

## General Information

### Mission Information

Project name	12079
Processing date	2021-03-04 20:03:27
Mission date	2021-03-02 23:12:43
Mission duration	03:19:47.849
Processing mode	IN-Fusion PP-RTX

### Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10633
IMU type	57
Receiver type	BD982
Antenna type	AV39

## Project File List

### Rover Data Files

File name	File type
20200802.000	POS Data
20200802.001	POS Data
20200802.002	POS Data
20200802.003	POS Data
20200802.004	POS Data
20200802.005	POS Data
20200802.006	POS Data
20200802.007	POS Data
20200802.008	POS Data
20200802.009	POS Data
20200802.010	POS Data
20200802.011	POS Data
20200802.012	POS Data
20200802.013	POS Data
20200802.014	POS Data
20200802.015	POS Data
20200802.016	POS Data
20200802.017	POS Data
20200802.018	POS Data
20200802.019	POS Data
20200802.020	POS Data
20200802.021	POS Data
20200802.022	POS Data
20200802.023	POS Data
20200802.024	POS Data

### Input Files

File Name	File Type
Ephm0610.21g	GLONASS Broadcast Ephemeris
Ephm0610.21n	GPS Broadcast Ephemeris
Ephm0620.21g	GLONASS Broadcast Ephemeris
Ephm0620.21n	GPS Broadcast Ephemeris

### Output Files

Filename	File type
sbet_12079.out	SBET Trajectory File
eo_12079.txt	ZI Imaging POSEO Output
sbet_12079_NAD83(2011).out	Custom Smoothed BET Export Output
lever_arm_values.txt	ReferenceToPrimaryLeverArms Export Output

## Rover Data Summary

First raw data file	20200802.000		
Last raw data file	20200802.024		
Start GPS week	2147		
Start time	256362.706 (03/02/2021 23:12:42)		
End time	268350.555 (03/03/2021 02:32:30)		
Start of fine alignment	256883.044 (03/02/2021 23:21:23)		
Available subsystems	Primary GNSS, IMU		
POS Event Input	None		
Correction data	None		
<b>IMU Installation Lever Arms &amp; Mounting Angles</b>			
Reference to IMU lever arm (m)	0.000	0.000	0.000
Reference to IMU mounting angles (deg)	0.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	-0.108	-0.248	-0.901
Reference to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

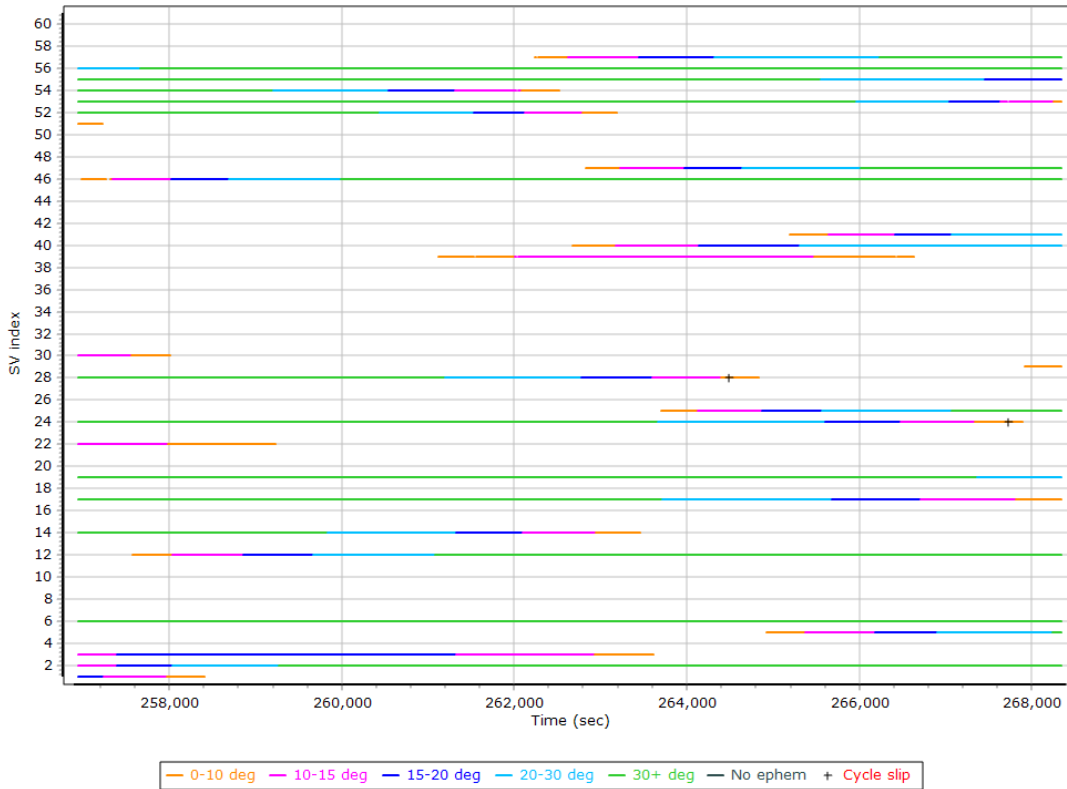
## Rover Data QC

### Raw IMU Import QC Summary

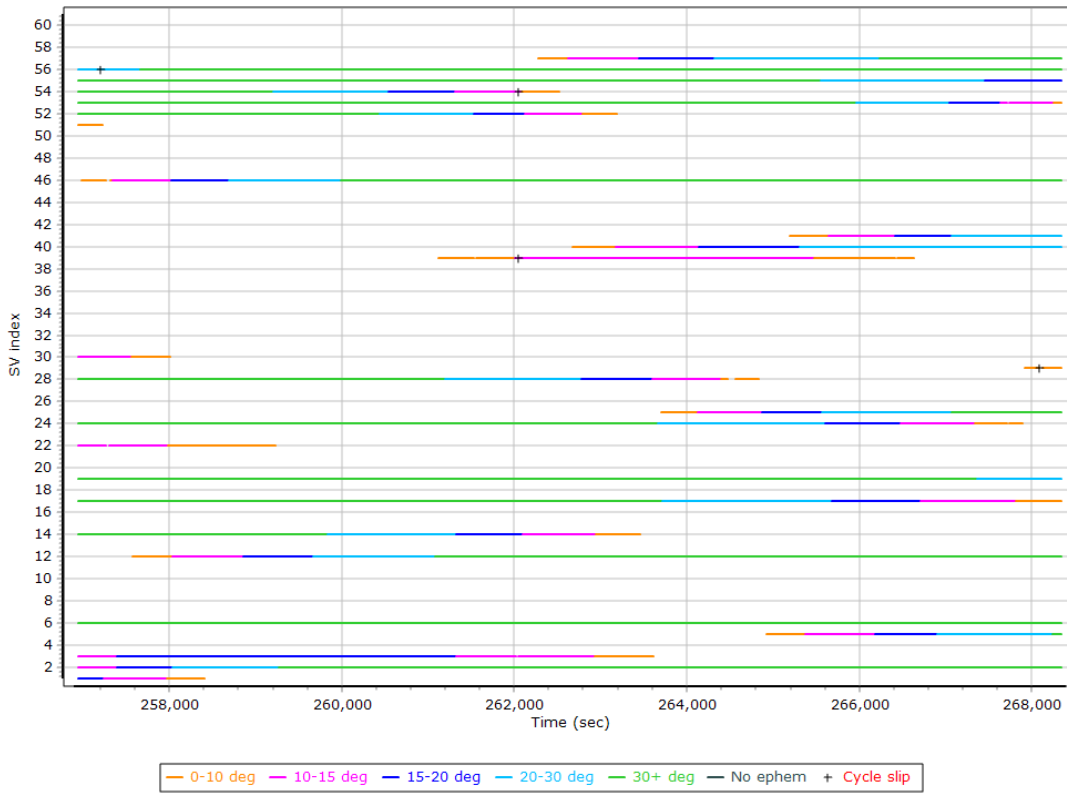
IMU data input file	imu_12079.dat
IMU data check log file	imudt_12079.log
IMU Records Processed	2397248
Termination Status	Normal
IMU Anomalies	0

## Primary Observables & Satellite Data

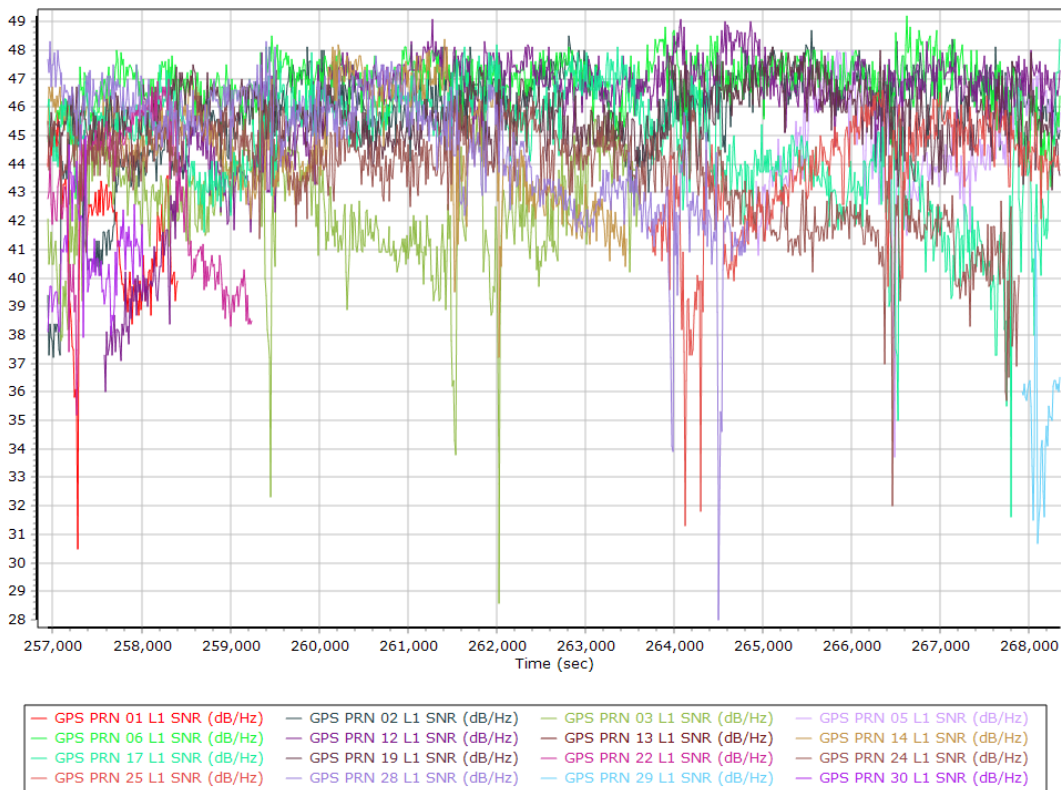
### L1 Satellite Lock/Elevation



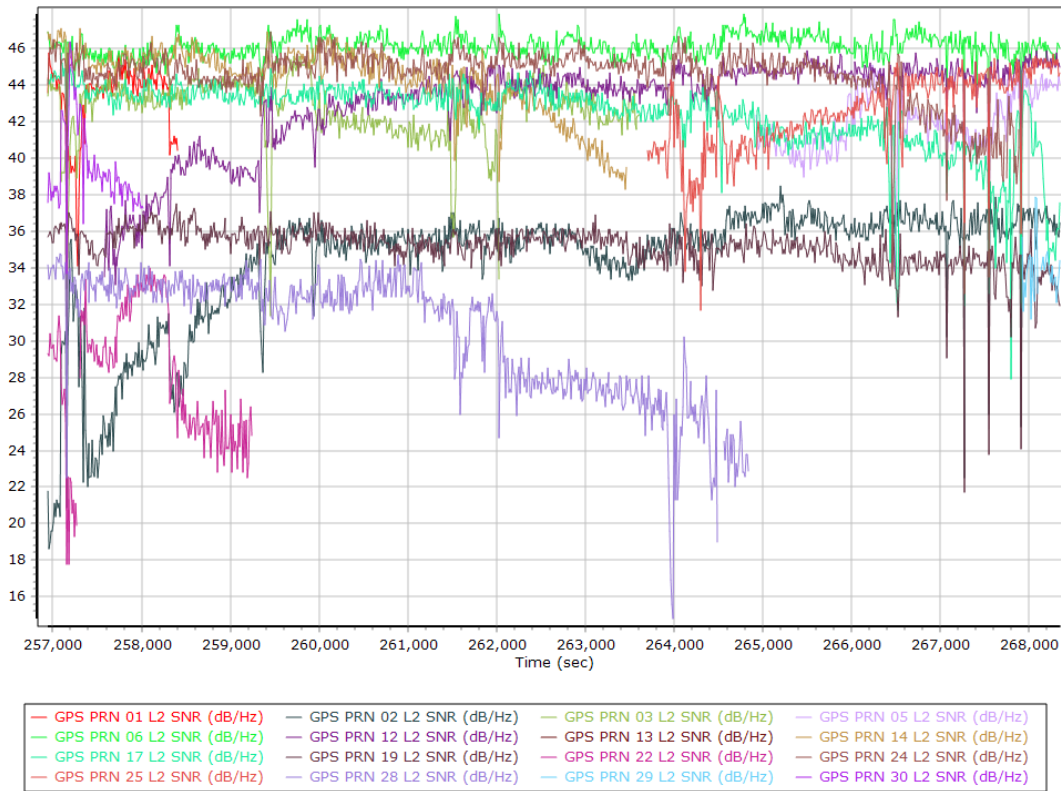
## L2 Satellite Lock/Elevation



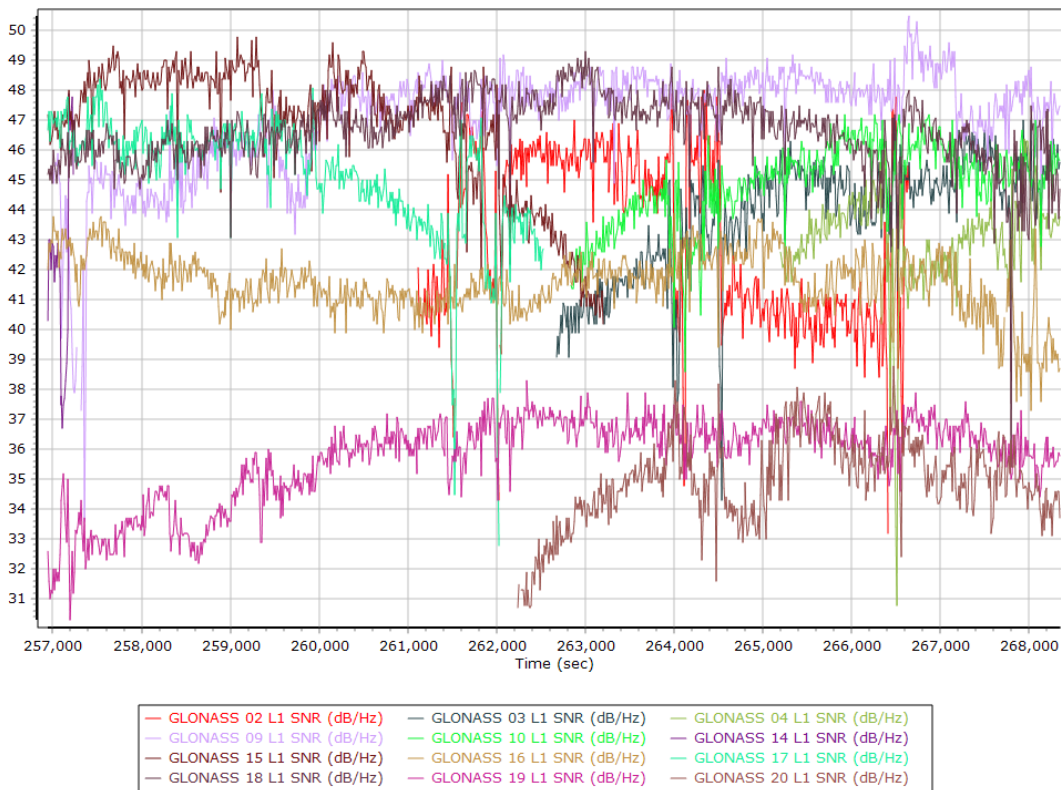
## GPS L1 SNR



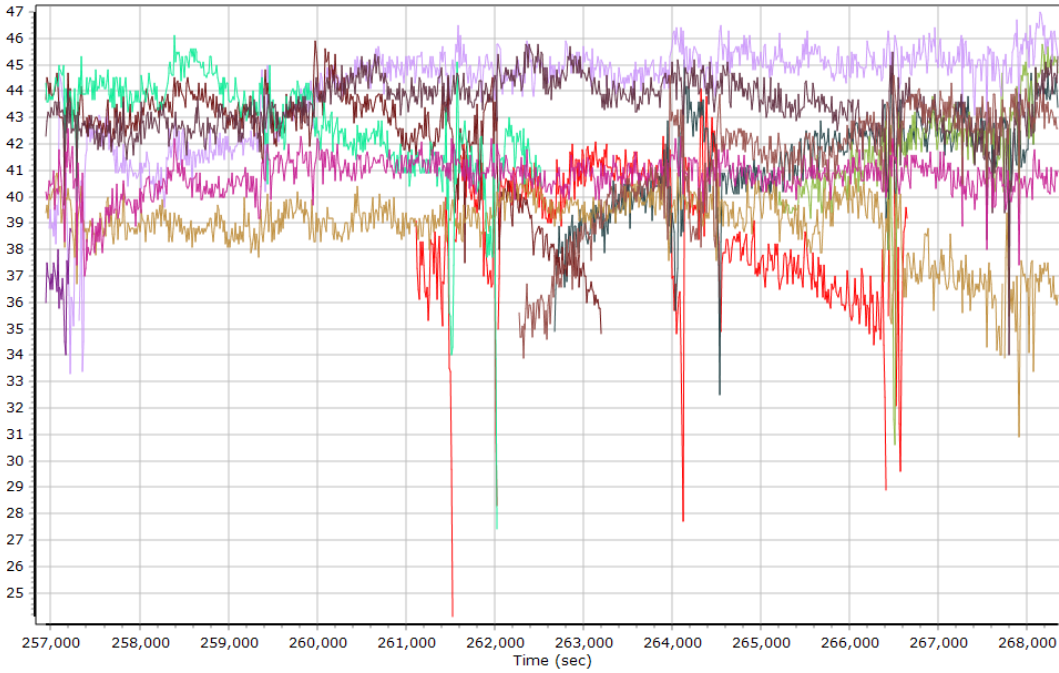
### GPS L2 SNR



### GLONASS L1 SNR

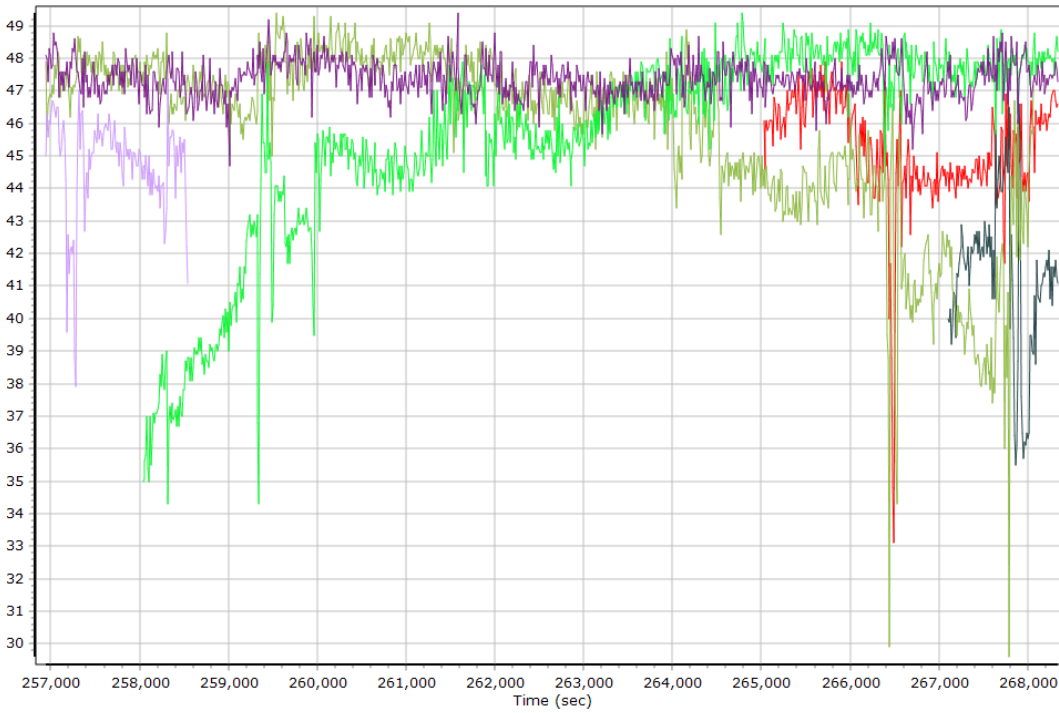


### GLONASS L2 SNR



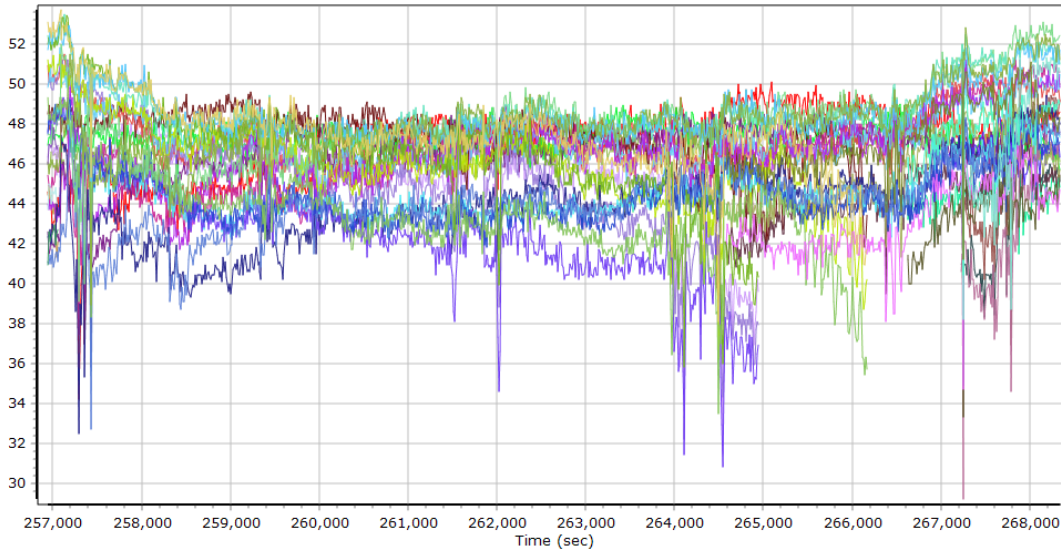
- GLONASS 02 L2 SNR (dB/Hz)
- GLONASS 03 L2 SNR (dB/Hz)
- GLONASS 04 L2 SNR (dB/Hz)
- GLONASS 09 L2 SNR (dB/Hz)
- GLONASS 10 L2 SNR (dB/Hz)
- GLONASS 14 L2 SNR (dB/Hz)
- GLONASS 15 L2 SNR (dB/Hz)
- GLONASS 16 L2 SNR (dB/Hz)
- GLONASS 17 L2 SNR (dB/Hz)
- GLONASS 18 L2 SNR (dB/Hz)
- GLONASS 19 L2 SNR (dB/Hz)
- GLONASS 20 L2 SNR (dB/Hz)

### BEIDOU SNR



- BEIDOU 20 B1 B1 SNR (dB/Hz)
- BEIDOU 26 B1 B1 SNR (dB/Hz)
- BEIDOU 27 B1 B1 SNR (dB/Hz)
- BEIDOU 28 B1 B1 SNR (dB/Hz)
- BEIDOU 29 B1 B1 SNR (dB/Hz)
- BEIDOU 30 B1 B1 SNR (dB/Hz)

