Quality Report

Generated with Pix4Denterprise version 4.3.31

Important: Click on the different icons for:

Help to analyze the results in the Quality Report

Additional information about the sections

Click here for additional tips to analyze the Quality Report

Summary

Project	sequ_4k_2_re
Processed	2019-01-24 11:56:57
Camera Model Name(s)	RedEdge_5.5_1280x960 (Blue)(1), RedEdge_5.5_1280x960 (Green)(2), RedEdge_5.5_1280x960 (Red)(3), RedEdge_5.5_1280x960 (NIR)(4), RedEdge_5.5_1280x960 (Red edge)(5), RedEdge_5.5_1280x960 (Blue)(6), RedEdge_5.5_1280x960 (Green)(7), RedEdge_5.5_1280x960 (Red)(8), RedEdge_5.5_1280x960 (NIR)(9), RedEdge_5.5_1280x960 (Red edge)(10)
Rig name(s)	«MicaSense 5 band_merge_sequ_4k_2_re_a», «MicaSense 5 band_merge_sequ_4k_2_re_b»
Average Ground Sampling Distance (GSD)	8.13 cm / 3.20 in
Area Covered	0.628 km^2 / 62.8286 ha / 0.24 sq. mi. / 155.3331 acres
Time for Initial Processing (without report)	12h:23m:52s

Quality Check

Images	median of 33771 keypoints per image	✓
Dataset	12281 out of 12335 images calibrated (99%), 10 images disabled	✓
Camera Optimization	1.96% relative difference between initial and optimized internal camera parameters	✓
Matching	median of 6661.95 matches per calibrated image	✓
Georeferencing	yes, no 3D GCP	⚠

Preview

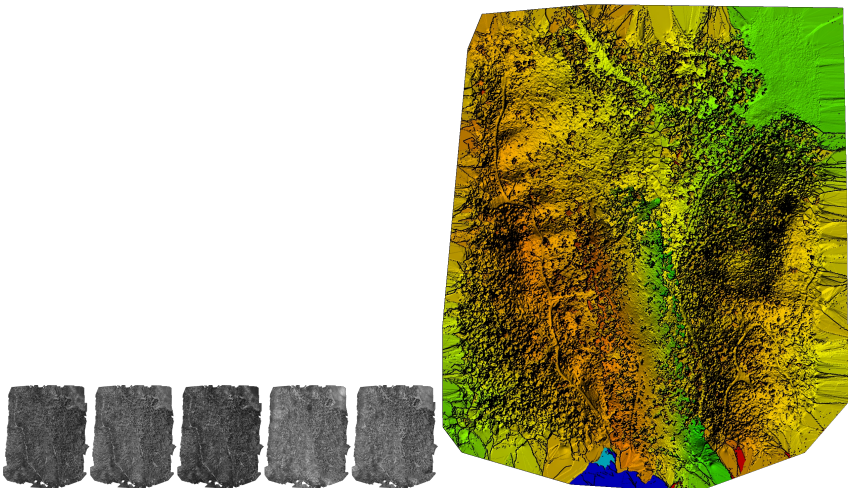


Figure 1: Orthomosaic and the corresponding sparse Digital Surface Model (DSM) before densification.

Calibration Details

Number of Calibrated Images	12281 out of 12345
Number of Geolocated Images	12345 out of 12345

Initial Image Positions

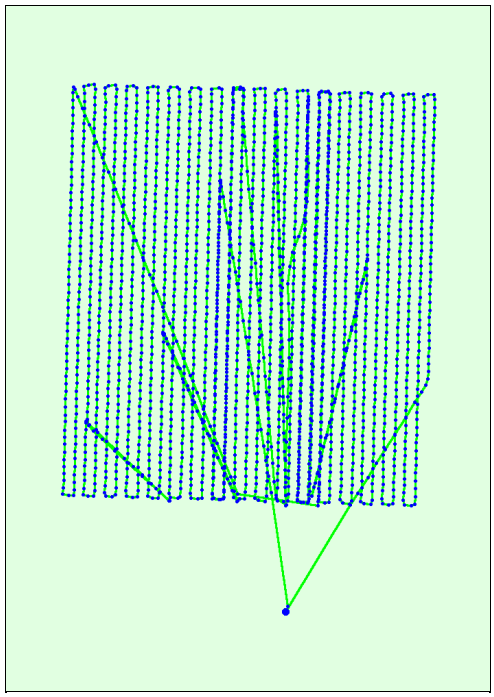


Figure 2: Top view of the initial image position. The green line follows the position of the images in time starting from the large blue dot.

