



SKOOKUM UAV

SK1000 UAV Helicopter Autopilot System

Commercial Flight Controller System for Unmanned Helicopters

SK-1000

UAV Helicopter Autopilot Flight Controller

SK1000 is a commercial and industrial autopilot flight controller designed specifically for unmanned helicopters. The SK1000 uses high quality Pinpoint™ MEMS sensors, DUAL ARM 32 bit M4 processors, and DUAL IMU for maximum performance and redundancy. It includes features such as automatic take-off and landing, fully autonomous mission planning with waypoints, semi-autonomous flight with pilot-assist, all controlled via our SK-GCS (Ground Control Station).



Dimensions L x W x H	72 x 55 x 16mm
Weight	65g (1)
Operating temp	-40c to +70c
Operating voltage	5.5v – 16.5v input, max 300ma
Gyro sensor	Pinpoint™ MEMS sensors (2)
Processor	DUAL ARM 32 bit M4
Memory/Logging	4GB flash SD card
Inertial Measurement Unit	DUAL IMU
Environmental conditions	Shielded against EMI, RFI, static shock
Flight accuracy	+/- 1.0m horizontal, +/-0.5m vertical
Backup system	<ul style="list-style-type: none"> • Backup IMU in case of main IMU failure • Backup gyro sensor in case of main gyro sensor failure • Backup barometric altitude sensor in case of main GPS sensor failure • Internal battery backed clock
Input/output	<ul style="list-style-type: none"> • One GPS port • One telemetry port • Four UART serial ports, one with optional RS232 (3) • Two I2C ports (3) • One Canbus port (3) • Sixteen PWM servo ports • Up to four external analog inputs • Up to four pulse type inputs • Up to two radio control style receiver inputs • Micro USB port plus external USB/LED extension • Second power input, isolated from servo noise

- (1) Up to 230g depending on anti-vibration base mount option
 (2) Very low drift and high vibration resistance
 (3) With controllable 150ma and 5.0v supply for accessories

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www.skookumuav.com
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Subject to alterations
 Illustrations are not binding



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SK-GPSU

GPS/Altimeter Module

The SK-GPSU module includes position, 3D compass, and barometric altitude sensors. It also features a huge patch antenna for maximum signal reception.



Dimensions L x W x H	55 x 55 x 16mm
Weight	66g
Operating temp	-30c to +80c
Operating voltage	3.3 to 5.5v
Processor	ARM 32 bit M4
Environmental conditions	Shielded against EMI, RFI, static shock
Sensors	Position, 3D compass, barometric altitude sensors
Flight accuracy	GPS+GLONASS with 1.0m accuracy

SK-TELEM1

Telemetry Communication Radio* (Non-video)

2.4GHz ground and air telemetry communication radio for range up to 15km (3)



Dimensions L x W x H	75 x 50 x 15mm
Weight	75g
Operating temp	-30 to +80c
Operating voltage	5.0 – 16.0v input
Current draw	150 – 1500ma
Data transmission frequency	2.4GHz 1-watt (1)
Data transmission rate	115kbs – 250kbs (2)
Antenna	6db dipole
Radio range	Up to 15km line-of-sight (3)

** Telemetry Communication radio set includes one USB version for ground station and one airborne version for UAV*

(1) Optional 900MHz 1-watt available

(2) Optional 12Mbps available on request

(3) 15km is practical range. True limit will be obstacle clearance and height of ground station antenna



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SK-PITOT1

Double-ended Helicopter Pitot Airspeed Sensor

Front and rear air speed indicator.



Dimensions L x W x H	<ul style="list-style-type: none"> • 30 x 20 x 15mm sensor module • 15cm pitot tubes
Weight	35g
Operating voltage	5.0v
Operating temp	-25c to +80c
Current draw	3ma
Speed range	-300 to +300 km/hr

SK-FUEL1

Fuel Flow Sensor

Allows monitoring of total fuel usage during flight. Compatible with gasoline fuel.



Dimensions L x W x H	55 x 40 x 30mm
Weight	85g
Operating voltage	5.0 – 25.0v
Operating temp	-30c to +80c
Current draw	25ma
Flow range*	0.15 – 0.90 litres per minute

** Fuel quantity is tracked by integrating total fuel flow since takeoff*



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SK-LZR11C

Laser Altimeter

Provides precision automatic take-off and landing, as well as terrain avoidance.

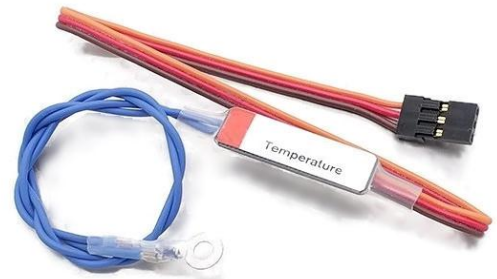


Dimensions L x W x H	57 x 30 x 50mm
Weight	35g
Operating voltage	5.0v +- 0.5v
Operating temp	-15c to +40c
Current draw	200ma
Update rate	20Hz
Range	0.1 – 100m with 1cm resolution and 10cm accuracy

SK-T1

Thermocouple Temperature Sensor

Allows monitoring of engine temperature during flight.



Dimensions L x W x H	<ul style="list-style-type: none"> • 10 x 20 x 5mm sensor module • 20cm thermocouple cable
Weight	15g
Operating voltage	4.0 – 8.40v
Current draw	5ma
Temperature range	30c to 230c



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SK-GCS

Ground Control Station Software

Professional ground control software with Primary Flight Display (PFD), comprehensive real time aircraft monitoring, and offline maps (does not require an internet).

Features:

- Fully automatic take-off and landing
- Full autonomous mission planning with waypoints, flight planner wizard, and actions
- One-key-fail safe return-home function
- Full autopilot mode, semi-autopilot mode with pilot assist, or manual control via traditional RC controller
- Built-in video display
- Built-in auto-rotation algorithm in case of engine power lost
- Watt-hour monitoring for electric helicopters, or fuel usage monitoring for gasoline helicopters
- Redundant safety features built-in

