US Army Corps of Engineers ®

LIDAR DEM QUALITY CONTROL REPORT

MISSISSIPPI DELTA LIDAR COLLECTION AND PROCESSING PHASE III

Contract # W912EE-07-D-0008
Task Order # 0004

SUBMITTED BY:

AEROQUEST
O P T I M A L

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METHODOLOGY

The vertical accuracy of a LiDAR DEM is estimated by determining the root mean square error (RMSE$_z$). RMSE$_z$ is the square root of the average of the set of squared differences between dataset coordinate values and coordinate values from an independent source of higher accuracy for identical points. If those differences are normally distributed and average zero, 95 percent of any sufficiently large sample should be less than 1.96 times the RMSE$_z$. Therefore 0.3' RMSE$_z$ is often referred to as "0.6' accuracy at the 95-percent confidence level". Following that convention, the vertical accuracy of any DEM is defined as 1.96 times the RMSE$_z$ of linearly interpolated elevations in the DEM, as compared with known elevations from high-accuracy test points.

The Quality Control check was intended to ensure that data would meet ASPRS Class 2 Vertical Accuracy Standards for 2' contours. (This standard requires a tested RMSE$_z$ of 1/3 of the contour interval or less.) Field verification of the vertical accuracy of this DEM was performed to ensure that the 0.66' RMSE$_z$ requirement for the ASPRS standard was tested in accordance with NSSDA methods for all major vegetation categories predominate within the project area. The categories may include:

  a) Bare-earth and low grass (plowed fields, lawns, golf courses);
  b) High grass and crops (hay fields, cornfields, wheat fields);
  c) Brush lands and low trees (chaparrals, mesquite, mangrove swamps);
  d) Fully covered by trees (hardwoods, evergreens, mixed forests);
  e) Urban areas (high, dense man-made structures);
  f) Sawgrass

The RMSE$_z$ calculated from a sample of test points is not the RMSE$_z$ of the DEM. The calculated value may be higher or it may be lower than that of the DEM. Confidence in the calculated value increases with the number of test points. If the errors (lack of accuracy) associated with the DEM are normally distributed and unbiased, the confidence in the calculated RMSE$_z$ can be determined as a function of sample size.

The test points were selected in areas to evaluate DEM accuracy under trees and in vegetation representative of the study area. The Precise Dilution of Position (PDOP) during the LiDAR data collection was consistently less than 3.0 and was determined to be of no issue. Test points on sloping or irregular terrain would be unreasonably affected by the linear interpolation of test points from surrounding DEM points and, therefore, were not selected.

ACCURACY RESULTS:

Aeroquest Optimal, Inc. collected test points using RTK (Real-Time Kinematic) GPS techniques. Six-hundred and eighty-four (684) were collected in total. All RMSE calculations were performed on the bare-earth, orthometric surface.

The comparisons between each validation point and the LiDAR DEM are shown in Appendix B. The RMSE$_z$ was determined for the project area.

Results of the validation points

FUNDAMENTAL

	U.S Svy Feet	Meters
Average Δz	0.009	0.003
Minimum Δz	-0.610	-0.186
Maximum Δz	0.841	0.256
Average Magnitude	0.137	0.042
$RMSE_z$	0.186	0.057
Standard Deviation	0.186	0.057

CONSOLIDATED

	U.S Svy Feet	Meters
Average Δz	0.046	0.014
Minimum Δz	-0.610	-0.186
Maximum Δz	0.841	0.256
Average Magnitude	0.161	0.049
$RMSE_z$	0.220	0.067
Standard Deviation	0.215	0.066

CONTROL

	U.S Svy Feet	Meters
Average Δz	0.011	0.003
Minimum Δz	-0.124	-0.038
Maximum Δz	0.196	0.060
Average Magnitude	0.075	0.023
$RMSE_z$	0.090	0.027
Standard Deviation	0.089	0.027

The favorable result of the DEM comparison to the validation points provides an overall confidence that the LiDAR system was operating properly during data collection.

Those validation points marked as outside are such as they fall outside of a predetermined maximum triangle size. Therefore, there are an insufficient number of LiDAR points hitting the ground in the immediate vicinity of these test points. Any attempt to assign a value from the triangulated surface will result in erroneous values and so these points are excluded from the $RMSE_z$ calculation.

Due to the nature of the area and indefinite spot of each individual LiDAR point, an $RMSE_h$ value was not reported. Any particular point cannot be tested. However, accuracy statements can be made about the performance of the ABGPS, IMU and LiDAR sensors. The ABGPS data are quality controlled by comparing multiple solutions from multiple base stations. On this project, these solutions all agreed to better than 5 cm horizontally. The IMU sensor combines the post-processed GPS data with the raw inertial data to produce a best estimate of trajectory. Automated quality control checks will not allow the IMU solution to be of a lower accuracy than the provided input from the GPS solution. On this project, three different OPTECH ALTM LiDAR sensors were utilized. The stated horizontal accuracies of the sensors are:

OPTECH ALTM 3100   1/2,000th of the flight altitude
OPTECH ALTM 3100EA   1/5,500th of the flight altitude
OPTECH ALTM Gemini   1/11,000th of the flight altitude

On this project, the combination of all the errors from all the components of the sensor is much less than the stated accuracy.

VERTICAL ACCURACY STATEMENTS

The DEMs for this survey area are believed to be accurate. The inclusion of breaklines collected from the LiDAR data provides for a more accurate DEM around hydro edges than could be achieved with the LiDAR points alone.

The following statements are derived in accordance with the ASPRS Guidelines for Vertical Accuracy Reporting for LiDAR Data (Flood, M., 2004).

Tested 0.365 U.S. survey feet (0.111 meters) fundamental vertical accuracy at the ninety-five percent confidence level in open terrain using $RMSE_z$ x 1.9600.

Tested 0.431 U.S. survey feet (0.131 meters) consolidated vertical accuracy at the ninety-five percent confidence level in open terrain, high grass and trees using $RMSE_z$ x 1.9600.

HORIZONTAL ACCURACY STATEMENTS

OPTECH ALTM 3100 LiDAR Sensor:
Expected horizontal accuracy of elevation products as determined from system studies and other methods is 1/2,000th of the flight height, which, in the instance of this particular project, was 3,280 U.S. survey feet (1,000 meters) AGL, giving a horizontal tolerance of less than 1.640 U.S. survey feet (0.500 meters).

OPTECH ALTM 3100EA LiDAR Sensor:
Expected horizontal accuracy of elevation products as determined from system studies and other methods is 1/5,500th of the flight height, which, in the instance of this particular project, was 3,280 U.S. survey feet (1,000 meters) AGL, giving a horizontal tolerance of less than 0.596 U.S. survey feet (0.182 meters).

OPTECH ALTM Gemini LiDAR Sensor:
Expected horizontal accuracy of elevation products as determined from system studies and other methods is 1/11,000th of the flight height, which, in the instance of this particular project, was 5,905 U.S. survey feet (1,800 meters) AGL, giving a horizontal tolerance of less than 0.537 U.S. survey feet (0.164 meters).

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APPENDIX A: Control Points vs LiDAR DEM

The following table is created from the sets of points collected from different control points. All positions as shown in the tables are in State Plane Co-ordinate System (NAD83) Mississippi West, US Survey Feet and the elevations are in NAVD88(Geoid03), US Survey Feet.

Station Name	Easting	Northing	Known Z	Laser Z	Δz	Surface
EG0944	2561512.499	1896328.376	581.434	581.510	-0.076	Control
EG1874	2692841.909	1903044.456	449.832	449.882	-0.050	Control
MSD01	2450342.933	1924884.066	301.679	301.750	-0.071	Control
MSD02	2532159.168	1972989.921	451.954	452.150	-0.196	Control
MSD03	2597234.851	1876272.735	393.460	393.450	0.010	Control
MSD04	2488613.306	1822058.022	453.395	453.330	0.065	Control
MSD05	2710312.098	1778213.402	492.813	492.770	0.043	Control
MSD08	2672949.787	1674814.537	333.012	333.050	-0.038	Control
MSD09-R	2596593.348	1614490.318	386.689	386.609	0.080	Control
MSD10-R	2538912.625	1584395.860	247.031	246.907	0.124	Control
EG0944	2561512.499	1896328.376	581.434	581.510	-0.076	Control

APPENDIX B: Validation Points vs LiDAR DEM

The following table is created from the sets of points collected from different control points. All positions as shown in the tables are in State Plane Co-ordinate System (NAD83) Mississippi West, US Survey Feet and the elevations are in NAVD88(Geoid03), US Survey Feet.

CODE	DESCRIPTION
BARE	Bare earth, Low-cut grass
HI_GRASS	High grass
LO_TREES	Low trees
HI_TREES	High trees

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD03_0002	2597210.787	1876241.335	393.502	393.640	-0.138	BARE
MSD03_0003	2597204.750	1876257.161	393.457	393.650	-0.193	BARE
MSD03_0004	2597198.362	1876272.165	393.516	393.380	0.136	BARE
MSD03_0005	2597194.143	1876280.912	393.779	393.770	0.009	BARE
MSD03_0006	2597189.898	1876296.597	393.854	394.020	-0.166	BARE
MSD03_0007	2597183.389	1876312.866	393.863	394.150	-0.287	BARE
MSD03_0008	2597178.462	1876323.942	394.051	394.240	-0.189	BARE
MSD03_0009	2597173.276	1876336.667	394.056	394.140	-0.084	BARE
MSD03_0010	2597170.604	1876348.595	393.817	393.960	-0.143	BARE
MSD03_0011	2600080.721	1873206.816	428.635	428.390	0.245	BARE
MSD03_0012	2600066.120	1873202.484	428.598	428.600	-0.002	BARE
MSD03_0013	2600051.876	1873195.730	428.592	428.460	0.132	BARE
MSD03_0014	2600034.336	1873188.470	428.510	428.420	0.090	BARE
MSD03_0015	2600018.115	1873179.902	428.564	428.500	0.064	BARE
MSD03_0016	2600006.152	1873173.456	428.576	428.330	0.246	BARE
MSD03_0017	2599992.773	1873166.232	428.367	428.070	0.297	BARE
MSD03_0018	2599980.901	1873159.647	428.287	428.170	0.117	BARE
MSD03_0019	2599966.938	1873151.635	428.068	427.940	0.128	BARE
MSD03_0020	2599937.818	1873162.125	428.460	428.490	-0.030	HI_GRASS
MSD03_0021	2599927.597	1873159.868	428.522	428.520	0.002	HI_GRASS
MSD03_0022	2599919.908	1873160.633	428.512	428.700	-0.188	HI_GRASS
MSD03_0023	2599908.507	1873157.893	428.518	428.420	0.098	HI_GRASS
MSD03_0024	2599895.028	1873154.221	428.412	428.390	0.022	HI_GRASS
MSD03_0025	2599882.877	1873151.517	428.189	428.310	-0.121	HI_GRASS
MSD03_0026	2599874.902	1873146.493	427.974	428.230	-0.256	HI_GRASS
MSD03_0027	2590554.096	1866386.509	313.884	313.740	0.144	BARE
MSD03_0028	2590567.539	1866381.418	313.380	313.280	0.100	BARE
MSD03_0029	2590587.667	1866374.006	312.761	312.620	0.141	BARE
MSD03_0030	2590608.116	1866366.892	312.244	312.120	0.124	BARE
MSD03_0031	2590625.175	1866361.301	311.869	311.700	0.169	BARE
MSD03_0032	2590656.696	1866351.524	311.263	311.150	0.113	BARE
MSD03_0033	2590674.869	1866346.551	311.017	310.800	0.217	BARE
MSD03_0034	2590687.590	1866343.130	310.833	310.860	-0.027	BARE
MSD03_0035	2590623.968	1866328.776	310.006	310.190	-0.184	HI_GRASS
MSD03_0036	2590607.519	1866334.002	310.462	310.470	-0.008	HI_GRASS

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD03_0037	2590583.950	1866340.816	310.777	310.810	-0.033	HI_GRASS
MSD03_0038	2590566.815	1866345.809	311.167	311.340	-0.173	HI_GRASS
MSD03_0039	2590549.736	1866354.289	311.805	311.880	-0.075	HI_GRASS
MSD03_0040	2590518.953	1866366.765	313.448	313.630	-0.182	HI_GRASS
MSD03_0041	2590493.986	1866375.262	314.807	315.060	-0.253	HI_GRASS
MSD03_0042	2585195.789	1867452.387	415.346	415.110	0.236	BARE
MSD03_0043	2585182.072	1867452.382	415.667	415.590	0.077	BARE
MSD03_0044	2585165.877	1867452.286	416.224	416.160	0.064	BARE
MSD03_0045	2585152.200	1867452.212	416.679	416.580	0.099	BARE
MSD03_0046	2585138.363	1867452.345	417.145	417.070	0.075	BARE
MSD03_0047	2585126.745	1867452.360	417.614	417.490	0.124	BARE
MSD03_0048	2585111.984	1867452.050	418.100	417.990	0.110	BARE
MSD03_0049	2585099.262	1867452.236	418.587	418.430	0.157	BARE
MSD03_0050	2603964.734	1871089.868	330.268	330.210	0.058	BARE
MSD03_0051	2603969.878	1871105.519	330.312	330.300	0.012	BARE
MSD03_0052	2603976.571	1871125.982	330.417	330.180	0.237	BARE
MSD03_0053	2603985.001	1871150.033	330.537	330.460	0.077	BARE
MSD03_0054	2603996.134	1871180.762	330.617	330.470	0.147	BARE
MSD03_0055	2604012.312	1871218.917	330.565	330.450	0.115	BARE
MSD03_0056	2604019.919	1871236.608	330.569	330.450	0.119	BARE
MSD03_0057	2603682.050	1877607.183	352.087	352.090	-0.003	HI_GRASS
MSD03_0058	2603675.205	1877618.638	352.388	352.400	-0.012	HI_GRASS
MSD03_0059	2603665.549	1877631.907	352.636	352.700	-0.064	HI_GRASS
MSD03_0060	2603656.715	1877644.369	352.675	352.850	-0.175	HI_GRASS
MSD03_0061	2603650.089	1877654.148	352.523	353.060	-0.537	HI_GRASS
MSD03_0062	2603644.859	1877662.283	352.397	352.540	-0.143	HI_GRASS
MSD03_0063	2603735.025	1877696.156	348.340	348.370	-0.030	BARE
MSD03_0064	2603740.593	1877683.569	348.769	348.750	0.019	BARE
MSD03_0065	2603747.422	1877668.886	349.165	349.140	0.025	BARE
MSD03_0066	2603764.565	1877629.518	350.294	350.100	0.194	BARE
MSD03_0067	2603772.795	1877610.401	350.763	350.670	0.093	BARE
MSD03_0068	2603799.509	1877634.179	352.418	352.390	0.028	BARE
MSD03_0069	2603817.052	1877653.025	352.644	352.620	0.024	BARE
MSD03_0070	2603833.894	1877672.578	353.301	353.370	-0.069	BARE
MSD03_0071	2603850.494	1877692.381	353.691	353.510	0.181	BARE
MSD03_0072	2603859.229	1877707.911	353.880	353.700	0.180	BARE
MSD03_0073	2598252.891	1883155.506	351.982	352.000	-0.018	BARE
MSD03_0074	2598233.528	1883161.658	352.374	352.450	-0.076	BARE
MSD03_0075	2598215.711	1883168.085	352.303	352.370	-0.067	BARE
MSD03_0076	2598203.006	1883172.206	352.457	352.500	-0.043	BARE
MSD03_0077	2598189.968	1883178.849	353.288	353.370	-0.082	BARE
MSD03_0078	2598174.584	1883185.783	354.278	354.360	-0.082	BARE
MSD03_0079	2598164.393	1883189.550	354.090	354.270	-0.180	BARE
MSD03_0080	2598212.267	1883140.017	352.546	352.520	0.026	BARE
MSD03_0081	2598233.817	1883131.223	352.368	352.380	-0.012	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD03_0082	2598257.220	1883122.561	352.108	352.150	-0.042	BARE
MSD03_0083	2598280.759	1883113.578	351.824	351.990	-0.166	BARE
MSD03_0084	2598307.794	1883103.235	351.578	351.600	-0.022	BARE
MSD02_0002	2532170.096	1972947.898	451.521	451.650	-0.129	BARE
MSD02_0003	2532171.058	1972906.237	450.690	450.780	-0.090	BARE
MSD02_0004	2532171.910	1972874.397	450.062	450.120	-0.058	HI_GRASS
MSD02_0005	2532172.490	1972843.081	449.408	449.570	-0.162	HI_GRASS
MSD02_0006	2532173.558	1972815.430	448.859	448.970	-0.111	HI_TREES
MSD02_0007	2532174.218	1972771.540	447.924	448.010	-0.086	BARE
MSD02_0008	2532175.150	1972739.970	447.299	447.400	-0.101	BARE
MSD02_0009	2532175.976	1972714.464	446.847	446.850	-0.003	HI_GRASS
MSD02_0010	2532176.499	1972685.493	446.243	446.370	-0.127	HI_TREES
MSD02_0011	2532177.385	1972641.145	445.273	445.350	-0.077	HI_TREES
MSD02_0012	2532178.449	1972607.030	444.690	444.700	-0.010	BARE
MSD02_0013	2532178.998	1972579.798	444.194	444.370	-0.176	BARE
MSD02_0014	2532179.650	1972552.191	443.673	443.690	-0.017	BARE
MSD02_0015	2532180.030	1972528.970	443.223	443.280	-0.057	BARE
MSD02_0016	2532180.360	1972503.997	442.707	442.800	-0.093	BARE
MSD02_0017	2532181.054	1972478.817	442.241	442.360	-0.119	HI_TREES
MSD02_0018	2532181.735	1972454.359	441.839	441.920	-0.081	BARE
MSD02_0019	2532182.273	1972435.124	441.457	441.550	-0.093	BARE
MSD02_0020	2532182.859	1972416.681	441.117	441.230	-0.113	BARE
MSD02_0021	2532183.462	1972401.465	440.837	440.870	-0.033	HI_GRASS
MSD02_0022	2527020.881	1966402.271	354.392	354.530	-0.138	HI_GRASS
MSD02_0023	2527032.487	1966387.285	354.223	354.350	-0.127	HI_GRASS
MSD02_0024	2527050.678	1966368.093	354.238	354.210	0.028	BARE
MSD02_0025	2527070.355	1966351.380	354.324	354.510	-0.186	BARE
MSD02_0026	2527083.853	1966337.244	354.364	354.460	-0.096	BARE
MSD02_0027	2527098.700	1966325.810	354.472	354.540	-0.068	BARE
MSD02_0028	2527114.297	1966315.787	354.425	354.560	-0.135	BARE
MSD02_0029	2527128.581	1966306.883	354.529	354.670	-0.141	BARE
MSD02_0030	2527141.180	1966298.329	354.482	354.650	-0.168	BARE
MSD02_0031	2527153.541	1966289.013	354.631	354.670	-0.039	BARE
MSD02_0032	2527166.616	1966279.215	354.672	354.820	-0.148	HI_GRASS
MSD02_0033	2527178.727	1966267.202	354.683	354.800	-0.117	HI_GRASS
MSD02_0034	2527192.893	1966256.049	354.870	354.930	-0.060	HI_TREES
MSD02_0035	2527208.372	1966244.408	354.860	354.920	-0.060	HI_TREES
MSD02_0036	2527217.060	1966235.529	354.861	354.930	-0.069	HI_GRASS
MSD02_0037	2527223.831	1966220.585	354.869	355.030	-0.161	HI_GRASS
MSD02_0040	2527243.872	1966185.623	354.867	354.900	-0.033	BARE
MSD02_0041	2527251.926	1966176.466	354.911	355.030	-0.119	BARE
MSD02_0042	2527260.815	1966167.828	355.024	355.130	-0.106	BARE
MSD02_0043	2526992.607	1966468.429	354.758	355.200	-0.442	BARE
MSD02_0044	2526991.330	1966485.438	354.677	355.200	-0.523	BARE
MSD02_0045	2526973.152	1966503.171	354.598	355.220	-0.622	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD02_0046	2526979.494	1966521.268	354.649	355.490	-0.841	BARE
MSD02_0047	2526981.732	1966542.597	354.815	355.360	-0.545	BARE
MSD02_0048	2526977.327	1966555.673	354.852	355.190	-0.338	BARE
MSD02_0049	2526974.445	1966576.977	354.865	355.270	-0.405	BARE
MSD02_0050	2526974.627	1966594.414	354.990	355.470	-0.480	BARE
MSD02_0051	2526973.897	1966611.840	355.038	355.390	-0.352	BARE
MSD02_0052	2526973.088	1966632.747	355.378	355.960	-0.582	BARE
MSD02_0053	2526971.999	1966652.001	355.498	356.020	-0.522	BARE
MSD02_0054	2526973.096	1966663.270	355.680	356.230	-0.550	BARE
MSD02_0055	2526919.948	1966656.613	358.020	358.150	-0.130	BARE
MSD02_0056	2526920.221	1966637.800	357.880	357.720	0.160	BARE
MSD02_0057	2526920.238	1966618.791	357.814	357.890	-0.076	BARE
MSD02_0058	2526920.272	1966597.234	357.783	357.720	0.063	BARE
MSD02_0059	2526920.589	1966575.667	357.686	357.830	-0.144	BARE
MSD02_0060	2526920.656	1966556.003	357.643	357.650	-0.007	BARE
MSD02_0061	2526920.794	1966530.331	357.590	357.640	-0.050	BARE
MSD02_0062	2526920.630	1966510.854	357.546	357.480	0.066	BARE
MSD02_0063	2526920.321	1966487.214	357.389	357.410	-0.021	BARE
MSD02_0064	2526921.337	1966457.589	357.292	357.380	-0.088	BARE
MSD02_0065	2526921.252	1966433.462	357.273	357.380	-0.107	BARE
MSD02_0066	2526921.513	1966409.058	357.191	357.140	0.051	BARE
MSD02_0067	2526921.645	1966390.231	357.182	357.310	-0.128	BARE
MSD02_0068	2526921.555	1966368.519	357.176	357.180	-0.004	BARE
MSD02_0069	2526921.668	1966353.141	357.144	357.180	-0.036	BARE
MSD02_0070	2534559.022	1977518.373	423.901	423.890	0.011	BARE
MSD02_0071	2534566.829	1977505.998	423.010	423.230	-0.220	BARE
MSD02_0072	2534572.128	1977494.502	422.677	422.800	-0.123	BARE
MSD02_0073	2534577.682	1977484.719	422.323	422.470	-0.147	BARE
MSD02_0074	2534583.054	1977473.546	422.092	422.320	-0.228	BARE
MSD02_0075	2534587.886	1977464.533	422.058	422.240	-0.182	BARE
MSD02_0076	2534593.787	1977455.755	422.270	422.240	0.030	BARE
MSD02_0077	2534597.574	1977446.721	422.179	422.360	-0.181	BARE
MSD02_0078	2534602.643	1977435.213	422.516	422.580	-0.064	BARE
MSD02_0079	2534606.436	1977427.002	422.589	422.760	-0.171	BARE
MSD02_0080	2534609.983	1977419.292	423.012	423.020	-0.008	BARE
MSD02_0081	2534653.477	1977384.480	424.332	424.780	-0.448	HI_GRASS
MSD02_0082	2534654.895	1977399.623	424.062	424.370	-0.308	HI_GRASS
MSD02_0083	2534658.499	1977420.507	423.763	424.290	-0.527	HI_GRASS
MSD02_0084	2534662.287	1977436.273	423.549	424.070	-0.521	HI_GRASS
MSD02_0085	2534666.460	1977472.368	423.945	424.250	-0.305	HI_GRASS
MSD02_0086	2534669.513	1977496.812	424.234	424.730	-0.496	HI_GRASS
MSD02_0087	2534488.008	1977527.848	427.419	427.340	0.079	HI_GRASS
MSD02_0088	2534498.473	1977534.209	427.148	427.220	-0.072	HI_GRASS
MSD02_0089	2534503.266	1977526.303	427.144	427.150	-0.006	HI_GRASS
MSD02_0090	2534486.849	1977516.589	427.695	427.830	-0.135	HI_GRASS

