



Coverage.
Performance.
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**Profile Series
N01AGCYM**

**Airgain
Embedded
Antenna
Engineering
Data Sheet**

3611 Valley Centre Drive, Suite 150
San Diego, CA 92130 USA
Tel: +1 760 579 0200
Fax: +1 760 579 0892
Information: info@airgain.com
Sales: sales@airgain.com
Support: support@airgain.com

Revision History (Required)

Revision	Date	Note
4101-02-00-002-1 Rev 1.0	September 18, 2023	Preliminary Datasheet 1.0
4101-02-00-002-1 Rev 1.1	February 17, 2025	Updated Radiation Patterns

Disclaimers

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Please verify with Airgain before finalizing a product design.

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1. Airgain N01AGCYM Embedded Antenna

The model N01AGCYM Embedded Antenna provides a high efficiency, 2400-2485MHz band embedded antenna solution for Wi-Fi and ISM band applications. N01AGCYM has a (patent pending) perfectly balanced design, which makes the antenna decoupled from the feeding cable, making its behaviors independent of the details of the cable routing and improving noise rejection.

2. Features

The Model N01AGCYM Embedded Antenna is defined by the following features:

- IEEE 802.11b/n
- Case mount
- High efficiency
- Balanced design
- Quick integration
- DC Grounded

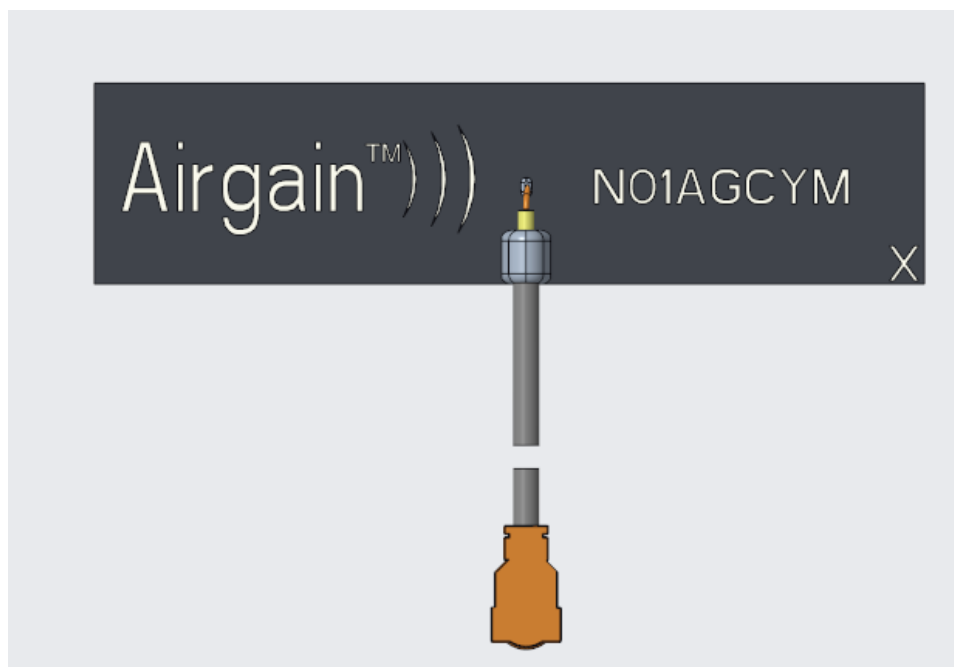


Figure 1: Model N01AGCYM Embedded Antenna

3. Specifications and Interface

Frequency range	2400-2485MHz
Peak gain	<5.0 dBi in 2400-2485MHz range
VSWR	< 2:1
Feed impedance	50 ohms
Power handling	30 dBm
Interface	50 ohms, U.FL-compatible cable connector
Cable	1.37 mm diameter, micro coax cable, length 80mm
Antenna dimensions	35.5 x 8.6 x 1.0 (mm)
Weight	1.0 g (0.035 oz) – with cable
Temperature range	Operating: -40° C to +75° C (-40° F to +167° F) Storage: -40° C to +85° C (-40° F to +185° F)
Humidity range	0% to 95% non-condensing

4. Radiation Patterns

Radiation patterns for the Airgain N01AGCYM were measured with the antenna mounted in the designated position inside the Airgain Lighthouse Repeater.

