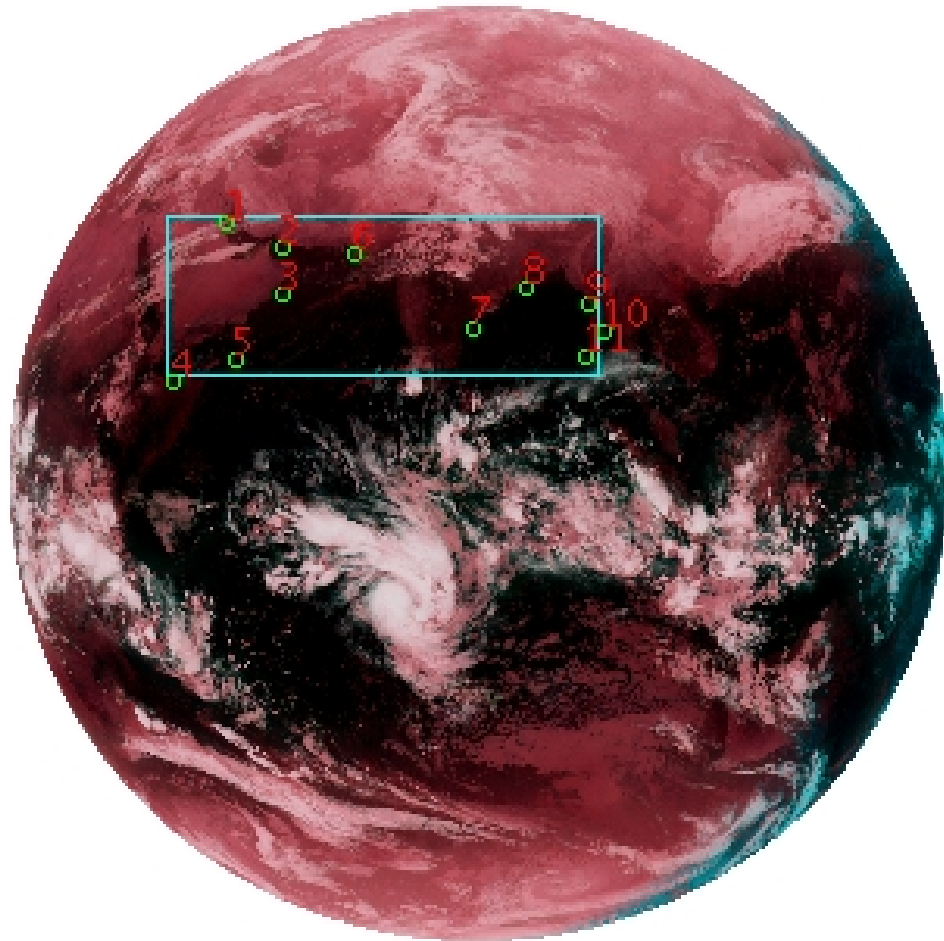


DQE Report: Location Accuracy of INSAT-3D-IMG STANDARD(FULL DISK) Product 3DIMG_02MAR2019_2130

Satellite INSAT-3D **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 02-03-19/21:30 **Station ID** BES **Field View(deg)** 17.974
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,0.843W)

(81.042N,163.157E)



(-81.042S,0.843W)

(-81.042S,163.157E)

GCP Distribution overview for 3DIMG02MAR20192130L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 11

GCP Coverage(%) 16.26 **(N-S)** 44.54 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | 0.539 | N | 1.550 | 1.641 |
| Across | -1.827 | W | 0.334 | 1.857 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.470 | 0.435 | 11.746 |
| Along | 5.656 | 4.840 | 41.413 |
| Across | 4.484 | 0.776 | 12.099 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|-------|--------|-------|
| Along | 4.266 | 1.041 | 1.50 | 1.829 |
| Across | 1.016 | 0.688 | 0.32 | 0.760 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.01214 | -0.00806 | 0.13440 |

