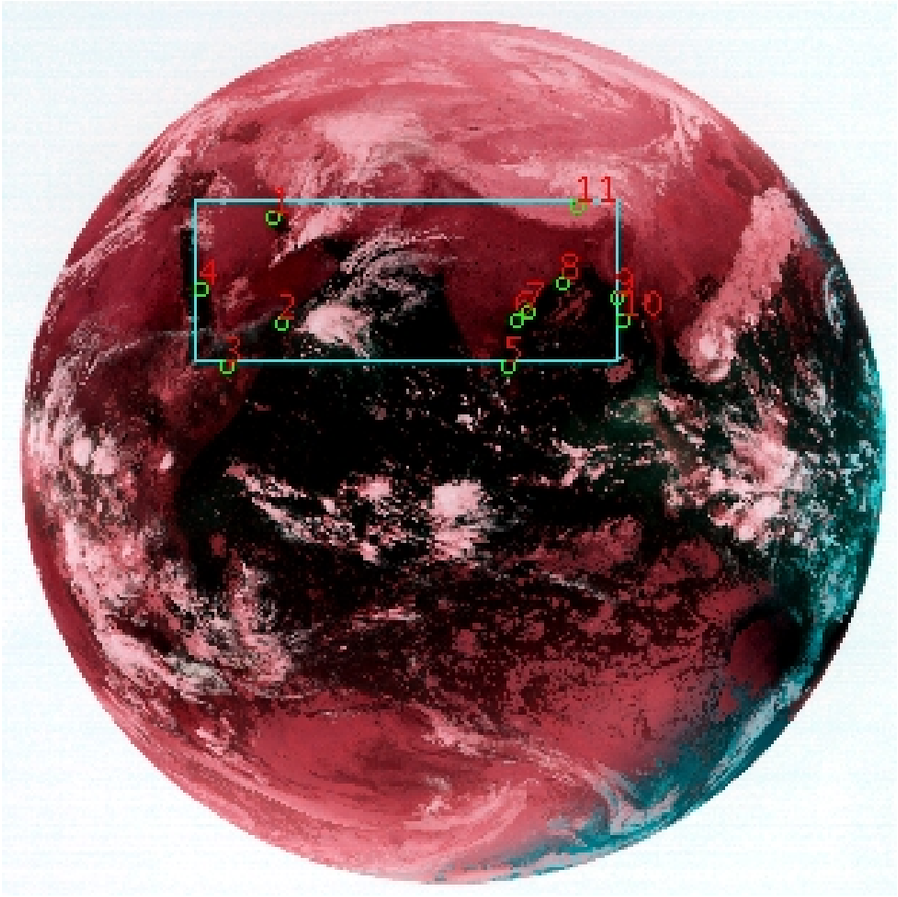
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_25NOV2018_2145

| | | | | | |
|---|---|---|---|---|---|
| **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) | | |

(80.753N,-7.278W) (80.753N,155.086E)




(-81.089S,-7.278W) (-81.089S,155.086E)

GCP Distribution overview for 3RIMG25NOV20182145L1BDQE

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

**GCP Coverage(%)** 17.92 **(N-S)** 47.14 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | -3.905 | S | 1.028 | 4.038 |
| Across | 6.741 | E | 1.298 | 6.865 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 7.859 |
| **Min** | 6.047 |
| **Max** | 10.533 |
| **CE90** | 8.803 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.406 | 0.275 | 10.152 |
| Along | 4.670 | 0.346 | 16.739 |
| Across | 4.258 | 0.261 | 6.449 |

