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Profile Series
N01AZAAB
Airgain, Inc.

Airgain
Embedded
Antenna
Engineering
Data Sheet

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Revision History (Required)

Revision	Date	Note
4793C-02-00-002-1 Rev 1.0	July 29, 2024	Preliminary Datasheet 1.0
4793C-02-00-002-1 Rev 1.1	September 29, 2024	Added version number screen printing

Disclaimers

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Please verify with Airgain before finalizing a product design.

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1. Airgain N01AZAAB Embedded Antenna

The model N01AZAAB Embedded Antenna provides a high efficiency, 2400-2485MHz band embedded antenna solution for Wi-Fi and ISM band applications. N01AZAAB 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 N01AZAAB Embedded Antenna is defined by the following features:

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



Figure 1: Model N01AZAAB Embedded Antenna

3. Specifications and Interface

Frequency range	2400-2485MHz
Peak gain	4.6 dBi @2440MHz
Return loss (Test in AP)	2400MHz-2500MHz < -10dB
Feed impedance	50 ohms
Power handling	30 dBm
Interface	U.FL-compatible cable connector
Cable	50 ohms, 1.37 mm diameter, micro coax cable (available with optional U.FL-compatible cable connector and/or cable-mounted EMI ferrites)
Antenna dimensions	26 x 12 x 1.0 (mm)
Weight	TBD
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



Figure 2: Model N01AZAAB Measurement axes

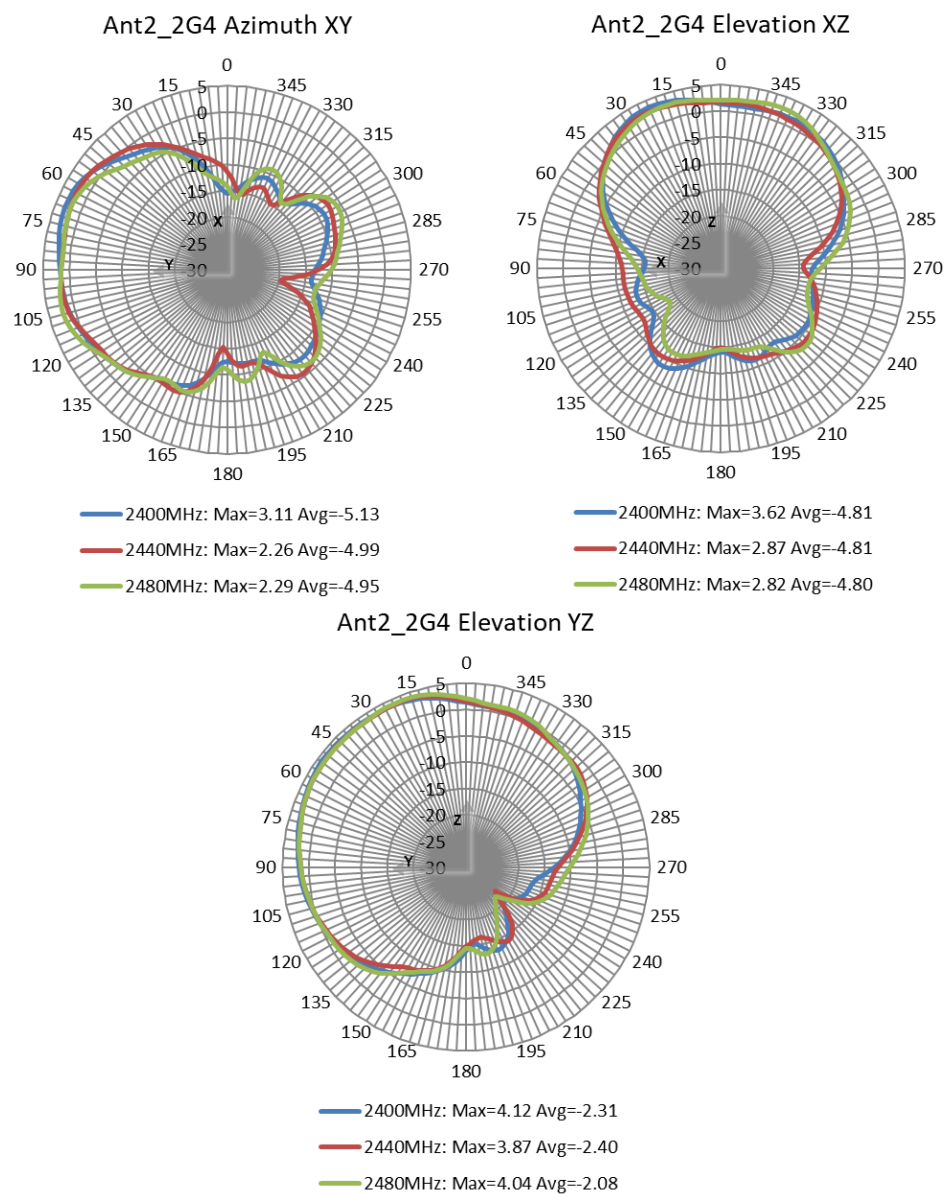
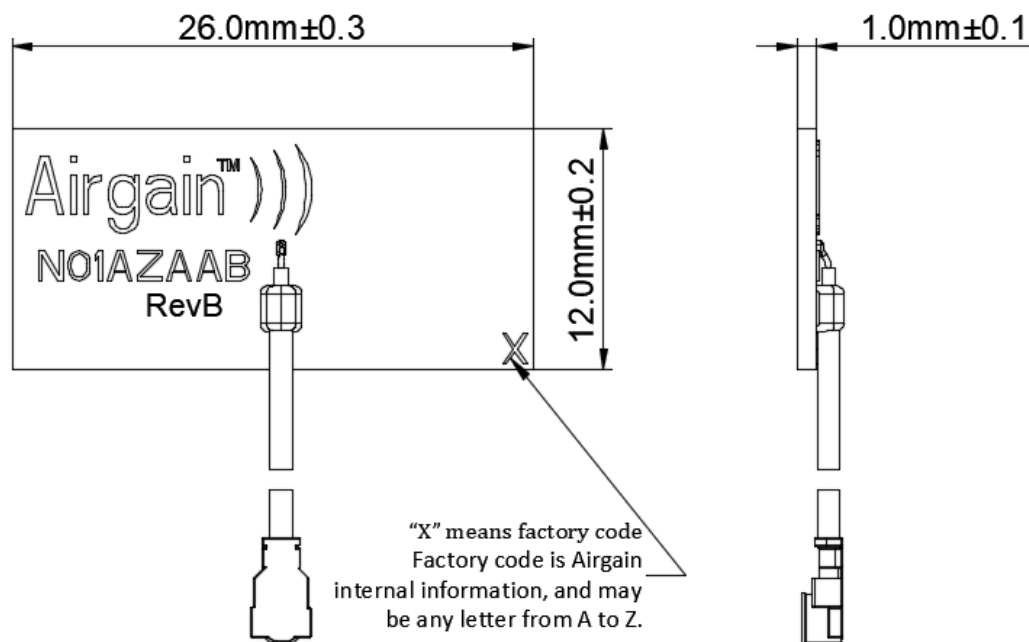


