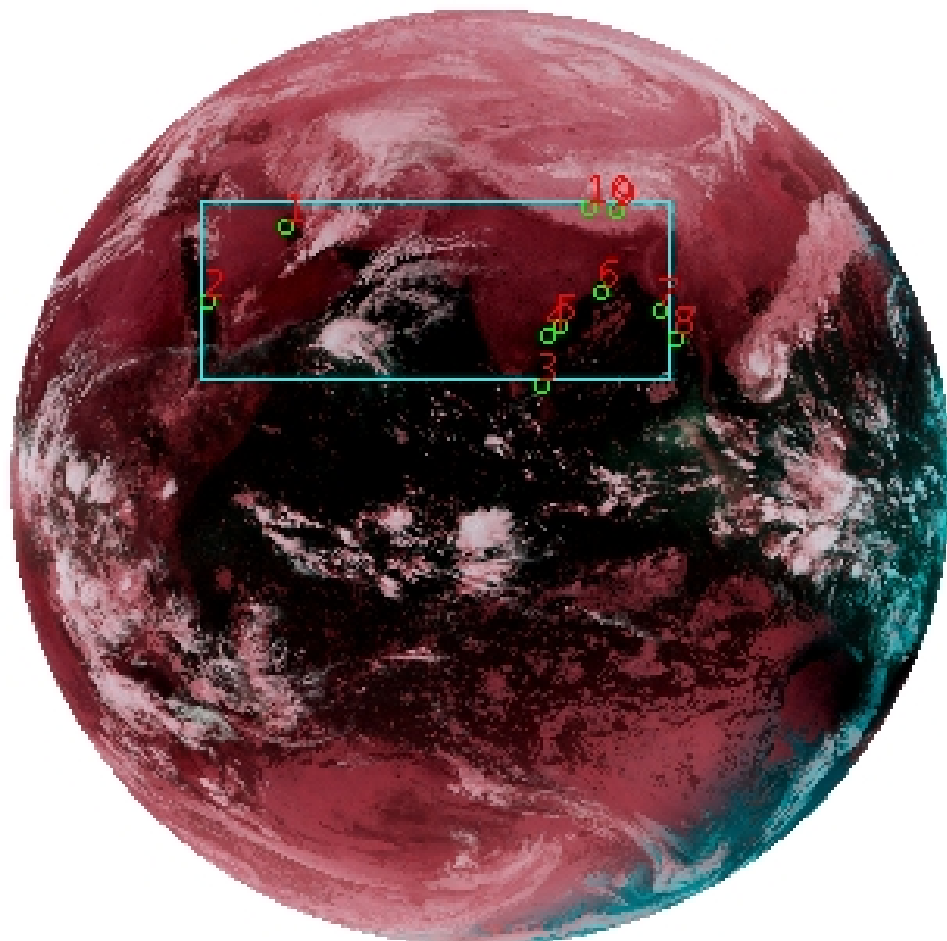


DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_25NOV2018_2145

Satellite INSAT-3DR **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 25-11-18/21:45 **Station ID** BES **Field View(deg)** 17.99
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,-7.157W)

(81.042N,155.157E)



(-81.042S,-7.157W)

(-81.042S,155.157E)

GCP Distribution overview for 3RIMG25NOV20182145L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 10

GCP Coverage(%) 18.27 **(N-S)** 48.31 **(E-W)**

Location Error(E)

Legend — 0Km < E <= 50Km — 50Km < E <= 100Km — E >100Km

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | 2.448 | N | 1.039 | 2.659 |
| Across | -3.098 | W | 1.828 | 3.597 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.543 | 0.253 | 13.574 |
| Along | 4.851 | 0.279 | 21.264 |
| Across | 4.240 | 0.188 | 6.009 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|-------|--------|-------|
| Along | 3.840 | 0.707 | 1.11 | 1.315 |
| Across | 3.645 | 3.465 | 1.07 | 3.626 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.01927 | -0.01533 | 0.02028 |