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD02_0091	2534486.012	1977505.514	427.930	427.940	-0.010	HI_GRASS
MSD02_0092	2534502.342	1977515.171	427.393	427.410	-0.017	HI_GRASS
MSD02_0093	2534501.311	1977504.257	427.731	427.820	-0.089	BARE
MSD02_0094	2534484.749	1977494.430	427.955	427.930	0.025	BARE
MSD02_0095	2534483.289	1977483.232	428.035	428.160	-0.125	BARE
MSD02_0096	2534500.086	1977492.939	427.727	427.670	0.057	BARE
MSD02_0097	2534499.175	1977482.220	427.731	427.790	-0.059	BARE
MSD02_0098	2534482.154	1977472.080	428.181	428.230	-0.049	BARE
MSD02_0099	2534481.066	1977460.806	428.227	428.450	-0.223	BARE
MSD02_0100	2534497.743	1977470.863	427.802	427.860	-0.058	BARE
MSD02	2532159.168	1972989.921	451.954	452.150	-0.196	BARE
MSD02_0001	2532159.116	1972988.612	451.873	452.020	-0.147	BARE
MSD02_0002	2532170.096	1972947.898	451.521	451.650	-0.129	BARE
MSD02_0003	2532171.058	1972906.237	450.690	450.780	-0.090	BARE
MSD02_0004	2532171.910	1972874.397	450.062	450.120	-0.058	BARE
MSD02_0005	2532172.490	1972843.081	449.408	449.570	-0.162	BARE
MSD02_0006	2532173.558	1972815.430	448.859	448.970	-0.111	BARE
MSD02_0007	2532174.218	1972771.540	447.924	448.010	-0.086	BARE
MSD02_0008	2532175.150	1972739.970	447.299	447.400	-0.101	BARE
MSD02_0009	2532175.976	1972714.464	446.847	446.850	-0.003	BARE
MSD02_0010	2532176.499	1972685.493	446.243	446.370	-0.127	BARE
MSD02_0011	2532177.385	1972641.145	445.273	445.350	-0.077	BARE
MSD02_0012	2532178.449	1972607.030	444.690	444.700	-0.010	BARE
MSD02_0013	2532178.998	1972579.798	444.194	444.370	-0.176	BARE
MSD02_0014	2532179.650	1972552.191	443.673	443.690	-0.017	BARE
MSD02_0015	2532180.030	1972528.970	443.223	443.280	-0.057	BARE
MSD02_0016	2532180.360	1972503.997	442.707	442.800	-0.093	BARE
MSD02_0017	2532181.054	1972478.817	442.241	442.360	-0.119	BARE
MSD02_0018	2532181.735	1972454.359	441.839	441.920	-0.081	HI_GRASS
MSD02_0019	2532182.273	1972435.124	441.457	441.550	-0.093	HI_GRASS
MSD02_0020	2532182.859	1972416.681	441.117	441.230	-0.113	HI_GRASS
MSD02_0021	2532183.462	1972401.465	440.837	440.870	-0.033	HI_GRASS
MSD02_0022	2527020.881	1966402.271	354.392	354.530	-0.138	HI_GRASS
MSD02_0023	2527032.487	1966387.285	354.223	354.350	-0.127	HI_GRASS
MSD02_0024	2527050.678	1966368.093	354.238	354.210	0.028	BARE
MSD02_0025	2527070.355	1966351.380	354.324	354.510	-0.186	BARE
MSD02_0026	2527083.853	1966337.244	354.364	354.460	-0.096	BARE
MSD02_0027	2527098.700	1966325.810	354.472	354.540	-0.068	BARE
MSD02_0028	2527114.297	1966315.787	354.425	354.560	-0.135	BARE
MSD02_0029	2527128.581	1966306.883	354.529	354.670	-0.141	BARE
MSD02_0030	2527141.180	1966298.329	354.482	354.650	-0.168	BARE
MSD02_0031	2527153.541	1966289.013	354.631	354.670	-0.039	BARE
MSD02_0032	2527166.616	1966279.215	354.672	354.820	-0.148	BARE
MSD02_0033	2527178.727	1966267.202	354.683	354.800	-0.117	BARE
MSD02_0034	2527192.893	1966256.049	354.870	354.930	-0.060	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD02_0035	2527208.372	1966244.408	354.860	354.920	-0.060	BARE
MSD02_0036	2527217.060	1966235.529	354.861	354.930	-0.069	BARE
MSD02_0037	2527223.831	1966220.585	354.869	355.030	-0.161	BARE
MSD01_0002	2450356.763	1924884.271	302.258	302.250	0.008	BARE
MSD01_0003	2450355.633	1924910.044	302.594	302.530	0.064	BARE
MSD01_0004	2450354.768	1924934.005	302.978	302.910	0.068	BARE
MSD01_0005	2450353.572	1924962.792	303.188	303.140	0.048	BARE
MSD01_0006	2450352.571	1924990.300	303.319	303.240	0.079	BARE
MSD01_0007	2450352.208	1925001.822	303.342	303.390	-0.048	BARE
MSD01_0008	2450351.560	1925016.511	303.453	303.320	0.133	BARE
MSD01_0009	2450350.584	1925040.867	303.652	303.520	0.132	BARE
MSD01_0010	2450349.744	1925061.081	303.851	303.830	0.021	BARE
MSD01_0011	2450349.073	1925077.531	304.033	303.890	0.143	BARE
MSD01_0012	2450348.691	1925090.261	304.137	304.110	0.027	BARE
MSD01_0013	2450295.385	1924884.702	299.230	299.250	-0.020	BARE
MSD01_0014	2450275.779	1924885.835	298.901	298.920	-0.019	BARE
MSD01_0015	2450258.442	1924873.289	298.865	298.880	-0.015	BARE
MSD01_0016	2450240.429	1924857.197	298.922	298.970	-0.048	BARE
MSD01_0017	2450227.055	1924845.424	298.941	298.910	0.031	BARE
MSD01_0018	2450210.380	1924830.554	298.831	298.850	-0.019	BARE
MSD01_0019	2450197.380	1924820.899	298.875	298.820	0.055	BARE
MSD01_0020	2450184.400	1924809.025	298.971	299.020	-0.049	BARE
MSD01_0021	2447901.695	1918682.269	333.977	334.000	-0.023	BARE
MSD01_0022	2447917.353	1918685.007	333.796	333.910	-0.114	BARE
MSD01_0023	2447933.477	1918689.677	333.849	333.920	-0.071	BARE
MSD01_0024	2447947.211	1918700.384	333.918	334.000	-0.082	BARE
MSD01_0025	2447959.822	1918709.449	334.073	334.170	-0.097	BARE
MSD01_0026	2447973.593	1918715.922	334.099	334.160	-0.061	BARE
MSD01_0027	2447988.924	1918717.937	334.239	334.280	-0.041	BARE
MSD01_0028	2448002.888	1918719.175	334.357	334.470	-0.113	BARE
MSD01_0029	2448012.684	1918720.703	334.353	334.380	-0.027	BARE
MSD01_0030	2448026.032	1918723.158	334.485	334.570	-0.085	BARE
MSD01_0031	2448039.823	1918727.493	334.807	334.860	-0.053	BARE
MSD01_0032	2448241.851	1918724.589	334.599	334.900	-0.301	LO_TREES
MSD01_0033	2448243.847	1918715.336	334.166	334.360	-0.194	LO_TREES
MSD01_0034	2448245.336	1918700.804	333.620	333.900	-0.280	LO_TREES
MSD01_0035	2448243.774	1918683.039	333.126	333.360	-0.234	LO_TREES
MSD01_0036	2448243.259	1918674.732	333.139	333.380	-0.241	LO_TREES
MSD01_0037	2448242.498	1918667.585	332.386	332.710	-0.324	LO_TREES
MSD01_0038	2448241.824	1918660.708	331.644	332.280	-0.636	LO_TREES
MSD01_0039	2448234.899	1918650.399	331.007	331.470	-0.463	LO_TREES
MSD01_0040	2448221.786	1918636.789	332.941	333.290	-0.349	LO_TREES
MSD01_0041	2448207.241	1918632.466	333.354	333.700	-0.346	LO_TREES
MSD01_0042	2447944.324	1918616.356	331.233	331.300	-0.067	BARE
MSD01_0043	2447920.856	1918617.674	331.379	331.320	0.059	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD01_0044	2447892.835	1918619.503	331.786	331.700	0.086	BARE
MSD01_0045	2447879.568	1918621.435	332.005	331.940	0.065	BARE
MSD01_0046	2447864.745	1918634.140	332.423	332.370	0.053	BARE
MSD01_0047	2447856.343	1918649.947	332.705	332.740	-0.035	BARE
MSD01_0048	2447849.436	1918673.156	333.588	333.560	0.028	BARE
MSD01_0049	2447846.553	1918690.045	334.188	334.150	0.038	BARE
MSD01_0050	2447845.510	1918706.698	334.652	334.590	0.062	BARE
MSD01_0051	2447844.761	1918721.934	335.148	335.130	0.018	BARE
MSD01_0052	2447843.825	1918739.514	335.922	335.830	0.092	BARE
MSD01_0053	2447650.061	1929458.394	273.341	273.450	-0.109	HI_GRASS
MSD01_0054	2447639.397	1929471.910	272.985	273.390	-0.405	HI_GRASS
MSD01_0055	2447630.454	1929483.832	272.881	273.090	-0.209	HI_GRASS
MSD01_0056	2447621.898	1929493.701	272.833	273.270	-0.437	HI_GRASS
MSD01_0057	2447613.835	1929503.911	272.820	273.170	-0.350	HI_GRASS
MSD01_0058	2447602.795	1929516.540	272.602	272.980	-0.378	HI_GRASS
MSD01_0059	2447590.012	1929533.800	272.727	273.150	-0.423	HI_GRASS
MSD01_0060	2447582.069	1929545.398	272.609	273.060	-0.451	HI_GRASS
MSD01_0061	2447574.273	1929553.968	272.611	273.290	-0.679	HI_GRASS
MSD01_0062	2447682.815	1929395.517	277.627	277.780	-0.153	BARE
MSD01_0063	2447701.588	1929395.522	277.471	277.490	-0.019	BARE
MSD01_0064	2447718.972	1929395.951	277.386	277.400	-0.014	BARE
MSD01_0065	2447732.363	1929396.208	277.351	277.380	-0.029	BARE
MSD01_0066	2447748.188	1929396.290	277.309	277.330	-0.021	BARE
MSD01_0067	2447763.817	1929396.566	277.317	277.190	0.127	BARE
MSD01_0068	2447783.121	1929397.036	277.218	277.110	0.108	BARE
MSD01_0069	2447798.304	1929397.327	277.229	277.170	0.059	BARE
MSD01_0070	2447818.807	1929397.342	277.078	277.130	-0.052	BARE
MSD01_0071	2447833.820	1929397.640	277.092	277.100	-0.008	BARE
MSD01_0072	2447843.140	1929397.844	277.039	276.930	0.109	BARE
MSD01_0073	2447855.509	1929398.042	277.031	277.020	0.011	BARE
MSD01_0074	2447865.803	1929398.026	276.995	277.070	-0.075	BARE
X31_0002	2561497.196	1896255.965	582.851	583.160	-0.309	BARE
X31_0003	2561486.855	1896254.776	583.649	584.060	-0.411	BARE
X31_0004	2561478.089	1896255.042	584.124	584.260	-0.136	BARE
X31_0005	2561468.387	1896254.600	584.712	584.930	-0.218	BARE
X31_0006	2561460.019	1896255.553	585.281	585.440	-0.159	BARE
X31_0007	2561450.854	1896256.969	586.032	586.170	-0.138	BARE
X31_0008	2557677.967	1900032.388	622.424	622.640	-0.216	BARE
X31_0009	2557662.426	1900034.384	622.213	622.380	-0.167	BARE
X31_0010	2557645.336	1900030.292	621.699	621.860	-0.161	BARE
X31_0011	2557628.173	1900027.263	621.066	621.240	-0.174	BARE
X31_0012	2557615.282	1900024.531	620.526	620.770	-0.244	BARE
X31_0013	2557602.474	1900022.587	620.046	620.310	-0.264	BARE
X31_0014	2557587.633	1900021.309	619.449	619.590	-0.141	BARE
X31_0015	2557568.422	1900027.855	618.294	618.490	-0.196	BARE

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X31_0016	2557552.398	1900033.929	617.424	617.650	-0.226	BARE
X31_0017	2557539.331	1900039.560	616.793	617.100	-0.307	BARE
X31_0018	2557529.299	1900060.124	616.954	617.180	-0.226	BARE
X31_0019	2557520.138	1900083.259	616.513	616.760	-0.247	BARE
X31_0020	2557512.809	1900106.140	615.924	616.010	-0.086	BARE
X31_0021	2557506.457	1900127.331	615.283	615.570	-0.287	BARE
X31_0022	2557498.390	1900150.568	614.531	614.790	-0.259	BARE
X31_0023	2557493.512	1900174.906	614.836	615.050	-0.214	BARE
X31_0024	2557544.940	1900260.909	616.578	616.560	0.018	LO_TREES
X31_0025	2557651.007	1900228.788	621.000	621.210	-0.210	LO_TREES
X31_0026	2557666.032	1900228.839	621.412	621.680	-0.268	LO_TREES
X31_0027	2557672.453	1900230.659	621.813	622.090	-0.277	LO_TREES
X31_0028	2557678.784	1900238.020	622.035	622.220	-0.185	LO_TREES
X31_0029	2557677.162	1900247.740	621.690	621.970	-0.280	LO_TREES
X31_0030	2557674.364	1900254.842	621.451	621.630	-0.179	LO_TREES
X31_0031	2557739.137	1900056.018	626.580	626.640	-0.060	BARE
X31_0032	2557733.037	1900043.071	626.314	626.370	-0.056	BARE
X31_0033	2557724.710	1900025.762	625.597	625.700	-0.103	BARE
X31_0034	2557716.596	1900009.876	624.993	625.210	-0.217	BARE
X31_0035	2557707.875	1899990.414	624.398	624.600	-0.202	BARE
X31_0036	2557700.321	1899972.418	624.024	624.120	-0.096	BARE
X31_0037	2557692.661	1899953.963	623.507	623.500	0.007	BARE
X31_0038	2557686.439	1899939.536	623.149	623.210	-0.061	BARE
X31_0039	2557679.919	1899922.754	622.556	622.580	-0.024	BARE
X31_0040	2557674.404	1899908.037	622.074	622.210	-0.136	BARE
X31_0041	2557668.738	1899892.113	621.652	621.820	-0.168	BARE
X31_0042	2557664.367	1899880.151	621.332	621.420	-0.088	BARE
X31_0043	2557591.282	1893537.313	552.420	552.570	-0.150	BARE
X31_0044	2557598.432	1893547.646	552.463	552.620	-0.157	BARE
X31_0045	2557606.223	1893560.025	552.443	552.600	-0.157	BARE
X31_0046	2557613.699	1893572.237	552.432	552.560	-0.128	BARE
X31_0047	2557620.470	1893581.910	552.365	552.550	-0.185	BARE
X31_0048	2557627.988	1893594.423	552.138	552.270	-0.132	BARE
X31_0049	2557635.552	1893606.852	551.826	552.050	-0.224	BARE
X31_0050	2557643.017	1893620.107	551.434	551.610	-0.176	BARE
X31_0051	2557650.418	1893633.903	551.102	551.390	-0.288	BARE
X31_0052	2557657.134	1893646.708	550.983	551.190	-0.207	BARE
X31_0053	2557724.209	1893712.169	550.249	550.220	0.029	BARE
X31_0054	2557717.884	1893736.899	550.077	550.090	-0.013	BARE
X31_0055	2557708.685	1893771.580	549.718	549.720	-0.002	BARE
X31_0056	2557704.059	1893788.835	549.577	549.490	0.087	BARE
X31_0057	2557685.856	1893841.950	548.994	549.080	-0.086	BARE
X31_0058	2557680.298	1893858.487	548.829	548.880	-0.051	BARE
X31_0059	2557853.457	1893892.361	559.157	559.600	-0.443	HI_TREES
X31_0060	2557856.708	1893899.234	558.944	559.550	-0.606	HI_TREES