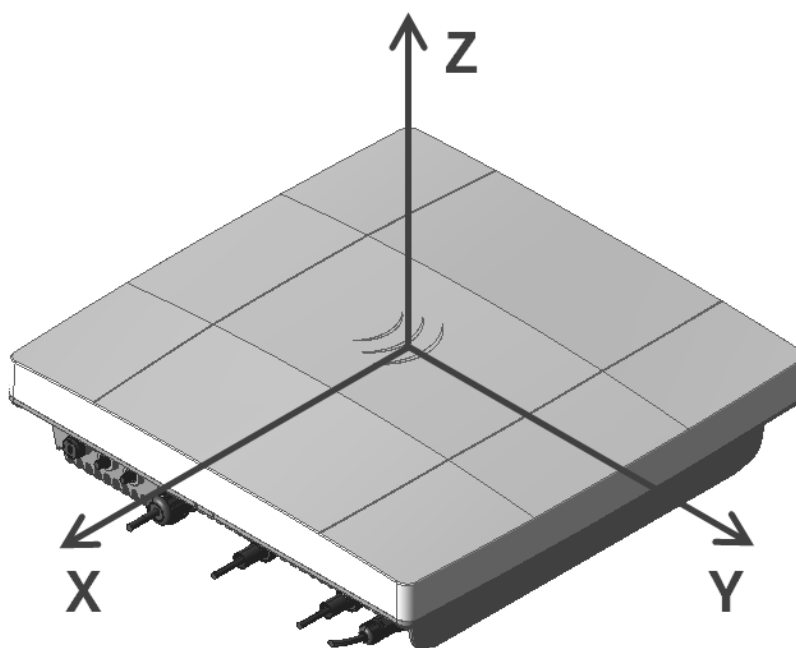


Figure 2: Measurement axes for N01AGCYM in Lighthouse device

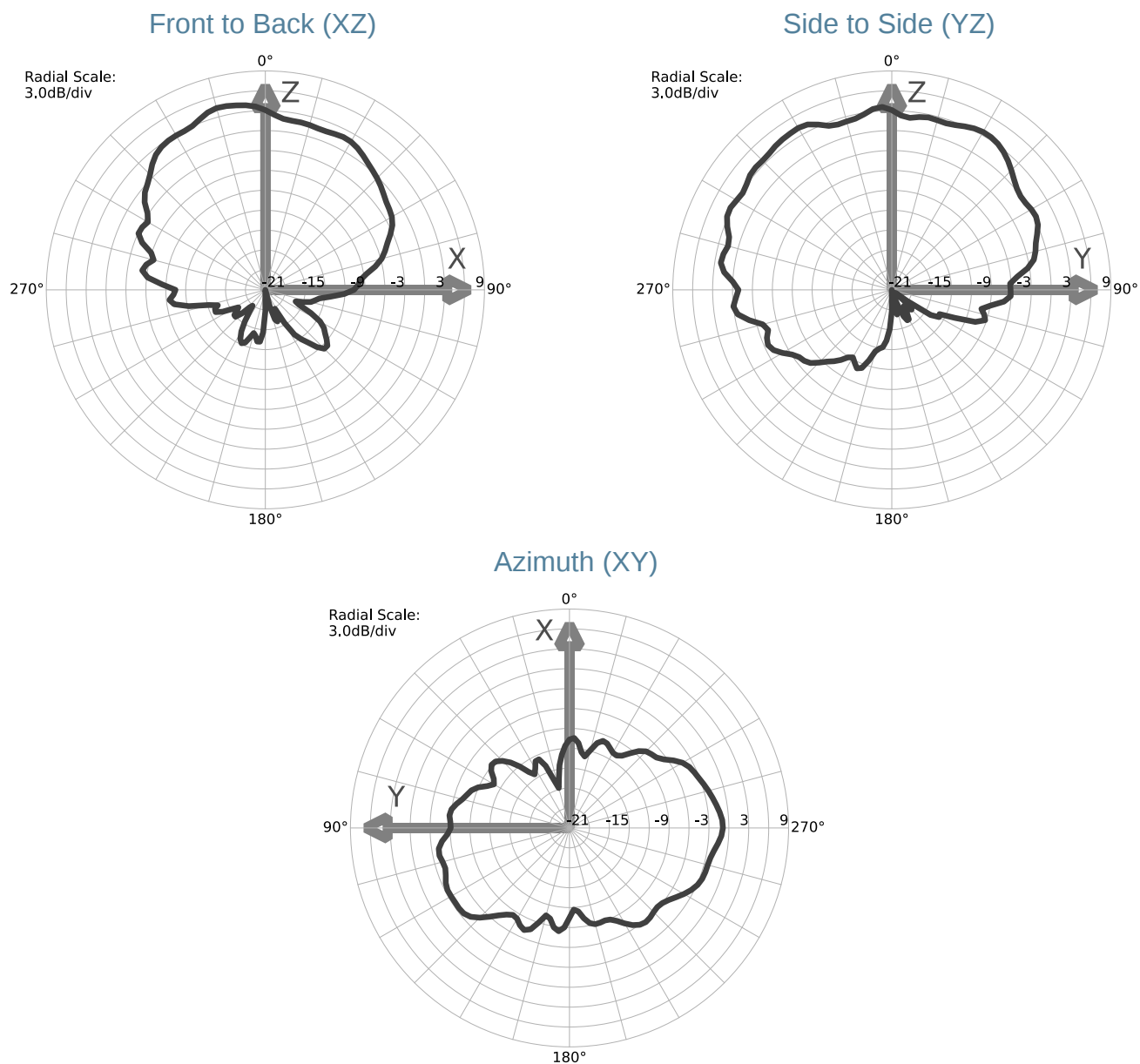


Figure 3: Airgain N01AGCYM radiation patterns in Lighthouse device at 2.44GHz