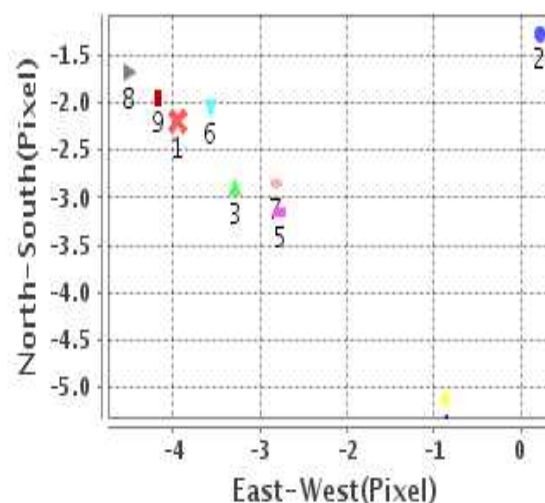
Reference Used

| Sensor | Resolution | Projection |
|--------|------------|------------|
| ETM | 500.00 | GGP |

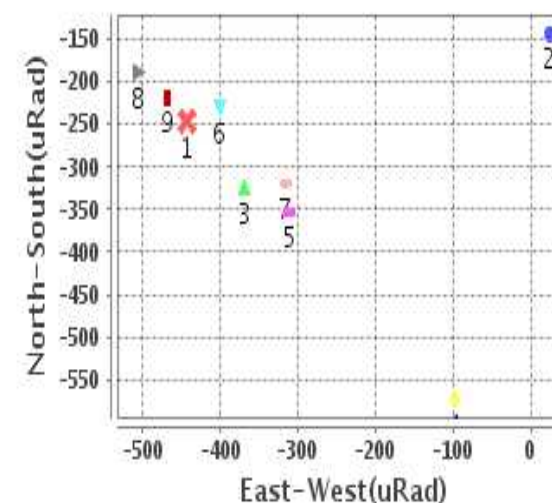
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 4.190 |
| Min | .688 |
| Max | 6.828 |
| CE90 | 5.342 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|--------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 26-11-18 |
| Sensor | IMG | DQE Date | 01-12-2018 |
| PassType | NONE | Aquisition Date | 25-11-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 21:45 |
| Sat Altitude(m) | 3.6E7 | Nominal Altitude(Km) | 3.6E7 |
| Station | BES | Predicted Altitude(Km) | -999.99 |
| Sat Location(deg) | -999.99 E | Nominal Center Lat(deg) | 0.0 |
| Format | hdf5-1.8.8 | Nominal Center Lon(deg) | 74.0 |
| LvlOfProcessing | STANDARD | Predicted Center Lat(deg) | -999.99 |
| DP JobId | 3RIMG_25NOV2 | Predicted Center Lon(deg) | -999.99 |
| ProductCode | NONE | | |
| Field View(deg) | 17.99 | | |

Projection Parameters

| | |
|--------------------------------------|----------|
| Projection | None |
| Ellipsoid | WGS_84 |
| Datum | WGS_84 |
| Zone | NotAvail |
| Semi_Major_Axis(Km) | 6378.14 |
| Semi_Minor_Axis(Km) | 6356.75 |
| Standard_Parallel1(deg) | -999.99 |
| Standard_Parallel2(deg) | -999.99 |
| Projection_Origin_Lon(deg) | -999.99 |
| Projection_Origin_Lat(deg) | -999.99 |
| Projection_False_Easting(Km) | -999.99 |
| Projection_False_Northing(Km) | -999.99 |

Scene Center Desc

| | |
|--------------------------|---------|
| Centre Lat(deg) | 0.0 |
| Center Lon(deg) | 74.0 |
| Centre Roll(deg) | -999.0 |
| Centre Pitch(deg) | -999.0 |
| Center Yaw(deg) | -999.0 |
| SunElevation(deg) | -999.99 |
| SunAzimuth(deg) | -999.99 |
| SatElevation(deg) | -999.99 |
| SatAzimuth(deg) | -999.99 |

