**NEO-6 module series**

u-blox 6 ROM-based GPS receivers

**Objective Specification**

**Product description**

The NEO-6 module series brings the high performance of the u-blox 6 positioning engine to the miniature NEO form factor. These receivers combine a high level of integration capability with flexible connectivity options in a small package. This makes them perfectly suited for mass-market end products with strict size and cost requirements.

**Highlights**

- u-blox 6 position engine with over 2 million effective correlators featuring acquisition down to 1 s, -147 dBm coldstart sensitivity and 5 Hz update rate
- Intelligent, user configurable power management for radically lower power consumption
- Supports u-blox’ AssistNow Online and AssistNow Offline A-GPS services and is OMA SUPL compliant
- 1.8 V supply voltage for low power consumption (NEO-6G)
- UART, USB, DDC (I2C compliant) and SPI interfaces
- Miniature 16.0 x 12.2 x 2.4 mm package
- Pin compatible with NEO-5G, NEO-5Q and NEO-5M
- RoHS compliant

**Features**

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Mechanical data

- Dimensions: 16.0 x 12.2 x 2.4 mm
- Weight: 1.6 g

Electrical data

- Power supply: 2.7 to 3.6 V (NEO-6Q/6M)
  1.8 V (NEO-6G)
- Power consumption:
  115 mW @ 3.0 V (Continuous, Max Perf.)
  51 mW @ 3.0 V (Power Save mode @1 Hz)
  72 mW @ 1.8V (Continuous, Max Perf.)
  32 mW @ 1.8V (Power Save mode @1 Hz)
- Backup power: 1.4V to 3.6V, 25 μA
- Antenna type: Active and passive

Interfaces

- Serial interfaces: 1 UART
  1 USB V2.0 full speed 12 Mbit/s
  1 DDC (I²C compliant)
  1 SPI (NEO-6G/Q)
- Digital I/O: Configurable time pulse
- Serial and I/O voltages: 2.7 – 3.6 V
- Protocols: NMEA, UBX binary

Receiver performance data

- Receiver type: 50-channel u-blox 5 engine
- GPS L1 C/A code
- SBAS: WAAS, EGNOS, MSAS, GAGAN
- Max. update rate: 5 Hz
- Accuracy:
  - Position: 2.5 m CEP
  - SBAS: 2.0 m CEP
- Acquisition:
  - NEO-6G/Q: Cold starts: 28 s
  - NEO-6M: Warm starts: 28 s
  - Aided starts: < 3 s
- Sensitivity:
  - NEO-6G/Q: Tracking: –160 dBm
  - NEO-6M: Reacquisition: –160 dBm
  - Cold starts: –147 dBm
- Timing accuracy:
  - RMS: 30 ns
  - 99%: < 60 ns
  - Granularity: 21 ns
- Time pulse: Configurable 0.25 Hz to 1 kHz
- A-GPS: Supports AssistNow Online and AssistNow Offline, OMA SUPL compliant
- Operational limits:
  - Velocity: 500 m/s (972 knots)
  - Altitude: 50,000 m
  - Operating temp.: –40°C to 85°C
  - Storage temp.: –40°C to 85°C

Ordering information

- NEO-6G-0: ROM-based u-blox 6 GPS Module 1.8 V with TCXO
- NEO-6M-0: ROM-based u-blox 6 GPS Module with crystal
- NEO-6Q-0: ROM-based u-blox 6 GPS Module with TCXO

Available as samples and tape on reel (250 pieces)

Contact us

- HQ Switzerland: +41 44 722 7444
  info@u-blox.com
- EMEA: +41 44 722 7444
  info@u-blox.com
- Americas: +1 703 483 3180
  info_us@u-blox.com
- APAC – Singapore: +65 6734 3811
  info_ap@u-blox.com
- China: +86 10 68 133 545
  info_cn@u-blox.com
- Japan: +81 3 5775 3850
  info jp@u-blox.com
- Korea: +82 02 542 0861
  info kr@u-blox.com
- Taiwan: +886 2 2657 1090
  info_tw@u-blox.com

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