



18 Typical Sample Test Data – Angle Random Walk (ARW) Noise

Please find below typical 100Hz sample test data for Angle Random Walk (ARW) Noise from a production LandMark™ 20 GPS/AHRS eXT “LN Series” for SN100. The gyro noise reflects a 300°/sec rate range gyro and 10g linear range accelerometer. The test conditions should be similar to what a user should likely have during initial setup. If the user is not obtaining laboratory test data similar to the data plots and charts below please contact the factory for consultation and assistance.

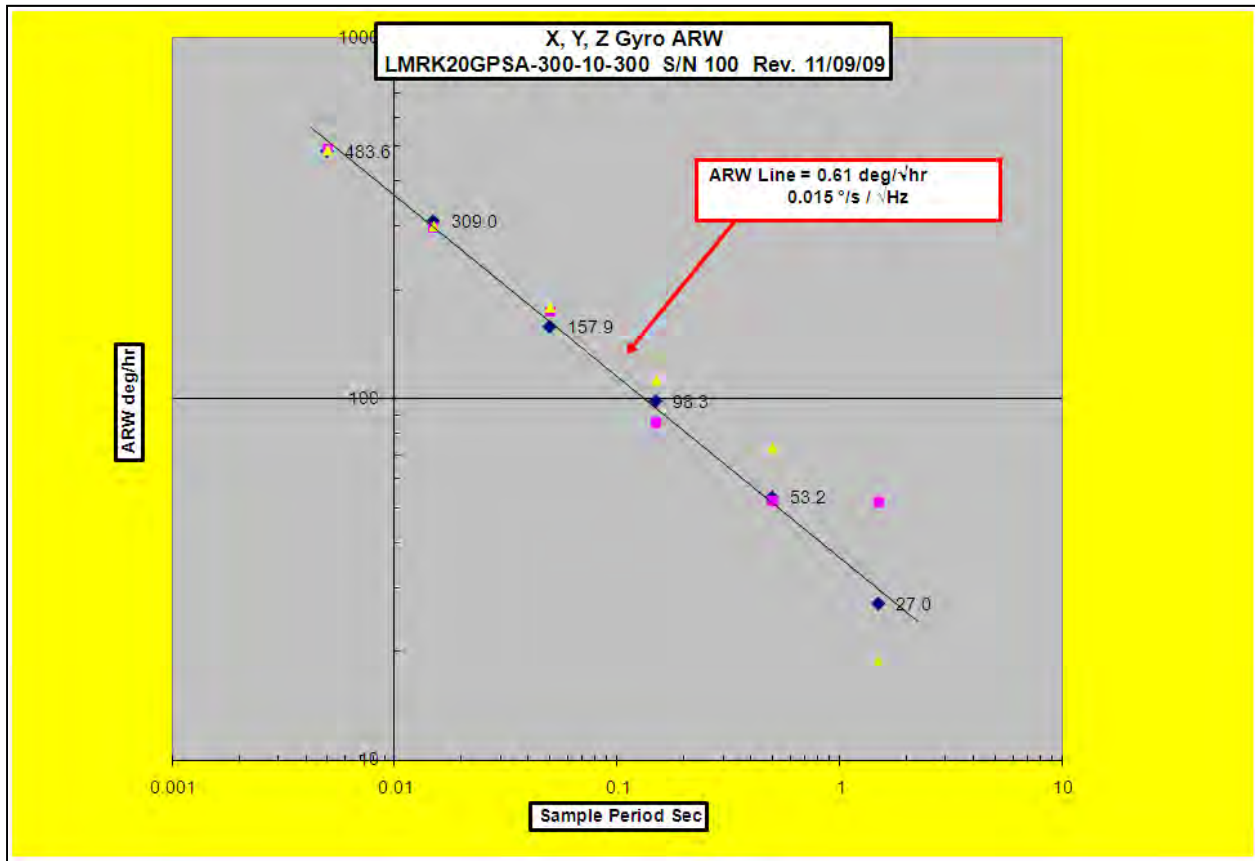


Figure 55: X, Y, Z Gyro Angle Random Walk (ARW) Noise



19 Typical Sample Test Data – Gyro and Accelerometer In-Run Bias

Please find below typical 100Hz sample test data for Gyro and Accelerometer In-Run Bias from a production LandMark™ 20 GPS/AHRS eXT “LN Series” for SN100. The charts are in run bias plots for the X, Y and Z channel 300°/sec rate range gyros and 10g linear range accelerometers for SN100. The data was taken for 5 minutes after a 5 minute warm-up period at ambient temperature. The test conditions should be similar to what a user should likely have during initial setup. If the user is not obtaining laboratory test data similar to the data plots and charts below please contact the factory for consultation and assistance.