5. Dimensions

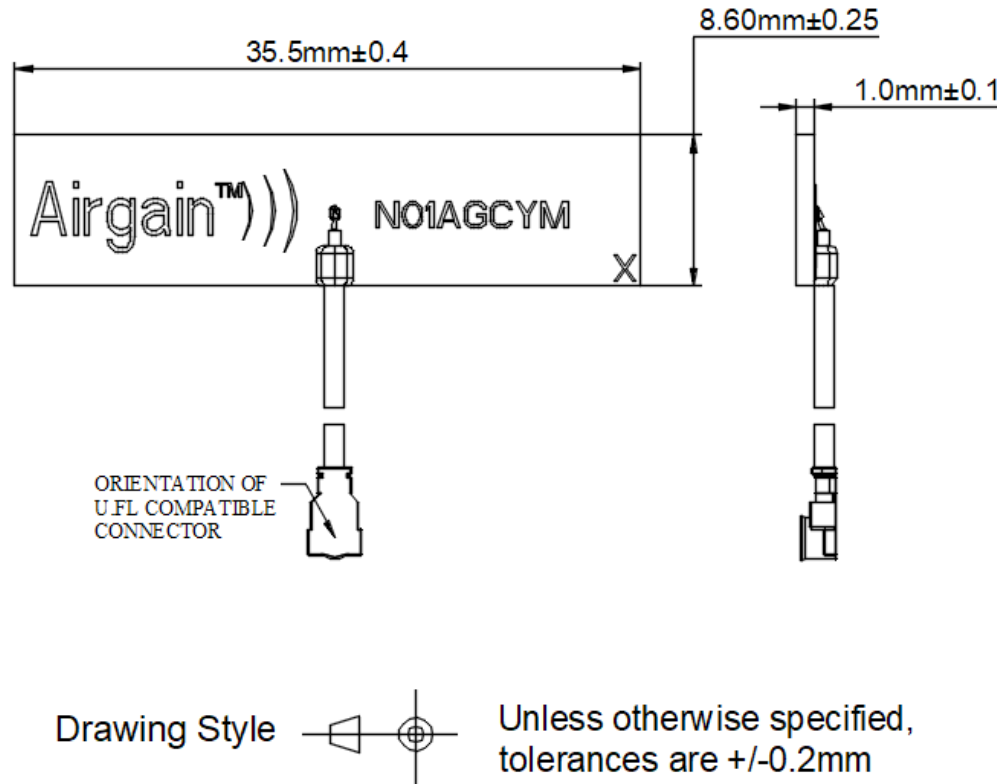


Figure 4: Model N01AGCYM Pre-applied Tape Dimensions

6. ROHS

Airgain N01AGCYM embedded antennas are RoHS compliant.

