

315MHz PCB Onboard Antenna Specification

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Product: Wireless Remote Control

Model:

RF Chip: HS119 (315MHz ASK Transmitter)

Antenna Type: Self-designed PCB Onboard Trace Antenna

Standard: FCC Part 15.231

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 HS119 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: $\leq -2\text{ dBi}$

Antenna Efficiency: $\geq 30\%$

Compatible Transmit Power: $\leq 13\text{dBm}$ (HS119 rated output)

Modulation: ASK

3. PCB Structure & Design Description

Material: FR-4

Board Thickness: 1.6mm

Antenna Layer: PCB top-layer copper trace

Feed Source: HS119 Pin 6 (PAOUT) RF output

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

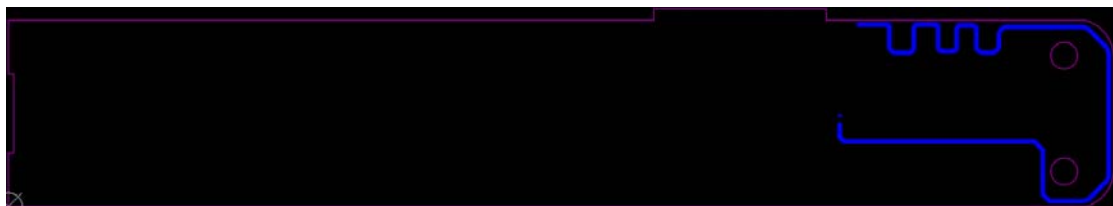
Clearance Requirement: $\geq 10\text{mm}$ around antenna, no metal, shield, battery or conductive parts

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 HS119. 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: 37.54 mm × 217.4 mm

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

Total Antenna Trace Length: 240mm

Material: FR-4, Thickness: 1.0mm

Clearance: ≥10mm around antenna, no metal, copper pour, battery or shield to avoid detuning

Antenna manufacturer

Company name: Guangdong ShangWei Technology Co., Ltd.

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