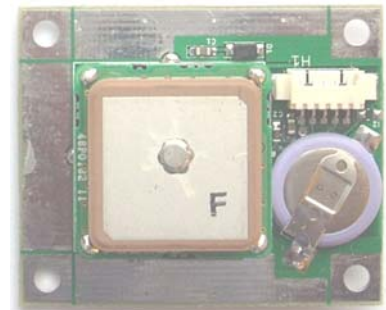


Furuno GPS Module



FEATURES

- 16 Channels
- Small Size: 1.590" x 1.320" X 0.45"
- Light Weight: 17g
- Horizontal Accuracy: 15m
- Max Navigation Update Rate: 1 Hz
- Cold Start: 52 s
- Hot Start: 9 s
- Acquisition Sensitivity: -133dBm
- Tracking Sensitivity: -139dBm

APPLICATION

- Global Positioning for small Unmanned Aerial Vehicle systems

DESCRIPTION

The Furuno GPS module is a light-weight GPS receiver with custom interface board. It was designed to easily interface with the Kestrel autopilot onboard small UAVs. With a weight less than 17g and size less than 1.6in square, the Furuno GPS module is ideal for small UAV applications.

➤ Kestrel is a trademark of Procerus Technologies.

TYPICAL APPLICATION

Figure 1 demonstrates how the Furuno GPS module is interfaced with the Kestrel autopilot system. The GPS is powered through the Kestrel Autopilot. A copper ground plane can be placed under the GPS unit to improve satellite reception. The copper plane does not need to be grounded to the GPS.

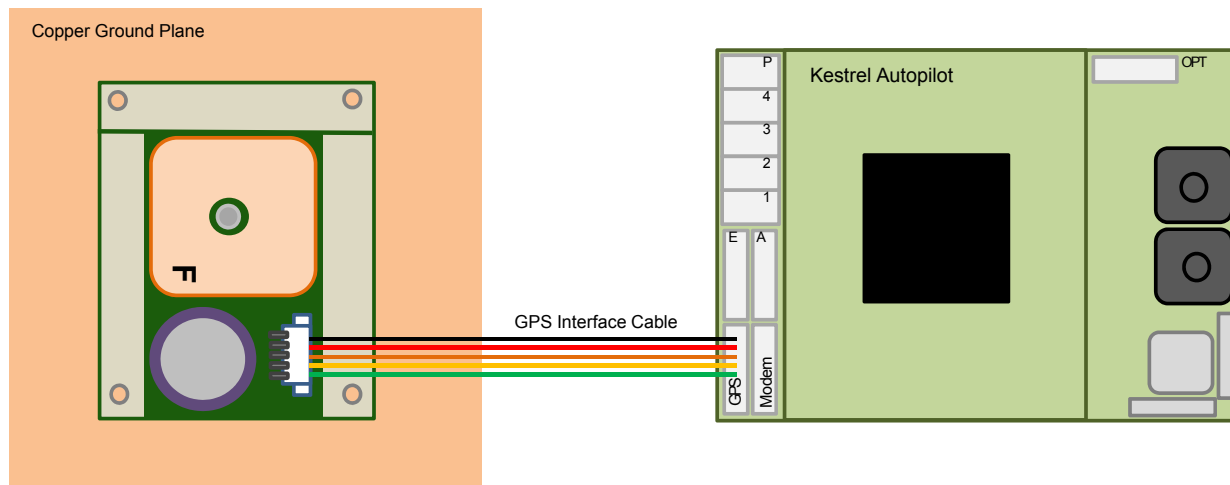


Figure 1 - Typical use of the Furuno GPS module.

ABSOLUTE MAXIMUM RATINGS

Input Supply Voltage0.0 to 3.6V
 Operating Temperature Range-30°C to 80°C
 Storage Temperature Range.....-40°C to 85°C
 Humidity5% to 95%, no condensing

Stresses above those listed under the Absolute Maximum Ratings may cause permanent damage to this device. This is a stress rating only; functional operation of this device at these or any other conditions above those indicated in the operational section of this specification are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Input Supply Voltage (Vcc)		2.9	3.3	3.6	V
Interface (C-MOS)			3.3		V
Sustained supply current (Icc)			22		mA

PHYSICAL CHARACTERISTICS

Parameter	Conditions	Typ	Units
Dimensions		1.590" x 1.320" X 0.45"	Inches
Weight		17	Grams

PORT DESCRIPTIONS

This section describes the associated input and output connection points on the Furuno GPS module. Figure 2 shows the connection points on the bottom surface of the Furuno GPS module.

Serial Port (H1): A five wire GPS cable connects GPS serial port (H1) to the GPS port of the Kestrel autopilot. This cable is made by splicing two 5 wire Molex “pigtailes” together (available from Procerus). Pigtail wire colors should match between spliced wires. A description of the GPS serial port pinout is shown in Table 1. Pin 1 is identified in Figure 2 with label “1” of header H1.

Pin	Data Direction	Description
1	Supply	GND
2	Supply	VCC (+3.3V)
3	In	GPS Rx
4	Out	GPS Tx
5		Not Connected

Table 1 Serial Port Pinout

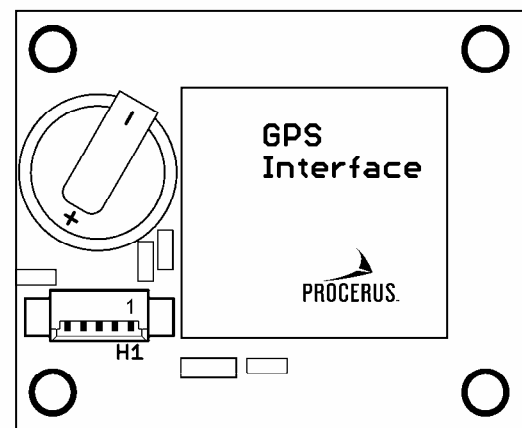


Figure 2 Connection Points On Bottom Surface.

Connectors: Machine crimped five pin 1.25mm Molex pigtailes with 12” wire lengths are available for sale from Procerus Technologies. These machine crimped pigtailes are recommended for use as they are generally more reliable than hand crimped pigtailes. See the Related Parts section for part numbers.

RELATED PARTS

Part Number	Manufacturer	Description	Comments
MOLEX5POS-L12	Procerus Technologies	5 PIN 1.25MM 12" WIRE PIGTAIL CONNECTOR	5 pin pigtails for video or channel select connection
51021-0500	Molex/Walden	5 pin Molex connector housing.	CONN HOUSING 5POS 1.25MM
50058-8000	Molex/Walden	CONN TERM FEMALE 28-32AWG TIN	Crimp Terminal (Used For Hand Crimping)