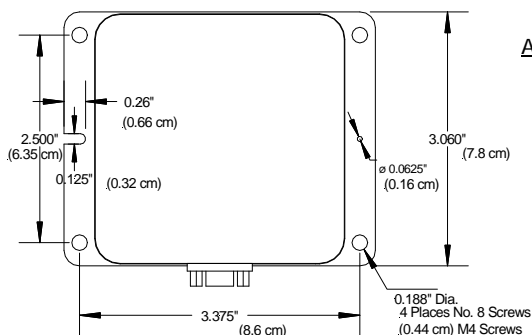
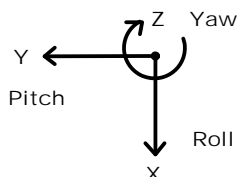


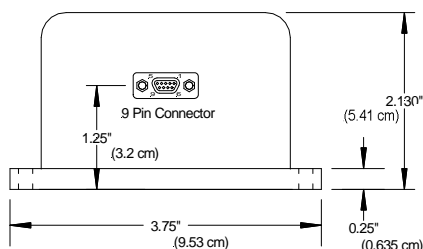
LandMark™ 30 IMU



Axes (Top View) Right Hand Rule



LandMark™ 30 IMU		
LMRK30IMU-100-02-300	or -06	or -10
LMRK30IMU-175-02-300	or -06	or -10
LMRK30IMU-300-02-300	or -06	or -10



Mating Connector: M83513/01-AN

Specification

Pin No.	Assignment
1	RS-485 A (+)
2	RS-485 B (-)
3	Power Ground
4	Analog/Digital Input (0V to 5V)
5	+6.0V to +36V Input Power
6	External Sync Input (1kHz or 1pps)
7	+5V Regulator Out
8	Signal Ground
9	Self Test

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

Outputs	Serial Sequence at 200Hz
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	LandMark™ 30 IMU					
	RATE AXES			ACCEL AXES		
Range	±100°/sec	±175°/sec	±300°/sec	±2 g's	±6 g's	±10 g's
Bias (Over Temp.)	<0.03°/sec 2σ			<0.5mg	<0.8mg 1σ	<1.0mg
Bias (In Run Stability)	8°/hour 1σ			0.02mg	0.06mg 1σ	0.08mg
Scale Factor Error %	≤ 0.08% (over temperature) 1σ					
Resolution	0.0015° /sec	0.0025° /sec	0.003° /sec	0.02mg	0.05mg	0.06mg
Angle Random Walk	0.003° /sec/√Hz 1σ	0.005° /sec/√Hz 1σ	0.006° /sec/√Hz 1σ	0.04mg /√Hz 1σ	0.1mg /√Hz 1σ	0.12mg /√Hz 1σ
Alignment	1mrad 1σ					
G-Sensitivity	<0.01°/sec/g 1σ					
Self Test On	Δ 8°/s ± 4 °/s	Δ 8°/s ± 4 °/s	Δ 8°/s ± 4 °/s	Δ 1.5 ±0.5g	Δ 0.3 ±0.2g	Δ 0.3 ±0.2g
Temp Range	Logic 1 = 3V to 5V at Pin 9					
Temp Range	Operating: -40°C to +85°C Non-Operating: -55°C to +100°C					
Update Rate	500 Hz, 200 Hz, 100 Hz, or 10 Hz (user selectable)					
Temp Sensors	6 Internal Temperature Sensors					
Start-up Time	< 0.3 sec at 200 Hz					
Input Power	+6.0V to +36V Max. Input (single sided) (Input Transient Protection to 80V)					
Power Consumption	2200 mW at +12V typical 2350 mW at +12V maximum					
Size	U.S.:	3.0 x 3.06 x 2.13 = 19.6 in ³				
	Metric:	7.62 x 7.8 x 5.4 = 321cm ³				
Weight	≤ 388 grams					
Mounting	4ea No.8 or M4 Screws					
Shock	500g's ½ sine 30 msec powered					
Vibration	6 gRMS (20Hz - 2KHz ~ 10g accelerometers)					
MTBF	No inherent wear out modes for long life.					