## Internal Distortion (in IR Pixels)

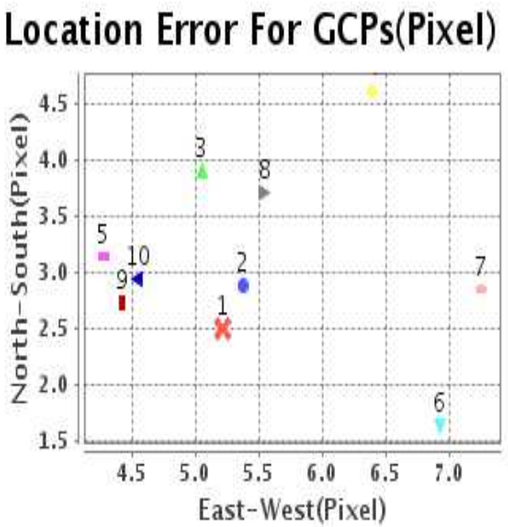
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 2.981 | -0.163 | 0.82 | 0.838 |
| Across | 2.973 | -0.500 | 1.03 | 1.144 |

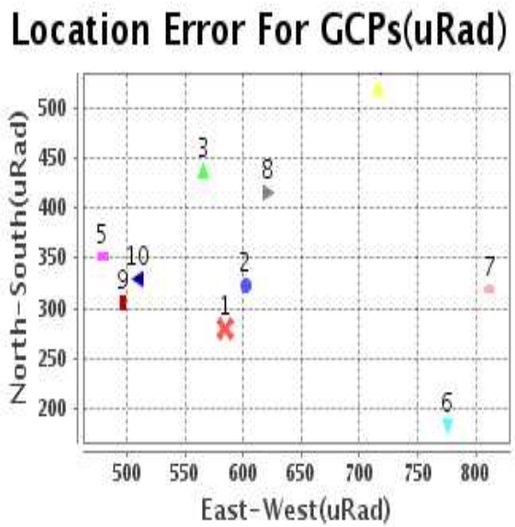
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| 0.04331 | 0.02507 | 0.04911 |

## 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) | 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) | -0.168 |
| Center Lon(deg) | 73.904 |
| 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) | 80.753 |
| NW_Lon(deg) | -7.278 |
| SW_Lat(deg) | -81.089 |
| SW_Lon(deg) | -7.278 |
| NE_Lat(deg) | 80.753 |
| NE_Lon(deg) | 155.086 |
| SE_Lat(deg) | -81.089 |
| SE_Lon(deg) | 155.086 |

## 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 :** **3RIMG25NOV20182145L1BDQE**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

