

simpleRTK3B Fusion

Includes:

- 1 simpleRTK3B Fusion board (UM981)



More info about the product!



simpleRTK3B Fusion SKU is: AS-RTK3B-UM981-L125-NH-00

Get a discounted bulk price on this product for orders of 50 units or more. Contact us at info@ardusimple.com to get a quote.

Description

DISCLAIMER: This product is for advanced users only. Sensor fusion use and configuration might not be plug and play and requires integration work. Check the documentation and ask questions if necessary before making your purchase.

simpleRTK3B Fusion is a standalone board that allows to evaluate triple band RTK GNSS technology with Inertial Sensor Fusion. It's based on Unicorecomm UM981 module and is fully compatible with Arduino and STM32 Nucleo platforms, as a shield.

Good to know:

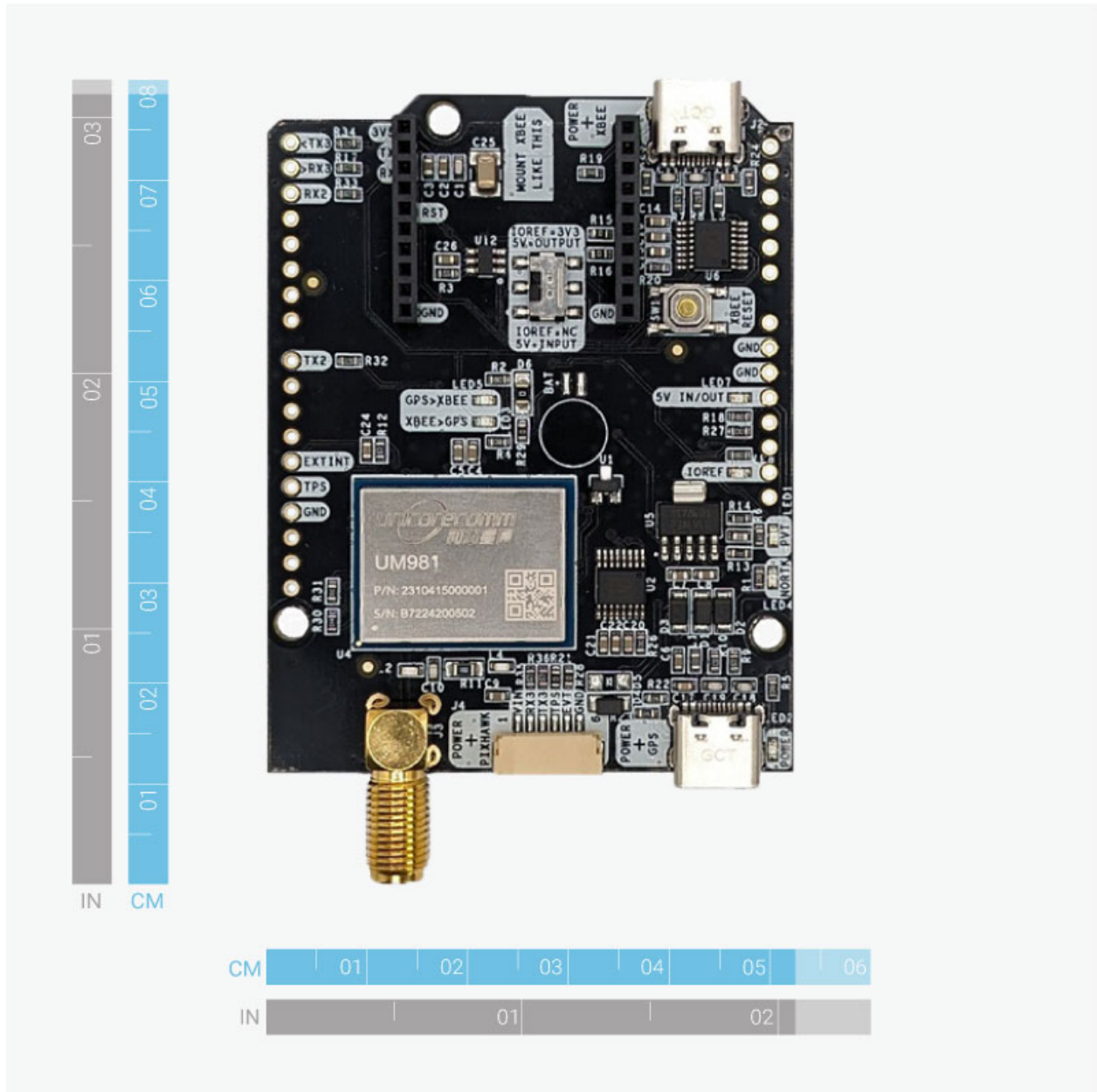
- This product is compatible but doesn't include multiband GNSS antenna, which is necessary to use the product.
- The module will not give good performance with a standard GNSS antenna, requires a multiband one.
- This product is compatible but doesn't include radio, which is necessary to connect to another base.
- This board is recommended if you want to test Unicore Communications UM981 performance.
- This product only works as rover.
- This board has the option of mounting a backup battery to speed up the Time to First Fix. Note that this will not speed up the Time to First RTK fix, fresh satellite data is needed for that. V_BCKP will not store IMU calibration data as in other boards in the market. The module will restart calibration after every boot. If you want the board with the onboard V_BCKP battery mounted you can add the [Hand Soldering Service](#) to your cart.