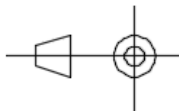
Figure 3: Model N01AZAAB radiation patterns at 2.4GHz & 2.44GHz & 2.48GHz

5. Dimensions



Dimensions

Drawing Style



Unless otherwise specified,
tolerances are $\pm 0.2\text{mm}$

Figure 4: Model N01AZAAB Pre-applied Tape Dimensions

6. ROHS

Airgain N01AZAAB embedded antennas are RoHS compliant.

7. Feature and Options Information

Airgain N01AZAAB 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 N01AZAAB, pre-applied, double-sided adhesive tape is available on the N01AZAAB -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)
N01AZAAB	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

N01AZAAB-T-PK1-G100U – N01AZAAB antenna with 1.6-mm double-sided adhesive tape, 100-mm cable, and U.FL-compatible connector.

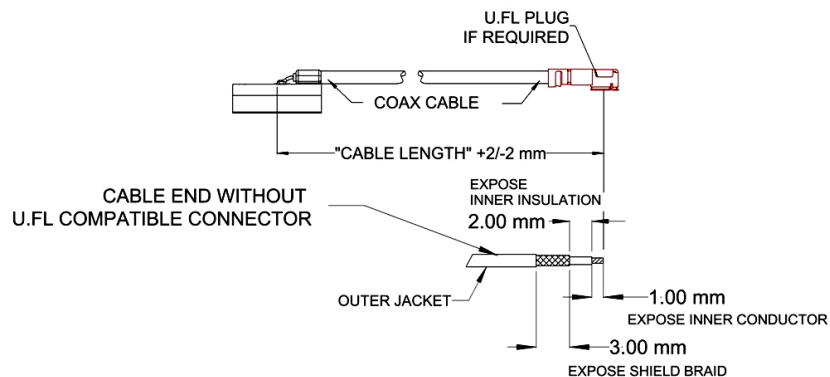
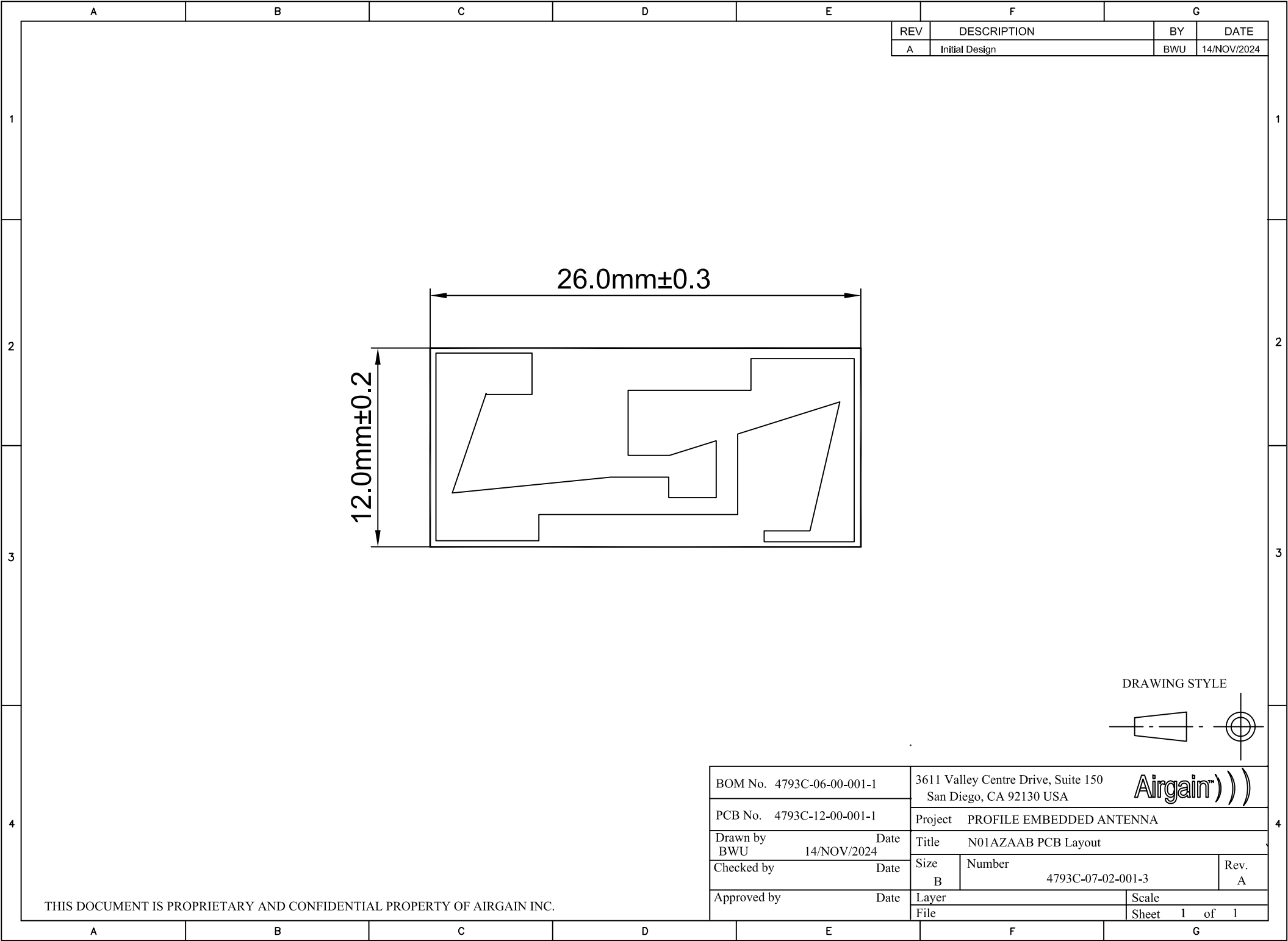


Figure 5: N01AZAAB with connector or stripped cable

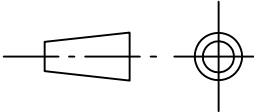
8. Cable Data Sheet

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



REV	DESCRIPTION	BY	DATE
A	Initial Design	BWU	14/NOV/2024

DRAWING STYLE



BOM No. 4793C-06-00-001-1		3611 Valley Centre Drive, Suite 150 San Diego, CA 92130 USA			Airgain)))
PCB No. 4793C-12-00-001-1		Project PROFILE EMBEDDED ANTENNA			
Drawn by BWU	Date 14/NOV/2024	Title N01AZAAB PCB Layout			
Checked by		Date	Size B	Number 4793C-07-02-001-3	Rev. A
Approved by		Date	Layer		Scale
			File		Sheet 1 of 1

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