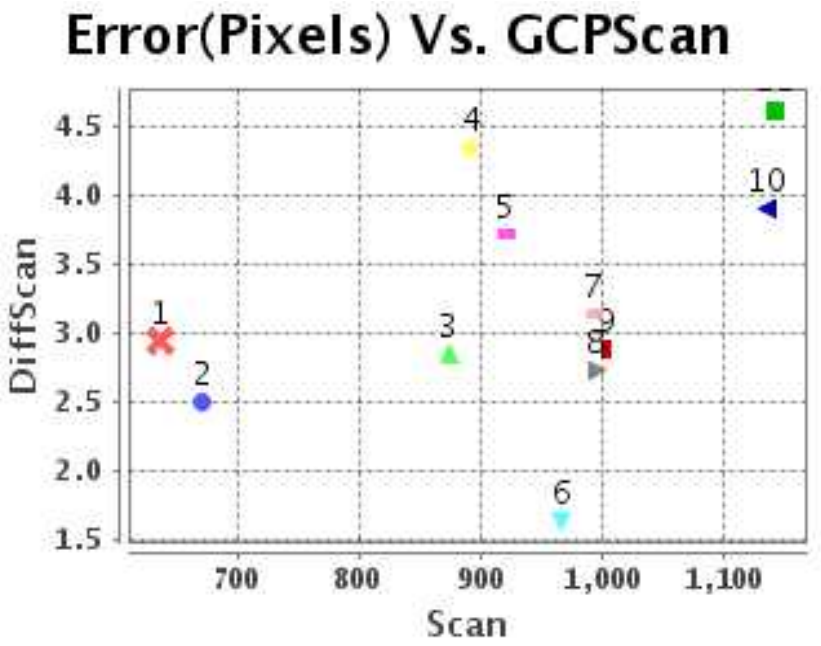
## GCP Distribution Statistics

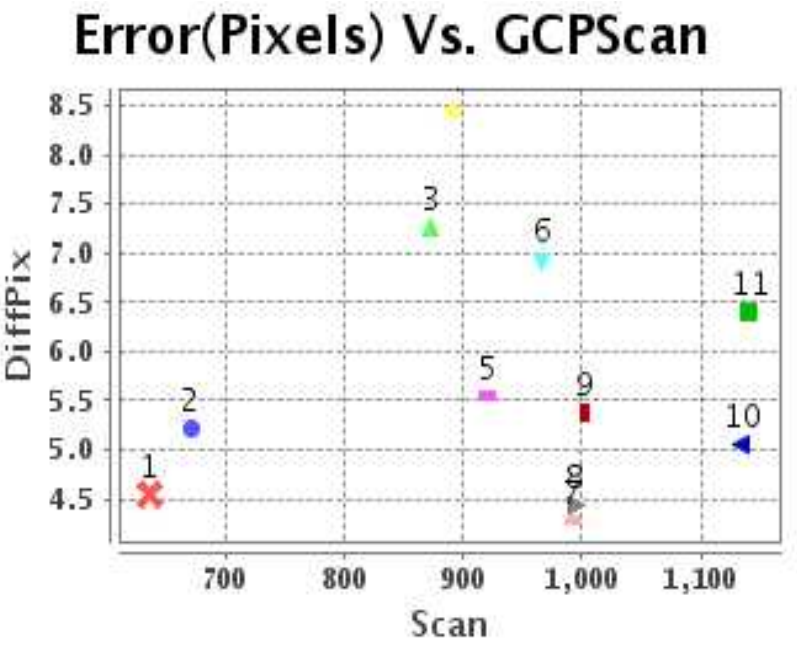
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 11

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 929.4 | 153.5 | 636.0 | 1140.75 | 17.92 (N-S) |
| **GCP Pix** | 1379.2 | 493.7 | 611.2 | 1933.50 | 47.14 (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 | 670.8 | 833.8 | 2.5 | 5.22 | 20.252 | S | 36.947 | E | Accepted |
| 2 | 1002.8 | 859.2 | 2.9 | 5.38 | 16.227 | S | 27.823 | E | Accepted |
| 3 | 1134.5 | 685.8 | 3.9 | 5.05 | 18.209 | S | 30.140 | E | Accepted |
| 4 | 892.0 | 611.2 | 4.3 | 8.46 | 21.868 | S | 55.002 | E | Rejected |
| 5 | 1140.8 | 1574.5 | 4.6 | 6.39 | 21.278 | S | 26.363 | E | Accepted |
| 6 | 992.5 | 1594.8 | 3.1 | 4.28 | 14.916 | S | 20.172 | E | Accepted |
| 7 | 966.0 | 1631.5 | 1.6 | 6.93 | 6.139 | S | 29.758 | E | Accepted |
| 8 | 873.2 | 1744.2 | 2.9 | 7.25 | 12.909 | S | 31.360 | E | Accepted |
| 9 | 920.5 | 1912.8 | 3.7 | 5.54 | 17.715 | S | 26.165 | E | Accepted |
| 10 | 994.5 | 1933.5 | 2.7 | 4.43 | 13.088 | S | 20.341 | E | Accepted |
| 11 | 636.0 | 1790.2 | 2.9 | 4.55 | 15.473 | S | 20.575 | E | Accepted |



