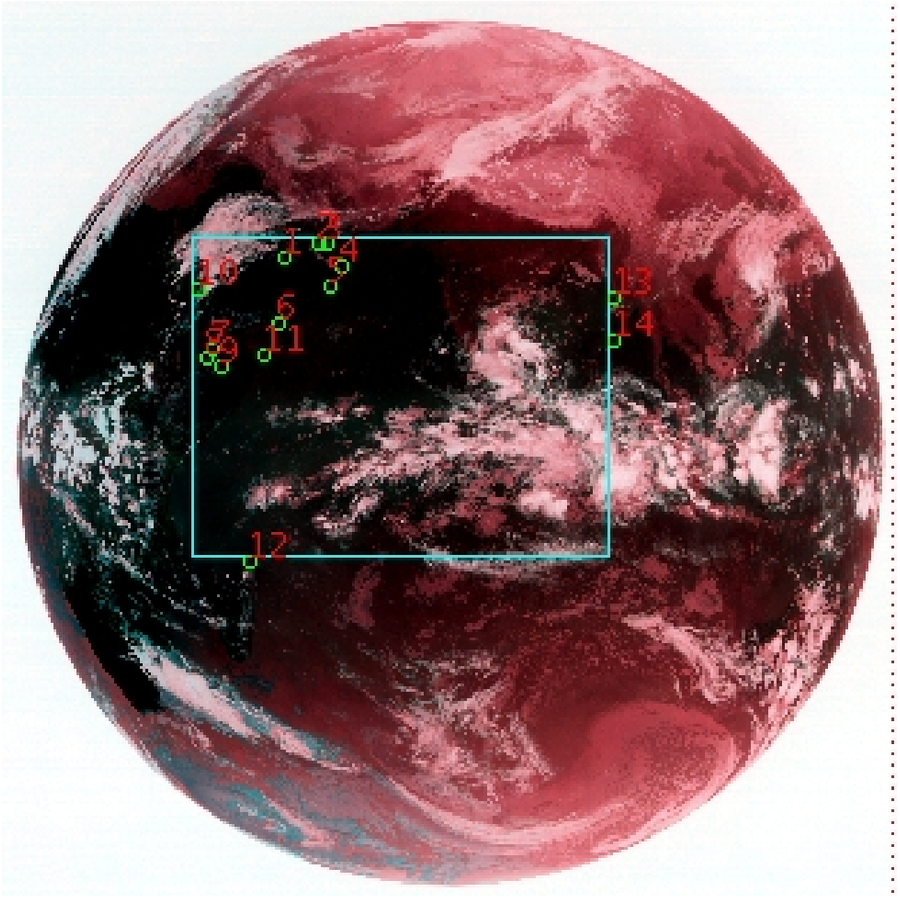
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_01NOV2018_1215

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 01-11-18/24:15 | **Station ID** | BES | **Field View(deg)** | 18.006 |
| **Res(Y,X) [Km]** | (4.0,4.0) | **Res(Y,X) [uRad]** | (112.0,112.0) | | |

(80.729N,-7.061W) (80.729N,155.322E)




(-81.223S,-7.061W) (-81.223S,155.322E)

GCP Distribution overview for 3RIMG01NOV20181215L1BDQE

**Image Width:** 2805 **Image Height:** 2816 **No Of GCPs:** 14

**GCP Coverage(%)** 35.37 **(N-S)** 46.46 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | -5.954 | S | 0.880 | 6.019 |
| Across | -2.407 | W | 1.784 | 2.996 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 6.691 |
| **Min** | 5.247 |
| **Max** | 8.075 |
| **CE90** | 7.256 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.341 | 0.299 | 8.530 |
| Along | 4.368 | 0.379 | 9.205 |
| Across | 4.507 | 0.416 | 12.681 |