Computed Image/GCPs/Manual Tie Points Positions

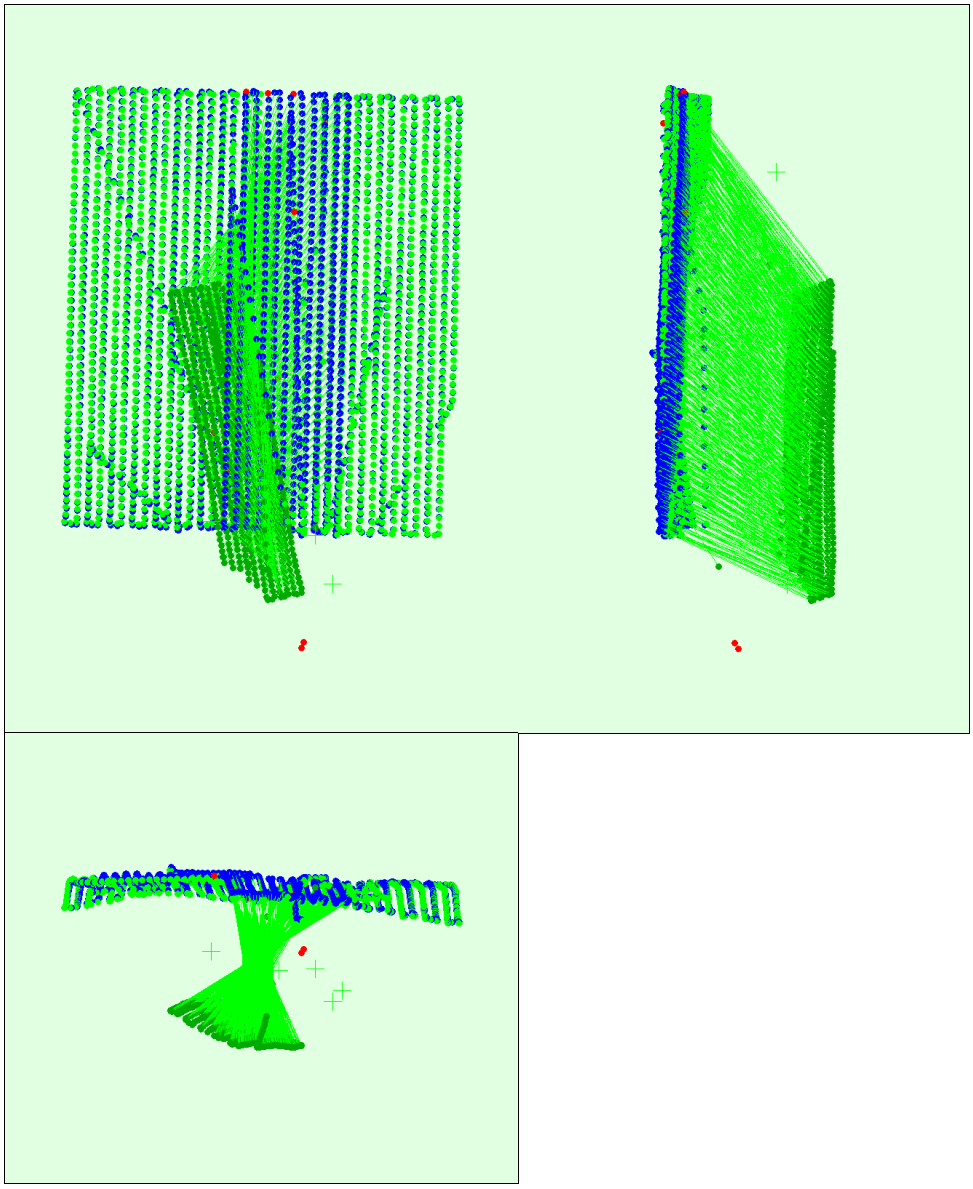


Figure 3: Offset between initial (blue dots) and computed (green dots) image positions as well as the offset between the GCPs initial positions (blue crosses) and their computed positions (green crosses) in the top-view (XY plane), front-view (XZ plane), and side-view (YZ

plane). Red dots indicate disabled or uncalibrated images.

Absolute camera position and orientation uncertainties

Uncertainty computation failed.

Overlap

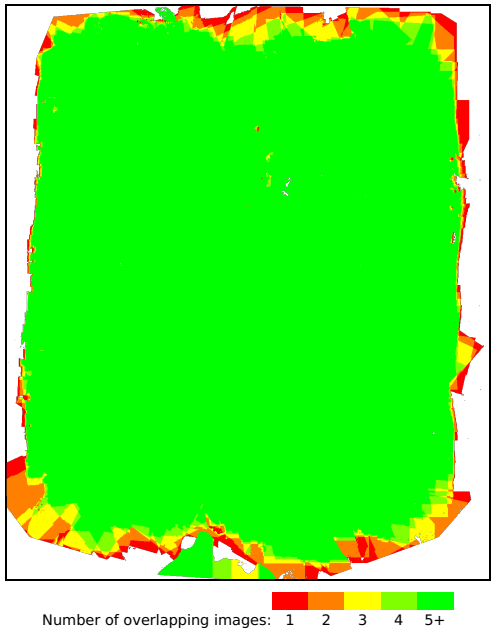


**Figure 4: Number of overlapping images computed for each pixel of the orthomosaic.
Red and yellow areas indicate low overlap for which poor results may be generated. Green areas indicate an overlap of over 5 images for every pixel. Good quality results will be generated as long as the number of keypoint matches is also sufficient for these areas (see Figure 5 for keypoint matches).**

Bundle Block Adjustment Details

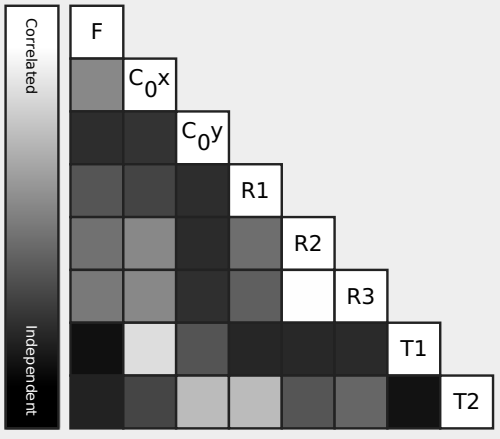
Number of 2D Keypoint Observations for Bundle Block Adjustment	23344784
Number of 3D Points for Bundle Block Adjustment	7679074
Mean Reprojection Error [pixels]	0.206

