

# iNAT-M200/S • iNAT-M200/S-DA

## Multi-Constellation GNSS Receiver in MIL Qualified Enclosure Single and Dual Antenna

**iNAT-M200/S** is a member of the advanced iNAT series (iMAR Navigation and Timing) and one of the most robust GNSS receivers in the market for applications on the surface (land/sea) and in the air. It provides all GNSS data (position, velocity, raw data, status etc.) with an data update rate of up to 100 Hz.



The iNAT-M200/S is delivered with the MS Windows (or LINUX or MacOS alternatively) based configuration software [iXCOM-CMD](#).

This software allows to configure the output interfaces, furthermore all output data can be displayed and stored online on the user's notebook, tablet or process computer. It also allows powerful playback capabilities and provides data export in many formats (csv, xml, GoogleEarth, InertialExplorer, GrafNav). With [iREF-GNSS](#), iMAR also provides a GNSS reference station to provide RTK corrections for centimeter level accuracy on demand.

- robust, compact, light weight system, 750 grams
- GPS, GLONASS, GALILEO, BeiDou etc. (selectable, as option) [Note: no inertial sensors integrated – otherwise see iNAT-M200/Sxx]
- Data output:
  - Position & Velocity with 1 Hz on Ethernet, USB, CAN, UART
  - GNSS raw data with 1 Hz on Ethernet
  - GNSS position, Velocity, raw data up to 100 Hz (option) on UART (only limited by UART Baud rate of integrated NovAtel OEM7xx GNSS engine)
- Full interface compatibility to all other iNAT-M200/Sxx devices (those with integrated inertial sensors)
- interfaces: UART RS232 & RS422 / CAN / Ethernet / USB for realtime data output and UART RS232 or RS422 for DGPS/RTK correction input
- Rugged enclosure with MIL-STD810 qualification and advanced EMI/EMC protection, MIL-STD 461/704 qualified
- up to 32 GByte internal memory ("black-box")
- easy to use, easy to configure; powerful GUI

## Technical Data iNAT-M200/S and iNAT-M200/S-DA (typical, rms):

Position (horizontal plane):	.....	+/- 0.02 m + 1 ppm RTK real-time <sup>1</sup>
		+/- 0.6 m GNSS with SBAS
		+/- 1.5 m CEP GNSS L1
		+/- 1.2 m CEP GNSS L1/L2
Velocity:	.....	0.03 m/s GNSS (max. 515 m/s <sup>2</sup> )
Height:	.....	unlimited range
Internal GNSS Engine:	up to L1L2 GPS, GLONASS, GALILEO, Beidou, SBAS, QZSS; RTK	
Data Processing Rate:	GNSS receiver up to 20 Hz (up to 100 Hz as option); PPS timing accuracy better 10 ns	
Synchronisation:	PPS_OUT (RS422 level, latency < 1 µs)	
Output (options):	USB, CAN, 4 x UART RS232/422, Ethernet 100 Mbit/s; NMEA183 or NovAtel logs, TCP/IP, UDP, NTRIP caster with RTCM 104 rev 3 (can serve as a GNSS reference station as option); PTP / NTP Time Server (since HW rev. 4)	
Connectors:	MIL-C-38999 III (data), SMA (antenna), M12 (Ethernet)	
Integrated Data Storage:	32 GByte (lasts for several days continuous data sampling as "black-box")	
Graphical User Interface:	MS Windows or LINUX or MacOS based software <a href="#">iXCOM-CMD</a> for configuration, visualization, data recording, data converting and playback operation	
Power Supply:	9...34 V DC, two independent and isolated inputs available; reverse and overvoltage protection; approx. 7.5 W; < 14 W for < 1 sec after power-on	
Temperature; MTBF:	-40...+71 °C (outer case temperature) operating, -40...85 °C storage; 50'000 hrs	
Shock, Vibration, Altitude:	60 g, 11 ms, 10...2'000 Hz 5 g rms (endurance); 10...2'000 Hz 2 g rms (operational); 60'000 ft	
Mass, size; IP:	approx. 750 grams, approx. 102 x 112 x 65 mm; IP67 environmental protection	
Deliverables:	- GNSS antenna, cable set (option) - iXCOM-CMD MS Windows or LINUX or MacOS based GUI software (option)	
Options:	- SW-Development Kit with DLL (with SDK under Qt / C) - dual-antenna GNSS based true heading ( <b>iNAT-M200/S-DA</b> ) allows heading determination even at standstill conditions → typ. 0.2° at 1 m baseline - interface to iMAR's <a href="#">iDMN</a> Dynamic Mesh Network for Swarm Communication & Control	

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<sup>1</sup> dependent on satellite constellation, environment and visibility

<sup>2</sup> Export license required for higher velocities