Specification subject to change without notice

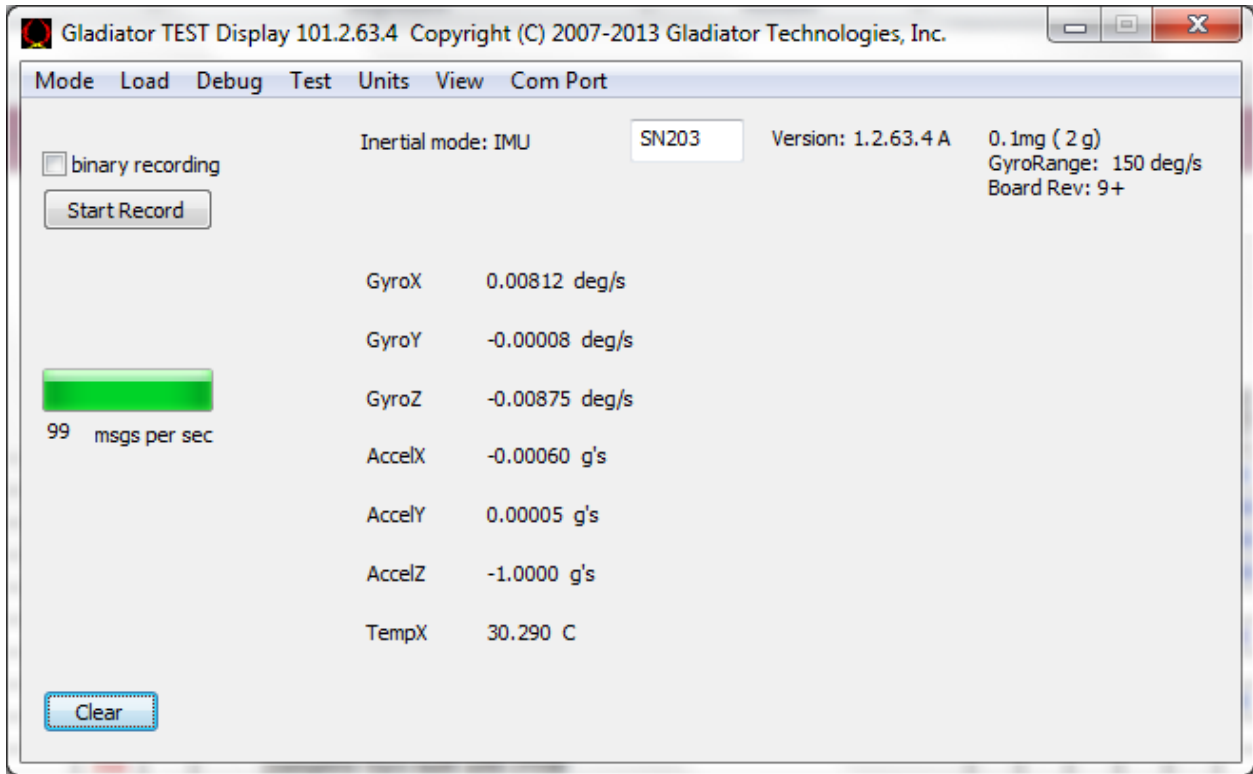


Gladiator Technologies



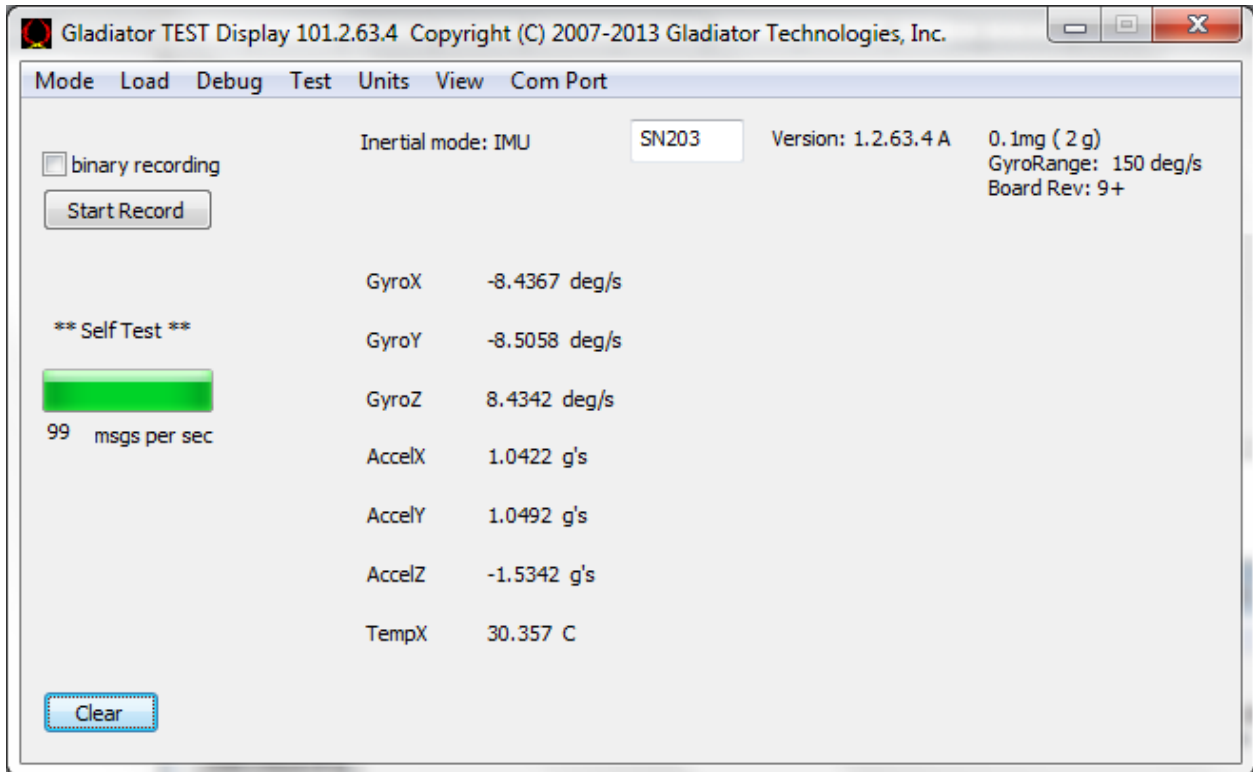
High Performance Inertial MEMS

Rev. 14Feb20
SN: 200



Initial Bench Readout (above)