Scene Corner Desc

| | |
|--------------------|---------|
| NW_Lat(deg) | 81.042 |
| NW_Lon(deg) | -7.157 |
| SW_Lat(deg) | -81.042 |
| SW_Lon(deg) | -7.157 |
| NE_Lat(deg) | 81.042 |
| NE_Lon(deg) | 155.157 |
| SE_Lat(deg) | -81.042 |
| SE_Lon(deg) | 155.157 |

Band Wise Details

| | Res_AL(Km) | Res_AX(Km) | Image Height | Image Width |
|-------------|------------|------------|--------------|-------------|
| MIR | 4.0 | 4.0 | 2816 | 2805 |
| SWIR | 1.0 | 1.0 | 11264 | 11220 |
| TIR1 | 4.0 | 4.0 | 2816 | 2805 |
| TIR2 | 4.0 | 4.0 | 2816 | 2805 |
| VIS | 1.0 | 1.0 | 11264 | 11220 |
| WV | 8.0 | 8.0 | 1408 | 1402 |

GDQE Computation Base

| | | | | | | | |
|-------------------|----------------|--------------------------------------|--------|-------------------------------|------------|----------------------------|-----------|
| Projection | MER | Wildpoint Rejection Threshold | 2.60 | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | -sigma | SemiMinorAxis(m) | 6356752.31 | Used Reference Type | REFINSREF |
| Datum | WGS_84 | Unit | meters | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

References

JobId : 3RIMG25NOV20182145L1BSTD

(-999.99 - Not Available/Not Computed)

| Ref.No | Source | File Name | Resolution (m) | Projection |
|--------|--------|-----------------|------------------|------------|
| 1 | ETM | world_Band1.img | 500.0 | GGP |

Location Accuracy

GCP Distribution Statistics

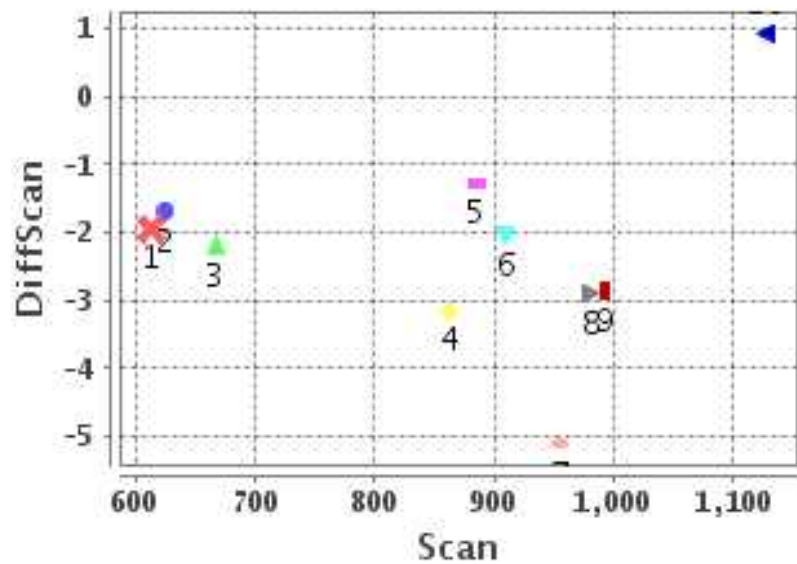
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| GCP Scan | 861.7 | 164.1 | 612.5 | 1127.00 | 18.27 (N-S) |
| GCP Pix | 1524.2 | 427.8 | 597.0 | 1952.00 | 48.31 (E-W) |