## GALILEO SNR

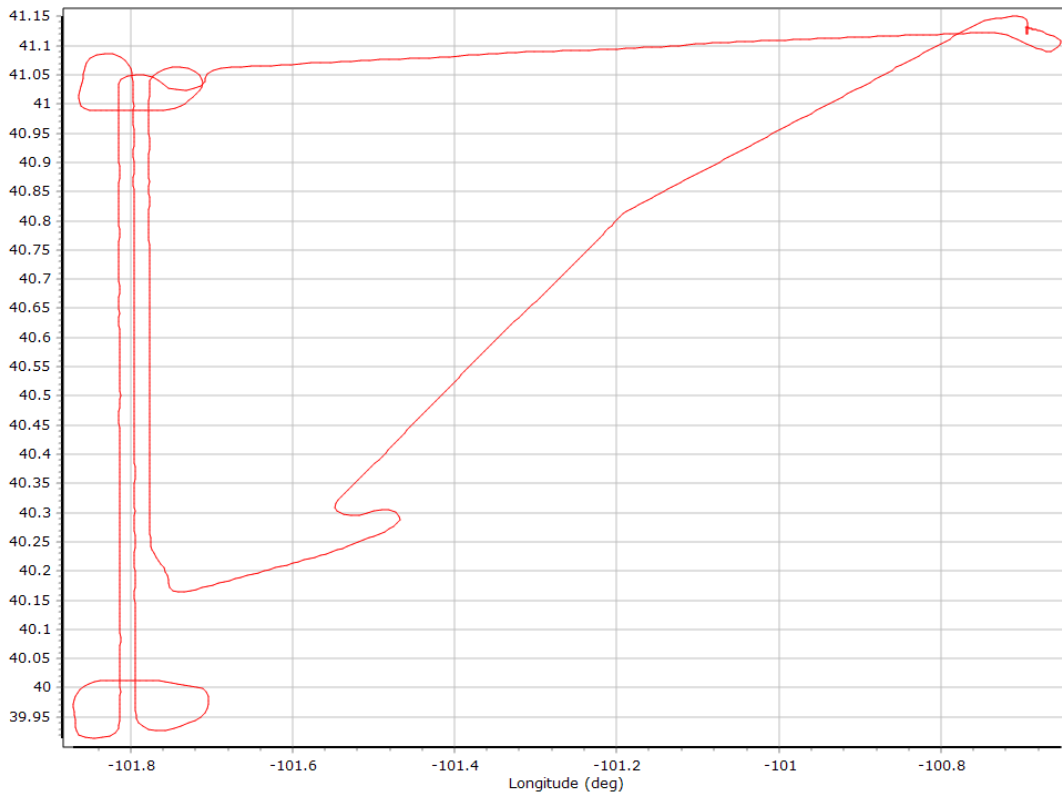


— GALILEO 01 L1 BOC_1_1_D_MBOC SNR (dB/Hz)	— GALILEO 08 L1 BOC_1_1_D_MBOC SNR (dB/Hz)
— GALILEO 13 L1 BOC_1_1_D_MBOC SNR (dB/Hz)	— GALILEO 15 L1 BOC_1_1_D_MBOC SNR (dB/Hz)
— GALILEO 21 L1 BOC_1_1_D_MBOC SNR (dB/Hz)	— GALILEO 26 L1 BOC_1_1_D_MBOC SNR (dB/Hz)
— GALILEO 27 L1 BOC_1_1_D_MBOC SNR (dB/Hz)	— GALILEO 30 L1 BOC_1_1_D_MBOC SNR (dB/Hz)
— GALILEO 31 L1 BOC_1_1_D_MBOC SNR (dB/Hz)	— GALILEO 33 L1 BOC_1_1_D_MBOC SNR (dB/Hz)
— GALILEO 01 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
— GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
— GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
— GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 30 L5E5A BPSK10_PD SNR (dB/Hz)
— GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)