Self Test (below)





Gladiator Technologies



High Performance Inertial MEMS

SN203 ATP

3/19/2014

LMRK30IMU-100-02-300

Rate Spin Test

Test	gyroX	gyroY	gyroZ	accelX	accelY	accelZ	temp X
PX	7200.101	-2.875	1.304	-0.1385	-1.2456	7.9209	2707.603
NX	-7200.032	-2.545	0.651	-0.0597	-1.1093	-2.6284	2708.111
Diff/2	7200.067	-0.165	0.3265	-0.0394	-0.06815	5.27465	-0.254
Ave	0.0345	-2.71	0.9775	-0.0991	-1.17745	2.64625	2707.857
PY	-1.051	7200.668	1.419	-0.2213	-0.4279	-1.2112	2707.241
NY	-3.11	-7199.314	0.399	1.1263	-0.4416	-2.5905	2705.96
Diff/2	1.0295	7199.991	0.51	-0.6738	0.00685	0.68965	0.6405
Ave	-2.0805	0.677	0.909	0.4525	-0.43475	-1.90085	2706.601
PZ	-1.794	-2.606	7199.689	-1.4328	1.0899	-0.2454	2703.628
NZ	-1.088	-2.954	-7199.859	-2.8809	-0.2687	-0.2229	2704.02
Diff/2	-0.353	0.174	7199.774	0.72405	0.6793	-0.01125	-0.196
Ave	-1.441	-2.78	-0.085	-2.15685	0.4106	-0.23415	2703.824
RSF Norm	1.000009	0.999999	0.999969				Temp °C 27.06

Gyro Mis-Align deg/sec	Input Rate			
x		0.01	0.00	x
y	0.00		0.00	y
z	0.00	0.01		z

Gyro Mis-align mrad	Input Rate			
x		0.14	-0.05	x
y	-0.02		0.02	y
z	0.05	0.07		z

Accepted by:





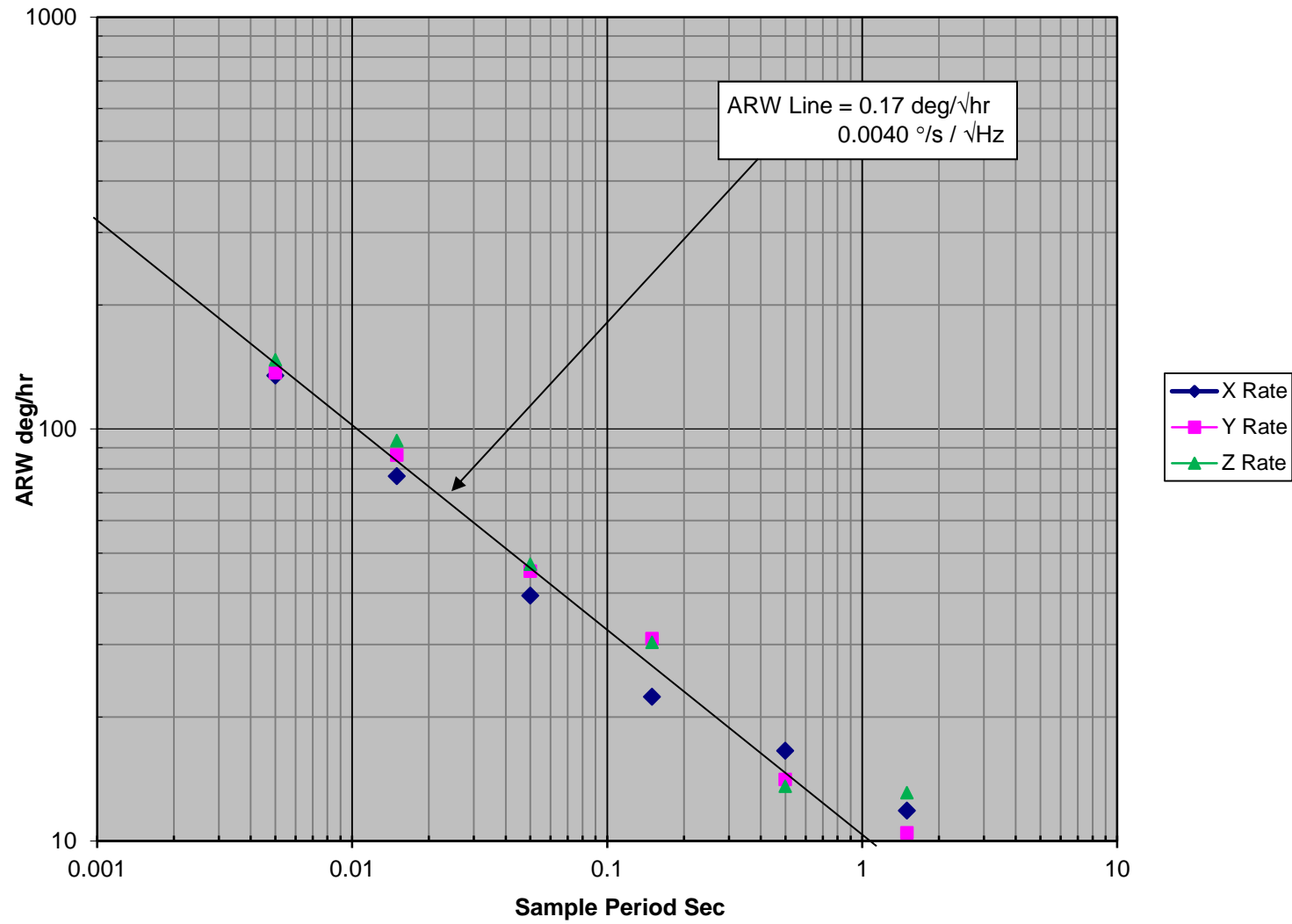
LMRK30IMU-100-02-300
Accelerometer Tumble Test

