

315MHz PCB Onboard Antenna Specification

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RF Chip: Y4455 (315MHz ASK Transmitter)

Antenna Type: Self-designed PCB Onboard Trace Antenna

Standard: FCC Part 15.231

Manufacturer: Dema Technology Co., Ltd.

Address : Room 102, Building 2, No. 2, Humen Section, Wantai Road, Humen Town, Dongguan City, Guangdong Province

1. Basic Antenna Information

Antenna Form: PCB top-layer copper monopole trace antenna (self-designed, no commercial antenna)

Operating Frequency: 315MHz (310–320MHz)

Input Impedance: 50Ω matched design

Polarization: Vertical Polarization

Radiation Pattern: Omni-directional

Installation: Integrated PCB printing, non-detachable, non-replaceable, non-modifiable

Matching Circuit: LC/ π -type matching network, suitable for Y4455 PA output

2. Electrical Specifications

Frequency Range: 310–320MHz

VSWR: ≤ 3.0 (within operating band)

Return Loss (S11): $\leq -6\text{dB}$ (typical)

Maximum Antenna Gain: $\leq 0\text{ dBi}$

Antenna Efficiency: $\geq 30\%$

Compatible Transmit Power: $\leq 12\text{dBm}$ (Y4455 rated output)

Modulation: ASK

3. PCB Structure & Design Description

Material: CEM-3

Board Thickness: 1.0mm

Antenna Layer: PCB top-layer copper trace

Feed Source: Y4455 Pin 3 (PAOUT) RF output

Antenna Area: No ground copper or copper pour on top/bottom layers

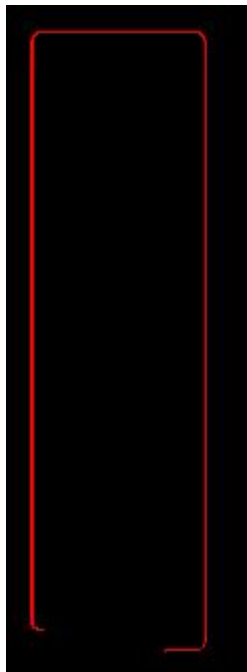
Clearance Requirement: $\geq 10\text{mm}$ around antenna, no metal, shield, battery or conductive parts

4. Self-designed Antenna Statement

This antenna is independently designed via PCB Layout for the remote control. No third-party supplier or commercial antenna specification is available. Parameters are obtained through circuit simulation and system test. Impedance matching and power optimization are completed with Y4455. The product meets all radiation requirements of FCC Part 15.231.

5. Compliance Declaration

This is a dedicated built-in antenna fixed on the specific product. It cannot be replaced, modified or reused on other models. The system RF performance has been verified in accordance with FCC requirements.



Attached: PCB Antenna Dimensions

PCB Size: 44.5 mm $\times$ 156 mm

Antenna Type: 315MHz PCB onboard monopole trace antenna (self-designed)

Total Antenna Trace Length: 360mm

Antenna Occupied Area: 156 mm $\times$ 0.6 mm

Material: CEM-3, Thickness: 1.0mm

Clearance: $\geq 10\text{mm}$ around antenna, no metal, copper pour, battery or shield to avoid detuning

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