



AMY-5M

u-blox 5 ROM-Based GPS Receiver

Objective Specification

Overview

AMY-5M is the GPS industry's smallest standalone receiver. This fully tested ROM-based solution features the high performance u-blox 5 positioning engine and has been developed for easy design. This module requires no host integration, resulting in extremely short times to market.

AMY-5M offers four different serial interfaces. The receiver integrates a standard crystal, which brings very fast acquisition and tracking performance at an economical price. Furthermore, AMY can be assembled on a 2-layer PCB, which leads to additional cost savings.

AMY-5M's miniature size allows integration into the smallest portable devices. Advanced jamming suppression mechanisms and innovative RF architecture ensure maximum performance even in hostile signal environments.



AMY-5M
6.5 x 8 x 1.2 mm

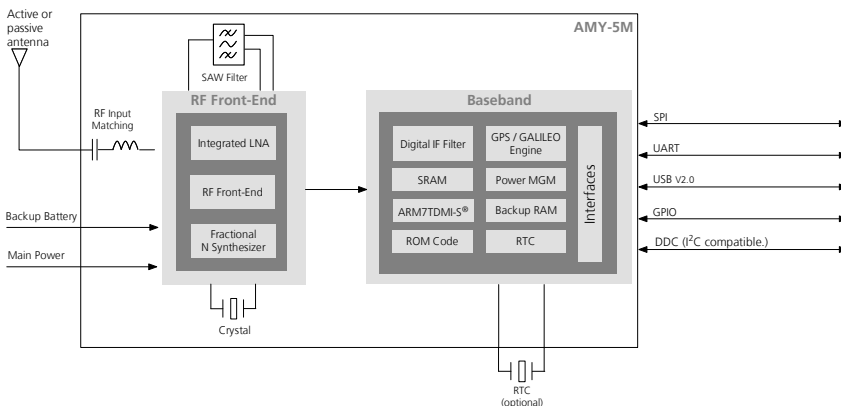
*your position
is our focus*



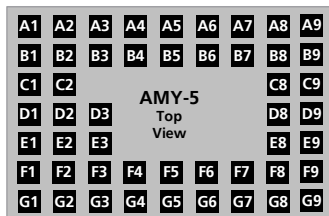
Highlights

- Industry's smallest GPS receiver module: 6.5 x 8 x 1.2 mm
- No additional components
- No host integration required
- 50-channel u-blox 5 engine with 1 million correlators
- Operates at 1.8V and 3.0V
- Variety of interfaces: 1 UART, 1 USB, 1 DDC (I²C compliant), 1 SPI
- Assisted GPS supported

Block Diagram



Mechanical Data



| | |
|-------------------|-----------------------|
| Housing | LGA50 |
| Dimensions | 8.0 mm x 6.5 x 1.2 mm |

Receiver Performance Data

| | | |
|--------------------------------|---|----------------------|
| Receiver Type | 50-channel u-blox 5 engine GPS L1 C/A code SBAS: WAAS, EGNOS, MSAS, GAGAN | |
| Max. Update Rate | 4 Hz | |
| Accuracy¹ | Position | 2.5 m CEP |
| | SBAS | 2.0 m CEP |
| Acquisition¹ | Cold starts: | 32 s |
| | Warm starts: | 32 s |
| | Aided starts ² : | <1 s |
| | Hot starts: | <3 s |
| Sensitivity³ | Tracking: | -160 dBm |
| | Reacquisition: | -160 dBm |
| | Cold starts: | -143 dBm |
| A-GPS | Supports AssistNow Online and AssistNow Offline, OMA SUPL compliant | |
| Operational Limits | Velocity: | 515 m/s (1000 knots) |

¹ All SV @ -130 dBm

² Dependent on aiding data connection speed and latency

³ Demonstrated with a good active antenna

RF Data

| | |
|-----------------------|-----------------------|
| LNA | Built-In |
| RTC Input | 32.768 kHz (optional) |
| Internal Clock | 26.0 MHz Crystal |

Electrical Data

| | |
|----------------------------------|---|
| Supply Voltages | Single voltage supply: 1.8V or 2.5-3.6V Dual voltage supply: 1.4V / 1.8V |
| Digital I/O Voltage Level | 1.65 - 3.6 V |
| Power Consumption | 64 mW (tracking & navigating) |
| Backup Supply | Voltage range: 1.4 to 3.6 V |
| Antenna Supervision | Short and open circuit detection supported with external circuit |
| Antenna Type | Active and Passive |

Interfaces

| | |
|--------------------------|--|
| Serial Interfaces | 1 UART 1 USB V2.0 Full Speed 12 Mbit/s 1 DDC (I ² C compliant) 1 SPI |
| Digital I/O | Configurable time pulse 2 EXTINT interrupt inputs 10 Configuration Pins |
| Protocols | NMEA, UBX binary |

Environmental Data

| | |
|------------------------|---------------|
| Operating Temp. | -40°C to 85°C |
|------------------------|---------------|

Ordering Information

| | |
|-----------------|------------------------------|
| AMY-5M-0 | AMY-5M – u-blox 5 GPS Module |
|-----------------|------------------------------|

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