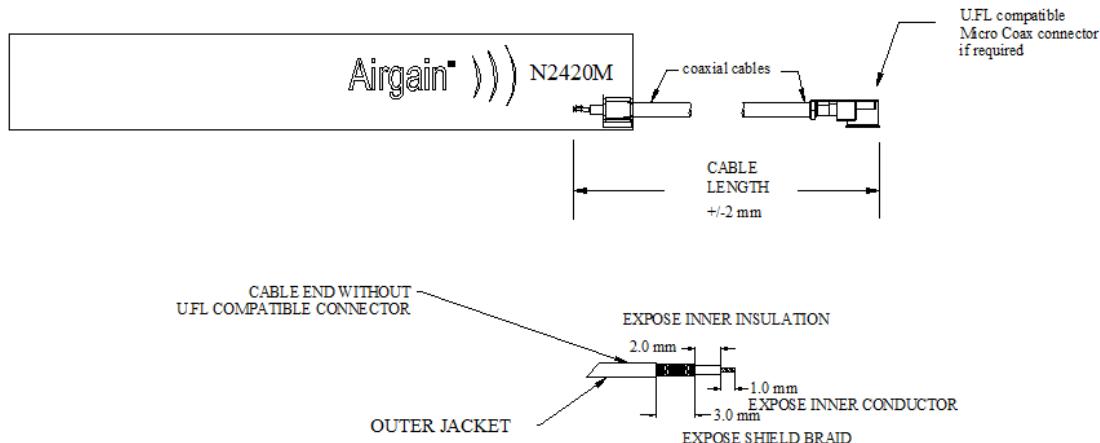
Airgain uses a five-staged standard number system for our part numbers, which serially define the antenna type, cable length and connector type/interface, as detailed below:

Antenna #	Tape Type -XX (if required)	Cable Type -X	Cable Length - XXX	Connector Type -XX (if required)
N2420M	Blank = No Tape T = Tape on bottom of element	G = Grey (Standard) B = Black (Non Standard)	Cable length in millimeters (mm)  Sample Lengths*: 65, 100, 130, 150, 190, 230, 250, 300, 400	Blank = Stripped Cable U = U.FL connector C = U.FL connector plus Ferrite Core CS = stripped cable plus Ferrite Core

\* Standard Cable Lengths listed in RF Cable Datasheet

*Example part number:*

**N2420M -T- G100U** N2420M antenna with 1.6mm double-sided adhesive tape with 100mm cable plus U.FL connector.



**Figure. 9**  
N2420M with connector or stripped cable