

# GA-001

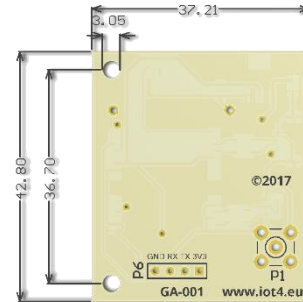
*Concurrent GNSS development module for Arduino and Raspberry Pi*

## Highlights

- Concurrent reception of up to 3 GNSS (GPS, Galileo, GLONASS, BeiDou)
- Industry leading  $-167$  dBm navigation sensitivity
- Combines low power consumption and high sensitivity
- Superior anti-spoofing and anti-jamming
- UART, USB interfaces

## Features

Receiver type	72-channel u-blox concurrent M8 engine GPS/QZSS L1 C/A, GLONASS L10F, BeiDou B11, Galileo E1B/C SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN
Nav. update rate	Single GNSS: up to 18 Hz 2 Concurrent GNSS: up to 10 Hz
Accuracy Position	2.5 m CEP
Acquisition	SBAS 2.0 m CEP Cold starts: 26 s Aided starts: 2 s Reacquisition: 1 s
Sensitivity	Tracking & Nav.: $-167$ dBm Cold starts: $-148$ dBm Hot starts: $-157$ dBm
Assistance GNSS	AssistNow Online AssistNow Offline (up to 35 days) AssistNow Autonomous (GPS only, up to 3 days) OMA SUPL & 3GPP compliant
Oscillator	TCXO
RTC crystal	Built-In
Anti-jamming	Active CW detection and removal. Extra onboard SAW band pass filter
Memory	Onboard ROM
Supported antennas	Active and passive
Raw Data	Code phase output
Odometer	Integrated in navigation filter
Geofencing	Up to 4 circular areas
Spoofing detection	Built-in
Signal integrity	Signature feature with SHA256



## Environmental data, quality & reliability

Operating temp	$-40^{\circ}$ C to $85^{\circ}$ C
Storage temp	$-40^{\circ}$ C to $85^{\circ}$ C
RoHS compliant (lead-free)	

## Electrical data

Supply voltage	2.7 V to 3.6 V from P6, 5V from USB
Power Consumption	22 mA @ 3 V (continuous) 6.2 mA @ 3 V (Power Save mode, 1 Hz)
Backup Supply	1.4 V to 3.6V, CR2032 battery

## Interfaces

Serial interfaces	<b>1 UART TTL</b>
Protocols	1 USBV2.0 full speed 12 Mbit/s NMEA, UBX binary, RTCM

## Connectors

USB	microUSB
UART	4 pin TTL (3.3V), 9600 baud default (GND,RX, TX,3V3 in if no USB power, out when have USB supply)
Antenna	SMA