

Dated: May 11, 2026

Subject: Antenna Justification Letter for FCC Part 15 Compliance

FCC ID: 2AKXF-ALB090

Model Number: ALRM002

To Whom It May Concern,

This letter provides justification for the antenna configuration used in the above-referenced device, submitted for certification under **FCC Part 15**.

Radiated Measurement Justification

All compliance testing, including fundamental and spurious emissions, was performed using **radiated measurement methods**. As such, antenna gain and performance characteristics were inherently captured in the test results. Therefore, no separate antenna gain documentation is required to demonstrate compliance with FCC limits.

This approach aligns with the guidance provided in the **FCC TCB Workshop (October 2022)** and **KDB 353028 D01**, which allows for a justification statement in lieu of antenna gain documentation when radiated measurements are used exclusively.

Antenna Description

- **Source:** Antenna design is copied from Texas Instruments Design Note DN038 and is used as described in the note except that a PCB thickness of 1.6 mm is used and the antenna is matched at 915 MHz.
- **Antenna Type:** PCB trace antenna
- **Location:** Integrated on the main PCB, as shown in the internal photographs
- **Dimensions:** 19 mm x 12 mm
- **Estimated Peak Gain:** 0.01 dBi
- **Polarization:** Linear
- **Orientation:** Horizontal
- **Frequency Bands Supported:** 915 MHz ISM band