## Internal Distortion (in IR Pixels)

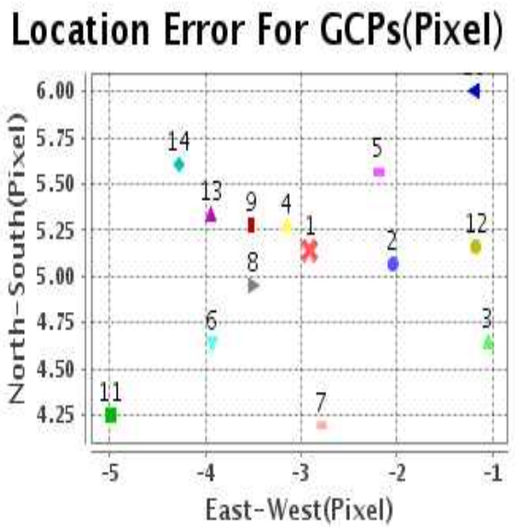
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 1.815 | -0.464 | 0.50 | 0.679 |
| Across | 3.938 | 1.835 | 1.13 | 2.155 |

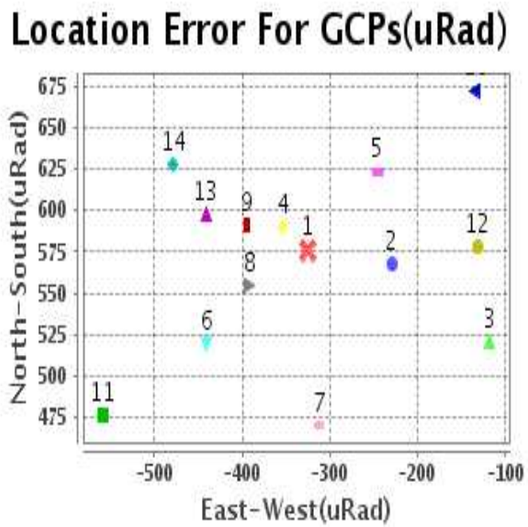
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.02090 | 0.03921 | -0.02526 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 01-11-18 |
| Sensor | IMG | DQE Date | 02-11-2018 |
| PassType | NONE | Aquisition Date | 01-11-18 |
| 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_01NOV2 | 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) | -0.247 |
| Center Lon(deg) | 74.13 |
| 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) | 80.729 |
| NW_Lon(deg) | -7.061 |
| SW_Lat(deg) | -81.223 |
| SW_Lon(deg) | -7.061 |
| NE_Lat(deg) | 80.729 |
| NE_Lon(deg) | 155.322 |
| SE_Lat(deg) | -81.223 |
| SE_Lon(deg) | 155.322 |

## 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 :** **3RIMG01NOV20181215L1BDQE**

(-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 :** 14

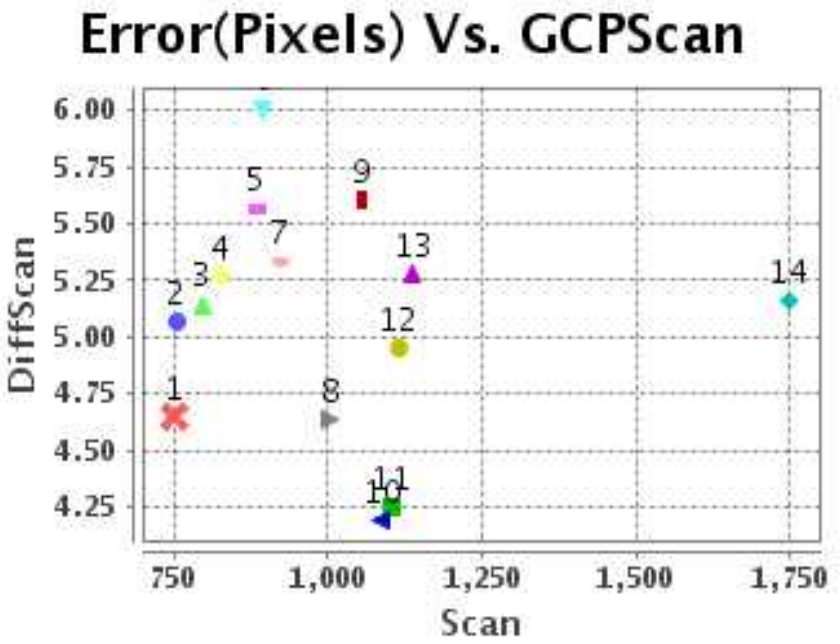
| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 1005.4 | 244.1 | 750.5 | 1746.50 | 35.37 (N-S) |
| **GCP Pix** | 976.7 | 404.0 | 598.2 | 1901.50 | 46.46 (E-W) |

