

RS-IMU-001-01 / 01 Overview

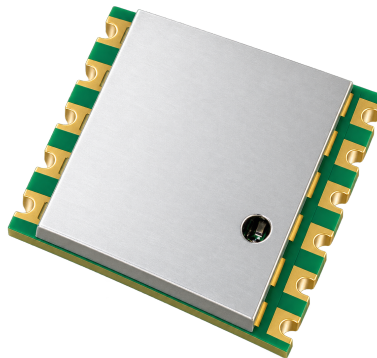
Board-Level 9-Axis IMU

Brand: ROGERSENSE

Model: RS-IMU-001-01

Document version: 1.0

Hardware / firmware revision: TBD



Product presentation. Delivered configuration: TBD.

Key functions

Parameter	Value / conditions	Rev.
Sensing channels	3-axis acceleration, angular rate and magnetic field pp.4-7	1.0
Acceleration range	+/-16 g p.5; typical parameter table	1.0
Angular-rate range	+/-2000 deg/s p.6	1.0

Delivery configuration

Configuration and delivery contents are confirmed in the integration project; no online sample offer.

Application scope

Reference specifications for project evaluation. Final delivery is subject to the agreed hardware, firmware, accessories and acceptance conditions. Presentation imagery does not define manufacturing geometry.

RS-IMU-001-01 / 02 Technical data

Documented values and operating conditions. Conflicting or unavailable values are marked TBD.

Parameter	Value / conditions	Rev.
Sensing channels	3-axis acceleration, angular rate and magnetic field pp.4-7	1.0
Acceleration range	+/-16 g p.5; typical parameter table	1.0
Angular-rate range	+/-2000 deg/s p.6	1.0
Roll / pitch accuracy	0.2 deg, manufacturer typical value p.6; application validation required	1.0
Heading accuracy	1 deg p.7; 9-axis fusion, calibrated magnetic field, no magnetic interference	1.0
Output rate	0.2-200 Hz; default 10 Hz p.8; actual payload / baud-rate combination to verify	1.0
Interfaces	UART TTL and I2C pp.7,9,12	1.0
UART baud rate	4800-230400 bit/s; default 9600 p.7; confirm firmware revision	1.0
Supply	3.3-5 V DC p.8	1.0
Operating temperature	-40 to +85 deg C p.8	1.0

RS-IMU-001-01 / 02 Technical data (continued)

Parameter	Value / conditions	Rev.
Board footprint	15.24 x 15.24 mm Web description; height / drawing revision TBD	1.0
Acceleration resolution / noise	0.0005 g/LSB; 0.75-1 mg RMS at 100 Hz	1.0
Acceleration zero / temperature drift	+/-20-40 mg static horizontal; +/-0.15 mg/deg C over -40 to +85 deg C	1.0
Gyroscope resolution / noise	0.061 deg/s/LSB; 0.028-0.07 deg/s RMS at 100 Hz	1.0
Gyroscope zero / temperature drift	+/-0.5-1 deg/s static; +/-0.005-0.015 deg/s/deg C	1.0
Acceleration / gyro bandwidth	5-256 Hz; configuration-specific	1.0
Magnetic range / resolution	+/-2 Gauss; 6.67 nT/LSB	1.0
Angle range / resolution	Roll +/-180 deg; pitch +/-90 deg; 0.0055 deg resolution, horizontal	1.0
Heading conditions	9-axis 1 deg after calibration without magnetic interference; 6-axis dynamic error accumulates	1.0
I2C clock	Hardware 400 kHz; simulated I2C 100 kHz	1.0
Startup / working current	1000 ms; 11.5 mA at 5 V	1.0
Sleep current / source discrepancy	Table: 10.05 uA at 5 V; introduction: 15-35 uA. Delivered condition: TBD	1.0
Storage temperature	-40 to +100 deg C	1.0

