simpleRTK2B Fusion

Includes:
- 1 simpleRTK2B Fusion board (ZED-F9R)

More info about the product!

simpleRTK2B Fusion has several different configurations to provide you with flexibility:

SKU	Variation Name
AS-RTK2B-FUSIONF9R-L1L2-NH-00	Without headers
AS-RTK2B-FUSIONF9R-L1L2-HS-00	Headers soldered (+26€)

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.

This document was last modified on 2025/03/06
Modifications reserved - Data subject to change without notice
© All rights reserved. ArduSimple, 2025

www.ardusimple.com
More information: info@ardusimple.com
Page 1 of 6

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.

simpleRTK2B Fusion is a standalone board that allows to evaluate dual band RTK GNSS technology with Inertial Sensor Fusion. It can output centimeter location, but also full vehicle's attitude (roll, pitch, yaw) thanks to it's integrated IMU. It's based on **u-blox ZED-F9R** module and can be used standalone. Or connected with Arduino, Ardupilot / Pixhawk (JST connector), Raspberry Pi, Nvidia Jetson and STM32 Nucleo platforms, as a shield. It can provide every second with up to 30 RTK positions and attitude angles.
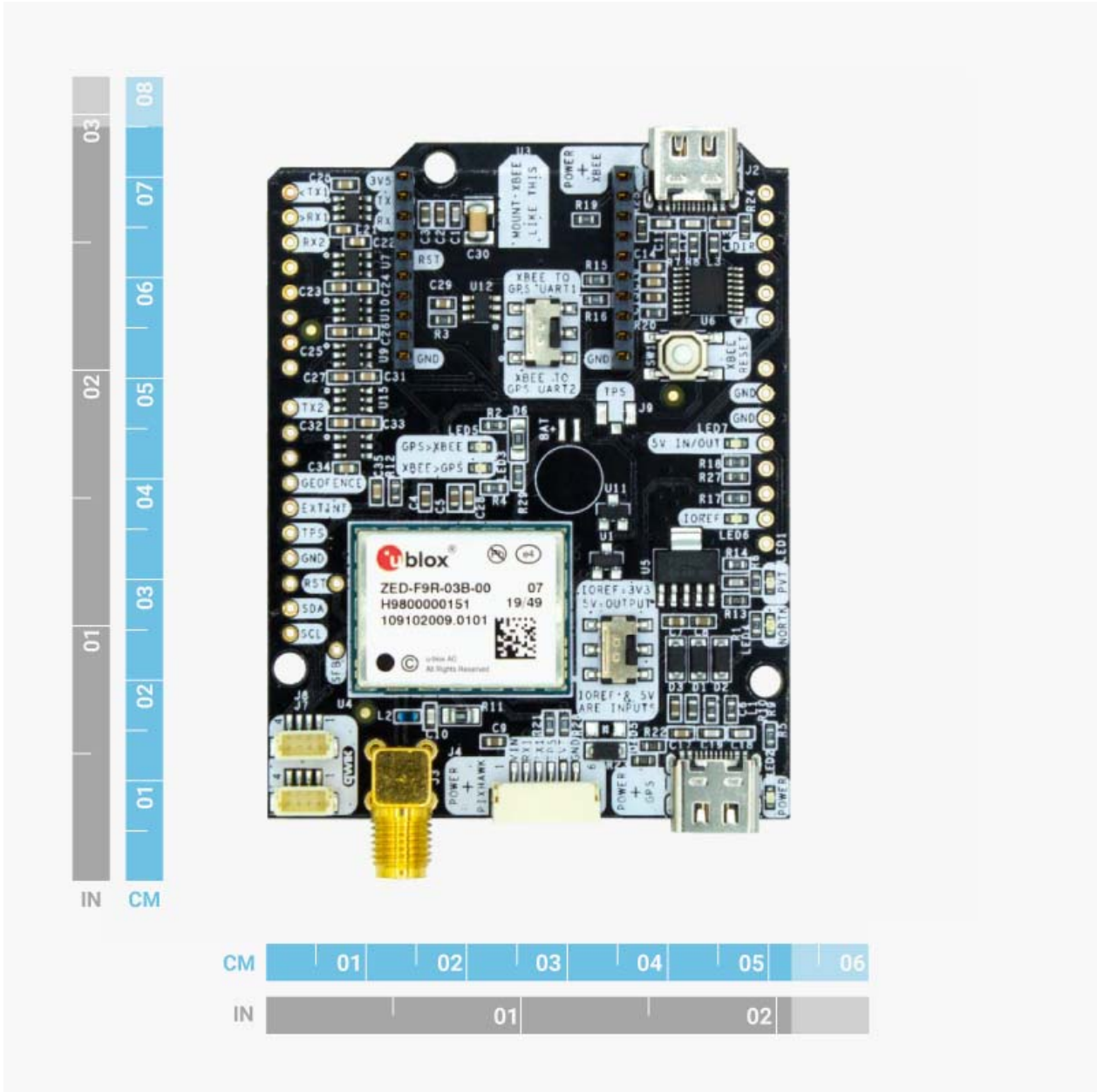
Good to know:
– This product is compatible but doesn't include a multiband GNSS antenna, of which 2 are necessary to use the product.
– The module will not give good performance with a standard GNSS antenna, requires a L1/L2/E5b antenna.
– This product doesn't have base station functionality.
– This board is recommended if you want to test **u-blox ZED-F9R** performance.
– The onboard XBee socket can be used to expand functionality with Plugin accessories (MR/LR/XLR radios, Bluetooth, WiFi, Dataloggers, Ethernet, RS232, Canbus, L-Band, 4G/3G/2G).
– You can use the Shield for Second Plugin socket to connect 2 plugins at the same time.
– Compatible with Ardusimple plastic case
– This board has the option of mounting a backup battery to speed up the Time to First Fix and store sensor calibration data after a short power down. Note that this will not speed up the Time to First RTK fix, fresh satellite data is needed for that. If you want the board with the onboard V_BCKP battery mounted you can add the Hand Soldering Service to your cart.
– If you don't provide RTK corrections to this module, it will have the same performance as u-blox ZED-F9L.
– This product has the same performance as ZED-F9K.

