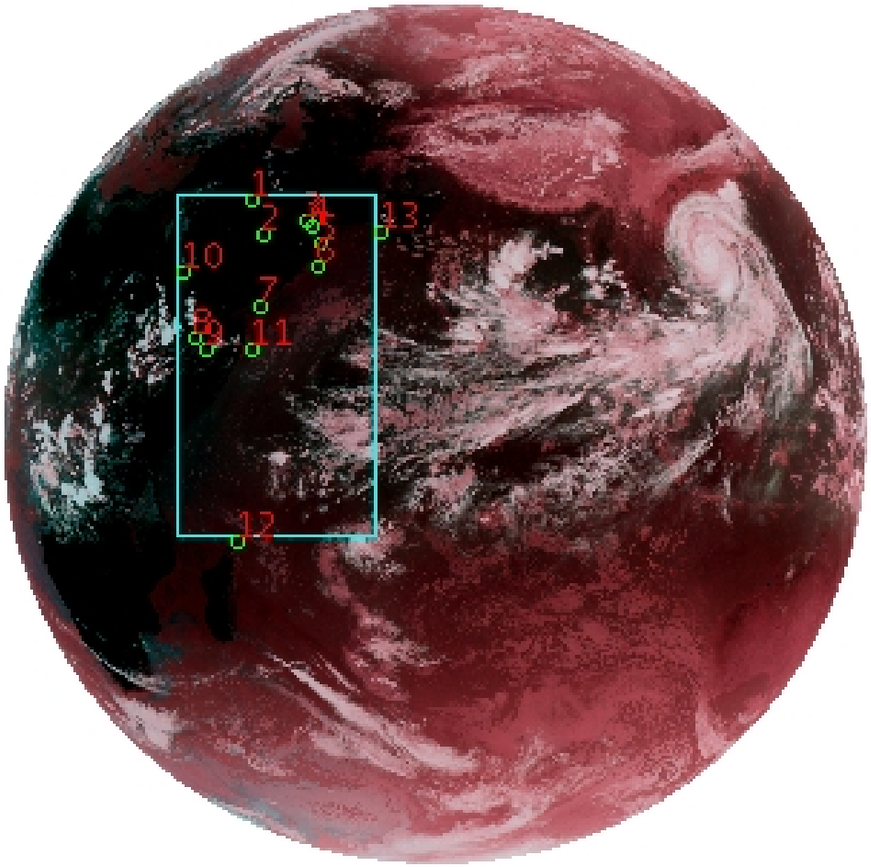
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_16SEP2018_1215

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 16-09-18/24:15 | **Station ID** | BES | **Field View(deg)** | 17.99 |
| **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 3RIMG16SEP20181215L1BSTD

**Image Width:** 2805 **Image Height:** 2816 **No Of GCPs:** 13

**GCP Coverage(%)** 37.90 **(N-S)** 22.22 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 2.040 | N | 1.238 | 2.386 |
| Across | -2.161 | W | 0.978 | 2.372 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 3.123 |
| **Min** | 1.454 |
| **Max** | 5.063 |
| **CE90** | 4.625 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.504 | 0.424 | 12.605 |
| Along | 4.615 | 0.518 | 15.387 |
| Across | 4.891 | 2.283 | 22.283 |

## Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 3.461 | 0.963 | 1.04 | 1.414 |
| Across | 3.621 | 1.106 | 0.95 | 1.455 |

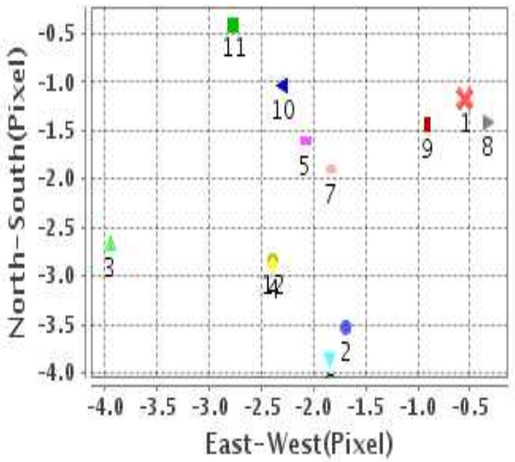
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.02375 | -0.02398 | 0.16520 |