Internal Camera Parameters

RedEdge_5.5_1280x960 (Blue)(1). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	657.605 [pixel] 2.466 [mm]	495.123 [pixel] 1.857 [mm]	-0.097	0.149	-0.017	0.000	0.000
Optimized Values	1437.387 [pixel] 5.390 [mm]	652.759 [pixel] 2.448 [mm]	496.140 [pixel] 1.861 [mm]	-0.092	0.129	-0.011	0.000	-0.001
Uncertainties (Sigma)	68247.060 [pixel] 255.926 [mm]	10556.113 [pixel] 39.585 [mm]	11029.238 [pixel] 41.360 [mm]	45.029	88.048	10.783	4.407	3.331



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

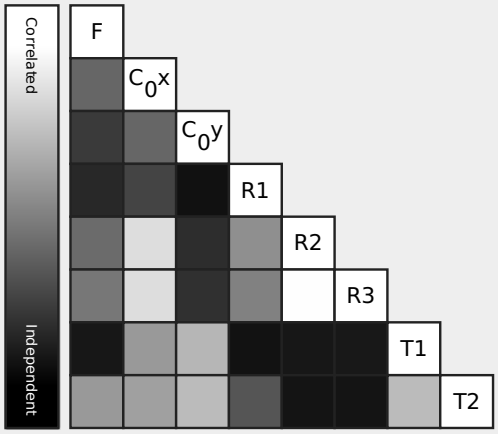
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

RedEdge_5.5_1280x960 (Green)(2). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	657.835 [pixel] 2.467 [mm]	481.299 [pixel] 1.805 [mm]	-0.099	0.143	-0.021	0.000	0.001
Optimized Values	1434.526 [pixel] 5.379 [mm]	655.189 [pixel] 2.457 [mm]	482.942 [pixel] 1.811 [mm]	-0.096	0.133	-0.017	0.001	0.000
Uncertainties (Sigma)	67509.271 [pixel] 253.160 [mm]	9348.597 [pixel] 35.057 [mm]	11173.018 [pixel] 41.899 [mm]	30.237	92.548	17.148	2.447	1.923



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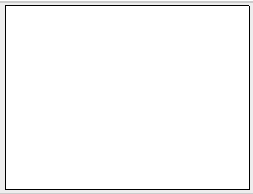

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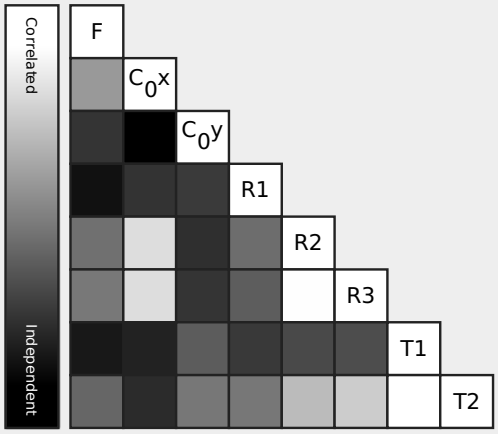
Internal Camera Parameters

RedEdge_5.5_1280x960 (Red)(3). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	657.200 [pixel] 2.465 [mm]	493.864 [pixel] 1.852 [mm]	-0.100	0.131	-0.003	-0.000	0.000
Optimized Values	1439.413 [pixel] 5.398 [mm]	651.918 [pixel] 2.445 [mm]	496.269 [pixel] 1.861 [mm]	-0.094	0.114	-0.010	0.000	-0.001
Uncertainties (Sigma)	68550.252 [pixel] 257.063 [mm]	10667.652 [pixel] 40.004 [mm]	11357.115 [pixel] 42.589 [mm]	45.380	77.406	9.328	4.503	3.183



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

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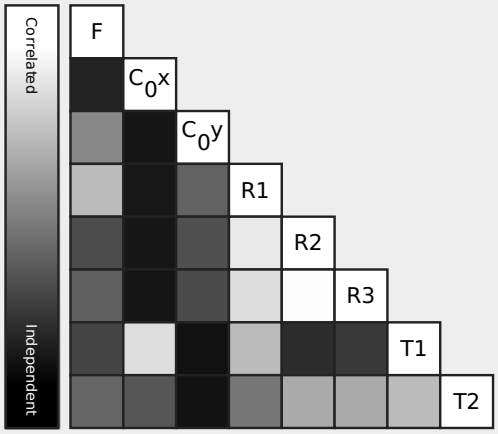
Internal Camera Parameters

RedEdge_5.5_1280x960 (NIR)(4). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	666.605 [pixel] 2.500 [mm]	482.221 [pixel] 1.808 [mm]	-0.105	0.153	-0.045	0.000	0.000
Optimized Values	1437.392 [pixel] 5.390 [mm]	662.313 [pixel] 2.484 [mm]	484.278 [pixel] 1.816 [mm]	-0.064	-0.005	0.000	0.000	-0.000
Uncertainties (Sigma)	69875.428 [pixel] 262.033 [mm]	21045.870 [pixel] 78.922 [mm]	19297.929 [pixel] 72.367 [mm]	25.855	8.722	0.459	3.107	3.145



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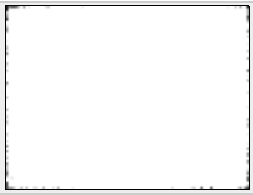

