GLADIATOR TECHNOLOGIES

LandMark™ 65 IMU

Ultra Low Noise High Dynamics MEMS IMU

QMS & CERTS
AS9100C
ISO9001:2008

Cage Code: 47L11
Division of
LKD Aerospace
SAM Registered
JCP certified

Low Noise Inertial MEMS
Rugged Low Cost Sensors & Systems

Automated Testing

Comprehensive ERP Environmental Test Lab:
- Shock
- Vibration
- Temperature Calibration
- G-Sensivity
- Axis Alignment
- Centrifuge
- GPS Simulation

Products:

Gyros
Accelerometers
IMU
VG
AHRS
VG/GPS
GPS/AHRS
INS/GPS

- NON-ITAR MEMS IMU High Range
- Low Gyro Noise 0.0016°/sec/√Hz
- Low Accel Noise 0.035mg/√Hz (40g)
- In-Run Gyro Bias 5°/hour 1σ
- Wide Sensor Bandwidth 250 Hz
- Compensated Misalignment <½ mrad
- G-Sensitivity <0.003°/sec/g 1σ
- Full Temperature Compensation (Bias & SF)
- Vibration 15gRMS
- Shock 1000g
- RS422/485 (5kHz) or CAN BUS 2.0B 1MHz
- External Sync Input (6kHz)
- Low Power < 500 mW Typical
- Low Voltage +7 to +36V (available for +5Vin*)
- Light Weight ≤ 115 grams
- Small Size < 76cm^3/4.6in^3

Applications

Platform Stabilization
Antenna Stabilization
Antenna Pointing
EO/IR Stabilization
LIDAR Stabilization
Low Cost Navigation
Flight Testing
High Vibration Environments

Export Classification:
Commerce
ECCN7A994 (NLR)

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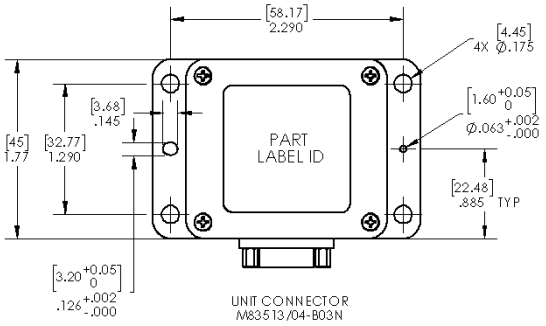
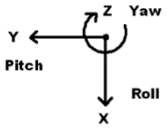
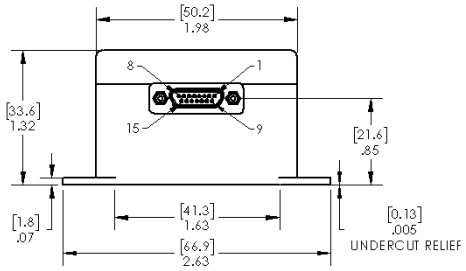


Axes (Top View)
Right Hand Rule



LMRK65 IMU
LMRK65IMU-490-**40**-100 or **-65** LMRK65IMU-2000-**40**-100 or **-65**
***Contact Factory for +5V Info**

Preliminary Specification



Mating Connector: M83513/03-BN

Pin No.	Assignment
1	RS-485 A (+) (Twisted Pair)
2	RS-485 B (-) (Twisted Pair)
3	Power Ground
4	Analog/Digital Input (0V to 5V)
5	+7V to +36V Input Power
6	External Sync Input (6kHz)
7	+5V Regulated Output
8	Signal Ground
9	Self Test
10	CAN High
11	CAN Low
12	CAN Gnd
13	NC
14	NC
15	Case

Note: Any unused inputs (Pins 4, 6, 9) must be connected to signal ground (Pin 8).

Outputs	Serial Sequence
1	Roll Gyro (X)
2	Pitch Gyro (Y)
3	Yaw Gyro (Z)
4	X Accelerometer
5	Y Accelerometer
6	Z Accelerometer
7	Temperature ± 0.5° C *typical*

PARAMETER	RATE AXES		ACCEL AXES	
Range	±490°/sec	±2000°/sec	±40 g's	±65 g's
ARW / VRW	0.0016° /sec/√Hz *1 σ*	0.002°	0.035mg/ /√Hz *1 σ*	2mg/
	0.068° /√hour *1 σ*	0.085°	0.015m/s /√hour 1σ	0.83m/s
Bias In-Run Stability	5°/hour *1 σ*	7°/hour	0.1mg *1 σ*	0.5 mg
Bias Over Temp.	<0.025°/sec *1 σ*	<0.03°/sec *1σ*	1mg *1σ* 2mg *max*	3mg *1σ* 10mg *max*
Scale Factor Error %	≤0.1% *(over temperature) 1 σ*			
LSB for 16 bit	0.015°/sec	0.06°/sec	1.22 mg	2mg
Alignment	<0.5 mrad *1 σ*			
G-Sensitivity / g^2	0.001 °/sec/g *1 σ*	0.003	0.4 mg/g^2 *1σ*	0.1 mg/g^2
Shock	1000g's ½ sine 1 msec powered			
Vibration	15gRMS *(20Hz to 3kHz)*			
Data Format	24/32-bit *(user selectable)*			
LSB	See Software User Guide			
Update Rate	Up to 5kHz (user selectable)			
External Sync	Up to 6kHz (user selectable)			
Data Interfaces	RS422/RS485 *3M baud* & CAN 2.0B *at 1MHz*			
Temp Operating:	-40°C to +85°C			
Non-Operating:	-55°C to +85°C			
Start-up Time	< 0.15 sec			
Input Power	**+7V to +36V Max. Input (single sided)**			
Power Consumption	500 mW at 12V *Typical* 600 mW at 12V *Maximum*			
Weight	≤ 115 grams			
Size U.S.:	1.975 x 1.77 x 1.325 = 4.6 in^3			
Metric:	5 x 4.5 x 3.4 = 76 cm^3			
Self Test On	∆ 1.4°/s ±1.1°/s		∆1.25 ±0.5 g	∆6.4 ±3 g
	Logic 1 = 3V to 5V at Pin 9			
Mounting	4ea No.8 or M4 Screws			
MTBF	53,869 hrs *(per MIL-STD-217F, Notice 2 based on AIC environment with ambient temperature at 45°C)*			

Specification subject to change without notice

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