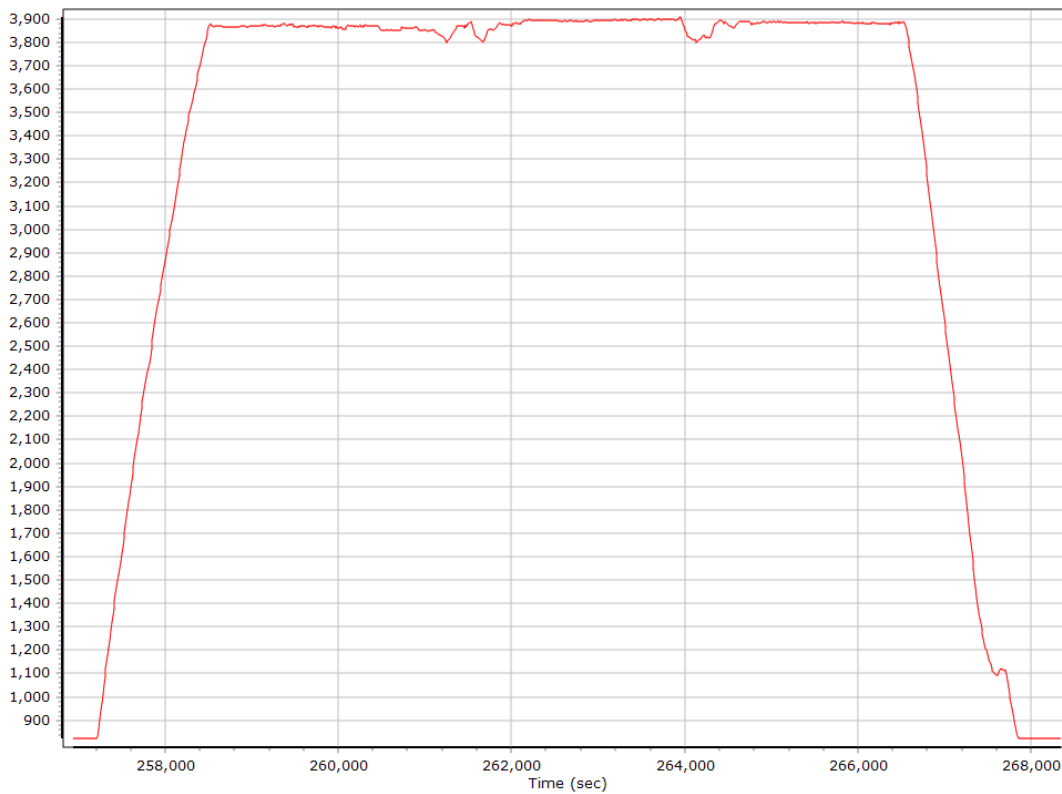


## Smoothed Trajectory Information

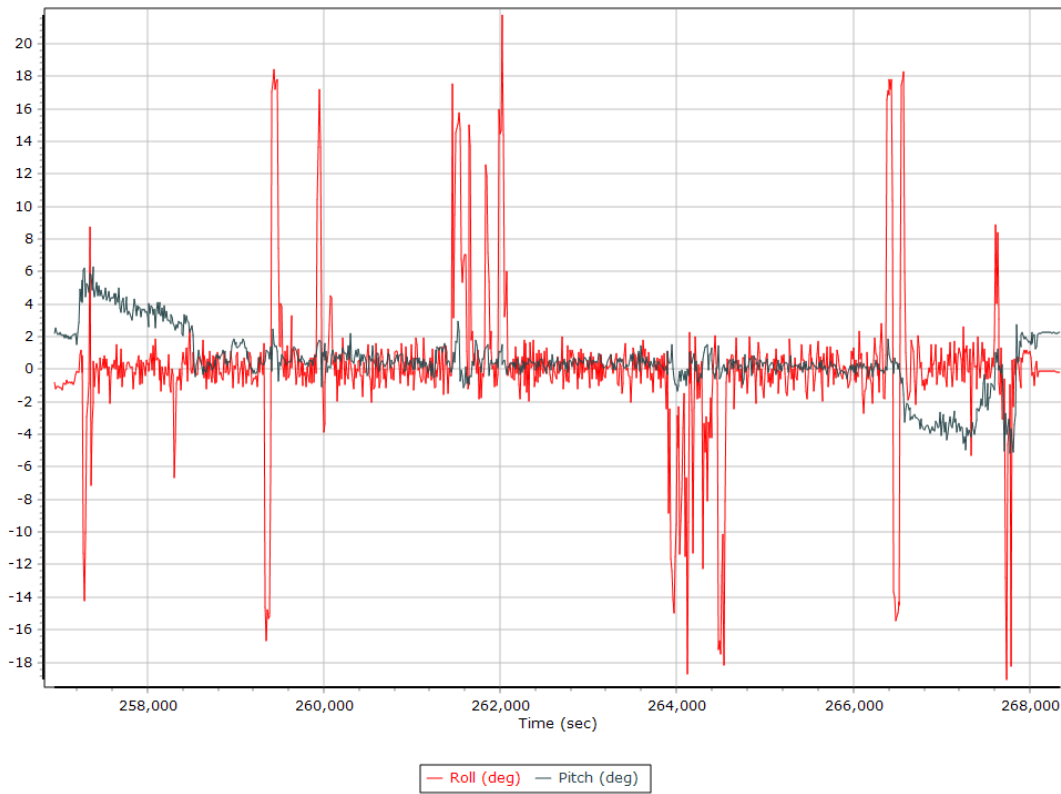
### Top View



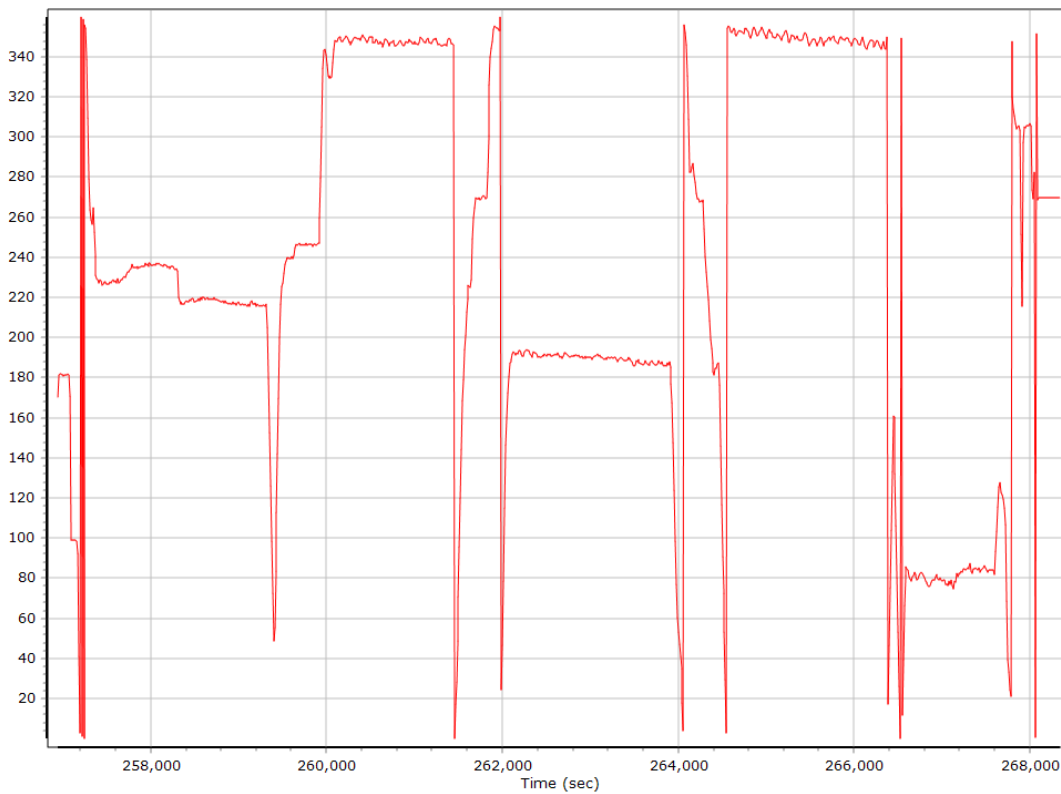
### Altitude



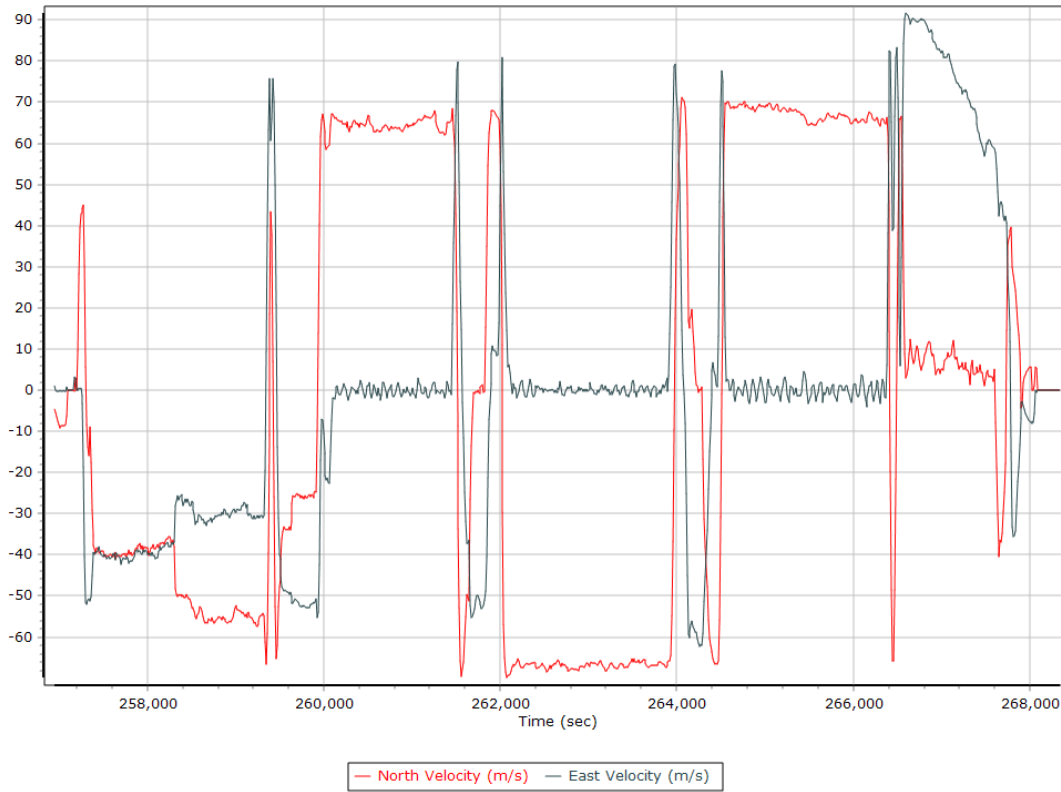
## Roll/Pitch



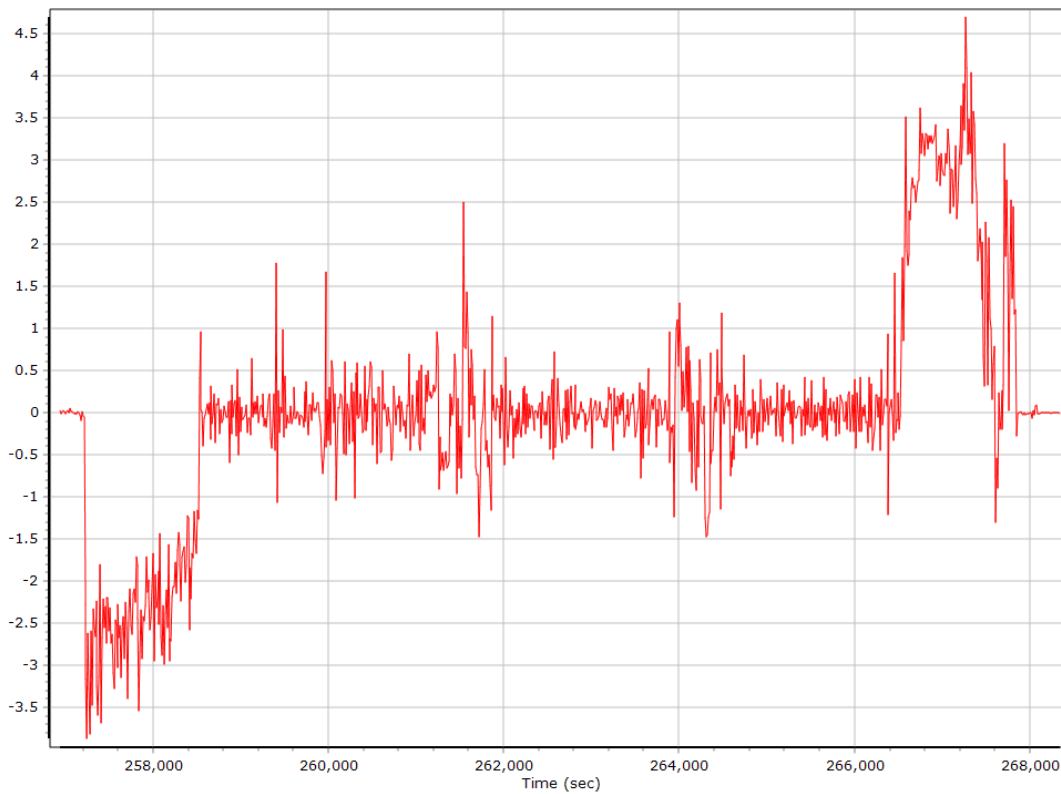
## Heading



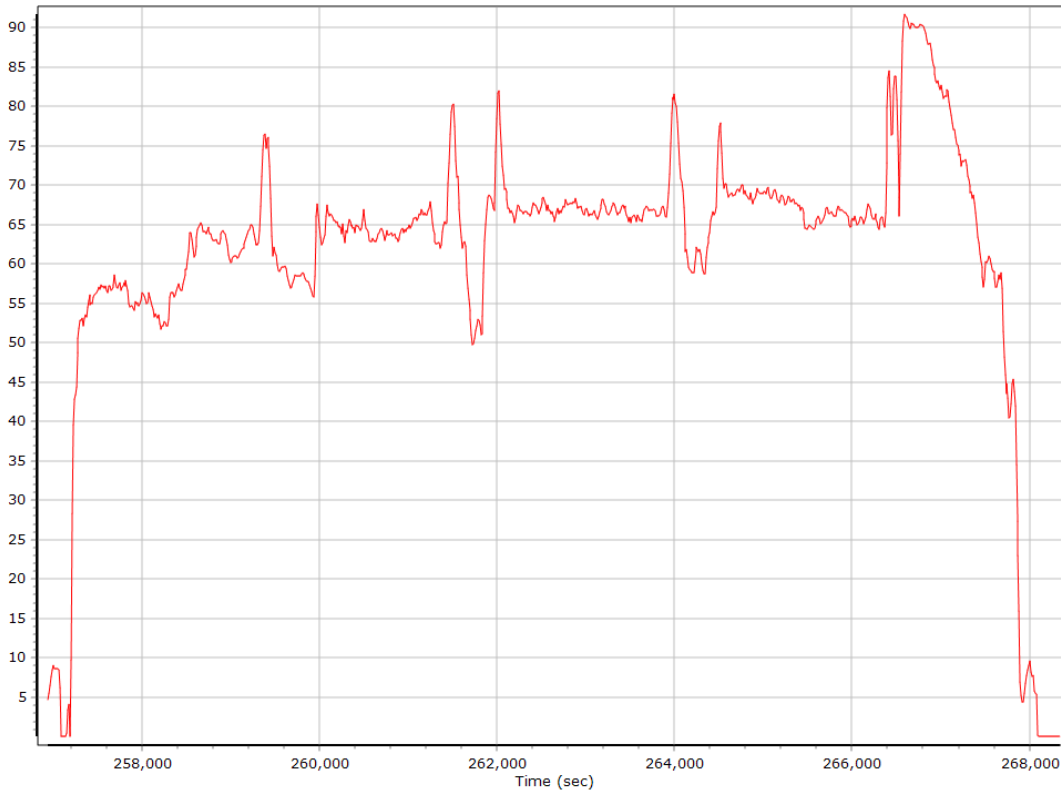
## North/East Velocity



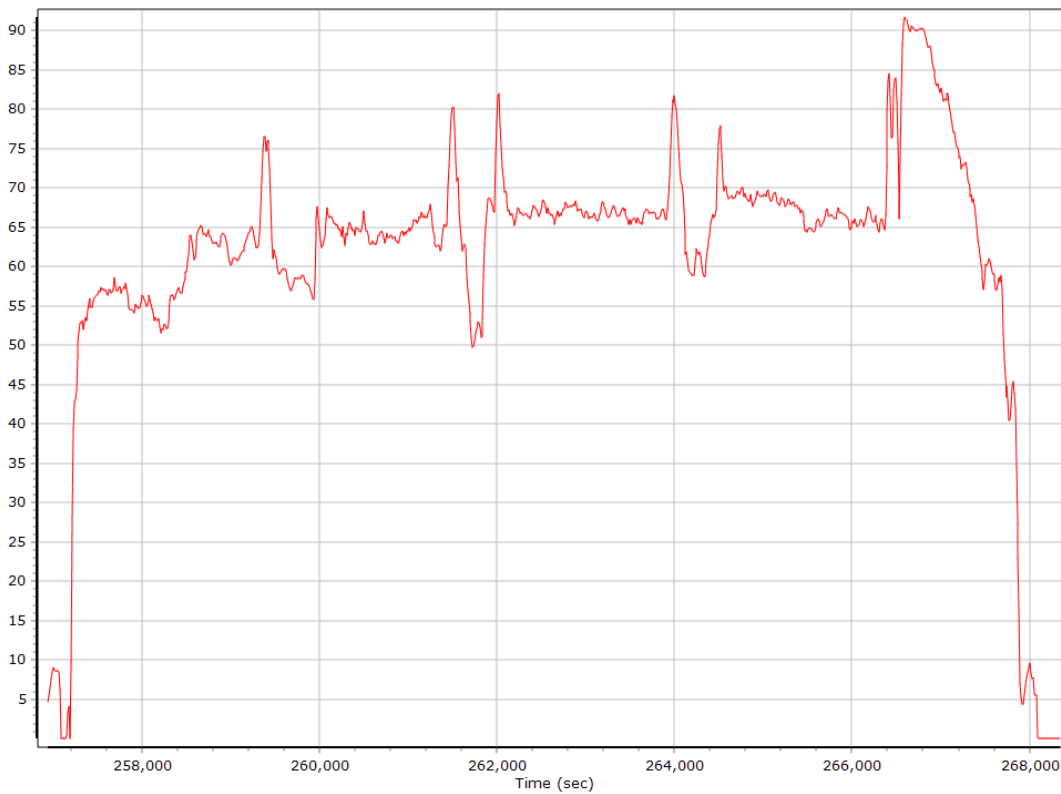
## Down Velocity



## Total Speed



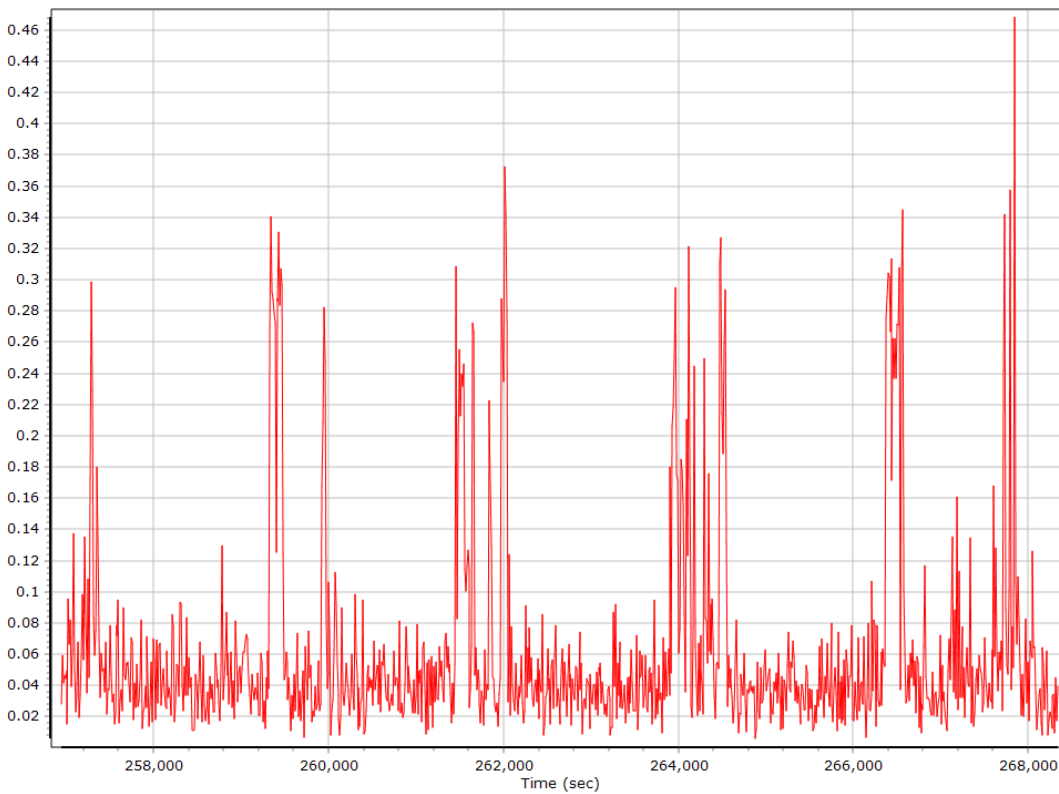
## Ground Speed



## Body Acceleration



## Total Body Acceleration

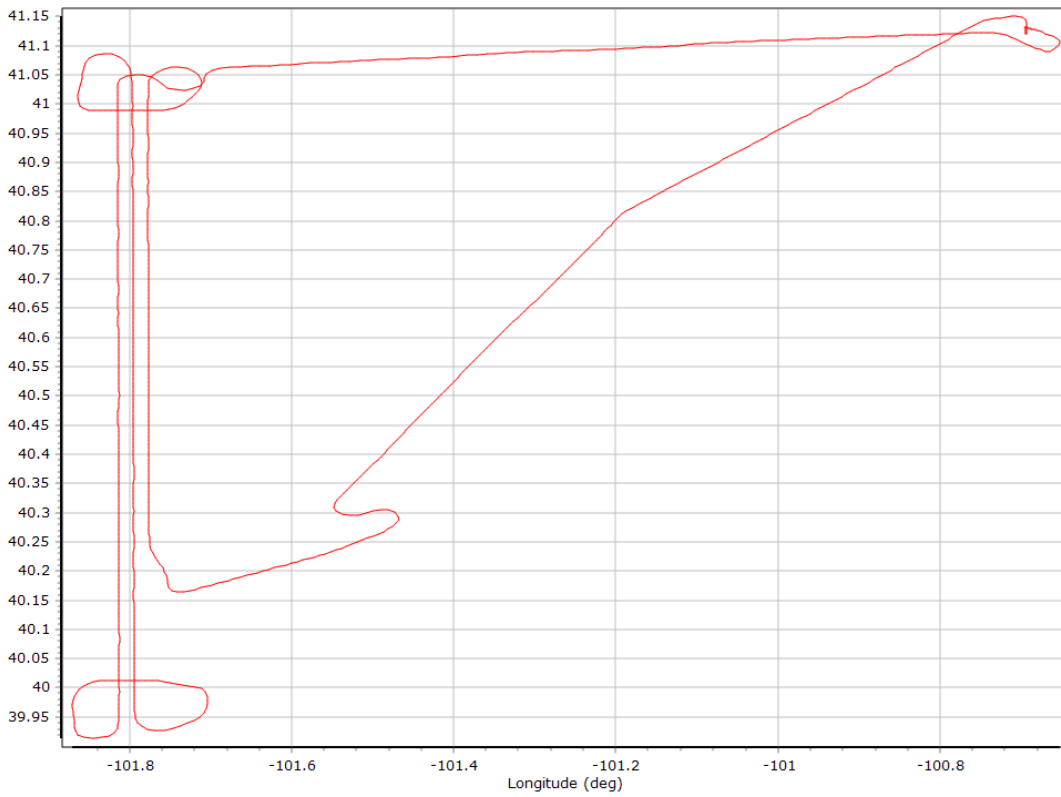


## Body Angular Rate

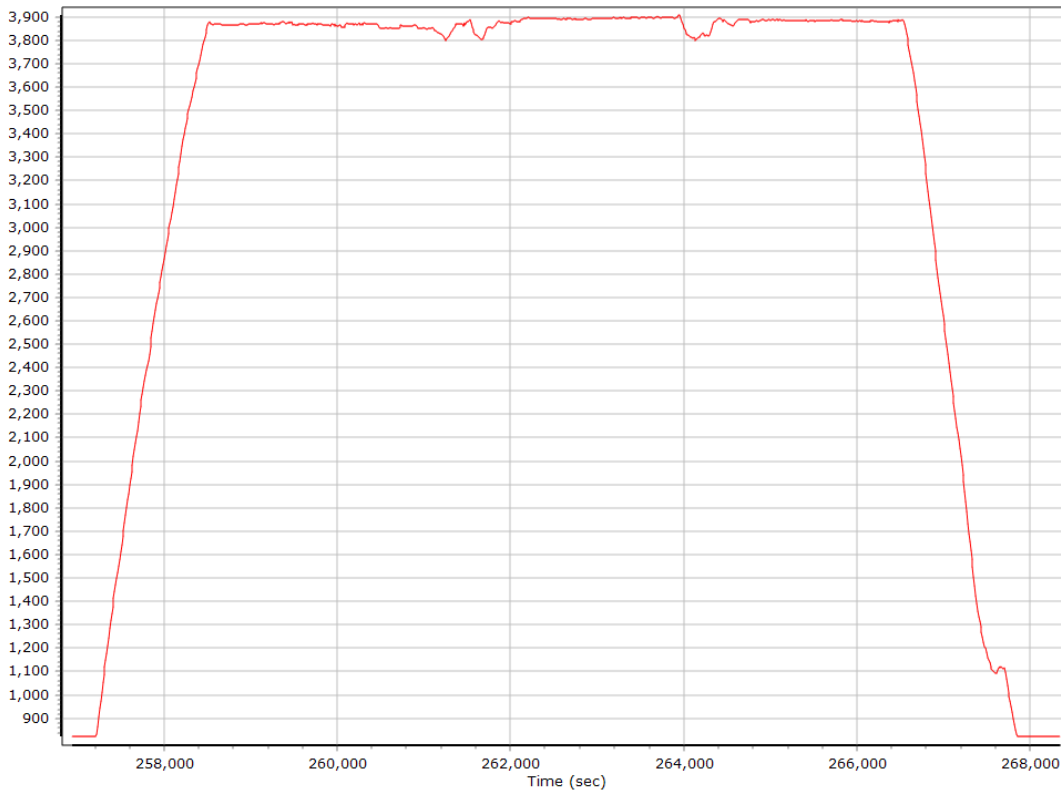


## Forward Processed Trajectory Information

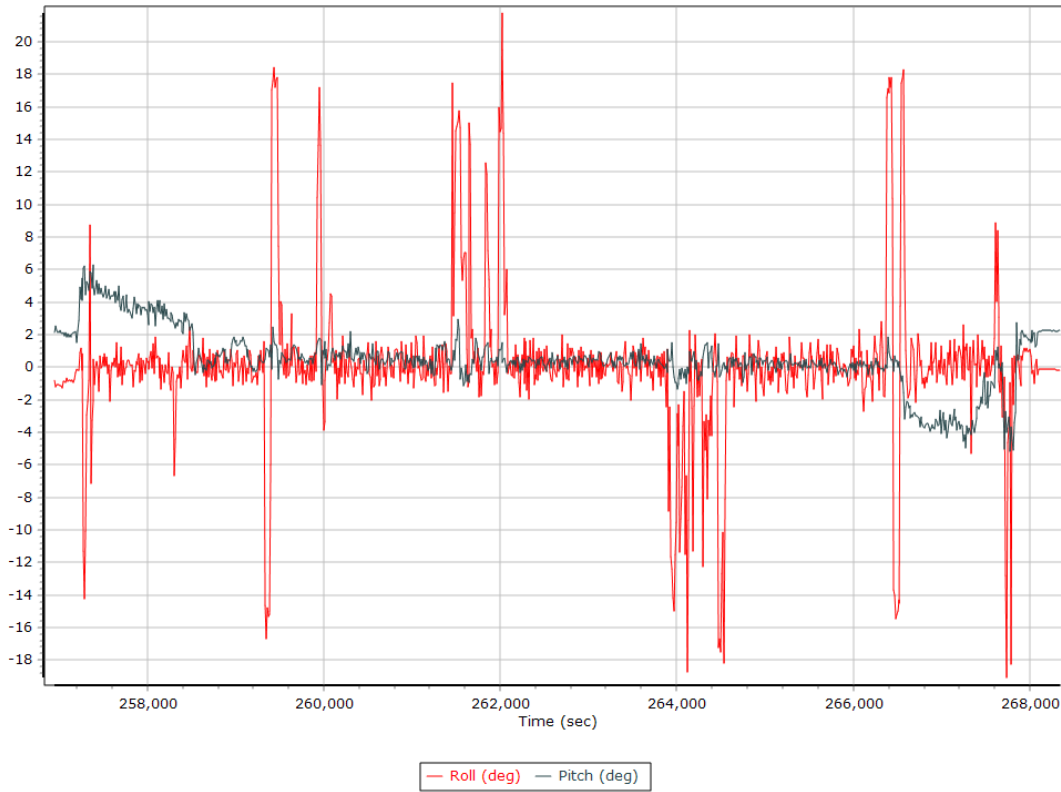
### Top View



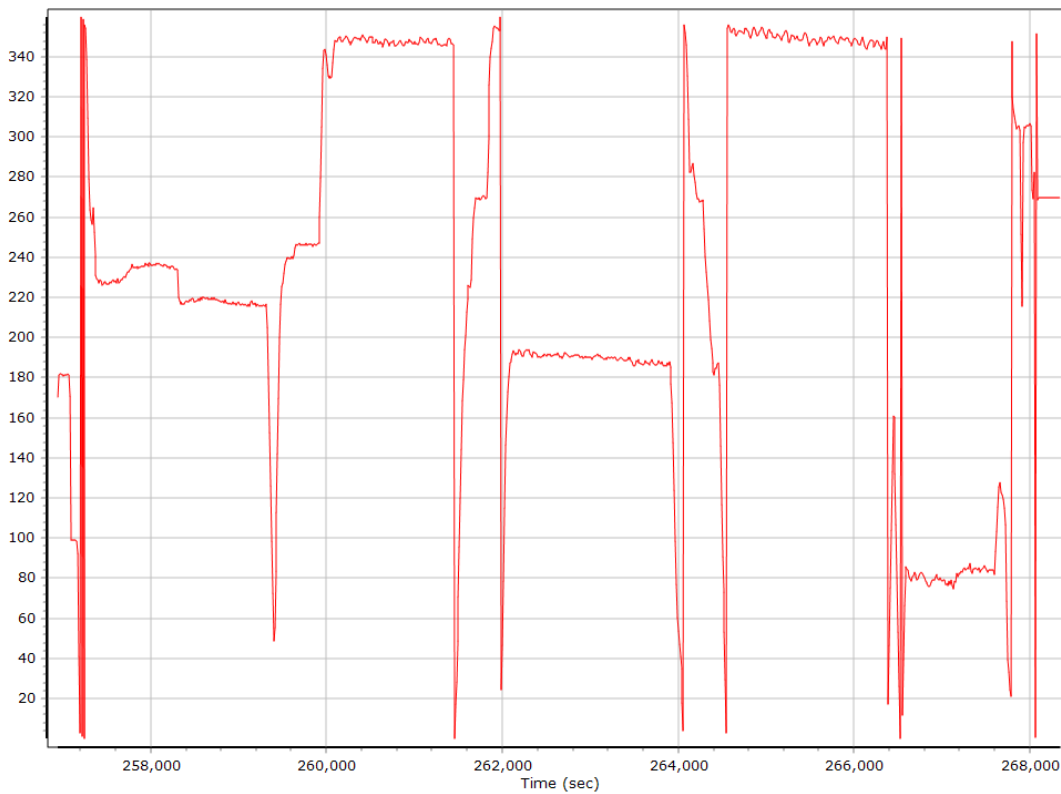
### Altitude



## Roll/Pitch

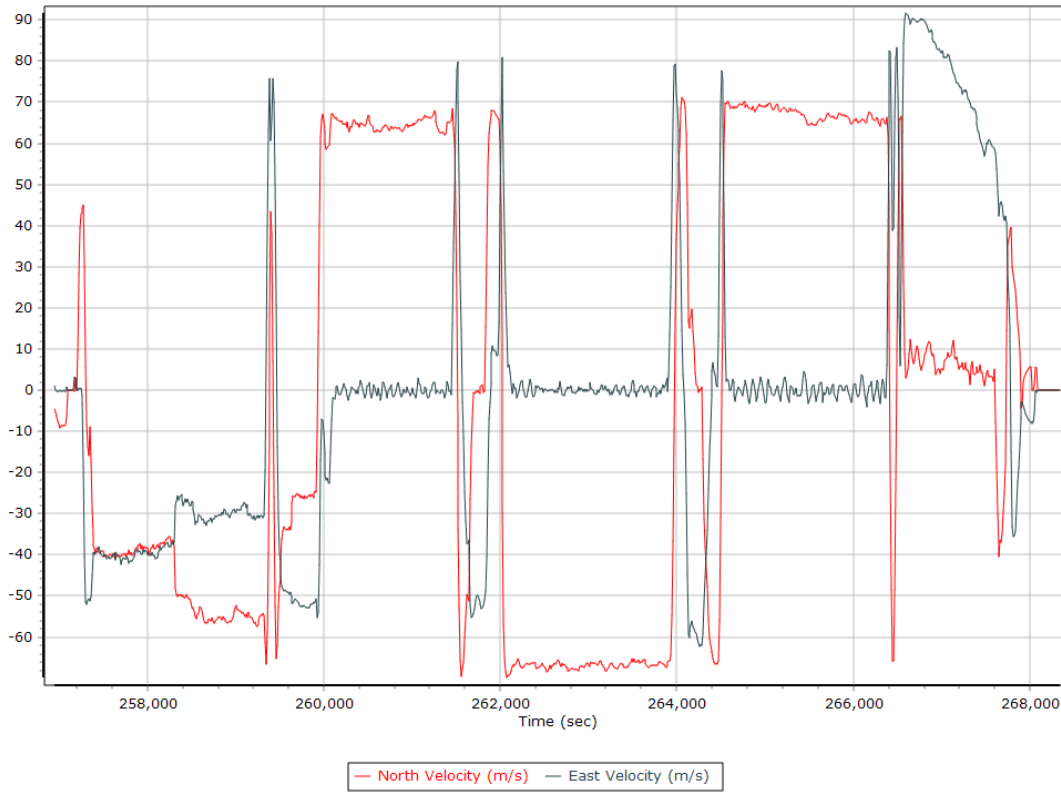


## Heading

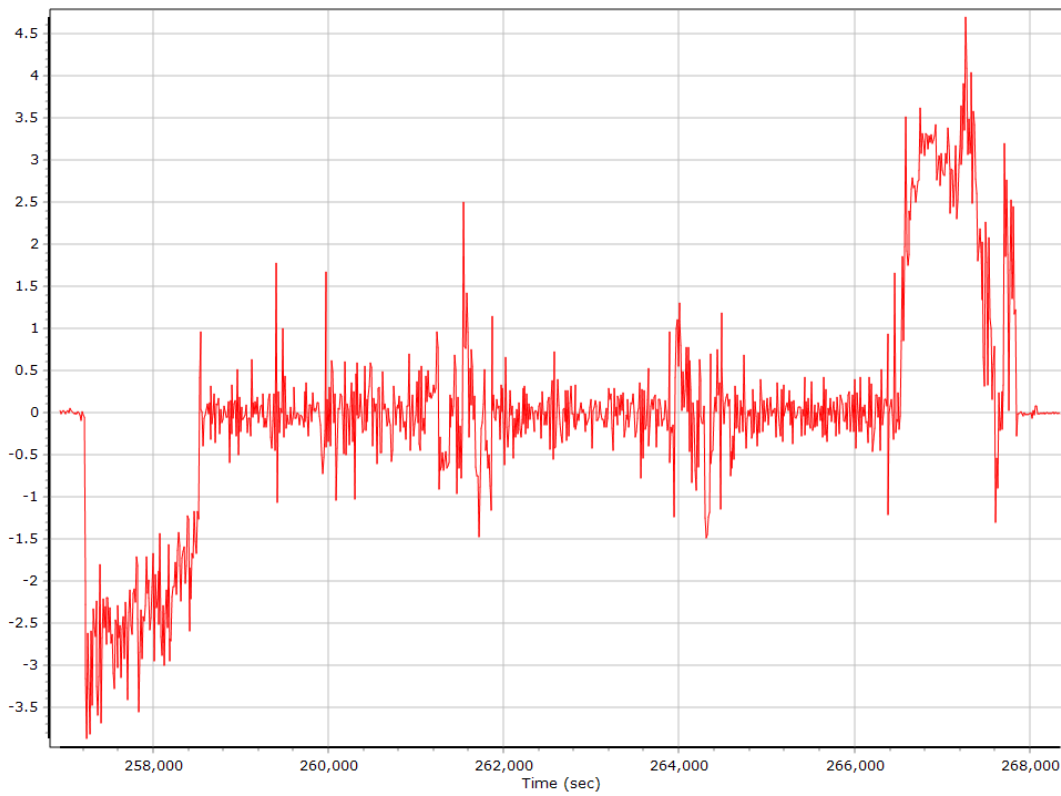




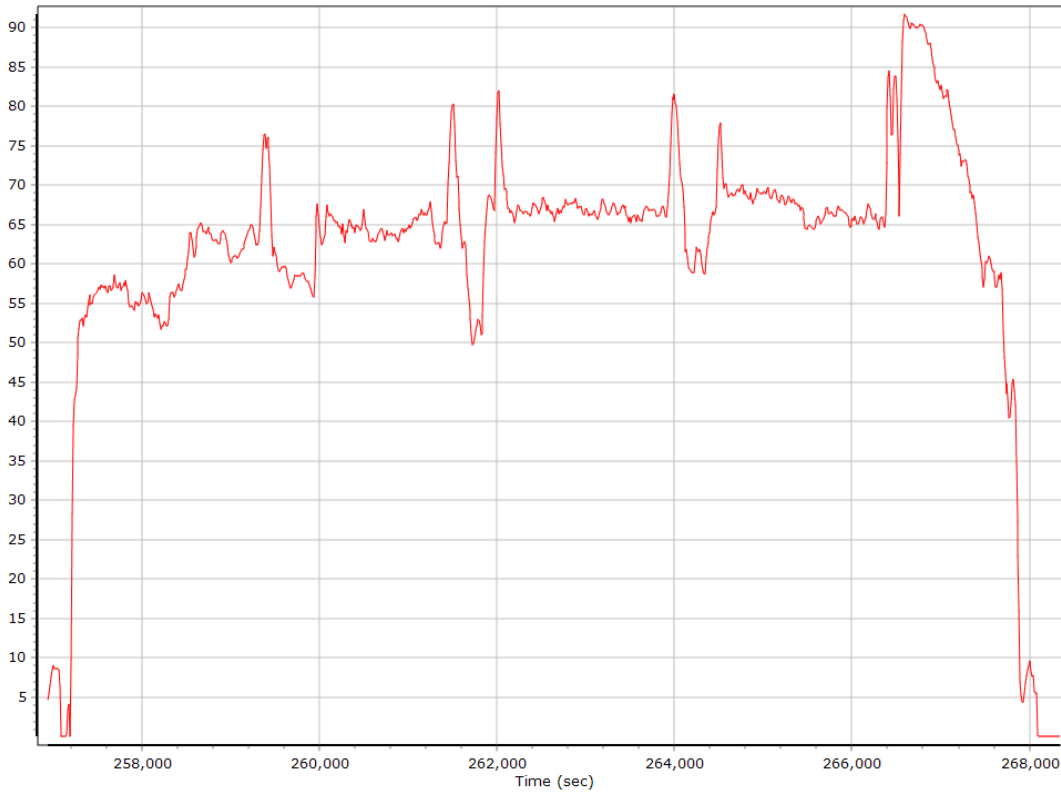
## North/East Velocity



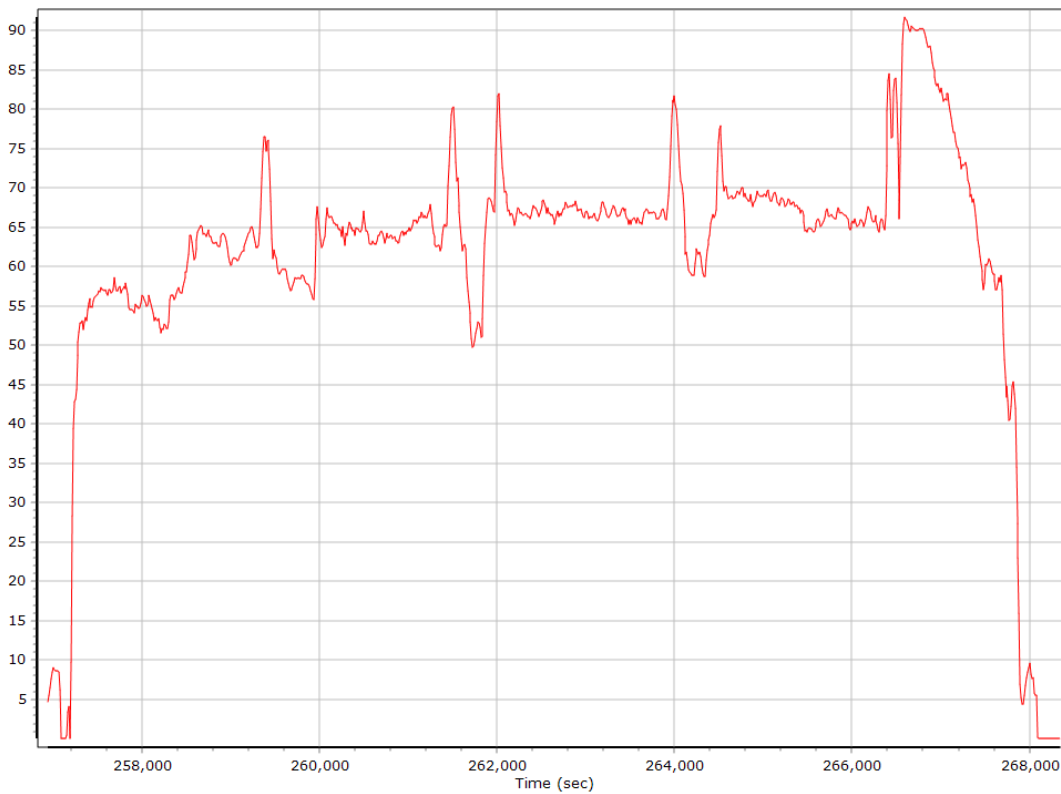
## Down Velocity



## Total Speed



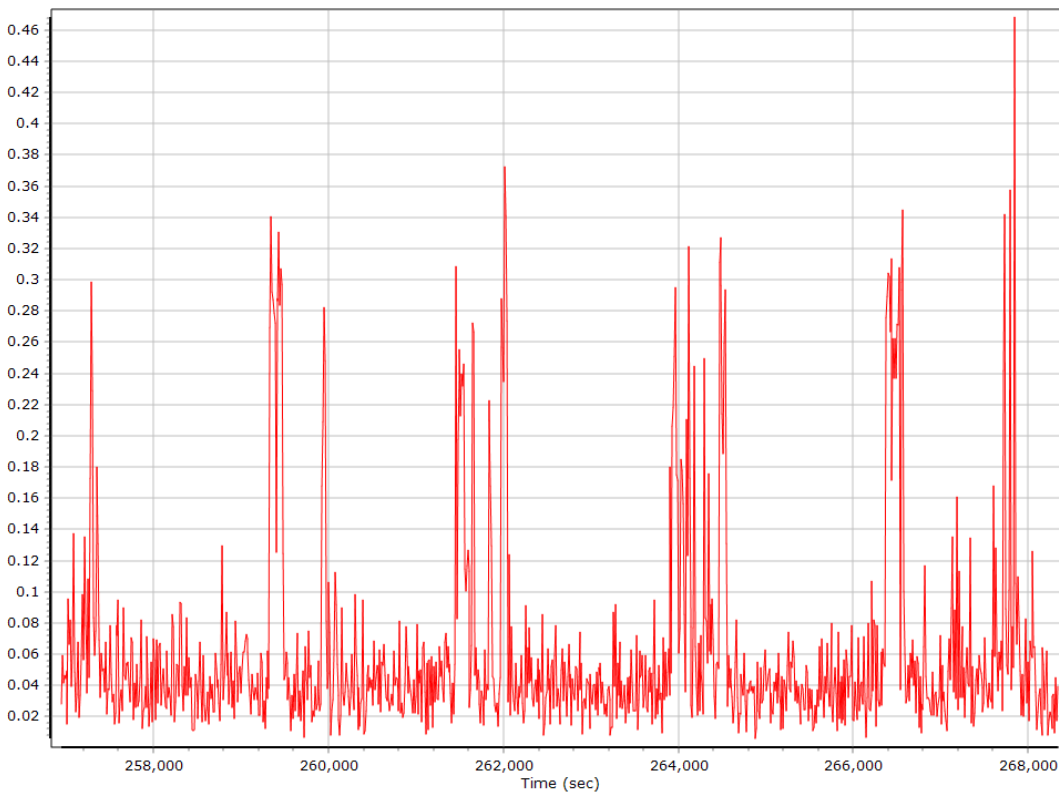
## Ground Speed



## Body Acceleration



## Total Body Acceleration



## Body Angular Rate

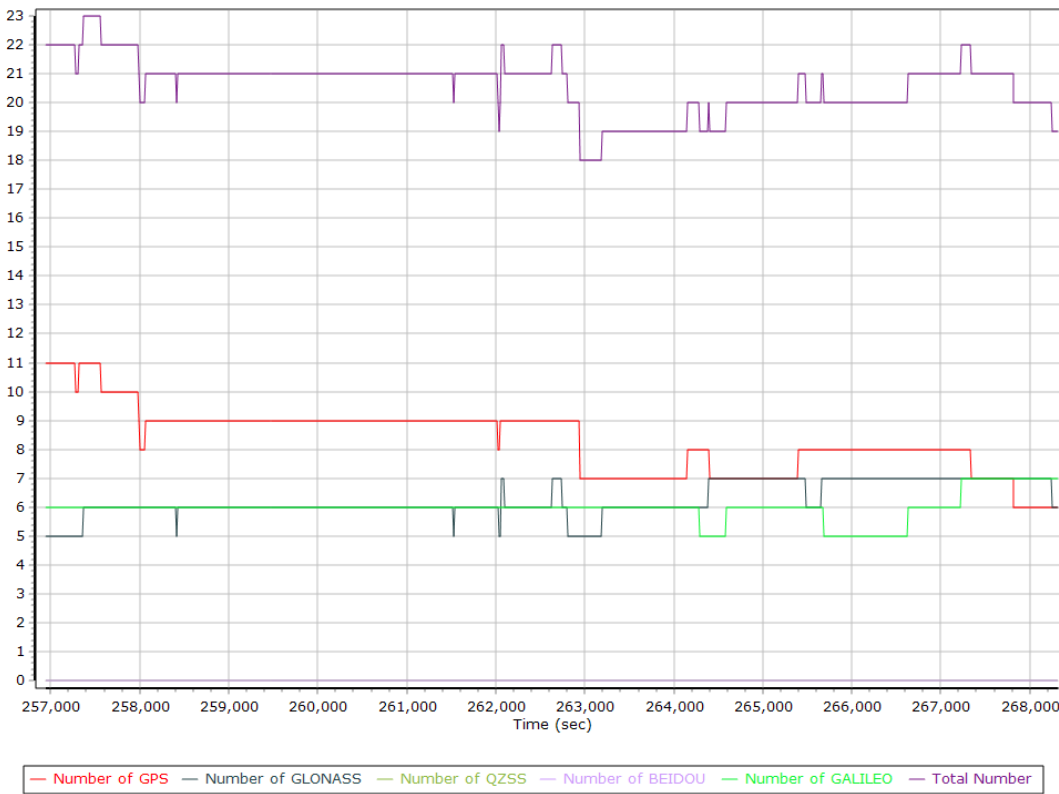


# GNSS QC

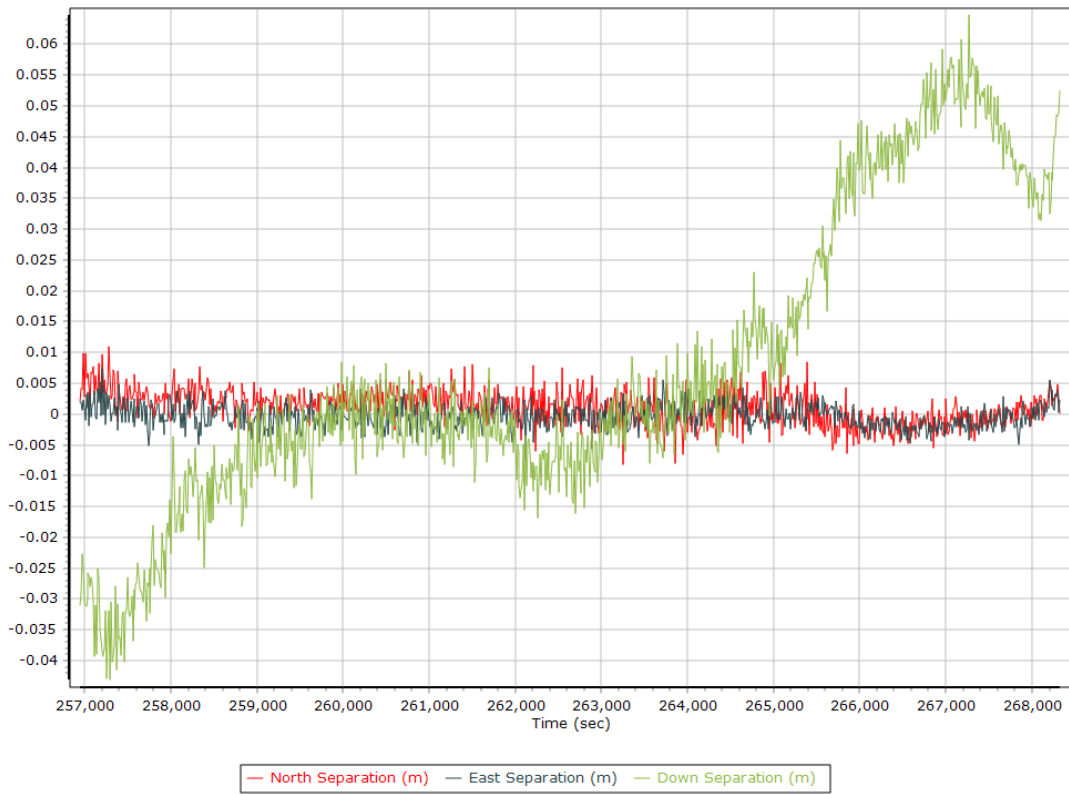
## GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	11	8
Number of GLONASS SV	4	7	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	7	6
Total number of SV	18	23	21
PDOP	0.94	1.40	1.18
QC Solution Gaps	1.00	1.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	11941.00	0.00	7.00
Percentage	99.94	0.00	0.06