This document was last modified on 2025/03/06
Modifications reserved - Data subject to change without notice
© All rights reserved. ArduSimple, 2025

www.ardusimple.com
More information: info@ardusimple.com
Page 2 of 6

Specifications

ZED-F9R features

- Centimeter level precision
  - <1cm with a base station up to 35km
  - <1cm with NTRIP up to 35km
  - <4cm with SSR corrections
  - <1.5m in standalone mode
  - <0.9m standalone with SBAS coverage
- Update rate
  - Default: 1Hz
  - Maximum GNSS update rate: 4Hz
  - Maximum fusion update rate: 30Hz
- Multi band: L1, L2 and E5b support
- Multifrequency and Multiconstellation:
  - GPS: L1C/A L2C
  - GLONASS: L1OF L2OF
  - Galileo: E1-B/C E5b
  - BeiDou: B1I B2I
  - QZSS: L1C/A L2C
  - SBAS: WAAS, EGNOS, MSAS, GAGAN and SouthPAN
- Start-up times:
  - First position fix: 25 seconds (cold), 2 seconds (hot)
  - First RTK fix: 35 seconds (cold)
- Dynamic models: ground vehicle, slow-moving service robots and electric scooters (drones, boats and pedestrians not supported)
- RAW data output in UBX format
- No Base Station function, only RTK Rover
- Operating temperature Range: -40 to +85degC
- Documentation: RED, RoHS

This document was last modified on 2025/03/06
Modifications reserved - Data subject to change without notice
© All rights reserved. ArduSimple, 2025

www.ardusimple.com
More information: info@ardusimple.com
Page 3 of 6

Image Gallery

This document was last modified on 2025/03/06
Modifications reserved - Data subject to change without notice
© All rights reserved. ArduSimple, 2025

www.ardusimple.com
More information: info@ardusimple.com
Page 4 of 6

Pinout

TOP VIEW

Description	Name
GPS TX1 IOREF level	TX1
GPS RX1 IOREF level	RX1
XBee TX/GPS RX2 IOREF level	RX2
XBee RX/GPS TX2 IOREF level	TX2
Configurable fence output 3.3V level	FENCE
Event input for timestamp 3.3V level	EXTINT
Timepulse out 3.3V level	TPS
Ground	GND
I2C Data line pulled-up 3.3V	SDA
I2C Clock line pulled-up 3.3V	SCL

Name	Description
DIR	Optional direction input 3.3V
WT	Optional wheel sensor input 3.3V
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	1.8-5V, defines voltage of TX/RX. Can also be 3.3V output via switch

This document was last modified on 2025/03/06
Modifications reserved - Data subject to change without notice
© All rights reserved. ArduSimple, 2025

www.ardusimple.com
More information: info@ardusimple.com
Page 5 of 6

Documentation

User Guide	https://www.ardusimple.com/rtk-ins-simplertk2b-f9r-hookup-guide/
Download CAD models	https://www.ardusimple.com/wp-content/uploads/2024/08/AS-RTK2B-FUSIONF9R-L1L2-NH-00.step
	https://www.ardusimple.com/wp-content/uploads/2024/08/AS-RTK2B-FUSIONF9R-L1L2-HS-00.step

simpleRTK2B 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.

This document was last modified on 2025/03/06
Modifications reserved - Data subject to change without notice
© All rights reserved. ArduSimple, 2025

www.ardusimple.com
More information: info@ardusimple.com
Page 6 of 6

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[ArduSimple](#):

[AS-RTK2B-FUSIONF9R-L1L2-NH-00](#)