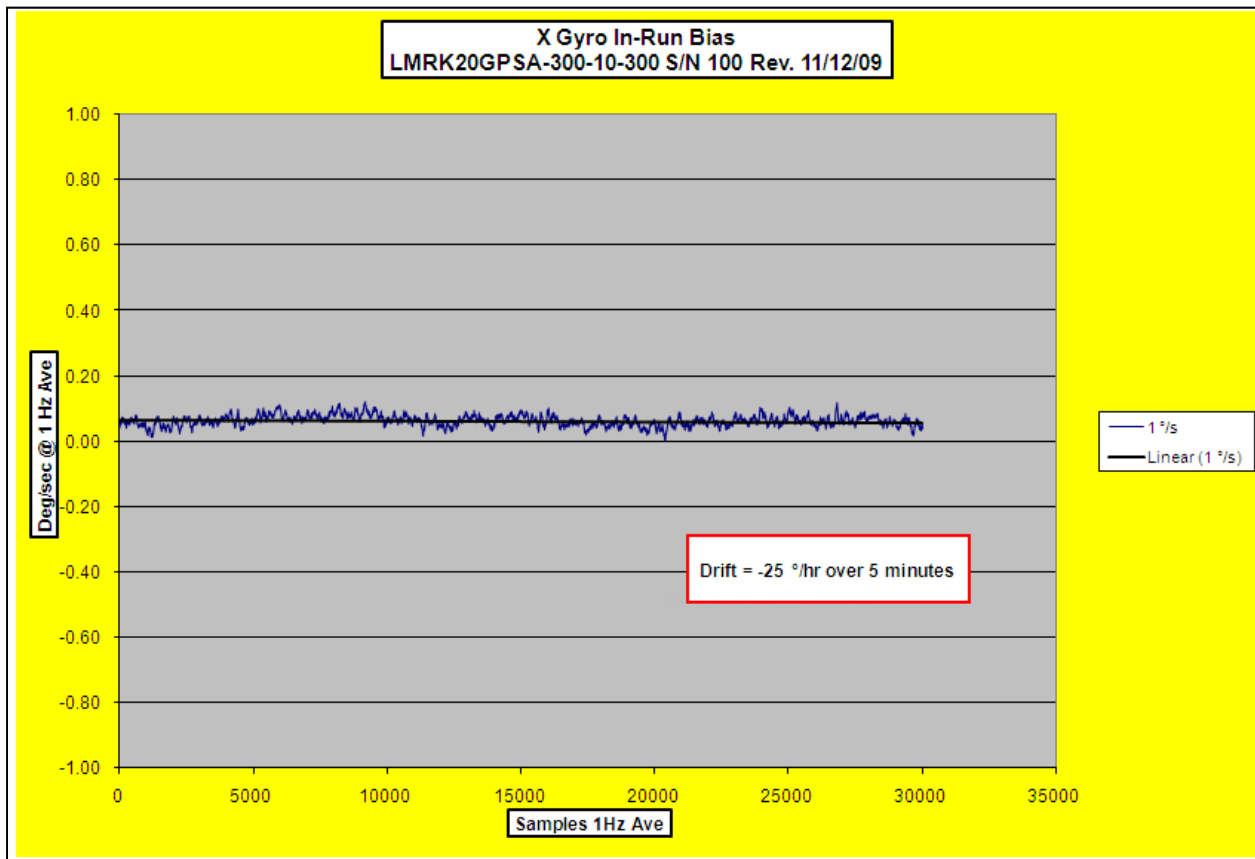


Figure 56: X Gyro In-Run Bias

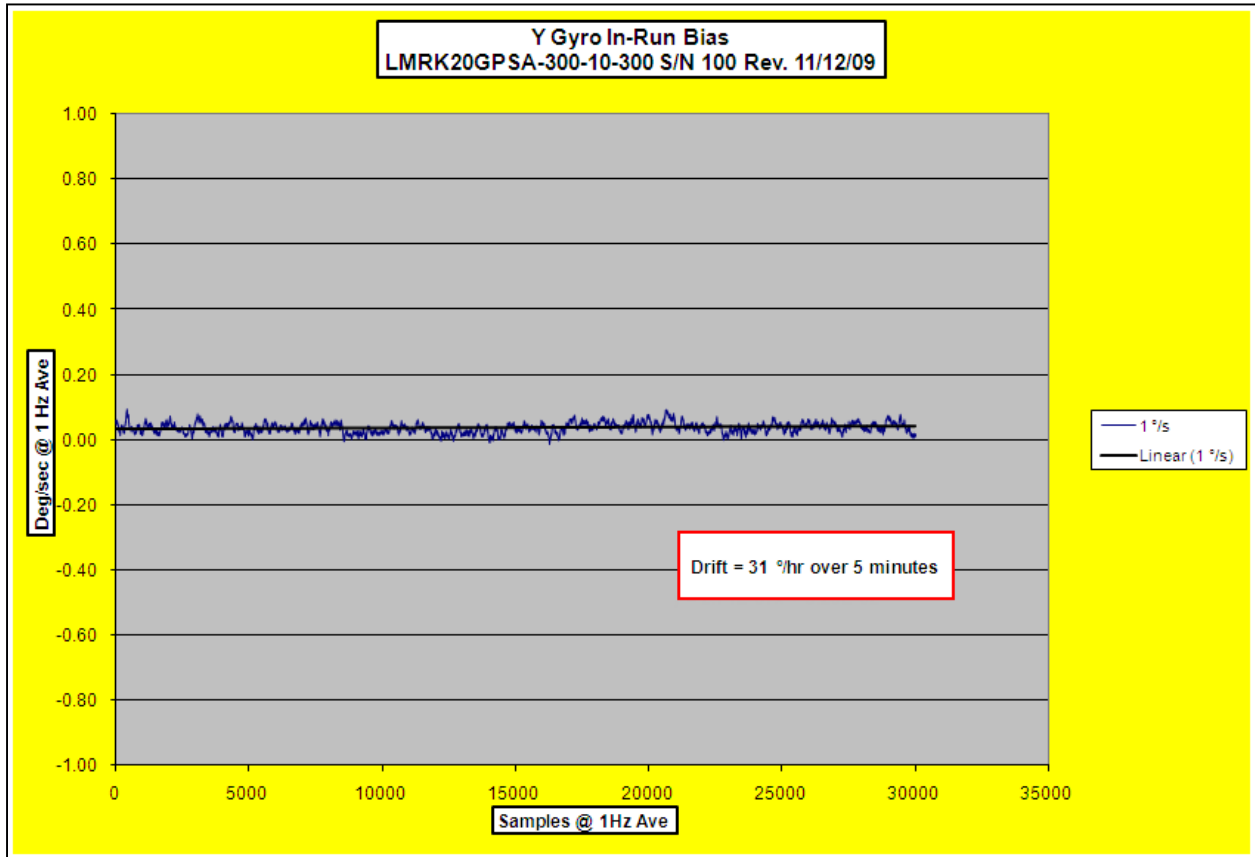


Figure 57: Y Gyro In-Run Bias

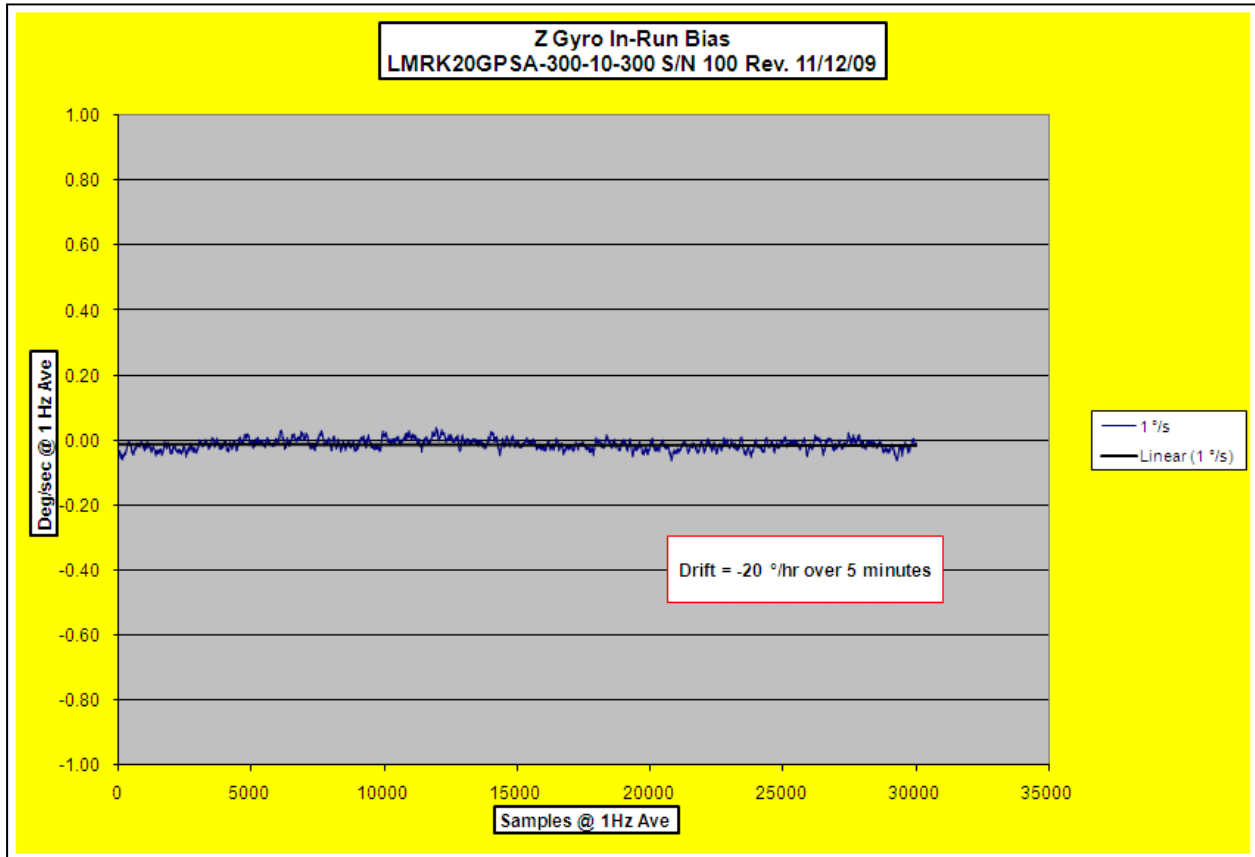


Figure 58: Z Gyro In-Run Bias

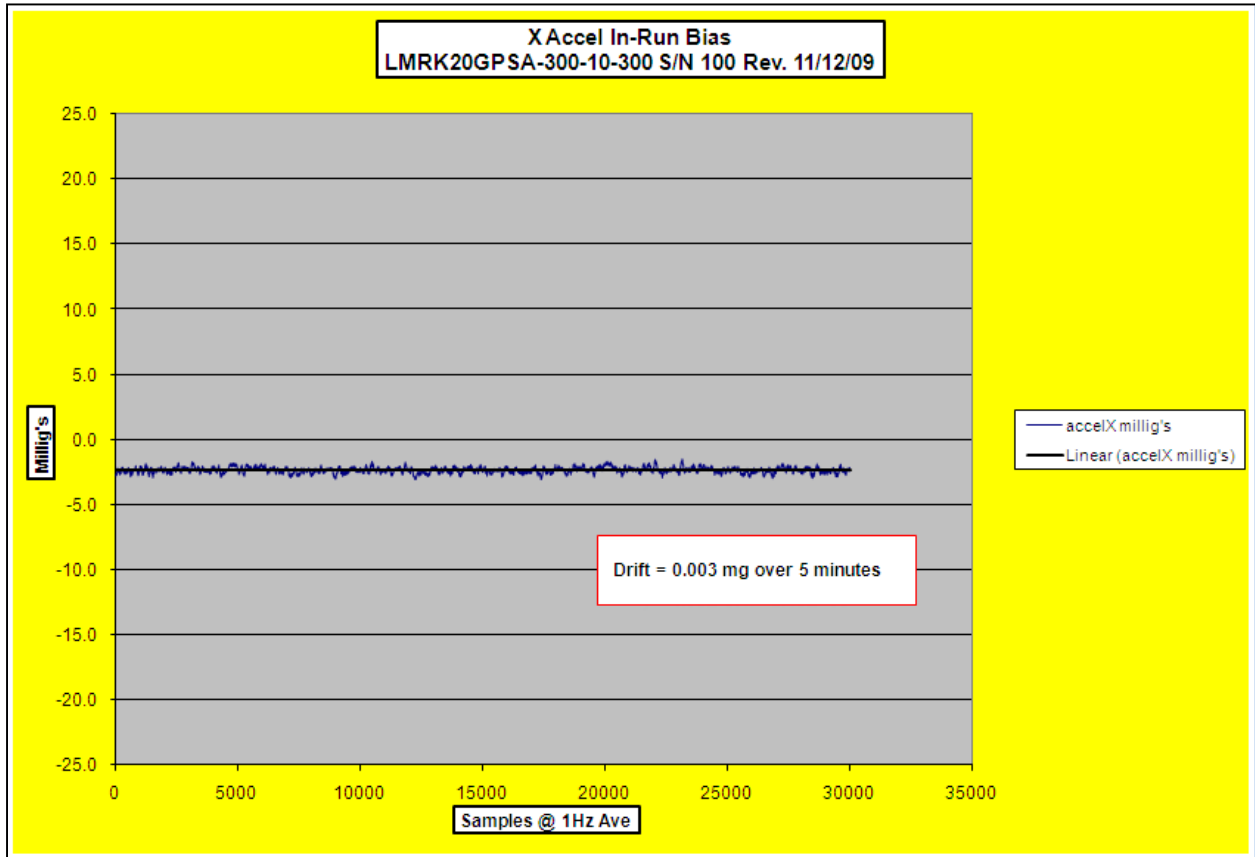


Figure 59: X Accel In-Run Bias

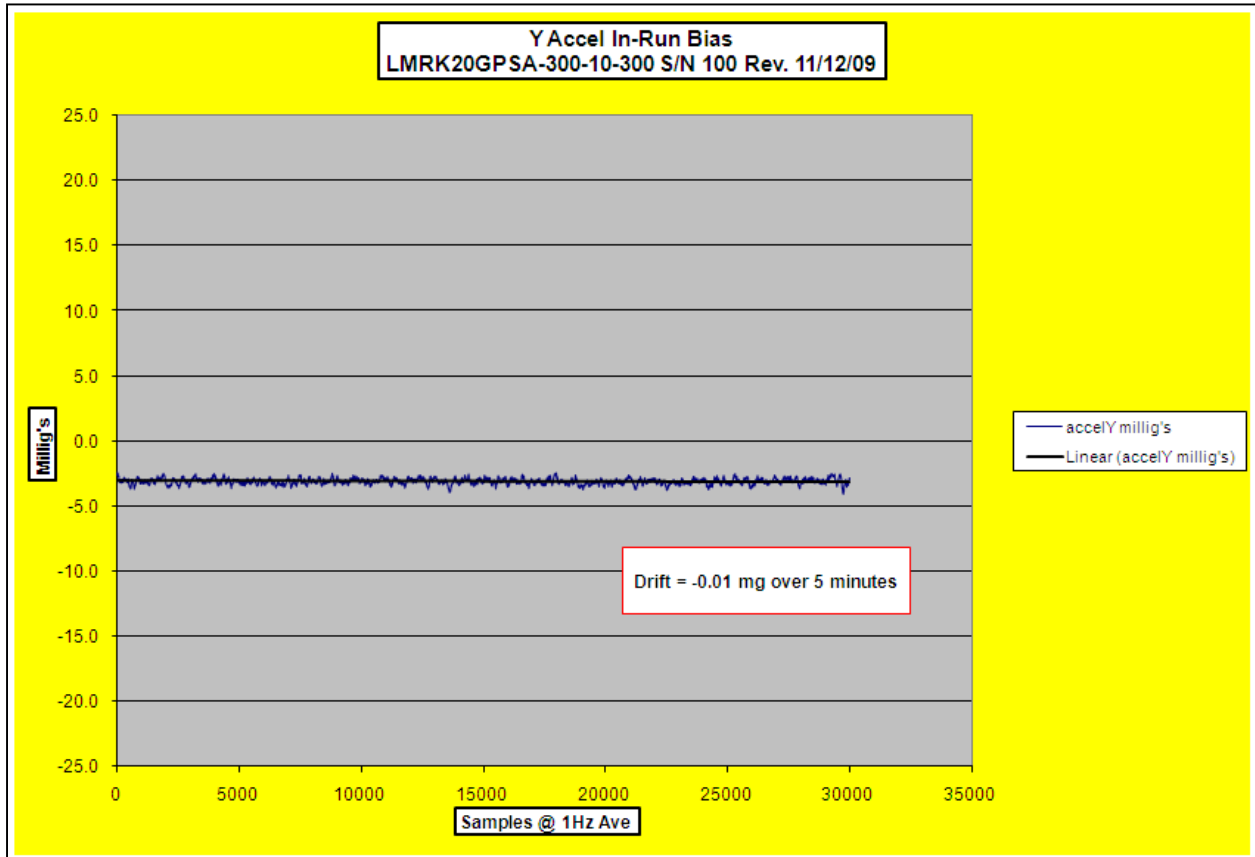


Figure 60: Y Accel In-Run Bias

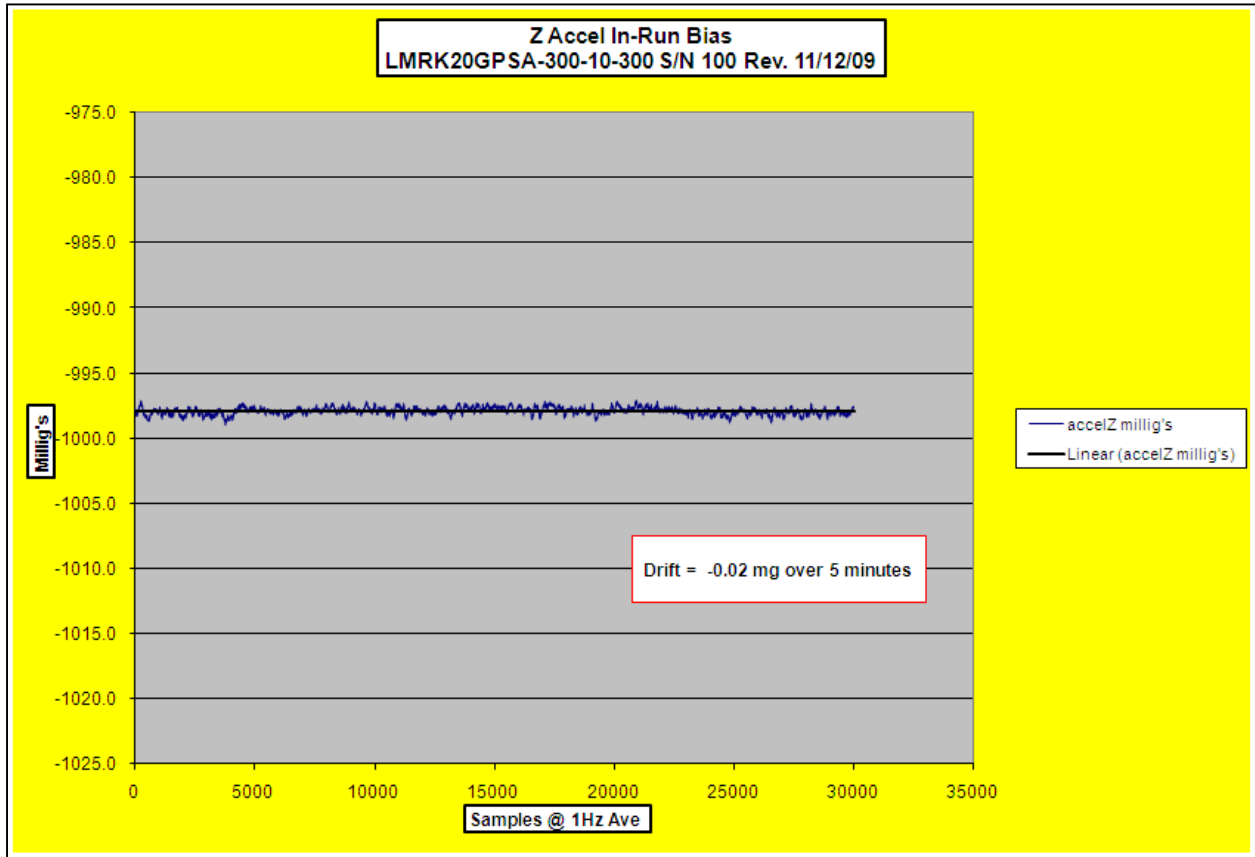


Figure 61: Z Accel In-Run Bias



20 Typical Test Data – Bias and Scale Factor over Temperature

Please find below typical 100Hz sample test data for Gyro and Accelerometer Bias and Scale Factor Over Temperature from a production LandMark™ 20 GPS/AHRS eXT “LN Series” for user reference. The charts are in run bias plots for the X, Y and Z channel gyros, accelerometers and magnetometers (Bias Over Temperature only) for unit SN502. **Please note that for all thermal models the unit is calibrated to the black line and errors are from that line.**