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
X31_0061	2557863.405	1893906.305	559.389	559.710	-0.321	HI_TREES
X31_0062	2557868.667	1893915.590	559.720	559.890	-0.170	HI_TREES
X31_0063	2557874.080	1893923.164	559.989	560.170	-0.181	HI_TREES
X31_0064	2557877.502	1893928.281	559.911	560.190	-0.279	HI_TREES
X31_0065	2557882.838	1893934.313	559.760	560.450	-0.690	HI_TREES
X31_0066	2557885.810	1893939.064	560.134	560.270	-0.136	HI_TREES
X31_0067	2557889.918	1893943.864	560.035	560.350	-0.315	HI_TREES
X31_0068	2557895.974	1893949.176	560.005	560.590	-0.585	HI_TREES
X31_0069	2561271.078	1885406.541	528.136	528.260	-0.124	HI_GRASS
X31_0070	2561262.874	1885413.546	527.228	527.610	-0.382	HI_GRASS
X31_0071	2561251.188	1885427.423	525.959	526.060	-0.101	HI_GRASS
X31_0072	2561242.855	1885438.966	525.131	525.480	-0.349	HI_GRASS
X31_0073	2561233.888	1885453.158	524.943	525.180	-0.237	HI_GRASS
X31_0074	2561229.098	1885459.327	524.484	524.740	-0.256	HI_GRASS
X31_0075	2561222.715	1885467.587	524.396	524.540	-0.144	HI_GRASS
X31_0076	2561261.925	1885495.608	525.196	525.750	-0.554	HI_GRASS
X31_0077	2561267.357	1885507.164	525.644	526.270	-0.626	HI_GRASS
X31_0078	2561317.317	1885544.731	529.712	529.870	-0.158	BARE
X31_0079	2561307.741	1885545.455	529.645	529.740	-0.095	BARE
X31_0080	2561304.197	1885558.622	529.387	529.370	0.017	BARE
X31_0081	2561300.255	1885575.618	529.118	529.200	-0.082	BARE
X31_0082	2561296.179	1885591.538	528.910	528.880	0.030	BARE
X31_0083	2561289.999	1885609.948	528.594	528.730	-0.136	BARE
X31_0084	2561284.395	1885626.134	528.444	528.520	-0.076	BARE
X31_0085	2561279.523	1885640.562	528.304	528.340	-0.036	BARE
X31_0086	2561273.651	1885656.701	528.219	528.190	0.029	BARE
X31_0087	2561267.493	1885671.454	528.231	528.230	0.001	BARE
X31_0088	2561259.227	1885691.018	528.165	528.080	0.085	BARE
X31_0089	2561251.647	1885706.695	528.233	528.310	-0.077	BARE
X31_0090	2561242.709	1885724.398	528.301	528.360	-0.059	BARE
X31_0091	2561237.159	1885736.080	528.383	528.510	-0.127	BARE
McGILL_0001	2692843	1903044	449.805	449.788	0.017	BARE
McGILL_0002	2692889	1903123	452.256	452.137	0.119	BARE
McGILL_0003	2692919	1903105	452.152	452.126	0.026	BARE
McGILL_0004	2692940	1903092	451.999	451.92	0.079	BARE
McGILL_0005	2692966	1903076	451.984	451.959	0.025	BARE
McGILL_0006	2692983	1903066	452.003	451.846	0.157	BARE
McGILL_0007	2692999	1903056	452.067	451.894	0.173	BARE
McGILL_0008	2693016	1903046	452.293	452.175	0.118	BARE
McGILL_0009	2693039	1903032	452.63	452.493	0.137	BARE
McGILL_0010	2693051	1903020	452.85	452.757	0.093	BARE
McGILL_0011	2693059	1903003	453.057	452.989	0.068	HI_GRASS
McGILL_0012	2693063	1902989	453.178	453.09	0.088	HI_GRASS
McGILL_0013	2693044	1903031	452.737	452.61	0.127	HI_TREES
McGILL_0014	2693058	1903028	453.009	452.947	0.062	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
McGILL_0015	2693079	1903029	453.542	453.475	0.067	BARE
McGILL_0016	2693093	1903033	453.941	453.759	0.182	HI_GRASS
McGILL_0017	2693063	1903070	453.042	453.071	-0.029	HI_TREES
McGILL_0018	2693047	1903092	452.244	452.255	-0.011	HI_TREES
McGILL_0019	2693033	1903111	451.373	451.365	0.008	BARE
McGILL_0020	2693018	1903135	450.553	450.613	-0.060	BARE
McGILL_0021	2692973	1903155	450.771	450.715	0.056	BARE
McGILL_0022	2692953	1903167	450.991	450.955	0.036	BARE
McGILL_0023	2683395	1907018	420.882	421.223	-0.341	BARE
McGILL_0024	2683409	1907022	420.657	421.002	-0.345	HI_TREES
McGILL_0025	2683426	1907028	420.399	420.836	-0.437	BARE
McGILL_0026	2683443	1907033	420.412	420.637	-0.225	BARE
McGILL_0027	2683459	1907036	420.618	420.897	-0.279	BARE
McGILL_0028	2683473	1907041	420.484	420.987	-0.503	HI_GRASS
McGILL_0029	2683489	1907049	420.252	420.398	-0.146	HI_GRASS
McGILL_0030	2683499	1907054	420.368	420.508	-0.140	HI_GRASS
McGILL_0031	2683368	1906955	420.099	420.149	-0.050	BARE
McGILL_0032	2683346	1906947	419.831	419.84	-0.009	BARE
McGILL_0033	2683323	1906938	419.581	419.671	-0.090	BARE
McGILL_0034	2683301	1906930	419.295	419.351	-0.056	BARE
McGILL_0035	2683281	1906923	419.077	419.118	-0.041	BARE
McGILL_0036	2683260	1906916	418.836	418.703	0.133	BARE
McGILL_0037	2683247	1906911	418.643	418.572	0.071	BARE
McGILL_0038	2703218	1904910	489.328	488.995	0.333	BARE
McGILL_0039	2703234	1904911	489.482	489.168	0.314	HI_GRASS
McGILL_0040	2703248	1904911	489.808	489.482	0.326	HI_GRASS
McGILL_0041	2703265	1904911	490.04	489.898	0.142	HI_TREES
McGILL_0042	2703282	1904912	490.218	490.054	0.164	HI_TREES
McGILL_0043	2703295	1904914	490.562	490.33	0.232	HI_GRASS
McGILL_0044	2703291	1904928	491.742	491.561	0.181	HI_GRASS
McGILL_0045	2703258	1904928	491.038	490.996	0.042	BARE
McGILL_0046	2703177	1904891	488.822	488.638	0.184	BARE
McGILL_0047	2703180	1904900	488.834	488.684	0.150	BARE
McGILL_0048	2703179	1904912	488.876	488.673	0.203	BARE
McGILL_0049	2703180	1904882	489.367	489.185	0.182	BARE
McGILL_0050	2703156	1904881	489.557	489.421	0.136	BARE
McGILL_0051	2703136	1904881	489.938	489.791	0.147	BARE
McGILL_0052	2689168	1899525	416.011	416.255	-0.244	BARE
McGILL_0053	2689157	1899525	416.151	416.479	-0.328	BARE
McGILL_0054	2689146	1899521	416.121	416.475	-0.354	BARE
McGILL_0055	2689136	1899525	416.163	416.442	-0.279	BARE
McGILL_0056	2689130	1899533	415.809	416.413	-0.604	BARE
McGILL_0057	2689120	1899538	415.782	416.439	-0.657	BARE
McGILL_0058	2689185	1899459	414.559	414.581	-0.022	BARE
McGILL_0059	2689201	1899455	414.085	414.188	-0.103	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
McGILL_0060	2689220	1899453	413.566	413.564	0.002	BARE
McGILL_0061	2689238	1899452	413.079	412.99	0.089	BARE
McGILL_0062	2689253	1899452	412.743	412.634	0.109	BARE
McGILL_0063	2689268	1899451	412.408	412.381	0.027	BARE
McGILL_0064	2689280	1899451	412.262	412.376	-0.114	BARE
McGILL_0065	2689296	1899450	412.016	411.919	0.097	BARE
McGILL_0066	2689309	1899450	411.794	411.715	0.079	BARE
McGILL_0067	2689318	1899450	411.72	411.652	0.068	BARE
McGILL_0068	2689328	1899450	411.656	411.584	0.072	BARE
McGILL_0069	2689341	1899450	411.556	411.733	-0.177	BARE
MSD05_0001	2710313	1778212	492.772	492.736	0.036	BARE
MSD05_0002	2710264	1778237	490.588	490.532	0.056	BARE
MSD05_0003	2710237	1778254	489.356	489.229	0.127	BARE
MSD05_0004	2710211	1778273	487.987	487.801	0.186	BARE
MSD05_0005	2710187	1778290	486.974	486.75	0.224	BARE
MSD05_0006	2710161	1778304	486.195	486.002	0.193	BARE
MSD05_0007	2710131	1778323	485.197	485.176	0.021	BARE
MSD05_0008	2710111	1778335	484.448	484.195	0.253	BARE
MSD05_0009	2714205	1777939	388.46	388.352	0.108	BARE
MSD05_0010	2714217	1777962	388.068	387.999	0.069	BARE
MSD05_0011	2714229	1777982	387.534	387.568	-0.034	BARE
MSD05_0012	2714241	1777998	387.433	387.336	0.097	BARE
MSD05_0013	2714252	1778019	387.355	387.196	0.159	BARE
MSD05_0014	2714263	1778036	387.468	387.417	0.051	BARE
MSD05_0015	2714278	1778053	387.64	387.57	0.070	BARE
MSD05_0016	2714286	1778063	387.562	387.475	0.087	HI_GRASS
MSD05_0017	2714293	1778072	387.762	387.581	0.181	HI_GRASS
MSD05_0018	2714230	1777905	390.008	390.122	-0.114	HI_GRASS
MSD05_0019	2714211	1777904	390.415	390.467	-0.052	HI_GRASS
MSD05_0020	2714186	1777905	390.973	390.858	0.115	HI_GRASS
MSD05_0021	2714168	1777909	391.269	391.184	0.085	HI_GRASS
MSD05_0022	2714151	1777915	391.495	391.509	-0.014	HI_GRASS
MSD05_0023	2714138	1777925	391.264	391.121	0.143	HI_GRASS
MSD05_0024	2723106	1778183	409.268	409.104	0.164	HI_GRASS
MSD05_0025	2723128	1778204	408.652	408.392	0.260	HI_GRASS
MSD05_0026	2723149	1778226	408.627	408.386	0.241	HI_GRASS
MSD05_0027	2723160	1778240	408.477	408.217	0.260	HI_GRASS
MSD05_0028	2723172	1778256	408.428	408.14	0.288	BARE
MSD05_0029	2723179	1778268	407.999	407.807	0.192	BARE
MSD05_0030	2724385	1788891	499.603	499.134	0.469	BARE
MSD05_0031	2724369	1788900	499.694	499.288	0.406	BARE
MSD05_0032	2724350	1788914	499.438	498.963	0.475	BARE
MSD05_0033	2724325	1788929	498.915	498.433	0.482	BARE
MSD05_0034	2724306	1788941	498.439	497.941	0.498	BARE
MSD05_0035	2724286	1788952	497.719	497.37	0.349	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD05_0036	2724269	1788962	497.173	496.871	0.302	BARE
MSD05_0037	2724248	1788976	496.563	496.18	0.383	BARE
MSD05_0038	2724228	1788987	495.833	495.481	0.352	BARE
MSD05_0039	2724395	1788863	500.474	500.234	0.240	BARE
MSD05_0040	2724402	1788873	500.046	499.502	0.544	BARE
MSD05_0041	2724416	1788892	499.248	498.663	0.585	BARE
MSD05_0042	2724419	1788896	499.14	498.868	0.272	BARE
MSD05_0043	2724434	1788916	498.745	498.39	0.355	BARE
MSD05_0044	2724445	1788907	499.043	498.767	0.276	BARE
MSD05_0045	2724457	1788866	502.152	501.882	0.270	BARE
MSD05_0046	2724466	1788862	502.51	502.182	0.328	BARE
MSD05_0047	2724477	1788857	502.297	501.957	0.340	BARE
MSD05_0048	2724492	1788852	502.709	502.38	0.329	BARE
MSD05_0049	2724504	1788848	502.997	502.779	0.218	BARE
MSD05_0050	2716677	1793901	443.617	443.38	0.237	BARE
MSD05_0051	2716696	1793903	443.682	443.378	0.304	BARE
MSD05_0052	2716724	1793906	443.753	443.508	0.245	BARE
MSD05_0053	2716741	1793909	444.028	443.809	0.219	BARE
MSD05_0054	2716758	1793912	444.418	444.203	0.215	HI_GRASS
MSD05_0055	2716773	1793913	444.666	444.334	0.332	HI_GRASS
MSD05_0056	2716784	1793896	444.419	444.172	0.247	HI_GRASS
MSD05_0057	2716797	1793869	444.243	444.069	0.174	HI_GRASS
MSD05_0058	2716808	1793848	444.178	443.932	0.246	HI_GRASS
MSD05_0059	2716820	1793810	444.055	443.847	0.208	HI_GRASS
MSD05_0060	2716954	1793862	440.622	440.425	0.197	BARE
MSD05_0061	2716971	1793854	440.874	440.636	0.238	BARE
MSD05_0062	2716984	1793844	440.561	440.491	0.070	BARE
MSD05_0063	2717009	1793829	439.996	440.064	-0.068	BARE
MSD05_0064	2717028	1793819	439.595	439.565	0.030	BARE
MSD05_0065	2717045	1793808	439.258	439.256	0.002	BARE
MSD05_0066	2717063	1793798	438.972	438.672	0.300	BARE
MSD05_0067	2717078	1793789	438.573	438.502	0.071	BARE
MSD05_0068	2717105	1793771	438.153	438.081	0.072	BARE
MSD05_0069	2717116	1793765	438.12	438.096	0.024	BARE
MSD05_0070	2710945	1788961	482.034	481.889	0.145	BARE
MSD05_0071	2710943	1788977	482.148	481.956	0.192	BARE
MSD05_0072	2710939	1789000	482.408	482.3	0.108	BARE
MSD05_0073	2710936	1789024	482.675	482.641	0.034	BARE
MSD05_0074	2710934	1789040	482.939	482.735	0.204	BARE
MSD05_0075	2710931	1789054	483.179	483.005	0.174	BARE
MSD05_0076	2710928	1789078	483.584	483.497	0.087	BARE
MSD05_0077	2710896	1789057	482.463	482.457	0.006	BARE
MSD05_0078	2710883	1789038	482.183	482.155	0.028	BARE
MSD05_0079	2710872	1789022	481.892	481.793	0.099	BARE
MSD05_0080	2710861	1789012	481.72	481.588	0.132	BARE

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MSD05_0081	2710844	1788994	481.211	481.196	0.015	BARE
MSD05_0082	2710861	1788969	481.459	481.379	0.080	BARE
MSD05_0083	2710876	1788953	481.325	481.27	0.055	BARE
MSD05_0084	2710901	1788931	481.175	481.094	0.081	BARE
MSD05_0002	2710264.053	1778236.695	490.588	490.650	-0.062	BARE
MSD05_0003	2710237.124	1778254.485	489.356	489.310	0.046	BARE
MSD05_0004	2710211.003	1778273.373	487.987	487.880	0.107	BARE
MSD05_0005	2710187.119	1778289.511	486.974	487.010	-0.036	BARE
MSD05_0006	2710161.489	1778303.897	486.195	486.040	0.155	BARE
MSD05_0007	2710131.488	1778323.463	485.197	485.210	-0.013	BARE
MSD05_0008	2710111.169	1778334.787	484.448	484.480	-0.032	BARE
MSD05_0009	2714204.827	1777939.221	388.460	388.220	0.240	BARE
MSD05_0010	2714216.903	1777961.512	388.068	387.970	0.098	BARE
MSD05_0011	2714229.412	1777982.324	387.534	387.630	-0.096	BARE
MSD05_0012	2714240.612	1777998.317	387.433	387.410	0.023	BARE
MSD05_0013	2714252.284	1778018.749	387.355	387.230	0.125	BARE
MSD05_0014	2714262.745	1778036.299	387.468	387.440	0.028	BARE
MSD05_0015	2714277.872	1778053.135	387.640	387.450	0.190	BARE
MSD05_0016	2714285.787	1778062.652	387.562	387.610	-0.048	BARE
MSD05_0017	2714292.539	1778072.342	387.762	387.700	0.062	BARE
MSD05_0018	2714229.543	1777905.199	390.008	389.860	0.148	BARE
MSD05_0019	2714210.685	1777904.110	390.415	390.230	0.185	BARE
MSD05_0020	2714186.264	1777905.332	390.973	390.800	0.173	BARE
MSD05_0021	2714168.162	1777908.534	391.269	390.940	0.329	BARE
MSD05_0022	2714150.798	1777914.525	391.495	391.240	0.255	BARE
MSD05_0023	2714137.925	1777925.359	391.264	391.280	-0.016	BARE
MSD05_0024	2723106.451	1778182.629	409.268	409.760	-0.492	BARE
MSD05_0025	2723127.834	1778204.108	408.652	409.080	-0.428	BARE
MSD05_0026	2723149.472	1778225.566	408.627	408.980	-0.353	BARE
MSD05_0027	2723160.265	1778240.005	408.477	408.620	-0.143	BARE
MSD05_0028	2723171.666	1778255.998	408.428	408.490	-0.062	BARE
MSD05_0029	2723178.656	1778268.080	407.999	408.090	-0.091	BARE
MSD08_0002	2672777.495	1674719.797	322.884	323.460	-0.576	HI_GRASS
MSD08_0003	2672799.227	1674715.755	322.432	323.030	-0.598	HI_GRASS
MSD08_0004	2672792.254	1674704.058	322.486	323.230	-0.744	HI_GRASS
MSD08_0005	2672794.092	1674694.639	322.440	323.250	-0.810	HI_GRASS
MSD08_0006	2672764.337	1674724.522	323.056	323.820	-0.764	HI_TREES
MSD08_0007	2672742.928	1674728.655	323.389	323.710	-0.321	HI_TREES
MSD08_0008	2672709.459	1674732.686	323.449	324.140	-0.691	HI_TREES
MSD08_0009	2672955.771	1674860.231	331.461	331.650	-0.189	BARE
MSD08_0010	2672956.492	1674882.874	330.852	330.960	-0.108	BARE
MSD08_0011	2672957.421	1674900.590	330.594	330.730	-0.136	BARE
MSD08_0012	2672958.096	1674919.029	330.388	330.480	-0.092	BARE
MSD08_0013	2672959.942	1674936.502	330.295	330.410	-0.115	BARE
MSD08_0014	2678468.963	1672508.257	316.890	317.020	-0.130	BARE

