

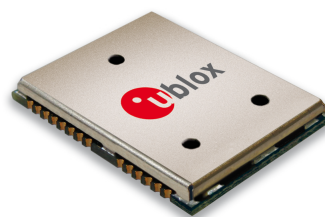
LEA-6 module series

u-blox 6 GPS receivers

Objective Specification

Product description

The LEA-6 module series brings the high performance of the u-blox6 position engine to the industry standard LEA form factor. These versatile, stand-alone receivers combine an extensive array of features with flexible connectivity options. Their ease of integration results in fast time-to-market for a wide range of automotive, consumer and industrial applications.



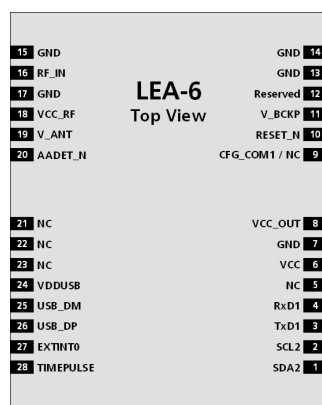
Highlights

- u-blox6 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
- UART, USB and DDC (I²C compliant) interfaces
- GALILEO ready (LEA-6H)
- Industry standard 22.4 x 17 mm form factor
- Pin compatible with LEA-5 family
- RoHS compliant

Features

| Series | Power | Memory | Function | | | | | | Antenna | | Input / Output | | | | | |
|--------|-------------------|--------------------------------|-----------------|-------------------|------|----------------|----------|------------------|----------------|--------------------|----------------|-----|-----|----------------------------------|-------------|-------------------|
| | Voltage range [V] | Programmable (Flash) FW update | Power Save mode | Capture & Process | TCXO | Dead Reckoning | Raw data | Precision Timing | Antenna supply | Antenna supervisor | UART | USB | SPI | DDC (I ² C compliant) | Reset input | Configuration pin |
| LEA-6H | 2.7 - 3.6 | • | • | | • | | | | • | • | 1 | 1 | | 1 | • | |
| LEA-6S | 2.7 - 3.6 | | • | | • | | | | • | • | 1 | 1 | | 1 | • | 1 |
| LEA-6A | 2.7 - 3.6 | | • | | | | | | • | • | 1 | 1 | | 1 | • | 1 |

Mechanical data



Electrical data

| | |
|---------------------|--|
| Power supply | 2.7 to 3.6 V |
| Power consumption | 115 mW @ 3.0 V (Continuous, Max Perf.) 51 mW @ 3.0 V (Power Save mode @1 Hz) |
| Backup power | 1.4 V to 3.6 V, 25µA |
| Antenna power | External or internal VCC_RF |
| Antenna supervision | Integrated short-circuit detection and antenna shutdown, open circuit detection is supported with ADET_N input and little external circuitry |

Ordering information

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|----------|--|
| LEA-6H-0 | Progr. u-blox 6 GPS Module with TCXO |
| LEA-6S-0 | ROM-based u-blox 6 GPS Module with TCXO |
| LEA-6A-0 | u-blox 6 ROM-based GPS Module with crystal |

Available as samples and tape on reel (250 pieces)

Interfaces

| | |
|-------------------------|--|
| Serial interfaces | 1 UART 1 USB V2.0 full speed 12 Mbit/s 1 DDC (I ² C compliant) |
| Digital I/O | Up to 2 configurable time pulse 1 EXTINT input 1 Reset 1 config. pin (LEA-6A, LEA-6S) |
| Serial and I/O voltages | 2.7 to 3.6 V |
| Protocols | NMEA, UBX binary |

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Receiver performance data

| | | |
|--------------------------|---|---------------------|
| Receiver type | 50-channel u-blox 6 engine GPS L1 C/A code GALILEO L1 open service (with upgrade) SBAS: WAAS, EGNOS, MSAS, GAGAN | |
| Max. update rate | 5 Hz (ROM version), 2 Hz (Flash version) | |
| Accuracy ¹ | Position | 2.5 m CEP |
| | SBAS | 2.0 m CEP |
| Acquisition ¹ | LEA-6H/6S | LEA-6A |
| | Cold starts: | 28 s |
| | Warm starts: | 28 s |
| | Aided starts ² : | 1 s |
| | Hot starts: | 1 s |
| Sensitivity ³ | LEA-6H/6S | LEA-6A |
| | Tracking: | -160 dBm |
| | Reacquisition: | -160 dBm |
| | Cold starts: | -147 dBm |
| Timing accuracy | RMS | 30 ns |
| | 99% | < 60 ns |
| | Granularity | 21 ns |
| Time pulse | 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 | |

¹ All SV @ -130 dBm

² Dependent on aiding data connection speed and latency

³ Demonstrated with a good active antenna

Contact us

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