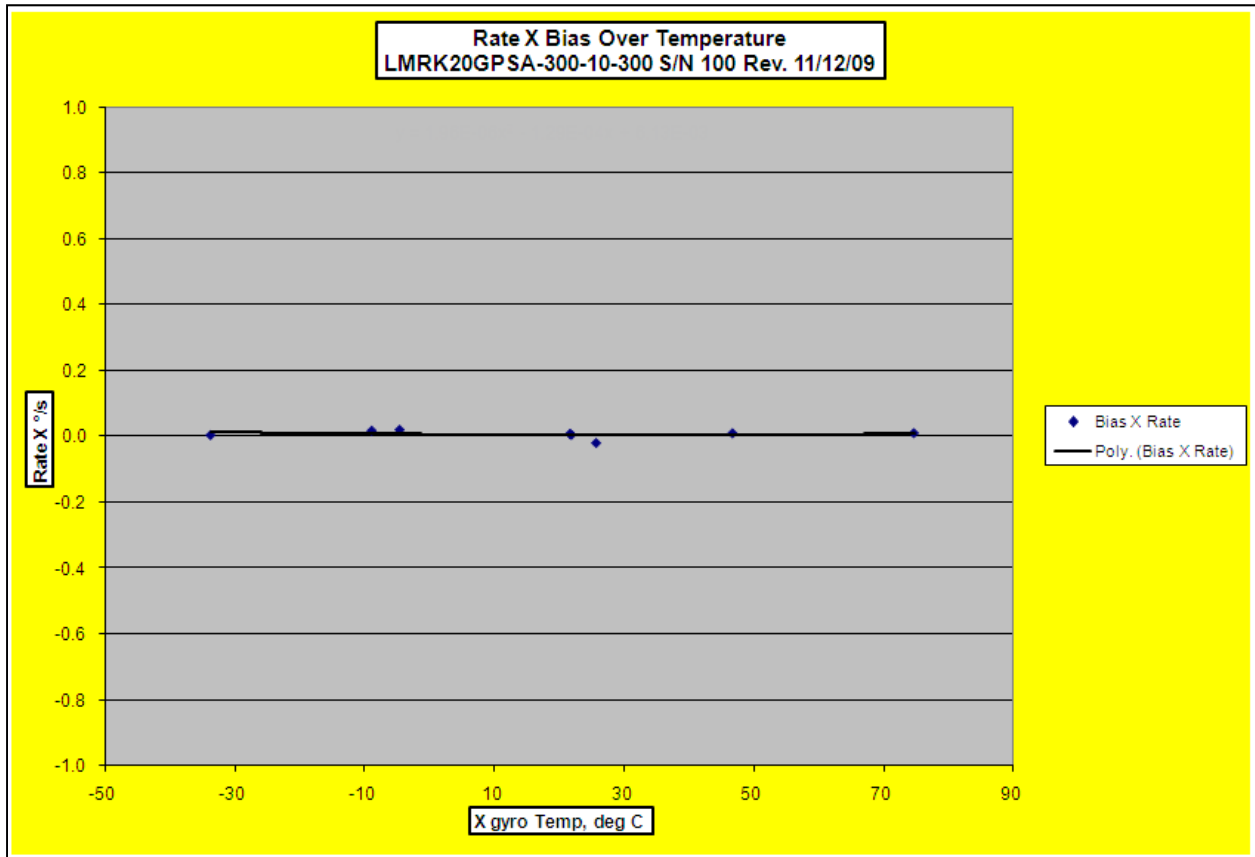


Figure 62: Rate X Bias Over Temperature

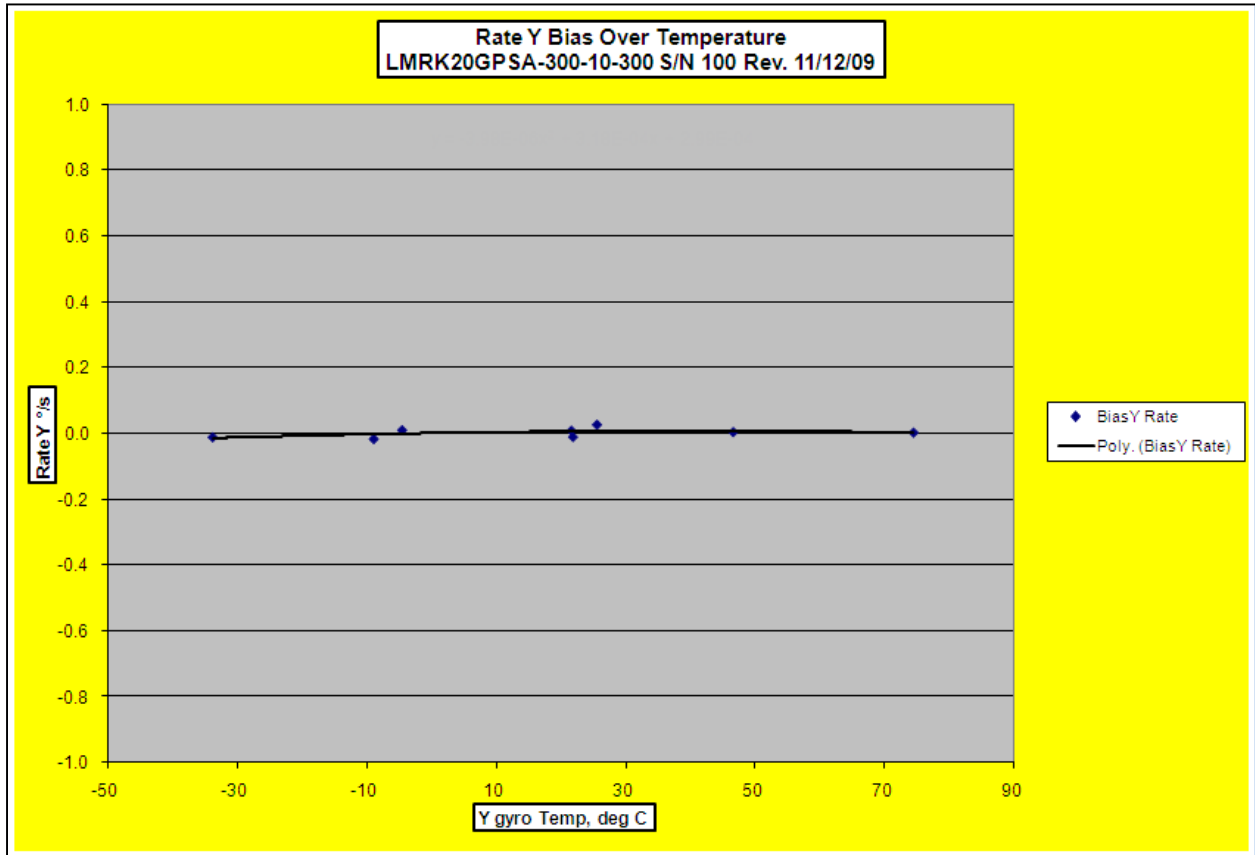


Figure 63: Rate Y Bias Over Temperature

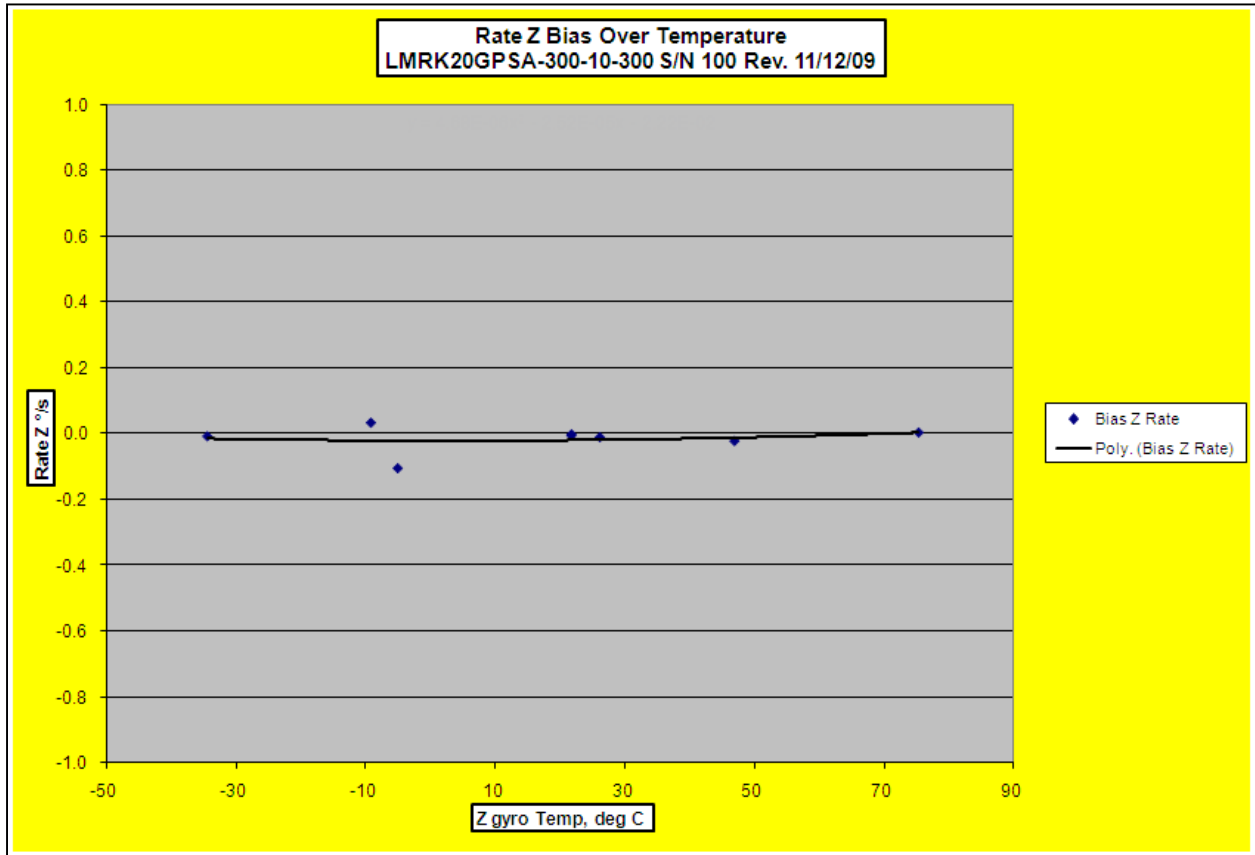


Figure 64: Rate Z Bias Over Temperature

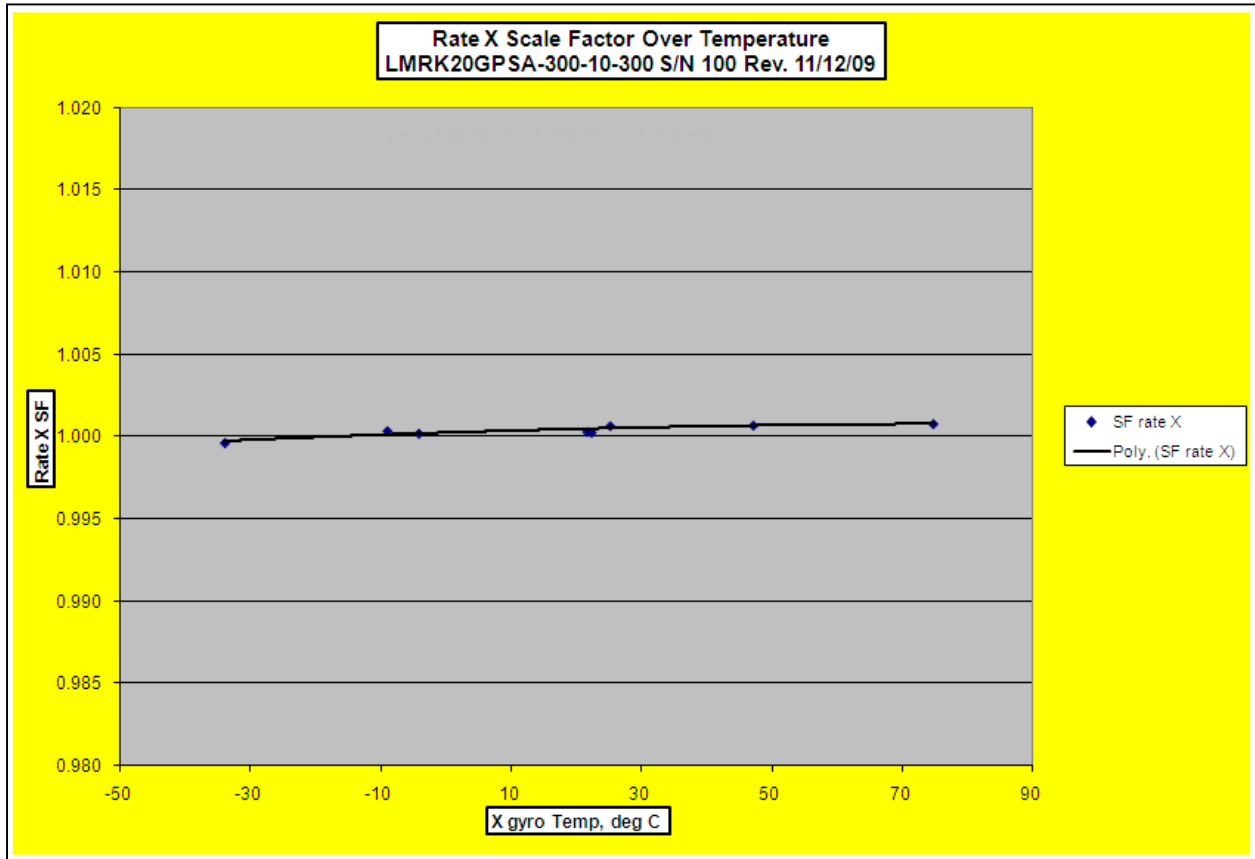


Figure 65: Rate X Scale Factor Over Temperature

