

315 MHz PCB-mounted antenna specifications

File Number: ANT-315-remote-V1.0

Version: V1.1

Date: July 8, 2026

Product: Wireless Remote Controller

Model: Dema Remote Control

Radio frequency chip: LT4455 (315 MHz ASK transmitter)

Antenna Type: Self-designed PCB board with built-in wire antenna

1. Basic Information of the Antenna

Antenna type: PCB top-layer copper single-wire antenna (self-designed, non-commercial)

Operating frequency: 315 MHz (310–320 MHz)

Input impedance: $50\ \Omega$ for matching design

Polarization: Vertical polarization

Radiation Mode: Omnidirectional

Installation method: Integrated PCB printing; non-detachable, non-replaceable, and non-modifiable

Matching circuit: An LC/ π type matching network suitable for the LT4455 power amplifier output

2. Electrical Specifications

Frequency range: 310–320 MHz

VSWR: ≤ 3.0 (within the operating range)

Echo loss (S11): $\leq -6\ \text{dB}$ (typical value)

Maximum antenna gain: $\leq -2\ \text{dBi}$

Antenna efficiency: $\geq 30\%$

Compatible transmission power: $\leq 12\ \text{dBm}$ (LT4455 rated output)

modulation mode : ASK

3. Description of PCB Structure and Design

Material: CEM-3

Plate thickness: 1.0 mm

Antenna Layer: Copper traces on the top layer of the PCB

Power source: RF output on Pin 3 (PAOUT) of the LT4455

Antenna area: No grounding copper foil or copper paste shall be present in the top or bottom layers.

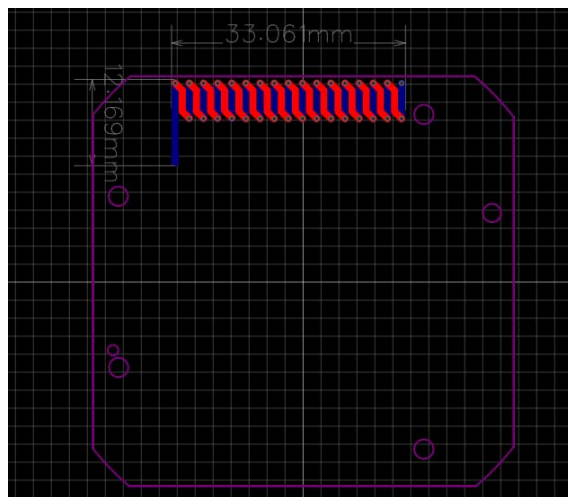
Gap requirements: A distance of ≥ 10 mm must be maintained around the antenna; no metal, shielding layers, batteries, or conductive components are permitted.

4. Description of the self-designed antenna

This antenna was independently designed through PCB layout specifically for remote control functionality, without utilizing products from third-party suppliers or commercial antenna specifications. All parameters were determined through circuit simulation and system testing. Impedance matching and power optimization were achieved using the LT4455 chip.

5. Compliance Statement

This is a built-in antenna specifically designed for a particular product; it cannot be replaced, modified, or reused on other models. The system's RF performance has been verified to meet face-centered cubic requirements.



Attachment: PCB Antenna Dimensions

PCB Dimensions: 60 mm $\times$ 60 mm

Antenna type: 315 MHz PCB-integrated single-pole wire antenna (self-designed)

Total antenna length: 360 mm

Antenna size: 33.6 mm $\times$ 12.169 mm

Material: CEM-3; Thickness: 1.0 mm

Gap requirements: There must be a minimum distance of 10 mm around the antenna; no metal components, copper castings, batteries, or shielding layers shall be present to prevent detuning.

Antenna manufacturer

Company name: Guangdong ShangWei Technology Co., Ltd.

Address: South of Lincuo Garden ,Guxiang Industrial,Chaozhou City, Guangdong Province,China

A handwritten signature in black ink, appearing to be 'Su Fu'.