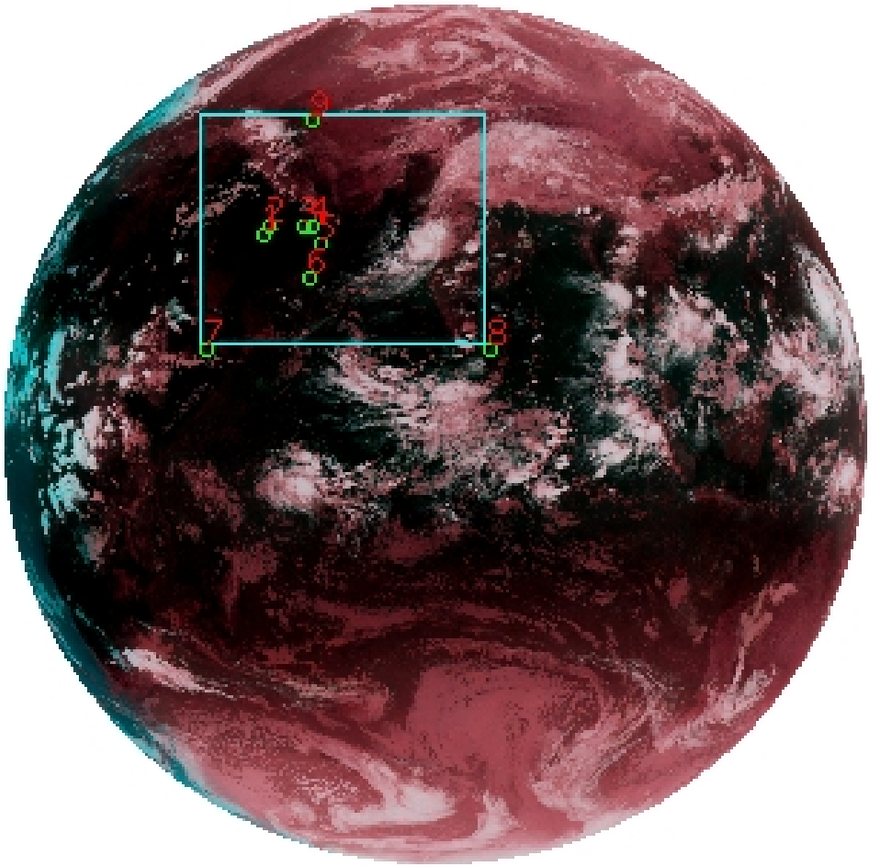
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_22SEP2018_1545

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 22-09-18/15:45 | **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 3RIMG22SEP20181545L1BSTD

**Image Width:** 2805 **Image Height:** 2816 **No Of GCPs:** 9

**GCP Coverage(%)** 25.50 **(N-S)** 31.80 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 2.326 | N | 0.720 | 2.435 |
| Across | -1.544 | W | 1.182 | 1.945 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 3.059 |
| **Min** | 1.667 |
| **Max** | 3.523 |
| **CE90** | 3.426 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.932 | 0.699 | 23.291 |
| Along | 6.922 | 3.305 | 73.053 |
| Across | 7.681 | 5.915 | 92.022 |

## Internal Distortion (in IR Pixels)

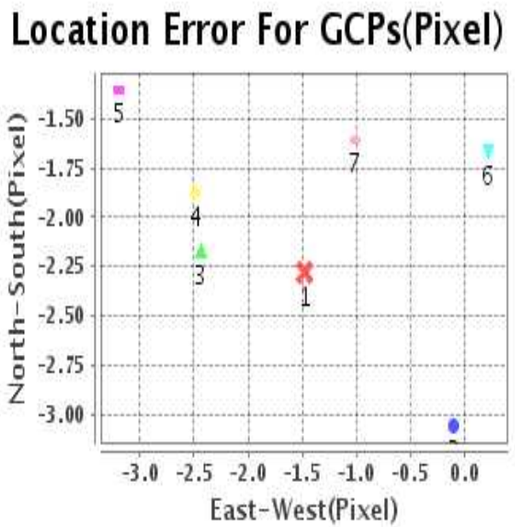
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 1.703 | 0.460 | 0.54 | 0.708 |
| Across | 3.086 | 2.001 | 1.03 | 2.252 |