Supporting details and materials

1. Internal Photographs

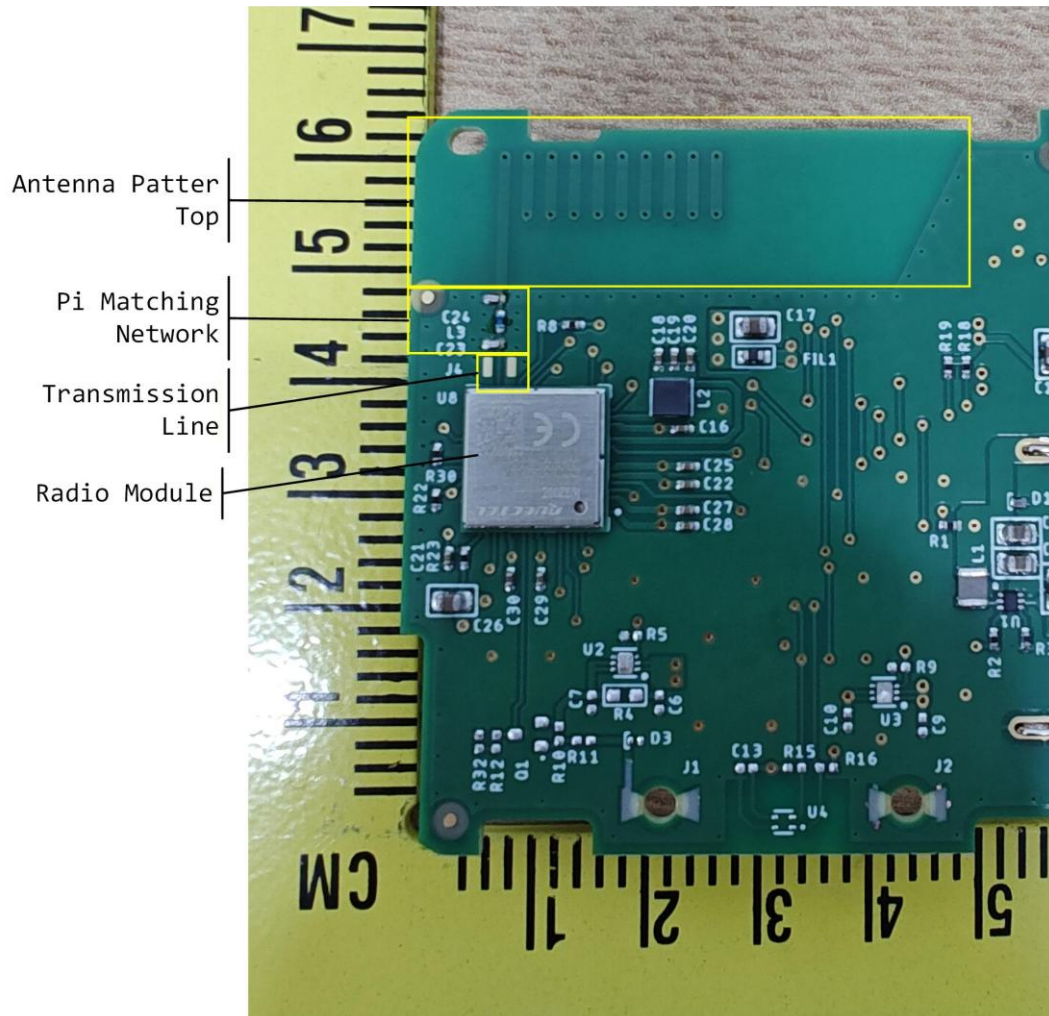


Figure 1: PCB Antenna Pattern – Top

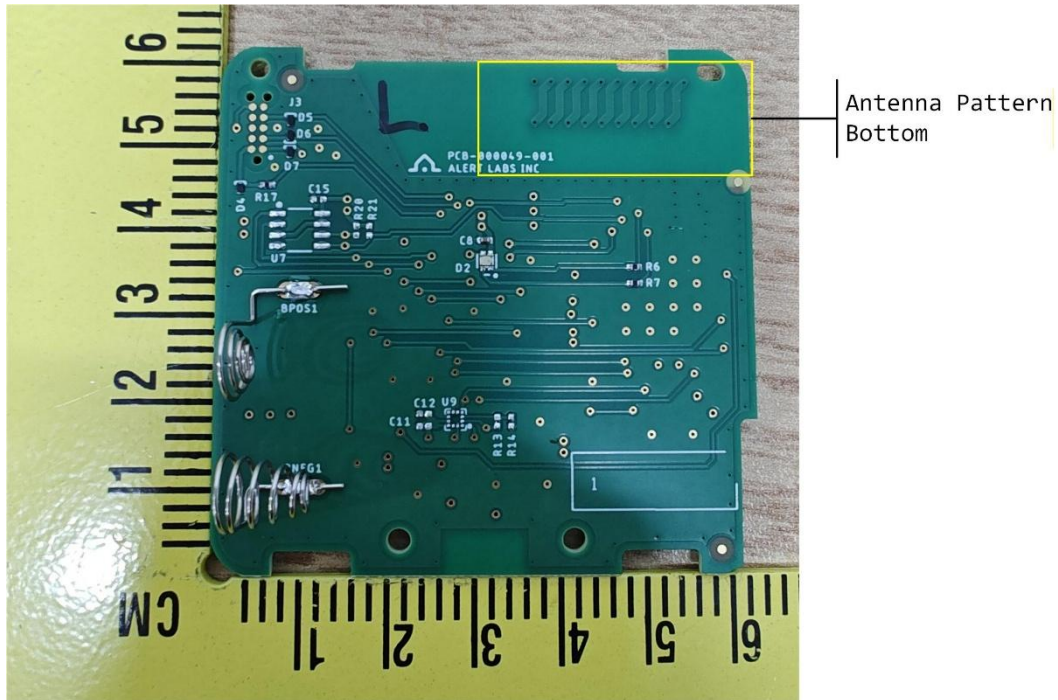


Figure 2: PCB Antenna Pattern - Bottom

2. PCB Layout Diagrams

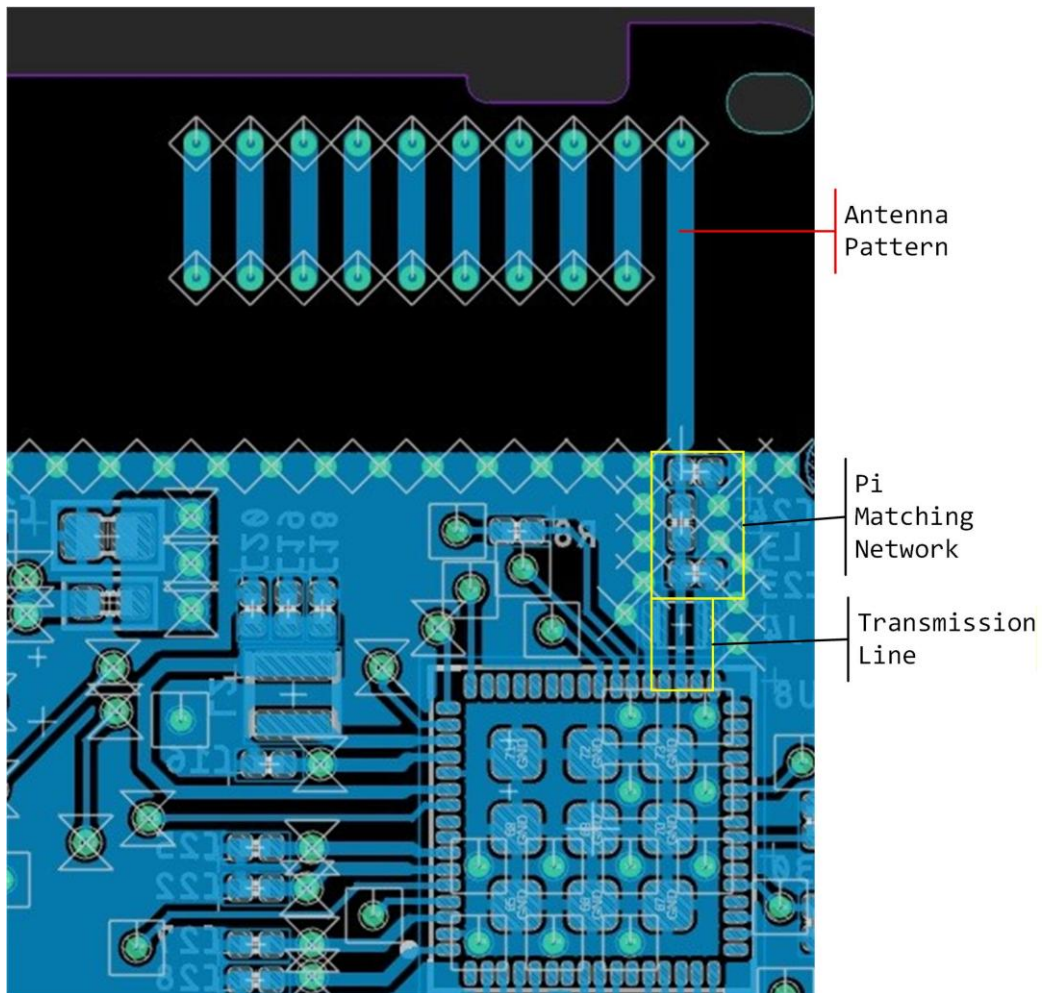


Figure 3: PCB Antenna Pattern - Top Layout



Figure 4: PCB Antenna Pattern - Bottom Layout

3. Antenna Specifications

3.1 Physical Dimensions

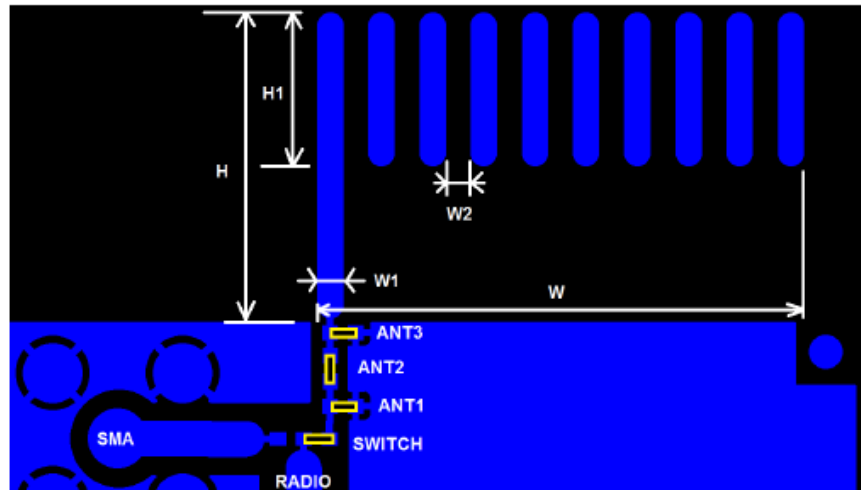


Figure 2. Top Layer Layout



Figure 3. Zoom of Top and Bottom Layer Layout with Via Markings

Dimension	H	H1	H2	W	W1	W2	Via dia
	12 mm	6 mm	0.5 mm	19 mm	1 mm	1 mm	0.38 mm

Table 1. Antenna Dimensions

Figure 5: Antenna Dimensions - copied from Texas Instruments Design Note DN038

Efficiency: 46.2 %

4. Estimated Gain Information

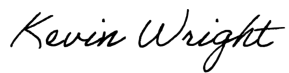
Gain: 0.01 dBi

Compliance Statement

The antenna configuration has not been altered in a way that would affect radiated performance. No external gain-enhancing accessories (e.g., reflectors, lenses) are used. The antenna is permanently affixed and not user-accessible or replaceable.

Should you require any additional information or clarification, please do not hesitate to contact us.

Sincerely,



Kevin Wright
Chief Architect
Alert Labs Inc
102 - 410 Albert Street, Waterloo, ON, Canada, N2L 3V3
888-425-3780
kevin@alertlabs.com