

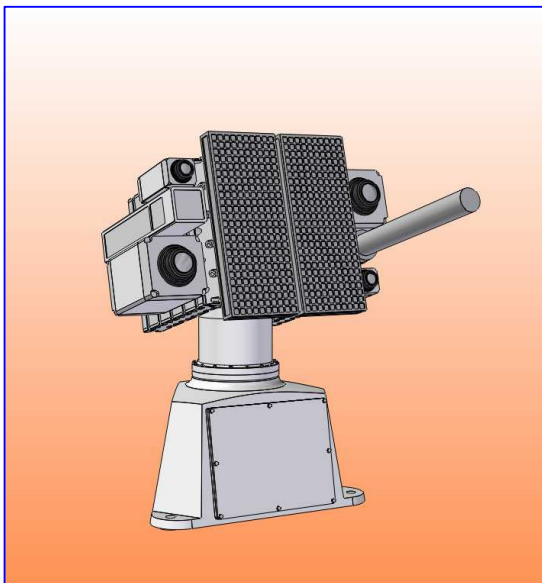
iIPSC-MOD

Inertial Platform Stabilisation & Control System in a Modular Design for Cameras, Image Trackers, Guns, Radars and other Devices

In today's applications in disaster control, police tasks or military observation mobile carriers like helicopters, UAVs, UCAVs, drones, vans, ships or speed boats are used. Main task is to carry a high quality camera (daylight or infra-red) and a Radar observation system, a laser pointer / laser designator, a gun or even a missile launch system to allow best observation and protection from the on-board or ground control station.

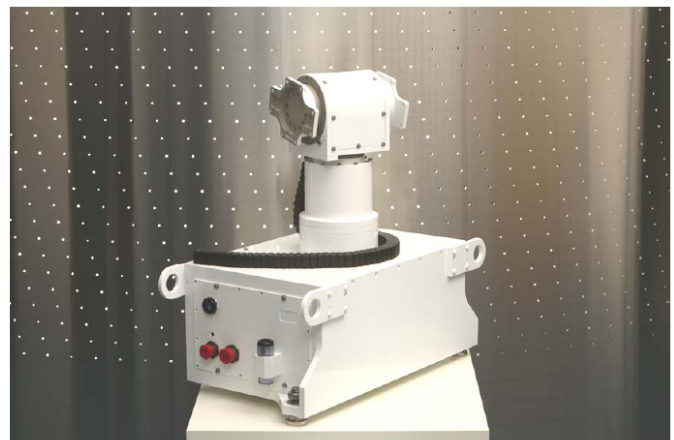
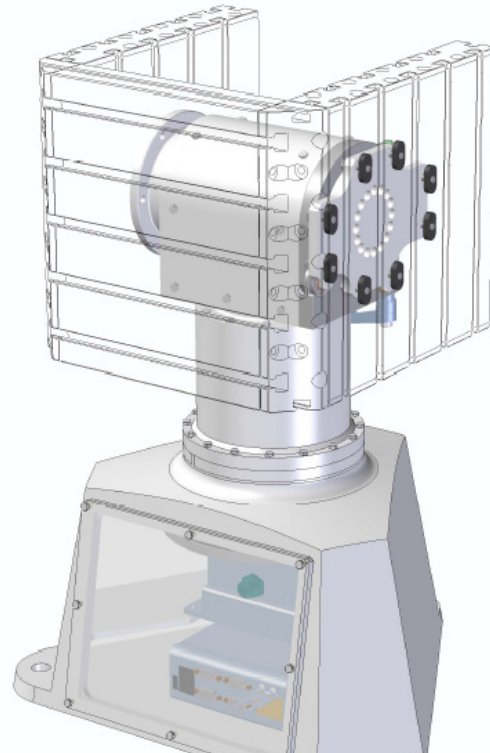
- remote controlled 2 axes stabilised platform; optional advanced roll axis stabilisation available
- daylight & infrared camera + laser ranger and gun all on one platform
- gyro stabilisation; using MEMS or FOG or RLG sensor technology
- high bandwidth, fast response
- robust system design, fully sealed
- used on helicopters, fixed wing aircrafts, drones, speed boats and trucks

Here it is important that the movements of the vehicle don't have a negative impact on pointing, aiming or picture quality performance.



