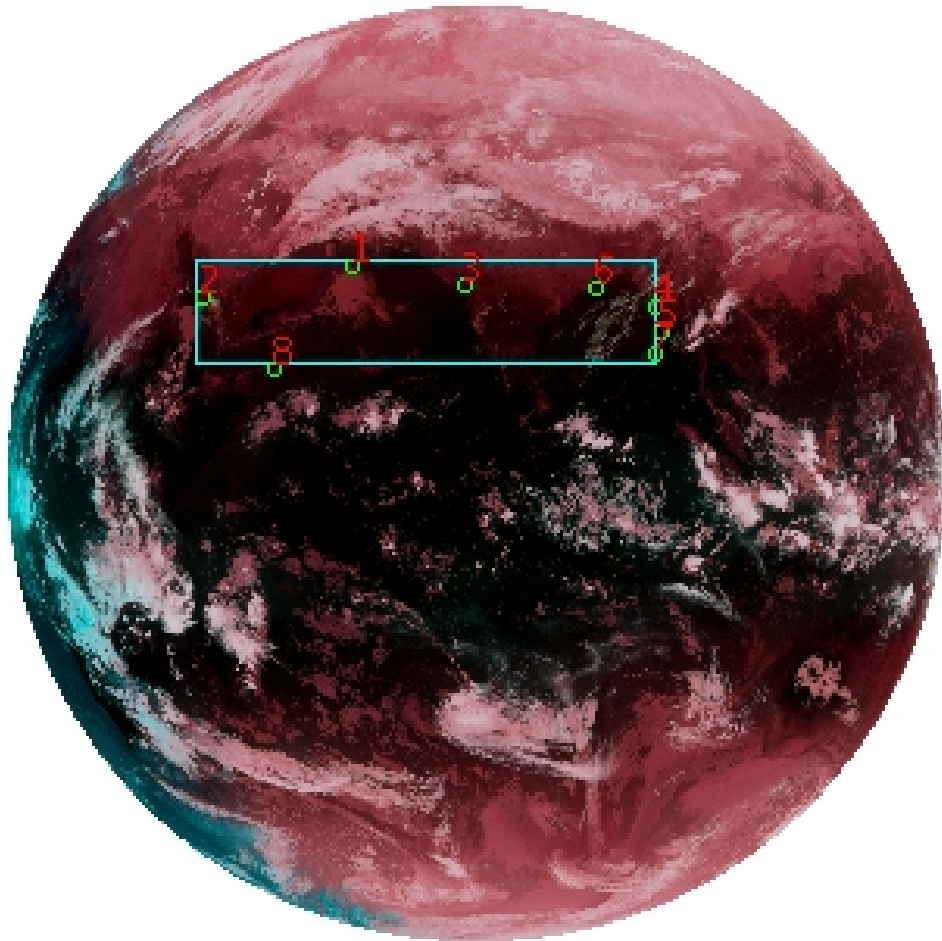


DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_11FEB2019_1545

Satellite INSAT-3DR **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 11-02-19/15:45 **Station ID** BES **Field View(deg)** 18.006
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 3RIMG11FEB20191545L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 8

GCP Coverage(%) 10.56 **(N-S)** 47.20 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | 3.050 | N | 1.345 | 3.334 |
| Across | -5.075 | W | 2.072 | 5.482 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.287 | 0.202 | 7.171 |
| Along | 4.567 | 1.320 | 14.179 |
| Across | 4.336 | 0.233 | 8.398 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 2.827 | -1.425 | 1.07 | 1.780 |
| Across | 3.826 | 3.406 | 1.35 | 3.664 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|----------|
| -0.03221 | -0.01941 | -0.00255 |

