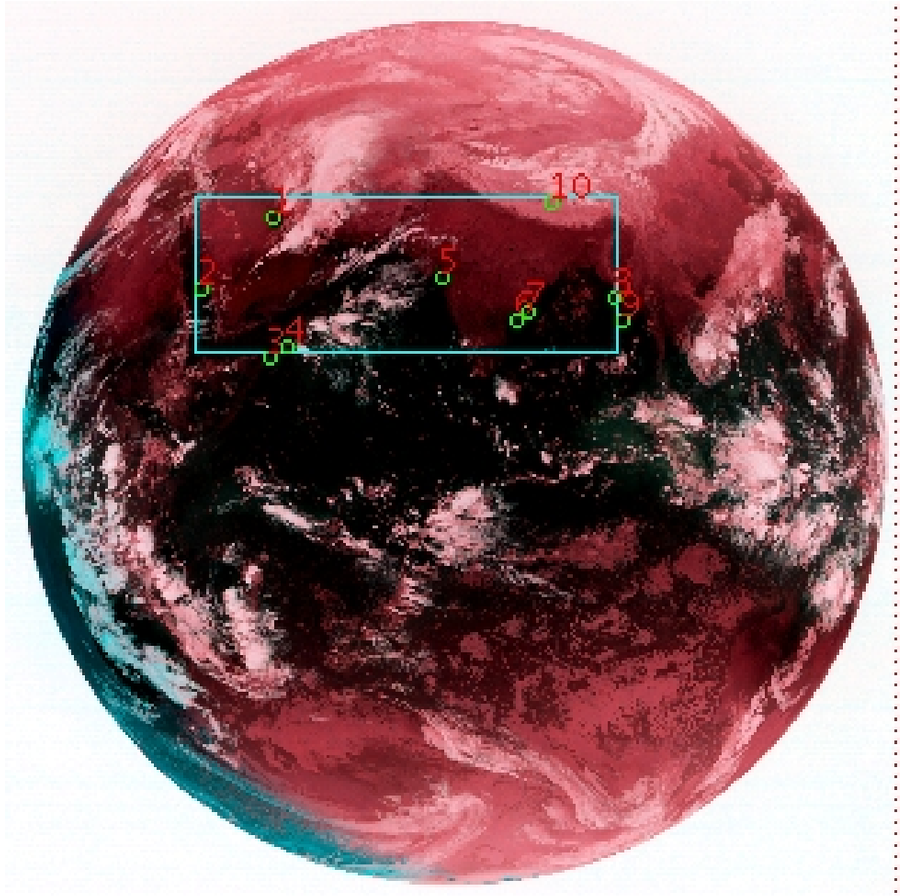
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_25NOV2018_1545

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 25-11-18/15:45 | **Station ID** | BES | **Field View(deg)** | 18.006 |
| **Res(Y,X) [Km]** | (4.0,4.0) | **Res(Y,X) [uRad]** | (112.0,112.0) | | |

(80.874N,-7.049W) (80.874N,155.352E)




(-80.816S,-7.049W) (-80.816S,155.352E)

GCP Distribution overview for 3RIMG25NOV20181545L1BDQE

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

**GCP Coverage(%)** 17.02 **(N-S)** 47.12 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | -3.522 | S | 1.456 | 3.811 |
| Across | 7.950 | E | 3.217 | 8.576 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 8.815 |
| **Min** | 5.884 |
| **Max** | 16.607 |
| **CE90** | 10.706 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.444 | 0.282 | 11.098 |
| Along | 5.379 | 2.336 | 34.480 |
| Across | 4.444 | 1.273 | 11.108 |