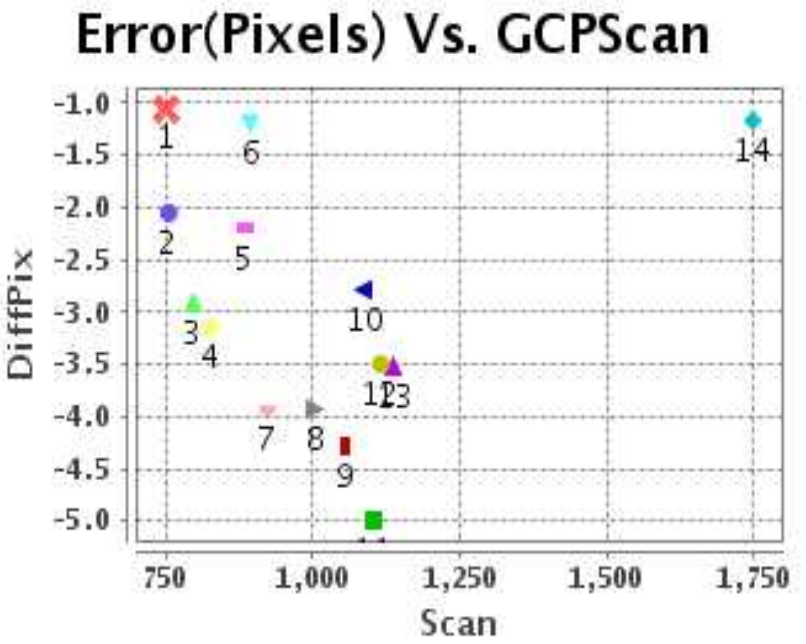
## Identified Control Point details : ( Differences are Reference - Product )

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 796.0 | 869.5 | 5.1 | -2.91 | 25.245 | S | 6.597 | W | Accepted |
| 2 | 754.8 | 977.8 | 5.1 | -2.05 | 29.006 | S | 1.084 | W | Accepted |
| 3 | 750.5 | 1000.2 | 4.6 | -1.05 | 26.102 | S | 0.575 | E | Accepted |
| 4 | 826.2 | 1049.2 | 5.3 | -3.15 | 26.362 | S | 9.431 | W | Accepted |
| 5 | 885.2 | 1012.5 | 5.6 | -2.19 | 26.273 | S | 4.651 | W | Accepted |
| 6 | 1004.0 | 846.0 | 4.6 | -3.93 | 19.298 | S | 14.771 | W | Accepted |
| 7 | 1088.2 | 647.0 | 4.2 | -2.79 | 18.193 | S | 10.464 | W | Accepted |
| 8 | 1114.2 | 628.0 | 5.0 | -3.50 | 20.965 | S | 14.348 | W | Accepted |
| 9 | 1137.2 | 672.2 | 5.3 | -3.53 | 22.742 | S | 13.297 | W | Accepted |
| 10 | 894.2 | 598.2 | 6.0 | -1.20 | 28.650 | S | 3.888 | E | Accepted |
| 11 | 1102.2 | 807.2 | 4.3 | -4.99 | 17.788 | S | 18.908 | W | Accepted |
| 12 | 1746.5 | 764.0 | 5.2 | -1.18 | 23.392 | S | 8.124 | W | Accepted |
| 13 | 922.5 | 1901.5 | 5.3 | -3.94 | 26.088 | S | 19.047 | W | Accepted |

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

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 1054.0 | 1900.5 | 5.6 | -4.28 | 23.346 | S | 18.540 | W | Accepted |