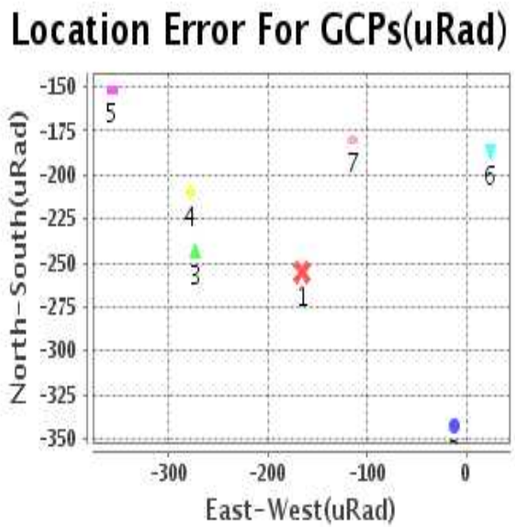
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.04660 | -0.01231 | -0.03998 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 22-09-18 |
| Sensor | IMG | DQE Date | 27-09-2018 |
| PassType | NONE | Aquisition Date | 22-09-18 |
| 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_22SEP20 | 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 -sigma | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | | 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 :** **3RIMG22SEP20181545L1BSTD**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

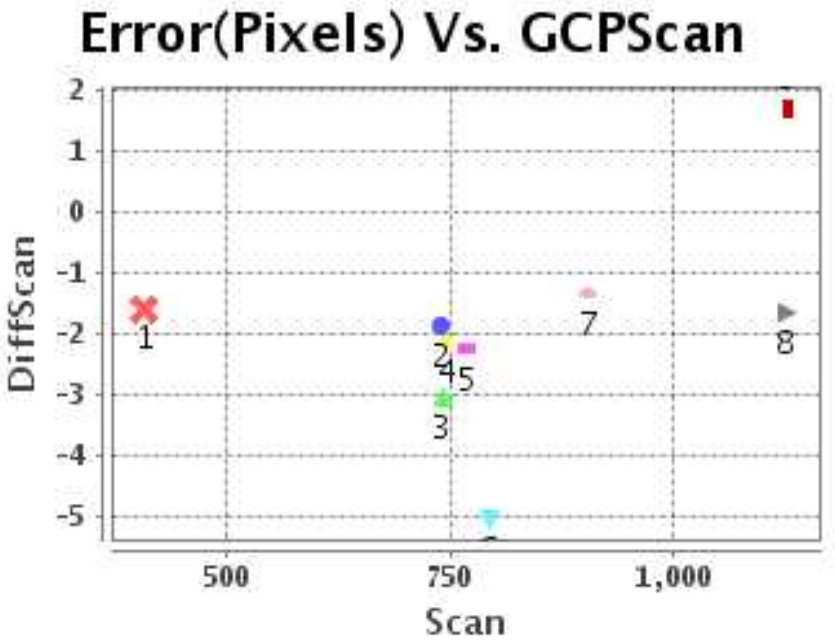
## GCP Distribution Statistics

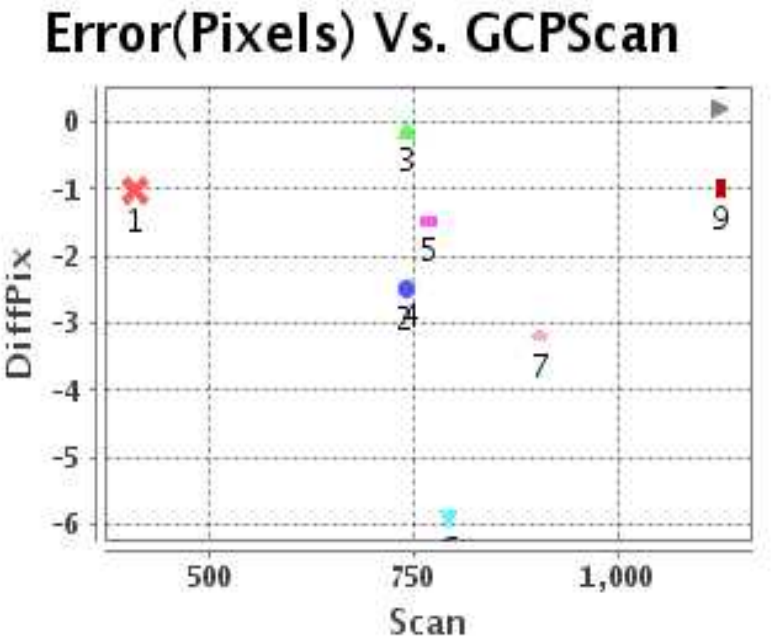
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 9

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 817.1 | 206.8 | 408.2 | 1126.25 | 25.50 (N-S) |
| **GCP Pix** | 995.0 | 227.2 | 669.5 | 1561.50 | 31.80 (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 | 769.2 | 850.8 | -2.3 | -1.48 | 10.625 | N | 6.038 | W | Accepted |
| 2 | 741.5 | 870.2 | -3.1 | -0.10 | 13.337 | N | 2.551 | W | Accepted |
| 3 | 745.2 | 978.8 | -2.2 | -2.44 | 9.775 | N | 9.603 | W | Accepted |
| 4 | 740.2 | 1002.2 | -1.9 | -2.49 | 8.028 | N | 11.582 | W | Accepted |
| 5 | 793.8 | 1027.2 | -5.1 | -5.91 | 21.924 | N | 27.989 | W | Rejected |
| 6 | 904.2 | 991.8 | -1.4 | -3.19 | 4.948 | N | 10.975 | W | Accepted |
| 7 | 1125.2 | 669.5 | -1.7 | 0.22 | 6.108 | N | 2.676 | E | Accepted |
| 8 | 1126.2 | 1561.5 | 1.7 | -1.00 | 8.372 | S | 2.388 | W | Rejected |
| 9 | 408.2 | 1002.8 | -1.6 | -1.02 | 12.306 | N | 5.167 | W | Accepted |