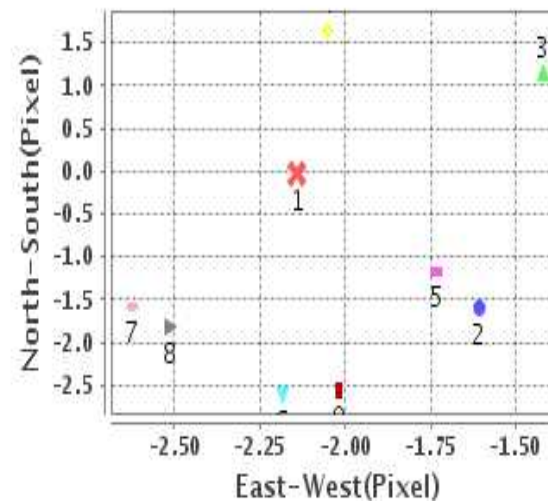
Reference Used

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

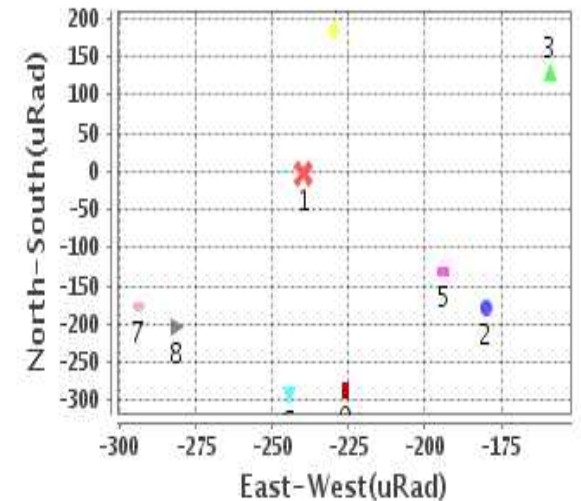
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 2.459 |
| Min | 1.759 |
| Max | 2.817 |
| CE90 | 2.813 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3D | Generation Date | 03-03-19 |
| Sensor | IMG | DQE Date | 04-03-2019 |
| PassType | NONE | Aquisition Date | 02-03-19 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 21:30 |
| 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) | 82.0 |
| LvlOfProcessing | STANDARD(FULL | Predicted Center Lat(deg) | -999.99 |
| DP JobId | 3DIMG_02MAR2 | Predicted Center Lon(deg) | -999.99 |
| ProductCode | NONE | | |
| Field View(deg) | 17.974 | | |

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) | 82.0 |
| 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) | 0.843 |
| SW_Lat(deg) | -81.042 |
| SW_Lon(deg) | 0.843 |
| NE_Lat(deg) | 81.042 |
| NE_Lon(deg) | 163.157 |
| SE_Lat(deg) | -81.042 |
| SE_Lon(deg) | 163.157 |

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 : 3DIMG02MAR20192130L1BSTD

(-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

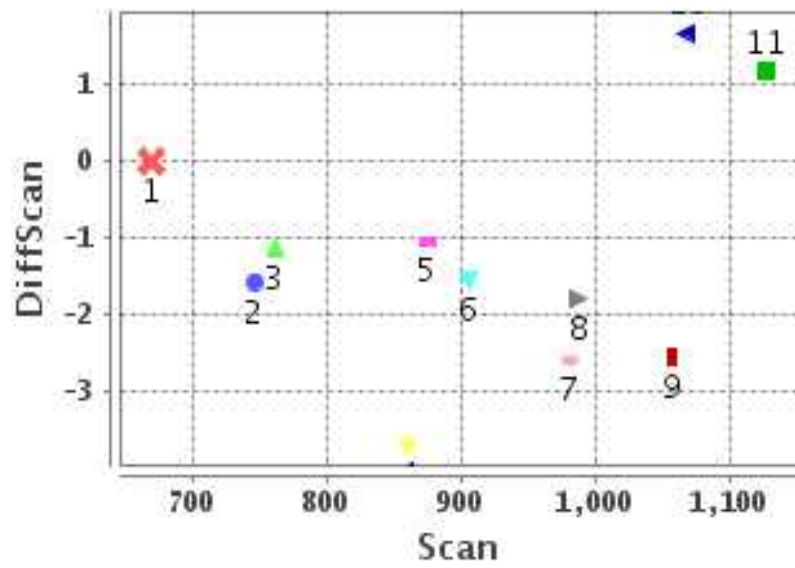
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 11