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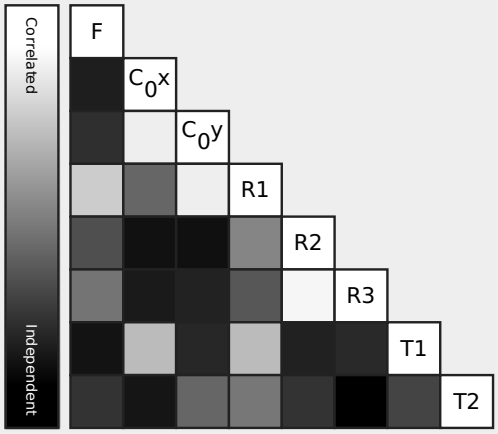
Internal Camera Parameters

RedEdge_5.5_1280x960 (Red edge)(5). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	661.440 [pixel] 2.480 [mm]	495.379 [pixel] 1.858 [mm]	-0.103	0.155	-0.049	0.000	0.001
Optimized Values	1437.758 [pixel] 5.392 [mm]	658.580 [pixel] 2.470 [mm]	496.166 [pixel] 1.861 [mm]	-0.096	0.136	-0.065	0.000	0.000
Uncertainties (Sigma)	68087.975 [pixel] 255.330 [mm]	9558.681 [pixel] 35.845 [mm]	10158.756 [pixel] 38.095 [mm]	45.965	119.936	65.499	4.468	3.356



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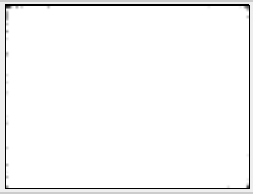

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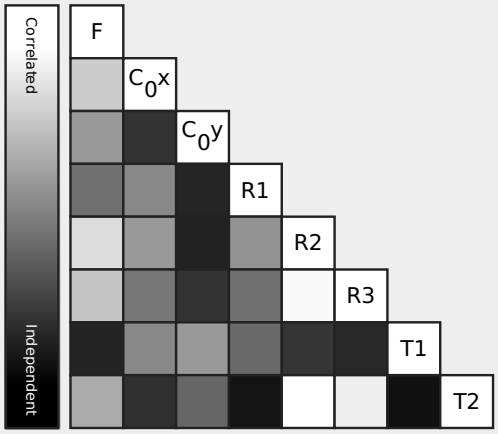
Internal Camera Parameters

RedEdge_5.5_1280x960 (Blue)(6). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	657.605 [pixel] 2.466 [mm]	495.123 [pixel] 1.857 [mm]	-0.097	0.149	-0.017	0.000	0.000
Optimized Values	1438.519 [pixel] 5.394 [mm]	652.770 [pixel] 2.448 [mm]	495.318 [pixel] 1.857 [mm]	-0.098	0.128	-0.005	0.000	-0.001
Uncertainties (Sigma)	78443.909 [pixel] 294.165 [mm]	11076.761 [pixel] 41.538 [mm]	12297.583 [pixel] 46.116 [mm]	24.498	8.645	0.348	1.254	1.231



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

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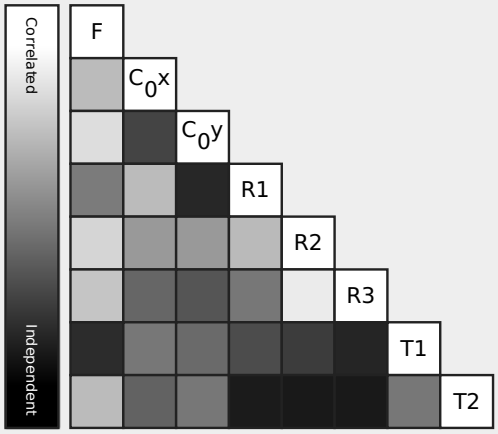
Internal Camera Parameters

RedEdge_5.5_1280x960 (Green)(7). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	657.835 [pixel] 2.467 [mm]	481.299 [pixel] 1.805 [mm]	-0.099	0.143	-0.021	0.000	0.001
Optimized Values	1435.655 [pixel] 5.384 [mm]	655.352 [pixel] 2.458 [mm]	481.619 [pixel] 1.806 [mm]	-0.103	0.136	-0.015	0.001	0.000
Uncertainties (Sigma)	77755.755 [pixel] 291.584 [mm]	10701.658 [pixel] 40.131 [mm]	11977.178 [pixel] 44.914 [mm]	25.841	10.883	1.082	1.869	1.510



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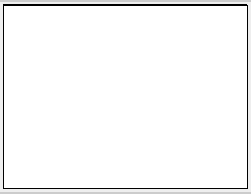

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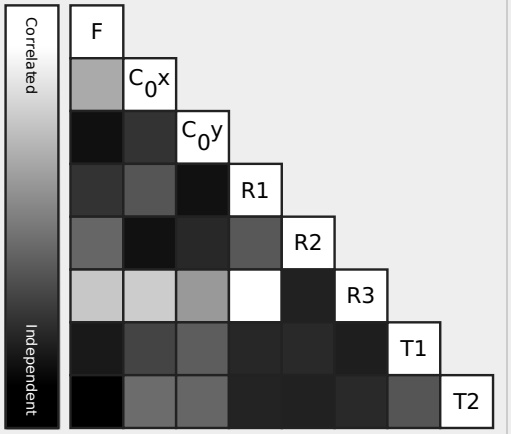
Internal Camera Parameters