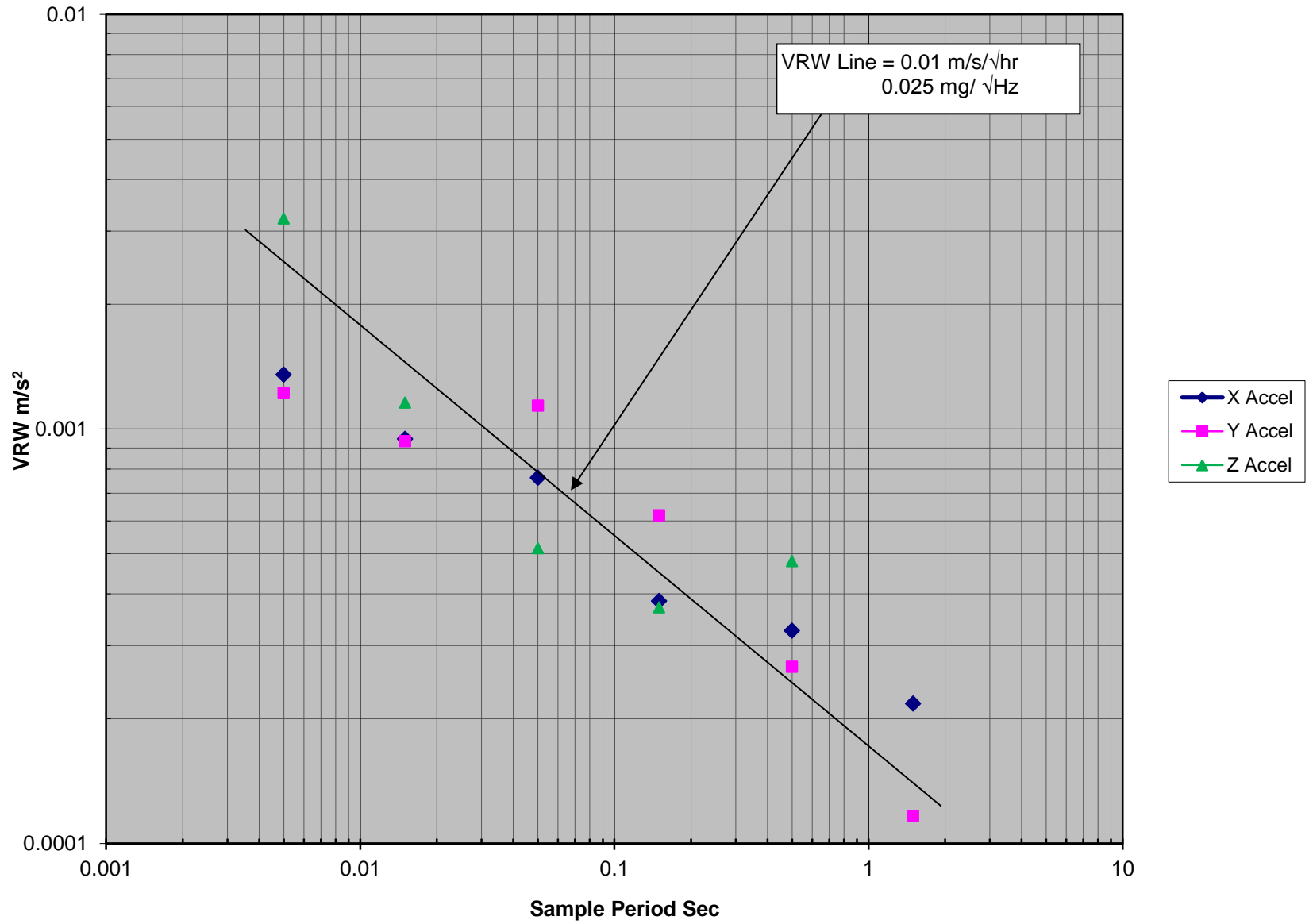
Test	gyroX	gyroY	gyroZ	accelX	accelY	accelZ	temp X
PX	0.006	0.284	-0.219	999.8978	-0.4675	-0.0358	2710.006
NX	0.252	-0.163	0.049	-1000.022	-0.1983	0.0986	2711.643
Diff/2	-0.123	0.2235	-0.134	999.9601	-0.1346	-0.0672	-0.8185
Ave	0.129	0.0605	-0.085	-0.0623	-0.3329	0.0314	2710.825
PY	0.723	0.063	0.075	-0.0289	999.9561	-0.2529	2705.38
NY	-0.127	0.118	0.12	-0.1465	-1000.057	0.3485	2707.233
Diff/2	0.425	-0.0275	-0.0225	0.0588	1000.007	-0.3007	-0.9265
Ave	0.298	0.0905	0.0975	-0.0877	-0.05045	0.0478	2706.307
PZ	0.281	-0.069	-0.12	0.0096	0.47	1000.025	2707.446
NZ	0.223	-0.043	0.283	0.1003	-0.2291	-999.7911	2703.496
Diff/2	0.029	-0.013	-0.2015	-0.04535	0.34955	999.9081	1.975
Ave	0.252	-0.056	0.0815	0.05495	0.12045	0.117	2705.471
Bias %s,mg	0.0023	0.0003	0.0003	-0.02	-0.11	0.04	27.08
ASF Norm				1.0000	1.0000	0.9999	Temp °C