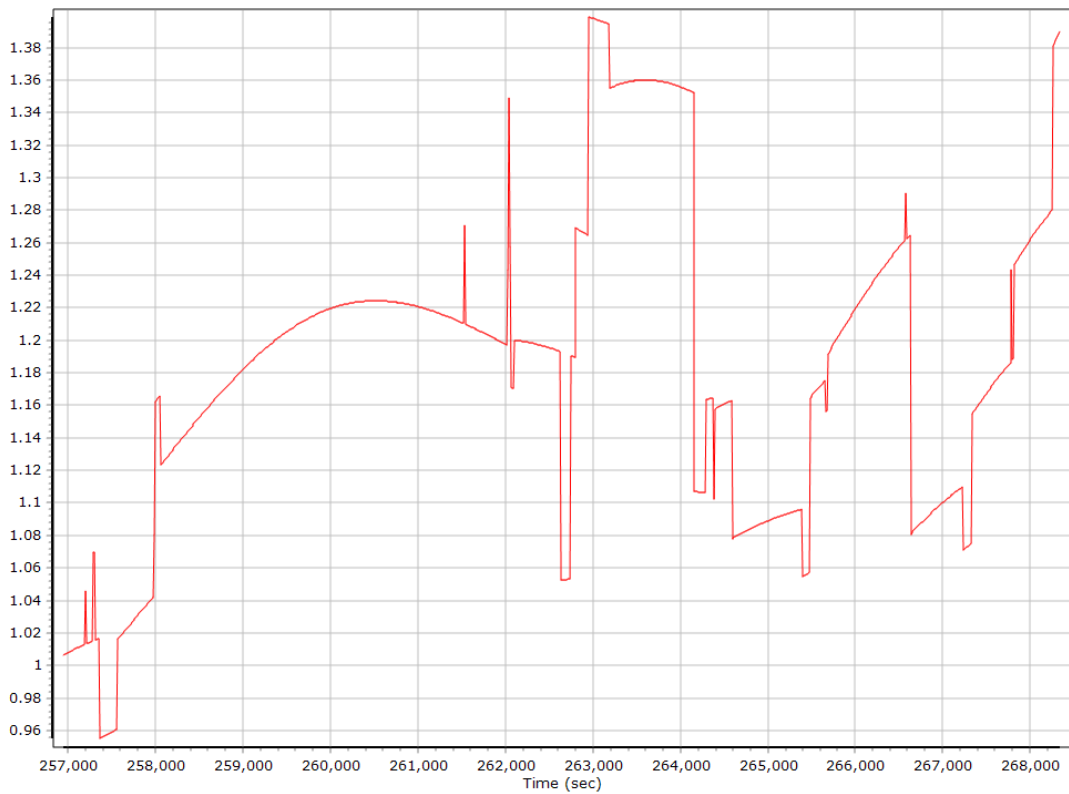
## Num SVs in solution



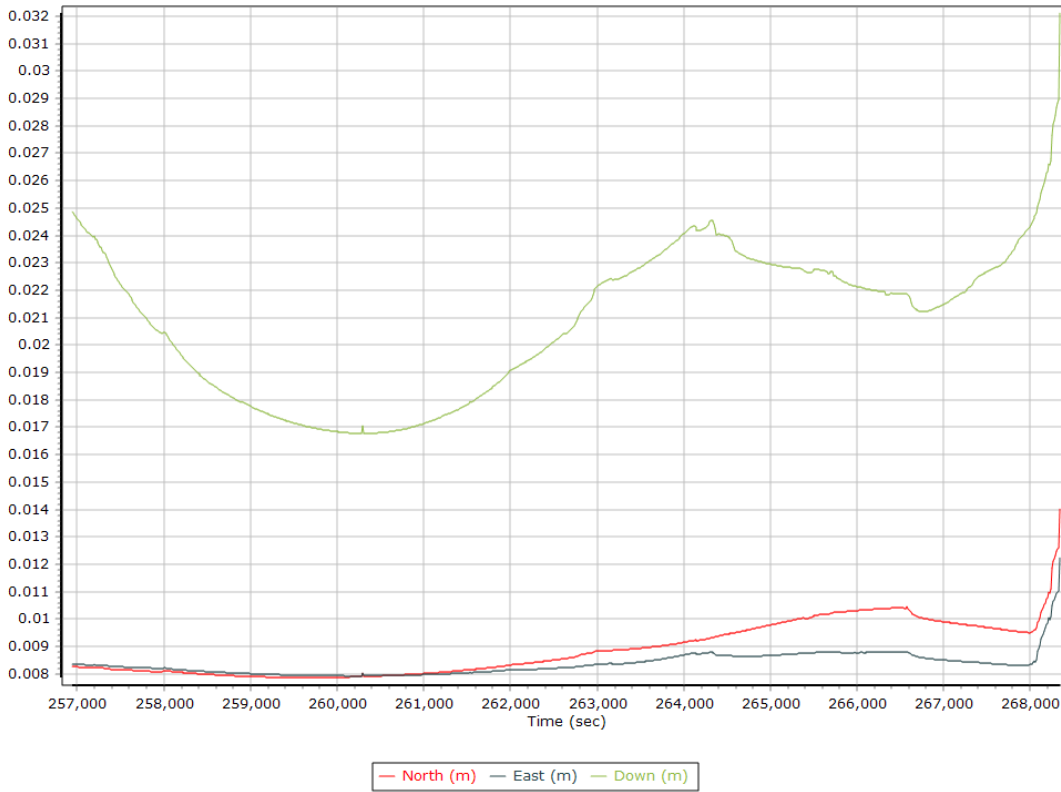
## Forward/Reverse Separation



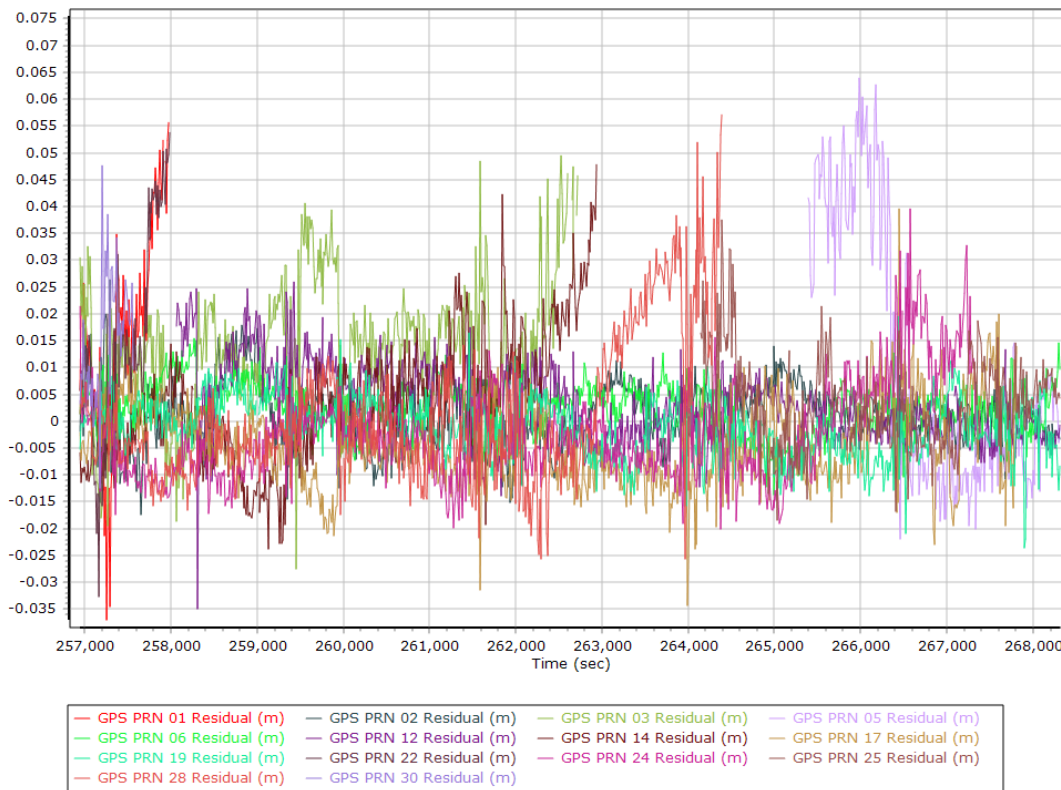
## PDOP



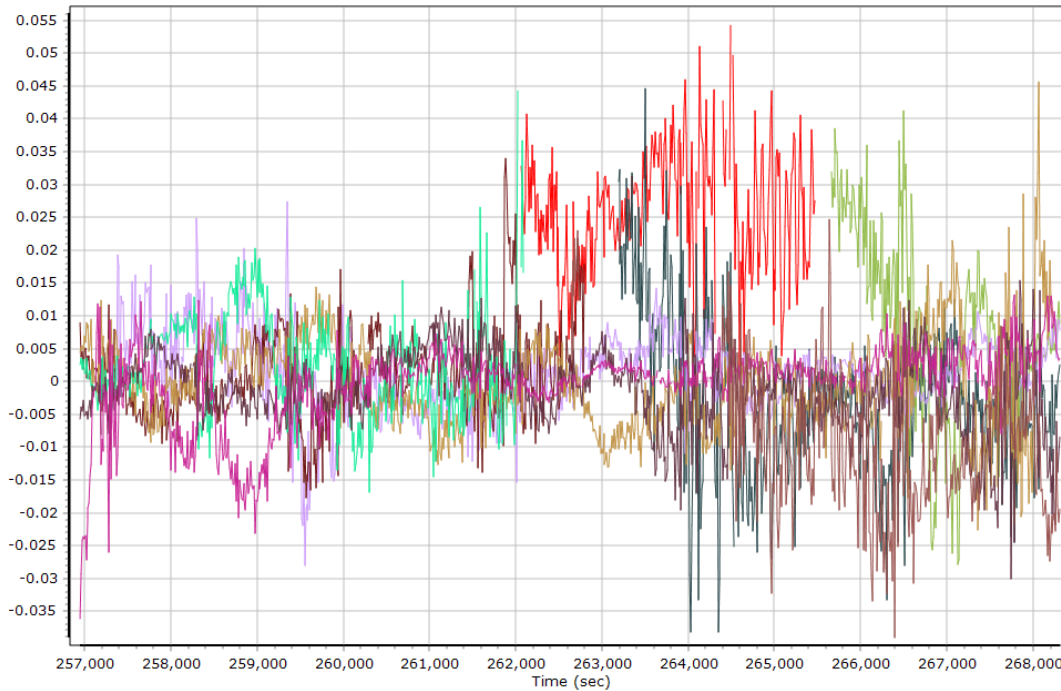
## Estimated Position Accuracy



## GPS Residuals

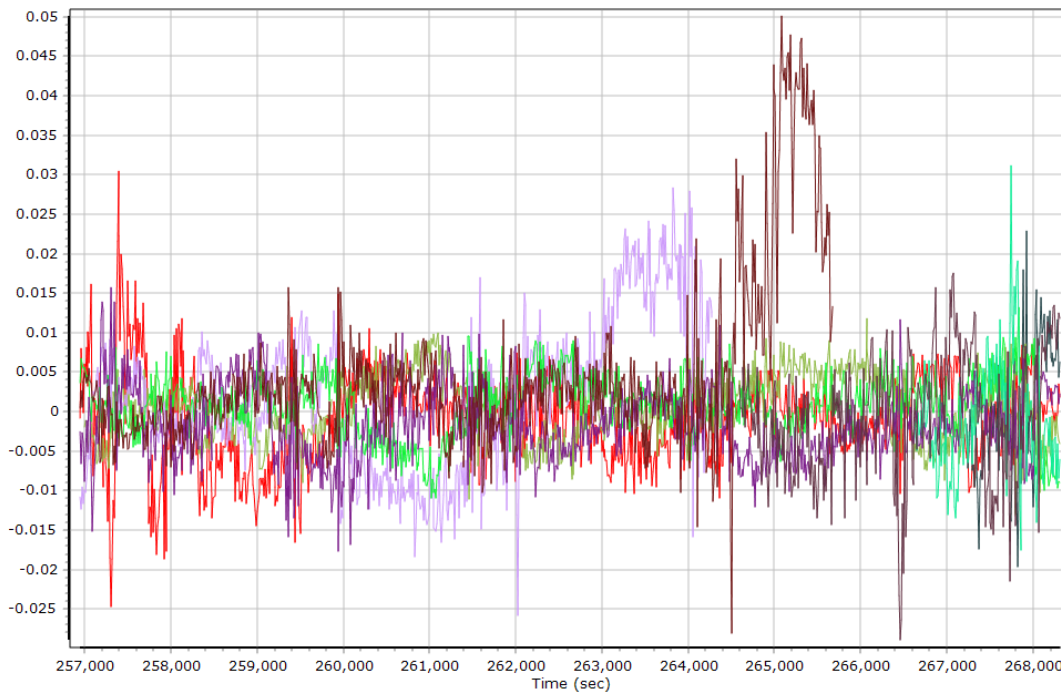


## GLONASS Residuals



- GLONASS 02 Residual (m)
- GLONASS 03 Residual (m)
- GLONASS 04 Residual (m)
- GLONASS 09 Residual (m)
- GLONASS 10 Residual (m)
- GLONASS 14 Residual (m)
- GLONASS 15 Residual (m)
- GLONASS 16 Residual (m)
- GLONASS 17 Residual (m)
- GLONASS 18 Residual (m)
- GLONASS 19 Residual (m)
- GLONASS 20 Residual (m)

## GALILEO Residuals



- GALILEO 01 Residual (m)
- GALILEO 08 Residual (m)
- GALILEO 13 Residual (m)
- GALILEO 15 Residual (m)
- GALILEO 21 Residual (m)
- GALILEO 26 Residual (m)
- GALILEO 27 Residual (m)
- GALILEO 30 Residual (m)
- GALILEO 31 Residual (m)
- GALILEO 33 Residual (m)



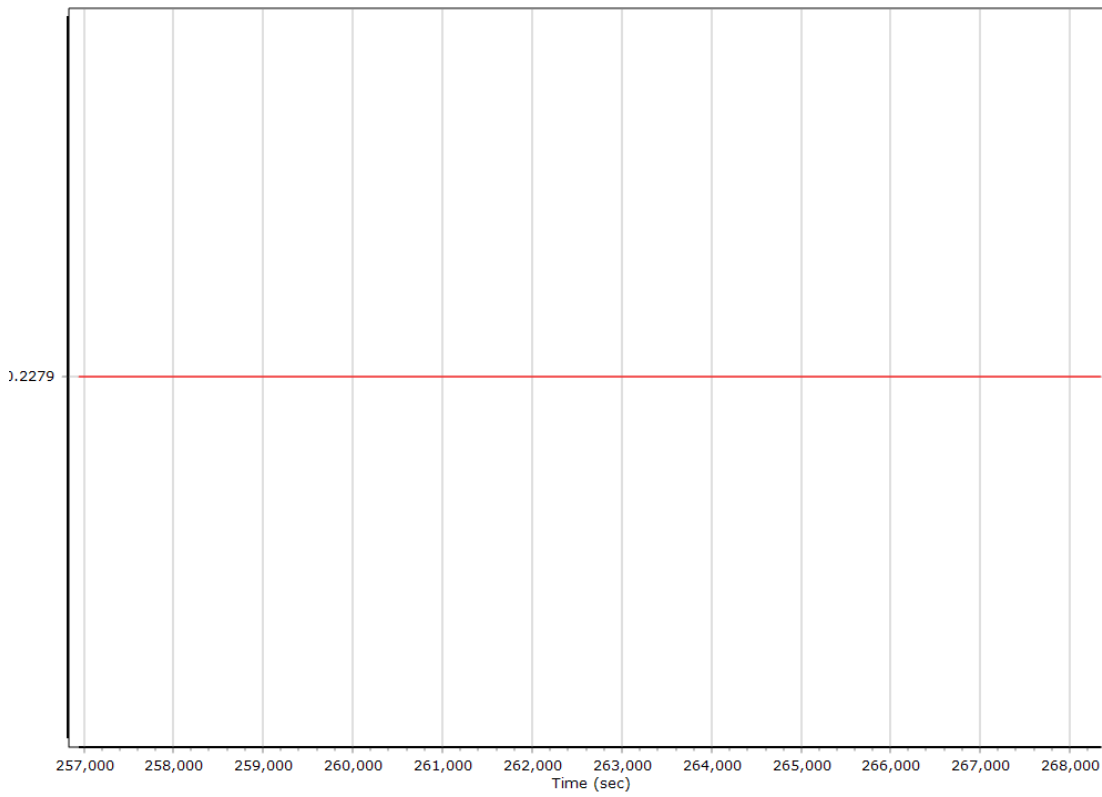
## GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	False		
Processing start time	256363.000 (03/02/2021 23:12:43)		
Processing end time	268351.000 (03/03/2021 02:32:31)		
Initial attitude source	Real-Time VNAV/RNAV Attitude		
IMU Sensor Context	Processing with Onboard IMU		
Reference to IMU lever arm (m)	0.000	0.000	0.000
Reference to IMU mounting angles (deg)	0.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	0.228	-0.286	-0.967
Reference to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

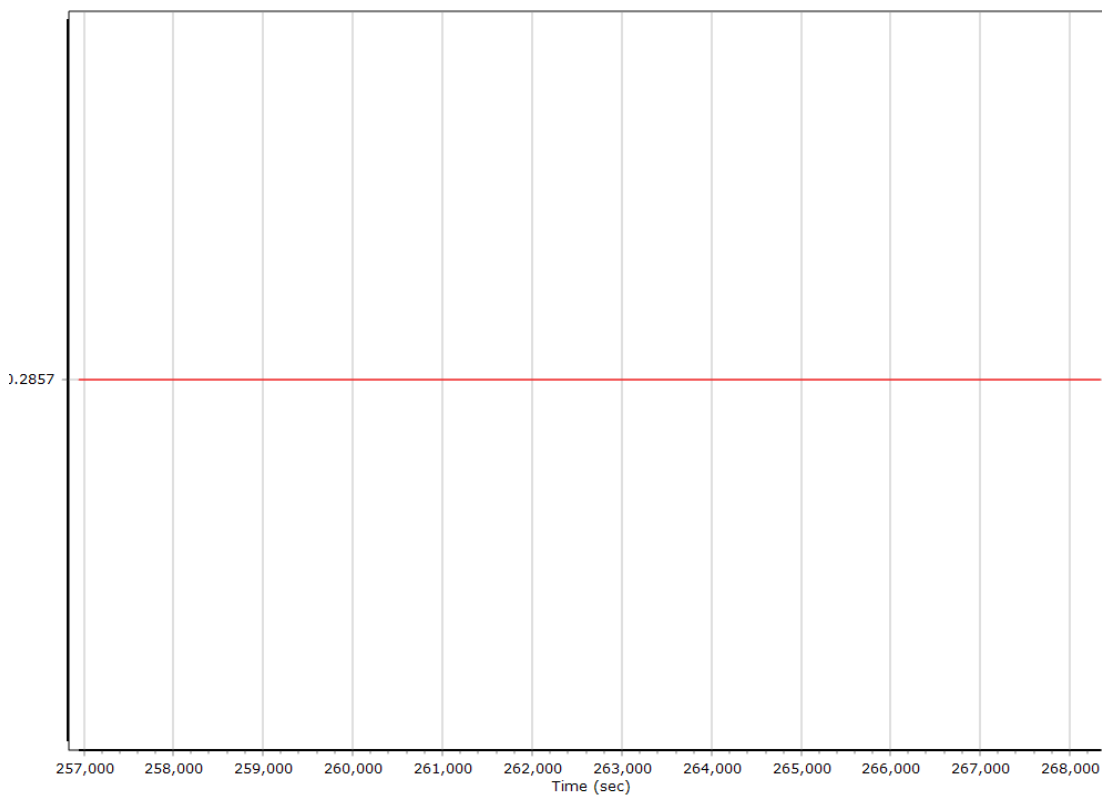
## Calibrated Installation Parameters

### Reference-Primary GNSS Lever Arm (m)

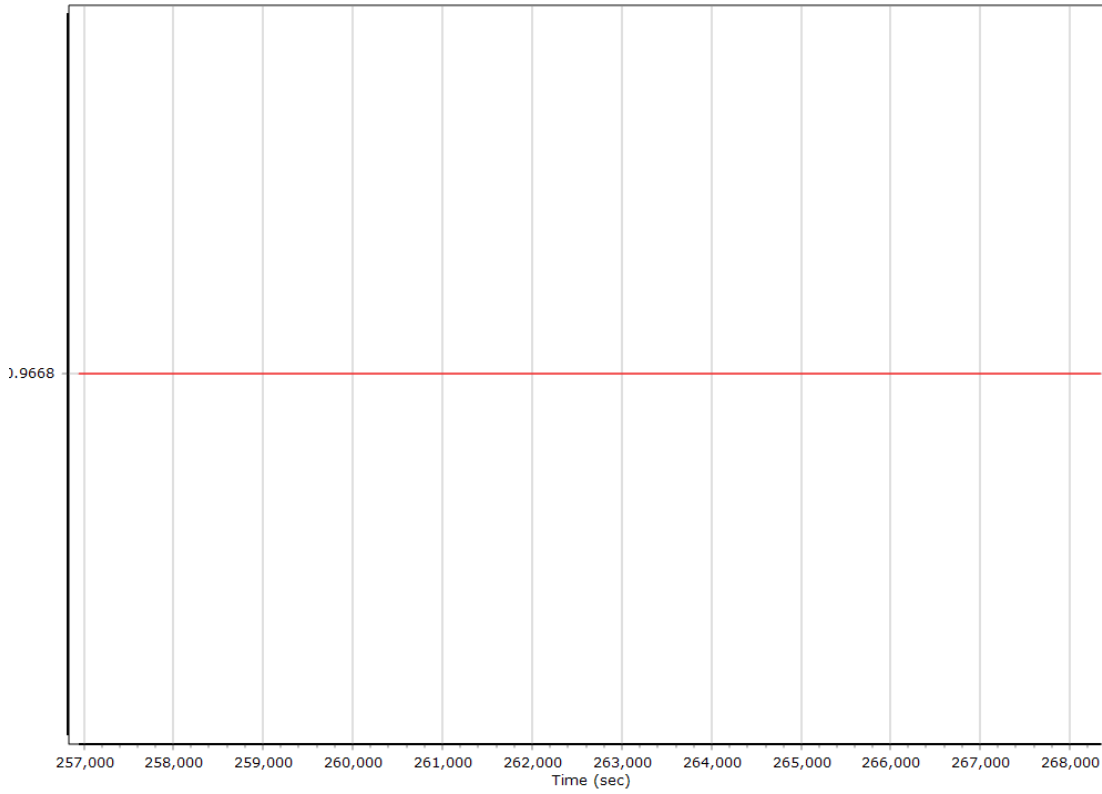
#### X Reference-Primary GNSS Lever Arm (m)



