



**GCIMU02**

**TACTICAL GRADE  
INERTIAL MEASUREMENT UNIT**

GCLAB MÜHENDİSLİK A. Ş.

# GCIMU02 TACTICAL GRADE INERTIAL MEASUREMENT UNIT

<b>Size</b>	44 mm x 45 mm x 28.8 mm
<b>Weight</b>	< 75 g
<b>Power Consumption</b>	< 1.5 W
<b>Operating Temperature Range</b>	[-40 , +85] (°C)
<b>Data Rate</b>	500 Hz filtered angular rate and linear acceleration (other frequencies available) 500 Hz compensated ΔVs and ΔΘs (other frequencies available)
<b>Gyro Operating Range</b>	Varies by configuration up to 10.800 deg/sec
<b>Accelerometer Operating Range</b>	Varies by configuration up to 100 g
<b>Supply Voltage</b>	5 ± 0.25 V
<b>Timing Stability</b>	< 2.5 ppm
<b>ITAR FREE</b>	

## GCIMU02 IMU STANDARD MODELS & PERFORMANCE

GYRO BIAS REPEATABILITY (°/HR 1σ)	GYRO BIAS IN-RUN STABILITY (°/HR 1σ)	ARW (°/√HR MAX)	ACCEL BIAS REPEATABILITY <sup>1</sup> (mG 1σ)	ACCEL BIAS IN-RUN STABILITY (mG 1σ)	VRW (m/sec/√HR MAX)
20 (varies by configuration down to 1)	1.0 (varies by configuration down to 0.05)	0.25 (varies by configuration down to 0.05)	1.2 (varies by configuration down to 0.24)	0.05 (varies by configuration down to 0.01)	0.07 (varies by configuration down to 0.015)

## GCIMU02 IMU TYPICAL PERFORMANCE OVER FULL OPERATING TEMPERATURE RANGE

GYRO BIAS REPEATABILITY <sup>1</sup> (°/HR 1σ)	GYRO BIAS IN-RUN STABILITY (°/HR 1σ)	ARW (°/√HR MAX)	ACCEL BIAS REPEATABILITY <sup>1</sup> (mG 1σ)	ACCEL BIAS IN-RUN STABILITY (mG 1σ)	VRW (m/sec/√HR MAX)
5 (varies by configuration down to 0.5)	0.5 (varies by configuration down to 0.02)	0.125 (varies by configuration down to 0.025)	0.7 (varies by configuration down to 0.14)	0.015 (varies by configuration down to 0.003)	0.05 (varies by configuration down to 0.01)

GCIMU02 is a general name of high precision tactical grade inertial measurement unit's family that employs MEMS based sensors and can be used for precise guidance, control, and navigation. Compared to fiber optic, and laser based tactical grade IMUs, GCIMU02 has lower cost, smaller size, lower mass, lower power, higher availability, and comparable accuracy. It can work in harsh environments and does not require periodic maintenance.

Acceleration and angular data collected from the IMU are used to create inertial navigation systems for unmanned aerial vehicles, missiles, autonomous vehicles, and generate feedback for stabilization and control loops for these systems. Hence, IMUs are vital for all autonomous systems. GCIMU02 is to be used in guidance, control, navigation, and stabilization systems for Aerial, Land, Naval, and Underwater vehicles.