Gyro %s /g	Input g =			Accel In g's
x	-0.001	0.004	0.000	x
y	0.002	0.000	0.000	y
z	-0.001	0.000	-0.002	z

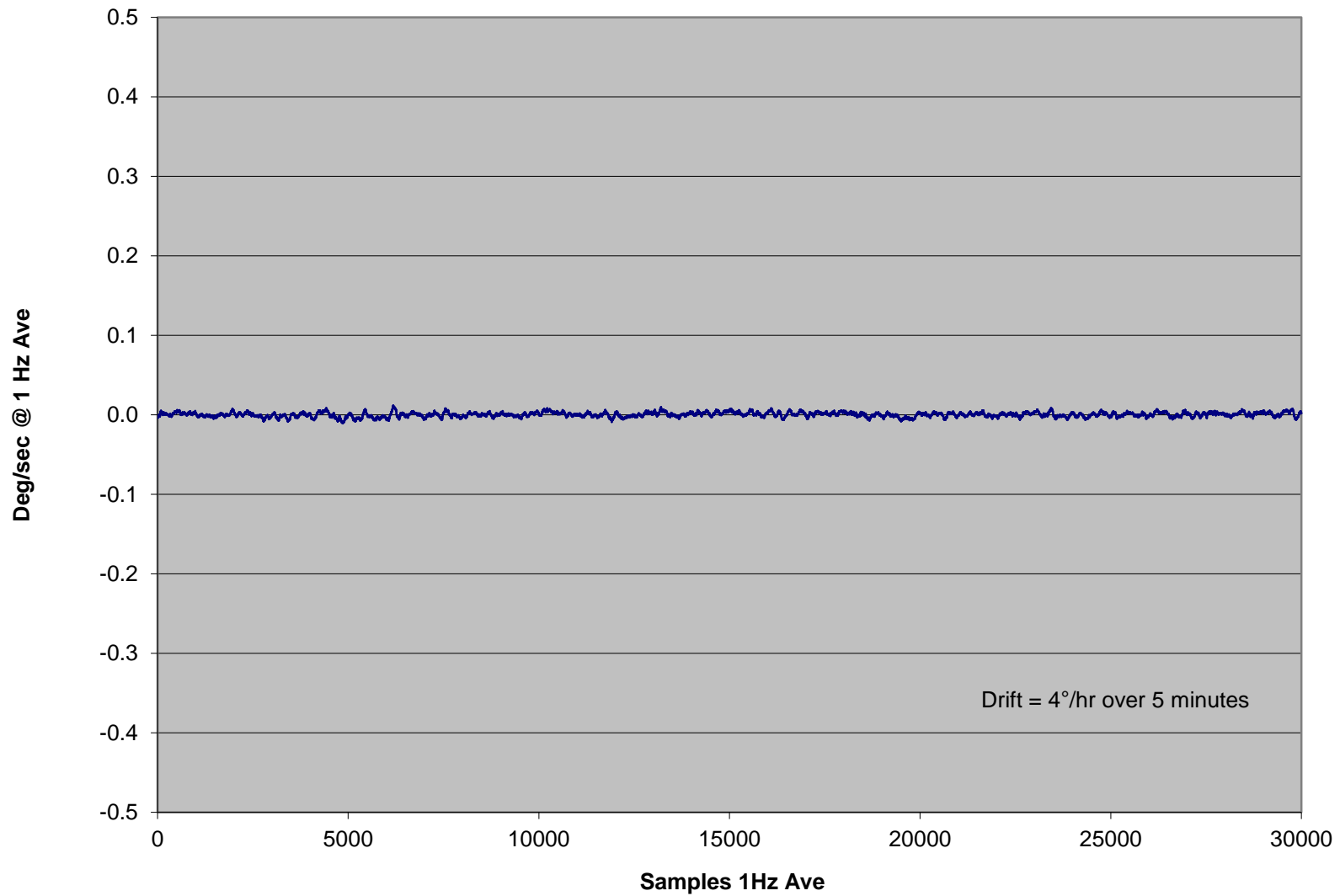
Accel		Accel In
Mis-Align	mrads	
0.06	-0.05	x
-0.13	0.35	y
-0.07	-0.30	z

Accepted by:

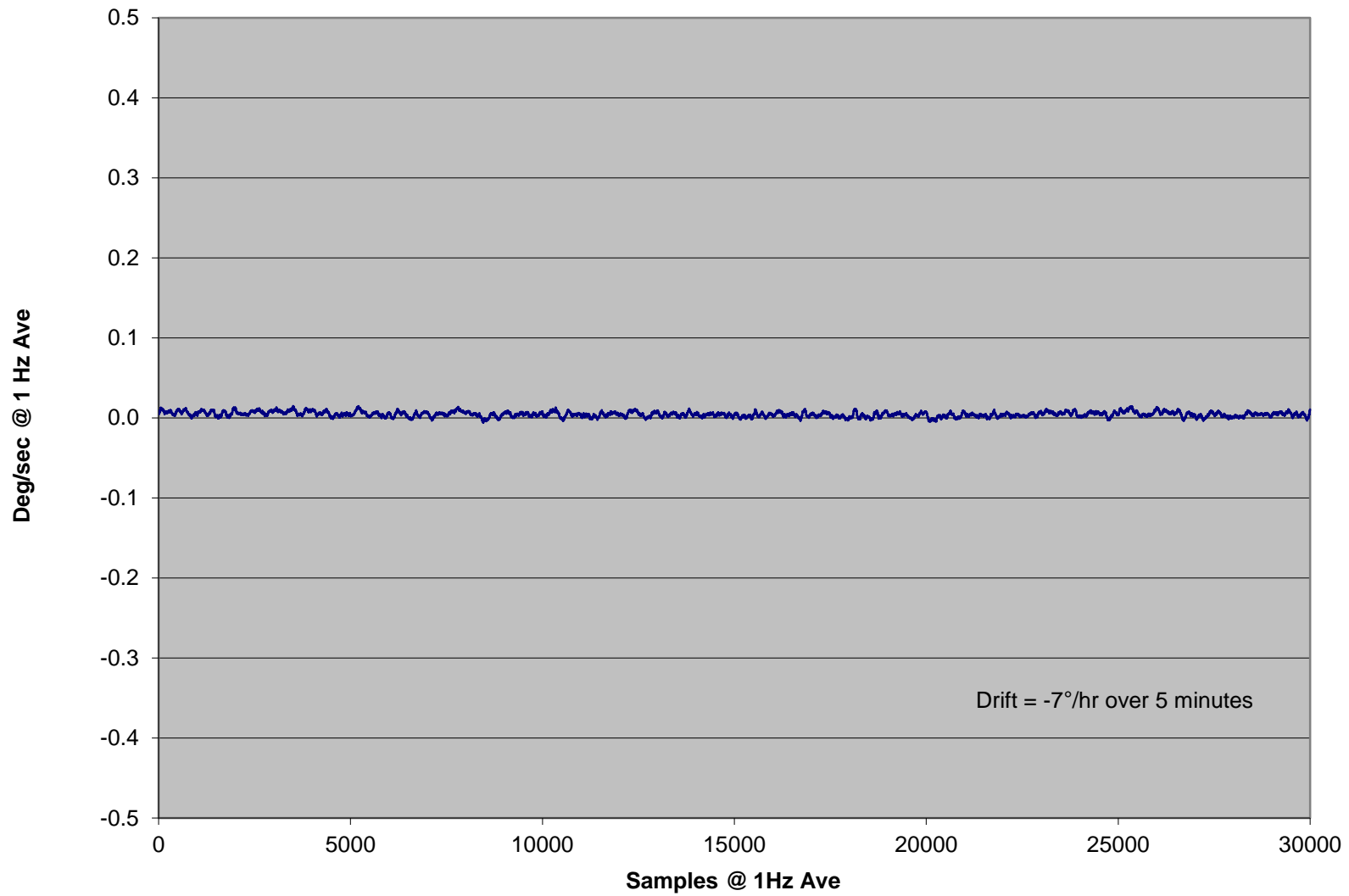




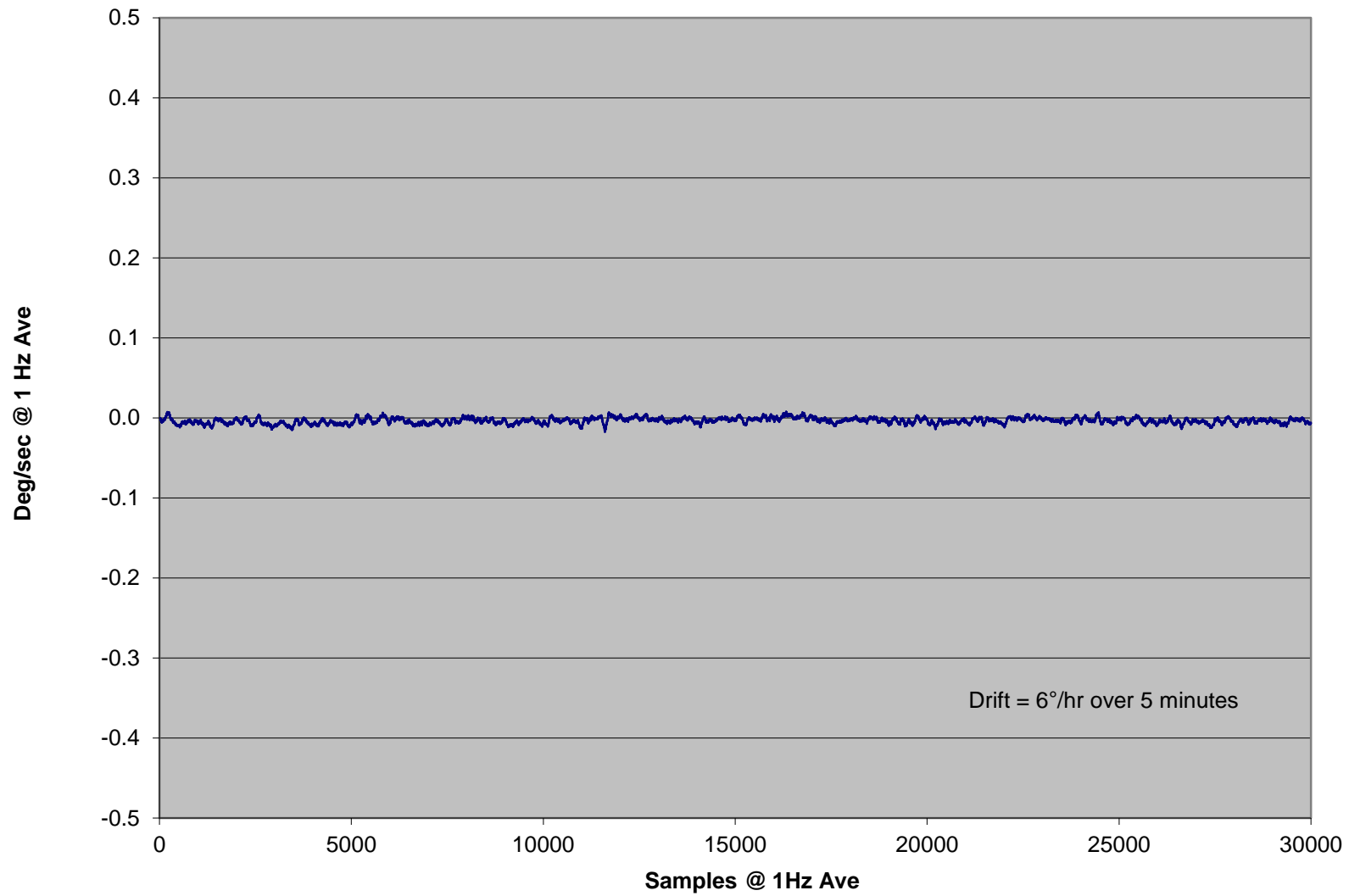
