Airgain™

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Performance.
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Profile Series

N03AKANF

Airgain Embedded Antenna

Engineering Data Sheet

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Airgain
Passive Report
Date: 06 Oct, 2021
Prepared By: Angela zhao
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3. Specifications and Interface

Standard	IEEE 802.11 a/b/g/n/ac
Frequency range	2.4 to 2.49 GHz, 5.15 to 5.85 GHz
Peak gain	TBD
VSWR	< 2:1
Feed impedance	50 ohms
Power handling	30 dBm
Interface	50 ohms, 1.13 mm diameter, micro coax cable (available with optional U.FL-compatible cable connector and/or cable-mounted EMI ferrites)
Antenna dimensions	31.7 x 14.4 x 0.5 mm
Weight	TBD g
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

TBD

Figure 2: Model N03AKANF Measurement axes

TBD

Figure 3: Model N03AKANF Radiation Patterns at 2.44 GHz

TBD

Figure 4: Model N03AKANF Radiation Patterns at 5.2 GHz

TBD

Figure 5: Model N03AKANF Radiation Patterns at 5.8 GHz

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4. Radiation Patterns

TBD

Figure 2: Model N03AKANG Measurement axes

TBD

Figure 3: Model N03AKANG Radiation Patterns at 2.44 GHz

TBD

Figure 4: Model N03AKANG Radiation Patterns at 5.2 GHz

TBD

Figure 5: Model N03AKANG Radiation Patterns at 5.8 GHz

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4. Radiation Patterns

TBD

Figure 2: Model N03AKANH Measurement axes

TBD

Figure 3: Model N03AKANH Radiation Patterns at 2.44 GHz

TBD

Figure 4: Model N03AKANH Radiation Patterns at 5.2 GHz

TBD

Figure 5: Model N03AKANH Radiation Patterns at 5.8 GHz

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4. Radiation Patterns

TBD

Figure 2: Model N03AKANJ Measurement axes

TBD

Figure 3: Model N03AKANJ Radiation Patterns at 2.44 GHz

TBD

Figure 4: Model N03AKANJ Radiation Patterns at 5.2 GHz

TBD

Figure 5: Model N03AKANJ Radiation Patterns at 5.8 GHz

Table of Contents

Introduction

- Airgain proposes an embedded antenna solution for EAI2326
- Total 4 antennas need to be integrate into limited housing space:
  - WiFi Antenna *4
    - Ant5 Frequency Range : 2400 - 2490/5150-5850(MHz)
    - Ant6 Frequency Range : 2400 - 2490/5150-5850(MHz)
    - Ant7 Frequency Range : 2400 - 2490/5150-5850(MHz)
    - Ant8 Frequency Range : 2400 - 2490/5150-5850(MHz)
- The antenna is mounted on the plastic enclosure and connect to the radio through coaxial cable and U.FL. Connector
- Passive measurement results are presented

Requirements

Return Loss :

- <-10dB

Isolation:

- <-20dB

Efficiency:

- >50%

Gain :