7. Feature and Options Information

Airgain N01AGCYM antennas are equipped with an RF cable I/O interface. Optional cable termination such as U.FL-compatible micro coax connectors and cable mounted EMI ferrite cores are available. To aid mounting the N01AGCYM, pre-applied, double-sided adhesive tape is available on the N01AGCYM -T Series.

7.1 Part Number Conventions

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

Antenna #	Tape type -XX (if required)	Packaging type -xx	Cable Assembly Type -xxxxxx		
			Cable Color -x	Cable length XXX	Connector type XX (if required)
N01AGCYM	Blank = No Tape T = Tape on bottom of element T10 = 1mm thick PE Tape affixed to bottom surface of antenna	PK1= singulated (individual) antennas (PK1 is mandatory)	G = Grey (Standard) B = Black (Non Standard) W = White (Non Standard) A = Blue (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, core size: 3.5mm * 9.0mm * 1.5mm CS = stripped cable plus Ferrite Core, core size: 3.5mm * 9.0mm * 1.5mm UR2 = U.FL compatible connector, rotated 180°

* Standard cable lengths listed in RF Cable Datasheet

7.2 Part Number Example

N01AGCYM-T-PK1-G100U – N01AGCYM antenna with 1.6-mm double-sided adhesive tape, 100-mm cable, and U.FL-compatible connector.

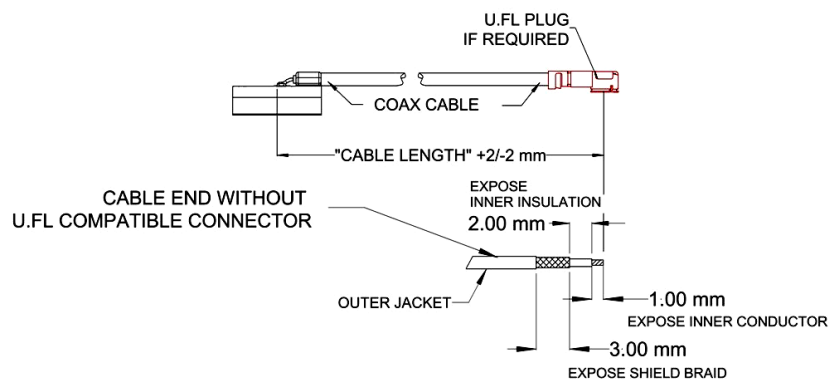


Figure 5: N01AGCYM with connector or stripped cable

8. Cable Data Sheet

Item	Specification	
Cable type	OD1.37	
Impedance	50 $\pm$ 2 ohms	
Inner conductor	Material	Tinned copper wire
	Conductor numbers	7
	Conductor size	0.102 mm
	Outer diameter	0.306 $\pm$ 0.02 mm
Insulation	Material	FEP
	Color	Clarity
	NOM.O.D	0.9 $\pm$ 0.03 mm
Outer conductor	Material	Tinned copper wire
	Makeup: total / O.D. of every wire(mm)	5/0.05 mm
	NOM.O.D	1.13 $\pm$ 0.05mm
	Coverage ratio	90% $\pm$ 5%
Jacket	Material	FEP
	Color	Gray
	NOM.O.D	1.37 $\pm$ 0.05 mm
VSWR testing	< 1.3@0~6GHz	
Attenuation (dB/1meter)	1GHz	$\leq$ 1.82
	2GHz	$\leq$ 2.67
	3GHz	$\leq$ 3.21
	4GHz	$\leq$ 3.74
	5GHz	$\leq$ 4.27
	6GHz	$\leq$ 4.8
Operating temperature	-55°C~+150°C	