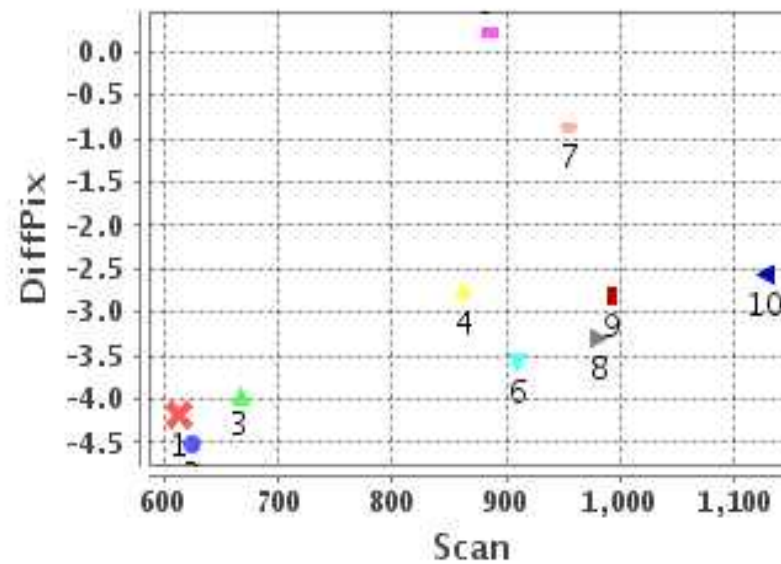
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 667.0 | 821.2 | -2.2 | -3.95 | 13.476 | N | 23.754 | W | Accepted |
| 2 | 884.8 | 597.0 | -1.3 | 0.22 | 2.739 | N | 0.250 | E | Accepted |
| 3 | 1127.0 | 1563.0 | 0.9 | -2.56 | 4.070 | S | 10.064 | W | Rejected |
| 4 | 981.5 | 1582.0 | -2.9 | -3.29 | 9.524 | N | 13.060 | W | Accepted |
| 5 | 955.8 | 1619.0 | -5.1 | -0.87 | 18.201 | N | 2.631 | W | Accepted |
| 6 | 862.5 | 1734.5 | -3.1 | -2.77 | 11.985 | N | 9.327 | W | Accepted |
| 7 | 909.5 | 1902.5 | -2.0 | -3.58 | 6.901 | N | 13.235 | W | Accepted |
| 8 | 991.8 | 1952.0 | -2.9 | -2.82 | 8.643 | N | 11.860 | W | Accepted |
| 9 | 625.0 | 1776.2 | -1.7 | -4.51 | 9.432 | N | 19.175 | W | Accepted |
| 10 | 612.5 | 1694.0 | -1.9 | -4.18 | 7.211 | N | 18.722 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