- <6 dBi


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Airgain Solution
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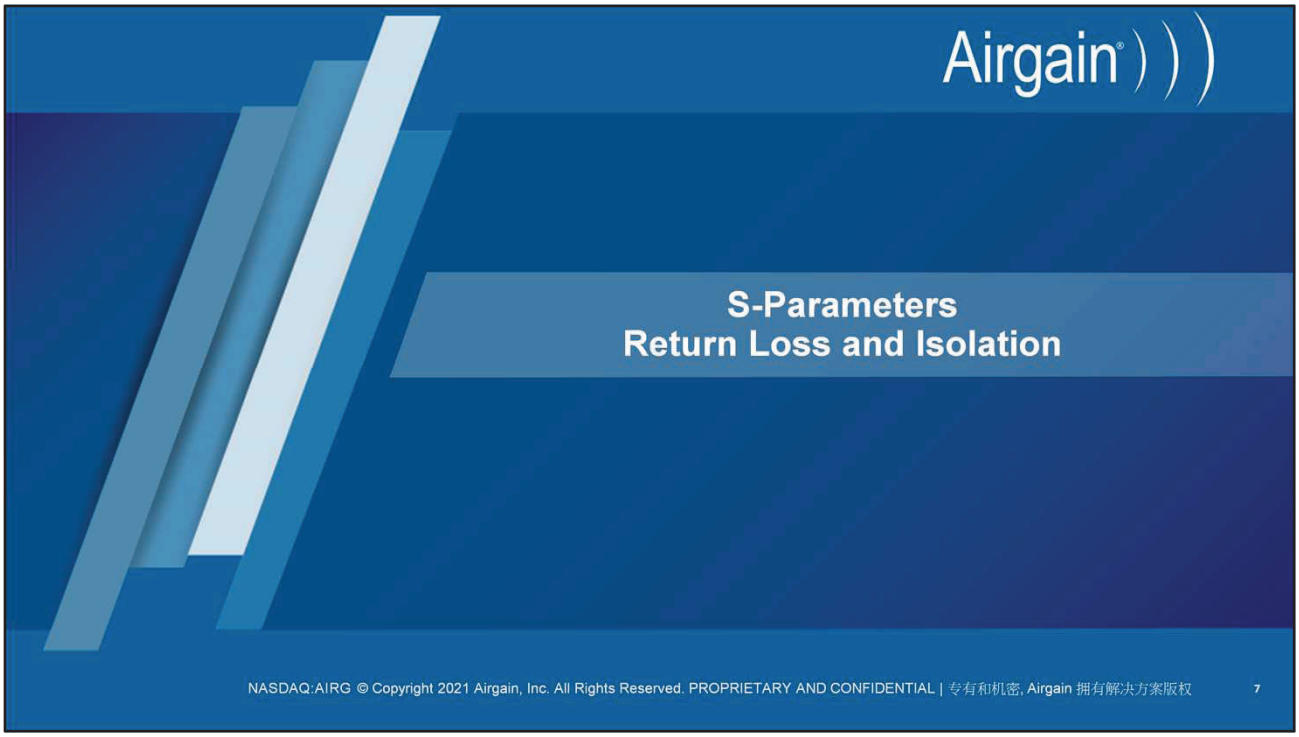
Airgain Solution

Antenna #	Part Number
Ant5_Wifi	N03AKANF-T-PK1-E140U
Ant6_Wifi	N03AKANG-T-PK1-K195U
Ant7_Wifi	N03AKANH-T-PK1-P85U
Ant8_Wifi	N03AKANJ-T-PK1-R65U


Airgain
S-Parameters
Return Loss and Isolation
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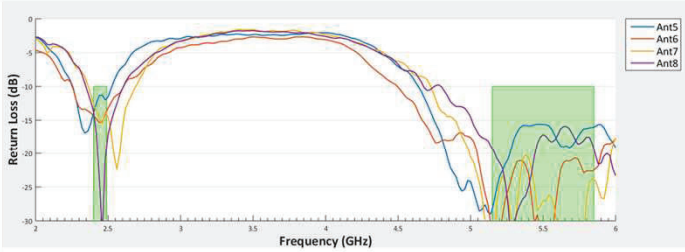
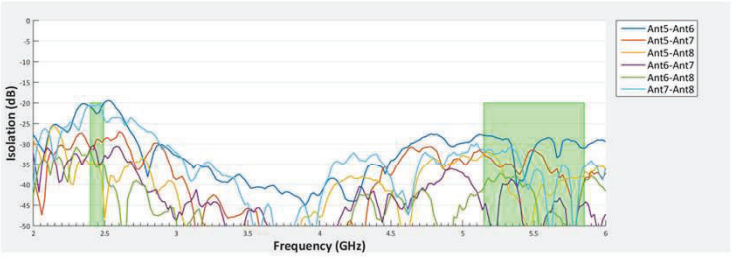
S-Parameter – Return Loss for Wifi Antennas



KEY OBSERVATIONS

Frequency (MHz)	Return Loss (dB)			
	Ant5_Wifi	Ant6_Wifi	Ant7_Wifi	Ant8_Wifi
2400	-14	-14	-12	-14
2490	-12	-14	-14	-18
5150	-27	-32	-32	-19
5850	-16	-23	-24	-20

S-Parameter – Isolation Among Wifi Antennas



KEY OBSERVATIONS

Antenna	Minimum Isolation (dB)	
	2400-2490 MHz	5150-5850 MHz
Ant5_Wifi-Ant6_Wifi	-20	-28
Ant5_Wifi-Ant7_Wifi	-29	-31
Ant5_Wifi-Ant8_Wifi	-35	-32
Ant6_Wifi-Ant7_Wifi	-30	-39
Ant6_Wifi-Ant8_Wifi	-32	-37
Ant7_Wifi-Ant8_Wifi	-20	-31