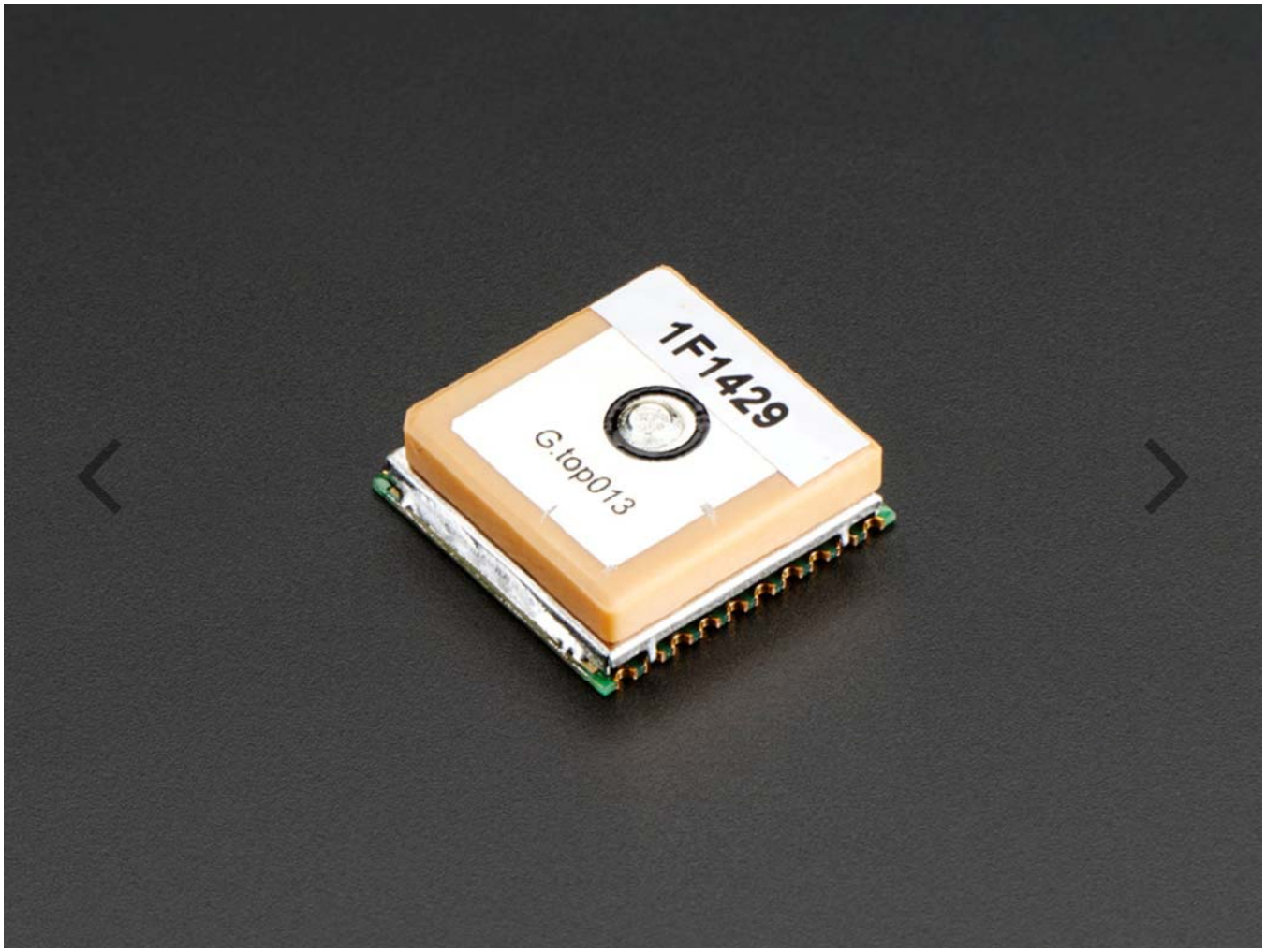
SENSORS / LOCATION (GPS)

Ultimate GPS Module - 66 channel w/10 Hz updates - MTK3339 chipset

PRODUCT ID: 790



DESCRIPTION

For those who want to integrate our awesome Ultimate GPS module into their own projects, we now have the raw sub-module available. Don't be fooled by it's small size, this is a very sensitive, high quality GPS module with all the extras you could want and more at under 6 grams!

It's got everything you want and more:

- -165 dBm sensitivity, 10 Hz updates, 66 channels
- Ultra low power usage: 20mA current draw while tracking
- 3.3V operation,
- RTC battery-compatible
- Built-in datalogging
- PPS output on fix
- We have received reports that it works up to ~32Km altitude (the GPS theoretically does not have a limit until 40Km)
- Internal patch antenna + connection for optional external active antenna
- Fix status output
- Ultra small size: only 16mm x 16mm x 5mm and 4 grams

...all for under $30!

This module is built around the MTK3339 chipset, a no-nonsense, high-quality GPS module that can track up to 22 satellites on 66 channels, has an excellent high-sensitivity receiver (-165 dB tracking!), and a built in antenna. It can do up to 10 location updates a second for high speed, high sensitivity logging or tracking. Power usage is incredibly low, only 20 mA during navigation.

Two features that really stand out about version 3 MTK3339-based module is the external antenna functionality and the the built in data-logging capability. The module has a standard ceramic patch antenna that gives it -165 dB sensitivity, but when you want to have a bigger antenna, you can attach an active antenna to the ANT pad. The module will automatically detect the active antenna and switch over!

The other cool feature of the new MTK3339-based module (which we have tested with great success) is the built in datalogging ability. Since there is a microcontroller inside the module, with some empty FLASH memory, the newest firmware now allows sending commands to do internal logging to that FLASH. The only thing is that you do need to have a microcontroller send the "Start Logging" command. However, after that message is sent, the microcontroller can go to sleep and does not need to wake up to talk to the GPS anymore to reduce power consumption. The time, date, longitude, latitude, and height is logged every 15 seconds and only when there is a fix. The internal FLASH can store about 16 hours of data, it will automatically append data so you don't have to worry about accidentally losing data if power is lost. It is not possible to change what is logged and how often, as its hardcoded into the module but we found that this arrangement covers many of the most common GPS datalogging requirements.

We've received reports from customers that have tested this version of the Ultimate GPS module in a high-altitude balloon, and it kept fix up to ~32km! There is a (theoretical, untested) firmware limit of 40Km. However, we provide no guarantee that it will work in all HAB's.

This item is just the GPS module itself, no breakout board or other components included. The module can be soldered by hand without too much difficulty, we have it in our Eagle Library (GPS_FGPMMOPA6H) to make it easy to use. If you're interested in getting started fast, check out our Ultimate GPS breakout board which comes all assembled and tested.

We have a nice fancy Arduino library for GPS usage, with background parsing and can set and query the built in GPS logging capability (called LOCUS). A full tutorial for the breakout is also available, which has tons of information about the module, how to use the data logger and more