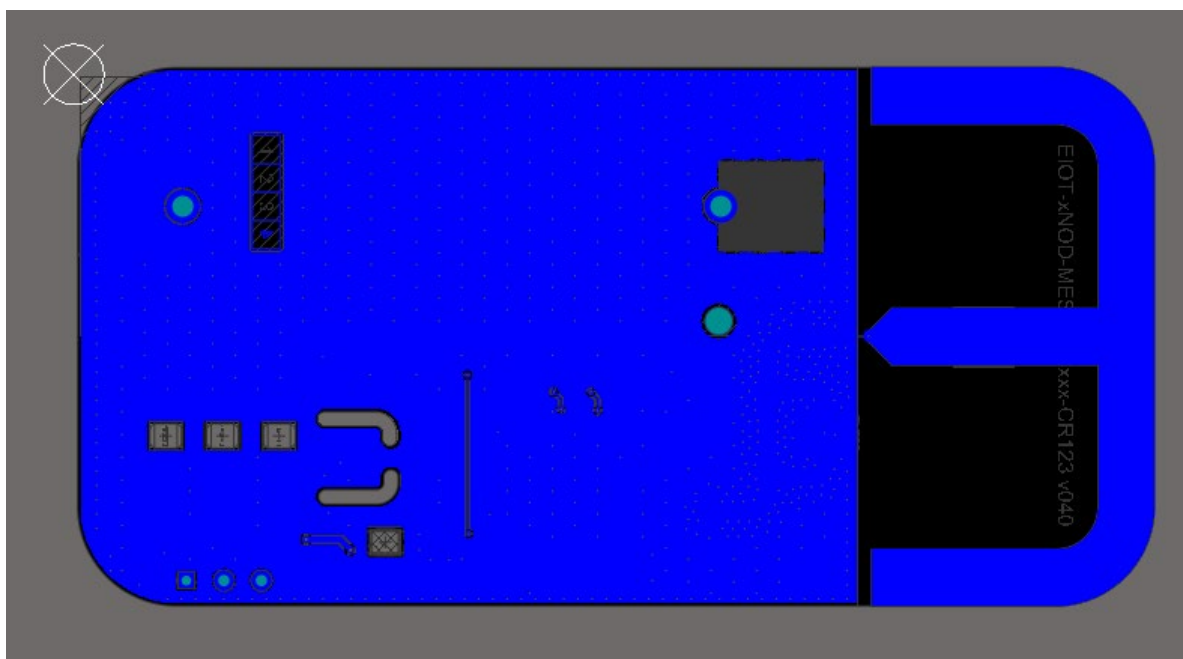


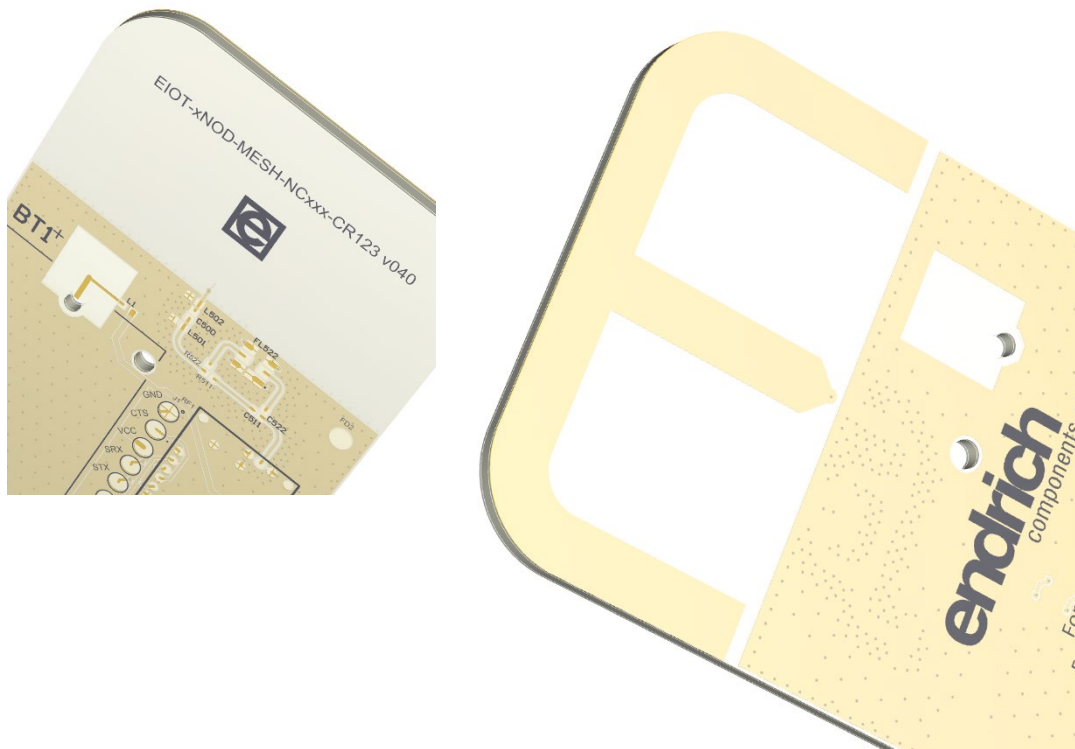
# Embedded Antenna Specification for the E-IOT node family EIOT-NODE-MESH-NCxxx-CR123A

