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Profile Series
N02AZAAC
Airgain, Inc.

Airgain
Embedded
Antenna
Engineering
Data Sheet

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Revision History

Revision	Date	Note
4794C-02-00-001-1 Rev 1.0	July 29, 2024	Preliminary Datasheet 1.0
4794C-02-00-001-1 Rev 1.1	September 29, 2024	Added version number screen printing

Disclaimers

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

Please verify with Airgain before finalizing a product design.

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1. Airgain N02AZAAC Embedded Antenna

The Model N02AZAAC Embedded Antenna provides a high efficiency, 5GHz band embedded antenna solution for Wi-Fi and ISM band applications, such as WLAN products. As embedded antenna solutions become the focus of next generation wireless product design, the Model N02AZAAC provides the flexibility of an embedded antenna with top performance. N02AZAAC 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 N02AZAAC Embedded Antenna is defined by the following features:

- IEEE 802.11 a/n/ac standards
- Case mount
- Single 5GHz Band operation
- Truly balanced operation
- High efficiency
- Quick integration

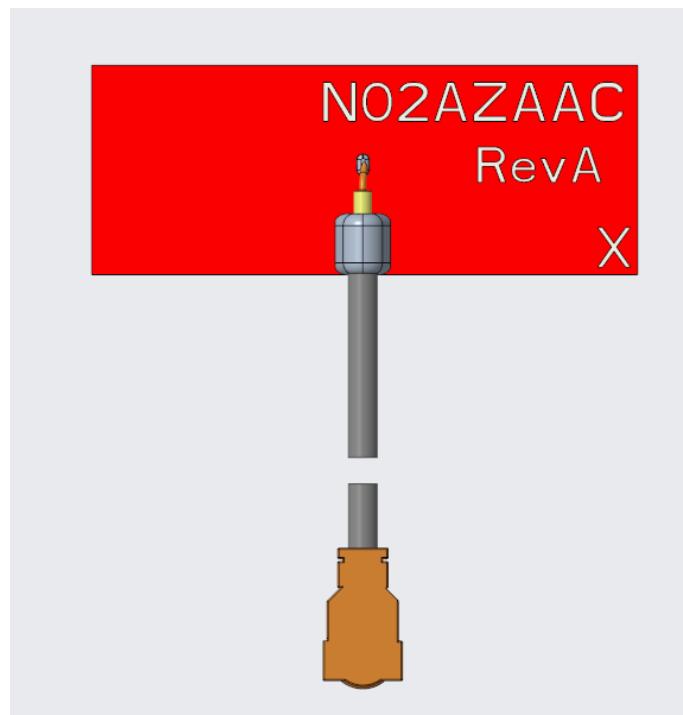


Figure 1:Model N02AZAAC Embedded Antenna

3. Specifications and Interface

Standard	IEEE 802.11 a/n/ac
Frequency range	5.15 to 5.85 GHz
Peak gain	5.0 dBi @ 5.5 GHz;
Feed impedance	50 ohms
Power handling	30 dBm
Interface	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	20.61 x 7.9 x 0.5 (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