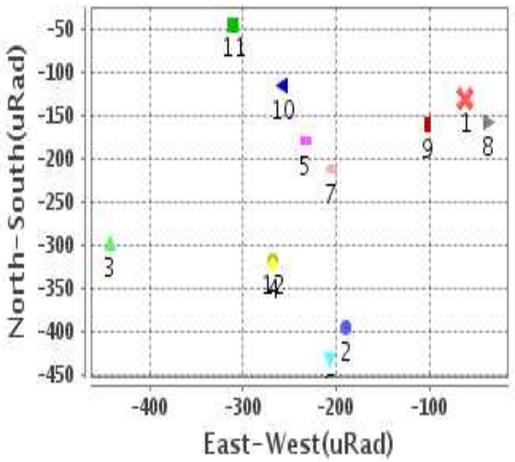
## Reference Used

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

## Location Error For GCPs(Pixel)




## Location Error For GCPs(uRad)



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 16-09-18 |
| Sensor | IMG | DQE Date | 20-09-2018 |
| PassType | NONE | Aquisition Date | 16-09-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 24:15 |
| 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_16SEP20 | 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) | 0.0 |
| 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 :** **3RIMG16SEP20181215L1BSTD**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

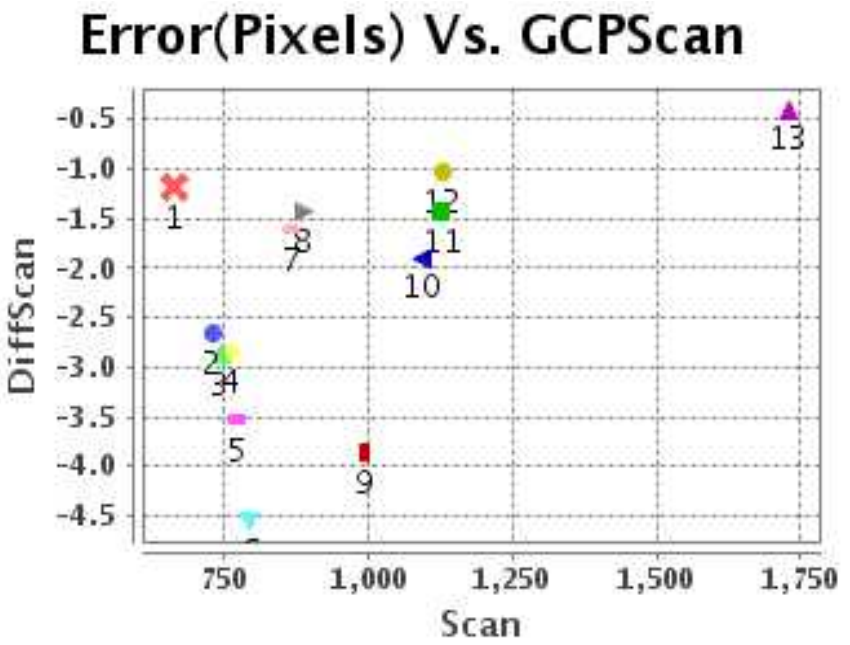
## GCP Distribution Statistics

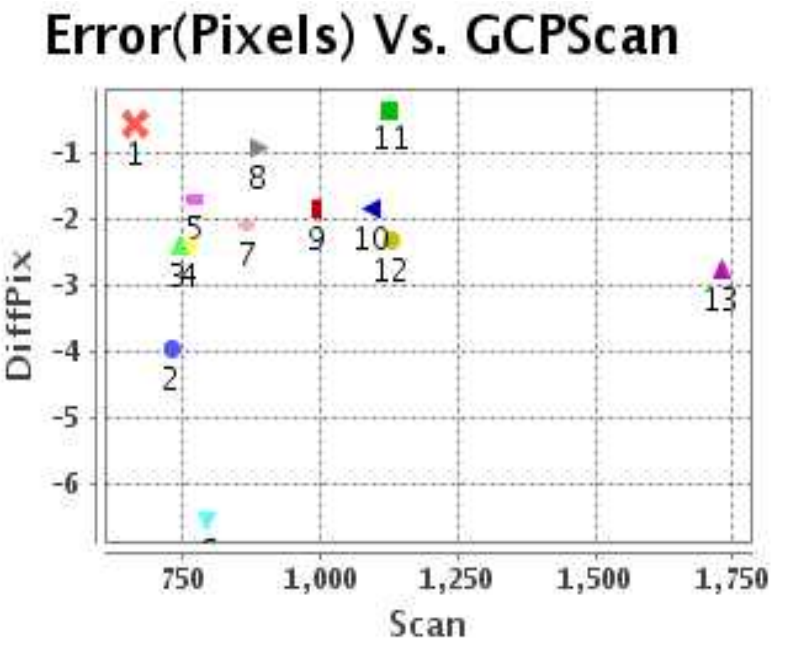
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 13

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 944.0 | 273.2 | 661.2 | 1728.50 | 37.90 (N-S) |