Specifications

UM981 features

- Millimeter level precision:
 - <1cm with a base station up to 35km
 - <1cm with NTRIP up to 35km
 - <1.2m in standalone mode
 - <0.6m standalone with SBAS coverage
- Update rate
 - Default: 1Hz
 - Maximum fusion update rate: 50Hz
- Sensor fusion
 - Tilt: 10 mm + 0.7 mm/°tilt (accuracy < 2.5 cm within 30°)
 - INS only: < 5 % of the distance travelled without GNSS signals
 - IMU RAW data: 100Hz
- Multi band: L1, L2 and L5 support, 1408 hardware channels
- Multifrequency and Multiconstellation:
 - GPS: L1C/A L1PY L2C L2PY L5
 - GLONASS: L1CA L2CA L2P L3 CDMA
 - Galileo: E1 E5a E5b E5 E6 HAS
 - BeiDou: B1I B1C B2a B2b B2I B3I
 - QZSS: L1C/A L2C L5
 - Navic: L5
 - SBAS: WAAS, EGNOS, MSAS, GAGAN, SDCM (L1)
- Start-up times:
 - Cold start: <35s
 - Warm start: <10s
 - Dynamic models: tractor, car
 - Re-acquisition: 1s
- Protocols
 - Unicore Format
 - NMEA 0183
 - RTCM v3
- Base and Rover functionality
- Operating temperature Range: -40 to +85 deg C
- Certification: CE
- Documentation: RED, RoHS

Image Gallery



Pinout

TOP VIEW

Description Name

GPS TX3 3.3V level TX3

GPS RX3 3.3V level RX3

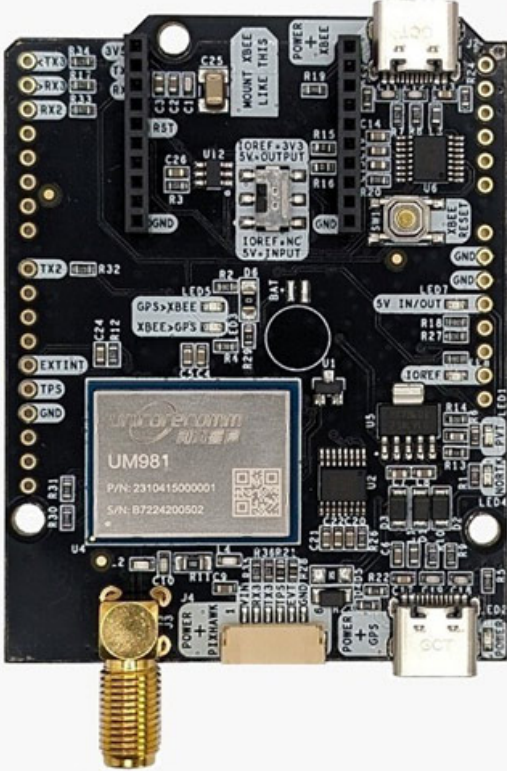
XBee TX/GPS RX2 3.3V level RX2

XBee RX/GPS TX2 3.3V level TX2

Event input for timestamp 3.3V level EXTINT

Timepulse out 3.3V level TPS

Ground **GND**



Name Description

GND Must connect to GND

GND Must connect to GND

5V_IN 4.5-5.5V optional input voltage
Can also be 5V output via switch

IOREF Can be set to 3.3V output by using the onboard switch

Documentation

how to configure
Unicore modules

<https://www.ardusimple.com/how-to-configure-unicore-um980-um981-um982/>

simpleRTK3B Fusion includes free basic technical support. Contact info@ardusimple.com for more information.

Data and descriptions in this document are subject to change without notice. Product photos and pictures are for illustration purposes only and may differ from the real product appearance.