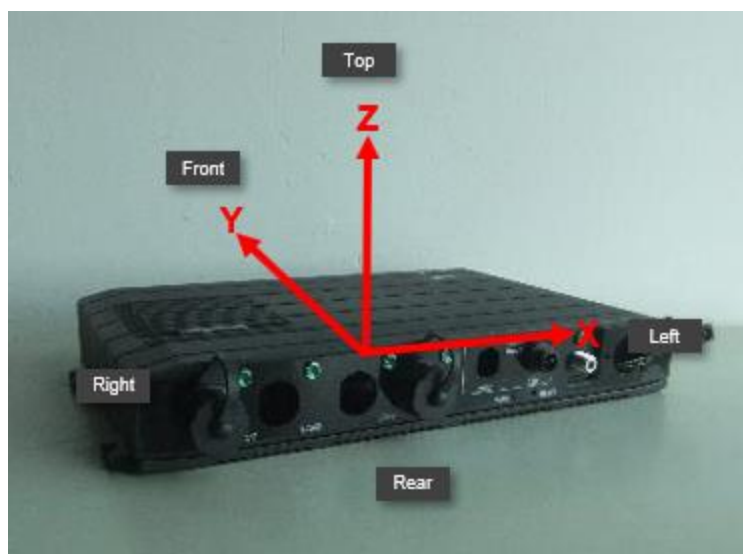


Figure 2:Model N02AZAAC Measurement axes

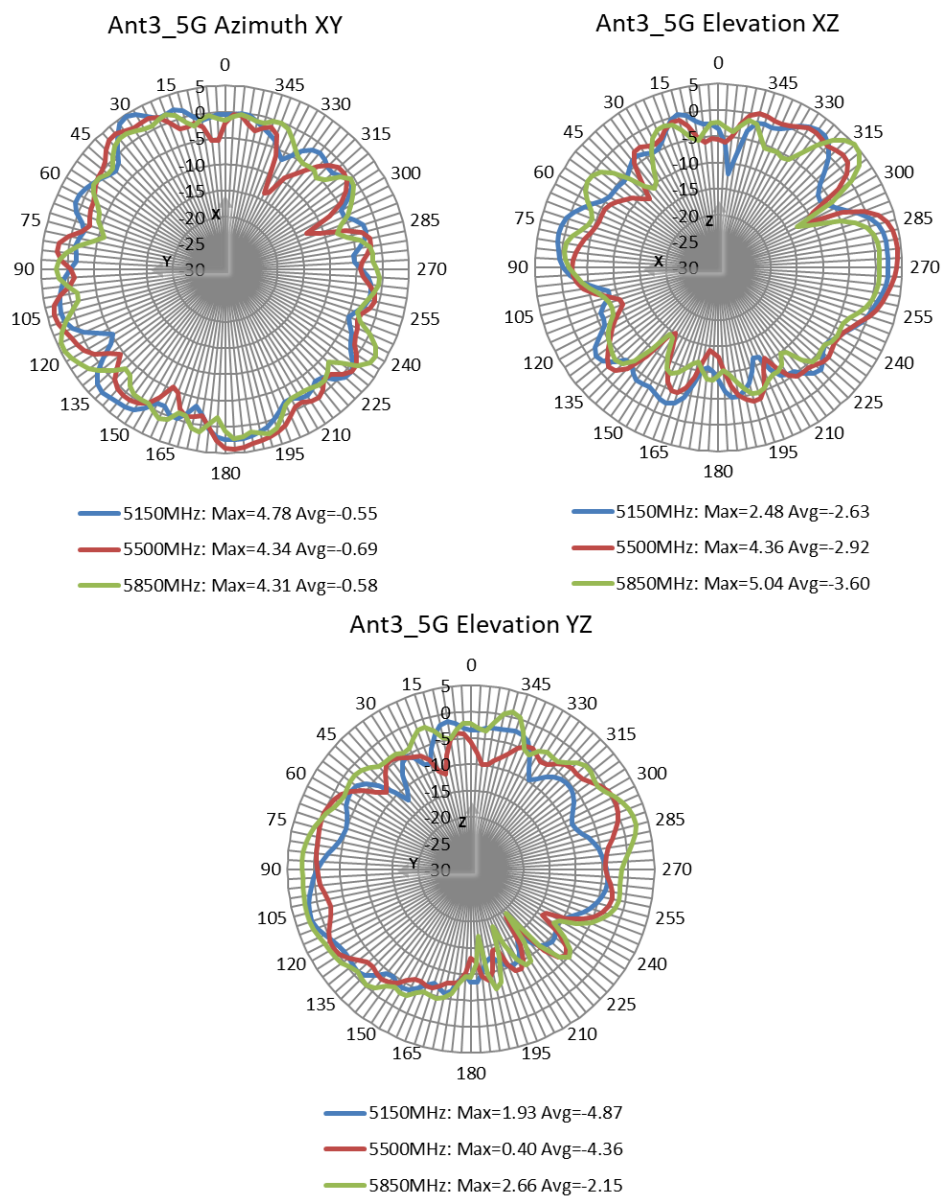


Figure 3: Airgain N02AZAAC radiation patterns at 5.15 GHz & 5.5 GHz & 5.85 GHz

5. Dimensions

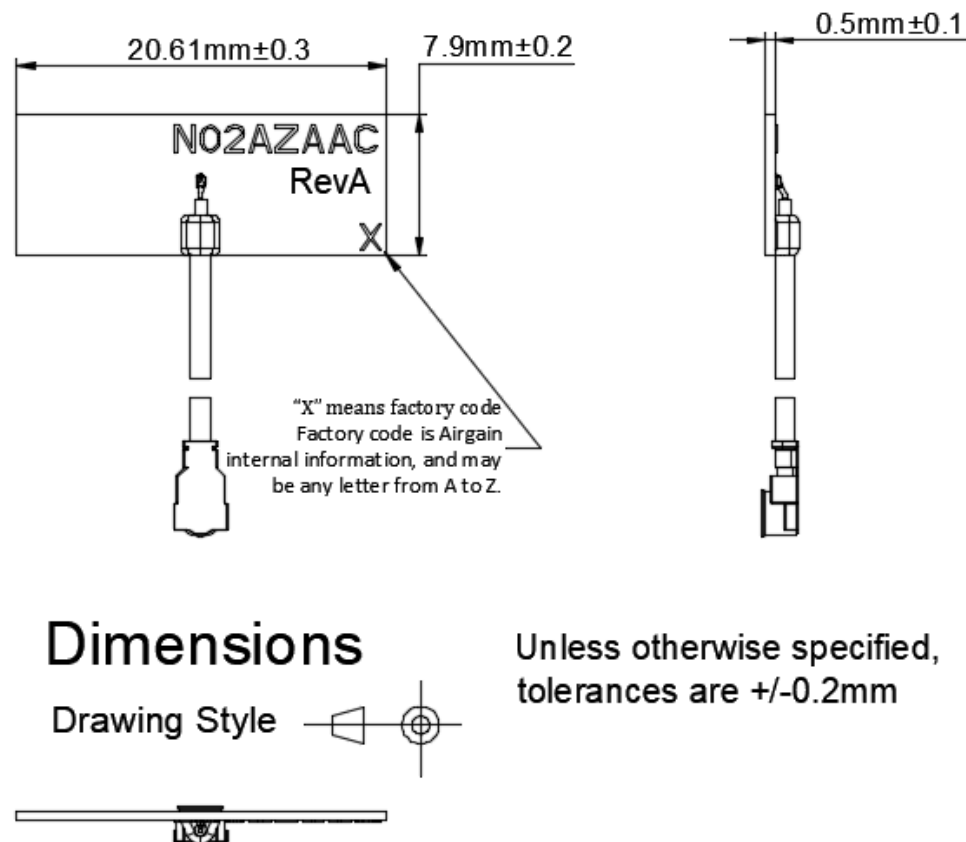


Figure 4: N02AZAAC Antenna dimensions

6. ROHS

Airgain N02AZAAC embedded antennas are RoHS compliant.

7. Feature and Options Information

Airgain N02AZAAC 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 N02AZAAC, pre-applied, double-sided adhesive tape is available on the N02AZAAC -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)
N02AZAAC	Blank = No tape T = Tape on bottom of element T6 = 0.5mm thick PE Tape affixed to bottom surface of antenna	PK1= singulated (PK1 is mandatory)	G = Grey (Standard) R = Red (Non Standard) Y = Yellow (Non Standard) K = Orange(Non Standard)	Cable length in millimeters (mm) Commonly used Lengths*: 65, 100, 130, 150, 190, 230, 250, 300,400, etc.	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

* Standard cable lengths listed in RF Cable Datasheet

7.2 Part Number Example

N02AZAAC-T-PK1-G100U – N02AZAAC antenna with 1.6-mm double-sided adhesive tape, 100-mm cable, and U.FL-compatible connector.