X Gyro In-Run Bias



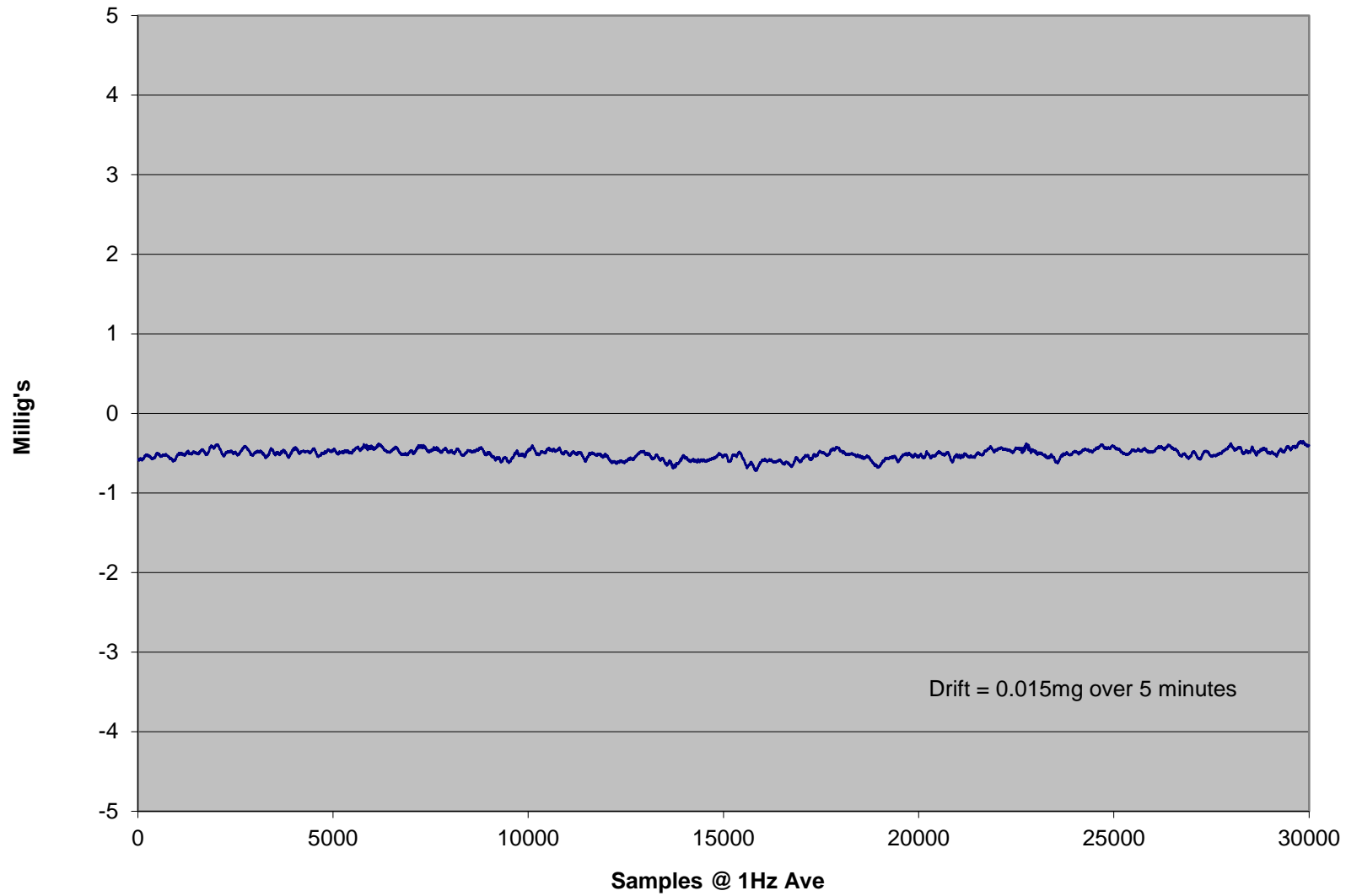
Y Gyro In-Run Bias