| **GCP Pix** | 865.3 | 173.2 | 598.2 | 1221.50 | 22.22 (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 | 661.2 | 816.2 | -1.2 | -0.55 | 5.088 | N | 3.074 | W | Accepted |
| 2 | 770.5 | 851.0 | -3.5 | -1.69 | 15.285 | N | 11.140 | W | Accepted |
| 3 | 727.8 | 984.5 | -2.7 | -3.95 | 10.189 | N | 17.502 | W | Accepted |
| 4 | 741.2 | 1002.2 | -2.9 | -2.39 | 13.904 | N | 12.204 | W | Accepted |
| 5 | 793.2 | 1027.8 | -4.6 | -6.56 | 21.924 | N | 28.654 | W | Rejected |
| 6 | 866.5 | 1022.2 | -1.6 | -2.08 | 5.003 | N | 8.387 | W | Accepted |
| 7 | 994.5 | 844.8 | -3.9 | -1.85 | 14.773 | N | 6.474 | W | Accepted |
| 8 | 1092.0 | 633.2 | -1.9 | -1.83 | 8.396 | N | 8.719 | W | Accepted |
| 9 | 1125.0 | 670.0 | -1.4 | -0.33 | 6.108 | N | 2.870 | W | Accepted |
| 10 | 884.8 | 598.2 | -1.4 | -0.91 | 3.209 | N | 4.852 | W | Accepted |
| 11 | 1127.0 | 812.2 | -1.0 | -2.30 | 4.445 | N | 9.025 | W | Accepted |
| 12 | 1728.5 | 765.5 | -0.4 | -2.77 | 0.916 | S | 10.032 | W | Accepted |
| 13 | 759.2 | 1221.5 | -2.8 | -2.39 | 12.430 | N | 9.439 | W | Accepted |