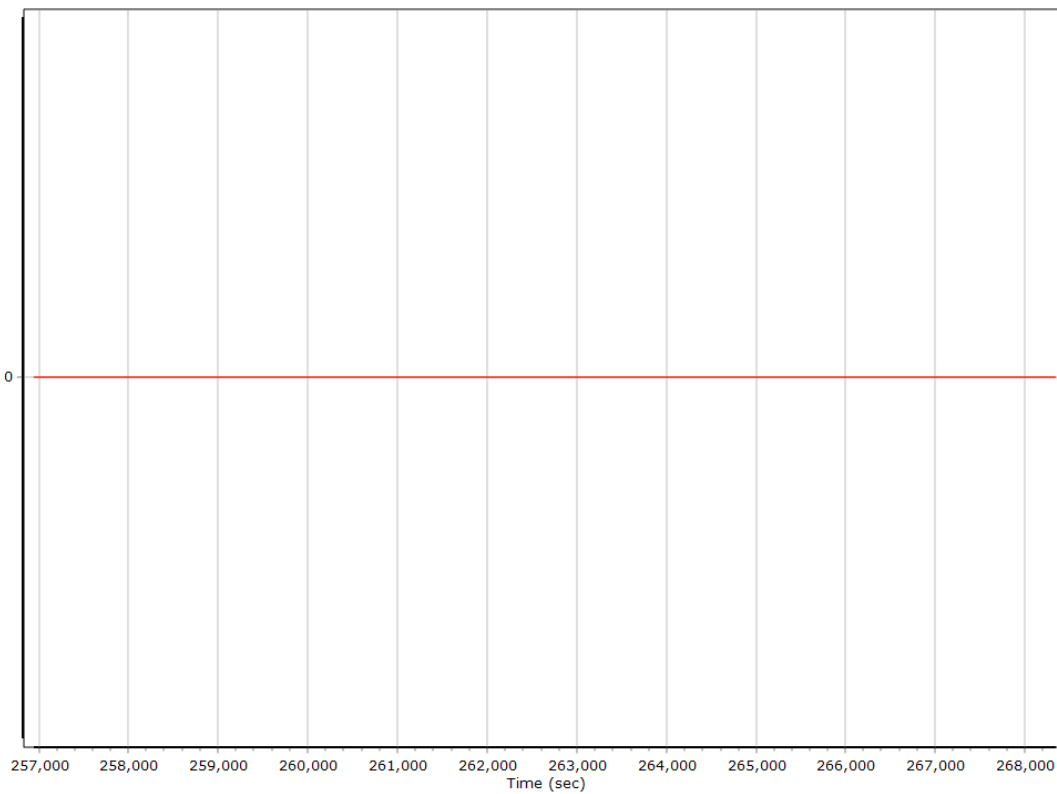
#### Y Reference-Primary GNSS Lever Arm (m)



### Z Reference-Primary GNSS Lever Arm (m)



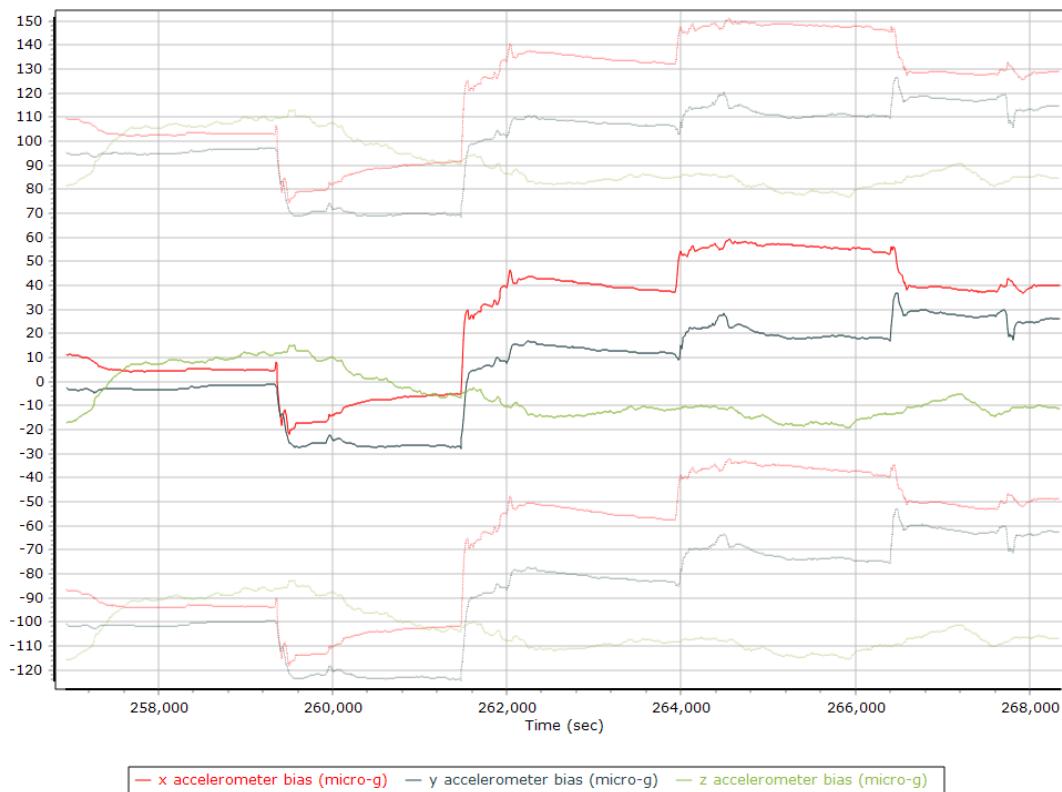
### Reference-Primary GNSS Lever Arm Figure of Merit



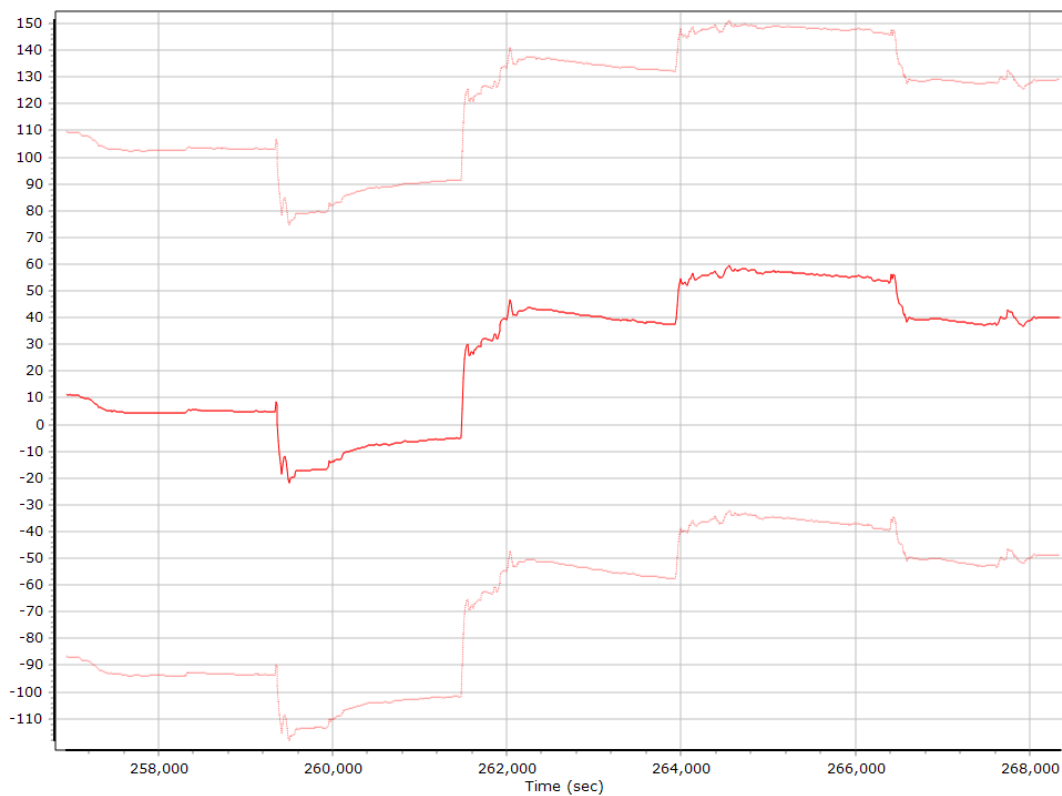
## IN-Fusion QC

### Forward Processed Estimated Errors, Reference Frame

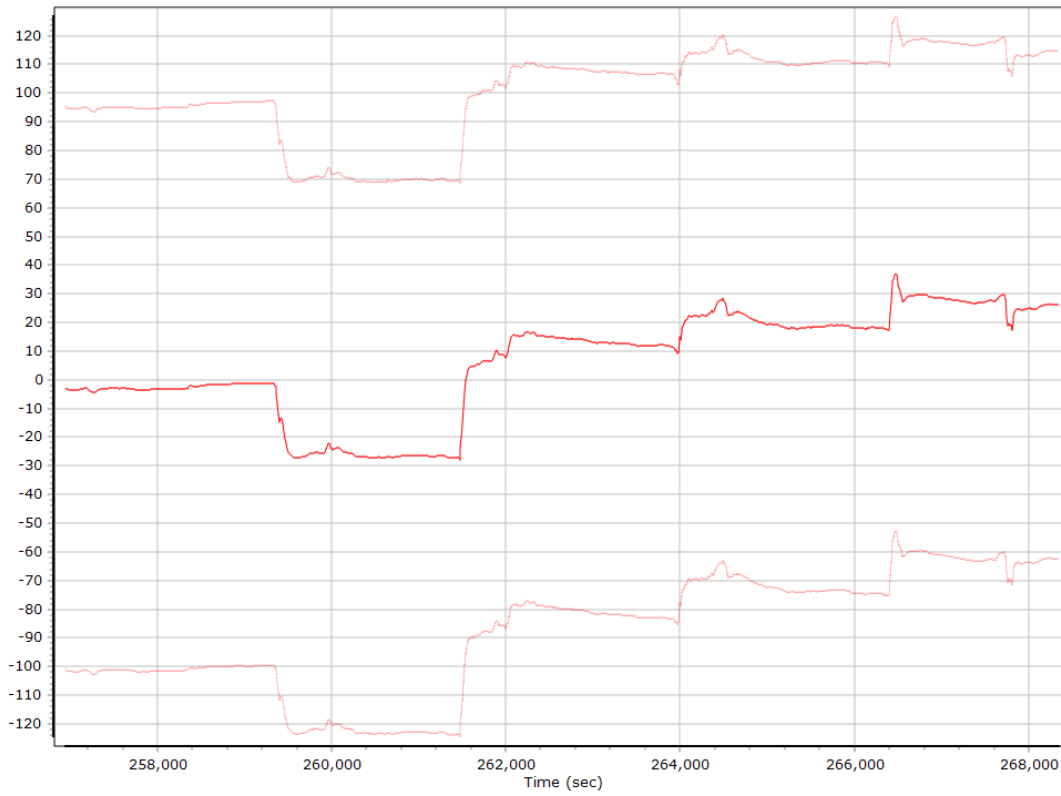
#### Accelerometer Bias (micro-g)



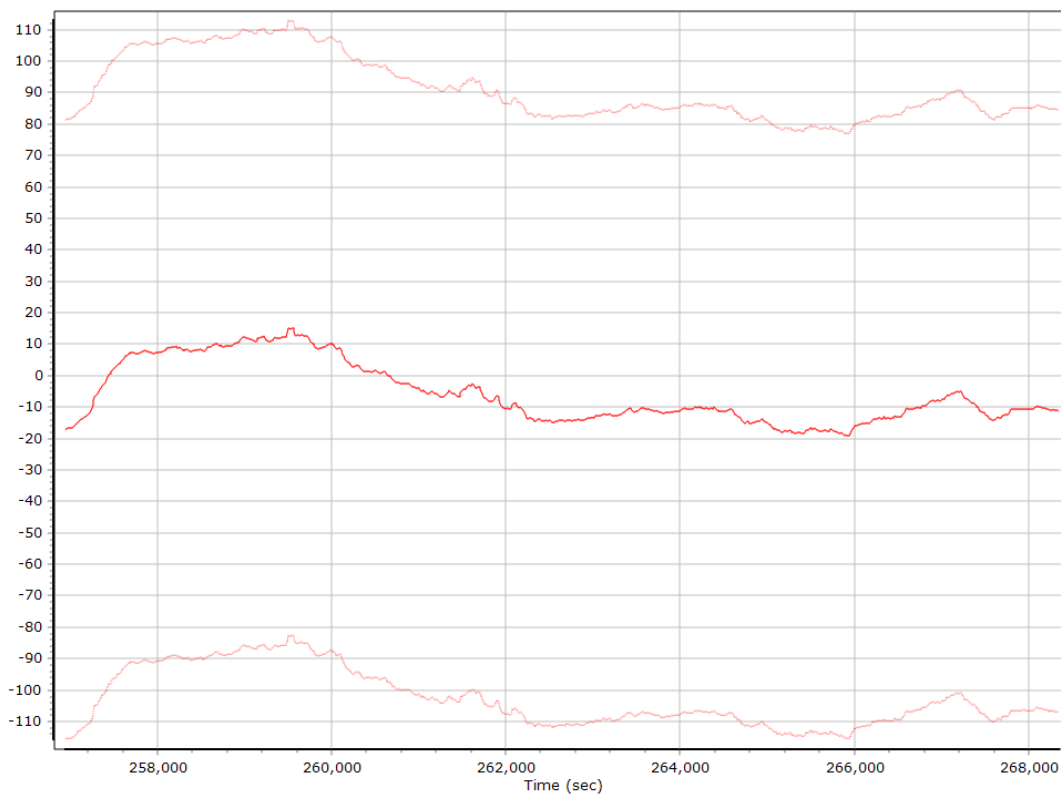
#### X Accelerometer Bias (micro-g)



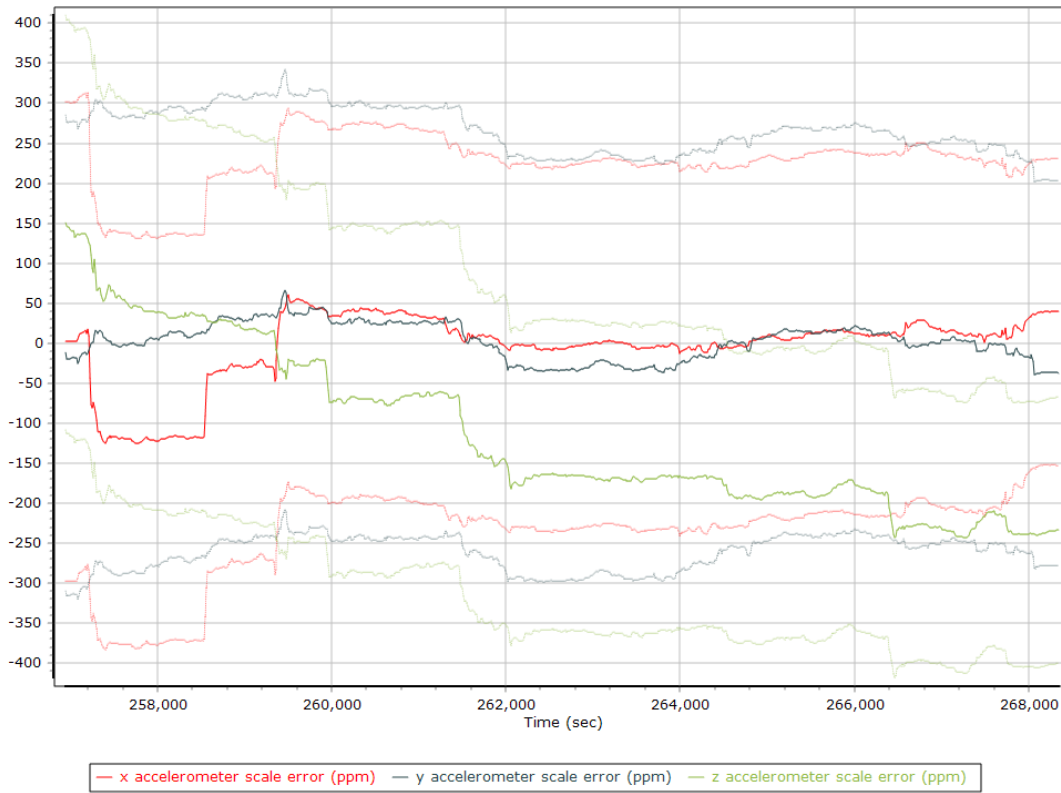
### Y Accelerometer Bias (micro-g)



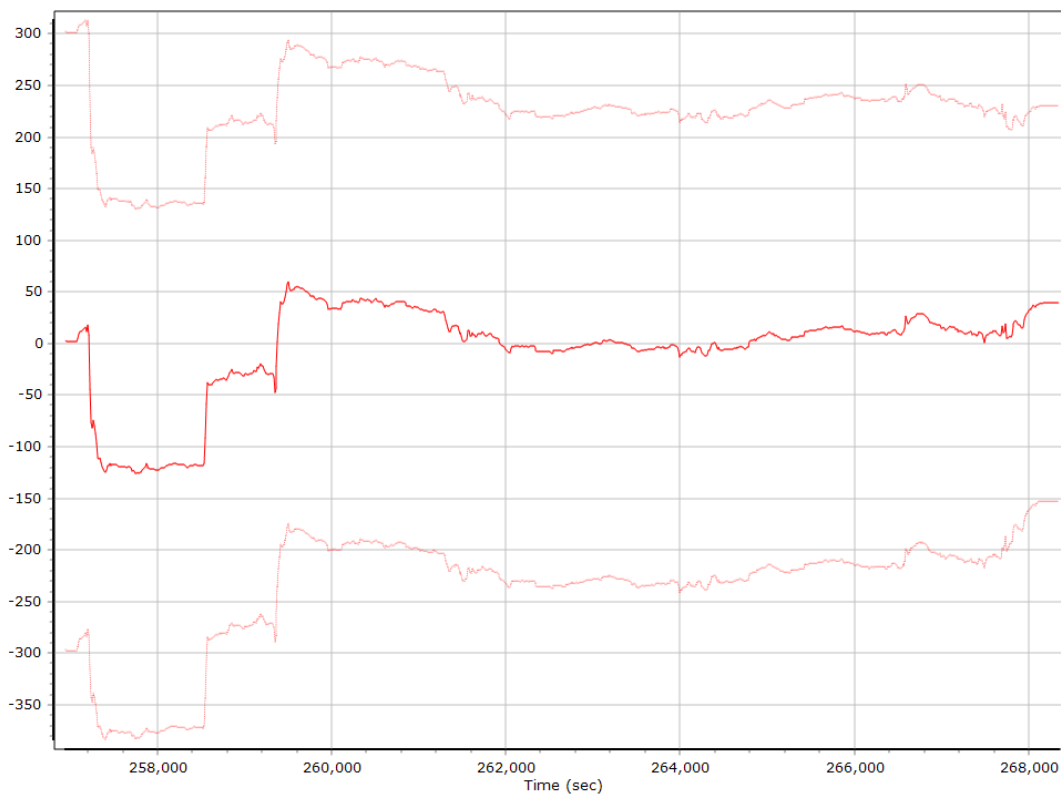
### Z Accelerometer Bias (micro-g)



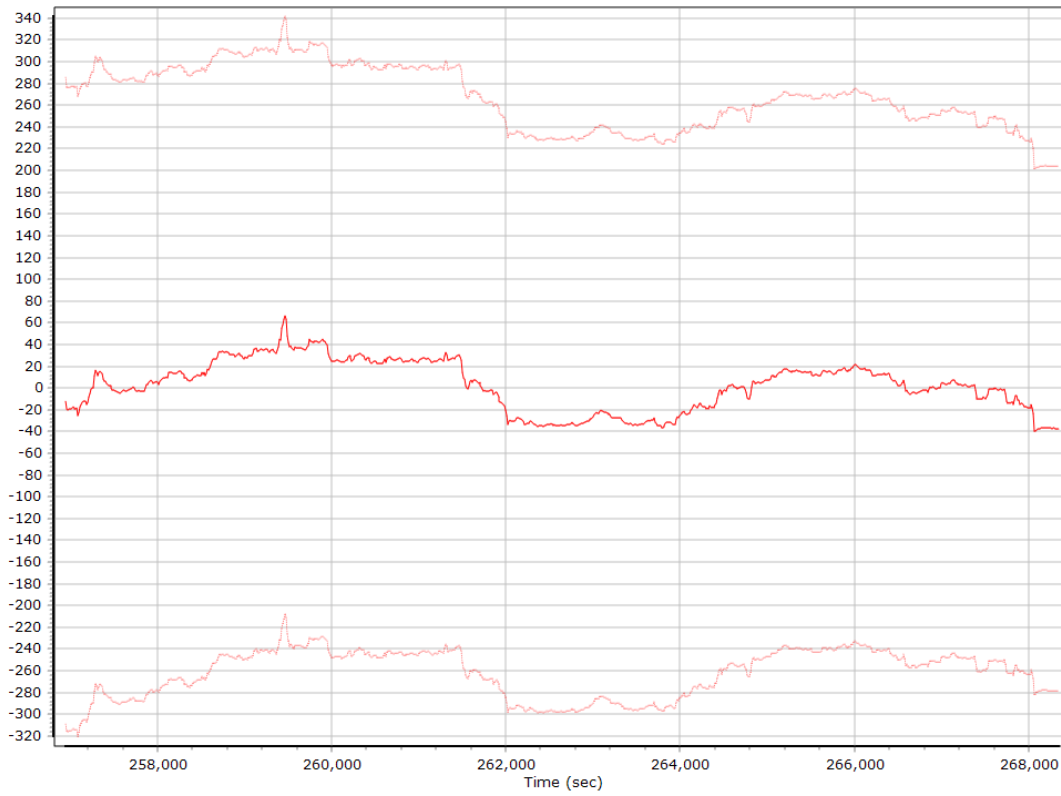
### Accelerometer Scale Error (ppm)



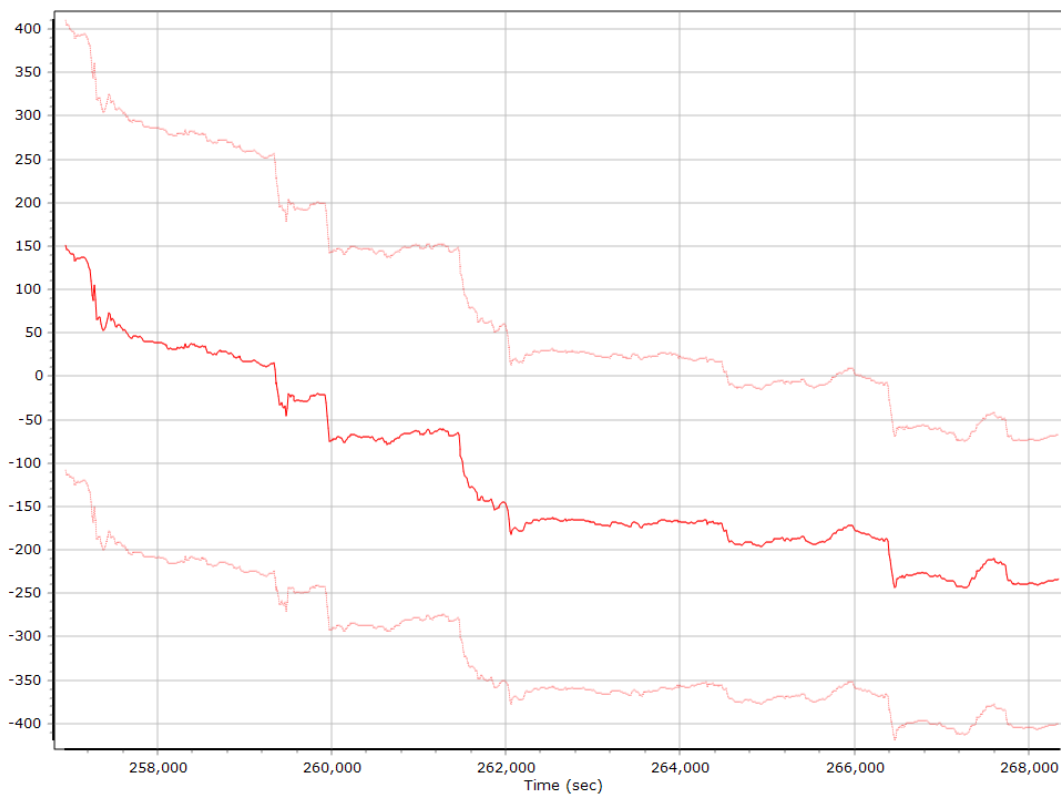
### X Accelerometer Scale Error (ppm)