RedEdge_5.5_1280x960 (Red)(8). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	657.200 [pixel] 2.465 [mm]	493.864 [pixel] 1.852 [mm]	-0.100	0.131	-0.003	-0.000	0.000
Optimized Values	1440.646 [pixel] 5.402 [mm]	651.625 [pixel] 2.444 [mm]	493.554 [pixel] 1.851 [mm]	-0.100	0.101	0.042	-0.000	-0.001
Uncertainties (Sigma)	80015.550 [pixel] 300.058 [mm]	11560.394 [pixel] 43.351 [mm]	12763.618 [pixel] 47.864 [mm]	48.212	10.730	3.014	6.220	5.022



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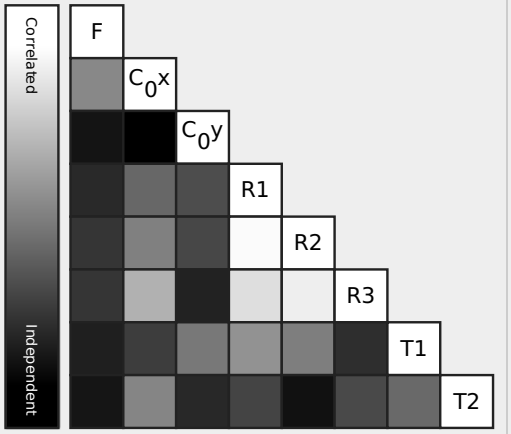
Internal Camera Parameters

RedEdge_5.5_1280x960 (NIR)(9). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	666.605 [pixel] 2.500 [mm]	482.221 [pixel] 1.808 [mm]	-0.105	0.153	-0.045	0.000	0.000
Optimized Values	1438.351 [pixel] 5.394 [mm]	654.217 [pixel] 2.453 [mm]	481.141 [pixel] 1.804 [mm]	-0.071	0.001	-0.000	0.000	-0.002
Uncertainties (Sigma)	80377.694 [pixel] 301.416 [mm]	27376.575 [pixel] 102.662 [mm]	14295.832 [pixel] 53.609 [mm]	4.141	0.193	0.002	1.413	0.914



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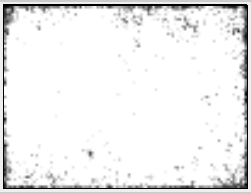

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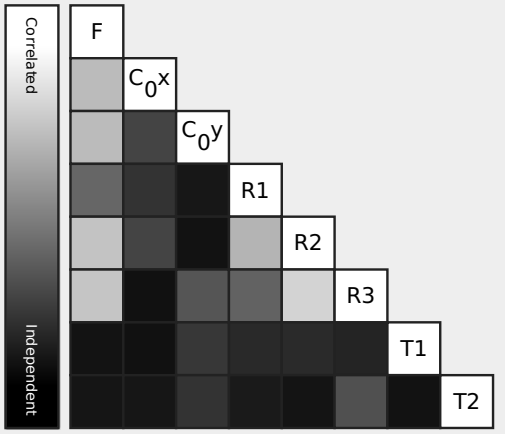
Internal Camera Parameters

RedEdge_5.5_1280x960 (Red edge)(10). Sensor Dimensions: 4.800 [mm] x 3.600 [mm]

EXIF ID: RedEdge_5.5_1280x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	1466.667 [pixel] 5.500 [mm]	661.440 [pixel] 2.480 [mm]	495.379 [pixel] 1.858 [mm]	-0.103	0.155	-0.049	0.000	0.001
Optimized Values	1438.859 [pixel] 5.396 [mm]	655.722 [pixel] 2.459 [mm]	494.066 [pixel] 1.853 [mm]	-0.103	0.130	-0.028	0.000	-0.000
Uncertainties (Sigma)	77679.306 [pixel] 291.297 [mm]	10865.010 [pixel] 40.744 [mm]	12087.794 [pixel] 45.329 [mm]	34.336	13.511	1.987	3.499	3.597



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Camera Rig «MicaSense 5 band_merge_sequ_4k_2_re_a» Relatives. Images: 9000

	Transl X [m]	Transl Y [m]	Transl Z [m]	Rot X [degree]	Rot Y [degree]	Rot Z [degree]
RedEdge_5.5_1280x960 (Green)(2)	Reference Camera					
RedEdge_5.5_1280x960 (Blue)(1)						
Initial Values	0.030	0.000	0.000	0.000	0.000	0.000
Optimized values	0.030	0.000	0.000	-0.094	0.048	-0.374
Uncertainties (sigma)				136.117	202.802	65.213
RedEdge_5.5_1280x960 (Red)(3)						
Initial Values	0.000	0.022	0.000	0.000	0.000	0.000
Optimized values	0.000	0.022	0.000	0.021	0.022	-0.064
Uncertainties (sigma)				160.571	226.733	73.976
RedEdge_5.5_1280x960 (NIR)(4)						
Initial Values	0.030	0.022	0.000	0.000	0.000	0.000
Optimized values	0.030	0.022	0.000	-0.147	-0.155	0.118
Uncertainties (sigma)				770.569	838.044	152.366
RedEdge_5.5_1280x960 (Red edge)(5)						
Initial Values	0.015	0.011	0.000	0.000	0.000	0.000
Optimized values	0.015	0.011	0.000	-0.075	-0.544	-0.321
Uncertainties (sigma)				165.082	146.256	107.242

