

# Rotomotion SR20 VTOL UAV Spec Sheet

<b>Length</b>	1220 mm, 48"
<b>Width</b>	380 mm, 15"
<b>Height</b>	560 mm, 22"
<b>Main Rotor (M/R) Diameter</b>	1750 mm, 69"
<b>Tail Rotor (M/R) Diameter</b>	255 mm, 10"
<b>Dry Weight</b>	7.5 kg, 16.5lbs.
<b>Energy Capacity</b>	8AH or 16Ah battery system
<b>Motor</b>	1300W electric motor
<b>Climb Rate</b>	122 mpm, 400 fpm (AFCS regulated)
<b>Maximum Speed</b>	50 kph, 31 mph (AFCS regulated)
<b>Endurance:</b>	12 to 24 min (depending on battery configuration)
<b>Maximum Payload</b>	4.5 kg, 10 lbs. (depending on options, altitude, fuel load)
<b>Telemetry</b>	802.11-based, 800m, 87yards, LOS range (other systems available)
<b>Safety Controller</b>	72Mhz, 730m, 800yards, LOS range

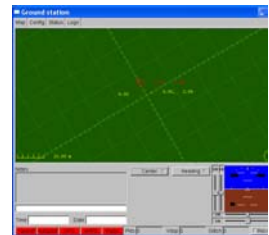


## Fully Autonomous VTOL Flight

The Series 20 UAV is capable of fully autonomous flight with a safety operator to perform takeoff and landing and to engage and disengage the autonomous flight control system (AFCS). The AFCS utilizes an advanced stable-hover (Patent Pending) control system. The helicopter has several modes of operation:

- **velocity command mode (VC-Mode):** the helicopter position is commanded by the safety operator using proportional velocity commands. For example, the cyclic control stick becomes the velocity control stick in velocity command mode. The stick commands the helicopter to move in the commanded direction at a speed proportional to the amount of stick movement on the transmitter.
- **way point route plan mode (WAY-Mode):** helicopter flies a preprogrammed series of way points (coordinates, heading, altitude, speed and other way point attributes)
- **command mode (CMD-Mode):** the helicopter is commanded in an ad-hoc fashion by sending it guidance commands from another computer. These commands can be given by a human operator or by another computer system.

The AFCS is easily interfaced using a C/C++ library. This library provides full-bandwidth telemetry data and services to command and control the UAV.



*Illustration 1: Moving map and AI display on the ground control station*



*Illustration 2: Video and operating control display.*



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