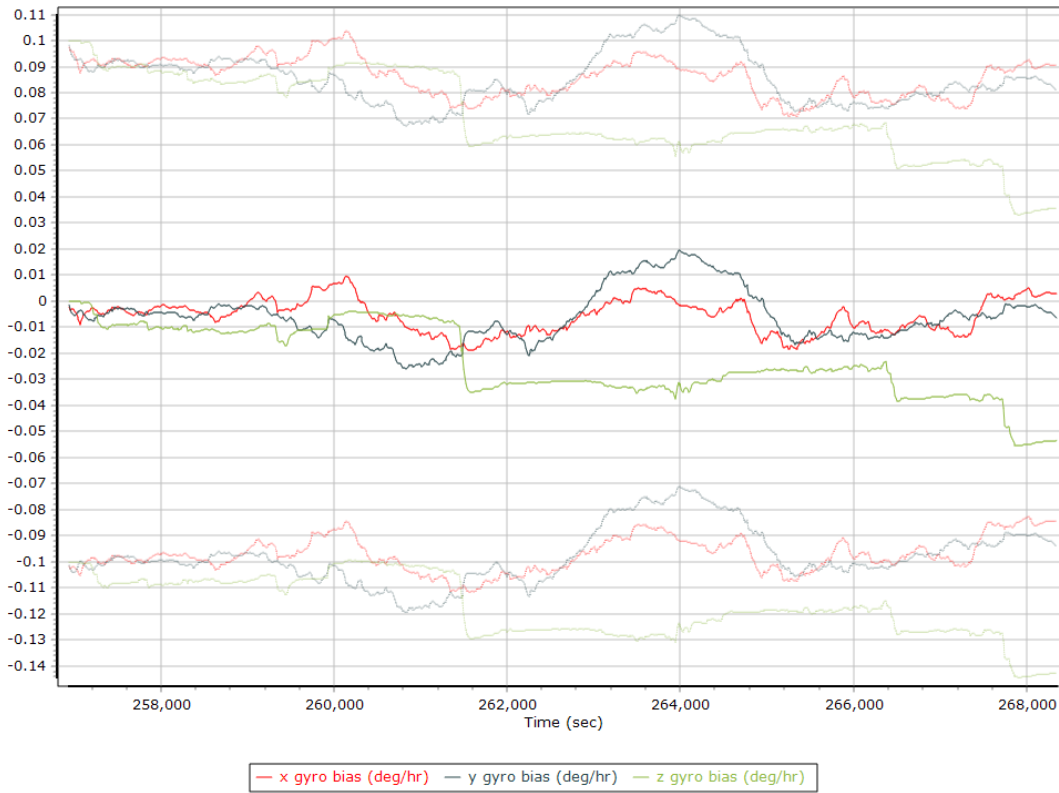
### Y Accelerometer Scale Error (ppm)



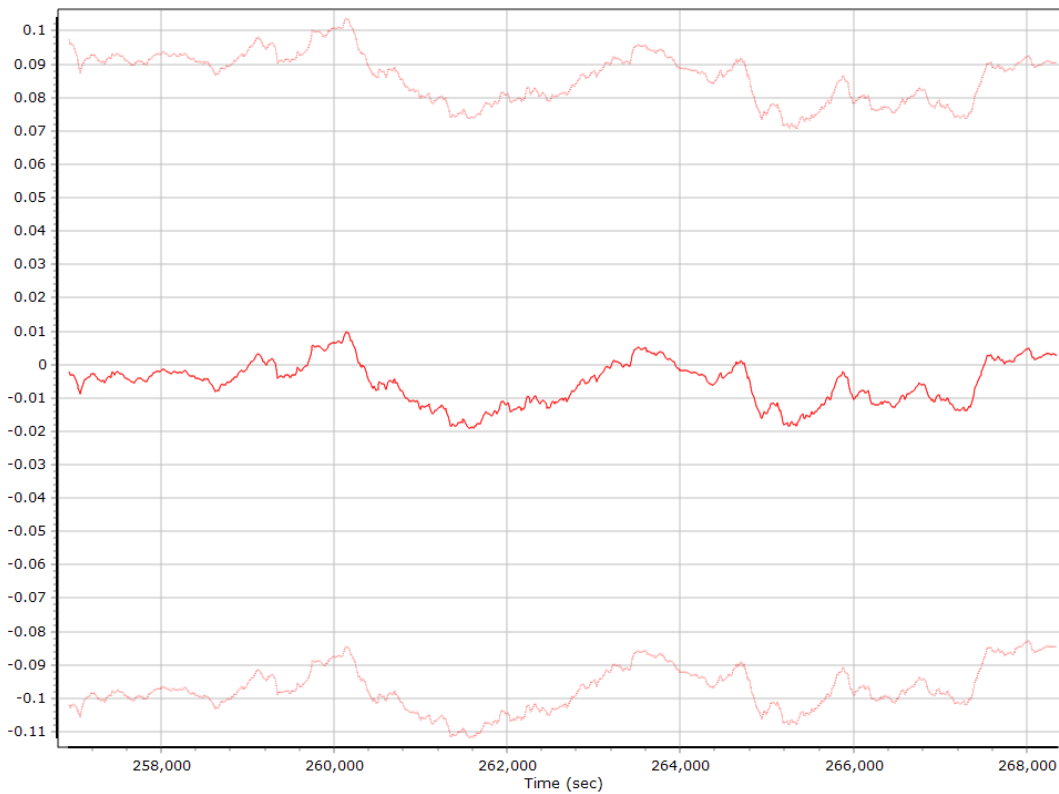
### Z Accelerometer Scale Error (ppm)



### Gyro Bias (deg/h)

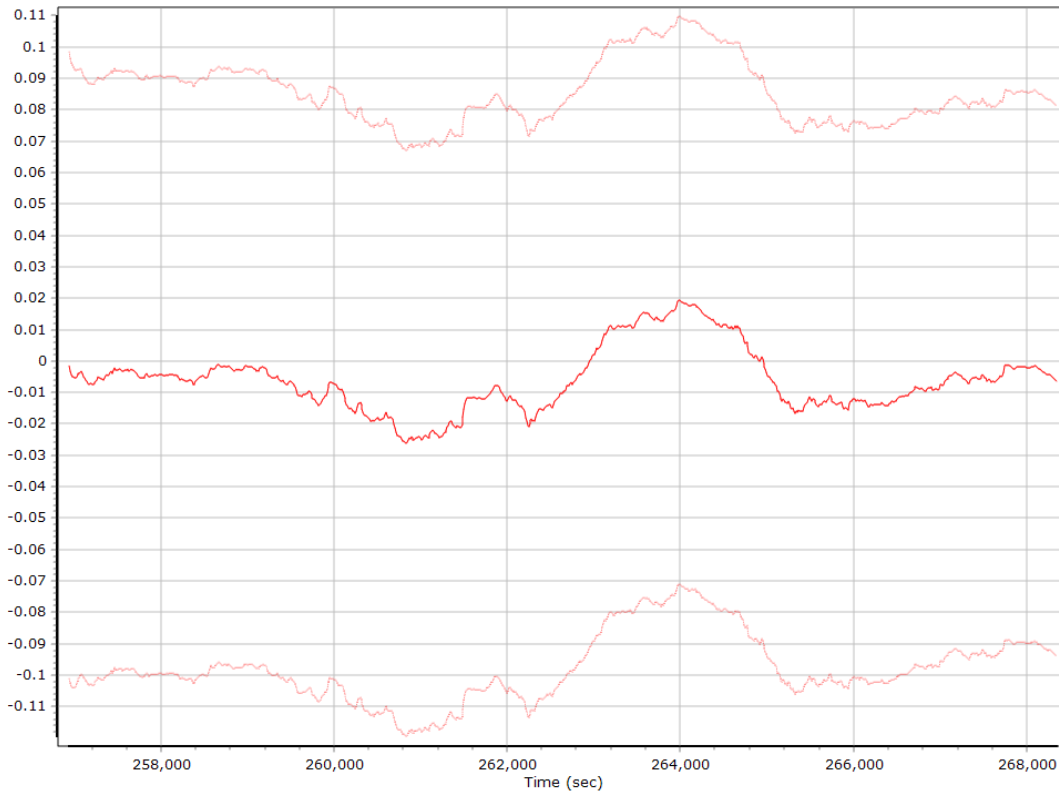


### X Gyro Bias (deg/h)

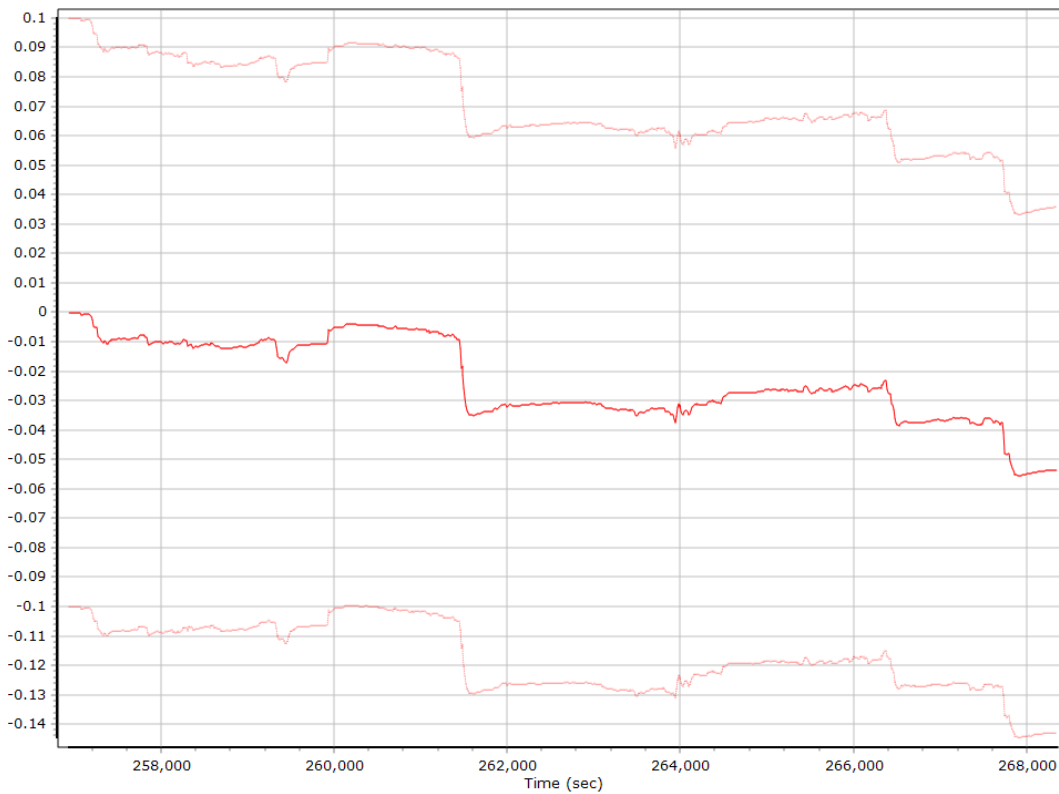




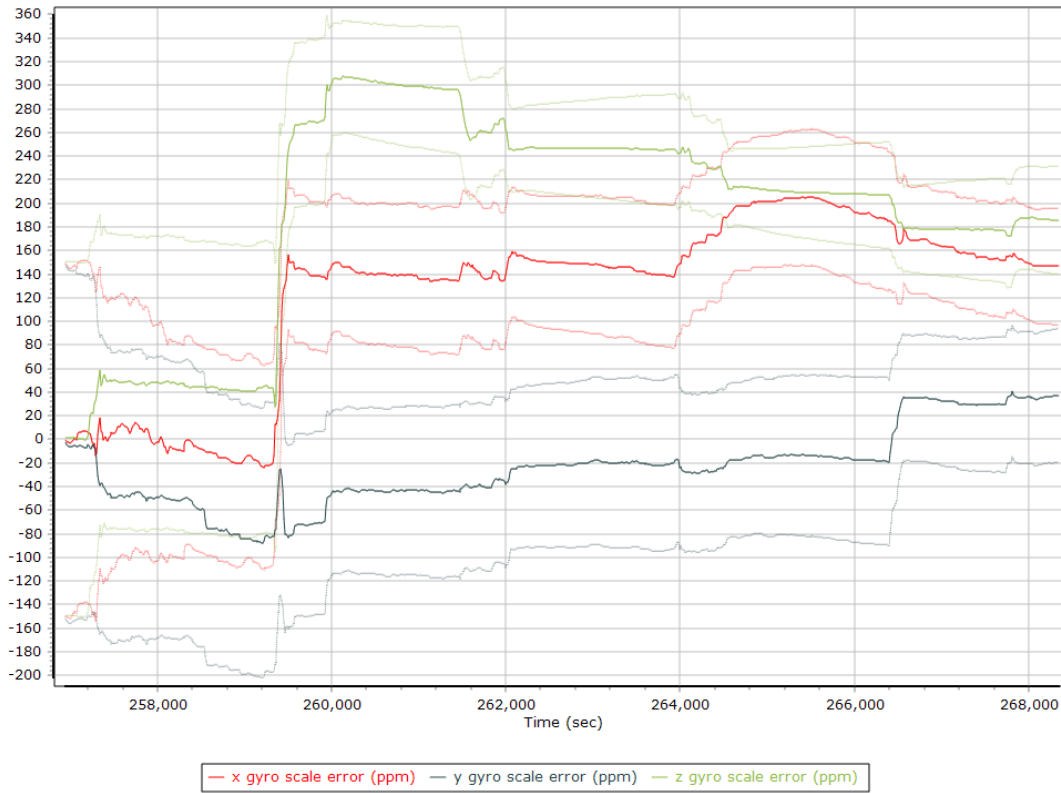
### Y Gyro Bias (deg/h)



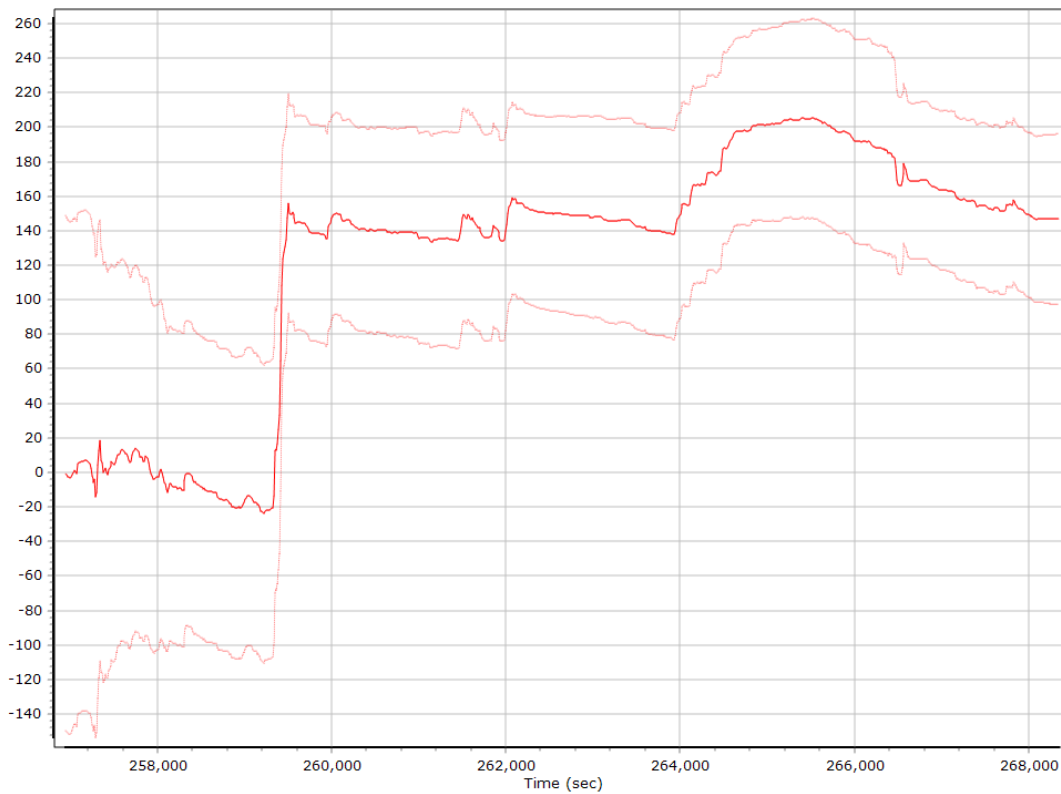
### Z Gyro Bias (deg/h)



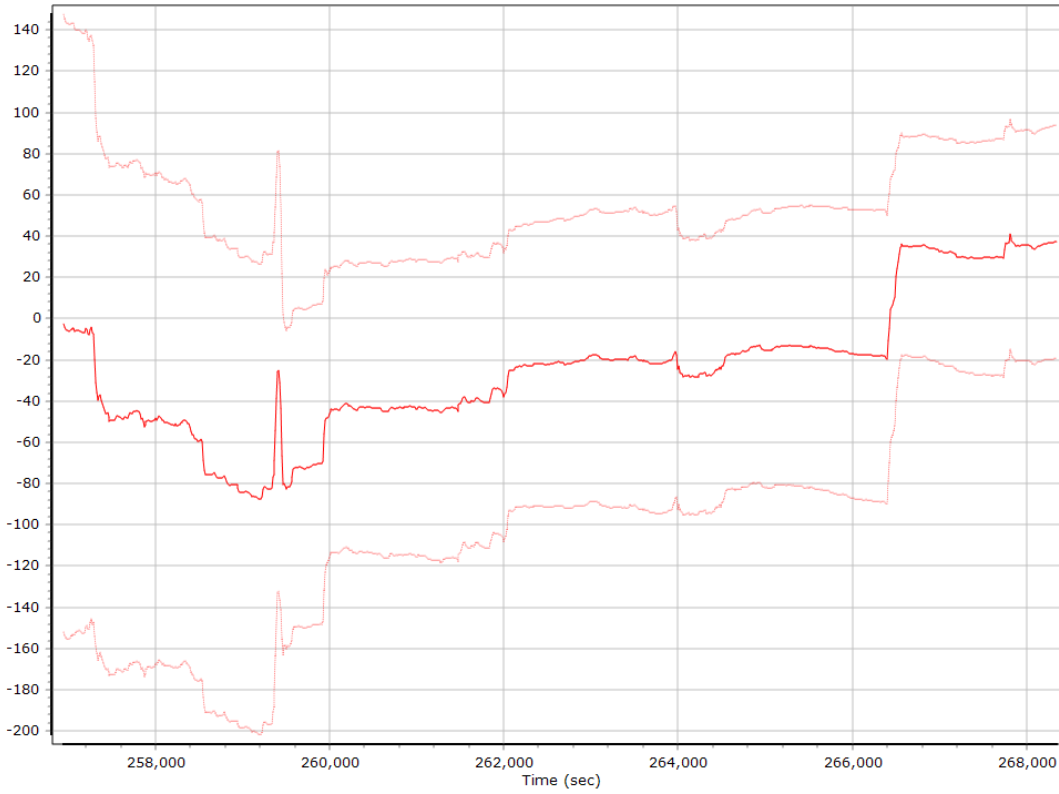
### Gyro Scale Error (ppm)



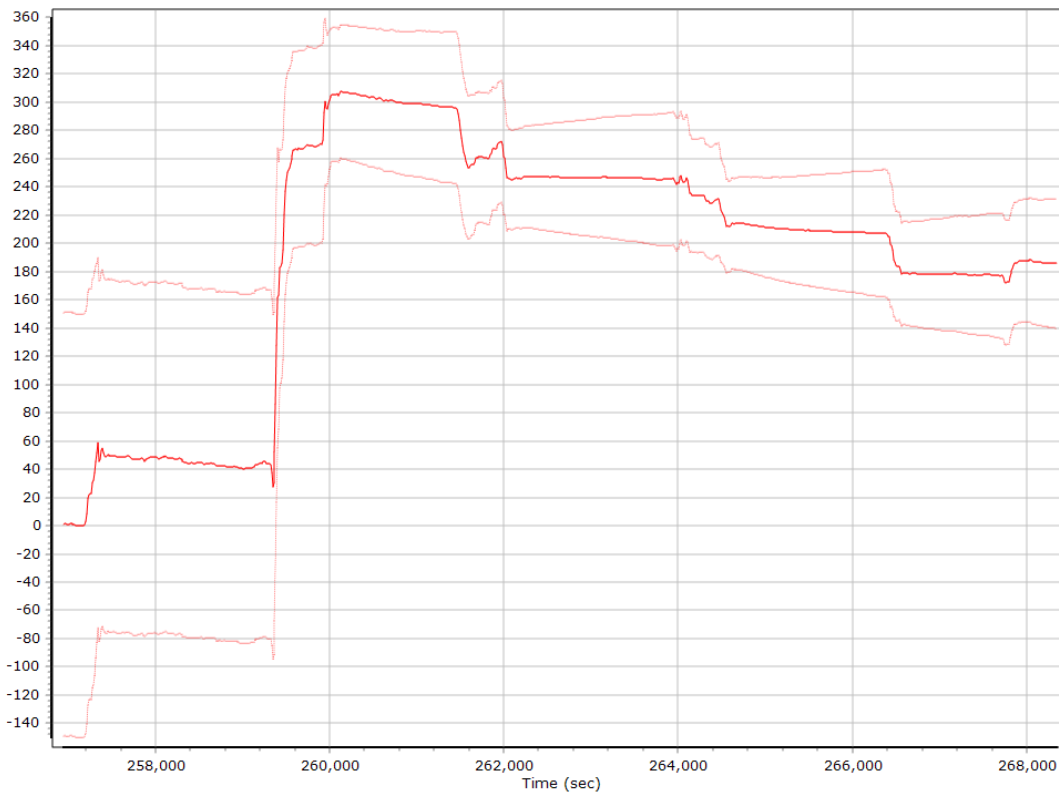
### X Gyro Scale Error (ppm)



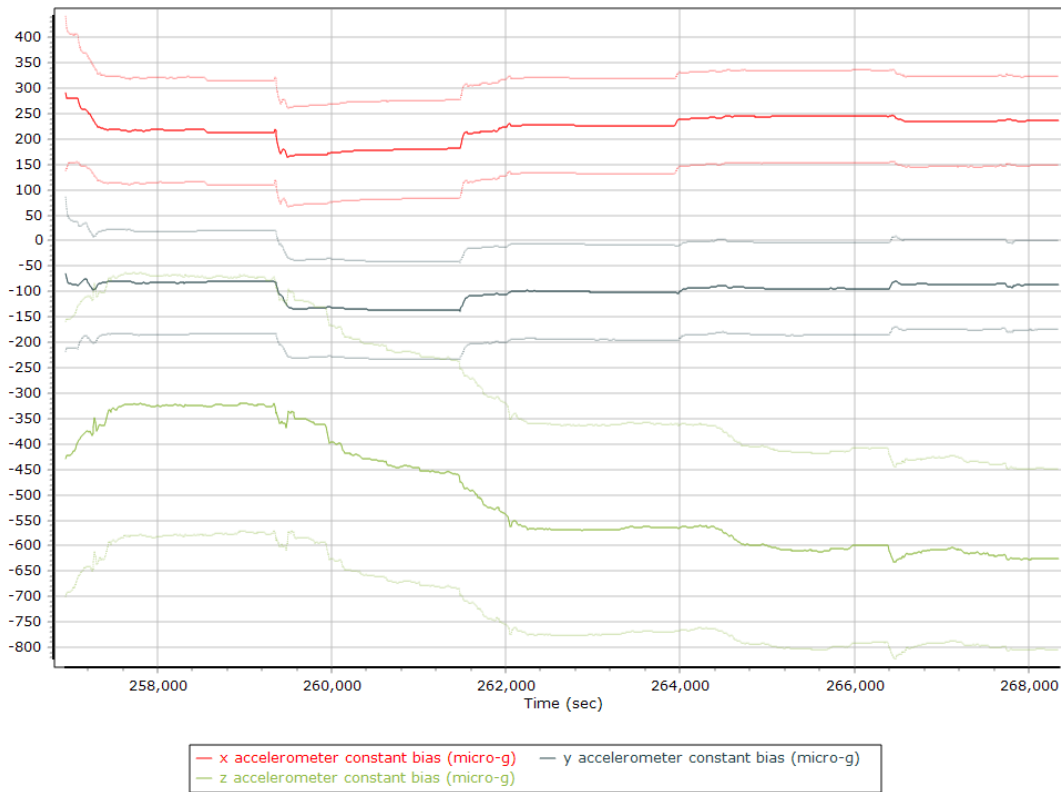
### Y Gyro Scale Error (ppm)