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MSD08_0015	2678491.049	1672506.641	316.966	317.150	-0.184	BARE
MSD08_0016	2678512.031	1672505.397	316.917	317.040	-0.123	BARE
MSD08_0017	2678532.953	1672505.250	317.004	317.030	-0.026	BARE
MSD08_0018	2678551.024	1672505.856	316.980	317.090	-0.110	BARE
MSD08_0019	2678570.378	1672506.781	316.990	317.140	-0.150	BARE
MSD08_0020	2678589.737	1672506.699	317.271	317.290	-0.019	BARE
MSD08_0021	2678607.128	1672506.153	317.010	317.160	-0.150	BARE
MSD08_0022	2678631.706	1672506.553	316.895	317.060	-0.165	BARE
MSD08_0023	2678607.493	1672536.568	316.823	317.460	-0.637	HI_TREES
MSD08_0024	2678586.072	1672535.652	316.832	317.160	-0.328	HI_TREES
MSD08_0025	2678537.260	1672533.984	316.862	317.190	-0.328	HI_TREES
MSD08_0026	2678472.740	1672539.701	317.095	317.020	0.075	HI_TREES
MSD08_0027	2678436.044	1672530.340	316.717	316.840	-0.123	HI_GRASS
MSD08_0028	2678442.039	1672536.635	316.699	317.080	-0.381	HI_GRASS
MSD08_0029	2678448.382	1672538.695	316.812	317.510	-0.698	HI_GRASS
MSD08_0030	2678435.658	1672560.265	316.725	316.770	-0.045	HI_GRASS
MSD08_0031	2678443.220	1672574.516	316.885	317.080	-0.195	HI_GRASS
MSD08_0032	2678425.551	1672607.525	316.897	316.940	-0.043	HI_GRASS
MSD08_0033	2678430.077	1672601.413	316.901	316.860	0.041	HI_TREES
MSD08_0034	2678431.408	1672589.336	316.997	317.120	-0.123	HI_TREES
MSD08_0035	2678440.270	1672557.052	316.818	316.800	0.018	HI_TREES
MSD09-R_0002	2596531.557	1614424.383	385.812	385.673	0.139	BARE
MSD09-R_0003	2596540.210	1614410.625	385.837	385.686	0.151	BARE
MSD09-R_0004	2596548.480	1614397.580	385.724	385.557	0.167	BARE
MSD09-R_0005	2596556.300	1614385.196	385.607	385.518	0.089	BARE
MSD09-R_0006	2596564.025	1614372.906	385.551	385.345	0.206	BARE
MSD09-R_0007	2596544.980	1614362.543	385.303	385.127	0.176	BARE
MSD09-R_0008	2596536.884	1614375.346	385.414	385.406	0.008	BARE
MSD09-R_0009	2596528.727	1614387.852	385.499	385.567	-0.068	BARE
MSD09-R_0010	2596520.749	1614400.976	385.521	385.478	0.043	BARE
MSD09-R_0011	2596512.346	1614413.619	385.672	385.584	0.088	BARE
MSD09-R_0012	2596080.917	1619158.925	389.691	389.839	-0.148	BARE
MSD09-R_0013	2596087.528	1619142.224	389.907	389.805	0.102	BARE
MSD09-R_0014	2596094.066	1619126.278	389.885	389.896	-0.011	BARE
MSD09-R_0015	2596100.076	1619110.030	390.163	390.061	0.102	BARE
MSD09-R_0016	2596104.590	1619093.827	390.258	390.706	-0.448	BARE
MSD09-R_0017	2596110.553	1619079.132	390.406	390.389	0.017	BARE
MSD09-R_0018	2596130.010	1619086.034	389.420	389.394	0.026	BARE
MSD09-R_0019	2596125.787	1619103.000	389.295	389.521	-0.226	BARE
MSD09-R_0020	2596121.811	1619120.504	388.799	388.744	0.055	BARE
MSD09-R_0021	2596117.944	1619137.307	388.589	388.663	-0.074	BARE
MSD09-R_0022	2596114.281	1619155.328	388.144	388.223	-0.079	BARE
MSD09-R_0023	2596109.036	1619174.609	387.657	387.610	0.047	BARE
MSD09-R_0042	2597001.293	1623073.937	285.798	285.703	0.095	BARE
MSD09-R_0043	2597000.849	1623091.263	285.493	285.498	-0.005	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD09-R_0044	2596999.402	1623105.500	285.379	285.298	0.081	BARE
MSD09-R_0045	2596999.515	1623119.660	285.191	285.016	0.175	BARE
MSD09-R_0046	2597010.136	1623119.292	285.234	285.153	0.081	BARE
MSD09-R_0047	2597010.950	1623106.247	285.457	285.407	0.050	BARE
MSD09-R_0048	2597010.022	1623092.186	285.474	285.341	0.133	BARE
MSD09-R_0049	2597009.241	1623081.428	285.587	285.525	0.062	BARE
MSD09-R_0058	2601646.133	1611106.524	378.890	378.950	-0.060	BARE
MSD09-R_0059	2601659.449	1611110.975	378.868	379.050	-0.182	BARE
MSD09-R_0060	2601665.131	1611098.794	378.731	378.850	-0.119	BARE
MSD09-R_0061	2601669.002	1611086.813	378.428	378.452	-0.024	BARE
MSD09-R_0062	2601670.866	1611078.417	378.055	378.166	-0.111	BARE
MSD09-R_0063	2601661.627	1611076.575	378.039	378.118	-0.079	BARE
MSD09-R_0064	2601655.924	1611088.245	378.212	378.301	-0.089	BARE
MSD09-R_0065	2601650.717	1611100.410	378.781	378.748	0.033	BARE
MSD09-R_0071	2602090.294	1606600.332	344.841	344.826	0.015	BARE
MSD09-R_0072	2602091.647	1606614.169	344.818	344.857	-0.039	BARE
MSD09-R_0073	2602092.443	1606626.531	344.768	344.756	0.012	BARE
MSD09-R_0074	2602092.928	1606637.612	344.826	345.132	-0.306	BARE
MSD09-R_0075	2602093.267	1606648.218	344.719	344.826	-0.107	BARE
MSD09-R_0076	2602073.830	1606645.664	345.599	345.837	-0.238	BARE
MSD09-R_0077	2602073.023	1606633.550	345.606	345.776	-0.170	BARE
MSD09-R_0078	2602074.045	1606619.354	345.595	345.674	-0.079	BARE
MSD09-R_0079	2602075.190	1606605.517	345.514	345.572	-0.058	BARE
MSD09-R_0087	2605664.690	1616518.707	363.703	363.721	-0.018	BARE
MSD09-R_0088	2605678.316	1616509.792	363.531	363.343	0.188	BARE
MSD09-R_0089	2605689.952	1616501.733	363.366	363.247	0.119	BARE
MSD09-R_0090	2605701.409	1616493.537	363.123	363.186	-0.063	BARE
MSD09-R_0091	2605711.495	1616487.178	362.963	362.913	0.050	BARE
MSD09-R_0094	2605843.665	1616461.816	362.749	362.943	-0.194	BARE
MSD09-R_0095	2605851.728	1616473.627	363.372	363.491	-0.119	BARE
MSD09-R_0096	2605859.360	1616483.937	363.783	363.903	-0.120	BARE
MSD09-R_0097	2605866.143	1616492.949	363.905	364.003	-0.098	BARE
MSD09-R_0098	2605876.614	1616487.358	364.043	364.102	-0.059	BARE
MSD09-R_0099	2605870.189	1616477.362	363.619	363.704	-0.085	BARE
MSD09-R_0100	2605863.914	1616467.441	363.299	363.307	-0.008	BARE
MSD09-R_0101	2605858.451	1616458.533	362.806	363.112	-0.306	BARE
MSD10-R_0002	2538899.349	1584391.655	247.223	246.969	0.254	BARE
MSD10-R_0003	2538885.011	1584376.513	247.278	247.133	0.145	BARE
MSD10-R_0004	2538872.199	1584361.622	247.275	247.264	0.011	BARE
MSD10-R_0005	2538860.634	1584347.106	247.365	247.253	0.112	BARE
MSD10-R_0006	2538871.108	1584334.787	247.353	247.238	0.115	BARE
MSD10-R_0007	2538884.232	1584348.523	247.113	246.980	0.133	BARE
MSD10-R_0008	2538894.842	1584365.295	247.161	247.028	0.133	BARE
MSD10-R_0009	2538906.463	1584380.231	246.786	246.660	0.126	BARE
MSD10-R_0025	2539538.045	1592095.491	345.587	345.610	-0.023	BARE

Number	Easting	Northing	Known Z	Laser Z	Δz	Surface
MSD10-R_0026	2539526.137	1592116.805	346.264	346.308	-0.044	BARE
MSD10-R_0027	2539515.563	1592135.747	347.123	346.513	0.610	BARE
MSD10-R_0028	2539502.728	1592158.231	347.993	347.901	0.092	BARE
MSD10-R_0029	2539495.270	1592171.373	348.519	347.984	0.535	BARE
MSD10-R_0030	2538776.157	1579036.686	243.076	242.899	0.177	BARE
MSD10-R_0031	2538775.749	1579058.633	243.658	243.706	-0.048	BARE
MSD10-R_0032	2538775.398	1579076.262	243.950	243.926	0.024	BARE
MSD10-R_0033	2538775.132	1579091.899	244.228	244.060	0.168	BARE
MSD10-R_0037	2538717.221	1579302.365	248.799	248.683	0.116	BARE
MSD10-R_0038	2538714.679	1579284.553	247.941	248.543	-0.602	BARE
MSD10-R_0039	2538717.341	1579172.258	248.678	248.605	0.073	BARE
MSD10-R_0040	2538716.780	1579147.349	248.426	248.247	0.179	BARE
MSD10-R_0042	2533466.732	1584374.907	249.177	249.311	-0.134	BARE
MSD10-R_0043	2533430.924	1584375.139	248.930	248.863	0.067	BARE
MSD10-R_0044	2533411.744	1584375.483	248.664	248.562	0.102	BARE
MSD10-R_0045	2533393.326	1584375.729	248.245	248.166	0.079	BARE
MSD10-R_0046	2533373.605	1584375.475	248.006	247.827	0.179	BARE
MSD10-R_0047	2533358.769	1584374.980	248.003	247.988	0.015	BARE

**US Army Corps
of Engineers** ®

AERIAL TRIANGULATION
REPORT

MISSISSIPPI DELTA LIDAR COLLECTION AND PROCESSING
PHASE III

Contract # W912EE-07-D-0008
Task Order # 0004

SUBMITTED BY:

AEROQUEST
O P T I M A L

Aeroquest Optimal, Inc.
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Suite 100
Huntsville, Alabama 35805
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TABLE OF CONTENTS

Prepared by

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Narrative

This project for USACE, Vicksburg District was to provide digital orthophotography using DMC imagery for approximately 4,120 square miles located in NW Mississippi at a 2-foot pixel resolution.

Flown imagery was oriented by using IMU data and validated by intersecting the positional values of its 1567 images and 28 control points. Intersection report is included.

Accuracy Statement

The EO analysis shows a RMS of 1.801ft , 2.101 ft and 3.100 ft for XYZ, respectively .

The results achieved will support the production the digital orthophotography to required accuracies.

Triangulation Parameters

Project Name	MS Delta LiDAR, Phase 3 Northwest Mississippi
Personnel	Project Manager: Christopher J. Jaeger, CP, SP, GISP AT Manager: Tomás Perdomo
Mensuration	Point selection, coding & measuring performed with Z/I ISDM.
Block Adjustment	PhotoT version 4.5 (within ISAT)
Photography	Color, vertical aerial photography, flown at approx 17,300' ASL, taken Jan 15, 2010 with Z/I Digital Mapping Cameras # DMC01-104, and DMC131.
Control	28 paneled and Photo Identifiable ground control points. Horizontal & Vertical Units: Feet. Grid: USA State Plane 1983; Zone: Mississippi Western Zone (2302); Datum: NAD83
Equipment	Z/I's ImageStation softcopy stereoplotter was used to perform all measurements and generate all reports.

Reports and Deliverable Files

20471_MSDelta_ AT Report.doc	EO analysis report . Includes control summary with residuals in feet.
20471_MSDelta _exterior_orientation.txt	Computed exterior orientation parameters for each photo.
DMC01-104_CBU_59.pdf	Calibration report for DMC01-104, CBU Serial Number 0100059, Calibration Date: September 14, 2007.
DMC01-104_CBU_59.pdf	Calibration report for DMC01-131, CBU Serial Number 0100086, Calibration Date: August 9, 2008.

EO Analysis Report

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ISAT EO Analysis Report


EO Used: Given


**************  Intersected Control Point List  *****************


  Point Id    Type  Class       Photo Pair Point Py (um) Model Py (um) Delta X Delta Y Delta Z Delta XY
    MSD02 Control    XYZ ~02_0031+~02_0032        9.8           9.8     1.457  -2.022   1.969   2.493
    MSD02 Control    XYZ ~02_0032+~02_0033       16.0          16.0     1.513  -3.634  -1.102   3.937
    MSD01 Control    XYZ ~04_0012+~04_0013        4.9           4.9    -2.751  -2.736   0.560   3.880
    MSD01 Control    XYZ ~04_0013+~04_0014       13.9          13.9    -2.701  -3.419  -1.454   4.357
    MSD01 Control    XYZ ~05_0011+~05_0012        0.8           0.8    -2.146  -1.193   0.565   2.456
    MSD01 Control    XYZ ~05_0012+~05_0013        1.0           1.0    -2.135  -1.116  -0.121   2.409
   EG1874 Control    XYZ ~06_0057+~06_0058        1.9           1.9    -1.763  -1.459   3.802   2.288
   EG0944 Control    XYZ ~07_0029+~07_0030        0.7           0.7    -0.294  -0.610   0.503   0.677
   EG0944 Control    XYZ ~07_0030+~07_0031        6.9           6.9    -0.422  -2.260   3.692   2.300
   EG1874 Control    XYZ ~07_0055+~07_0056        8.7           8.7    -2.212  -0.613   1.995   2.296
    MSD03 Control    XYZ ~08_0035+~08_0036        1.0           1.0    -2.784  -2.330   1.606   3.630
    MSD03 Control    XYZ ~08_0036+~08_0037        5.3           5.3    -2.891  -2.477  -0.950   3.807
   EG0973 Control    XYZ ~10_0046+~10_0047        4.9           4.9    -1.367  -3.309   4.519   3.580
    MSD04 Control    XYZ ~11_0010+~11_0011        1.5           1.5    -0.415  -1.140   1.294   1.213
   EG0973 Control    XYZ ~11_0045+~11_0046        8.7           8.7    -0.014  -1.878   3.662   1.878
     MSOX Control    XYZ ~14_0015+~14_0016        2.1           2.1    -0.112  -3.734   0.228   3.736
     MSOX Control    XYZ ~14_0016+~14_0017        1.6           1.6     0.026  -1.998   7.051   1.999
    MSD05 Control    XYZ ~14_0048+~14_0049        6.9           6.9    -1.344  -0.673   4.875   1.503
    MSD05 Control    XYZ ~14_0049+~14_0050        1.9           1.9    -1.317  -0.980   5.199   1.641
    1090A Control    XYZ ~16_0014+~16_0015        0.5           0.5    -1.912  -0.728   0.044   2.046
  EG1051A Control    XYZ ~17_0034+~17_0035        3.9           3.9     0.593  -1.388   4.141   1.510
  EG1051A Control    XYZ ~17_0035+~17_0036        7.3           7.3     0.545  -0.432   3.460   0.696
    MSD07 Control    XYZ ~19_0024+~19_0025       13.7          13.7    -1.174  -3.940   2.758   4.111
    MSD07 Control    XYZ ~19_0025+~19_0026        8.2           8.2    -1.212  -2.407   2.751   2.695
    MSD06 Control    XYZ ~20_0005+~20_0006        3.4           3.4    -1.258  -2.962   0.525   3.218
    MSD06 Control    XYZ ~20_0006+~20_0007        1.3           1.3    -1.502  -1.825   4.931   2.364
    MSD08 Control    XYZ ~20_0045+~20_0046       14.4          14.4    -3.916  -0.563   5.549   3.957
    MSD08 Control    XYZ ~20_0046+~20_0047        8.2           8.2    -3.856   0.370   3.333   3.874
    MSD09 Control    XYZ ~24_0035+~24_0036        3.4           3.4    -0.210  -2.427   1.420   2.436
    MSD10 Control    XYZ ~25_0012+~25_0013        0.5           0.5    -0.929  -0.767  -0.518   1.205
    MSD11 Control    XYZ ~27_0022+~27_0023       11.3          11.3    -0.286  -0.189   2.248   0.343


 ********* Intersected Control Point Summary ***********


  Min Py (um):  0.5
  Min Model Py (um):  0.5
  Min DX (ft):  -3.916
  Min DY (ft):  -3.940
  Min DZ (ft):  -1.454


  Max Py (um):  16.0
  Max Model Py (um):  16.0
  Max DX (ft):  1.513
  Max DY (ft):  0.370
  Max DZ (ft):  7.051


  Mean Py (um):  5.6
  Mean Model Py (um):  5.6
  Mean DX (ft):  -1.187
  Mean DY (ft):  -1.769
  Mean DZ (ft):  2.211


  RMS Py (um):  7.3
  RMS Model Py (um):  7.3
  RMS DX (ft):  1.801
  RMS DY (ft):  2.101
  RMS DZ (ft):  3.100
 *******************************************************
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Exterior Orientation