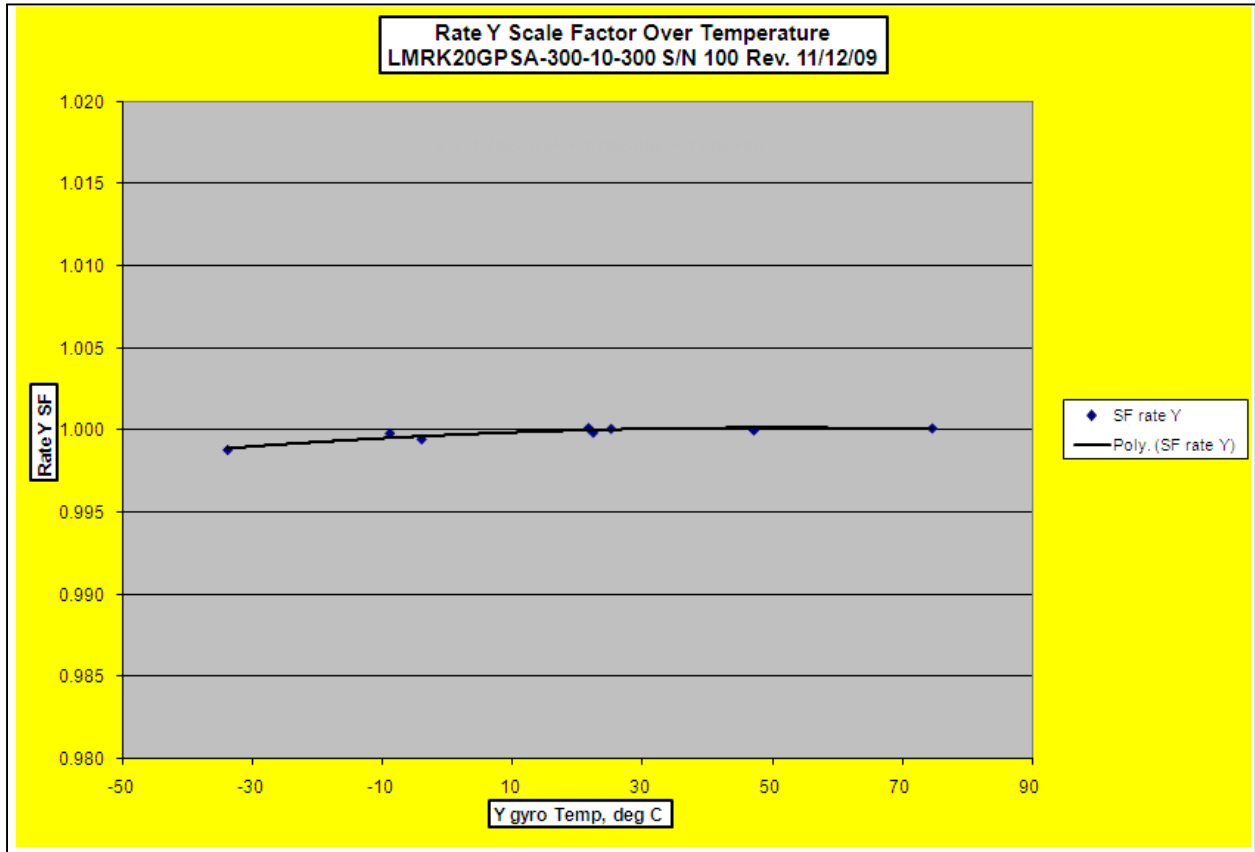


Figure 66: Rate Y Scale Factor Over Temperature

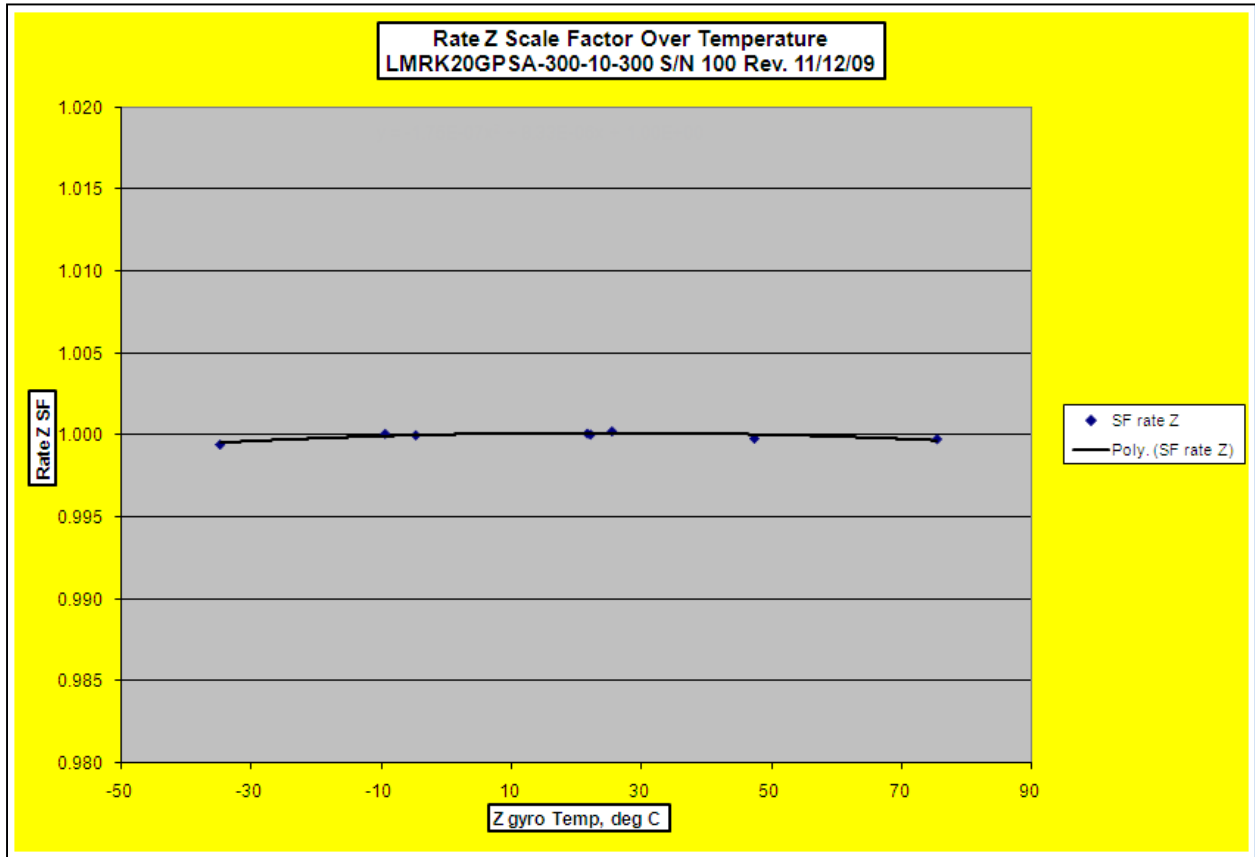


Figure 67: Rate Z Scale Factor Over Temperature

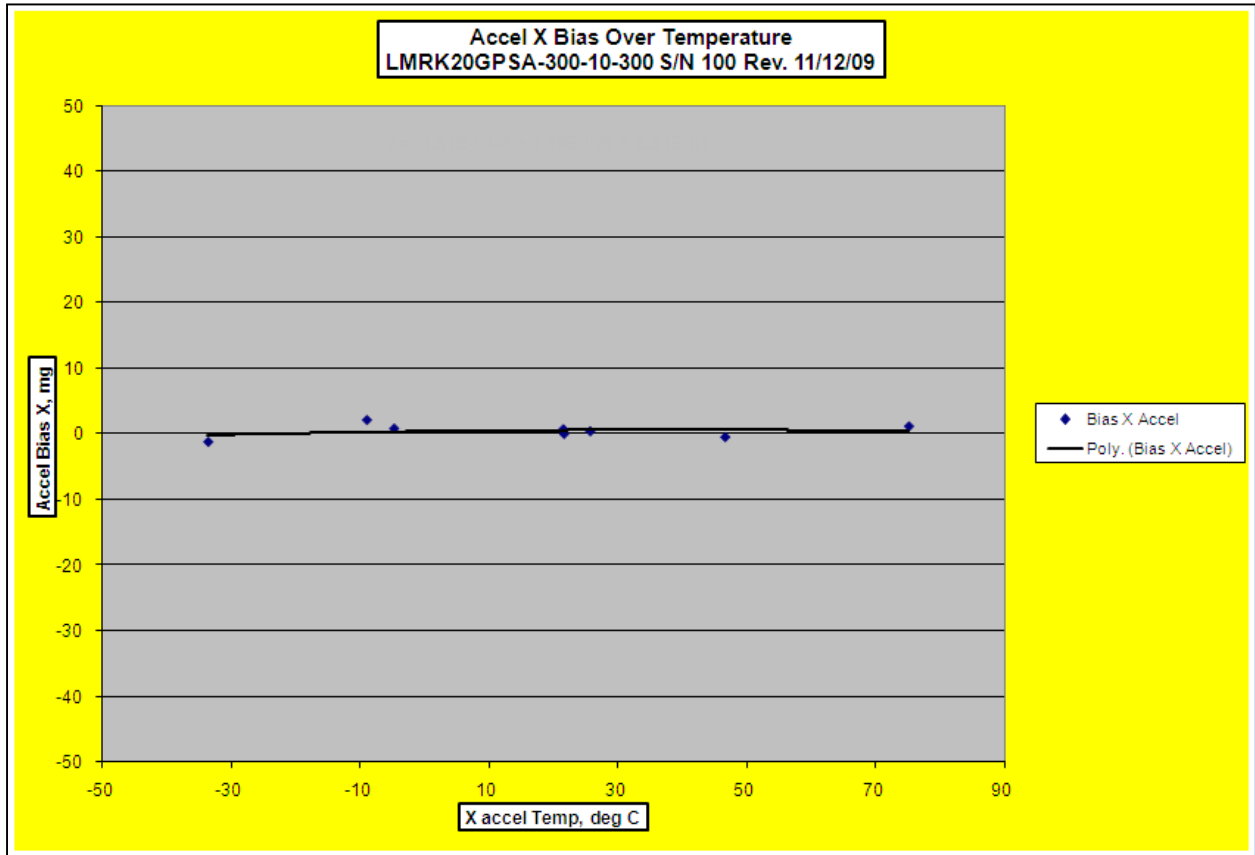


Figure 68: Accel Bias X Over Temperature

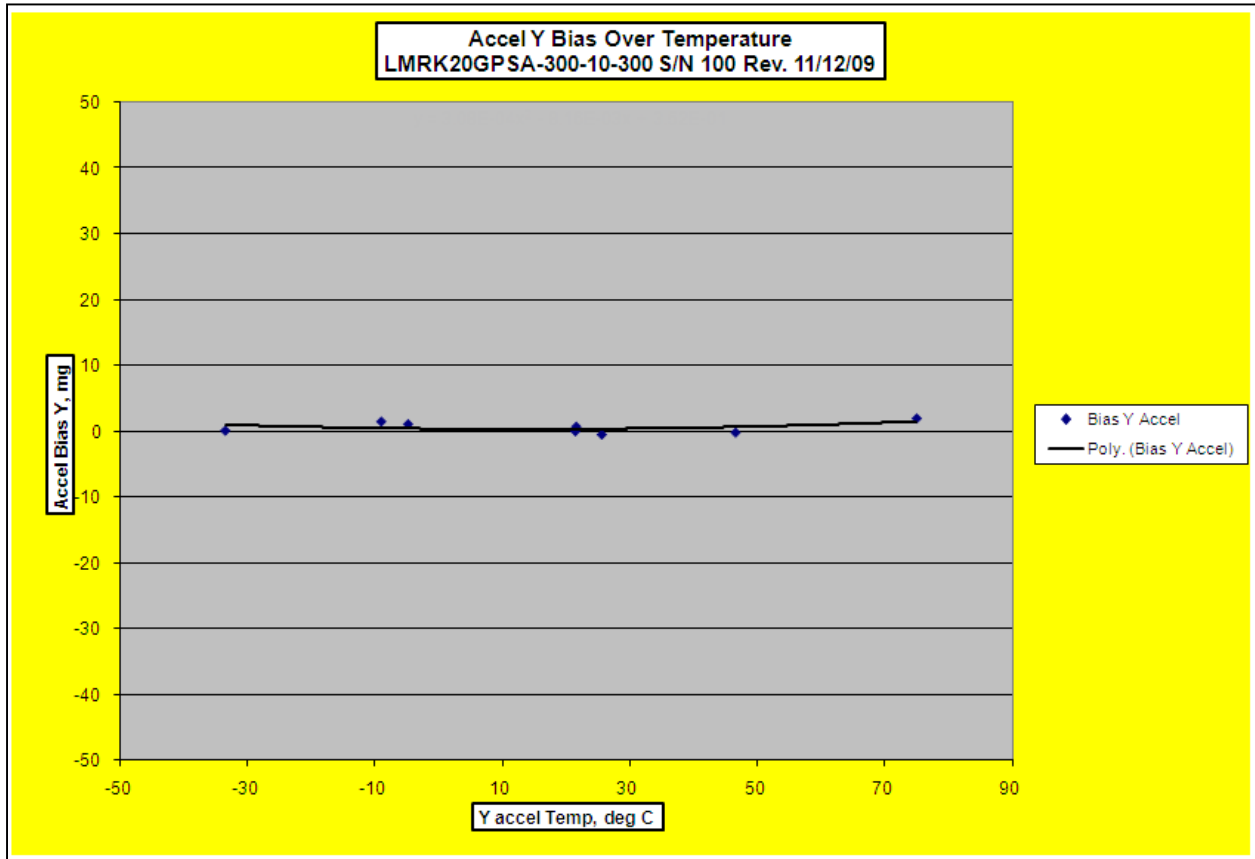