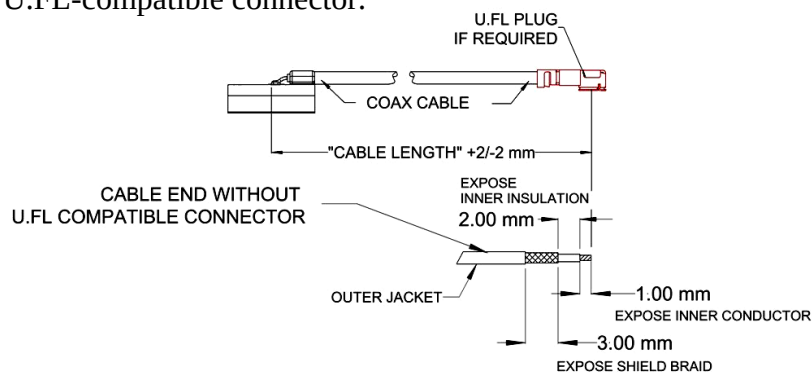
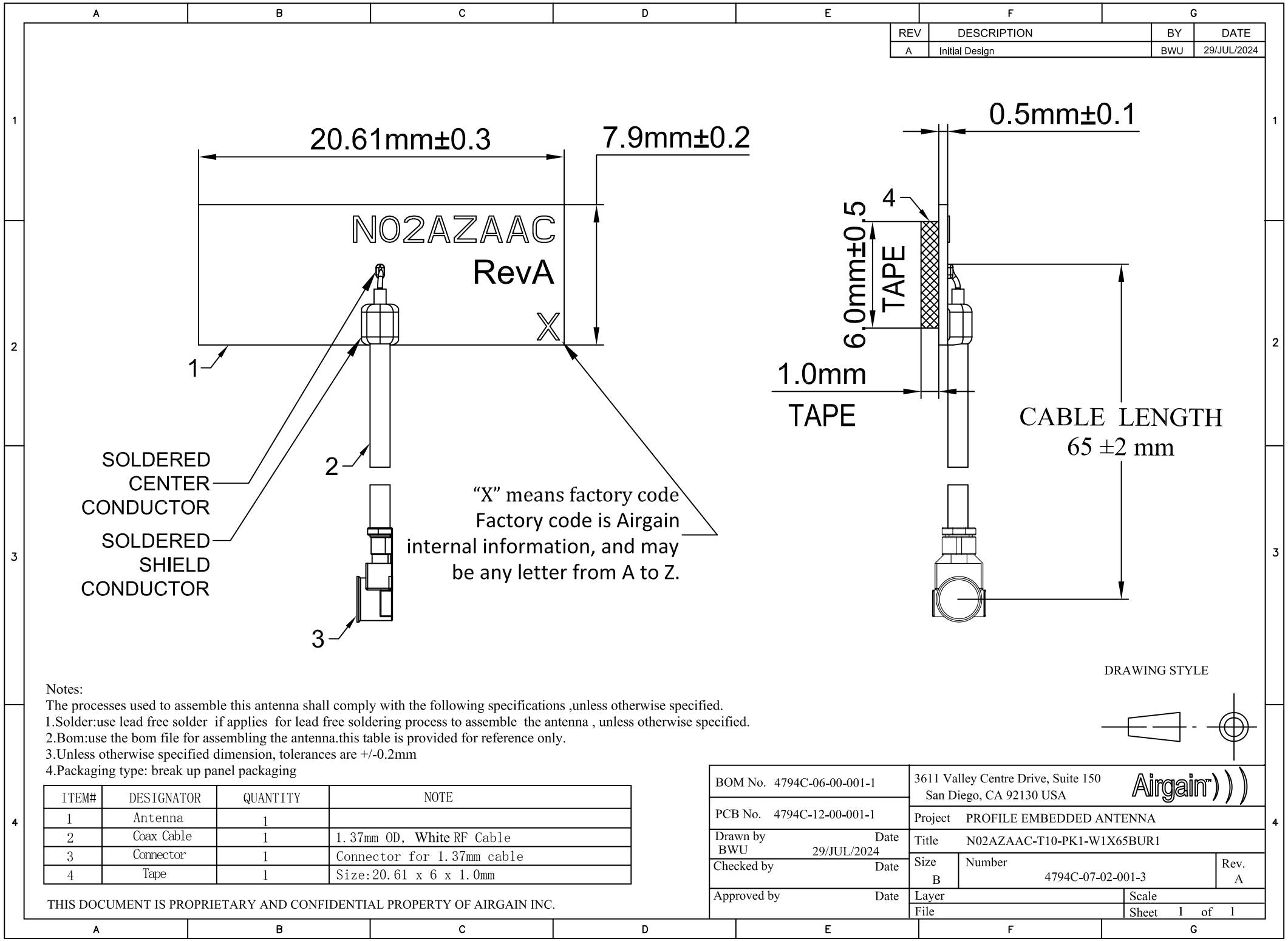
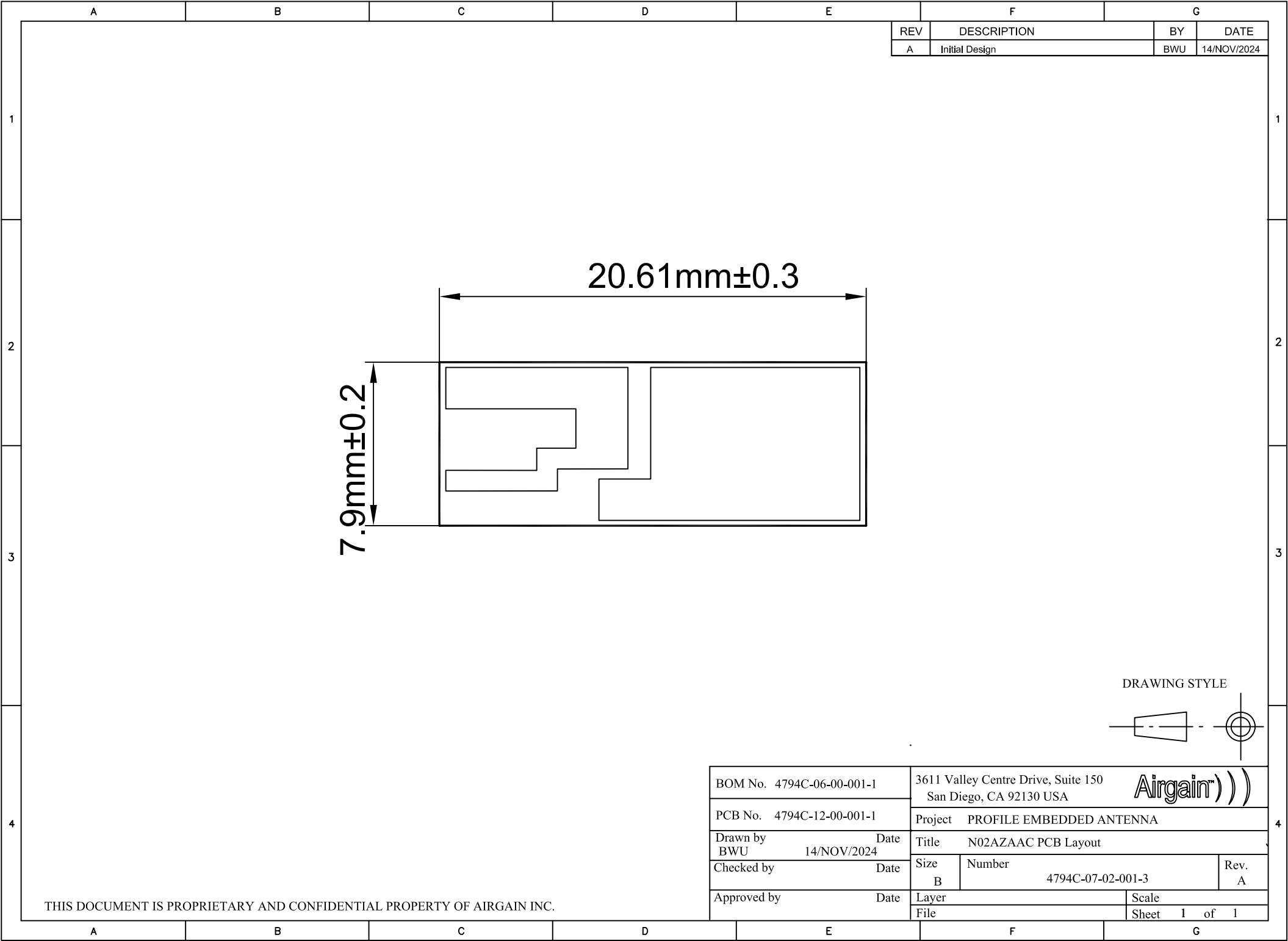


Figure 5: N02AZAAC with connector or stripped cable

8. Cable Data Sheet

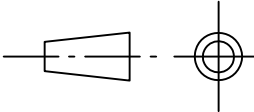
Item	Specification	
Cable type	OD1.37	
Impedance	50 ± 2 ohms	
Inner conductor	Material	Tinned copper wire
	Conductor numbers	7
	Conductor size	0.102 mm
	Outer diameter	0.306 ± 0.02 mm
Insulation	Material	FEP
	Color	Clarity
	NOM.O.D	0.9 ± 0.03 mm
Outer conductor	Material	Tinned copper wire
	Makeup: total / 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	Gray
	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



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PCB No. 4794C-12-00-001-1								
		Project				PROFILE EMBEDDED ANTENNA		
Drawn by BWU		Date 14/NOV/2024		Title N02AZAAC PCB Layout				
Checked by		Date		Size B	Number 4794C-07-02-001-3			Rev. A
Approved by		Date		Layer		Scale		
				File		Sheet 1 of 1		