# PmGnssUblox

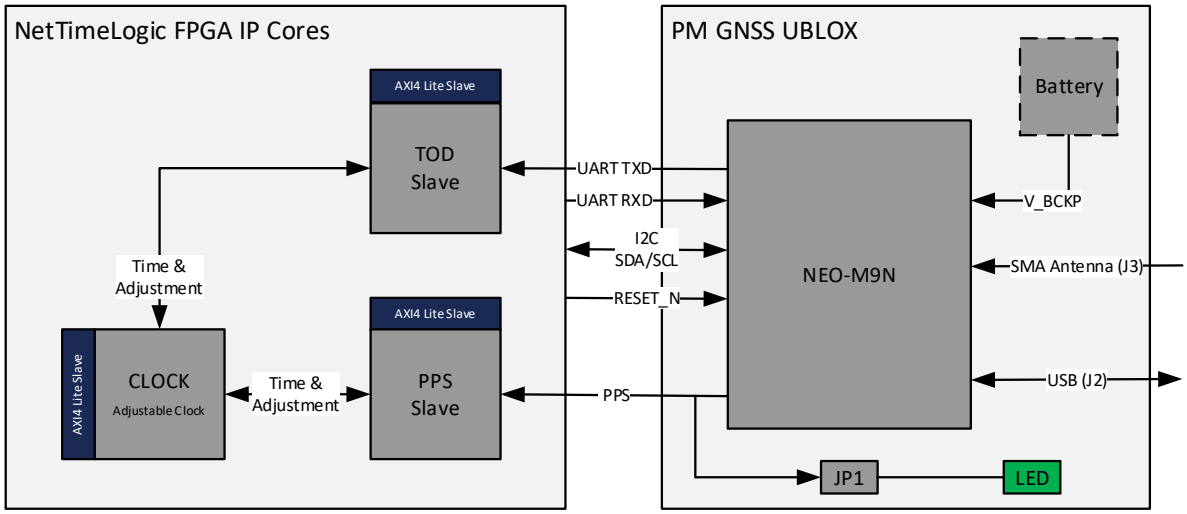
This Pmod™ compatible module contains the u-blox NEO-M9N GNSS receiver. The receiver has different possibilities to get accessed. An UART and I2C interface as well as a PPS are available on the Pmod™ connector. In addition, it offers a direct access via a USB. This connection can be used to configure the module via the u-center. The module can be battery backed which allows to maintain known GNSS information.

## Key Features:

- u-blox NEO-M9N standard precision GNSS module
- Different interfaces to access the module (UART, I2C or USB)
- UART, I2C, Pulse Per Second (PPS) and a Reset are available on the Pmod™ connector
- Passive or active antenna
- PPS indication on LED
- Compatible NetTimeLogic IP-Cores: TOD Slave, PPS Slave Adjustable Clock

## Module:

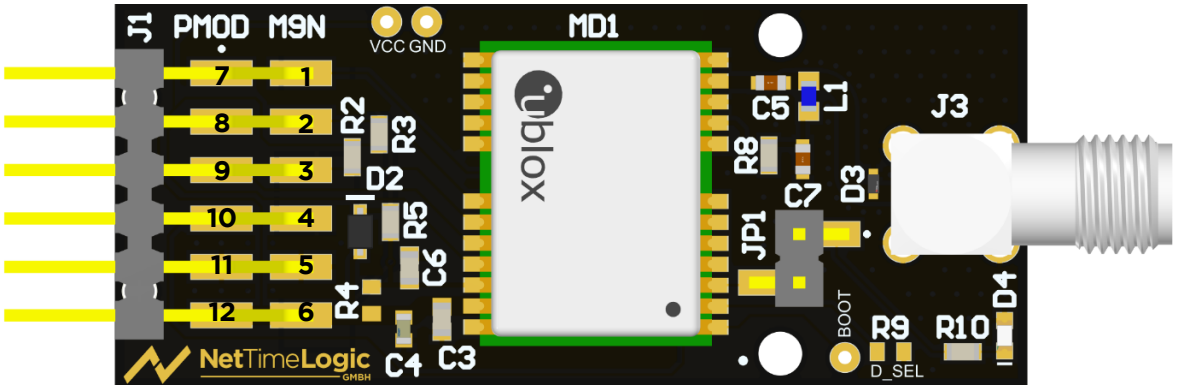
## Block Diagram:



## Specification:

| | |
|---|---|
| GNSS Module | u-blox NEO-M9N module |
| UART | 3V3 TTL UART with configurable baudrate (default 38400 baud, 8 bits, no parity bit, 1 stop bit) |
| I2C | I2C line on 3V3 with pull-ups on the board (Address: 0x42) |
| Config | Jumper (JP1) placed → PPS on D4 visualized |
| Battery | CR1026 |
| Power | ~100mA @ 3.3V (dep. on conditions with passive antenna) |
| Output | max. 200mA @ ~3.2V on J3 for an active antenna |

## Pmod™ Pins and Module Overview:




| Pin | Signal | Direction | Description |
|---|---|---|---|
| | | | Pmod™ Header (J1) |
| 1 | RESET_N | In | RESET_N to the RESET Pin of the NEO-M9N (Pin 8) |
| 2 | SDA | In/Out | SDA/SPI CS Pin of the NEO-M9N with 4.7 kOhm Pull-Up (Pin 18) |
| 3 | SCL | In/Out | SCL/SPI CLK Pin of the NEO-M9N with 4.7 kOhm Pull-Up (Pin 19) |
| 4 | NC | - | Not connected |
| 5 | GND | | GND connection to the carrier board |
| 6 | VCC | | 3.3V supply from the carrier board |
| 7 | NC | - | Not connected |
| 8 | RXD | In | RXD/SPI MOSI Pin of the NEO-M9N (Pin 21) |
| 9 | TXD | Out | TXD/SPI MISO Pin of the NEO-M9N (Pin 20) |
| 10 | PPS OUT | Out | PPS output from the TIMEPULSE Pin of the NEO-M9N (Pin 3) |
| 11 | GND | | GND connection to the carrier board |
| 12 | VCC | | 3.3V supply from the carrier board |
| | | | SMA Connector (J3) |
| J3 | Antenna | In | Antenna connector for active or passive antennas |
| | | | USB Connector (J2) |
| J2 | USB Con | In/Out | Micro-USB connector to access the module directly via the vendor tool (u-center). The module must be powered via J1. |


NetTimeLogic GmbH
Synchronization Solutions

Strassburgstrasse 10
8004 Zürich
Switzerland

contact@nettimelogic.com
www.nettimelogic.com
www.aionyx.ch