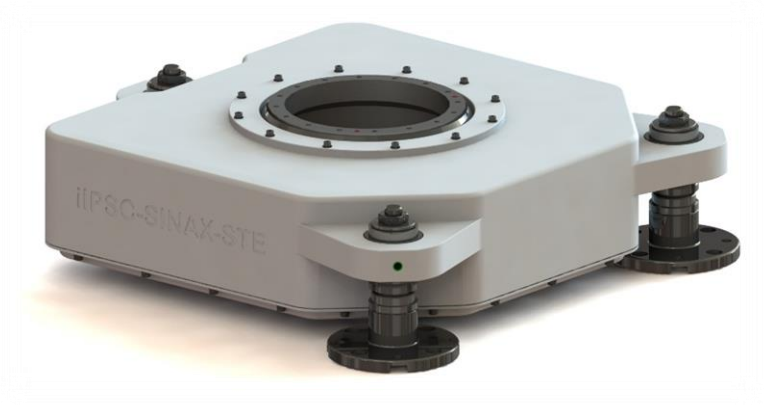
iIPSC-SINAX

Single Axis Gyro Stabilized Naval Platform for up to 300 kg Payload

Key Features



- Surface vehicle based Single-axis gyro stabilized platform for EO/IR imaging, antenna pointing and target tracking with geo-referencing capability
- Light weight system (< 50 kg) to carry a balanced payload up to 300 kg (or customized)
- Integrated direct torque drive for highest resolution, negligible hysteresis and fast dynamics (> 100 °/s, 200 °/s²)
- Cable Through for customer payload; as option optical sliprings for signal transmission and gold plated sliprings for power transmission
- Angular freedom unlimited, but can be limited to protect payload cables if any (by HW and SW)
- Available Features:
  - iSCU: Gyro based Stabilization and Control Unit
  - iOET²: Video Target Tracker
  - iJP: Joystick Panel for control
  - INS/GNSS: geo-referencing with down to centimeter-level accuracy and for blind-pointing support
  - Video Fusion, Image Blending
- Designed to operate in harsh environment on trucks and on naval vessels.

Description

Direct drive brushless servo motors combined with high resolution encoders are ensuring the precise and smooth tracking and positioning of the iIPSC-SINAX.

The motion axis is sealed. The selected materials are corrosion resistant and surface treated to withstand harsh land based, airborne or shipboard environmental conditions. Due to its open architecture, the instrument can be equipped e.g. with phased-array antennas (see the picture on the right, where the iIPSC-SINAX, just mounted on iMAR's hexapod 6D motion simulator, carries a large antenna) or any other payload.

iMAR Navigation GmbH, located in Germany, is designer, manufacturer and system integrator of the entire iIPSC-SINAX (mechanics, electronics, gyro stabilization, INS/GNSS data fusion and motion control). Customer specific adaptations can be provided on request.

Options

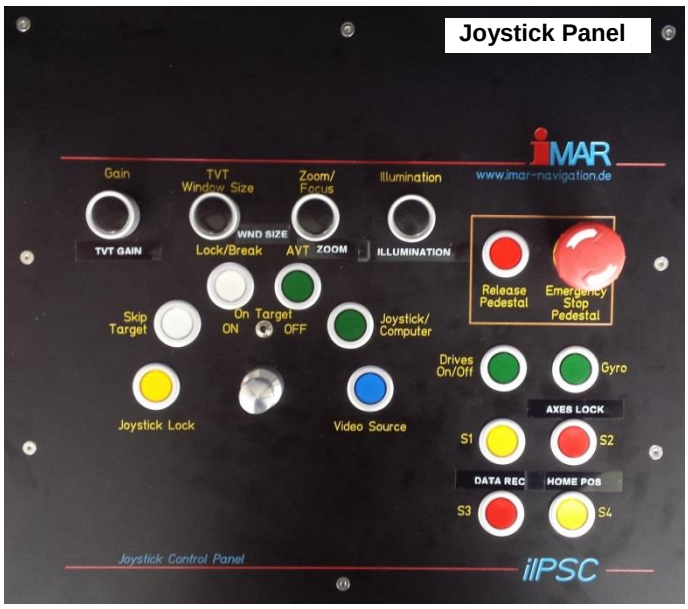
- additional elevation axis assembly enabling multi axes stabilization (see also iIPSC-MSG).
- iOET² Opto Electronic Target Tracking for Auto Video Tracking (with multi target capability and fast 50 measurements / second).
- dynamic gyro stabilization with integrated INS/GPS positioning including true north referencing and geo-referencing for target localization with sub-decimeter performance (iNAT series).
- optional spring isolated base plate to prevent high frequency environmental disturbance from the instrument.
- transportation container

 13.07.2017 rev. 1.03 DocNo.: DOC170713076 technical modifications reserved w/o notice

Specification Summary

General Configuration	Payload:	antenna or other devices (customized)	
	Payload weight, nominal:	up to 300 kg, centered and balanced	
	Payload Signals:	by direct lines / wrapped cables (slip rings as option)	
	Power Consumption:	up to 1'000 W, 24 V DC (depends on acceleration) < 50 W at standstill	
	Platform Weight:	50 kg plus payload	
Performance		**Azimuth**	
	Angular freedom (deg)	continuous (limited to +/- 90 deg as option to protect cable wrap if any)	
	Position		
	• encoder resolution	better 20 bit	
	• resolution shaft	< 5 arcsec	
	• repeatability (static)	< 100 µrad	
	Rate (deg/sec)	> ±100	
	Acceleration (deg/sec^2) [iIPSC-SINAX-50]	> ±200	(50 kg payload; also J dependent)
	Acceleration (deg/sec^2) [iIPSC-SINAX-130]	> ±40	(130 kg payload; also J dependent)
	Torque cont./peak (Nm)	30/60	
Environment	Operating Temperature	0 °C to +45 °C full operational (other on request) 0 °C to +55 °C storage (other on request)	
	Altitude	up to 4'000 m above sea level or tbd	
	Vibration, Shock, EMI, EMC	designed to MIL-STD810F	
Color	White	RAL 9010 (true white)	
Motion Limiters	Adjustable End Stops	The system contains hard stops and software defined end stops	
Mounting Feet and Leveling	Adjustable Feet	The system contains three adjustable mounting feet	
Gyro Stabilization	Stabilization Performance	with iNAT-M200/SLN-STAB < 200 µrad rms (option)	
True North Capability	True Heading Performance	dual-antenna setup or gyro compassing (option)	
Command / Remote Control	via CAN or RS232/422 or Ethernet or/and joystick (see iMAR's iSCU interface)		

Pictures below: Joystick Operator Panel (left) and iNAT-M200/SLC-DA Gyro Stabilization Unit with dual-antenna support (right)



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