The EIOT-NODE-MESH-NC868-CR123A and EIOT-NODE-MESH-NC915-CR123A are advanced smart sensor nodes engineered for wireless sensor networks operating in the 868 MHz and 915 MHz ISM bands, respectively. Based on the NeoMesh protocol and featuring an integrated PCB antenna, these devices function as core wireless nodes within extensive mesh networks. By leveraging the ultra-low-power, high-reliability neo.mesh wireless protocol, they enable seamless communication between virtually unlimited network elements and the host system. Data collected is efficiently routed to the Cloud via a NeoMesh-to-Internet gateway, ensuring robust, scalable, and energy-efficient IoT connectivity. The embedded antenna specifications are detailed below :



For optimal performance in sub-GHz wireless communication, the module features a **custom-tuned, matched PCB trace antenna**. Designed to support both **868 MHz and 915 MHz ISM bands**, this antenna provides excellent efficiency, with over **88% radiation efficiency** and a **peak gain of 1.4 dBi**. Its **linear polarization** and **omnidirectional (spherical) radiation pattern** ensure reliable connectivity and consistent signal strength across diverse installation environments, making it well-suited for mesh network deployments.

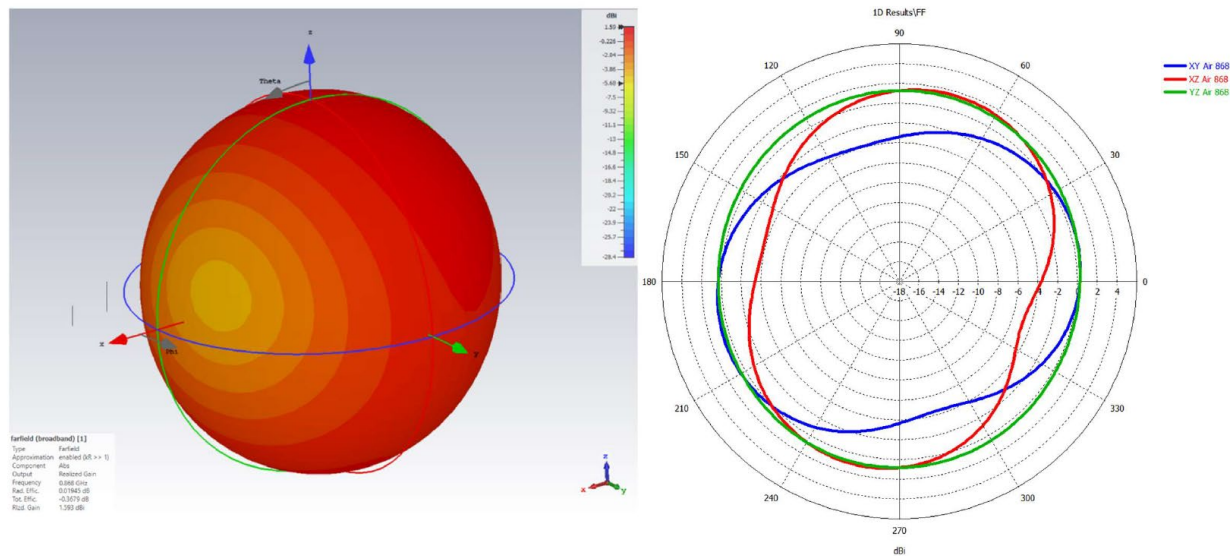




Antenna and electrical specifications:

| Parameter          | 868 MHz ISM Band Antenna     | 915 MHz ISM Band Antenna     |
|--------------------|------------------------------|------------------------------|
| Standards          | NeoMesh                      | NeoMesh                      |
| Band (MHz)         | 868                          | 915                          |
| Frequency (MHz)    | 863–870                      | 902–928                      |
| Return Loss (dB)   | < -12                        | < -12                        |
| VSWR               | 1.5 : 1                      | 1.5 : 1                      |
| Efficiency (%)     | 88                           | 89                           |
| Peak Gain (dBi)    | 1.4                          | 1.4                          |
| Average Gain (dBi) | -2.8                         | -2.8                         |
| Impedance (Ohm)    | 50                           | 50                           |
| Polarization       | Linear                       | Linear                       |
| Radiation Pattern  | Omni-Directional (spherical) | Omni-Directional (spherical) |

Radiation pattern 868 MHz



Radiation pattern 915 MHz