Mounting the camera on a stabilised gimballed platform achieves the dynamic separation of the

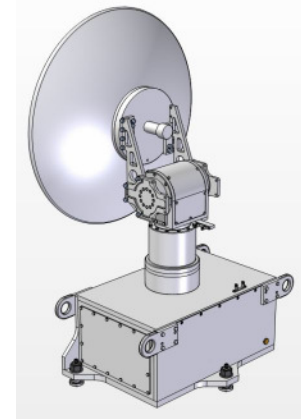
camera from the vehicle's movements. The iIPSC system consists of a two- or three-axes platform which will be controlled using a precise inertial measuring system. A strong drive system combined with an inertial control system with three fibre-optical or MEMS gyroscopes and ac-



celerometers, leads to a stable image alignment even in quite dynamic vehicle movements.

iIPSC-MOD is constructed as a highly modular system which can easily be adapted to the customer's needs.

Using a 3D joystick or an optional image tracker, it is possible to control the stabilized position of the platform. Platform position and other operating data of the system are optionally displayed on a LCD terminal or notebook. Due to the large signal bandwidth of the sensors and the strong drives, the system is especially suited for use on land vehicles, cranes or speedboats. Further applications are the stabilization of optronic systems, antennas and target tracking devices. The system can also be used for general platform stabilisation in naval applications like stabilisation of weapons like guns or light weight missile launchers. The standard system is designed to carry up to 30 kg payload. Separate versions for standard dynamics (SD) and advanced dynamics (AD) are available.



General Configuration	iIPSC-MOD	fully stabilised in azimuth and elevation axis Option: Additional advanced roll axis		
	Payload nominal	300x300 mm (2 flanges), 250x250 mm (1 flange), 30 kg;		
	Electrical lines for user	tbd (LF signals, RF signals or payload power), Motor power lines		
	Optical lines for user	Optional fiber optical rotary joint		
	Mounting platen	Universal mounting platform, aluminum hard anodized		
	Payloads (examples)	CCD Cameras (Standard or HDTV), IR cameras, Laser Rangefinders...		
Performance (drives)		Azimuth	Elevation	(Roll)
	Angular freedom (deg)	±185	-45...+100 ¹	(±60)
	Speed (deg/sec)	±40	±40	
		±150	±150	
	Optional roll axis (deg/s)			(±150)
	Angular acceleration (deg/s ²)	> 50	> 50	(> 500)
		500	500	(> 500)
	Rate resolution (deg/sec)	< 0.01		
	Angular repeatability (deg)	< 0.01 (all axes)		
	Angular resolution (deg)	< 0.005 (option: 0.0006)		
	Small signal bandwidth	> 50 Hz		
	Self braking momentum	5 Nm	5 Nm	
Inertial Stabilisation	Gyro Technology	FOG or MEMS or RLG based IMU (3 axes)		
	Modular IMU Head	iVRU-FC or iVRU-SC or iNAV-FMS/RQH/FJI		
	Aiding information (option)	interfaces for GPS aiding and external heading		
Environment	Operating Temperature	-10 °C to +55 °C (or tbd) ²		
	Protection	IP66; protected against salty fog		
Properties	Dimension	approx. 600 x 350 x 650 mm		
	Weight	approx. 30 kg (without mounting base) plus payload		
	Power Consumption	48 V DC (24...50 V ³), typ. < 250 W (600 W peak)		
Command	via CAN (1 MBit/s) by the Joystick Panel (iJP).			
	Option: Through RS-232 or RS422 interface, Data baud rate of 115200 Bd, via a compatible input device or host computer. Integration of a video target tracker as an option.			

The device is also available in a version for heavy payloads (300 kg) named iIPSC-MOD-XXL.

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¹ other offsets / ranges on request, e.g. -75...+75 deg or tbd

² The system can be equipped with an internal electrical heating to expand the operational temperature range to -20 °C or -40 °C.