## Internal Distortion (in IR Pixels)

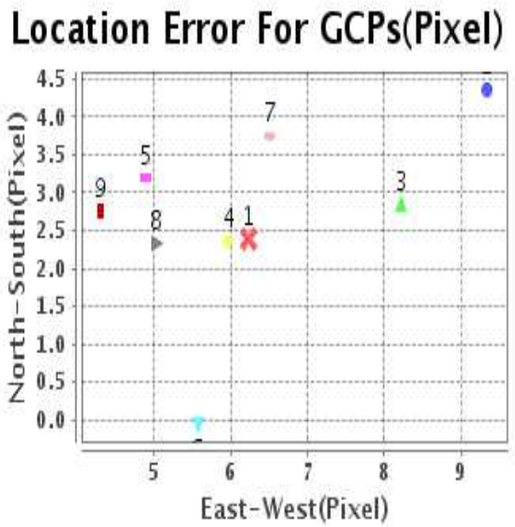
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 4.427 | 0.121 | 1.23 | 1.235 |
| Across | 3.912 | 3.503 | 1.13 | 3.681 |

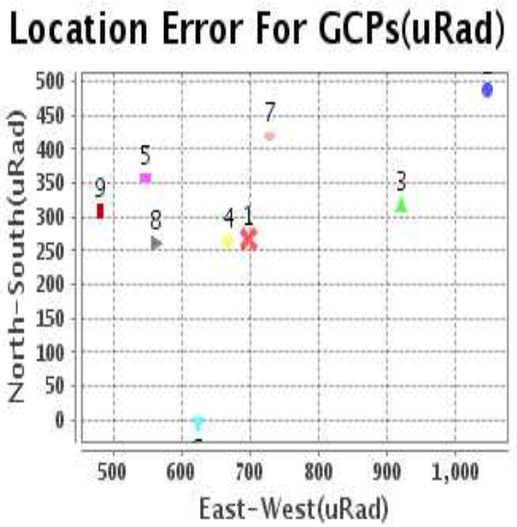
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| 0.04882 | 0.02209 | 0.05942 |

## Reference Used

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



# 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) | 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_25NOV2 | 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) | 0.029 |
| Center Lon(deg) | 74.151 |
| 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) | 80.874 |
| NW_Lon(deg) | -7.049 |
| SW_Lat(deg) | -80.816 |
| SW_Lon(deg) | -7.049 |
| NE_Lat(deg) | 80.874 |
| NE_Lon(deg) | 155.352 |
| SE_Lat(deg) | -80.816 |
| SE_Lon(deg) | 155.352 |

## 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 :** **3RIMG25NOV20181545L1BDQE**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