ID	EASTING	NORTHING	HEIGHT	OMEGA	PHI	KAPPA
01_0001	2364521.369	1982595.462	17390.428	-0.07218	-0.43788	-177.24866
01_0002	2369731.700	1982815.242	17432.176	0.09341	-0.15447	-177.25946
01_0003	2374952.172	1983034.768	17438.585	0.24335	0.43385	-177.26490
01_0004	2380166.791	1983241.535	17396.099	0.24568	0.31111	-178.18009
01_0005	2385388.909	1983380.307	17394.635	0.66291	-0.52140	-178.89854
01_0006	2390610.404	1983448.667	17444.687	-0.54393	0.10724	-178.62688
01_0007	2395835.261	1983570.950	17418.119	-0.55496	0.26549	-177.77384
01_0008	2401048.691	1983769.606	17388.290	-0.11258	-0.32801	-177.29300
01_0009	2406266.887	1983981.410	17419.295	0.02013	-0.60447	-177.35688
01_0010	2411486.041	1984190.036	17452.615	-0.03258	0.06385	-177.29154
01_0011	2416703.793	1984406.360	17429.587	0.09210	0.32746	-177.33376
01_0012	2421921.227	1984622.063	17390.558	0.34039	-0.10527	-177.63493
01_0013	2427140.666	1984795.794	17403.562	0.26394	-0.39621	-178.34690
01_0014	2432358.632	1984913.186	17445.379	-0.16952	0.02584	-178.38076
01_0015	2437582.022	1985039.422	17424.554	-0.09825	0.41238	-178.08724
01_0016	2442800.639	1985188.160	17384.476	0.01500	-0.12832	-178.06455
01_0017	2448021.948	1985332.838	17412.627	-0.01729	-0.38259	-178.23439
01_0018	2453241.936	1985471.352	17441.502	-0.25132	0.16056	-178.07940
01_0019	2458461.522	1985638.183	17405.366	-0.14092	0.24237	-177.83792
01_0020	2463684.308	1985822.521	17391.346	0.00218	-0.37683	-177.65445
01_0021	2468899.709	1986011.649	17435.924	-0.26835	-0.08538	-177.67287
01_0022	2474115.357	1986217.146	17437.088	-0.10001	0.38960	-177.33410
01_0023	2479338.293	1986437.189	17396.087	0.12724	-0.11943	-177.38450
01_0024	2484555.762	1986645.107	17406.678	0.12010	-0.35723	-177.76527
01_0025	2489775.324	1986829.092	17439.043	-0.00872	0.04056	-177.72619
01_0026	2494992.777	1987017.581	17422.927	0.05138	0.31363	-177.83321
01_0027	2500216.392	1987203.493	17394.526	0.10485	-0.07853	-177.92551
01_0028	2505431.346	1987374.175	17405.631	-0.07316	-0.33311	-177.98423
01_0029	2510657.201	1987538.245	17444.469	-0.21488	-0.09410	-177.94898
01_0030	2515876.941	1987716.748	17436.590	-0.07024	0.31477	-177.78247
01_0031	2521092.270	1987910.630	17396.939	0.05945	0.05893	-177.83973
01_0032	2526315.568	1988085.055	17401.922	0.00711	-0.50576	-178.05468
01_0033	2531533.166	1988238.136	17445.422	-0.37196	-0.01351	-177.79592
01_0034	2536756.006	1988422.478	17428.816	-0.04384	0.29141	-177.39865
01_0035	2541971.806	1988628.656	17399.033	0.18065	-0.18807	-177.73210
01_0036	2547197.116	1988804.514	17419.171	0.00568	-0.15146	-178.07280
01_0037	2552416.144	1988953.734	17436.723	-0.10028	0.09940	-177.88520
01_0038	2557637.615	1989112.702	17419.107	-0.19213	0.04785	-177.82287
01_0039	2562859.279	1989285.920	17404.961	-0.08746	-0.00980	-177.83302
01_0040	2568077.892	1989469.881	17412.732	0.07222	-0.15171	-177.72178
01_0041	2573298.474	1989651.315	17424.374	-0.03134	-0.03343	-177.83970
01_0042	2578516.513	1989823.975	17413.907	0.09338	0.17977	-177.68280
01_0043	2583739.376	1989998.940	17405.037	0.27139	-0.44162	-178.12057
01_0044	2588961.743	1990139.300	17443.066	-0.26047	-0.09969	-178.54479
01_0045	2594184.765	1990277.068	17435.432	-0.68560	0.03002	-177.95795
01_0046	2599404.753	1990472.831	17420.180	-0.32775	-0.00573	-177.27628
02_0001	2370288.282	1966391.677	17390.873	-0.19992	-0.01518	2.34896
02_0002	2375502.646	1966580.685	17410.743	-0.23289	-0.38879	2.41042
02_0003	2380726.203	1966781.450	17430.377	0.05337	-0.21831	2.57225
02_0004	2385940.132	1966979.904	17407.942	0.11146	0.21991	2.56674
02_0005	2391157.520	1967166.956	17377.448	0.09523	0.39225	2.09423
02_0006	2396376.561	1967346.564	17398.838	0.05577	-0.14385	2.29741
02_0007	2401596.039	1967535.659	17428.372	0.00953	-0.21228	2.37087
02_0008	2406817.462	1967722.728	17421.418	0.20801	0.10142	2.33160
02_0009	2412038.539	1967889.625	17388.862	0.13871	0.35068	2.02106

02_0010	2417253.697	1968045.978	17376.821	0.00734	−0.03072	1.99525
02_0011	2422468.597	1968209.925	17411.816	−0.07443	−0.40796	2.14798
02_0012	2427693.574	1968387.411	17435.432	−0.16573	−0.18774	2.21761
02_0013	2432908.700	1968574.058	17403.986	0.10819	0.35009	2.18895
02_0014	2438130.134	1968725.267	17381.237	0.41603	0.16588	1.73144
02_0015	2443352.207	1968839.915	17413.148	0.07232	−0.41237	1.40939
02_0016	2448572.444	1968955.199	17429.712	−0.00920	−0.08423	1.57388
02_0017	2453790.148	1969078.225	17404.601	−0.04964	0.39201	1.55064
02_0018	2459014.755	1969206.525	17381.171	−0.37804	0.12994	1.88582
02_0019	2464232.747	1969388.427	17403.166	−0.09096	−0.27694	2.41349
02_0020	2469451.841	1969565.493	17423.793	0.16485	−0.18640	2.19206
02_0021	2474673.714	1969742.646	17413.658	0.01345	0.12881	2.31601
02_0022	2479890.042	1969916.502	17391.382	0.09057	0.25792	2.24529
02_0023	2485111.372	1970081.785	17396.902	0.03130	−0.10623	2.13198
02_0024	2490327.161	1970250.378	17424.736	−0.21899	−0.20043	2.22009
02_0025	2495552.127	1970442.843	17410.989	0.01825	0.24855	2.43612
02_0026	2500770.414	1970635.054	17397.137	−0.01896	0.21364	2.48340
02_0027	2505988.983	1970829.593	17419.812	−0.01485	−0.25699	2.45709
02_0028	2511210.930	1971033.510	17423.422	0.00982	0.09399	2.56524
02_0029	2516429.062	1971234.391	17397.483	0.04590	0.34435	2.45649
02_0030	2521644.965	1971430.131	17388.361	−0.03273	0.07141	2.47365
02_0031	2526863.001	1971620.555	17414.358	0.00132	−0.24694	2.38788
02_0032	2532088.862	1971813.697	17432.140	−0.03294	−0.01833	2.37946
02_0033	2537306.585	1972006.825	17402.845	0.03940	0.35687	2.30611
02_0034	2542531.429	1972188.469	17373.682	0.13108	0.32298	2.14466
02_0035	2547744.376	1972361.378	17399.096	0.09539	−0.34789	2.18248
02_0036	2552970.207	1972535.957	17433.595	0.03254	−0.21736	2.17545
02_0037	2558186.613	1972717.140	17415.191	−0.04740	0.34476	2.20058
02_0038	2563411.975	1972899.090	17374.665	−0.14452	0.38618	2.32180
02_0039	2568629.790	1973056.322	17389.793	0.78571	−0.19440	1.57544
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21_0034      2610262.633 1661554.846 17309.730    0.66108    0.15275    0.97996
21_0035      2615483.941 1661710.046 17260.601   -0.60437    0.50342    2.25549
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21_0040      2641589.405 1662780.476 17305.593   -1.06905   -0.92140    4.38876
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21_0045      2667699.355 1663541.132 17321.376   -0.65568   -0.55141    1.60938
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23_0047        2689637.201 1631383.353 17352.510     -0.00688       0.91814 -177.78572
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24_0033	2622291.241	1612630.988	17355.840	−0.56173	0.06627	2.69557
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25_0001	2460974.889	1590978.622	17339.418	0.18048	−0.54565	−178.20019
25_0002	2466192.077	1591134.924	17335.584	−0.11553	0.08540	−178.18925
25_0003	2471416.705	1591309.797	17321.655	0.22165	−0.10410	−177.29015
25_0004	2476632.896	1591468.634	17320.982	−0.85188	0.08680	−178.07785
25_0005	2481857.395	1591627.423	17307.099	−1.23042	−0.17227	−178.77534
25_0006	2487075.536	1591806.379	17341.310	0.76518	0.11212	−178.43687
25_0007	2492299.006	1591902.884	17341.774	−0.37294	0.56770	−177.22985
25_0008	2497515.904	1592099.203	17309.938	−0.63176	−0.06060	−177.07843
25_0009	2502732.972	1592385.936	17320.221	0.67126	−0.08252	−177.45812
25_0010	2507953.523	1592539.971	17327.846	−1.16982	−0.13382	−178.86709
25_0011	2513170.310	1592726.606	17340.610	0.56363	−0.39138	−177.72016
25_0012	2518391.700	1592868.248	17344.165	0.20965	−0.14085	−177.80760
25_0013	2523612.432	1593038.087	17319.867	0.34896	−0.49524	−177.13039
25_0014	2528831.869	1593270.773	17320.246	−0.15717	−0.15442	−177.85818
25_0015	2534051.385	1593415.017	17311.109	−0.64937	−0.58366	−178.84910
25_0016	2539276.936	1593512.361	17358.548	−0.06267	−0.15186	−177.29918
25_0017	2544496.899	1593679.062	17337.251	−0.31298	0.38237	−176.95420
25_0018	2549717.798	1593908.379	17305.651	0.26344	0.12563	−177.18425
25_0019	2554935.675	1594075.577	17312.779	−0.59891	0.73706	−178.84915
25_0020	2560158.982	1594178.552	17290.327	0.14428	−0.12291	−176.83212
25_0021	2565381.306	1594376.759	17269.505	0.34462	0.24005	−178.74148
25_0022	2570596.460	1594516.047	17266.998	0.88374	−0.36527	−177.43871
25_0023	2575822.665	1594672.080	17325.391	−0.94811	0.26009	−178.09411
25_0024	2581039.190	1594863.484	17336.368	−0.17470	0.22148	−177.88954
25_0025	2586265.584	1595041.124	17312.761	0.28927	0.01818	−178.32528
25_0026	2591484.803	1595174.664	17315.180	0.10366	0.10168	−176.77310

25_0027	2596705.763	1595418.341	17320.923	0.81701	-0.29462	-177.17075
25_0028	2601925.180	1595606.344	17342.247	0.56800	0.10514	-177.33913
25_0029	2607144.628	1595765.988	17331.666	-0.51739	-0.23713	-178.04492
25_0030	2612368.278	1595934.101	17326.993	-0.51515	-0.28593	-178.23618
25_0031	2617588.062	1596094.522	17363.504	-0.07333	0.46806	-177.83677
25_0032	2622812.764	1596249.777	17291.947	-0.46531	-0.23264	-178.39393
25_0033	2628031.759	1596373.910	17309.017	-0.74233	-0.23729	-177.56494
25_0034	2633251.323	1596607.158	17319.160	0.15461	-0.23277	-177.68317
25_0035	2638472.490	1596792.722	17322.947	0.26101	0.50103	-177.33193
25_0036	2643695.118	1596946.858	17275.719	-0.29360	-0.22677	-178.86459
25_0037	2648919.359	1597071.086	17277.987	-0.30474	0.33726	-177.91458
25_0038	2654139.921	1597249.461	17299.437	0.85449	-0.14077	-178.11535
25_0039	2659365.304	1597380.896	17311.266	-0.49386	0.24532	-178.64414
25_0040	2664588.346	1597505.322	17303.310	-0.28394	-0.06126	-177.57872
25_0041	2669807.640	1597726.112	17317.203	0.48925	-0.04802	-177.85947
25_0042	2675026.938	1597886.217	17348.960	-0.05023	0.26166	-177.70614
25_0043	2680251.659	1598063.485	17372.116	-0.09735	0.21435	-178.01252
25_0044	2685473.386	1598215.577	17364.291	0.07003	0.32553	-178.21832
25_0045	2690700.168	1598356.985	17340.672	-0.46777	-0.27067	-177.91356
25_0046	2695921.224	1598543.067	17340.512	-0.18948	-0.14143	-177.30108
25_0047	2701141.674	1598777.852	17312.085	-0.05399	0.36035	-178.05584
26_0001	2466735.756	1574701.854	17353.129	-0.47798	0.05593	2.91320
26_0002	2471956.710	1574917.767	17338.333	0.10322	0.45717	2.90174
26_0003	2477175.708	1575075.002	17352.704	0.44052	0.29387	1.71168
26_0004	2482392.152	1575192.719	17355.031	-0.74719	0.10620	1.71164
26_0005	2487618.254	1575342.023	17353.457	-0.26558	0.22426	1.94467
26_0006	2492834.648	1575502.520	17345.741	0.99054	0.56738	1.45983
26_0007	2498057.709	1575632.928	17341.857	-0.79810	-0.01182	2.32889
26_0008	2503278.743	1575812.470	17328.584	-0.70743	0.16435	2.46189
26_0009	2508496.436	1576032.041	17342.248	0.18629	-0.01451	2.53867
26_0010	2513712.203	1576208.388	17313.829	0.44671	0.21339	2.06490
26_0011	2518932.787	1576354.724	17323.854	-0.00743	-0.12206	1.93753
26_0012	2524157.119	1576535.298	17326.666	-0.04694	-0.05945	2.34858
26_0013	2529371.906	1576741.710	17289.963	-0.62895	0.24135	2.71096
26_0014	2534593.533	1576943.037	17270.742	0.83006	0.11664	2.10101
26_0015	2539816.649	1577079.148	17313.112	0.11181	-0.68897	1.82661
26_0016	2545036.659	1577241.656	17307.784	-0.61198	-0.21685	2.45236
26_0017	2550253.645	1577425.681	17299.063	0.23769	-0.02317	2.16816
26_0018	2555480.328	1577577.041	17284.003	0.36349	0.03968	1.85296
26_0019	2560696.635	1577726.786	17295.016	-0.07697	-0.19016	1.96293
26_0020	2565923.935	1577853.593	17306.598	-0.15010	0.01457	1.62973
26_0021	2571141.515	1578014.665	17284.763	-0.72618	-0.03856	2.37657
26_0022	2576362.840	1578229.952	17295.038	-0.77606	-0.04473	2.78625
26_0023	2581581.261	1578504.862	17295.272	1.07366	0.24965	2.82279
26_0024	2586798.842	1578627.987	17311.691	0.40437	0.13273	1.32800
26_0025	2592027.529	1578716.673	17313.000	-0.70982	-0.03550	1.52475
26_0026	2597243.229	1578913.766	17303.738	-0.97447	-0.20854	2.94510
26_0027	2602469.085	1579129.011	17287.228	0.05286	0.10296	2.74623
26_0028	2607685.274	1579345.203	17285.257	0.65502	0.08101	2.61413
26_0029	2612905.624	1579496.500	17273.737	0.44667	0.26524	1.72549
26_0030	2618127.922	1579681.461	17307.832	0.19222	-0.22027	2.33374
26_0031	2623347.809	1579829.072	17310.909	0.77091	0.24972	1.52870
26_0032	2628574.600	1579947.787	17296.888	-0.82479	0.12086	2.01779
26_0033	2633791.544	1580102.261	17300.396	-0.17560	-0.14659	1.89562
26_0034	2639018.386	1580277.321	17330.563	-0.41733	-0.24604	2.19790
26_0035	2644237.706	1580416.671	17327.198	0.52988	0.02310	1.47599
26_0036	2649461.036	1580569.226	17300.994	-0.68043	0.35872	2.20508
26_0037	2654684.033	1580740.574	17288.145	0.42696	0.36389	1.92664
26_0038	2659904.976	1580910.193	17293.251	-0.12402	0.26401	2.24626
26_0039	2665128.149	1581058.364	17300.018	0.24434	0.28294	1.71252
26_0040	2670352.153	1581224.746	17319.447	-0.32039	-0.14162	2.31015

26_0041	2675571.059	1581401.376	17341.513	−0.08147	−0.06722	2.19248
26_0042	2680794.922	1581564.834	17343.609	−0.69590	0.03360	2.21712
26_0043	2686015.051	1581745.269	17323.416	0.25278	0.42328	2.19132
26_0044	2691236.916	1581941.726	17322.615	−0.15239	0.01174	2.37272
26_0045	2696458.617	1582107.789	17292.608	1.14226	0.37562	1.49324
27_0001	2467261.063	1558198.468	17336.670	0.30060	−0.16243	−177.22895
27_0002	2472476.810	1558392.532	17338.757	−1.23561	−0.01329	−177.30490
27_0003	2477696.555	1558625.762	17337.159	0.45258	−0.21771	−177.81481
27_0004	2482913.990	1558795.373	17330.337	−0.46931	0.26674	−178.33157
27_0005	2488136.127	1558962.972	17315.589	−0.56495	0.15837	−178.04409
27_0006	2493356.092	1559148.734	17342.649	−0.53990	0.21730	−177.91846
27_0007	2498577.763	1559326.562	17341.824	0.12653	0.22579	−177.71836
27_0008	2503796.468	1559475.141	17321.476	−1.48976	0.00677	−178.57799
27_0009	2509017.582	1559659.220	17358.692	0.02046	0.06259	−177.71838
27_0010	2514235.342	1559827.589	17365.021	−1.17876	−0.47461	−178.76590
27_0011	2519454.250	1559984.464	17403.513	−1.11195	−0.10230	−177.04391
27_0012	2524675.288	1560187.030	17409.762	0.21306	0.53113	−178.14744
27_0013	2529892.642	1560348.313	17362.247	0.54501	−0.02019	−177.41222
27_0014	2535117.836	1560528.088	17335.499	0.78034	−0.34233	−177.97885
27_0015	2540334.605	1560663.706	17373.632	−0.32211	−0.02047	−178.91250
27_0016	2545559.352	1560790.645	17375.102	−0.45846	0.29829	−177.64581
27_0017	2550777.607	1560982.047	17362.734	−0.72403	0.67676	−178.48580
27_0018	2555996.508	1561174.369	17342.368	0.83135	−0.83239	−177.09998
27_0019	2561217.560	1561376.976	17369.135	0.16862	0.19015	−177.94311
27_0020	2566443.076	1561529.051	17343.310	−0.08063	−0.25993	−178.23460
27_0021	2571663.995	1561672.586	17385.327	−0.07390	0.30606	−177.78676
27_0022	2576881.887	1561873.616	17353.287	0.57114	0.11574	−177.31284
27_0023	2582102.613	1562052.548	17333.543	−0.80966	−0.54197	−178.72924
27_0024	2587323.200	1562214.615	17348.228	0.81404	−0.21858	−177.38988
27_0025	2592544.679	1562377.445	17343.122	−0.14889	−0.37007	−178.95642
27_0026	2597767.549	1562505.293	17368.406	0.65894	0.03765	−177.84346
27_0027	2602989.637	1562657.121	17342.878	0.04447	−0.06382	−177.73916
27_0028	2608207.651	1562833.563	17346.656	−0.18716	0.15786	−178.14813
27_0029	2613430.140	1563020.361	17329.111	0.24532	−0.10750	−177.94493
27_0030	2618652.517	1563178.911	17333.168	−0.54526	−0.31272	−177.38645
27_0031	2623871.732	1563387.893	17351.534	0.43966	0.47285	−177.59320
27_0032	2629091.727	1563555.195	17336.908	0.25432	0.10322	−178.25563
27_0033	2634313.964	1563680.255	17333.979	−1.38120	0.38495	−178.66944
27_0034	2639539.505	1563870.852	17325.028	−0.14718	0.15754	−178.07636
27_0035	2644761.127	1564004.008	17313.167	−1.51937	0.11192	−178.56231
27_0036	2649982.090	1564203.170	17336.763	−0.19955	−0.08951	−177.38437
27_0037	2655202.385	1564407.704	17332.151	0.15645	0.19042	−178.78046
27_0038	2660429.139	1564487.546	17318.165	−0.65639	0.00265	−177.92947
27_0039	2665648.898	1564673.376	17323.949	0.01818	−0.05399	−177.69295
27_0040	2670869.816	1564867.929	17322.888	−0.50958	−0.14486	−177.31270
27_0041	2676090.886	1565089.093	17322.034	0.22731	0.01702	−178.39524
27_0042	2681314.170	1565228.934	17299.716	−0.29266	−0.23380	−178.33533
27_0043	2686536.529	1565397.263	17314.633	0.30165	−0.22098	−177.62246
28_0001	2467797.062	1541862.035	17346.554	0.81400	−0.01554	2.27250
28_0002	2473017.121	1541992.273	17331.677	0.37594	0.60049	1.48072
28_0003	2478234.491	1542127.212	17343.345	−0.35704	0.14234	2.04860
28_0004	2483452.546	1542306.369	17356.069	−0.99373	−0.03534	2.95505
28_0005	2488676.450	1542525.747	17335.000	−0.43557	0.31041	2.99329
28_0006	2493896.249	1542655.566	17315.332	0.31776	0.40854	1.31613
28_0007	2499119.826	1542766.773	17348.649	−1.01636	−0.24676	2.10706
28_0008	2504334.694	1542991.981	17334.355	0.26959	0.09331	2.59750
28_0009	2509555.559	1543169.652	17379.079	−0.39874	−0.70187	2.38981
28_0010	2514776.727	1543358.381	17371.102	0.42053	0.33421	2.02131
28_0011	2519995.171	1543499.967	17351.697	−0.25077	0.16985	1.98407
28_0012	2525214.663	1543664.590	17349.763	0.53283	0.01518	2.06710
28_0013	2530434.796	1543790.576	17366.798	−0.30456	−0.08054	1.65060

