

# **VIRAJ DRONE**

(UAS: Unmanned Aircraft Systems)



## **ANNEXURES**

1. Specifications of VIRAJ Agricultural Drone - Annexure 1
2. Bill of Material (BOM) - Annexure 2
3. Flight Manual - Annexure 3
4. Design Documents - Annexure 4



## Specifications

The table given below outlines the performance of VIRAJ UAS-AG 01 in the minimum and maximum operational envelope for the different parameters given below.

1	Physical Characteristics	Specification/Remarks
a.	Role of RPA	Auto spray & Seed spreading
b.	RPA maximum take-off weight	24,90 grams
2	UAS Performance Characteristics	Specification/Remarks
a.	Endurance per flight	18 minutes of operational time with payload**
b.	Range	1 KM - VLOS
c.	Maximum operating altitude	30 m AGL
d.	Working Temperature Range	0°C to 50°C
e.	Wind Resistance	Up to 8 m/s
f.	UAS Maximum operational speed	Up to 8 m/s
g.	UAS Battery capacity	16000 mAh 6S battery (2)
3	Operational Characteristics	Specification/Remarks
a.	Launch	Vertical Take- Off and Landing
b.	Flight Modes	• LOITER
		• Auto spray
		• RTL
c.	Propulsion System	Electric propulsion system
d.	Failsafe (FS) features	• Return to Home on prolonged Communication Failure
		• Warning of low battery @ 30% Battery capacity
		• Return to Home @ 20% Battery capacity
e.	Geofencing capability	Yes, RTL on breaching Geo Fence
f.	Altitude Fence	Yes, UAS will not fly above 30 meters AGL.
e.	Packaging	Standard Casing for the RPA and peripherals
f.	Operating Crew	1 or 2 person per system
4	Communication Link Characteristics	Specification/Remarks
a.	C - 2 Link	• Transmit control commands from GCS to UAV
		• Transmit telemetry data from UAV to GCS
b.	Frequency Band	2.4 Ghz up-link and down-link
5	Ground Control Station (GCS) Characteristics	Specification/Remarks
a.	GCS Hardware	Skydroid H12
b.	Display	• Geographic Map along with UAV location
		• Flight plan
		• Display of important parameters:
		• Battery capacity
		• Distance from home
		• Waypoints
c.	Maps	• Artificial Horizon indicating UAV attitude
		Standard google maps with selectable layers of satellite, street view.
d.	User Controls	• Set altitude of the UAV
		• Waypoint navigation
		• Dynamic flight plan adjustment
e.	Pre - flight checks	• Integrated electronic pre-flight checklist
f.	Others	• Essential telemetry data logging.
6	Other Parameters	Specification/Remarks
a.	Hand Holding / troubleshooting	After sales support, the team would be available on phone as well as electronic email.
b.	DGCA operational guidelines	Support to customer in complying with the DGCA operational guidelines
c.	Warranty	1 Year