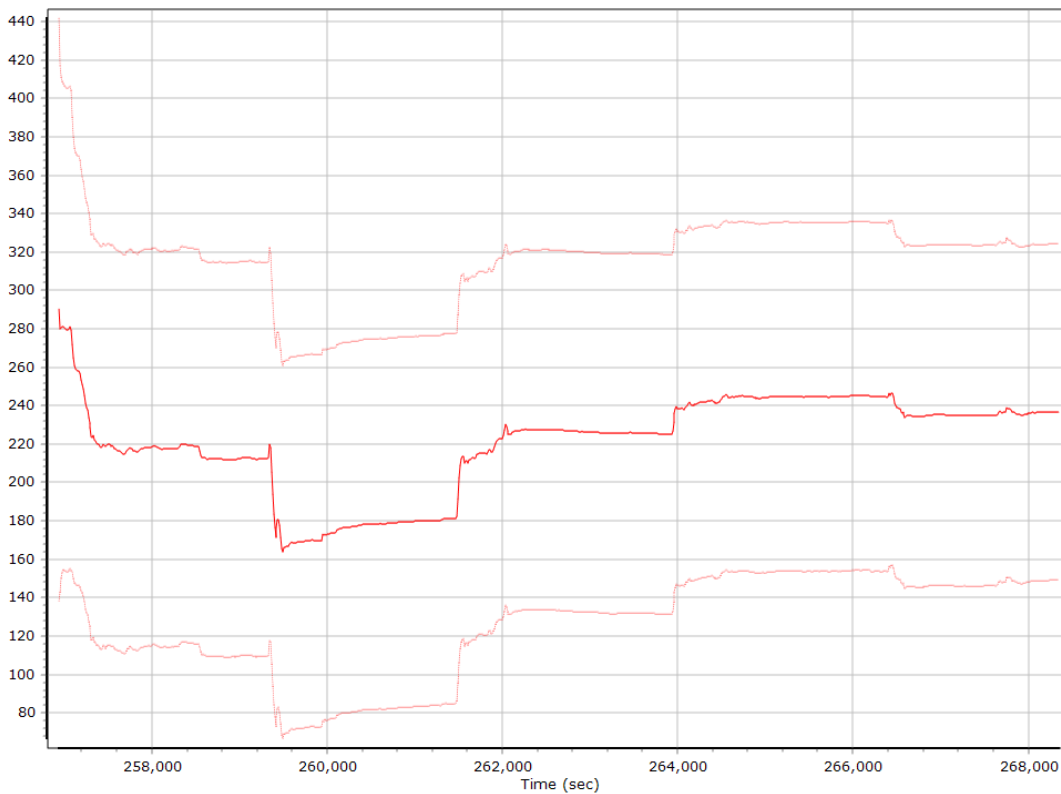
### Z Gyro Scale Error (ppm)



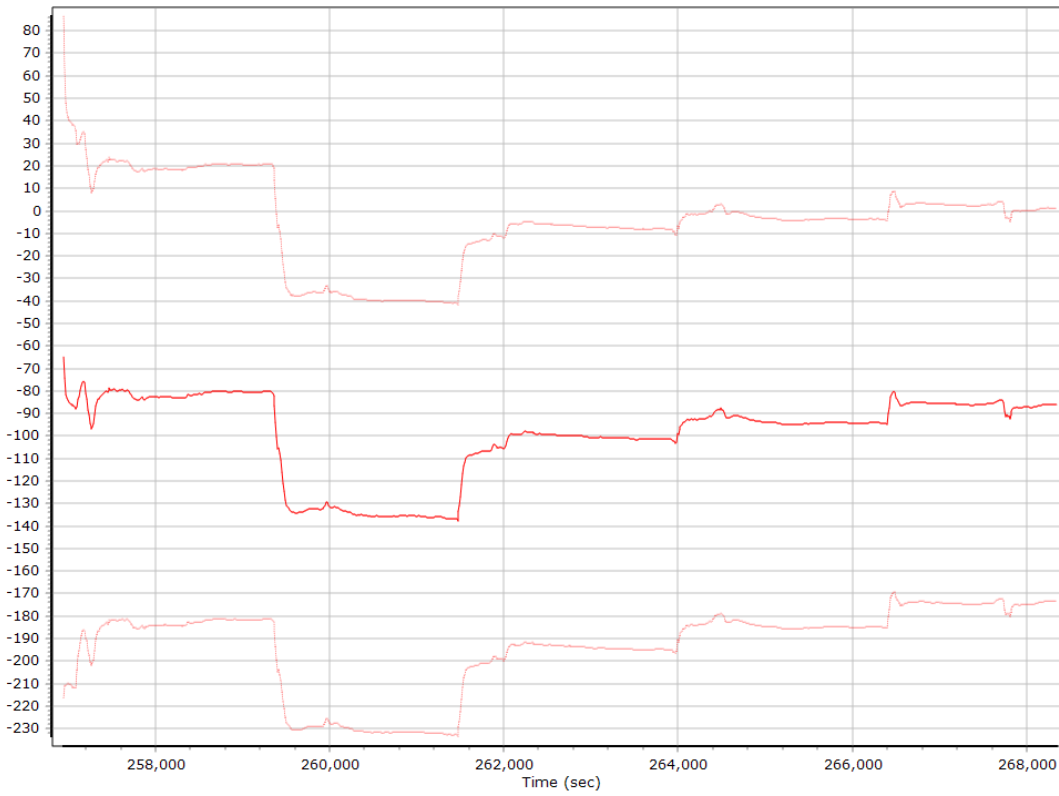
### Forward Processed Estimated Constant Errors, Reference Frame Accelerometer Bias (micro-g)



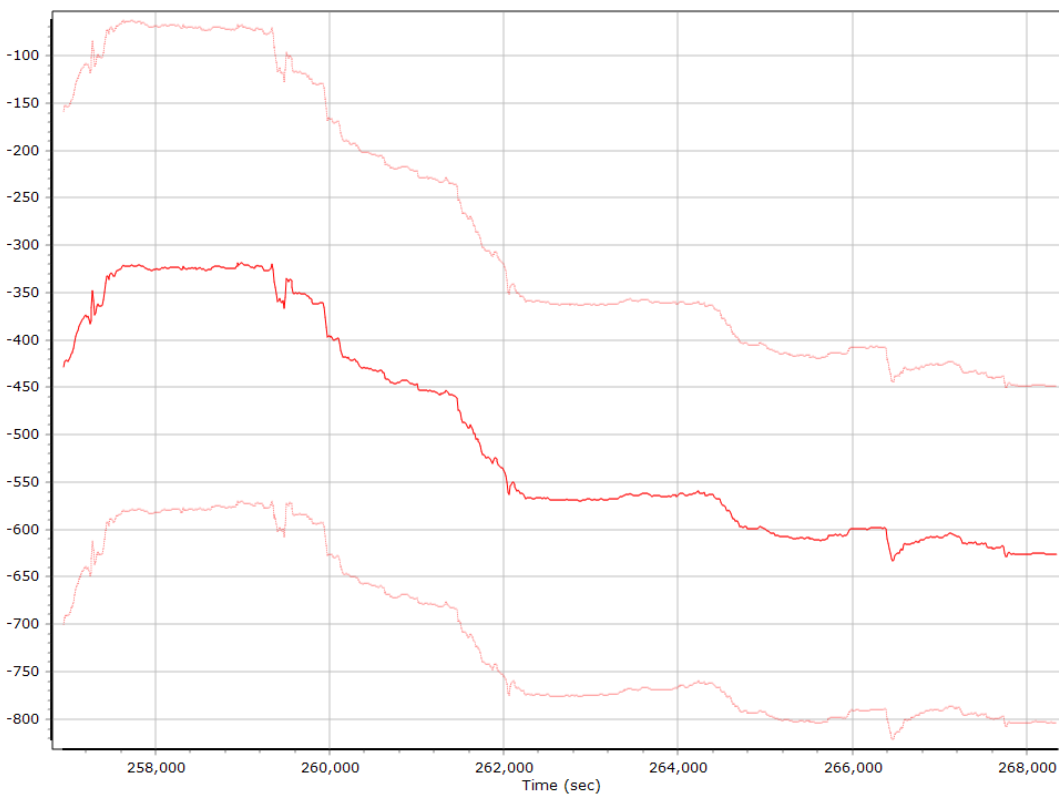
### X Accelerometer Bias (micro-g)



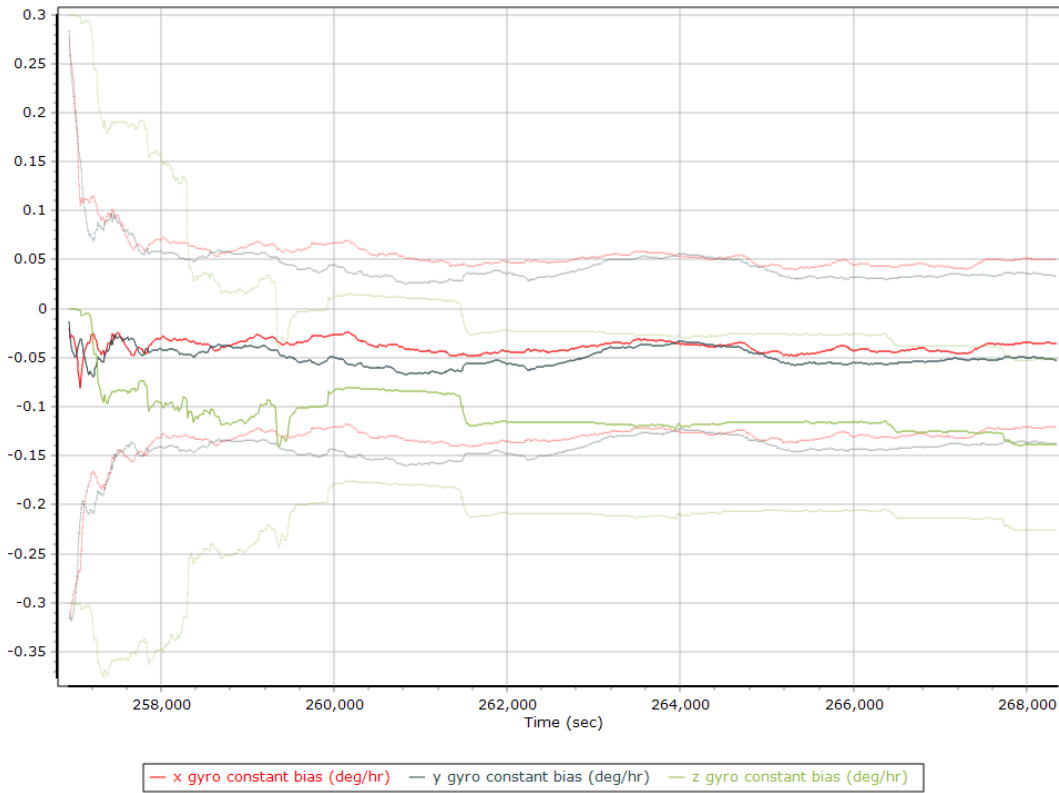
### Y Accelerometer Bias (micro-g)



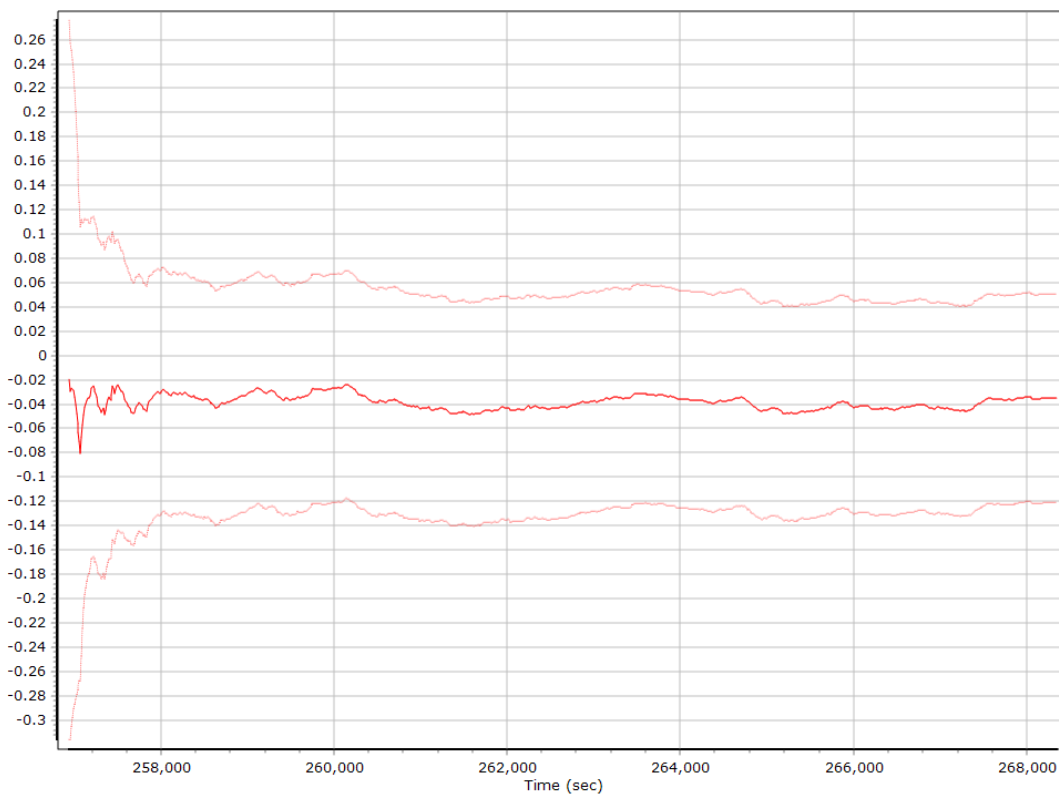
### Z Accelerometer Bias (micro-g)



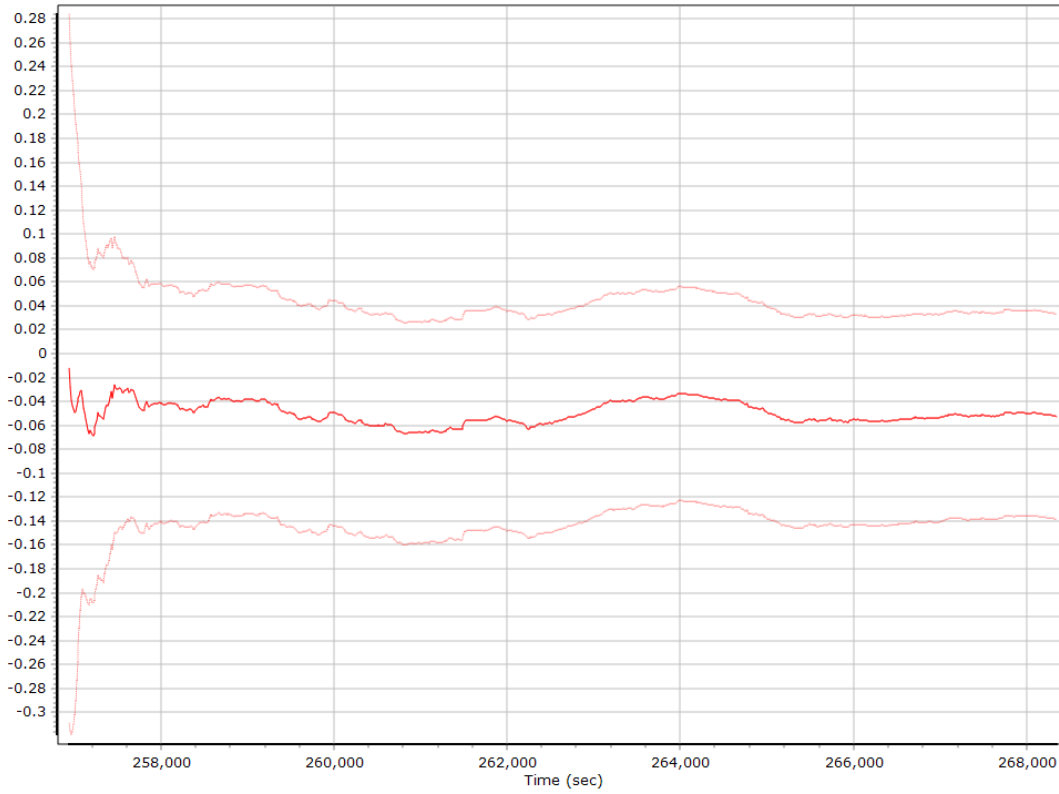
### Gyro Bias (deg/h)



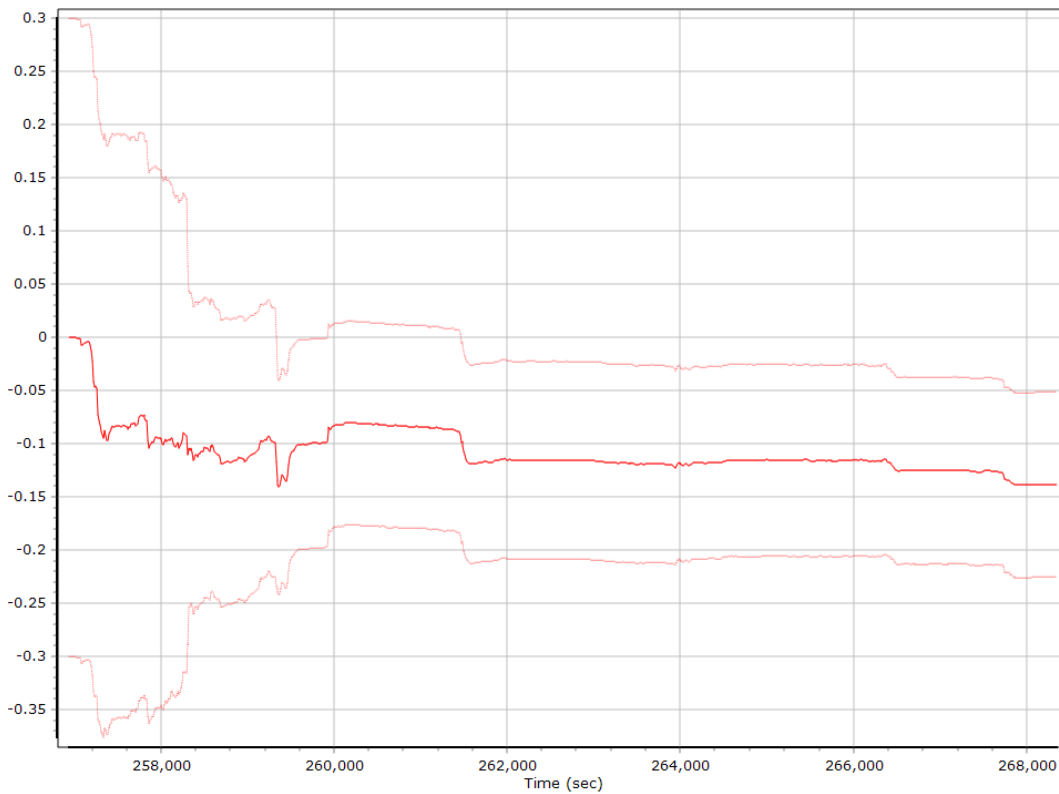
### X Gyro Bias (deg/h)