Figure 69: Accel Bias Y Over Temperature

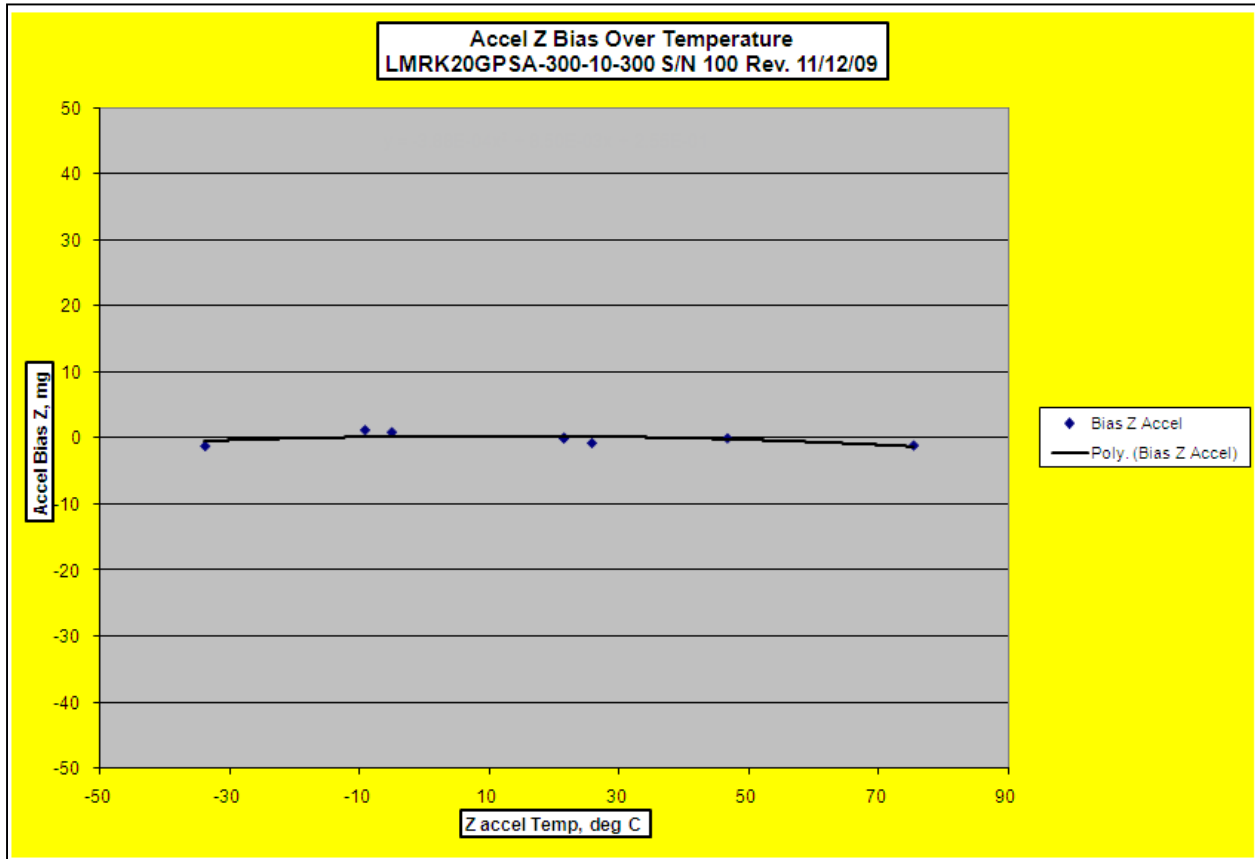


Figure 70: Accel Bias Z Over Temperature

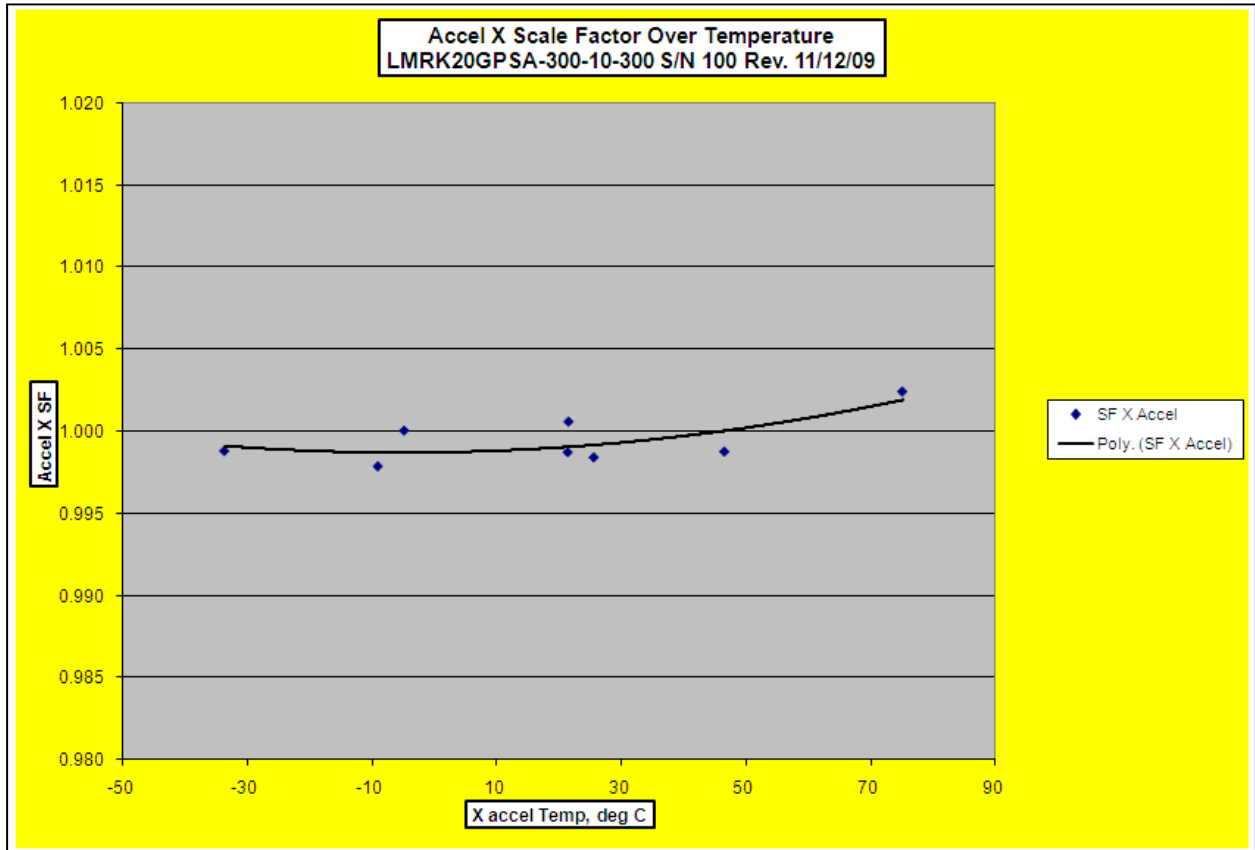


Figure 71: Accel Scale Factor X Over Temperature

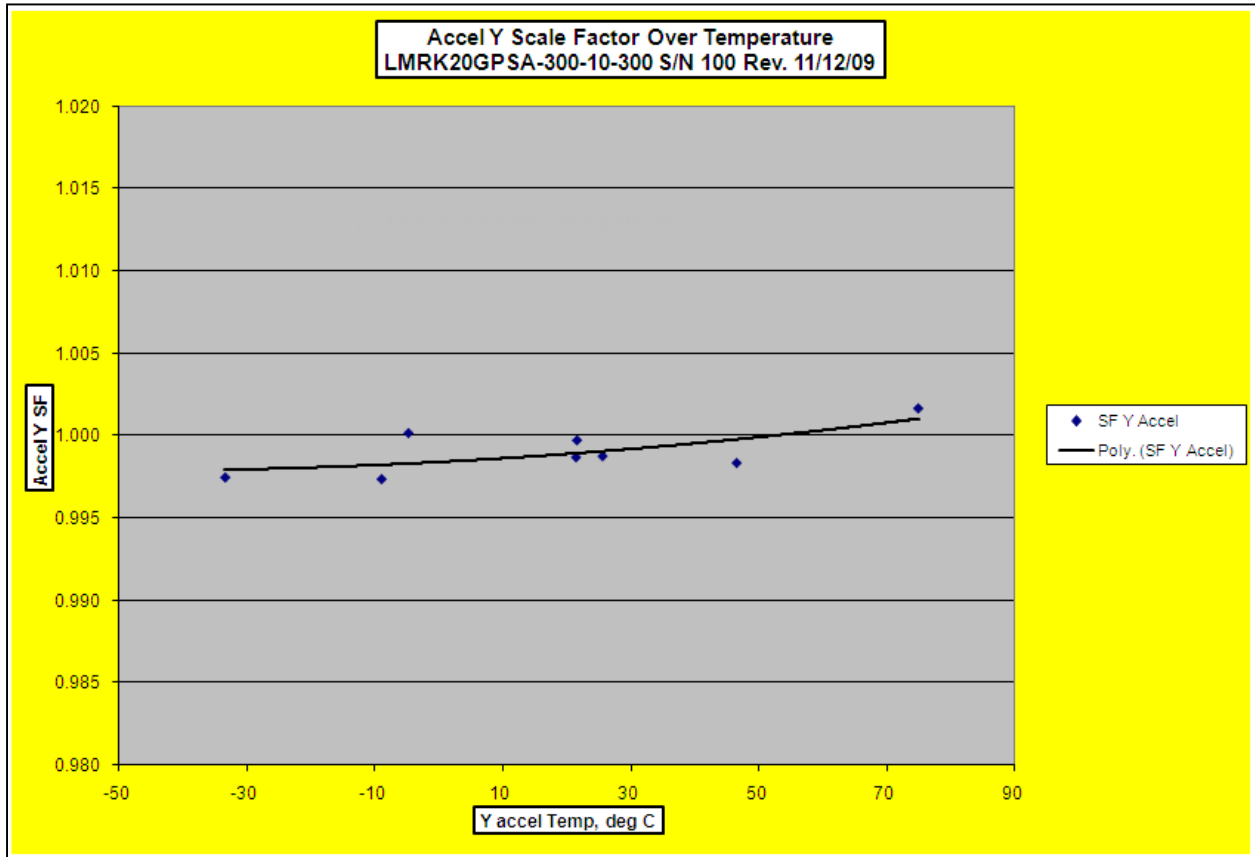


Figure 72: Accel Scale Factor Y Over Temperature

