

iAGNSS

Atomic Clock with integrated Geodetic Class GNSS Receiver

The iAGNSS is a compact module, combining a high precision atomic clock and a geodetic class GNSS receiver to allow the GNSS receiver to operate with a most stable clock.

- Integrated Atomic Clock of type CSAC SA.45s
- Integrated GNSS receiver "all-constellations / all-frequencies" of type NovAtel OEM 729
- UART RS422 / RS232 and Ethernet TCP/IP / UDP interfaces; SYNC-I/Os via RS422 level
- EMI/EMC protection
- Power supply: 10...34 V DC, reverse polarity protection

Applications of iAGNSS are operational scenarios, where the GNSS receiver's clock drift shall be minimized even in situations, where only a low number of satellites is observable. This allows e.g. a tightly coupled INS/GNSS data fusion to rely on the clock performance without the need to "waste" observations for the estimation of the GNSS clock error.

The iAGNSS can be used like a standard GNSS receiver, but with excellent clock features - it provides all typical data of a high performance GNSS receiver, like PPS output, data output, correction data input (RTK, PPP, DGPS) etc.



Technical Data of iAGNSS (excerpt):

Position accuracy:	$\pm 1 \text{ cm} + 1 \text{ ppm}$ CEP position measurement (in RTK mode, with sufficient GNSS availability)
Atomic Clock Accuracy:	10 MHz clock output to steer the GNSS receiver, $< 1.0\text{E-}11$ @ 1'000 s short term stability (Allan Deviation), $< 9.0\text{E-}10$ / month aging rate (typical)
GNSS capability:	up to all-frequencies / all constellations (GPS, GALILEO, GLONASS, BEIDOU)
Data rate:	up to 100 Hz GNSS data (depending on activated options)
Timing Interface:	Output of PPS (RS422 level) [factory set: from GNSS receiver or from atomic clock; default: from GNSS receiver]
Interfaces:	Output of GNSS data (NMEA 183 or NovAtel binary or ASCII logs), via UART RS422 or Ethernet; interface also usable to apply RTK correction data; directly connectable to systems of iNAT INS/GNSS series
Power Supply:	10 – 34 V DC, 9 W
Weight:	approx. 550 grams
Size:	131 x 134 x 54 mm (W x D x H)
Temperature Range:	-30...+60 °C (heating below +5 °C)

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