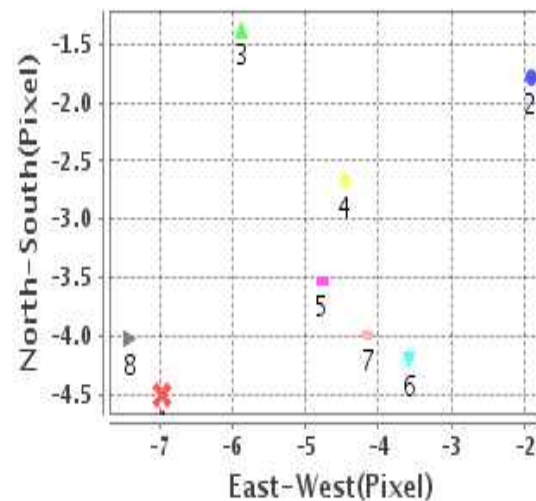
Reference Used

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

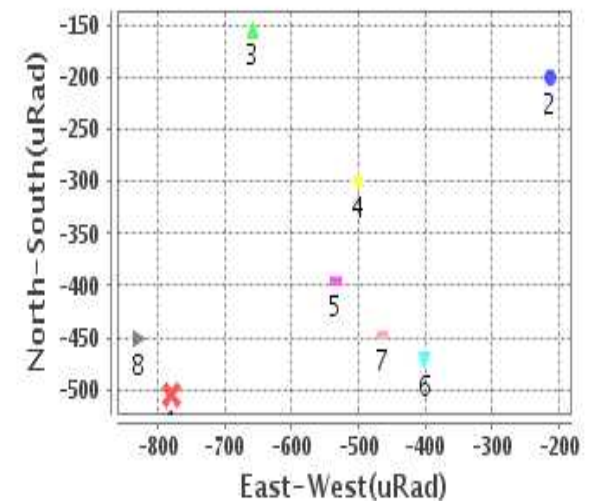
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 6.051 |
| Min | 3.252 |
| Max | 9.761 |
| CE90 | 9.286 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 11-02-19 |
| Sensor | IMG | DQE Date | 12-02-2019 |
| PassType | NONE | Aquisition Date | 11-02-19 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 15:45 |
| 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_11FEB20 | Predicted Center Lon(deg) | -999.99 |
| ProductCode | NONE | | |
| Field View(deg) | 18.006 | | |

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 | pixels | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

References

JobId : 3RIMG11FEB20191545L1BSTD

(-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

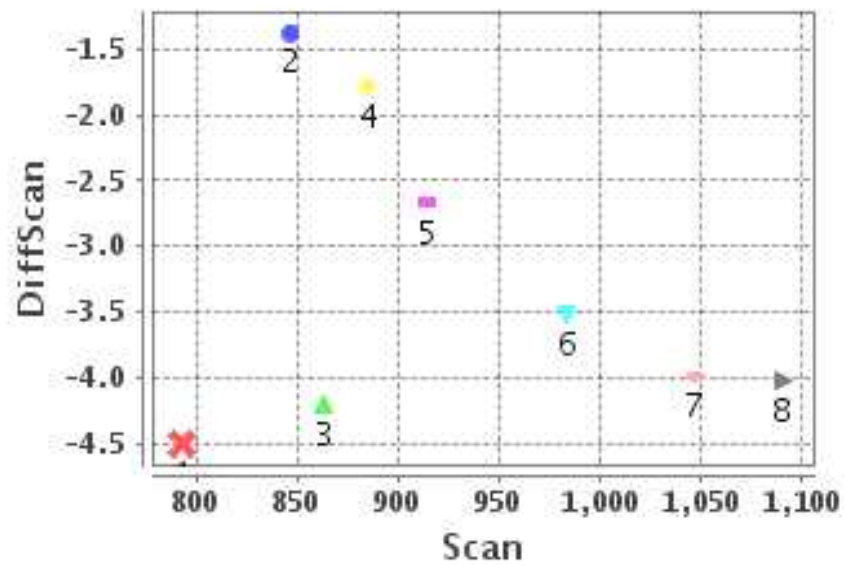
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 8

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| GCP Scan | 928.0 | 96.5 | 793.2 | 1090.50 | 10.56 (N-S) |
| GCP Pix | 1406.6 | 503.0 | 599.2 | 1923.25 | 47.20 (E-W) |

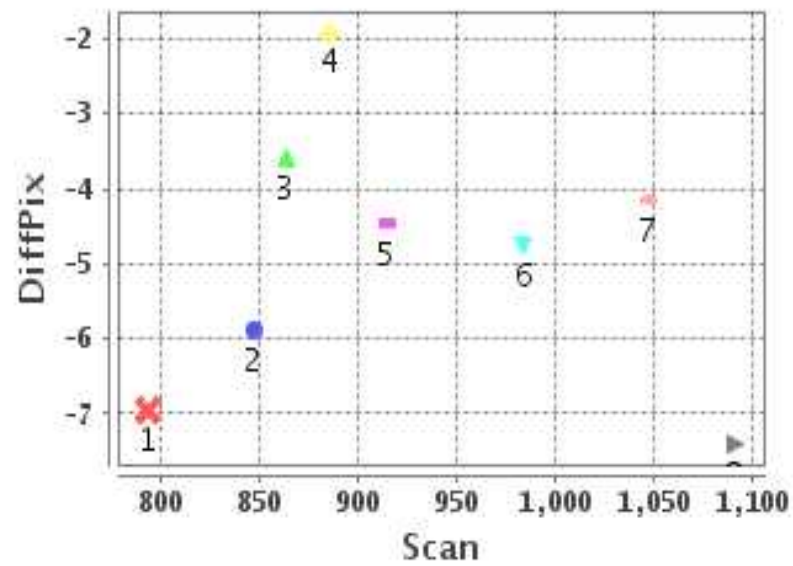
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 793.2 | 1028.2 | -4.5 | -6.97 | 21.683 | N | 32.470 | W | Accepted |
| 2 | 885.2 | 599.2 | -1.8 | -1.91 | 7.252 | N | 10.798 | W | Accepted |
| 3 | 846.8 | 1354.2 | -1.4 | -5.88 | 3.185 | N | 23.160 | W | Accepted |
| 4 | 914.5 | 1903.5 | -2.7 | -4.47 | 9.685 | N | 16.296 | W | Accepted |
| 5 | 983.8 | 1923.2 | -3.5 | -4.77 | 11.134 | N | 18.837 | W | Accepted |
| 6 | 863.5 | 1735.2 | -4.2 | -3.58 | 16.743 | N | 12.743 | W | Accepted |
| 7 | 1046.8 | 1901.5 | -4.0 | -4.15 | 13.037 | N | 14.059 | W | Accepted |
| 8 | 1090.5 | 807.2 | -4.0 | -7.41 | 14.883 | N | 34.034 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