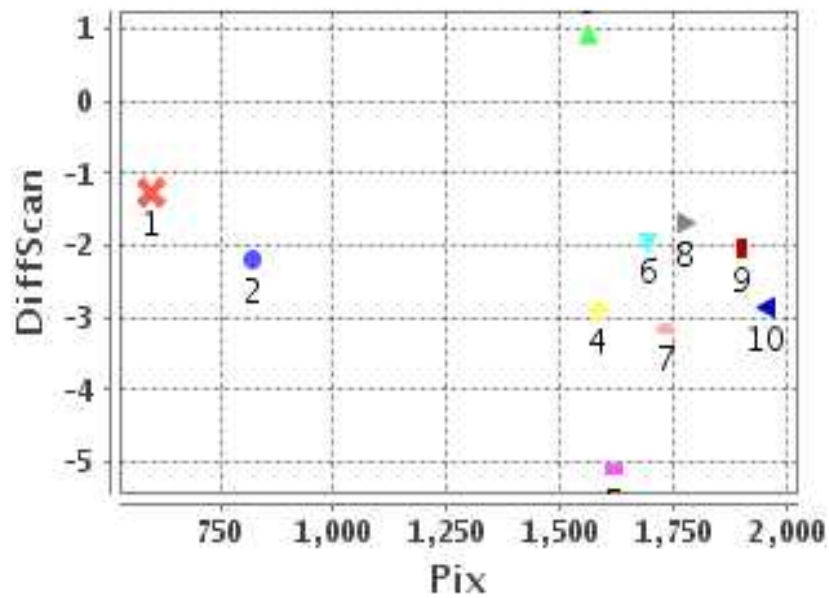
Number Of Points

| | |
|-------|---|
| North | 9 |
| South | 0 |
| East | 1 |
| West | 8 |

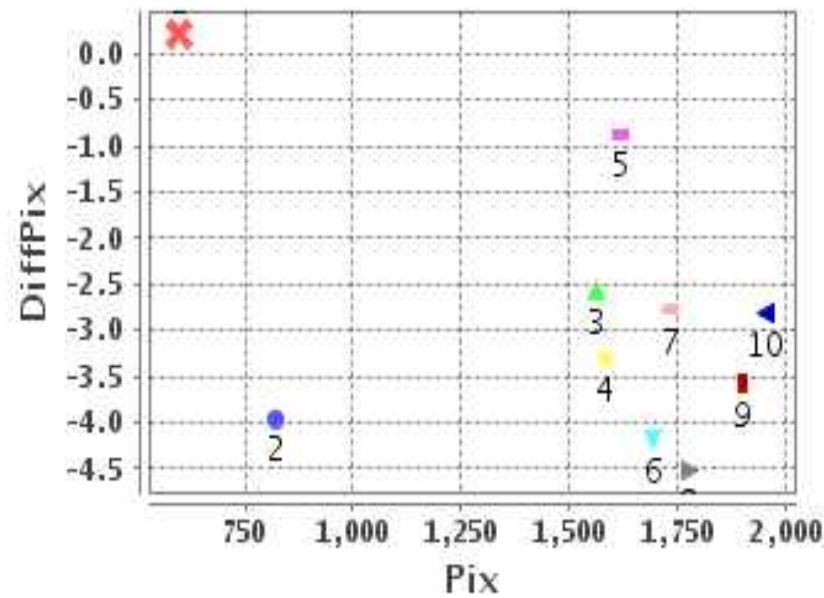
Radial Error (Km)

| | |
|------|-------|
| Mean | 4.190 |
| Min | .688 |
| Max | 6.828 |
| CE90 | 5.342 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | 2.448 | 1.039 | 2.659 | N | 2.316 | 2.810 |
| Across (Km) | -3.098 | 1.828 | 3.597 | W | 3.185 | 3.815 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | |
|--|--------|------|
| Scan Range-0-937; Pix Range-0-934 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 8.105 | N |
| Across(Mean,Dir) | -11.75 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.39 | 9.81 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.92 | 0.00 |
| Across(Mean,Stddev) | 4.17 | 0.00 |

| | | |
|---|---------|-------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 9.54333 | N |
| Across(Mean,Dir) | -15.74 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.95 | 23.81 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 0.47 | 0.74 |
| Across(Mean,Stddev) | -0.54 | 0.87 |

| | | |
|--|---------|---------|
| Scan Range-0-937; Pix Range-1869-2805 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 6.9 | N |
| Across(Mean,Dir) | -13.23 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|---|---------|----------|
| Scan Range-937-1876; Pix Range-0-934 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|--|--------|-------|
| Scan Range-937-1876; Pix Range-934-1869 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 13.865 | N |
| Across(Mean,Dir) | -7.84 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.56 | 13.93 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -2.22 | 0.00 |
| Across(Mean,Stddev) | -2.42 | 0.00 |

| | | |
|---|---------|---------|
| Scan Range-937-1876; Pix Range-1869-2805 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 8.65 | N |
| Across(Mean,Dir) | -11.86 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|--|---------|----------|
| Scan Range-1876-2816; Pix Range-0-934 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|---|---------|----------|
| Scan Range-1876-2816; Pix Range-937-1869 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|--|---------|----------|
| Scan Range-1876-2816; Pix Range-1869-2805 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

*-999 : no gcp available

* -999.99 : values are not computed