

# Performance Optimization Guide

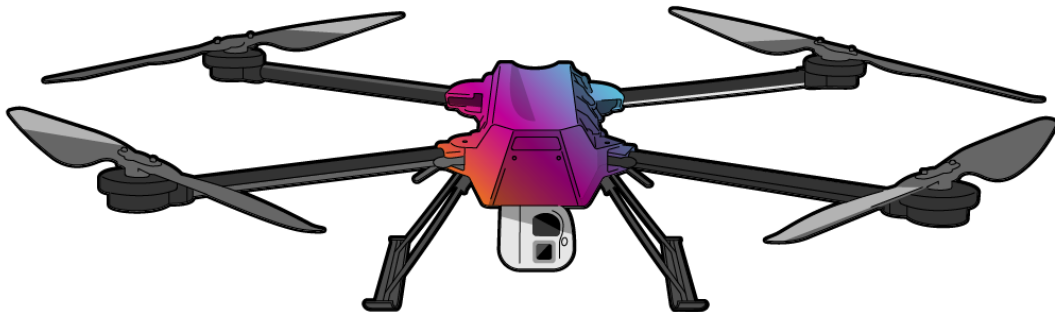
## Doodle Labs Performance Optimization Guide: Drone at 15 to 25 km

We've developed our Doodle Labs Performance Optimization Guides to shed light on how specific Doodle Labs customers are achieving peak performance at particular ranges and use-cases.

The following configuration data was provided by a Doodle Labs customer based on results achieved during real field testing. As with the use of any radio technology, unique environmental challenges may require alternative configurations to achieve similar results.

### Drone Description:

This model is a "loitering munition" tactical attack drone launched by hand and powered by electric propulsion. The model is enabled with multiple targeting modes, operates with a range of 15-25 KM and includes a parachute for recovery and reusability.



### Link Details

- **Type of System used in test:** Fixed-wing drone
- **Range:** 25 km

### Doodle Labs Product Details

- **Mesh Rider Radio Models:** RM-2450-2J-XM
- **Frequency Band:** 2400-2482 MHz - WiFi Band - Non0Licensed
- **Channel Width:** 10 MHz

## Mesh Rider Settings (if different from default)

- **DiffServ:** Enabled
- **Transmit Power Control:** Disabled
- **Mesh Map:** Disabled
- **DHCP:** Client
- **Ath9k\_watchdog:** 5

## Antenna Details

- **Antenna Gain - GCS:** 18 dBi
- **Antenna Type - GCS:** Patch
- **Antenna Height:** 2 Meters
- **Antenna Gain - UAV:** 2.15 dBi
- **Antenna Type - UAV:** Omni
- **Antenna Polarization - UAV:** Vertical
- **Tx Power:** 34 dBm

## Integration/Customer System Specifics

- **Weight:** 5.5 kg
- **Cruising speed:** 2 km per hour, 20m per second
- **Endurance:** 1 hour
- **Payload:** Multiple munition options up to 1 kg, plus GPS, image, video and sensor data
- **Flight controller:** Pixhawk
- **GCS Software:** QGround Control

## Environment

- **Location (urban, remote, etc):** India, Open Field, countryside. BLoS