RS-IMU-001-01 / 03 Electrical interface

Pin / terminal definitions

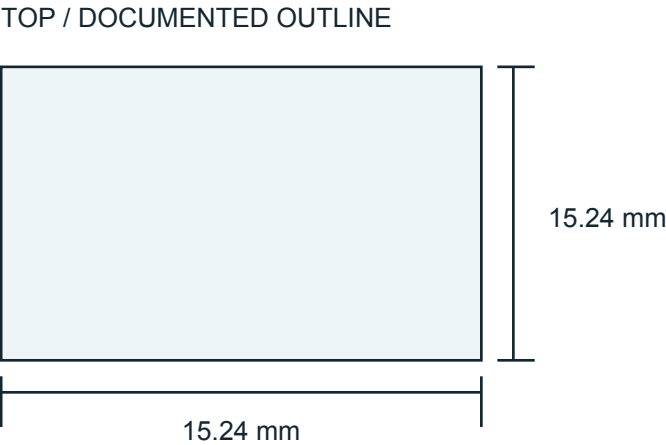
Parameter	Value / conditions	Rev.
VCC / GND	Pins 2,11 / pins 5,8 p.9, V250806 pin numbering only	1.0
UART RX / TX	Pins 3 / 4 p.9; orientation must follow source drawing	1.0
I2C SDA / SCL	Pins 9 / 10 p.9	1.0
D0 / pin 1	Analog / digital / wake-high	1.0
D1 / pin 6	Analog / digital / angle reference	1.0
D3 / pin 7	Analog / digital / X-angle alarm	1.0
D2 / pin 12	Analog / digital / reset / X+ alarm	1.0

Electrical conditions

Item	Value / condition	Rev.
Pin viewing orientation	TBD unless identified in the approved wiring drawing	1.0
Harness / logic compatibility	TBD; confirm against the delivered hardware before wiring	1.0
EMC / isolation / load derating	TBD; component ratings do not establish system ratings	1.0

RS-IMU-001-01 / 04 Mechanical & installation

Dimensions / unit: mm



Unit: mm. Not to scale. Overall height / exact holes / datum: TBD.

Item	Value / condition	Rev.
A / B board dimensions	15.24 / 15.24 mm	1.0
C / D / E drawing dimensions	2.54 / 12.7 / 2 mm	1.0
Castellation diameter / pin pitch	0.9 / 2.54 mm	1.0
Board revision / final tolerances	TBD / TBD; current manual V250806	1.0

Installation control

Confirm mounting datum, clearance, connector access and the exact delivered revision. Drawing spans listed in the table require an approved drawing to establish orientation. Unspecified geometry and tolerances: TBD.

RS-IMU-001-01 / 05 Protocol & software

Native interfaces and protocol

Item	Value / condition	Rev.
Serial / bus	UART TTL, 4800-230400 bit/s, default 9600; I2C	1.0
Output schedule	0.2-200 Hz, default 10 Hz; startup 1000 ms	1.0
Packet bytes / register map	TBD; bind to the delivered firmware and manufacturer SDK	1.0
Calibration	Magnetic calibration and interference control required for heading performance	1.0
Assembly constraints	Avoid PCB routing under magnetometer; observe original handling guidance	1.0

ROGERSENSE integration services

MQTT connectivity, OTA firmware updates, gateways and cloud platform are available for delivery. Model-specific controllers, interfaces and adaptation are agreed per project. These services do not imply native MQTT or OTA support inside every sensor.

Platform: <https://iot.rogersense.com>

Item	Value / condition	Rev.
Gateway / firmware build	TBD	1.0
MQTT topic / payload / credentials	TBD	1.0
OTA signing / rollback / access control	TBD	1.0

RS-IMU-001-01 / 06 Delivery & verification

Configuration and acceptance record

Item	Value / condition	Rev.
Document version	1.0	1.0
Brand / model	ROGERSENSE / RS-IMU-001-01	1.0
Hardware / firmware revision	TBD	1.0
Serial number / calibration report	TBD	1.0
Approved mechanical drawing	TBD	1.0
Inspection / acceptance report	TBD	1.0
Packing / harness / accessories	TBD; confirm the ordered configuration	1.0
Certification / compliance evidence	TBD unless identified in the delivery agreement	1.0

Open items

Every TBD item and any conflicting supply, accuracy, dimensional or revision requirement must be resolved in the approved delivery configuration. Calibration conditions, wiring orientation, installation datum and application suitability require project verification.

After-sales

After-sales follows the existing ROGERSENSE policy and the approved order. <https://rogersense.com/returns>