

## Antenna Specification

1. **Type of Antenna:** RFID coil antenna
2. **Operating Frequency:** 134.2 kHz
3. **Antenna Gain:** 1–1.5 dBi (approx.)
4. **Antenna Wire Length:** 17.97 m
5. **Material:** Copper (bare wire diameter: 0.22 mm)
6. **Construction:**
  - The coil is wound on a cylindrical former (approximately 115 mm in diameter, 17 mm winding length) to achieve the required inductance.
  - The antenna wire is wound in multiple layers (4 layers), totaling about 48 turns.
7. **Intended Use:** Integrated RFID reader application, compliant with FCC Part 15 regulations.
8. **Non-Removable Design:** The antenna is permanently mounted and not user accessible or replaceable.

This coil antenna is designed to operate at low frequency (134.2 kHz) for RFID applications. The specific wire dimensions and winding characteristics ensure the required inductance and field strength for near-field communication. The overall gain of 1–1.5 dBi is based on antenna modeling and practical measurements under typical operating conditions.