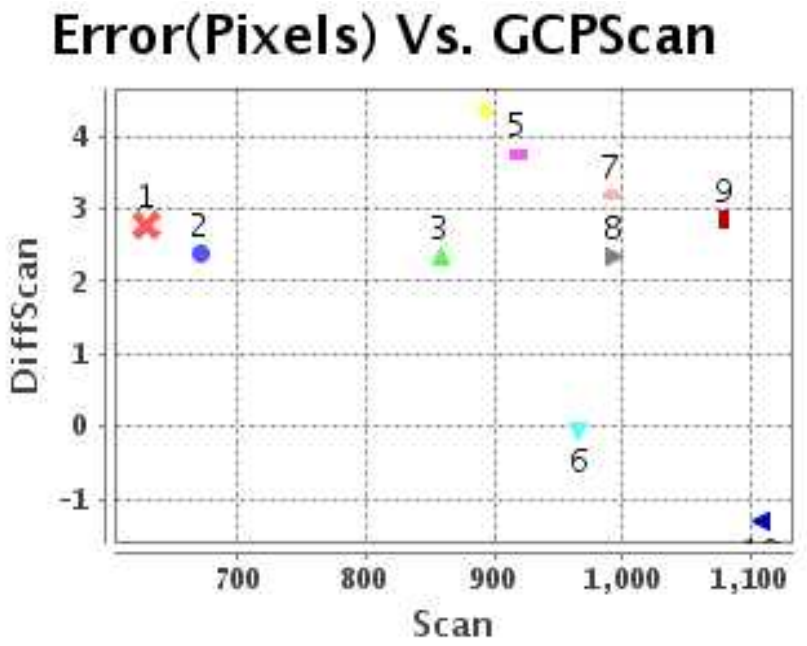
## GCP Distribution Statistics

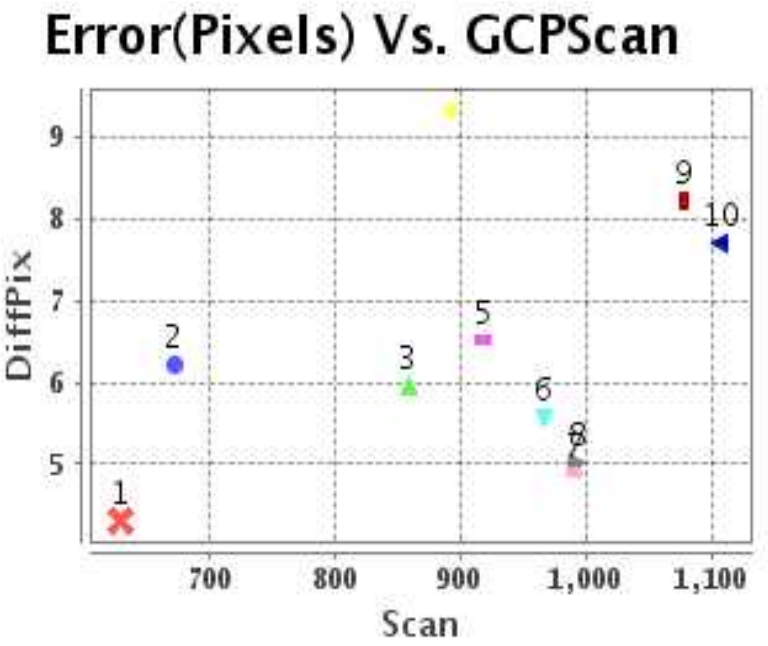
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 910.5 | 149.5 | 628.2 | 1107.50 | 17.02 (N-S) |
| **GCP Pix** | 1319.8 | 471.8 | 602.5 | 1924.25 | 47.12 (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 | 671.0 | 824.5 | 2.4 | 6.22 | 14.915 | S | 40.141 | E | Accepted |
| 2 | 892.2 | 602.5 | 4.4 | 9.34 | 23.234 | S | 62.234 | E | Accepted |
| 3 | 1107.5 | 815.0 | -1.3 | 7.72 | 2.401 | N | 33.883 | E | Rejected |
| 4 | 1078.5 | 869.5 | 2.9 | 8.22 | 13.814 | S | 39.547 | E | Accepted |
| 5 | 858.5 | 1354.5 | 2.4 | 5.97 | 12.946 | S | 27.554 | E | Accepted |
| 6 | 991.2 | 1585.0 | 3.2 | 4.89 | 14.044 | S | 18.886 | E | Accepted |
| 7 | 966.2 | 1624.8 | -0.1 | 5.57 | 0.835 | S | 26.518 | E | Accepted |
| 8 | 918.5 | 1897.2 | 3.7 | 6.51 | 19.022 | S | 28.124 | E | Accepted |
| 9 | 993.2 | 1924.2 | 2.3 | 5.03 | 10.885 | S | 21.628 | E | Accepted |
| 10 | 628.2 | 1700.8 | 2.8 | 4.31 | 17.110 | S | 21.561 | E | Accepted |