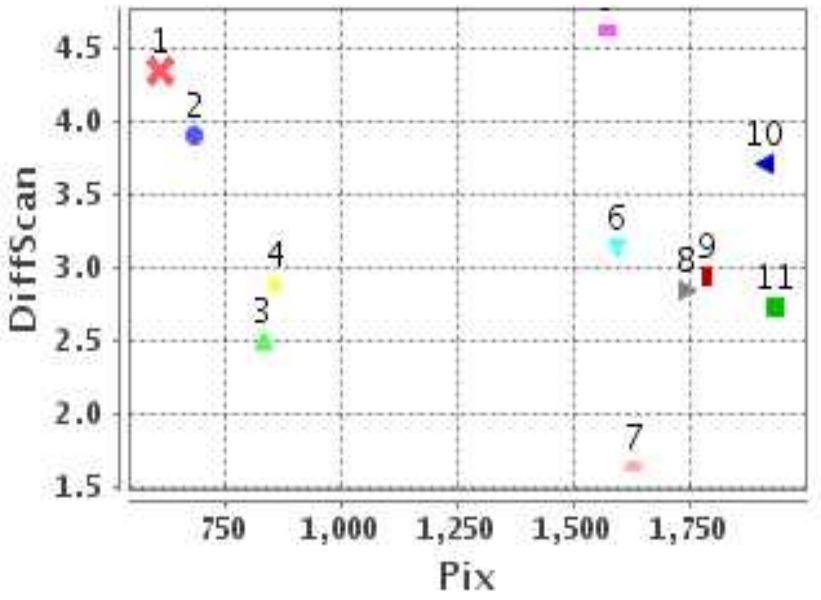



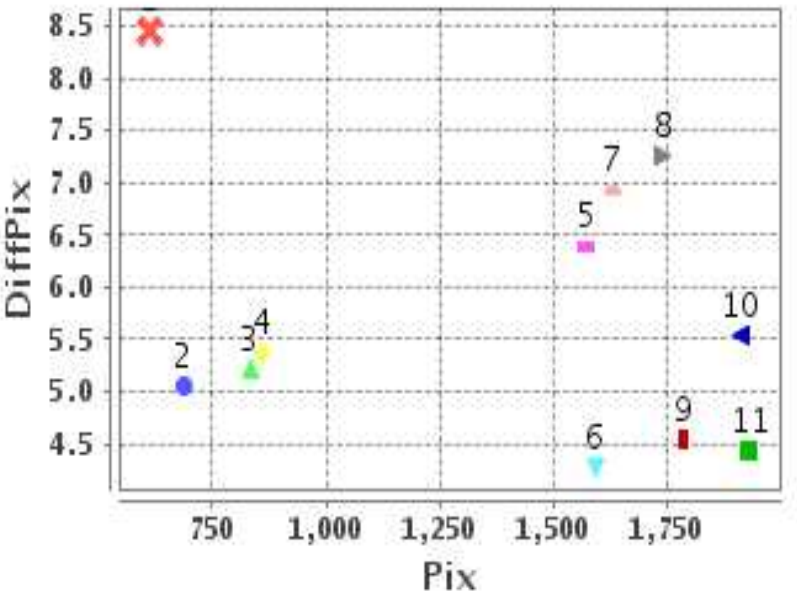

**Number Of Points**

| | |
|---|---|
| North | 0 |
| South | 10 |
| East | 10 |
| West | 0 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 7.859 |
| Min | 6.047 |
| Max | 10.533 |
| CE90 | 8.803 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | -3.905 | 1.028 | 4.038 | S | 3.870 | 4.226 |
| Across ( Km ) | 6.741 | 1.298 | 6.865 | E | 6.549 | 7.038 |

# 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)** | -20.25 | S | |
| **Across(Mean,Dir)** | 36.95 | 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-0-937; Pix Range-934-1869**

| | | | |
|---|---|---|---|
| **Number of GCPs** | 2 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -14.195 | S | |
| **Across(Mean,Dir)** | 25.96 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 5.20 | 29.93 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.09 | 0.00 | |
| **Across(Mean,Stddev)** | 2.70 | 0.00 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -17.71 | S | |
| **Across(Mean,Dir)** | 26.16 | 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** | 2 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -17.22 | S | |
| **Across(Mean,Dir)** | 28.98 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.19 | 4.72 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -1.02 | 0.00 | |
| **Across(Mean,Stddev)** | -0.32 | 0.00 | |

**Scan Range-937-1876; Pix Range-934-1869**

| | | | |
|---|---|---|---|
| **Number of GCPs** | 3 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -14.1067 | S | |
| **Across(Mean,Dir)** | 25.43 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.31 | 7.75 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -2.24 | 0.74 | |
| **Across(Mean,Stddev)** | 0.78 | 1.32 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -13.09 | S | |
| **Across(Mean,Dir)** | 20.34 | 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