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| GCP Scan | 912.3 | 140.0 | 668.8 | 1126.50 | 16.26 (N-S) |
| GCP Pix | 1144.4 | 452.9 | 505.0 | 1754.25 | 44.54 (E-W) |

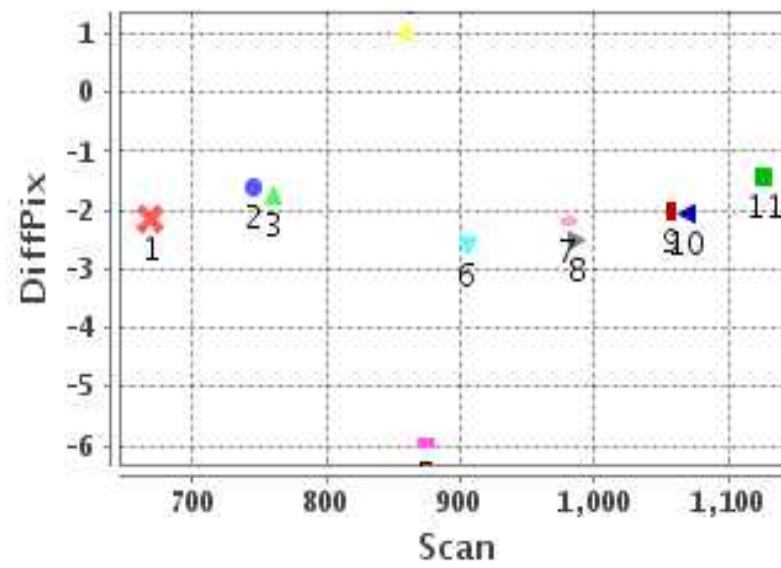
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 668.8 | 665.5 | -0.0 | -2.14 | 3.691 | S | 8.842 | W | Accepted |
| 2 | 745.8 | 823.8 | -1.6 | -1.61 | 4.746 | N | 5.193 | W | Accepted |
| 3 | 874.5 | 825.5 | -1.1 | -5.97 | 3.681 | N | 26.520 | W | Rejected |
| 4 | 1126.5 | 505.0 | 1.2 | -1.42 | 6.586 | S | 6.908 | W | Accepted |
| 5 | 1068.5 | 685.5 | 1.7 | -2.05 | 8.614 | S | 6.291 | W | Accepted |
| 6 | 761.0 | 1028.5 | -1.2 | -1.73 | 6.113 | N | 6.244 | W | Accepted |
| 7 | 980.8 | 1369.2 | -2.6 | -2.18 | 8.194 | N | 7.736 | W | Accepted |
| 8 | 860.5 | 1529.2 | -3.7 | 1.01 | 14.482 | N | 6.025 | E | Rejected |
| 9 | 905.5 | 1705.2 | -1.6 | -2.62 | 4.432 | N | 9.197 | W | Accepted |
| 10 | 987.2 | 1754.2 | -1.8 | -2.51 | 6.904 | N | 8.888 | W | Accepted |
| 11 | 1056.5 | 1696.2 | -2.6 | -2.02 | 7.894 | N | 6.471 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