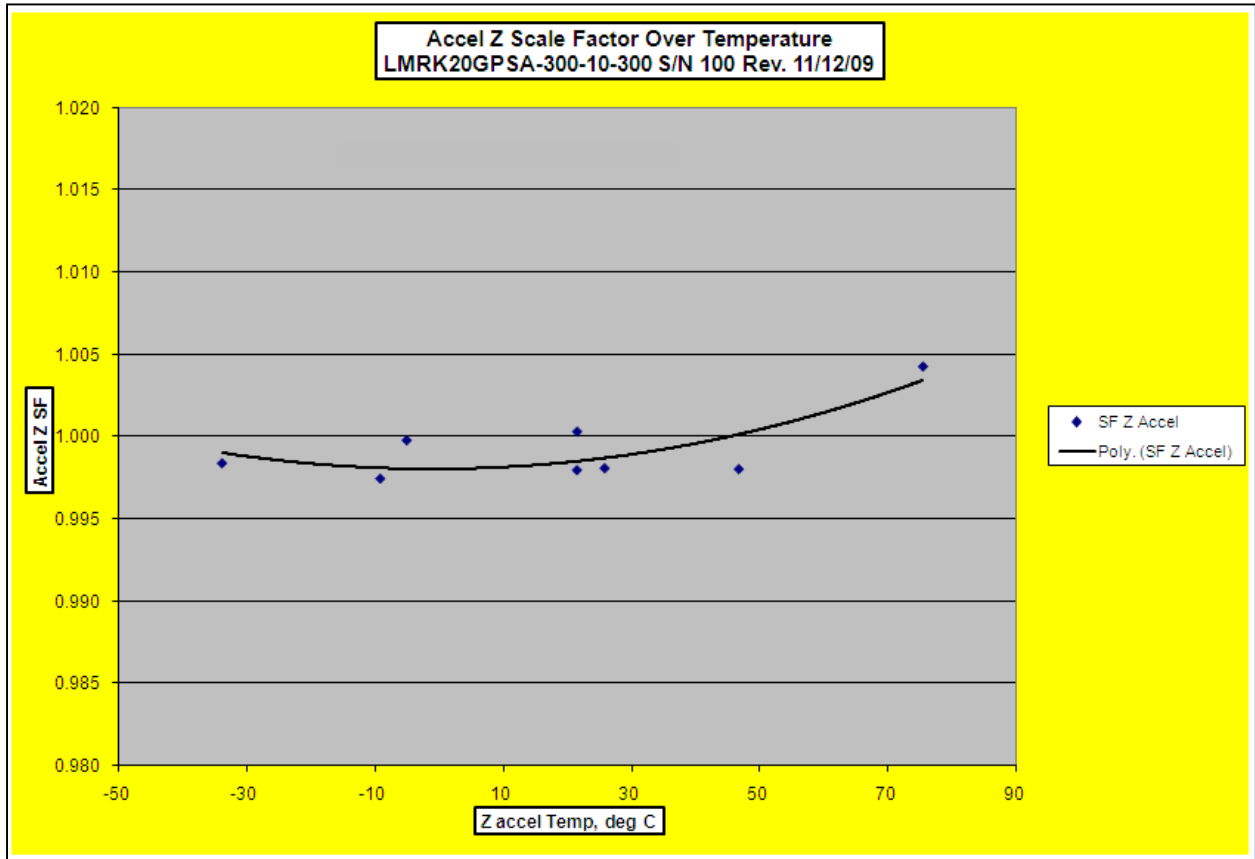


Figure 73: Accel Scale Factor Z Over Temperature



21 Magnetic Heading – Z Axis

Please find below typical 100Hz sample test data for Magnetic Heading from a production LandMark™ 20 GPS/AHRS eXT “LN Series” (SN100) for user reference with 300°/sec rate range gyros and 10g linear range accelerometers.