28_0014	2535657.450	1543960.260	17355.863	−0.83667	−0.15422	2.37349
28_0015	2540877.138	1544125.736	17380.480	−1.21280	−0.51859	1.94352
28_0016	2546100.053	1544314.491	17362.355	−0.66775	0.01125	2.24514
28_0017	2551318.669	1544484.205	17360.355	0.15007	−0.19670	2.04061
28_0018	2556541.299	1544645.323	17345.894	0.12230	0.05245	2.54247
28_0019	2561759.947	1544798.026	17351.944	−0.51906	−0.33451	2.82929
28_0020	2566984.461	1544962.279	17346.301	0.32997	0.06695	1.95745
28_0021	2572204.794	1545128.598	17305.845	0.26706	0.62566	1.89138
28_0022	2577424.579	1545346.164	17335.533	0.30900	0.28907	2.98472
28_0023	2582646.016	1545474.526	17364.922	0.32890	−0.05838	1.20974
28_0024	2587865.724	1545645.466	17367.961	−1.10327	−0.03983	2.45217
28_0025	2593088.713	1545914.037	17332.613	0.99959	0.82351	2.75213
28_0026	2598308.452	1546050.250	17345.356	0.51751	0.32114	1.59963
28_0027	2603532.494	1546224.292	17364.973	−0.10747	0.16434	2.65653
28_0028	2608749.011	1546417.321	17381.739	0.62801	0.25190	2.27923
28_0029	2613974.061	1546572.742	17375.649	−0.65611	0.43695	1.93540
28_0030	2619191.427	1546742.522	17351.564	0.49195	0.61722	1.79634
28_0031	2624412.716	1546915.761	17352.750	−0.64677	0.03230	2.42535
28_0032	2629637.171	1547107.460	17366.980	0.48490	−0.09645	1.99720
28_0033	2634854.683	1547282.998	17396.474	−0.48864	−0.54731	2.69854
28_0034	2640074.638	1547484.062	17362.518	0.56198	0.10076	1.86500
28_0035	2645296.864	1547635.375	17320.303	0.24248	0.32291	1.76608
28_0036	2650527.145	1547738.780	17325.366	0.17747	0.14806	1.53988
28_0037	2655743.136	1547904.588	17342.936	0.40120	−0.16576	2.31167
28_0038	2660968.979	1548029.774	17337.282	−1.53123	−0.07469	2.14831
28_0039	2666191.197	1548270.366	17361.841	0.26059	−0.26777	2.76561
28_0040	2671409.867	1548446.599	17378.428	0.76947	−0.19849	1.74101
28_0041	2676632.747	1548555.515	17344.246	−1.02528	0.23094	1.58887
28_0042	2681855.823	1548738.877	17314.913	0.42400	0.26710	2.18627
28_0043	2687079.295	1548909.915	17342.786	−0.10013	−0.32342	2.30651
29_0001	2452676.469	1524877.333	17350.270	0.13299	0.02539	−177.32863
29_0002	2457889.917	1525066.103	17357.983	−0.30397	0.70747	−179.14857
29_0003	2463111.262	1525187.494	17348.318	0.32420	0.07922	−177.62845
29_0004	2468331.435	1525407.947	17356.956	1.19076	0.12616	−177.47151
29_0005	2473552.221	1525535.927	17341.143	0.57176	−0.35166	−178.59752
29_0006	2478772.732	1525623.312	17359.799	−0.84259	0.05193	−177.86248
29_0007	2483992.592	1525848.362	17354.813	0.03845	−0.40544	−177.56261
29_0008	2489210.790	1526063.994	17394.789	−0.04682	−0.42388	−176.43971
29_0009	2494428.100	1526325.760	17396.432	1.07045	0.08771	−177.95250
29_0010	2499647.899	1526480.825	17378.771	−0.04116	−0.27338	−177.86714
29_0011	2504865.104	1526663.545	17400.835	0.82240	0.20535	−178.64074
29_0012	2510090.293	1526775.373	17381.287	−0.70163	0.13163	−177.65734
29_0013	2515308.084	1526995.046	17388.797	0.57648	0.37645	−177.85522
29_0014	2520530.638	1527138.868	17368.779	−1.16553	0.09685	−178.71581
29_0015	2525747.782	1527318.266	17371.248	0.09222	−0.13322	−178.03488
29_0016	2530969.226	1527481.548	17380.094	0.67861	−0.34075	−177.71994
29_0017	2536189.642	1527619.334	17390.183	−0.48959	−0.08013	−178.42136
29_0018	2541411.379	1527796.677	17399.443	0.53680	−0.01915	−177.51478
29_0019	2546630.615	1527982.260	17376.620	0.43113	−0.31753	−177.35102
29_0020	2551853.181	1528162.943	17392.155	0.13938	−0.24898	−177.35463
29_0021	2557072.900	1528349.988	17382.915	−0.02736	−0.22901	−178.57113
29_0022	2562291.258	1528455.256	17393.942	−0.78235	−0.26520	−178.32954
29_0023	2567514.600	1528616.826	17395.029	−0.33320	−0.46518	−177.64363
29_0024	2572733.832	1528822.095	17395.747	−0.60024	0.01928	−177.95989
29_0025	2577955.553	1528992.236	17381.165	−0.59942	0.09694	−178.54700
29_0026	2583178.741	1529107.332	17364.427	−1.28730	0.12629	−177.82134
29_0027	2588398.347	1529355.308	17349.598	−0.14450	−0.12707	−177.95892
29_0028	2593617.896	1529533.559	17355.223	0.15689	−0.03369	−177.98398
29_0029	2598838.912	1529677.718	17373.039	−0.47154	−0.00325	−177.91918
29_0030	2604061.664	1529833.085	17377.781	−0.60983	1.04456	−178.12025
29_0031	2609278.302	1529999.829	17317.199	−0.89422	−0.18146	−176.61613

29_0032	2614501.842	1530260.323	17342.236	0.23770	−0.13630	−177.87241
29_0033	2619721.203	1530402.868	17375.753	−1.34045	0.28611	−178.98380
29_0034	2624945.144	1530552.636	17369.997	0.49192	0.17650	−178.19577
29_0035	2630166.296	1530681.196	17383.828	−0.12274	0.06830	−178.17005
29_0036	2635391.963	1530862.654	17394.932	0.19349	−0.18217	−176.90307
29_0037	2640609.697	1531074.375	17408.554	−0.13192	0.53463	−177.59720
29_0038	2645833.078	1531236.178	17360.124	0.40555	−0.29853	−178.49822
29_0039	2651052.679	1531376.794	17347.422	−0.25408	−0.58396	−176.99908
30_0001	2468366.145	2002634.732	17461.018	0.20041	−0.48060	2.75908
30_0002	2473581.957	2002842.986	17444.880	0.32203	0.30949	2.53143
30_0003	2478806.508	2003000.105	17424.605	0.34310	0.44326	1.66792
30_0004	2484029.074	2003138.882	17419.232	0.11604	0.18713	1.64407
30_0005	2489244.166	2003280.683	17429.692	−0.15051	0.03125	1.80327
30_0006	2494466.627	2003435.833	17435.724	−0.22456	−0.04742	1.85312
30_0007	2499688.229	2003601.576	17447.112	0.00281	−0.15369	2.02203
30_0008	2504906.442	2003755.565	17440.387	0.07614	0.16216	1.83789
30_0009	2510126.206	2003896.035	17417.670	0.01682	0.32552	1.73142
30_0010	2515348.837	2004036.970	17412.015	−0.10769	0.16183	1.80002
30_0011	2520565.298	2004192.389	17422.497	−0.15072	−0.11895	2.03426
30_0012	2525791.623	2004353.797	17433.959	−0.11145	−0.12681	2.03714
30_0013	2531008.156	2004520.932	17422.908	0.05204	0.20109	1.94968
30_0014	2536227.427	2004682.930	17407.686	−0.03508	0.18917	2.02344
30_0015	2541447.529	2004852.019	17414.325	−0.33125	−0.11183	2.12468
30_0016	2546665.653	2005065.257	17429.769	−0.22664	−0.14399	2.84546
30_0017	2551887.051	2005282.745	17444.686	0.01325	−0.15177	2.61142
30_0018	2557107.287	2005493.210	17438.570	0.02335	0.01570	2.56441
30_0019	2562327.306	2005700.477	17416.582	−0.07945	0.28240	2.53652
30_0020	2567551.180	2005882.723	17402.560	0.42634	0.11304	1.89190
30_0021	2572768.700	2006030.069	17434.009	0.11235	−0.34790	1.87715
30_0022	2577986.646	2006177.001	17447.043	−0.10968	−0.07631	1.77238
30_0023	2583213.121	2006339.786	17410.929	−0.27115	0.36432	2.07809
30_0024	2588430.313	2006533.228	17387.224	−0.05617	0.20858	2.28769
30_0025	2593654.278	2006720.616	17427.005	0.01301	−0.55227	2.28770
30_0026	2598875.749	2006915.614	17455.992	−0.15684	−0.14737	2.43215

Survey Coordinates

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MSOX              2538305.799 1770433.441 557.583
1090A             2521844.401 1736912.655 324.863
MSD01             2450342.933 1924884.066 301.679
MSD02             2532159.168 1972989.921 451.954
MSD03             2597233.851 1876271.735 393.46
MSD04             2488613.306 1822058.022 453.395
MSD05             2710312.098 1778213.402 492.813
MSD06             2464583.818 1667939.747 384.026
MSD07             2567469.022 1692311.091 384.987
MSD08             2672949.787 1674814.537 333.012
MSD09             2635901.620 1608580.530 370.842
MSD10             2521340.752 1596229.482 388.462
MSD11             2579445.077 1557738.006 317.250
EG0944            2561512.499 1896328.376 581.434
EG0973            2669769.949 1835760.651 377.697
EG1874            2692841.909 1903044.456 449.832
EG1051A           2628179.721 1732189.827 407.804
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LiDAR DATA PROCESSING PROCEDURES REPORT

**MISSISSIPPI DELTA LIDAR COLLECTION AND PROCESSING
PHASE III**

Contract # W912EE-07-D-0008
Task Order # 0004

SUBMITTED BY:

AEROQUEST
OPTIMAL

Aeroquest Optimal, Inc.
4975 Bradford Drive, NW
Suite 100
Huntsville, Alabama 35805
(256) 882-7788

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INITIAL LIDAR PROCESSING

Data collection of the survey area resulted in a total of five hundred flightlines, including control lines, covering the project area. The range files, flight logs, raw air and ground GPS files were then taken to the office for data processing using DASHMap, v4.18, (Optech, Inc.).

For redundancy and accuracy purposes, the airborne GPS data were processed from two base stations using POSGPS from Applanix, Inc. The agreement between a minimum of two solutions checked or combined between a minimum of two stations was better than 10 cm in each of X, Y, and Z. These trajectories were used in the processing of the inertial data. The inertial data were processed using POSProc from Applanix, Inc. This software produces an SBET ("smooth best estimate of trajectory") using the GPS trajectory from POSGPS and the roll, pitch and heading information recorded by the POS (Position Orientation System).

DASHMap uses the SBET to generate a set of data points for each laser return in the LAS file format. Each data point is assigned an echo value so it can be segregated based on the first and last pulse information. This project's data were processed in strip form, meaning each flight line was processed independently. Processing the lines individually provides the data analyst with the ability to QC the overlap between lines.

CALIBRATION PARAMETERS

Acquisition Area 1:

JD05101

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[CALIBRATION]

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200

IMURoll=0.115600
IMUPitch=-0.040400
IMUHeading=0.056600

UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000

TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000

Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0

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ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
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FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
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FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
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FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
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IntensityTable100Khz=%PATH%\5112_100
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DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
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CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
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f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
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DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
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WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
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JD052F01

[CALIBRATION]

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.105100
IMUPitch=-0.049800
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
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UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
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meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
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FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]

LastPulseRange=-2.650000
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SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
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SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
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ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
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SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
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BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
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CrystalResolution=50.000000
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f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
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a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
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WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD052F02

[CALIBRATION]

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.112800
IMUPitch=-0.042800
IMUHeading=0.045500

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UserToImuEy=-0.060000
UserToImuEz=0.000000
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UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
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UseRightDroopCorrection=3.000000
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Pressure=1025.060000
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ScannerOffset=0.000000
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ScannerAngleLimitingSmootherOn=0
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SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]

LastPulseRange=-2.650000
FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
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SecondPulseRange=-2.700000
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[RangeOffset100KHz]
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LastPulseRange=0.000000
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a2=-0.000091189490290
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FilterType=0

JD055F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.112600
IMUPitch=-0.037100
IMUHeading=0.056600
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UserToImuEz=0.000000
UserToImuDx=-0.090000
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UserToImuDz=-0.096000
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UserToRefDy=-0.030000
UserToRefDz=-0.488000
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UseRightDroopCorrection=3.000000
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ScannerAngleLimitingSmootherOn=0
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FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
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BEAM0_ROLL=0.000000
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f2=0.000000000000000
f3=0.000000000000000
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a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
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ThresholdMeters=50.000000
FilterType=0

JD056F01

AltmSerialNo=04SEN155
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IMUPitch=-0.037100
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UserToImuDy=-0.008000
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UserToRefDy=-0.030000
UserToRefDz=-0.488000
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ScannerAngleLimitingSmootherOn=0
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[RangeOffset50KHz]
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FirstPulseRange=-2.650000
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[RangeOffset70KHz]
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ThirdPulseRange=-2.700000
[RangeOffset100KHz]
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ThirdPulseRange=0.000000
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z.txt

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z.txt
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MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
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CrystalResolution=50.000000
DegreeOfPoly=-1
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f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005868330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
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WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD056F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
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scannerAngleDiffThreshold=2.000000
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FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
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ThirdPulseRange=-2.700000
[RangeOffset100KHz]
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ThirdPulseRange=0.000000
[RangeOffset142KHz]
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FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
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FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
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IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
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DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD057F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.107000
IMUPitch=-0.042200
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD057F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.110100
IMUPitch=-0.041300
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD058F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.100000
IMUPitch=-0.041300
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000
FirstPulseRange=-2.650000

SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000

[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD058F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.100000
IMUPitch=-0.041300
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD059F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200

IMURoll=0.104900
IMUPitch=-0.040400
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD059F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.111700
IMUPitch=-0.042900
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD060F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.101600
IMUPitch=-0.040400
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD063F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.101600
IMUPitch=-0.040400
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TmeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt

IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD063F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.101600
IMUPitch=-0.040400
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt

IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD064F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.106200
IMUPitch=-0.043700
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000

TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
[OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD064F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.114400
IMUPitch=-0.045200
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kH
z.txt
IntensityTable50Khz=%PATH%\5112_50kH
z.txt

IntensityTable70Khz=%PATH%\5112_70kH
z.txt
IntensityTable100Khz=%PATH%\5112_100
kHz.txt
[OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.004888330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD065F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.101700
IMUPitch=-0.038300
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]

LastPulseRange=-2.650000
FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt

IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

Acquisition Area 2:

JD049F01

[CALIBRATION]
AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200

IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000

TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000

Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0

[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000

SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000
FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

intensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD052F01

[CALIBRATION]

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000

JD051F01

[CALIBRATION]

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000

[RangeOffset50KHz]
LastPulseRange=-2.650000
FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

[RangeOffset50KHz]
LastPulseRange=-2.650000
FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005358330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000

[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[cannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005358330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD051F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005868330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD051F03

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005868330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD052F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=5.000000
UseRightDroopCorrection=5.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD057F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD057F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD057F03

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.081400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000
FirstPulseRange=-2.650000

SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000

[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD187F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.044400
IMUPitch=0.013300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD189F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200

IMURoll=-0.045900
IMUPitch=0.010300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.005500000000000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD189F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.049963
IMUPitch=0.011402
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.005500000000000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD190F01

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=0.101600
IMUPitch=-0.040400
IMUHeading=0.056600
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000
ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000

FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[Intensity]

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.008562706990000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587
a4=0.000000050095613
a5=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD190F02

AltmSerialNo=04SEN155
ImuType=LN200A1
ImuRate=200
IMURoll=-0.045900
IMUPitch=0.010300
IMUHeading=0.000000
UserToImuEx=0.030000
UserToImuEy=-0.060000
UserToImuEz=0.000000
UserToImuDx=-0.090000
UserToImuDy=-0.008000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TmeLag=0.00001190
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=50.000000
UseRightDroopCorrection=3.000000
Temperature=10.000000
Pressure=1025.060000
ScannerScale=1.003520
ScannerOffset=0.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
[RangeOffset33KHz]
LastPulseRange=-2.630000
FirstPulseRange=-2.630000
SecondPulseRange=-2.630000

ThirdPulseRange=-2.630000
[RangeOffset50KHz]
LastPulseRange=-2.650000
FirstPulseRange=-2.650000
SecondPulseRange=-2.650000
ThirdPulseRange=-2.650000
[RangeOffset70KHz]
LastPulseRange=-2.700000
FirstPulseRange=-2.700000
SecondPulseRange=-2.700000
ThirdPulseRange=-2.700000
[RangeOffset100KHz]
LastPulseRange=-2.715000
FirstPulseRange=-2.715000
SecondPulseRange=-2.715000
ThirdPulseRange=-2.715000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000

ThirdPulseRange=0.000000
[Intensity]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[OpticalModel]
DX0=0.000000
DY0=0.000000
DZ0=0.000000
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=50.000000
DegreeOfPoly=-1
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=4
a0=0.005500000000000
a1=1.005138330000000
a2=-0.000091189490290
a3=0.000005049667587

Acquisition Area 3:

JD034F01

[Calibration]
AltmSerialNo=07SEN212
ImuType=LN200A1
ImuRate=200
IMURoll=-0.031400
IMUPitch=-0.008000
IMUHeading=0.124000
TimeLag=0.00001300
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=4.000000
UseRightDroopCorrection=0.000000
Temperature=20.000000
Pressure=998.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
ScannerScale=1.000000
ScannerOffset=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.000000
UserToImuDx=0.000000
UserToImuDy=0.000000
UserToImuDz=0.000000
UserToRefDx=0.000000
UserToRefDy=0.000000
UserToRefDz=0.000000
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[RangeOffset33KHz]

LastPulseRange=-5.259830
FirstPulseRange=-2.760800
SecondPulseRange=-2.827400
ThirdPulseRange=-2.885340
[RangeOffset50KHz]
LastPulseRange=-5.161000
FirstPulseRange=-2.661970
SecondPulseRange=-2.718570
ThirdPulseRange=-2.769510
[RangeOffset70KHz]
LastPulseRange=-5.121430
FirstPulseRange=-2.612400
SecondPulseRange=-2.669000
ThirdPulseRange=-2.739940
[RangeOffset100KHz]
LastPulseRange=-5.109640
FirstPulseRange=-2.600610
SecondPulseRange=-2.657210
ThirdPulseRange=-2.738160
[RangeOffset125KHz]
LastPulseRange=-4.990590
FirstPulseRange=-2.550560
SecondPulseRange=-2.640160
ThirdPulseRange=-2.740110
[RangeOffset142KHz]
LastPulseRange=-5.063390
FirstPulseRange=-2.624360
SecondPulseRange=-2.720960
ThirdPulseRange=-2.811900
[RangeOffset166KHz]
LastPulseRange=-5.079400
FirstPulseRange=-2.640370
SecondPulseRange=-2.736970
ThirdPulseRange=-2.827920

[ScannerPolynomialCoefficients]
DegreeOfPoly=5
a0=0.000300000000000
a1=1.023500000000000
a2=-0.000050000000000
a3=0.000001000000000
a4=-0.000000020000000
a5=-0.000000001000000
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=10.000000
DegreeOfPoly=0
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD041F01 _N40204