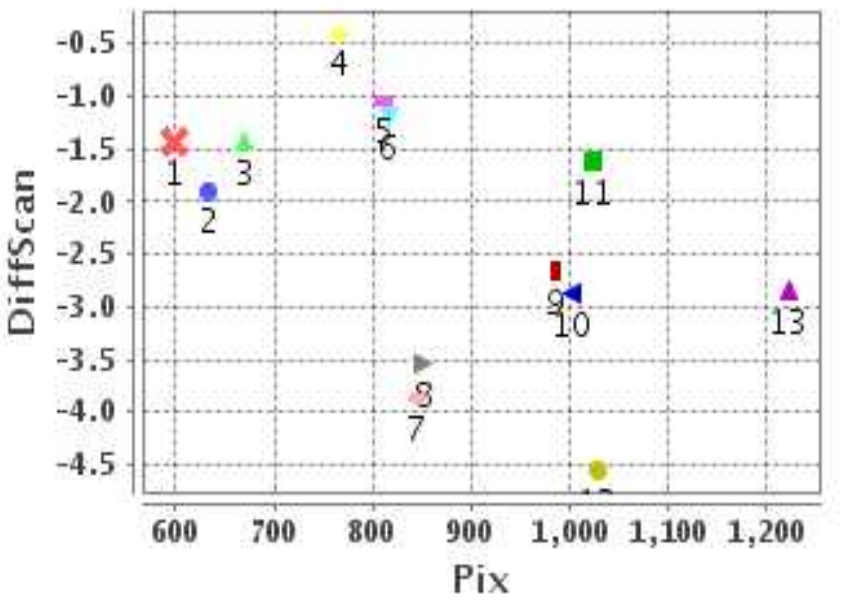



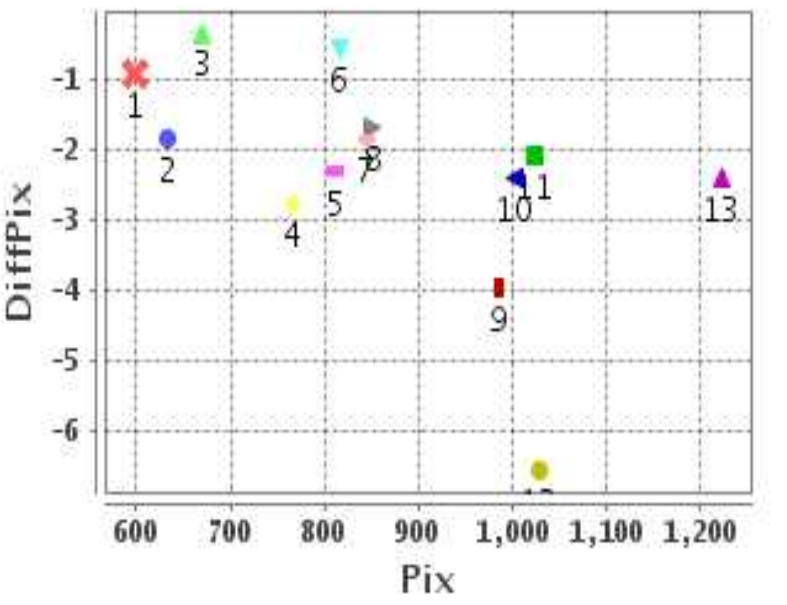

**Number Of Points**

| | |
|---|---|
| North | 11 |
| South | 1 |
| East | 0 |
| West | 12 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 3.123 |
| Min | 1.454 |
| Max | 5.063 |
| CE90 | 4.625 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | 2.040 | 1.238 | 2.386 | N | 2.210 | 2.491 |
| Across ( Km ) | -2.161 | 0.978 | 2.372 | W | 2.097 | 2.468 |

# Block-Wise Geo location Error Statistics

## Location Accuracy,Scale,ID

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 3 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 7.86 | N | |
| **Across(Mean,Dir)** | -6.35 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.91 | 22.70 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 1.30 | 1.04 | |
| **Across(Mean,Stddev)** | 0.21 | 0.57 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 4 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 10.38 | N | |
| **Across(Mean,Dir)** | -11.88 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.84 | 20.93 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.21 | 0.59 | |
| **Across(Mean,Stddev)** | -1.66 | 0.15 | |

**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** | 5 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 6.558 | N | |
| **Across(Mean,Dir)** | -7.42 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.32 | 7.94 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -2.67 | 0.55 | |
| **Across(Mean,Stddev)** | -0.02 | 0.92 | |

**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