Camera Rig «MicaSense 5 band_merge_sequ_4k_2_re_b» Relatives. Images: 3335

	Transl X [m]	Transl Y [m]	Transl Z [m]	Rot X [degree]	Rot Y [degree]	Rot Z [degree]
RedEdge_5.5_1280x960 (Green)(7)	Reference Camera					
RedEdge_5.5_1280x960 (Blue)(6)						
Initial Values	0.030	0.000	0.000	0.000	0.000	0.000
Optimized values	0.030	0.000	0.000	-0.110	0.069	-0.372

Uncertainties (sigma)				0.763	0.730	1.789
RedEdge_5.5_1280x960 (Red)(8)						
Initial Values	0.000	0.022	0.000	0.000	0.000	0.000
Optimized values	0.000	0.022	0.000	0.070	0.018	-0.061
Uncertainties (sigma)				0.500	0.380	0.330
RedEdge_5.5_1280x960 (NIR)(9)						
Initial Values	0.030	0.022	0.000	0.000	0.000	0.000
Optimized values	0.030	0.022	0.000	-0.088	-0.447	0.118
Uncertainties (sigma)				303.787	999.681	239.588
RedEdge_5.5_1280x960 (Red edge)(10)						
Initial Values	0.015	0.011	0.000	0.000	0.000	0.000
Optimized values	0.015	0.011	0.000	-0.055	-0.629	-0.322
Uncertainties (sigma)				0.327	3.998	0.756

2D Keypoints Table

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	33771	6662
Min	18019	22
Max	46058	34851
Mean	33119	6771

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (Blue)(1)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	29318	3748
Min	18019	579
Max	40399	16180
Mean	29153	3885

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (Green)(2)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	33965	6751
Min	20103	22
Max	46058	34851
Mean	33419	7326

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (Red)(3)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	28639	3370
Min	18685	458
Max	37194	17345
Mean	28571	3727

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (NIR)(4)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	30198	5802
Min	18625	362
Max	38607	16191
Mean	29904	6097

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (Red edge)(5)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	34478	6100
Min	18598	462
Max	41830	16095
Mean	34006	6047

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (Blue)(6)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	31374	4766
Min	23320	611
Max	37290	11606
Mean	31345	4941

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (Green)(7)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	36279	7508
Min	20972	595

Max	43471	21791
Mean	35765	7648

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (Red)(8)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	28414	4193
Min	20082	502
Max	34616	11314
Mean	27308	4745

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (NIR)(9)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	32738	6862
Min	25933	475
Max	37876	14973
Mean	32728	6609

2D Keypoints Table for Camera RedEdge_5.5_1280x960 (Red edge)(10)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	36373	6788
Min	30074	802
Max	39896	16223
Mean	36051	6931

Median / 75% / Maximal Number of Matches Between Camera Models

	RedEdge_5.5... (Blue)(1)	RedEdge_5.... (Green)(2)	RedEdge_5.5_... (Red)(3)	RedEdge_5.5_... (NIR)(4)	RedEdge... (Red edge)(5)	RedEdge_5.5... (Blue)(6)	RedEdge_5.... (Green)(7)	RedEdge_5.5_... (Red)(8)	Red (NIR
RedEdge_5.5_1280x960 (Blue)(1)	45 / 288 / 9968	18 / 77 / 6879	51 / 350 / 6045	18 / 100 / 1530	25 / 148 / 4809	(n/a) / (n/a) / 1	1 / 2 / 4	(n/a) / (n/a) / 1	(n/a
RedEdge_5.5_1280x960 (Green)(2)		40 / 200 / 22496	15 / 63 / 5012	17 / 74 / 2472	24 / 112 / 8196	2 / 2 / 6	1 / 2 / 6	2 / 2 / 6	1 / 2
RedEdge_5.5_1280x960 (Red)(3)			55 / 355 / 11592	16 / 72 / 1284	22 / 120 / 3719	(n/a) / (n/a) / 1	1 / 2 / 4	2 / (n/a) / 2	3 / 3
RedEdge_5.5_1280x960 (NIR)(4)				67 / 541 / 13809	56 / 574 / 3969	1 / (n/a) / 2	1 / 2 / 4	2 / (n/a) / 2	2 / (
RedEdge_5.5_1280x960 (Red edge)(5)					46 / 335 / 6460	2 / (n/a) / 2	1 / 2 / 5	2 / 3 / 3	2 / (
RedEdge_5.5_1280x960 (Blue)(6)						112 / 447 / 6697	34 / 141 / 3909	123 / 562 / 4012	21 /
RedEdge_5.5_1280x960 (Green)(7)							68 / 266 / 13806	28 / 113 / 2535	15 /
RedEdge_5.5_1280x960 (Red)(8)								151 / 545 / 6589	19 /
RedEdge_5.5_1280x960 (NIR)(9)									77 /
RedEdge_5.5_1280x960 (Red edge)(10)									

3D Points from 2D Keypoint Matches

	Number of 3D Points Observed
In 2 Images	4934816
In 3 Images	1310449
In 4 Images	564475
In 5 Images	280076
In 6 Images	164278
In 7 Images	103188
In 8 Images	70763
In 9 Images	50568
In 10 Images	37901
In 11 Images	28669
In 12 Images	22178
In 13 Images	17603
In 14 Images	14117
In 15 Images	11454
In 16 Images	9518
In 17 Images	7744
In 18 Images	6576
In 19 Images	5440
In 20 Images	4833
In 21 Images	4026
In 22 Images	3541
In 23 Images	3056
In 24 Images	2662
In 25 Images	2364
In 26 Images	2069