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.044140
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD041F01_N59936

[Calibration]
AltmSerialNo=07SEN212
ImuType=LN200A1
ImuRate=200
IMURoll=-0.021400
IMUPitch=-0.008000
IMUHeading=0.124000
TimeLag=0.00001300
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=4.000000
UseRightDroopCorrection=0.000000
Temperature=20.000000
Pressure=998.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
ScannerScale=1.000000
ScannerOffset=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.000000
UserToImuDx=0.000000
UserToImuDy=0.000000
UserToImuDz=0.000000
UserToRefDx=0.000000
UserToRefDy=0.000000
UserToRefDz=0.000000
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[RangeOffset33KHz]

LastPulseRange=-5.259830
FirstPulseRange=-2.760800
SecondPulseRange=-2.827400
ThirdPulseRange=-2.885340
[RangeOffset50KHz]
LastPulseRange=-5.161000
FirstPulseRange=-2.661970
SecondPulseRange=-2.718570
ThirdPulseRange=-2.769510
[RangeOffset70KHz]
LastPulseRange=-5.121430
FirstPulseRange=-2.612400
SecondPulseRange=-2.669000
ThirdPulseRange=-2.739940
[RangeOffset100KHz]
LastPulseRange=-5.109640
FirstPulseRange=-2.600610
SecondPulseRange=-2.657210
ThirdPulseRange=-2.738160
[RangeOffset125KHz]
LastPulseRange=-4.990590
FirstPulseRange=-2.550560
SecondPulseRange=-2.640160
ThirdPulseRange=-2.740110
[RangeOffset142KHz]
LastPulseRange=-5.063390
FirstPulseRange=-2.624360
SecondPulseRange=-2.720960
ThirdPulseRange=-2.811900
[RangeOffset166KHz]
LastPulseRange=-5.079400
FirstPulseRange=-2.640370
SecondPulseRange=-2.736970
ThirdPulseRange=-2.827920

[ScannerPolynomialCoefficients]
DegreeOfPoly=5
a0=0.000300000000000
a1=1.022300000000000
a2=-0.000050000000000
a3=0.000001000000000
a4=-0.000000020000000
a5=-0.000000001000000
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=10.000000
DegreeOfPoly=0
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD041F02_N40204

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.044140
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1

[Intensity]

ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD041F03_N40204

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.04140
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
 [Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD041F03_N59936

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.04140
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD042F01_N40204

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.084140
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD42F01_N59936

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.084140
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD043F01

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.084140
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD043F02

[Calibration]
AltmSerialNo=07SEN212
ImuType=LN200A1
ImuRate=200
IMURoll=-0.021400
IMUPitch=-0.008000
IMUHeading=0.124000
TimeLag=0.00001300
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=4.000000
UseRightDroopCorrection=0.000000
Temperature=20.000000
Pressure=998.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
ScannerScale=1.000000
ScannerOffset=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.000000
UserToImuDx=0.000000
UserToImuDy=0.000000
UserToImuDz=0.000000
UserToRefDx=0.000000
UserToRefDy=0.000000
UserToRefDz=0.000000
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-5.259830
FirstPulseRange=-2.760800
SecondPulseRange=-2.827400
ThirdPulseRange=-2.885340
[RangeOffset50KHz]
LastPulseRange=-5.161000
FirstPulseRange=-2.661970
SecondPulseRange=-2.718570
ThirdPulseRange=-2.769510
[RangeOffset70KHz]
LastPulseRange=-5.121430
FirstPulseRange=-2.612400
SecondPulseRange=-2.669000
ThirdPulseRange=-2.739940
[RangeOffset100KHz]
LastPulseRange=-5.109640
FirstPulseRange=-2.600610
SecondPulseRange=-2.657210
ThirdPulseRange=-2.738160
[RangeOffset125KHz]
LastPulseRange=-4.990590
FirstPulseRange=-2.550560
SecondPulseRange=-2.640160
ThirdPulseRange=-2.740110
[RangeOffset142KHz]
LastPulseRange=-5.063390
FirstPulseRange=-2.624360
SecondPulseRange=-2.720960
ThirdPulseRange=-2.811900
[RangeOffset166KHz]
LastPulseRange=-5.079400
FirstPulseRange=-2.640370
SecondPulseRange=-2.736970
ThirdPulseRange=-2.827920

[ScannerPolynomialCoefficients]
DegreeOfPoly=5
a0=0.000300000000000
a1=1.023500000000000
a2=-0.000050000000000
a3=0.000001000000000
a4=-0.000000020000000
a5=-0.000000001000000
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=10.000000
DegreeOfPoly=0
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD041F02_N59936

[Calibration]
AltmSerialNo=07SEN212
ImuType=LN200A1
ImuRate=200
IMURoll=-0.006400
IMUPitch=-0.008000
IMUHeading=0.224000
TimeLag=0.00001300
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=4.000000
UseRightDroopCorrection=0.000000
Temperature=20.000000
Pressure=998.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
ScannerScale=1.000000
ScannerOffset=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.000000
UserToImuDx=0.000000
UserToImuDy=0.000000
UserToImuDz=0.000000
UserToRefDx=0.000000
UserToRefDy=0.000000
UserToRefDz=0.000000
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[RangeOffset33KHz]

LastPulseRange=-5.259830
FirstPulseRange=-2.760800
SecondPulseRange=-2.827400
ThirdPulseRange=-2.885340
[RangeOffset50KHz]
LastPulseRange=-5.161000
FirstPulseRange=-2.661970
SecondPulseRange=-2.718570
ThirdPulseRange=-2.769510
[RangeOffset70KHz]
LastPulseRange=-5.121430
FirstPulseRange=-2.612400
SecondPulseRange=-2.669000
ThirdPulseRange=-2.739940
[RangeOffset100KHz]
LastPulseRange=-5.109640
FirstPulseRange=-2.600610
SecondPulseRange=-2.657210
ThirdPulseRange=-2.738160
[RangeOffset125KHz]
LastPulseRange=-4.990590
FirstPulseRange=-2.550560
SecondPulseRange=-2.640160
ThirdPulseRange=-2.740110
[RangeOffset142KHz]
LastPulseRange=-5.063390
FirstPulseRange=-2.624360
SecondPulseRange=-2.720960
ThirdPulseRange=-2.811900
[RangeOffset166KHz]
LastPulseRange=-5.079400
FirstPulseRange=-2.640370
SecondPulseRange=-2.736970
ThirdPulseRange=-2.827920

[ScannerPolynomialCoefficients]
DegreeOfPoly=5
a0=0.000300000000000
a1=1.023500000000000
a2=-0.000050000000000
a3=0.000001000000000
a4=-0.000000020000000
a5=-0.000000001000000
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=10.000000
DegreeOfPoly=0
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD40F01_N59936

[Calibration]
AltmSerialNo=07SEN212
ImuType=LN200A1
ImuRate=200
IMURoll=-0.006400
IMUPitch=-0.008000
IMUHeading=0.224000
TimeLag=0.00001300
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=4.000000
UseRightDroopCorrection=0.000000
Temperature=20.000000
Pressure=998.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000a
ScannerAngleLimitingSmootherOn=0
ScannerScale=1.000000
ScannerOffset=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.000000
UserToImuDx=0.000000
UserToImuDy=0.000000
UserToImuDz=0.000000
UserToRefDx=0.000000
UserToRefDy=0.000000
UserToRefDz=0.000000
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-5.259830
FirstPulseRange=-2.760800
SecondPulseRange=-2.827400
ThirdPulseRange=-2.885340
[RangeOffset50KHz]
LastPulseRange=-5.161000
FirstPulseRange=-2.661970
SecondPulseRange=-2.718570
ThirdPulseRange=-2.769510
[RangeOffset70KHz]
LastPulseRange=-5.121430
FirstPulseRange=-2.612400
SecondPulseRange=-2.669000
ThirdPulseRange=-2.739940
[RangeOffset100KHz]
LastPulseRange=-5.109640
FirstPulseRange=-2.600610
SecondPulseRange=-2.657210
ThirdPulseRange=-2.738160
[RangeOffset125KHz]
LastPulseRange=-4.990590
FirstPulseRange=-2.550560
SecondPulseRange=-2.640160
ThirdPulseRange=-2.740110
[RangeOffset142KHz]
LastPulseRange=-5.063390
FirstPulseRange=-2.624360
SecondPulseRange=-2.720960
ThirdPulseRange=-2.811900
[RangeOffset166KHz]
LastPulseRange=-5.079400
FirstPulseRange=-2.640370
SecondPulseRange=-2.736970
ThirdPulseRange=-2.827920

[ScannerPolynomialCoefficients]
DegreeOfPoly=5
a0=0.000300000000000
a1=1.023500000000000
a2=-0.000050000000000
a3=0.000001000000000
a4=-0.000000020000000
a5=-0.000000001000000
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=10.000000
DegreeOfPoly=0
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD039F01_N59936

[Calibration]
AltmSerialNo=07SEN212
ImuType=LN200A1
ImuRate=200
IMURoll=-0.006400
IMUPitch=-0.008000
IMUHeading=0.224000
TimeLag=0.00001300
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=4.000000
UseRightDroopCorrection=0.000000
Temperature=20.000000
Pressure=998.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000a
ScannerAngleLimitingSmootherOn=0
ScannerScale=1.000000
ScannerOffset=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.000000
UserToImuDx=0.000000
UserToImuDy=0.000000
UserToImuDz=0.000000
UserToRefDx=0.000000
UserToRefDy=0.000000
UserToRefDz=0.000000
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-5.259830
FirstPulseRange=-2.760800
SecondPulseRange=-2.827400
ThirdPulseRange=-2.885340
[RangeOffset50KHz]
LastPulseRange=-5.161000
FirstPulseRange=-2.661970
SecondPulseRange=-2.718570
ThirdPulseRange=-2.769510
[RangeOffset70KHz]
LastPulseRange=-5.121430
FirstPulseRange=-2.612400
SecondPulseRange=-2.669000
ThirdPulseRange=-2.739940
[RangeOffset100KHz]
LastPulseRange=-5.109640
FirstPulseRange=-2.600610
SecondPulseRange=-2.657210
ThirdPulseRange=-2.738160
[RangeOffset125KHz]
LastPulseRange=-4.990590
FirstPulseRange=-2.550560
SecondPulseRange=-2.640160
ThirdPulseRange=-2.740110
[RangeOffset142KHz]
LastPulseRange=-5.063390
FirstPulseRange=-2.624360
SecondPulseRange=-2.720960
ThirdPulseRange=-2.811900
[RangeOffset166KHz]
LastPulseRange=-5.079400
FirstPulseRange=-2.640370
SecondPulseRange=-2.736970
ThirdPulseRange=-2.827920

[ScannerPolynomialCoefficients]
DegreeOfPoly=5
a0=0.000300000000000
a1=1.023500000000000
a2=-0.000050000000000
a3=0.000001000000000
a4=-0.000000020000000
a5=-0.000000001000000
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=10.000000
DegreeOfPoly=0
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

JD042F02

[Calibration]
AltmSerialNo=07SEN212
ImuType=LN200A1
ImuRate=200
IMURoll=-0.006400
IMUPitch=-0.008000
IMUHeading=0.224000
TimeLag=0.00001300
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=4.000000
UseRightDroopCorrection=0.000000
Temperature=20.000000
Pressure=998.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
ScannerScale=1.000000
ScannerOffset=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.000000
UserToImuDx=0.000000
UserToImuDy=0.000000
UserToImuDz=0.000000
UserToRefDx=0.000000
UserToRefDy=0.000000
UserToRefDz=0.000000
[Intensity]
ntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[RangeOffset33KHz]

LastPulseRange=-5.259830
FirstPulseRange=-2.760800
SecondPulseRange=-2.827400
ThirdPulseRange=-2.885340
[RangeOffset50KHz]
LastPulseRange=-5.161000
FirstPulseRange=-2.661970
SecondPulseRange=-2.718570
ThirdPulseRange=-2.769510
[RangeOffset70KHz]
LastPulseRange=-5.121430
FirstPulseRange=-2.612400
SecondPulseRange=-2.669000
ThirdPulseRange=-2.739940
[RangeOffset100KHz]
LastPulseRange=-5.109640
FirstPulseRange=-2.600610

SecondPulseRange=-2.657210
ThirdPulseRange=-2.738160
[RangeOffset125KHz]
LastPulseRange=-4.990590
FirstPulseRange=-2.550560
SecondPulseRange=-2.640160
ThirdPulseRange=-2.740110
[RangeOffset142KHz]
LastPulseRange=-5.063390
FirstPulseRange=-2.624360
SecondPulseRange=-2.720960
ThirdPulseRange=-2.811900
[RangeOffset166KHz]
LastPulseRange=-5.079400
FirstPulseRange=-2.640370

SecondPulseRange=-2.736970
ThirdPulseRange=-2.827920
[ScannerPolynomialCoefficients]
DegreeOfPoly=5
a0=0.000300000000000
a1=1.023500000000000
a2=-0.000050000000000
a3=0.000001000000000
a4=-0.000000020000000
a5=-0.000000001000000
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=10.000000
DegreeOfPoly=0
f0=0.000000000000000
f1=0.000000000000000
f2=0.000000000000000
f3=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0

Acquisition Area 4:

JD351F01

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.006900
ScannerOffset=0.000000
IMURoll=-0.090140
IMUPitch=0.020300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000

Pressure=993.900000
[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
[RangeOffset33KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000

[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000

JD352F01

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType= LN200A1;
ImuRate= 200;
ScannerScale=1.006900
ScannerOffset=0.000000
IMURoll=-0.090140
IMUPitch=0.020300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000

UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
[INTENSITY]
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000

IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000

ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000

JD35401

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType= LN200A1;
ImuRate= 200;
ScannerScale=1.006900
ScannerOffset=0.000000
IMURoll=-0.090140
IMUPitch=0.020300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000

[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000

[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000

JD355F01

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType= LN200A1;
ImuRate= 200;
ScannerScale=1.006900
ScannerOffset=0.000000
IMURoll=-0.090140
IMUPitch=0.020300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000

Pressure=993.900000
[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000

[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000

JD360F01

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.006900
ScannerOffset=0.000000
IMURoll=-0.090140
IMUPitch=0.020300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000

Pressure=993.900000
[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000

[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000

JD360F02

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.006900
ScannerOffset=0.000000
IMURoll=-0.090140
IMUPitch=0.020300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000

Pressure=993.900000
[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000

[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.00000

JD005F01

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.006900
ScannerOffset=0.000000
IMURoll=-0.090140
IMUPitch=0.020300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000

Pressure=993.900000
[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000

[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000

JD018F01

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.041400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD018F02

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.041400
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD027F01

[CALIBRATION]
AltmSerialNo= 06Sen187;
ImuType=   LN200A1;
ImuRate=   200;
ScannerScale=1.008000
ScannerOffset=0.005500
IMURoll=-0.044140
IMUPitch=0.050300
IMUHeading=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.040000
UserToImuDx=-0.090000
UserToImuDy=1.000000
UserToImuDz=-0.096000
UserToRefDx=-0.051000
UserToRefDy=-0.030000
UserToRefDz=-0.488000
TimeLag=0.00001200
IntensityGainFor3070=20.000000
UseDroopCorrection=15.000000
Temperature=26.750000
Pressure=993.900000
meteoCorrMethod=1
[INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset50KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset70KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset100KHz]
LastPulseRange=-2.740000
FirstPulseRange=-2.740000
SecondPulseRange=-2.740000
ThirdPulseRange=-2.740000
[RangeOffset125KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset142KHz]
LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[RangeOffset166KHz]

LastPulseRange=0.000000
FirstPulseRange=0.000000
SecondPulseRange=0.000000
ThirdPulseRange=0.000000
[ScannerPolynomialCoefficients]
DegreeOfPoly=1
a0=0.000000000000000
a1=0.000000000000000
[AtmosphericFilter]
WindowSizePoints=15
ThresholdMeters=50.000000
FilterType=0
[OpticalModel]
BEAM0_PITCH=0.000000
BEAM0_ROLL=0.000000
DX0=0.000000
DY0=0.000000
DZ0=0.000000
MIRROR_PITCH=0.000000
WINDOW_PITCH=0.000000
WINDOW_YAW=0.000000
[MeteoCrystalPolyCoeff]
CrystalFreq=100.000000
CrystalResolution=0.000000
DegreeOfPoly=-1

JD031F01

[Calibration]
AltmSerialNo=07SEN212
ImuType=LN200A1
ImuRate=200
IMURoll=-0.031400
IMUPitch=-0.008000
IMUHeading=0.124000
TimeLag=0.00001300
IntensityGainFor3070=20.000000
UseLeftDroopCorrection=4.000000
UseRightDroopCorrection=0.000000
Temperature=20.000000
Pressure=998.000000
meteoCorrMethod=1
scannerAngleDiffThreshold=2.000000
ScannerAngleLimitingSmootherOn=0
ScannerScale=1.000000
ScannerOffset=0.000000
UserToImuEx=0.000000
UserToImuEy=0.000000
UserToImuEz=0.000000
UserToImuDx=0.000000
UserToImuDy=0.000000
UserToImuDz=0.000000
UserToRefDx=0.000000
UserToRefDy=0.000000
UserToRefDz=0.000000
 [INTENSITY]
IntensityTable33Khz=%PATH%\5112_33kHz.txt
IntensityTable50Khz=%PATH%\5112_50kHz.txt
IntensityTable70Khz=%PATH%\5112_70kHz.txt
IntensityTable100Khz=%PATH%\5112_100kHz.txt
 [RangeOffset33KHz]

LastPulseRange=-5.259830
FirstPulseRange=-2.760800
SecondPulseRange=-2.827400
ThirdPulseRange=-2.885340
[RangeOffset50KHz]
LastPulseRange=-5.161000
FirstPulseRange=-2.661970
SecondPulseRange=-2.718570
ThirdPulseRange=-2.769510
[RangeOffset70KHz]
LastPulseRange=-5.121430
FirstPulseRange=-2.612400
SecondPulseRange=-2.669000
ThirdPulseRange=-2.739940
[RangeOffset100KHz]
LastPulseRange=-5.109640
FirstPulseRange=-2.600610
SecondPulseRange=-2.657210
ThirdPulseRange=-2.738160
[RangeOffset125KHz]
LastPulseRange=-4.990590
FirstPulseRange=-2.550560
SecondPulseRange=-2.640160
ThirdPulseRange=-2.740110
[RangeOffset142KHz]
LastPulseRange=-5.063390
FirstPulseRange=-2.624360
SecondPulseRange=-2.720960
ThirdPulseRange=-2.811900
[RangeOffset166KHz]
LastPulseRange=-5.079400
FirstPulseRange=-2.640370
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JD033F01

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JD033F02

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JD034F01

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JD043F03

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FilterType

Each strip was then imported into a project using TerraScan (Terrasolid, Ltd.) and the project management tool GeoCue (GeoCue Corp.). By creating a project the various flightlines are combined while breaking the dataset as a whole into manageable pieces. This process also converts the dataset from the geographic coordinate system (NAD83) to the State Plane Coordinate System (NAD83), Mississippi West, Feet, and utilizing standard ESRI transformations. The ellipsoid height values were converted to NAVD88, Feet, orthometric values using Geoid03, provided by NGS.

Individual lines were then checked against adjacent lines and intersecting control lines to ensure a cohesive dataset. The data from each line were then combined and LiDAR intensity images were produced to visually check the horizontal positioning of the LiDAR data.