### Y Gyro Bias (deg/h)

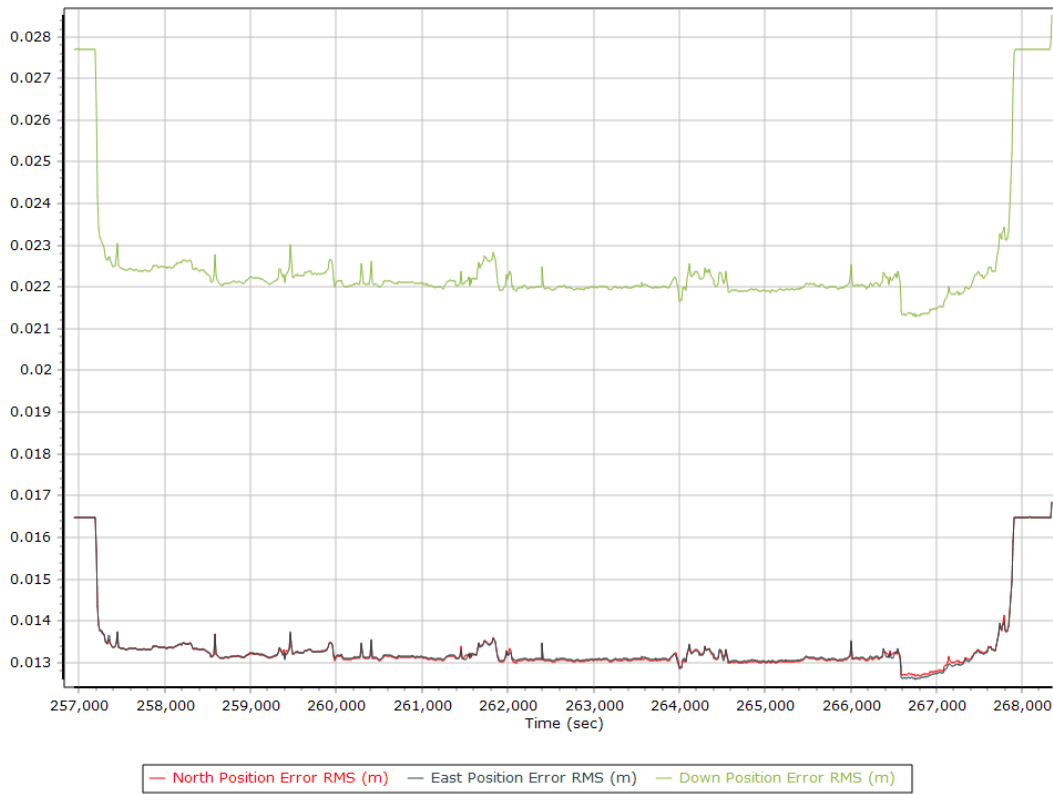


### Z Gyro Bias (deg/h)

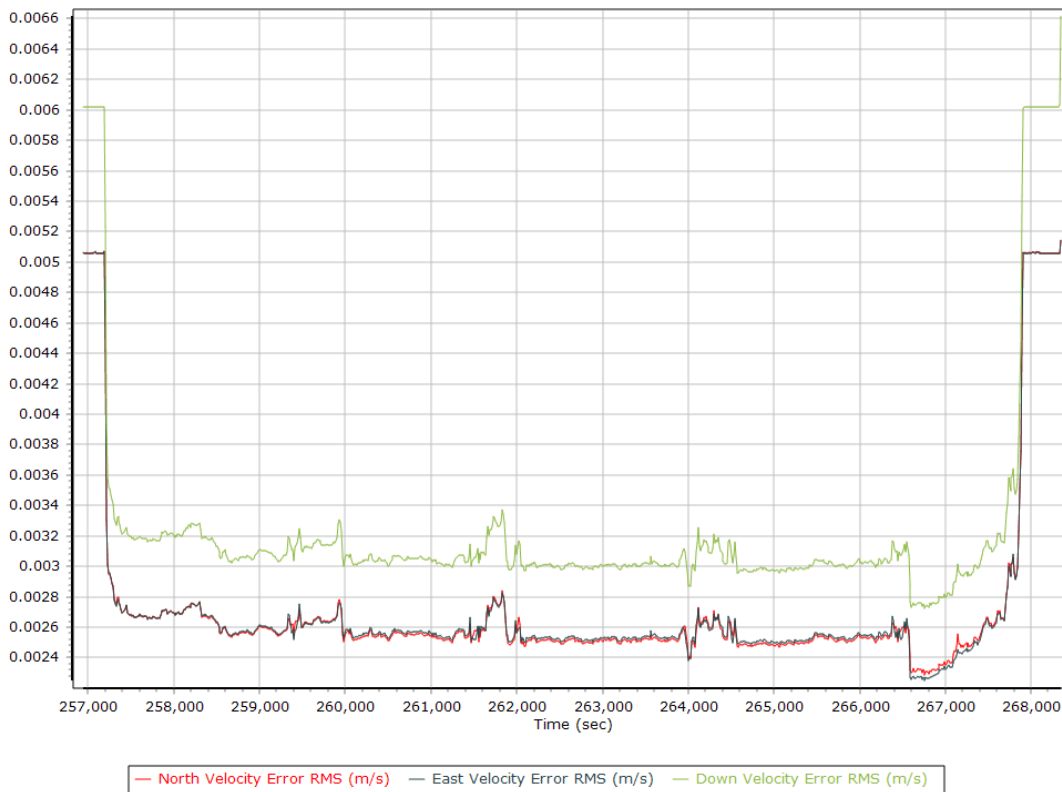


## Smoothed Performance Metrics

### Position Error RMS (m)

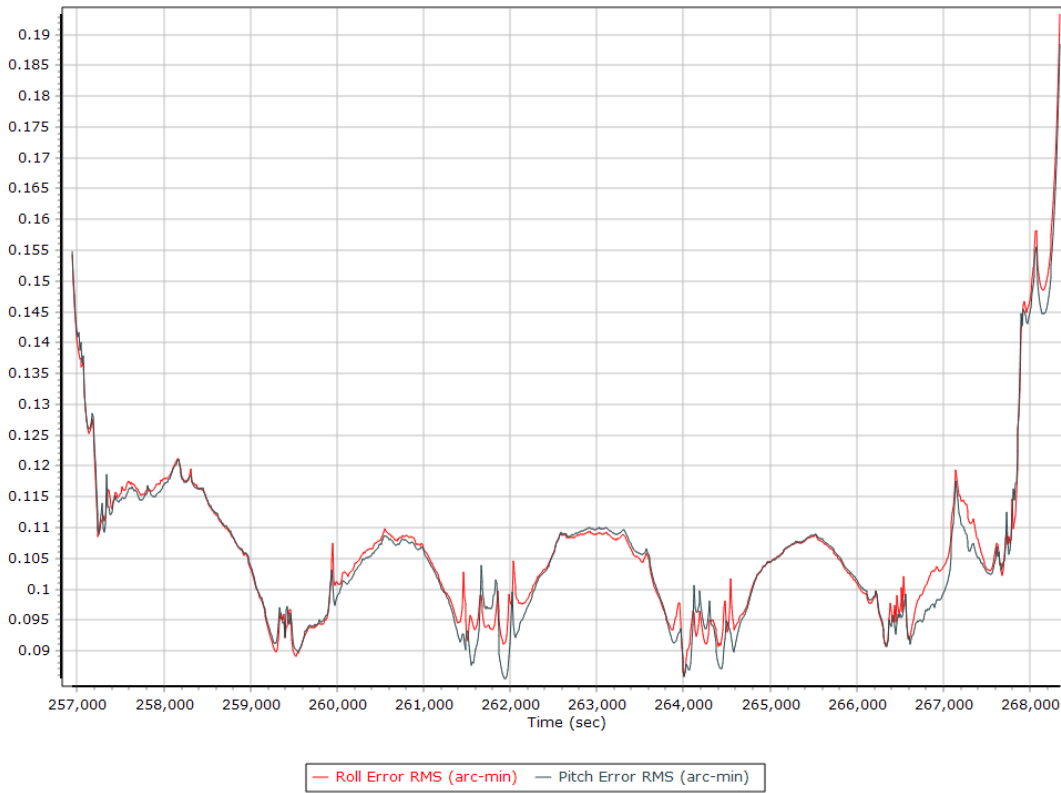


### Velocity Error RMS (m/s)

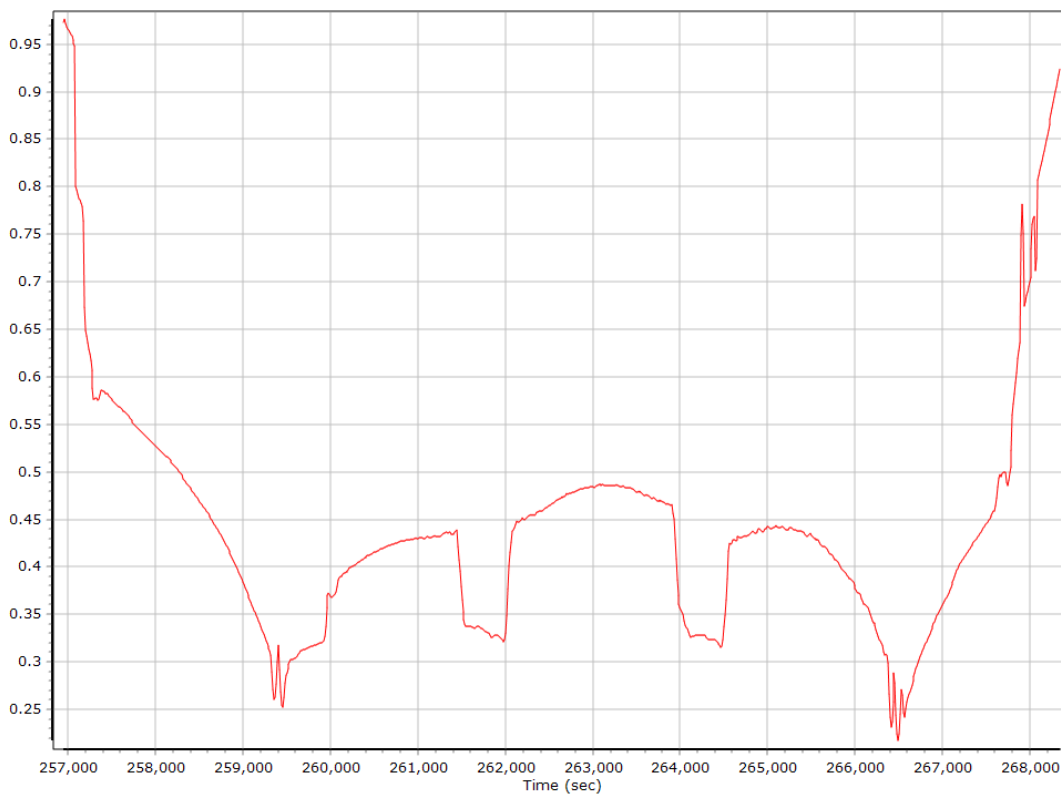




### Roll/Pitch Error RMS (arc-min)

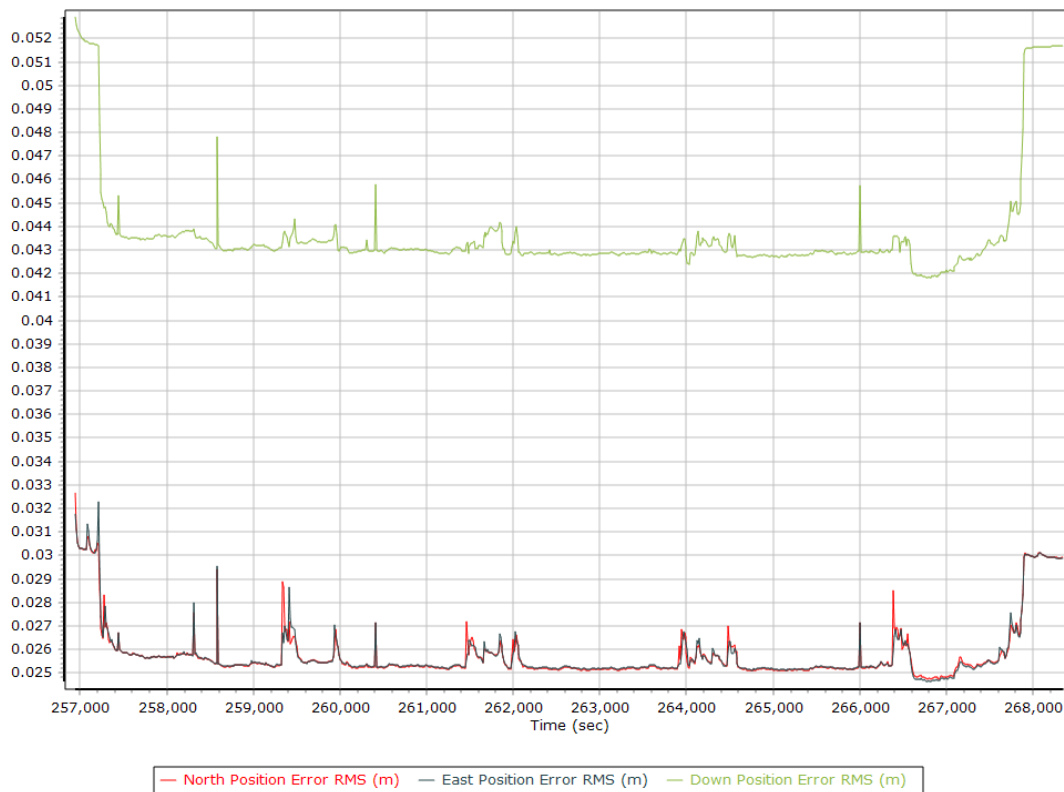


### Heading Error RMS (arc-min)

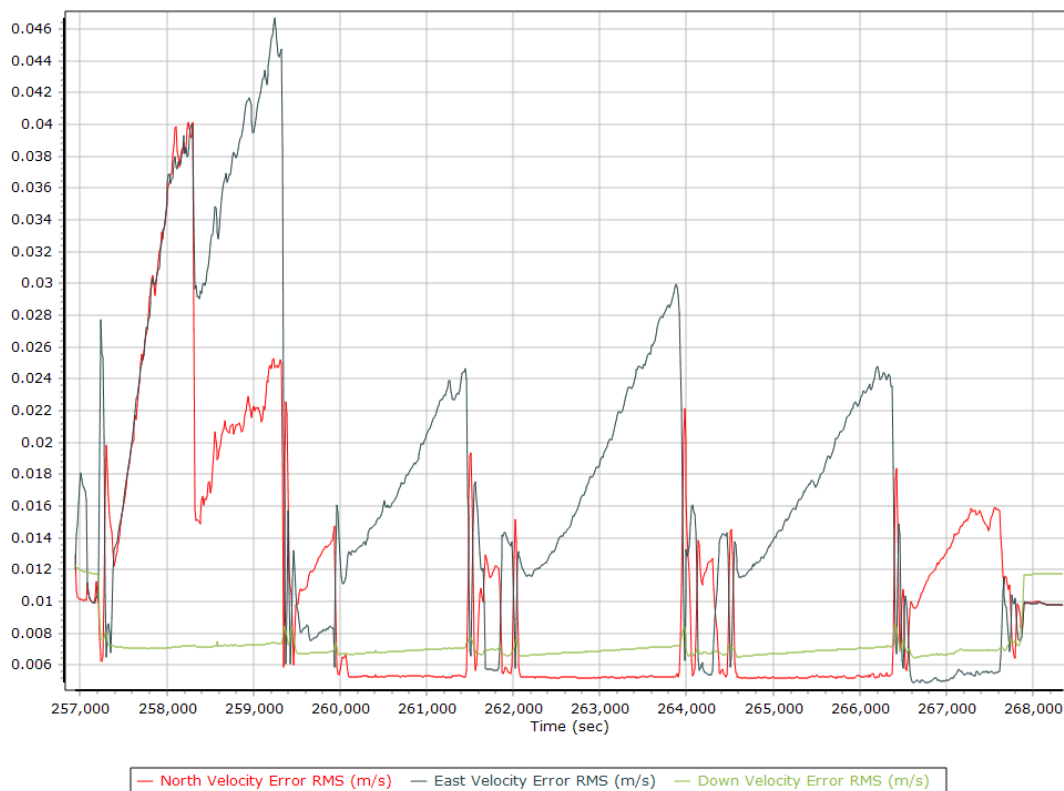


## Forward Processed Performance Metrics

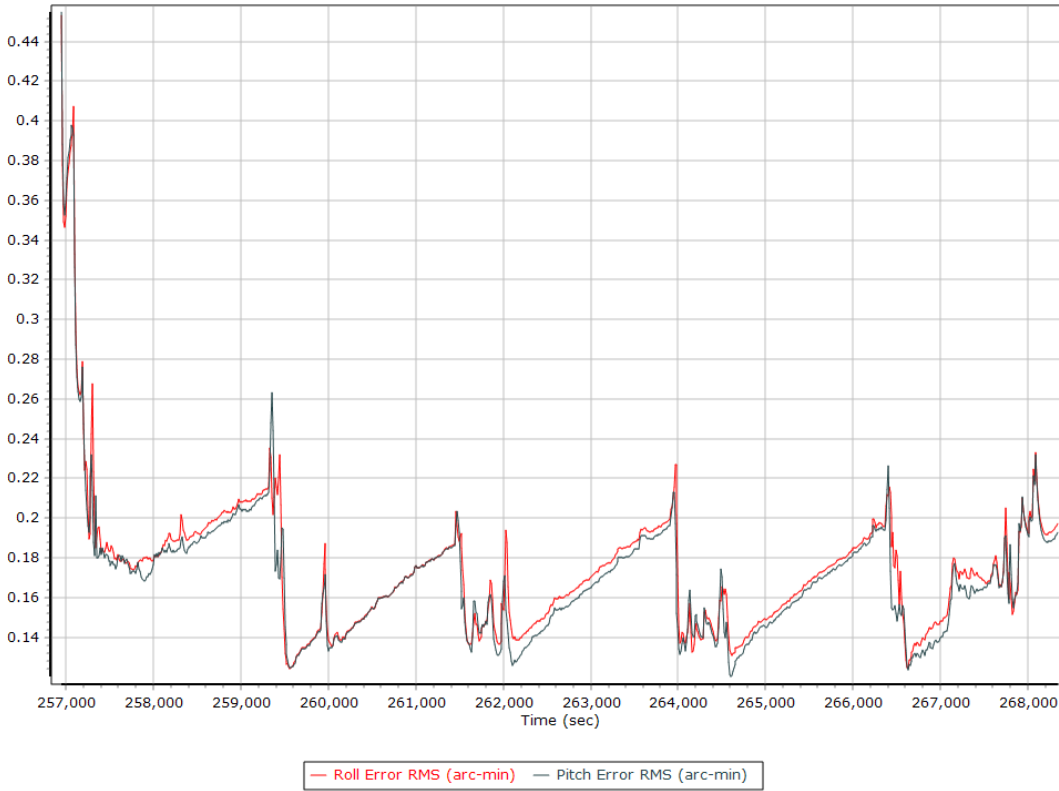
### Position Error RMS (m)



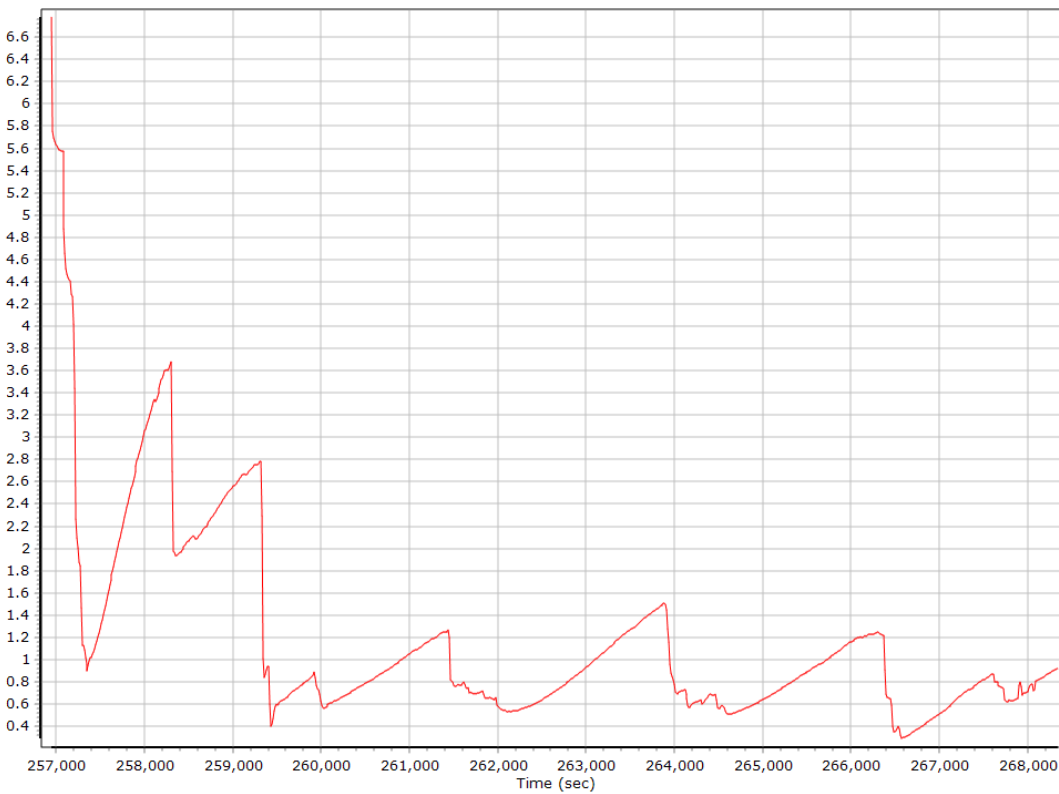
### Velocity Error RMS (m/s)



### Roll/Pitch Error RMS (arc-min)

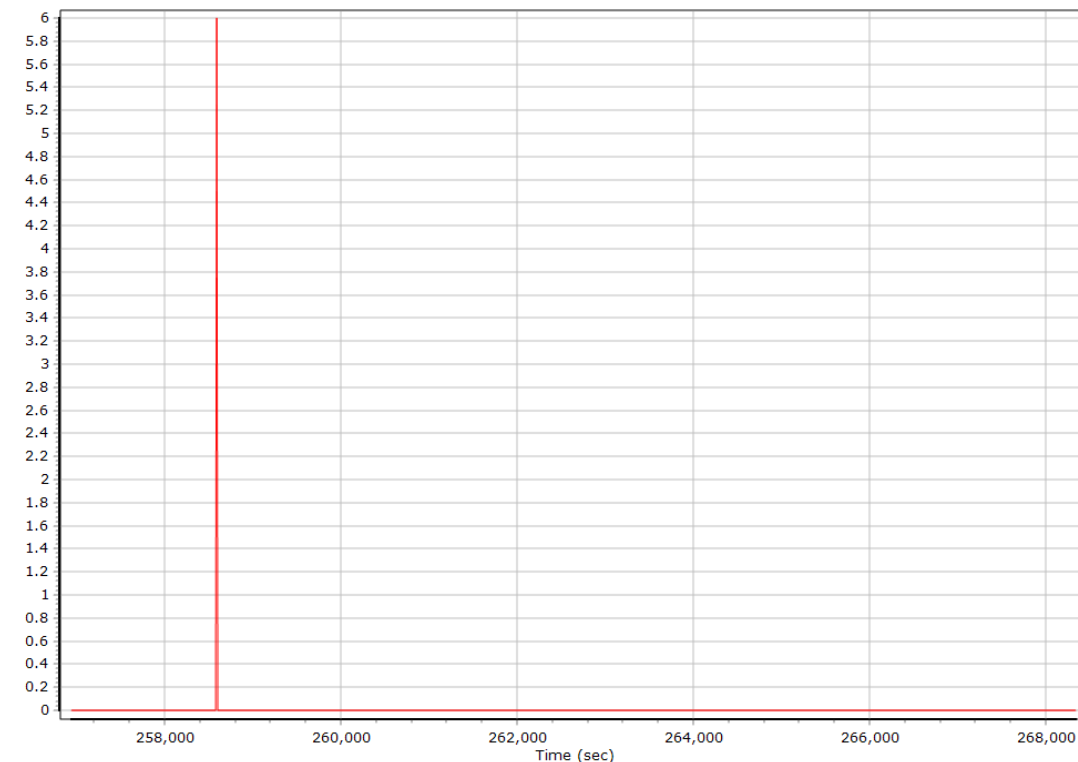


### Heading Error RMS (arc-min)



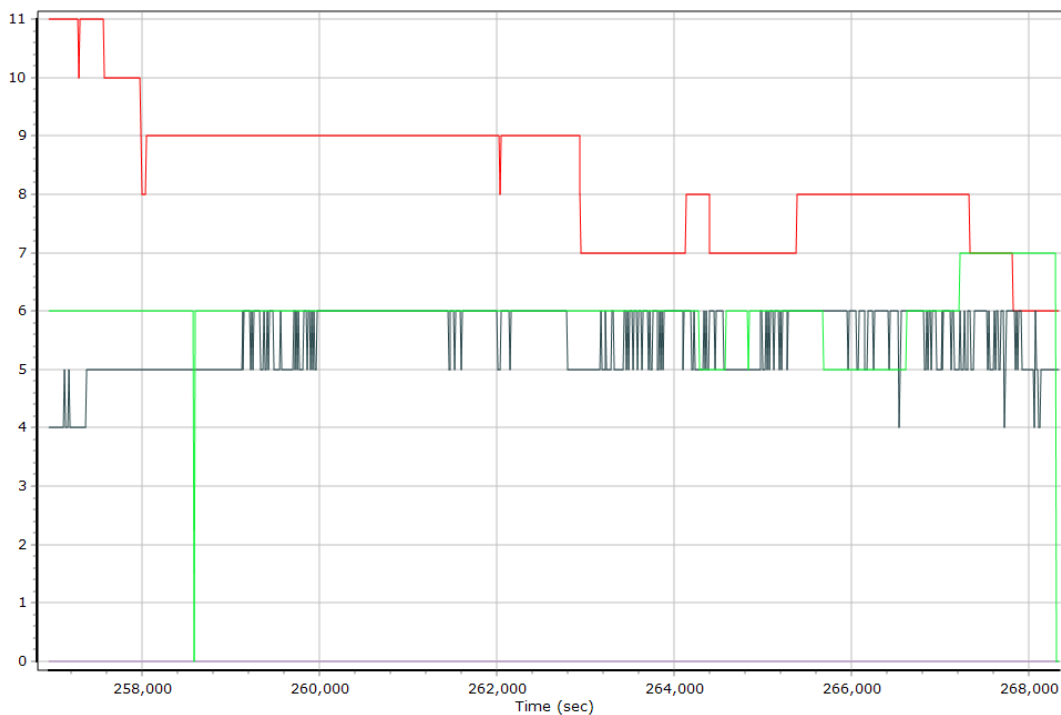
## Forward Processed Solution Status

### Processing Mode



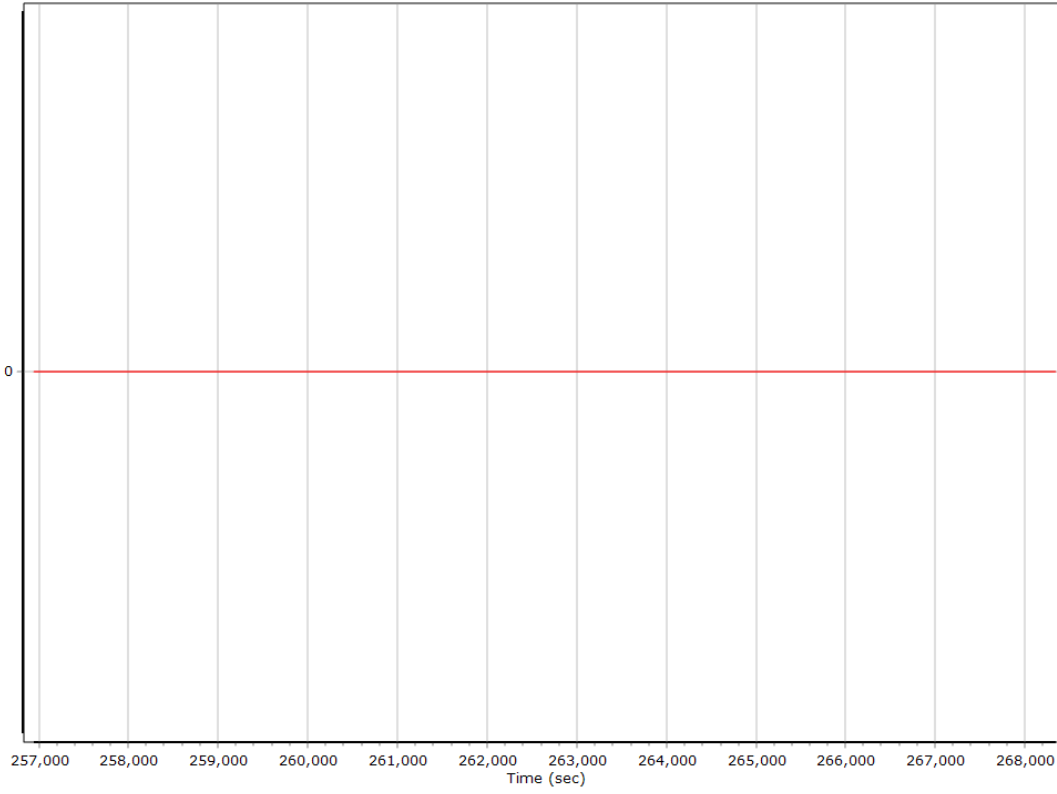
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

### Number of Satellites



— Number of GPS Satellites — Number of GLONASS Satellites — Number of QZSS Satellites  
 — Number of BEIDOU Satellites — Number of GALILEO Satellites

### Baseline Length



## Export Summary Section 1

Export file	sbet_12079_NAD83(2011).out		
Export format	Custom Smoothed BET		
Solution in use	Post-processed		
Output rate	All Records		
Reference to Output lever arm (m)	0.000	0.000	0.000
Reference mounting angles (deg)	0.000	0.000	0.000
Output units (Coordinate / Lat & Lon)	Meter	Meter	
Export start time	256884.005 (03/02/2021 23:21:24)		
Export end time	268351.000 (03/03/2021 02:32:31)		
Height option	Ellipsoid Height		
WGS84 height flag	False		
Grid			
Zone			
Datum	NAD83 (2011)		
Ellipsoid	GRS 1980		
Local Transformation			
Target Epoch	2010		

## Export Summary Section 2

Export file	lever_arm_values.txt		
Export format	ReferenceToPrimaryLeverArms		
Solution in use	Post-processed		
Output rate	All Records		
Reference to Output lever arm (m)	0.000	0.000	0.000
Reference mounting angles (deg)	0.000	0.000	0.000
Output units (Coordinate / Lat & Lon)	Meter	Meter	
Export start time	256884.005 (03/02/2021 23:21:24)		
Export end time	268351.000 (03/03/2021 02:32:31)		
Height option	Ellipsoid Height		
WGS84 height flag	False		
Grid	Universal Transverse Mercator		
Zone	UTM North 14 (102W to 96W)		
Datum	WGS84		
Ellipsoid	WGS84		
Local Transformation	NONE		
Target Epoch	2010		

## EO Summary Section 1

EO file			
EO format	ZI Imaging		
Lever arm (m)	0.000	0.000	0.000
Boresight angles (arcmin)	0.0000	0.0000	0.0000
Output rate	All Records		
Rotation sequence	x omega	y phi	z kappa
Local shift (m)	0.000	0.000	0.000
Output units (coordinate / angle / lat & lon)	Meter	Degree	Deg Decimal
Height option	Ellipsoid Height		
WGS84 height flag	False		
Scale height option	False		
Kappa cardinal rotation (deg)	0		
Solution in use	Post-processed		
EO start time	256884.005 (03/02/2021 23:21:24)		
EO end time	268351.000 (03/03/2021 02:32:31)		
Grid	Universal Transverse Mercator		
Zone	UTM North 14 (102W to 96W)		
Datum	NAD83 (2011)		
Ellipsoid	GRS 1980		
Local Transformation	NONE		
Target Epoch	2010		