

iIPSC-ANTRAD-103G

Inertial Platform Stabilisation & Control System for Single-Axis Actively Steered Phased Array Antenna Pointing

The iIPSC-ANTRAD-103G carries payloads like radar antennas measuring tilt angles and allows movements of the platform in the azimuth axis.

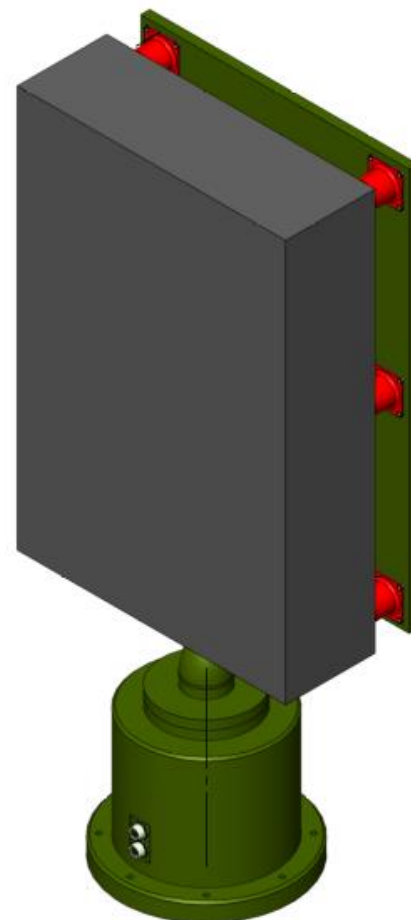
The platform can be levelled by using external actuators (e.g. hydraulic pillars of a vehicle), using the integrated 2D level sensor which provides pitch and roll angles with an accuracy of better than $\pm 0.1^\circ$. The levelling itself is being performed either automatically (closed loop, using the applicants acutators/pillars) or by means of manual re-adjustments. In the latter case, the offsets are provided via the available interfaces.

- Used for standard and phased array antenna pointing and levelling on static and semi-dynamic platforms
- Movements around the azimuth axis up to ± 200 deg (continuous rotation as an option)
- 2-axes tilt angle measurement and correction with 0.1 deg (< 2 mrad) pitch and roll absolute accuracy
- 0.01 deg azimuth resolution at $60^\circ/\text{s}$ dynamic capability
- Interfaces: CAN, Ethernet, RS422
- Option: Integrated Dead Reckoning Navigation System to provide True Heading, Attitude and 3D Position
- Option: Dual-antenna GNSS based True Heading, under motion and even during standstill

The platform carries loads up to 50 kg and allows a movement around the azimuth axis of up to $\pm 200^\circ$.

To provide True Heading information for antenna pointing, the system can be combined with a dead reckoning navigation

system iSULONA-IV which is equipped with a single or dual-antenna GNSS receiver. Alternatively, a magnetometer can be connected as well.



iIPSC-MultiSensorSetup

iIPSC-ANTRAD-103G can be operated by the user's host computer via UART RS422, CAN or Ethernet interface. As an option, an integrated gyro system is available for dynamic 3-axis LOS stabilization of phased array antennas.

For static operation the integrated high precision accelerometers support leveling.

The iPSC-ANTRAD-103G is manufactured in Germany and does not require any export license.

iSULONA-IV Dead Reckoning System
or
iSULONA-II-DA-improved (with dual-antenna GNSS compass and integrated high performance accelerometers for precise static tilt)



Technical Data of iPSC-ANTRAD-103G

Freedom of Azimuth axis:	$\pm 200^\circ$
Azimuth Resolution:	$< 0.01 \text{ deg} (< 0.2 \text{ mrad})$
Azimuth Rate:	$60^\circ/\text{s}$
Drive Technology:	Motor with Gearbox and high resolution encoders
Tilt Measurement Range:	$\pm 15 \text{ deg}$; adapters available as optional accessories for other tilt angles
Tilt Measurement Accuracy:	$< 0.1 \text{ deg} (< 2 \text{ mrad})$
Interfaces:	CAN (up to 1 MBd), Ethernet, RS422 (up to 115.2 KBd),
Output Data Rate:	0.1...100 Hz – adjustable (continuous measurement)
Temperature:	$-30...+65^\circ\text{C}$ (operating, case temperature), others TBD; $-46...+85^\circ\text{C}$ (storage);
Shock:	10 g / 11ms
Environment / MTBF/ MTTR:	IP64 / 25.000 hrs / 30 minutes
Size, Weight:	approx. 1,400 x 300 mm, approx. 35 kg
Power:	24 V DC
Option :	Dead Reckoning System iSULONA-IV or iSULONA-II for orientation and positioning

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