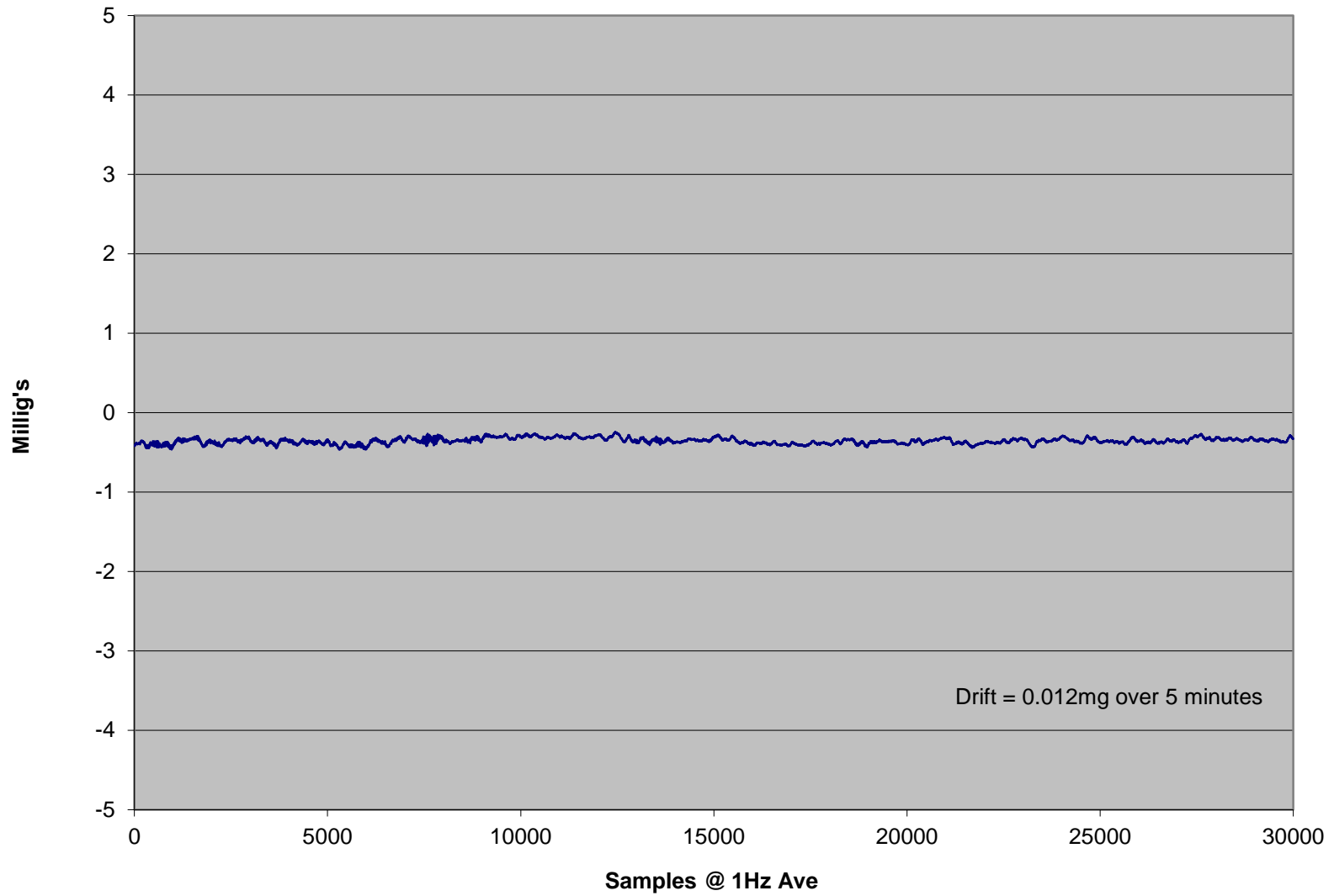
Z Gyro In-Run Bias



X Accel In-Run



Y Accel In-Run



Z Accel In-Run