Figure 1 - Qualitative check of horizontal accuracy centerline of pavement validation points
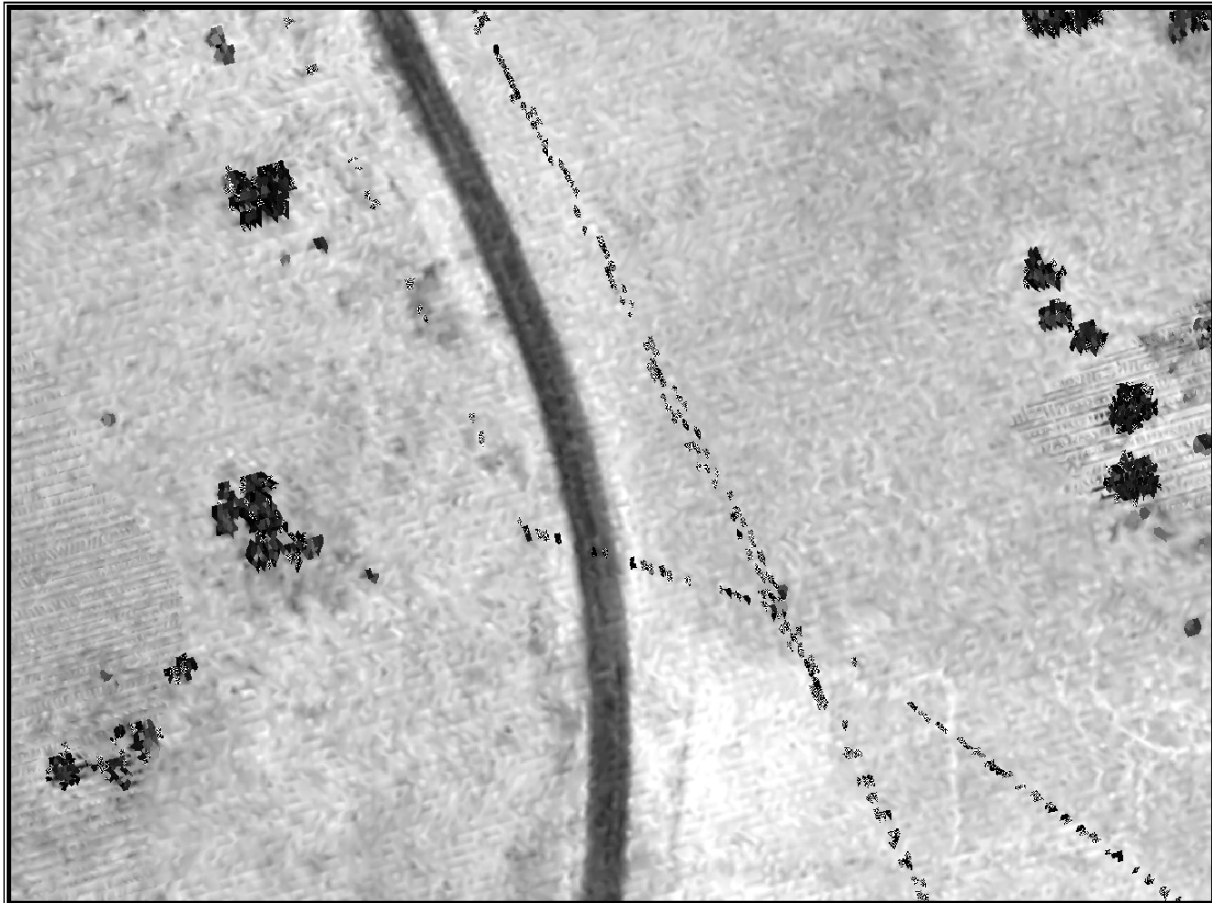
Figure 2- Qualitative check of horizontal accuracy centerline of pavement validation points

A classification routine was then run to determine the initial surface model. This initial surface model was then reduced using Optimal Geomatics' proprietary methods to create the final bare-earth dataset. Upon reaching a satisfactory classification result the bareearth data were then checked against the control and validation points across the project area. The results of these checks showed the DEM fitting the validation points well (see LiDAR DEM Quality Control Report for results).

LiDAR CLASSIFICATION

The calibrated LiDAR data was run through automated classification routines in GeoCue. A manual inspection of the auto-classified data was conducted and corrections were made to the classification if required. An additional quality check is conducted in the 3D environment during the collection of the breakline data. Any mis-classified data is corrected during the stereo compilation of the breaklines. The data was classified int the following classes: ground, hydrography, unclassified
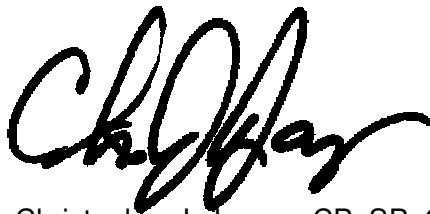
BREAKLINE COLLECTION (LiDARgrammetry)

Stereo pairs were generated from the LiDAR intensity data using Geocue and LiDAR1CuePac (Geocue Corp.). LiDARgrammetry was then utilized to collect breaklines in a stereo environment where necessary to hydro enforce the terrain model. These breaklines were collected as a 3D element in the MicroStation (Bentley Systems, Inc.) environment utilizing ISSD (Z/I Imaging). Contours were then created utilizing TerraModeler (Terrasolid, Ltd.) from a TIN generated from the final surface data.

DEM CREATION

Following the completion of final LiDAR classification and breakline collection, the LiDAR data was post-processed to buffer points off of breaklines and remove any existing points from within polygonal hydrographic features. After validating the success of the process, contours were developed to perform a quality check of the final surface. The contours were interactively reviewed in Microstation to validate the absence of surface anomalies. Upon completion of the quality control inspection, a combination of LP360, ESRI ArcGIS and ArcGIS extensions were utilized to import the final Bare-Earth LiDAR points and breaklines into ArcInfo and generate Digital Terrain Model TINs. The TINs were clipped to correspond with the final index and hillshades of the TINs were generated to use as a final quality check of the data. Once the QC of the TINs was completed, GRIDs with a 5' posting were generated using ESRI's 3D Analyst toolbox command Tin to Raster.

The Digital Surface Models were created in a similar fashion except First-Return LiDAR data was used as the mass point input and no breaklines were used in the generation of the TIN models. The DSM GRID deliverables were then generated using the 3D Analyst toolbox command Tin to Raster.

Christopher J. Jaeger, CP, SP, GISP
Project Manager
Aeroquest Optimal, Inc.

PROJECT COMPLETION REPORT

MISSISSIPPI DELTA LIDAR COLLECTION AND PROCESSING PHASE III

Contract # W912EE-07-D-0008
Task Order # 0004

SUBMITTED BY:

Aeroquest Optimal, Inc.
4975 Bradford Drive, NW
Suite 100
Huntsville, Alabama 35805
(256) 882-7788

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DESCRIPTION OF WORK

USACE, Vicksburg District required the acquisition of LIDAR data and aerial digital photography for approximately 2.6 million acres within the Vicksburg District. The data was used to create orthorectified mosaics, digital terrain models and digital surface models that will used as geometry input to USACE hydraulic modeling program.

GROUND CONTROL SURVEY

Maptech Surveying based in Jackson, Mississippi, was subcontracted to establish 28 aerial targets/temporary control points to support the orthorectification of the imagery as well as provide controlled base station locations from which to collect RTK survey points used in the validation of the LiDAR derived elevation data. The control survey was conducted between October and November of 2009.

Aeroquest Optimal provided base station support for the collection of the LiDAR and collected a total of 679 RTK control points that were used to validate the accuracy of the LiDAR DEM.

During the photo collection, subcontractor Richard Crouse and Associates provided base station support for the acquisition.

LiDAR FLIGHT

a. **Flight Planning.** Aeroquest Optimal and subcontractor Laser Mapping Specialists teamed for the acquisition of the LiDAR data. Aeroquest Optimal's aircraft was outfitted with an OPTECH ALTM 3100 LiDAR sensor while LMSI's aircraft were outfitted with an OPTECH ALTM 3100EA LiDAR sensor and and OPTECH Gemini LiDAR sensor. Because all the sensors were OPTECH sensors, flight plans using the ALTM-NAV software were interchangeable between systems and integration of the data from the different sensors was seamless.

It was determined that the optimal flight plan parameters for the project were:

ALTM 3100 and ALTM 3100EA		ALTM Gemini	
Repetition Rate	70 KHz	Repetition Rate	100 KHz
Scan Frequency	38 Hz	Scan Frequency	38.1 Hz
Altitude (AGL)	3,280'	Altitude (AGL)	5,900'
Scan Angle (Full FOV)	42°	Scan Angle (Full FOV)	35.6°
Side Overlap	30%	Side Overlap	30%
Cross-Track Resolution	2.736'	Cross-Track Resolution	2.890'
Down-Track Resolution	2.664'	Down-Track Resolution	2.881'
Nominal Pulse Spacing	2.700'	Nominal Pulse Spacing	2.886'

The project was broken into four separate areas for LiDAR data acquisition. This allowed the acquisition of the data to be planned to minimize IMU drift, better plan differing areas of terrain and allow the use of multiple sensors simultaneously. The resulting plans consisted of 487 flight lines plus 13 control lines and were estimated to take 132.8 sensor hours to complete.

b. **Acquisition.**

During acquisition, two base stations were used to support the precise positioning and orientation of the LiDAR sensor head. At times an additional base station set at the Oxford Airport was used as a back-up. The base stations were positioned so that the aircraft would be no further than 20-miles from a single base station at any time during the flight and were placed on the control points established by Maptech during the ground control phase of the project.

The LiDAR acquisition commenced on December 17, 2009 and was completed on March 5, 2010. Initial processing of the LiDAR data determined that reflights were necessary; in part because of sensor or base station malfunctions. The reflights occurred between June 27, 2010 and July 9, 2010. To achieve better penetration of the vegetation during the reflights, two passes were conducted over the reflight area; one in each direction.

Detailed flight information and flight logs can be found in the separate Flight Report submitted with the project.

PHOTO FLIGHT

a. **Flight Planning.** The aerial photography acquisition was subcontracted to Richard Crouse and Associates of the Carolinas (RC&A). They used Track'Air flight planning software using the following parameters to achieve the desired specifications:

Altitude (AGL)	17,300'
Forward Overlap	60%
Side Overlap	30%

It was determined that the project would require 30 flight lines with a total of 1,567 exposures and approximately 26.3 sensor hours to complete.

b. **Acquisition.**

RC&A acquired the digital imagery using two Z/I Digital Mapping Cameras supported by a ground base station located at the Oxford University Airport.

The imagery was collected in a single day using two Z/I DMCs operating simultaneously. The collection was completed on January 15, 2010.

Detailed flight information and flight logs can be found in the separate Flight Report submitted with the project.

AGPS/IMU PROCESSING

Upon completion of the flight portions of the project the GPS data was post processed for quality and backed up. For redundancy and accuracy purposes, the airborne GPS data were processed from the base stations using GrafNav from Waypoint Consulting, Inc. These trajectories were used in the processing of the inertial data. The inertial data were processed using PosProc from Applanix, Inc. This software produces an SBET ("smooth best estimate of trajectory") using the GPS trajectory from GrafNav and the roll, pitch and heading information recorded by the POS (Position and Orientation System). Results were favorable for all flights and errors are estimated to be less than 5cm.

PHOTO PROCESSING

The raw digital imagery was downloaded and processed using Z/I DMC software. The approximate pixel resolution of the digital imagery was approximately 1.73' that was later resampled to a pixel size of 2.0' during orthophoto production. The IMU data for the imagery flights was processed and a photo orientation QC was performed. The objective of the photo orientation QC was to determine whether the provided Exterior Orientations (EO) were of sufficient accuracy to support the production of digital orthophotography to meet ASPRS Class II standards. This was achieved utilizing post-processed AGPS/IMU data imported into Z/I Imaging's ISAT software, along with the DMC imagery.

Portions of the project area were then reviewed stereoscopically, checking for XY parallax, and the fit of the LiDAR data on the observed earth's surface. In all of the observations, the parallax solution and elevation data met the requirements for the generation of orthophotography to ASPRS Class II standards.

LiDAR DATA PROCESSING

For redundancy and accuracy purposes, the airborne GPS data were processed from two base stations using POSGPS from Applanix, Inc. The agreement between a minimum of two solutions checked or combined between a minimum of two stations was better than 10 cm in each of X, Y, and Z. These trajectories were used in the processing of the inertial data. The inertial data were processed using POSProc from Applanix, Inc. This software produces an SBET ("smooth best estimate of trajectory") using the GPS trajectory from POSGPS and the roll, pitch and heading information recorded by the POS (Position Orientation System).

DASHMap uses the SBET to generate a set of data points for each laser return in the LAS file format. Each data point is assigned an echo value so it can be segregated based on the first and last pulse information. This project's data were processed in strip form, meaning each flight line was processed independently. Processing the lines individually provides the data analyst with the ability to QC the overlap between lines.

Each strip was then imported into a project using TerraScan (Terrasolid, Ltd.) and the project management tool GeoCue (GeoCue Corp.). By creating a project the various flightlines are combined while breaking the dataset as a whole into manageable pieces. This process also converts the dataset from the geographic coordinate system (NAD83) to the State Plane Coordinate System (NAD83), Mississippi West, Feet, and utilizing standard ESRI

transformations. The ellipsoid height values were converted to NAVD88, Feet, orthometric values using Geoid03, provided by NGS.

Individual lines were then checked against adjacent lines and intersecting control lines to ensure a cohesive dataset. The data from each line were then combined and LiDAR intensity images were produced to visually check the horizontal positioning of the LiDAR data.

Stereo pairs were generated from the LiDAR intensity data using Geocue and LiDAR1CuePac (Geocue Corp.). LiDARgrammetry was then utilized to collect breaklines where necessary along hydro features to support the contour generation. These breaklines were collected as a 3D element in the MicroStation (Bentley Systems, Inc.) environment utilizing ISSD (Z/I Imaging). A Triangular Irregular Network (TIN) was generated using the final surface data. Contours were then created from the TIN utilizing TerraModeler (Terrasolid, Ltd.).

ORTHOPHOTOGRAPHY

Orthophoto generation was performed at the Optimal Geomatic's Huntsville, Alabama facility. The rectification was accomplished using a combination of semi-automated and interactive processes. Optimal Geomatics used Z/I Base Rectifier and an internally developed rectification engine as primary platforms for orthorectification. Input information for the rectification process included the raw digital imagery, a thinned LiDAR DEM, exterior orientation angles, and camera parameters. During the rectification process, the imagery was re-sampled to a ground resolution of 2' and corrected for scale, camera attitude, and relief, resulting in fully geo-referenced image maps or digital orthophotos. The orthophotos were then subjected to radiometric adjustments and tone balancing using a combination of AGFA's Apertune software and Adobe Photoshop. Upon satisfactory completion of tone balancing, mosaic lines were placed within image overlap areas to stitch the orthophotos into a single dataset. The placement of the seamlines were generated automatically when possible and interactively reviewed and edited to ensure that the joins between images were well masked. After completion of the seamline placement, the imagery was automatically mosaicked and extracted to pre-determined tile extents. These tiles were then subjected to a comprehensive and rigorous quality control process. Each image was individually inspected to validate horizontal accuracy and to verify the absence of artifacts associated with the rectification process. After the artifacts were edited as required using Photoshop, the entire dataset was reviewed as a single scene in order to provide a final validation of tone and project coverage.

DEM PRODUCTION

Following the completion of final LiDAR classification and breakline collection, the LiDAR data was post-processed to buffer points off of breaklines and remove any existing points from within polygonal hydrographic features. After validating the success of the process, contours were developed to perform a quality check of the final surface. The contours were interactively reviewed in Microstation to validate the absence of surface anomalies. Upon completion of the quality control inspection, a combination of LP360, ESRI ArcGIS and ArcGIS extensions were utilized to import the final Bare-Earth LiDAR points and breaklines into ArcInfo and generate Digital Terrain Model TINs. The TINs were clipped to correspond with the final index and hillshades of the TINs were generated to use as a final quality check of the data. Once the QC of the TINs was completed, GRIDs with a 5' posting were generated using ESRI's 3D Analyst toolbox command Tin to Raster.

The Digital Surface Models were created in a similar fashion except First-Return LiDAR data was used as the mass point input and no breaklines were used in the generation of the TIN models. The DSM GRID deliverables were then generated using the 3D Analyst toolbox command Tin to Raster.

MISCELLANEOUS SHAPEFILE PRODUCTION

Shapefiles were generated for the tile index, LiDAR bin index, breaklines, 2' contours, control points, test points, and the photo centers. A file geodatabase was created using SDSFIE 2.6 Geodatabase Builder to insure SDSFIE compliance of the individual deliverable shapefiles. The initial shapefiles were imported into the file geodatabase using SDSFIE 2.6 Data Loader Extender and then exported out of the geodatabase into shapefile format. This allows all exported data to retain the SDSFIE compliance and attribution. The LiDAR flight lines however do not have a corresponding SDSFIE feature class and were exported into shapefile format using the flight trajectory files and maintaining the flight line attribution.

DATA ACCURACY

a. **Orthophotography.** The digital imagery was checked in stereo after the aerial triangulation adjustment against the surveyed aerial photography targets. The results of the check indicate that the orthophotography would have an approximate $RMSE_x$ of 1.801' and an $RMSE_y$ of 2.101'. This results in an approximate circular error of 4.790' at the 95% confidence level using the formula: $2.4477 * 0.5 * (RMSE_x + RMSE_y)$

b. **LiDAR.** The LiDAR data was tested against control points established using RTK GPS techniques. Six-hundred and seventy-nine (679) test points were collected throughout the project area in several vegetation categories. The RMSE calculations were performed on the bare-earth, orthometric surface and determined for each of the four LiDAR acquisition areas separately. Results of the vertical accuracy tests are:

FUNDAMENTAL

	U.S Svy Feet	Meters
Average Δz	0.009	0.003
Minimum Δz	-0.610	-0.186
Maximum Δz	0.841	0.256
Average Magnitude	0.137	0.042
$RMSE_z$	0.186	0.057
Standard Deviation	0.186	0.057

CONSOLIDATED

	U.S Svy Feet	Meters
Average Δz	0.046	0.014
Minimum Δz	-0.610	-0.186
Maximum Δz	0.841	0.256
Average Magnitude	0.161	0.049
$RMSE_z$	0.220	0.067
Standard Deviation	0.215	0.066

VERTICAL ACCURACY STATEMENTS

The DEMs for this survey area are believed to be accurate. The inclusion of breaklines collected from the LiDAR data provides for a more accurate DEM around hydro edges than could be achieved with the LiDAR points alone.

The following statements are derived in accordance with the ASPRS Guidelines for Vertical Accuracy Reporting for LiDAR Data (Flood, M., 2004).

Tested 0.365 U.S. survey feet (0.111 meters) fundamental vertical accuracy at the ninety-five percent confidence level in open terrain using $RMSE_z$ x 1.9600.

Tested 0.431 U.S. survey feet (0.131 meters) consolidated vertical accuracy at the ninety-five percent confidence level in open terrain, high grass and trees using $RMSE_z$ x 1.9600.

HORIZONTAL ACCURACY STATEMENTS

OPTECH ALTM 3100 LiDAR Sensor:
Expected horizontal accuracy of elevation products as determined from system studies and other methods is 1/2,000th of the flight height, which, in the instance of this particular project, was 3,280 U.S. survey feet (1,000 meters) AGL, giving a horizontal tolerance of less than 1.640 U.S. survey feet (0.500 meters).

OPTECH ALTM 3100EA LiDAR Sensor:
Expected horizontal accuracy of elevation products as determined from system studies and other methods is 1/5,500th of the flight height, which, in the instance of this particular project, was 3,280 U.S. survey feet (1,000 meters) AGL, giving a horizontal tolerance of less than 0.596 U.S. survey feet (0.182 meters).

OPTECH ALTM Gemini LiDAR Sensor:
Expected horizontal accuracy of elevation products as determined from system studies and other methods is 1/11,000th of the flight height, which, in the instance of this particular project, was 5,905 U.S. survey feet (1,800 meters) AGL, giving a horizontal tolerance of less than 0.537 U.S. survey feet (0.164 meters).

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