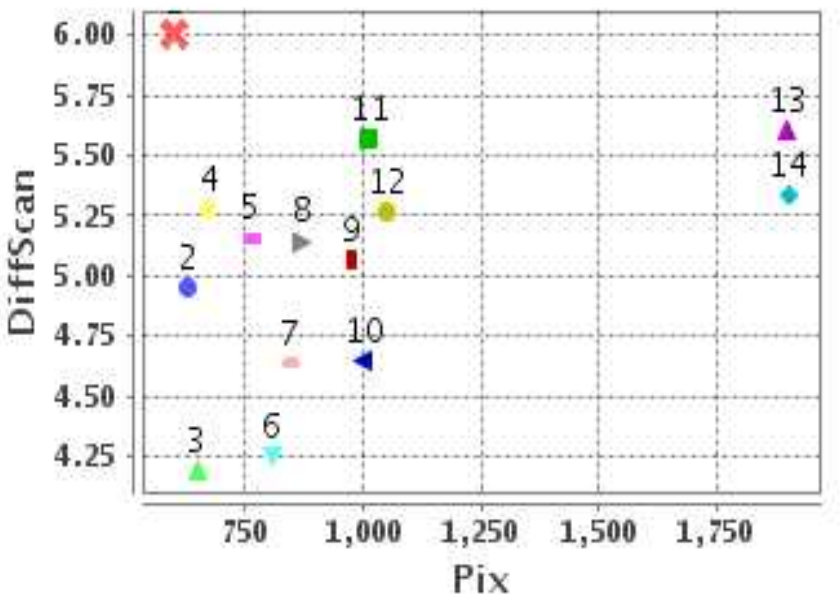



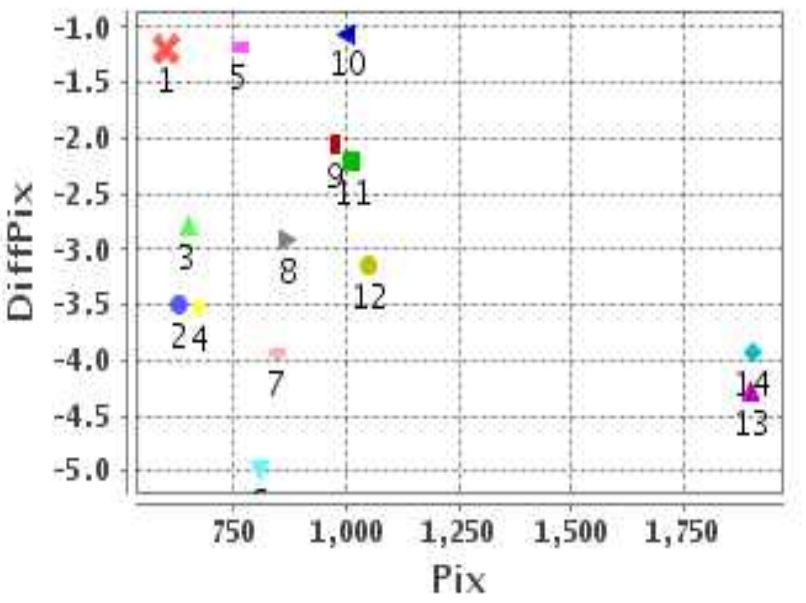

**Number Of Points**

| | |
|---|---|
| North | 0 |
| South | 14 |
| East | 2 |
| West | 12 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 6.691 |
| Min | 5.247 |
| Max | 8.075 |
| CE90 | 7.256 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | -5.954 | 0.880 | 6.019 | S | 5.914 | 6.123 |
| Across ( Km ) | -2.407 | 1.784 | 2.996 | W | 2.815 | 3.109 |

# 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)** | -26.945 | S | |
| **Across(Mean,Dir)** | -1.36 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.65 | 16.29 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.86 | 0.00 | |
| **Across(Mean,Stddev)** | 1.71 | 0.00 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 4 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -26.9375 | S | |
| **Across(Mean,Dir)** | -3.65 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.84 | 20.93 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.65 | 0.21 | |
| **Across(Mean,Stddev)** | 0.08 | 0.86 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -26.09 | S | |
| **Across(Mean,Dir)** | -19.04 | W | |
| **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** | 6 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -20.3967 | S | |
| **Across(Mean,Dir)** | -13.32 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.30 | 7.47 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.13 | 0.46 | |
| **Across(Mean,Stddev)** | -0.21 | 1.27 | |

**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** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -23.35 | S | |
| **Across(Mean,Dir)** | -18.54 | W | |
| **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