Table Position degrees from N	Heading AHRS °	Error degrees	Average degrees
0	0.0	0.0	-0.03
45	45.2	0.2	-0.03
90	90.1	0.1	-0.03
135	134.9	-0.1	-0.03
180	179.7	-0.3	-0.03
225	224.8	-0.2	-0.03
270	269.8	-0.2	-0.03
315	315.2	0.2	-0.03
360		0.0	-0.03
ave err =		-0.03	

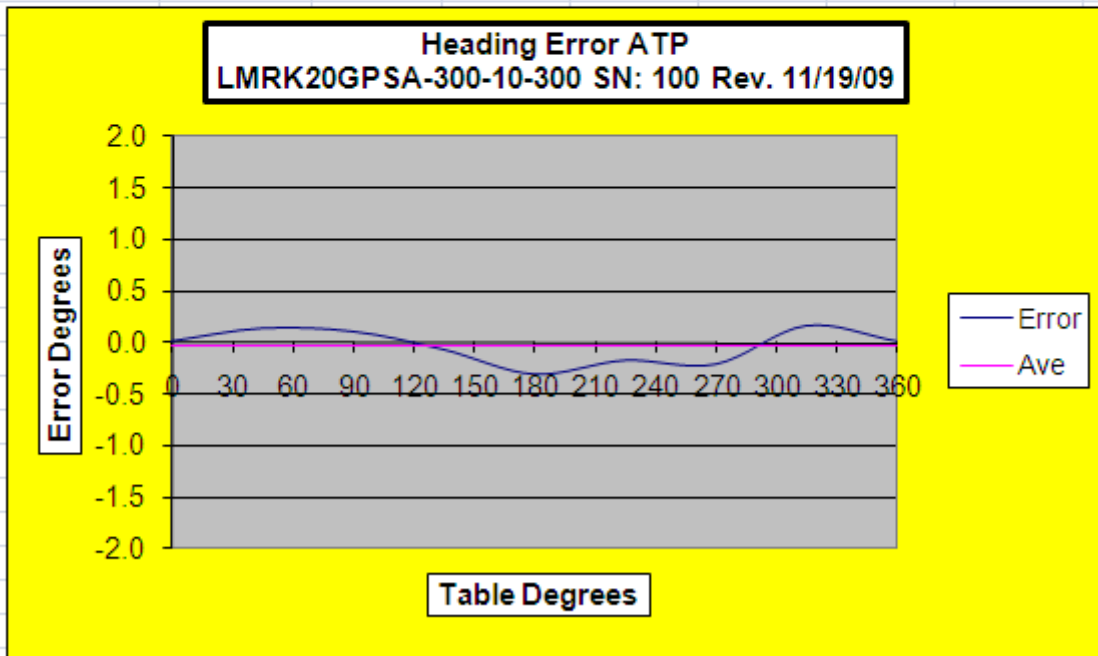


Figure 74: Magnetic Heading Over 360 degree Turn



22 Power Supply Sensitivity

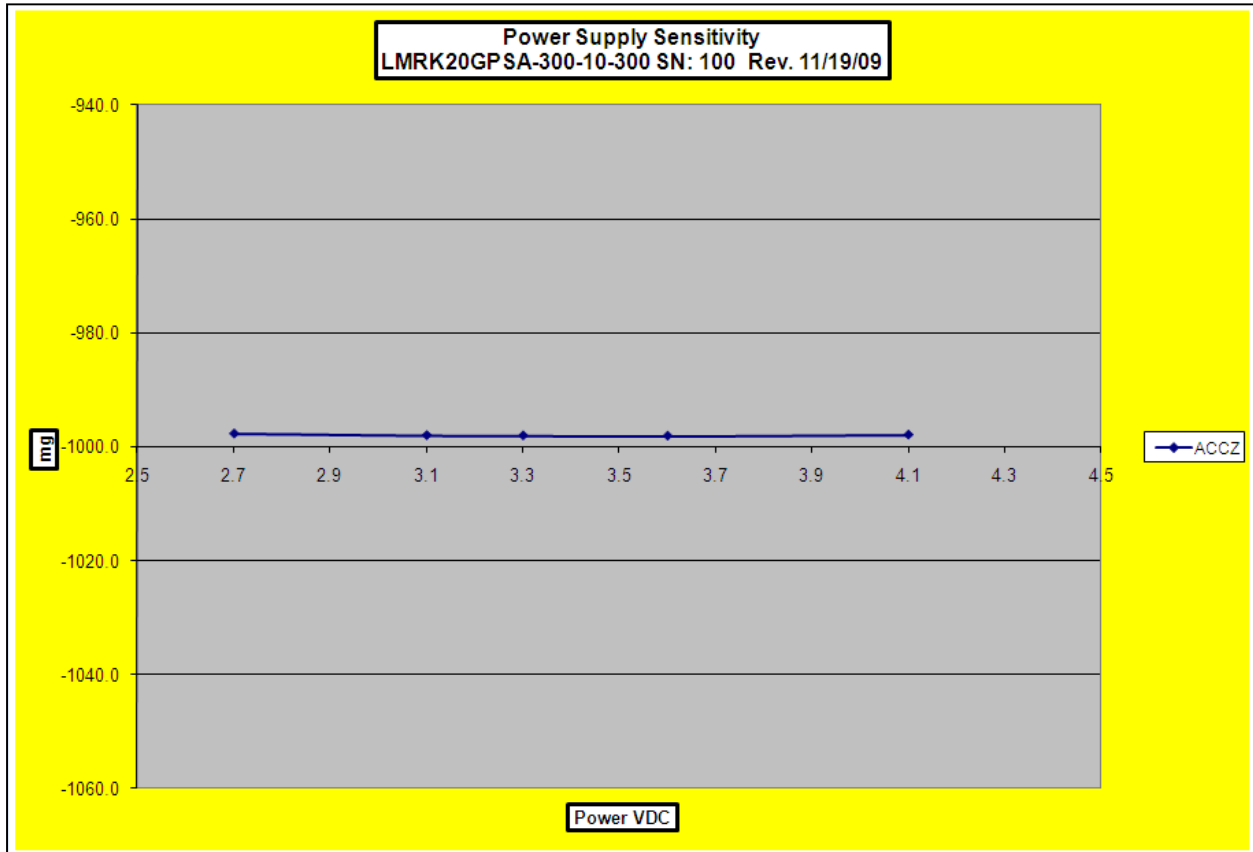


Figure 75: Power Supply Sensitivity



24 GPS ATP Test Data

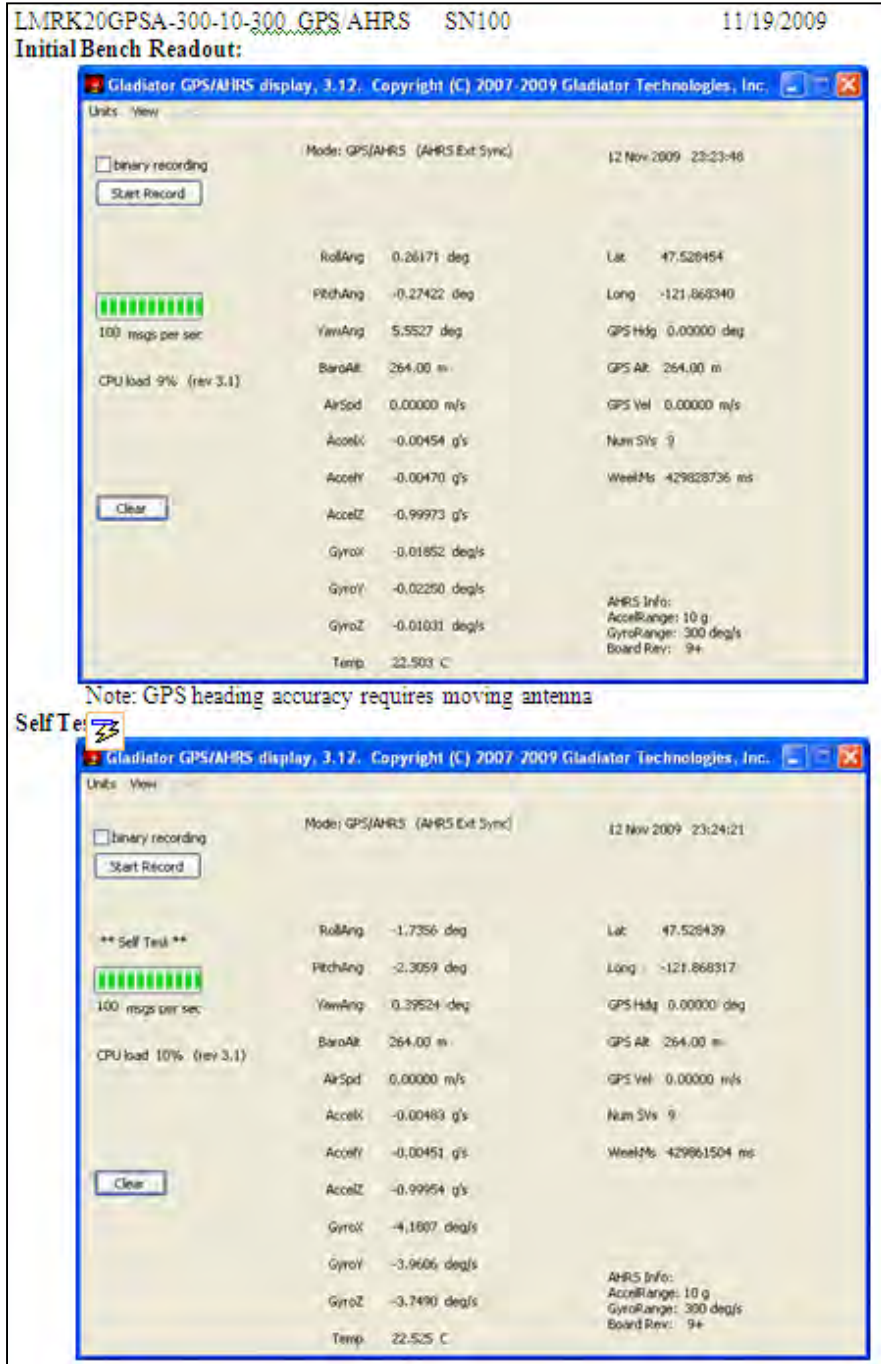


Figure 78: GPS ATP Data