iNAT-M300/T • iNAT-M300/T-DA

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

iNAT-M300/T 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-M300/T** 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-M300, iMAR also provides a GNSS reference station to transmit RTK corrections for centimeter level accuracy on demand.

Features:

- robust, compact, light weight system, ~850 grams
- all-frequency / all-constellation GNSS (GPS, GLONASS, GALILEO, BeiDou etc.), selectable [Note: No inertial sensors are integrated – otherwise see iNAT-M300/Txx]
- 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 UART Baud rate adjustable
- Full interface compatibility to all other iNAT-M300/uvw devices (those with integrated inertial sensors)
- interfaces: UART RS232 & RS422 / CAN / Ethernet / USB for realtime data output and UART RS232 or RS422 for RTK correction input data (RTCM / RTCA)
- Rugged enclosure with MIL-STD810 qualification and advanced EMI/EMC protection, MIL-STD 461/704 qualified
- up to 128 GByte internal memory ("black-box")
- easy to use, easy to configure; powerful GUI iXCOM-CMD

Technical Data iNAT-M300/T and iNAT-M300/T-DA (typical, rms):

Position (horizontal plane):	+/- 0.02 m + 1 ppm x baseline	RTK real-time [1]
	+/- 0.6 m	GNSS with SBAS
	+/- 1.5 m CEP	GNSS L1
	+/- 1.2 m CEP	GNSS L1/L2/L5…
Velocity:	0.03 m/s	GNSS (max. 515 m/s [2])
Height:	unlimited range	
Internal GNSS Engine:	multi-frequency / multi-constellation: 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); NTP Time Server capability	
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 iXCOM-CMD for configuration, visualization, data recording, data converting and playback operation	
Power Supply:	10...34 V DC, 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	
Qualification:	designed to meet MIL-STD-810G, MIL-STD-461G, NIL-STD-704F and partially DO160G	
Mass, size; IP:	approx. 850 grams, approx. 102 x 112 x 65 mm; IP67 environmental protection	
Part Number:	iNAT-M300/T: 00193-00900-0516	
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 (**iNAT-M300/T-DA**) allows heading determination even at standstill conditions → typ. 0.2° at 1 m baseline - available also as GNSS RTK reference station / base station: **iREF-M300/T** - interface to iMAR's iDMN Dynamic Mesh Network	

iMAR Navigation GmbH • Im Reihersbruch 3 • D-66386 St. Ingbert / Germany
Phone: +49-(0)-6894-9657-0 • Fax: +49-(0)-6894-9657-22
www.imar-navigation.de • sales@imar-navigation.de

[1] dependent on satellite constellation, environment and visibility
[2] Export license required for higher velocities

 15.01.2024 rev. 1.11 DocNo.: DOC230210073