

Antenna Information Specification

Applicant: FATROMED S.r.l.

Product Model: ATUM

Antenna Model Name: RoundAntenna

FCC ID: 2BW8P-ATUM-01-USA

1. Technical Specifications Table

Parameter	Value / Specification
Antenna Type	PCB Near-Field Inductive Loop Antenna (Magnetic Loop)
Operating Frequency	13.56 MHz (RFID HF)
Antenna Gain	0 dBi (or less) * Note: Operates strictly in the reactive near-field
Nominal Impedance	50 Ohm (matched via tuning circuit on the main transmitter PCB)
Number of Turns	4 Concentric Turns on each side (Copper traces)
Outer Diameter	66 mm
Inner Hole Diameter	30 mm
Connection Method	Hardwired via permanently soldered wires to pads TP1 and TP2.

2. Operational & Mechanical Description

The RoundAntenna V5 is a dedicated, custom-designed external loop antenna etched directly onto an independent circular FR4 PCB substrate. The antenna consists of 4 concentric copper turns designed to operate at 13.56 MHz via inductive magnetic coupling. The antenna PCB features 4 integrated mechanical mounting holes used to securely screw and anchor the board to the non-metallic (plastic), internal side, bottom lid of the final host enclosure. The electrical RF connection to the main transmitter board (featuring the MFRC52202HN1 chipset) is established exclusively via two insulated copper wires permanently soldered onto the dedicated pads labeled TP1 and TP2. There are no external RF connectors, switches, jacks, or user-accessible antenna ports. This permanent construction prevents any end-user modification or replacement, ensuring full compliance with the antenna requirements of FCC § 15.203.

3. Near-Field Operation Statement

Due to the nature of the 13.56 MHz RFID inductive system, the device operates exclusively in the reactive near-field zone to detect transponders within a maximum distance of 6 cm. Traditional far-field parameters, such as 2D/3D radiation patterns and far-field antenna gain measurements, are not applicable to this magnetic loop structure.

4. Layout and Geometry (Gerber View)