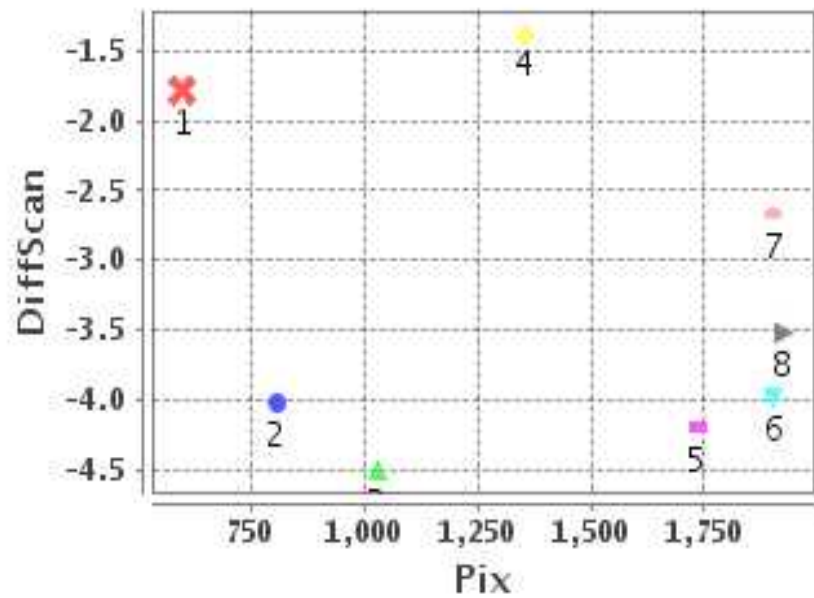
Number Of Points

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

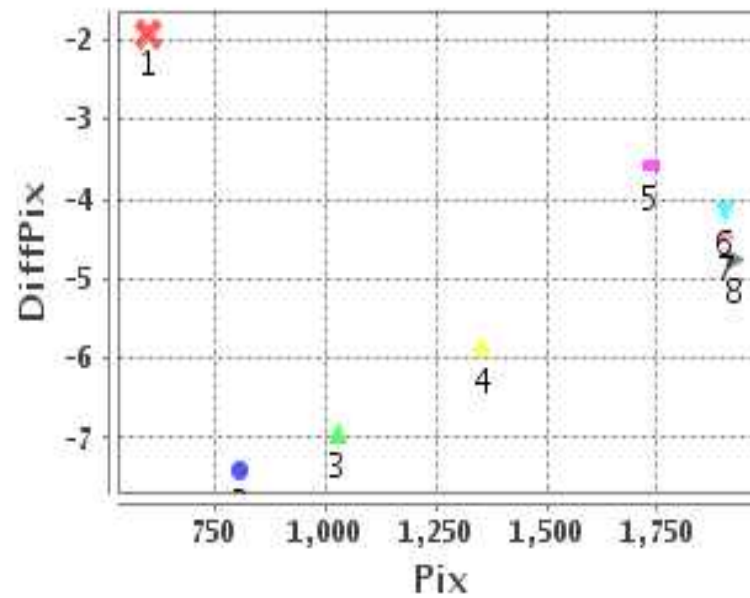
Radial Error (Km)

| | |
|------|-------|
| Mean | 6.051 |
| Min | 3.252 |
| Max | 9.761 |
| CE90 | 9.286 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | 3.050 | 1.345 | 3.334 | N | 2.916 | 3.551 |
| Across (Km) | -5.075 | 2.072 | 5.482 | W | 4.899 | 5.770 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | |
|------------------------------------------|---------|---------|
| Scan Range-0-937; Pix Range-0-934 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 7.25 | N |
| Across(Mean,Dir) | -10.80 | 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-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 13.87 | N |
| Across(Mean,Dir) | -22.79 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.30 | 7.50 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -1.72 | 1.41 |
| Across(Mean,Stddev) | -2.24 | 1.15 |

| | | |
|----------------------------------------------|---------|---------|
| Scan Range-0-937; Pix Range-1869-2805 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 9.68 | N |
| Across(Mean,Dir) | -16.30 | 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 | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 14.88 | N |
| Across(Mean,Dir) | -34.03 | 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-934-1869 | | |
| 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-937-1876; Pix Range-1869-2805 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 12.09 | N |
| Across(Mean,Dir) | -16.44 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.39 | 9.64 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 0.46 | 0.00 |
| Across(Mean,Stddev) | 0.62 | 0.00 |

| | | |
|----------------------------------------------|---------|----------|
| 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