In 27 Images	1795
In 28 Images	1619
In 29 Images	1454
In 30 Images	1268
In 31 Images	1117
In 32 Images	1012
In 33 Images	887
In 34 Images	819
In 35 Images	746
In 36 Images	622
In 37 Images	574
In 38 Images	580
In 39 Images	496
In 40 Images	387
In 41 Images	356
In 42 Images	309
In 43 Images	292
In 44 Images	267
In 45 Images	245
In 46 Images	237
In 47 Images	177
In 48 Images	172
In 49 Images	150
In 50 Images	147
In 51 Images	117
In 52 Images	119
In 53 Images	100
In 54 Images	89
In 55 Images	74
In 56 Images	64
In 57 Images	68
In 58 Images	48
In 59 Images	35
In 60 Images	42
In 61 Images	32
In 62 Images	40
In 63 Images	25
In 64 Images	31
In 65 Images	17
In 66 Images	23
In 67 Images	10
In 68 Images	11
In 69 Images	11
In 70 Images	7
In 71 Images	2
In 72 Images	3
In 73 Images	4
In 74 Images	1
In 75 Images	1
In 76 Images	2
In 78 Images	1
In 80 Images	2
In 82 Images	3

2D Keypoint Matches

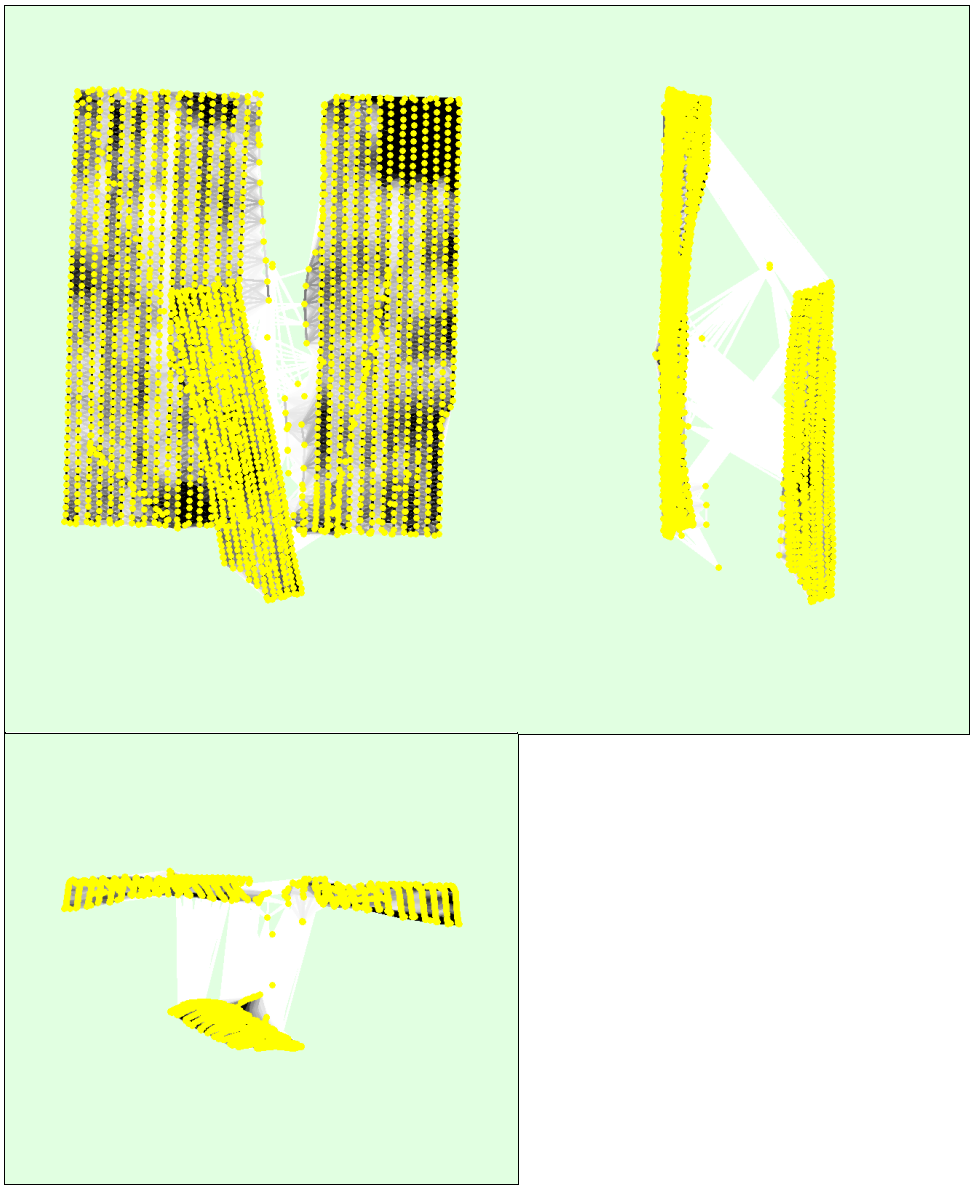

Figure 5: Computed image positions with links between matched images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate weak links and require manual tie points or more images.

Manual Tie Points

MTP Name	Projection Error [pixel]	Verified/Marked
mtp1	0.459	192 / 240
mtp2	0.365	102 / 150
mtp4	1.190	37 / 37
mtp5	0.532	72 / 72
mtp3	0.729	88 / 149
mtp6	0.668	35 / 35

Projection errors for manual tie points.The last column counts the number of images where the manual tie point has been automatically verified vs. manually marked.