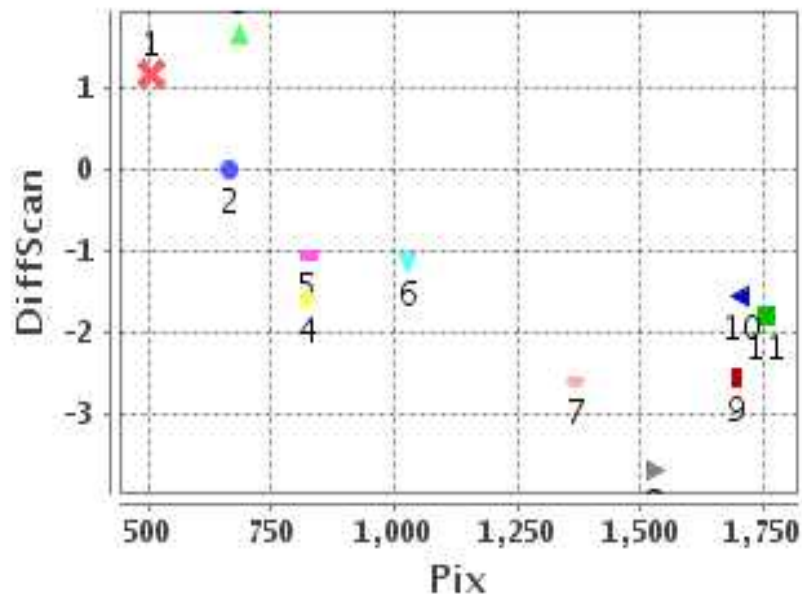
Number Of Points

| | |
|-------|---|
| North | 6 |
| South | 3 |
| East | 0 |
| West | 9 |

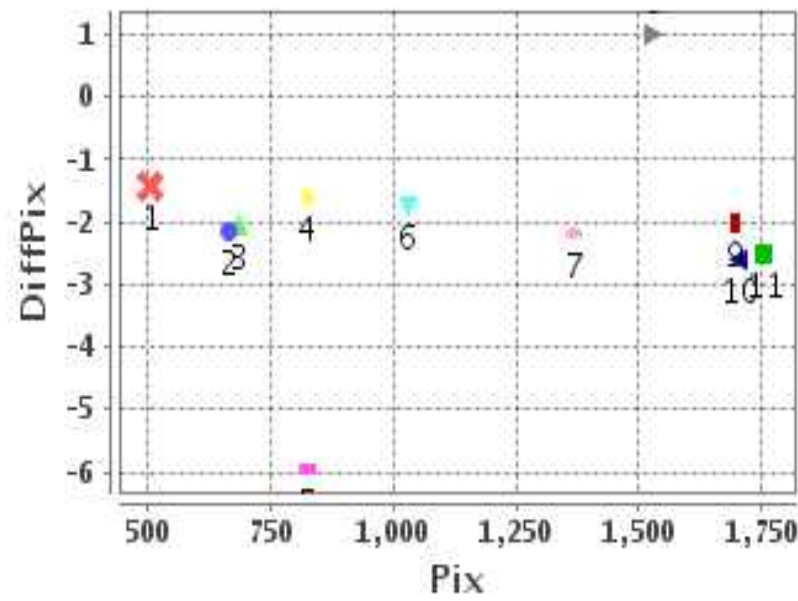
Radial Error (Km)

| | |
|------|-------|
| Mean | 2.459 |
| Min | 1.759 |
| Max | 2.817 |
| CE90 | 2.813 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | 0.539 | 1.550 | 1.641 | N | 1.565 | 1.710 |
| Across (Km) | -1.827 | 0.334 | 1.857 | W | 1.794 | 1.916 |

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) | 0.53 | N |
| Across(Mean,Dir) | -7.02 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 6.25 | 56.22 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 1.56 | 0.00 |
| Across(Mean,Stddev) | -0.53 | 0.00 |

| | | |
|---|-------|------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 5.28 | N |
| Across(Mean,Dir) | -7.72 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.28 | 7.01 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 0.42 | 0.00 |
| Across(Mean,Stddev) | 0.89 | 0.00 |

| | | |
|--|---------|----------|
| Scan Range-0-937; 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 |

| | | |
|---|-------|-------|
| Scan Range-937-1876; Pix Range-0-934 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -7.6 | S |
| Across(Mean,Dir) | -6.60 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.83 | 20.75 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 0.50 | 0.00 |
| Across(Mean,Stddev) | 0.63 | 0.00 |

| | | |
|--|---------|------|
| Scan Range-937-1876; Pix Range-934-1869 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 7.66667 | N |
| Across(Mean,Dir) | -7.70 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.11 | 2.77 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.42 | 0.38 |
| Across(Mean,Stddev) | 0.08 | 0.24 |

| | | |
|---|---------|----------|
| Scan Range-937-1876; 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 |

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