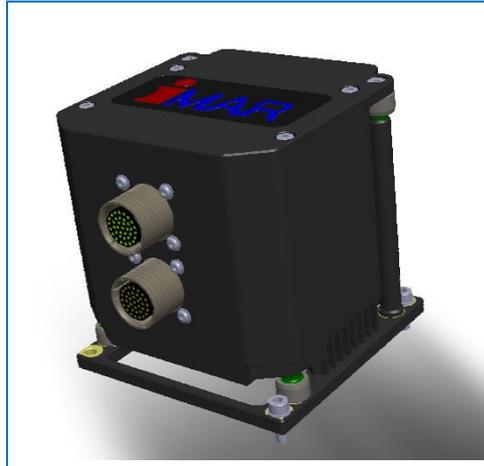


iIMU-CFM-01

FOG Based IMU for Surveying, Control and ADAHRS Applications

The iIMU-CFM-01 is a FOG based IMU consisting of 3 fiber optic gyro axes and 3 servo accelerometer axes.

- 0.3 deg/sqrt(hr) / 50 µg/sqrt(Hz); bias stability (AV) 5 °/hr, 2 mg @ const. temp.
- 1'000 Hz and 200 Hz data rate with calibrated data
- power supply according to DO160E; FPGA Firmware designed according to DO254
- Used for Attitude Heading Reference, Surveying, UAV & missile Guidance & Control Applications
- Also uncalibrated data available on request
- RS485 (UART) interface
- SYNC input for time stamping



helicopters and fixed wing aircrafts. The iIMU-CFM-01 can be operated at an unregulated wide range power supply (10-34 V DC) and is protected against wrong polarity, HIRF and moderate over-voltage up to 60 V. The data output is free running and the data are sent via RS485. Two redundant outputs and power inputs are available.

An AHRS processor with optional integrated L1 GPS engine can be integrated as an option to provide roll, pitch, heading and velocity informa-

The iIMU-CFM-01 is delivered with each 3 gyro and 3 accelerometer axes. The IMU is designed for ruggedized applications on land vehicles, naval vessels,

tion.

The iIMU-CFM-01 requires no export license. See iNAT-CFM-5 with integrated INS/GNSS data fusion.

Technical Data of iIMU-CFM-01 (rms):

	Angular Rate	Acceleration
Sensor Range:	± 450 °/s	± 10 g
Bias:	< 5 °/hr (1 sigma, OTR)	2 mg
Bias Stability:	< 1 °/hr (const temp.)	1.5 mg
Resolution:	0.000'04 °	< 0.1 mg
Linearity / Scale error:	< 0.2 %	0.15 %
Angular random walk:	0.3 °/√h	< 50 µg/√Hz
Output:	3 x angular rate + 3 x angular incr. + 3 x acceleration + 3 x veloc.incr. 3 x accumulated angular increments + 3 x accumulated velocity increments	
Axis Misalignment:	< 1 mrad between all sensor axes	
Digital Interface:	RS485 (UART), 921.6 kBd full calib. data (1'000 Hz / 200 Hz) or 115.2 kBd reduced calib. data (125 Hz / 25 Hz) or 115.2 kBd uncalibrated data (50 Hz)	
Connector:	Type MIL-C-38999-III (J1, J2)	
Data rate:	1'000 Hz rates and 200 Hz increments (free running)	[protocol V #1]
	1'000 Hz accumulated increments (free running)	[protocol V #2]
	gyro bandwidth 500 Hz, accelerometer bandwidth 100 Hz	
SYNC:	Option: RS422 level SYNC input to reset internal package counter	
Temperature:	-45...+71 °C (operating, case temperature; +85 °C short time), -56...+90 °C (storage)	
Shock, Vibration:	6 g, 20 ms ½ sine saw-tooth; 10...2'000 Hz 4.8 g rms (operation) 6.3 g rms (endurance)	
Bonding resistance:	better 2.5 mOhm	
Environment / MTBF/ MTTR:	IP66 / > 25.000 hrs (estimated) / 6 minutes	
Size, Weight:	approx. 120 x 128 x 125 mm (plus connector), approx. 2.1 kg	
Power, Start-up-Time:	10...34 V DC ; approx.. 17 W; < 4 sec; reverse-voltage protection	

iMAR 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