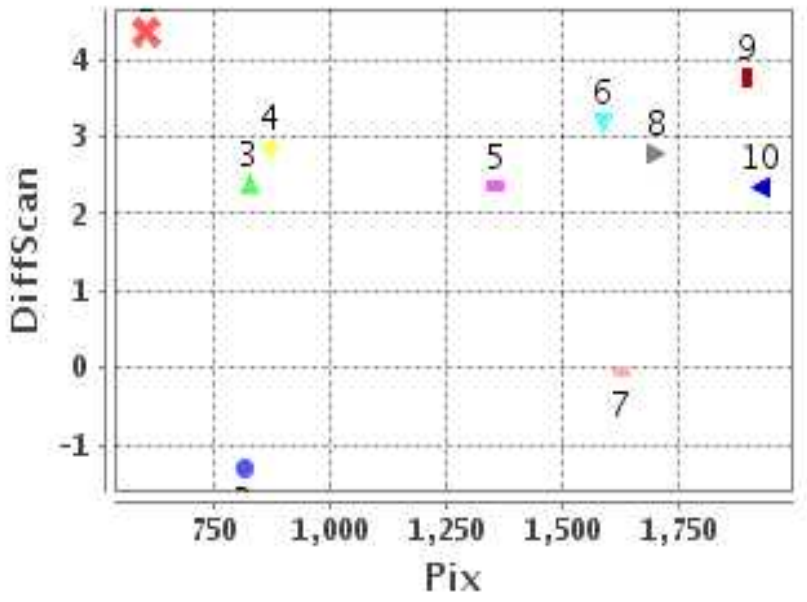



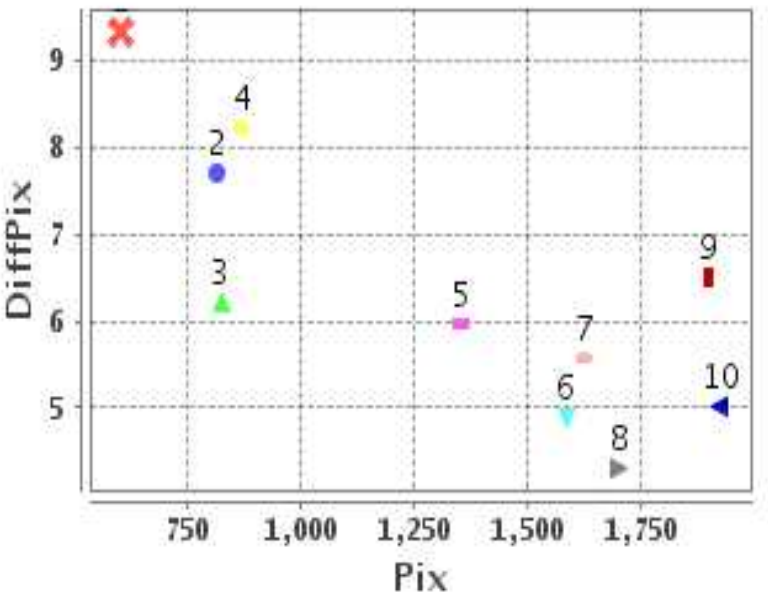

**Number Of Points**

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

**Radial Error ( Km**

| | |
|---|---|
| Mean | 8.815 |
| Min | 5.884 |
| Max | 16.607 |
| CE90 | 10.706 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | -3.522 | 1.456 | 3.811 | S | 3.482 | 4.042 |
| Across ( Km ) | 7.950 | 3.217 | 8.576 | E | 7.245 | 8.942 |

# 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)** | -19.075 | S | |
| **Across(Mean,Dir)** | 51.19 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.41 | 10.33 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -1.98 | 0.00 | |
| **Across(Mean,Stddev)** | 3.12 | 0.00 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 2 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -15.03 | S | |
| **Across(Mean,Dir)** | 24.56 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.74 | 18.55 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.42 | 0.00 | |
| **Across(Mean,Stddev)** | 1.66 | 0.00 | |

**Scan Range-0-937; Pix Range-1869-2805**

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -19.02 | S | |
| **Across(Mean,Dir)** | 28.12 | 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-0-934**

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -13.82 | S | |
| **Across(Mean,Dir)** | 39.55 | 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** | 2 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -7.44 | S | |
| **Across(Mean,Dir)** | 22.70 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.46 | 11.45 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -3.25 | 0.00 | |
| **Across(Mean,Stddev)** | -0.68 | 0.00 | |

**Scan Range-937-1876; Pix Range-1869-2805**

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -10.88 | S | |
| **Across(Mean,Dir)** | 21.63 | 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-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