

315 MHz Telescopic Antenna Specification

AureliaFlame | Antenna Model AF-ANT315-T300 | Document AF-ANT-315-001 | Rev 1.0

This specification defines the integral telescopic monopole antenna used in the 315 MHz handheld remote control. Electrical ratings apply with the antenna fully extended and installed with the transmitter output matching network.

Product	315 MHz Handheld Remote Control	Remote model	TX315-001
Antenna model	AF-ANT315-T300	Issue date	2026-09-21



Figure 1 Telescopic antenna dimensional view

Mechanical and Environmental Specifications

Parameter	Specification	Remark
Element material	Copper and stainless steel	Telescopic conductive structure
Surface finish	Nickel plated and polished	Silver appearance
Closed total length	83 +/- 1 mm	Including end and mounting base
Extended total length	300 +/- 5 mm	Fully extended operating position
Maximum outer diameter	5.2 +/- 0.2 mm	Closed antenna body
Main closed tube length	73 mm nominal	Reference dimension
Mounting lug height	8 mm nominal	Reference dimension
Mass	4.8 +/- 0.5 g	Antenna only
Feed connection	Direct metal or solder lug	No external RF connector
Operating temperature	-30 to +70 deg C	Normal operation
Storage temperature	-40 to +85 deg C	Non-operating
Relative humidity	10 to 95 percent RH	Non-condensing

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Electrical Specifications

Parameter	Specification	Condition
Antenna type	Telescopic monopole whip	Integral attached antenna
Nominal frequency	315 MHz	Antenna fully extended
Operating band	310 to 320 MHz	With production matching network
Feed impedance	50 ohm nominal	At RF feed point
VSWR	2.0 to 1 maximum	315 MHz, installed and fully extended
Return loss	9.5 dB minimum	Equivalent to VSWR 2.0 to 1
Peak realized gain	1.5 dBi typical, 2.15 dBi maximum	Installed reference condition
Polarization	Linear	Parallel to whip axis
Radiation pattern	Omnidirectional in azimuth	Typical monopole H plane
Maximum RF input power	1 W CW	At 25 deg C
DC resistance	0.5 ohm maximum	Base to tip, fully extended

Installation and test condition: Mount the antenna to the remote-control RF feed using the production housing, PCB ground and 315 MHz matching network. Keep the feed conductor short and unobstructed by metal. Verify RF characteristics with the antenna fully extended to 300 mm at 25 deg C.