Geolocation Details

Absolute Geolocation Variance

Min Error [m]	Max Error [m]	Geolocation Error X [%]	Geolocation Error Y [%]	Geolocation Error Z [%]
-	-15.00	0.05	0.00	0.00
-15.00	-12.00	0.00	0.00	0.00
-12.00	-9.00	0.04	0.00	0.00
-9.00	-6.00	0.16	0.28	0.01
-6.00	-3.00	0.75	5.81	0.00
-3.00	0.00	41.32	39.62	13.31

0.00	3.00	55.14	42.42	56.20
3.00	6.00	2.34	10.42	24.94
6.00	9.00	0.10	0.83	5.26
9.00	12.00	0.04	0.05	0.04
12.00	15.00	0.00	0.00	0.10
15.00	-	0.04	0.56	0.14
Mean [m]		0.282763	0.447509	2.146466
Sigma [m]		1.727624	3.033326	2.241822
RMS Error [m]		1.750611	3.066159	3.103721

Min Error and Max Error represent geolocation error intervals between -1.5 and 1.5 times the maximum accuracy of all the images. Columns X, Y, Z show the percentage of images with geolocation errors within the predefined error intervals. The geolocation error is the difference between the initial and computed image positions. Note that the image geolocation errors do not correspond to the accuracy of the observed 3D points.

Relative Geolocation Variance

Relative Geolocation Error	Images X [%]	Images Y [%]	Images Z [%]
[-1.00, 1.00]	99.44	96.52	99.72
[-2.00, 2.00]	99.86	99.39	99.96
[-3.00, 3.00]	99.90	99.44	99.96
Mean of Geolocation Accuracy [m]	5.000000	5.000000	10.000000
Sigma of Geolocation Accuracy [m]	0.000000	0.000000	0.000000

Images X, Y, Z represent the percentage of images with a relative geolocation error in X, Y, Z.

Initial Processing Details

System Information

Hardware	CPU: Intel(R) Xeon(R) Platinum 8124M CPU @ 3.00GHz RAM: 69GB GPU: no info (Driver: unknown)
Operating System	Linux 4.15.0-1031-aws x86_64

Coordinate Systems

Image Coordinate System	WGS 84 (EGM 96 Geoid)
Output Coordinate System	WGS 84 / UTM zone 11N (EGM 96 Geoid)

Processing Options

Detected Template	No Template Available
Keypoints Image Scale	Custom, Image Scale: 2
Advanced: Matching Image Pairs	Aerial Grid or Corridor
Advanced: Matching Strategy	Use Geometrically Verified Matching: no
Advanced: Keypoint Extraction	Targeted Number of Keypoints: Automatic
Advanced: Calibration	Calibration Method: Standard Internal Parameters Optimization: All External Parameters Optimization: All Rematch: Custom, yes
Rig «MicaSense 5 band_merge_sequ_4k_2_re_a» processing	optimize relative rotation using a subset of secondary cameras
Rig «MicaSense 5 band_merge_sequ_4k_2_re_b» processing	optimize relative rotation using a subset of secondary cameras

Point Cloud Densification details

Processing Options

Image Scale	multiscale, 1/2 (Half image size, Default)
Point Density	Optimal
Minimum Number of Matches	3
3D Textured Mesh Generation	yes
3D Textured Mesh Settings:	Resolution: Medium Resolution (default) Color Balancing: no
LOD	Generated: no
Advanced: 3D Textured Mesh Settings	Sample Density Divider: 1
Advanced: Image Groups	Blue, Green, Red, NIR, Red edge
Advanced: Use Processing Area	yes
Advanced: Use Annotations	yes
Time for Point Cloud Densification	10m:15s
Time for Point Cloud Classification	01m:01s
Time for 3D Textured Mesh Generation	11m:19s

Results

Number of Generated Tiles	1
Number of 3D Densified Points	12376398
Average Density (per m^3)	5.97

DSM, Orthomosaic and Index Details

Processing Options

DSM and Orthomosaic Resolution	1 x GSD (8.13 [cm/pixel])
DSM Filters	Noise Filtering: yes Surface Smoothing: yes, Type: Sharp
Raster DSM	Generated: yes Method: Triangulation Merge Tiles: yes
Orthomosaic	Generated: yes Merge Tiles: yes GeoTIFF Without Transparency: no Google Maps Tiles and KML: no
Radiometric calibration with reflectance target	yes
Index Calculator: Reflectance Map	Generated: yes Resolution: 1 x GSD (8.13 [cm/pixel]) Merge Tiles: yes
Index Calculator: Indices	ndvi
Index Calculator: Index Values	Polygon Shapefile [cm/grid]: 400
Time for DSM Generation	51s
Time for Orthomosaic Generation	02h:26m:43s
Time for DTM Generation	00s
Time for Contour Lines Generation	00s
Time for Reflectance Map Generation	02h:47m:38s
Time for Index Map Generation	40s

Camera Radiometric Correction

Camera Name	Band	Radiometric Correction Type	Reflectance target
RedEdge_5.5_1280x960	Blue	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	Green	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	Red	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	NIR	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	Red edge	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	Blue	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	Green	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	Red	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	NIR	Camera and Sun Irradiance	✓
RedEdge_5.5_1280x960	Red edge	Camera and Sun Irradiance	✓