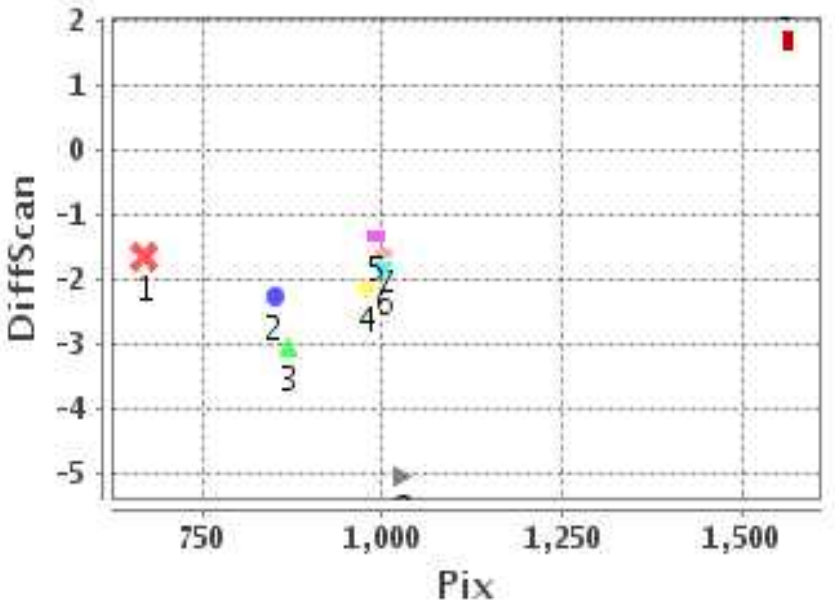



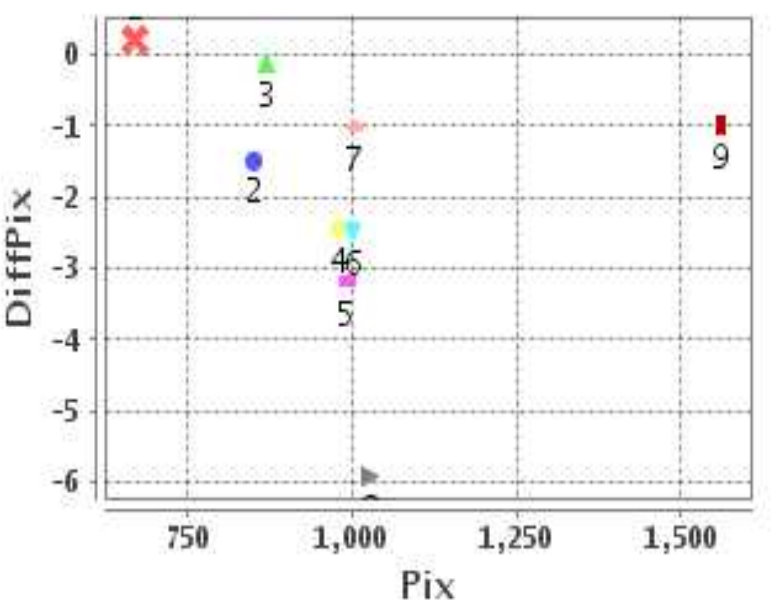

**Number Of Points**

| | |
|---|---|
| North | 7 |
| South | 0 |
| East | 1 |
| West | 6 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 3.059 |
| Min | 1.667 |
| Max | 3.523 |
| CE90 | 3.426 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| **Along( Km )** | 2.326 | 0.720 | 2.435 | N | 2.250 | 2.581 |
| **Across ( Km )** | -1.544 | 1.182 | 1.945 | W | 1.737 | 2.084 |

# 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)** | 11.985 | N | |
| **Across(Mean,Dir)** | -4.29 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.66 | 16.50 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.78 | 0.00 | |
| **Across(Mean,Stddev)** | -1.38 | 0.00 | |

**Scan Range-0-937; Pix Range-934-1869**

| | | | |
|---|---|---|---|
| **Number of GCPs** | 4 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 8.765 | N | |
| **Across(Mean,Dir)** | -9.33 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 5.47 | 36.64 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.19 | 0.34 | |
| **Across(Mean,Stddev)** | -0.21 | 0.90 | |

**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** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 6.11 | N | |
| **Across(Mean,Dir)** | 2.68 | E | |
| **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** | -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