iCOMBANA-II

High efficient and reliable

Combat Navigation System

Static & on-the-move Alignment

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

iCOMBANA-II

iCOMBANA-II is part of the INS product family of inertial systes for navigation and guidance, north finding, stabilization, geo locationing and pointing with fiber optical gyros, that covers applications, which require accuracy, reliability, easy integration, easy operation and an open interface to the user.

- Integrated all frequency / all constellation GNSS receiver or mil grade receiver
- interface to external ERGR and TopStar GNSS
- inertial navigation & surveying system for ground, airborne, naval and other applications
- FOG technology with high angular resolution and robustness; high data rate, low latency
- Integrated VMS / odometer interface
- Interfaces: Ethernet TCP/IP - UDP, CAN, UART RS422, NMEA 0183, iXCOM, ARINC429, HDLC, UBS, ext. GNSS corrections, ext. aiding sources (option)

iCOMBANA-II consists of three accurate fiber optical gyroscopes with lower random walk and better bias day-to-day accuracy than MEMS based systems and and high gyro angular resolution, three servo accelerometers, a powerful strapdown processor and an open and flexible interface, which can be customized on request.

All data like attitude, heading, position, velocity, rates and acceleration are sent with up to 500 Hz via Ethernet or RS422 (UART) or CAN or ARINC429 or HDLC with time stamp related to GPS time or UTC.

The GNSS data are transmitted via the same or alternate interface. All signals are fed via robust connectors of type MIL-C-38999-III.

It's high sensor performance allows the system to perform a gyro compassing at standstill or on-the-move to determine true heading. Furthermore the system is designed for "plug & play" operation and e.g. estimates the wheel sensor's scale factor and misalignment automatically.

The system is delivered with an internal power conditioning according to MIL-STD 461 G and transient protection according to MIL-STD 704F.

With iXCOM-CMD an operation and configuration software, operable under Linux and MS Windows, incl. moving map, waypoint navigation etc. is available. The system is manufactured in Germany and **not covered by ITAR regulations**.

Technical Data iCOMBANA-II

True Heading:	6 mils (0.3°) sec lat [RMS] by gyro compassing 0.5 mils (0.03°) [RMS] with GNSS aiding on the move [1] < 2 mils (0.1°) [RMS] in dual-antenna setup and 2 m antenna baseline (within ~60 sec) Heading drift during short GNSS outages under motion (typical): 0.003 mils/sec	
Position accuracy:	< 2 m / < 0.1 m [CEP50]	GNSS, S/A off / RTK GNSS
	< 0.1 % DT [CEP50]	during short-term loss of GNSS, odometer aided (ground)
Altitude:	< 3 m / 0.06 m [PE50]	GNSS, S/A off / RTK GNSS
	< 0.1 % DT [PE50]	during short-term loss of GNSS, odometer aided (ground)
Attitude Accuracy:	< 0.5 mils [RMS]	with temporarily sufficient GNSS coverage
Angular Rate / Accel. Range:	±450 °/sec , ±10 g	option: +/-18 g
GNSS Aiding:	integrated all-frequency / all constellation GNSS single antenna receiver; option: dual-antenna GNSS receiver or SAASM / M-Code receiver	
Alignment Time:	< 3 min. static alignment time (gyro compassing, i.e. w/o GNSS), duration of inflight alignment depends on motion dynamics (30 sec … 5 minutes) < 30 sec static alignment using stored heading and stored position	
Data Output Rate, Latency:	integer divisor of 500 Hz, internal bandwidth 500 Hz; < 5 ms; NTP output via Ethernet	
Temperature range:	-45 to +65°C operating, -55 to +85°C storage	
MTBF / MTTR; Installation:	35,000 hrs (estimated) / < 30 minutes / installation allowed in all arbitrary orientations	
Shock, Vibration:	16 g, 11 ms; 6 g, 20 ms (operating); 10…2'000 Hz, 4 g rms operational / 6 g rms endurance	
Qualification:	MIL-STD-810G, MIL-STD-461G, MIL-STD-704F; designed partially to meet DO160G	
Power; Start-up-Time:	10...34 V DC, < 25 W, overvoltage protection up to 60 V ; < 15 sec (< 2 min. GNSS cold start)	
Weight / Size / Connector:	< 5.5 kg / approx. 187 x 130 x 261 mm^3 (without connectors) / MIL-STD-38999 III, TNC	
Part-Number:	iCOMBANA-II/T: 00190-04103-050x (x = 6: single antenna =7: /dual antenna setup)	

[1] under sufficient GNSS conditions and motion dynamics (changes of heading required by physical laws for sufficient EKF observations)

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

 17.02.2024 rev. 2.04 DocNo.: DOC240217001