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.

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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.
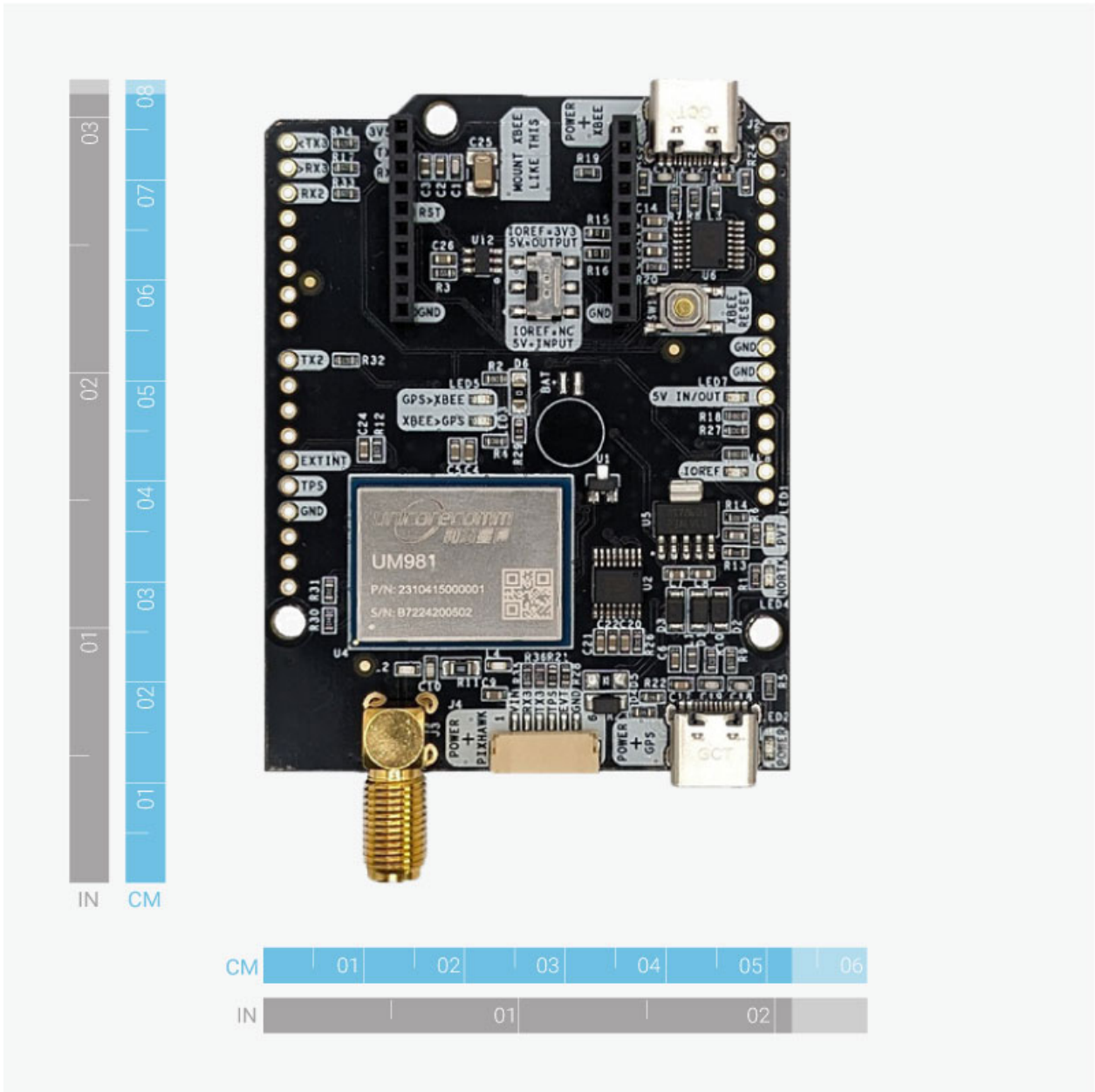
Good to know:
- This product is compatible but doesn't include multiband GNSS antenna, which is necessary to use the product.
- The module will not give good performance with a standard GNSS antenna, requires a multiband one.
- This product is compatible but doesn't include radio, which is necessary 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.

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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
  - With maximum performance: up to 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
  - Re-acquisition: 1s
- Protocols
  - Unicore Format
  - NMEA 0183
  - RTCM v3
- Base and Rover functionality
- Operating temperature Range: -40 to +85deg
- Certification: CE
- Documentation: RED, RoHS

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Image Gallery

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Pinout

TOP VIEW

Description	Name
GPS TX3 IOREF level	TX3
GPS RX3 IOREF level	RX3
Xbee RX/GPS RX2 IOREF level	RX2
Xbee TX/GPS TX2 IOREF level	TX2
Event Input for timestamp 3.3V level	EXTINT
Inverted 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 output via swithch
IOREF	1.8-5V, defines voltage of TX/RX. Can also be 3.3V output via switch

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Documentation

User Guide	https://staging.ardusimple.com/user-guide-simplertk3b-fusion/
how to configure Unicore modules	https://staging.ardusimple.com/how-to-configure-unicore-um980-um981-um982/

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

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