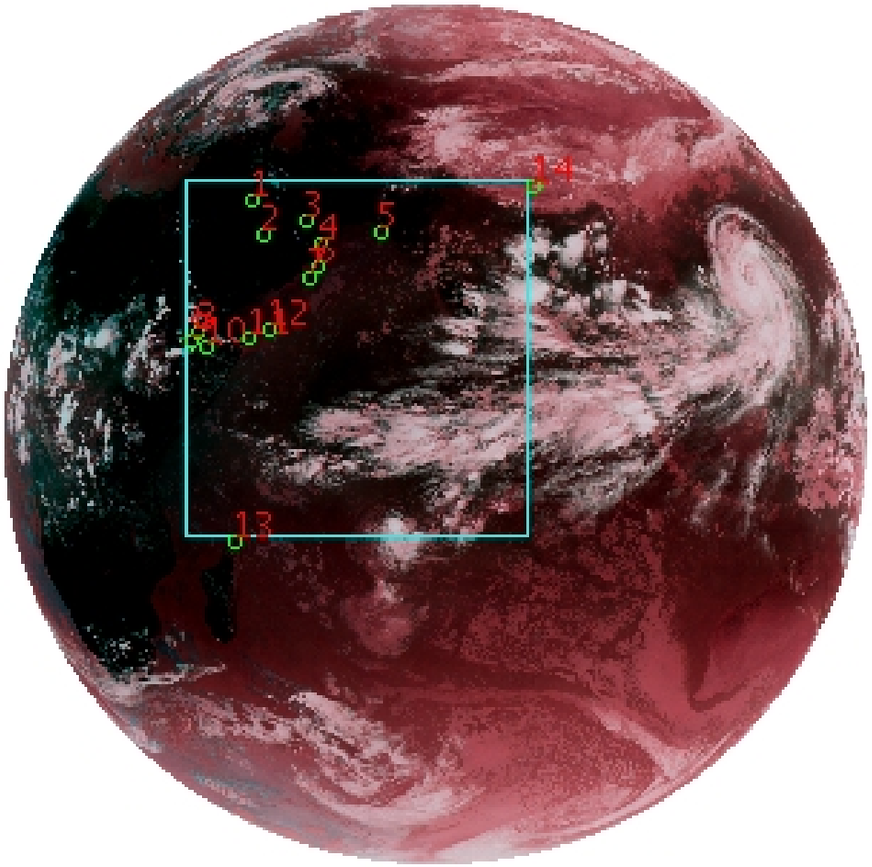
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_15SEP2018_1215

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 15-09-18/24:15 | **Station ID** | BES | **Field View(deg)** | 18.006 |
| **Res(Y,X) [Km]** | (4.0,4.0) | **Res(Y,X) [uRad]** | (112.0,112.0) | | |

(81.042N,-7.157W) (81.042N,155.157E)



(-81.042S,-7.157W) (-81.042S,155.157E)

GCP Distribution overview for 3RIMG15SEP20181215L1BSTD

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

**GCP Coverage(%)** 39.44 **(N-S)** 38.20 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 1.156 | N | 1.198 | 1.665 |
| Across | -1.453 | W | 1.207 | 1.889 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 2.227 |
| **Min** | .724 |
| **Max** | 4.177 |
| **CE90** | 3.333 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.432 | 0.380 | 10.801 |
| Along | 4.430 | 0.908 | 10.752 |
| Across | 4.805 | 2.156 | 20.133 |

## Internal Distortion (in IR Pixels)

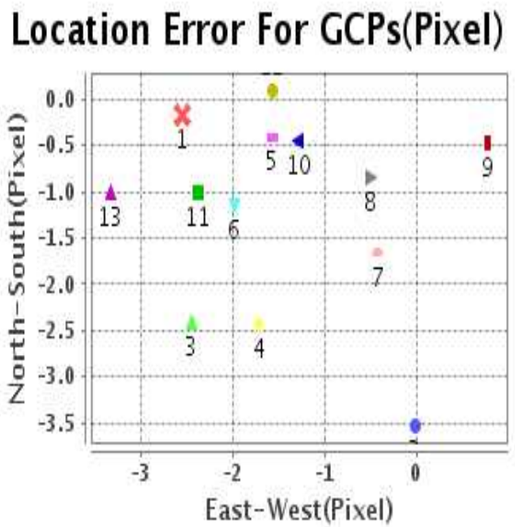
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 3.628 | 0.187 | 1.05 | 1.066 |
| Across | 4.097 | 1.042 | 1.11 | 1.526 |

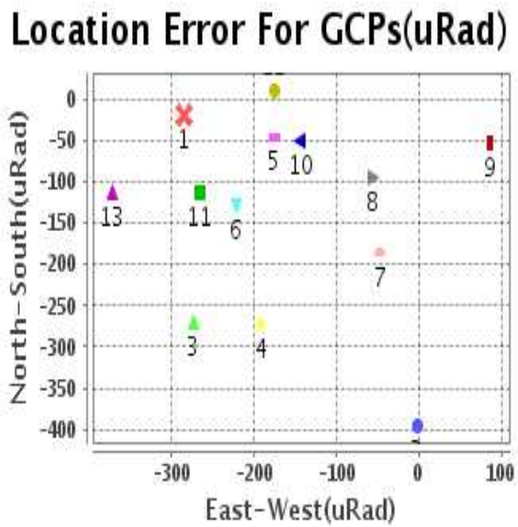
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.01633 | -0.00997 | 0.04559 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 15-09-18 |
| Sensor | IMG | DQE Date | 19-09-2018 |
| PassType | NONE | Aquisition Date | 15-09-18 |
| 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_15SEP20 | 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 :** **3RIMG15SEP20181215L1BSTD**

(-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

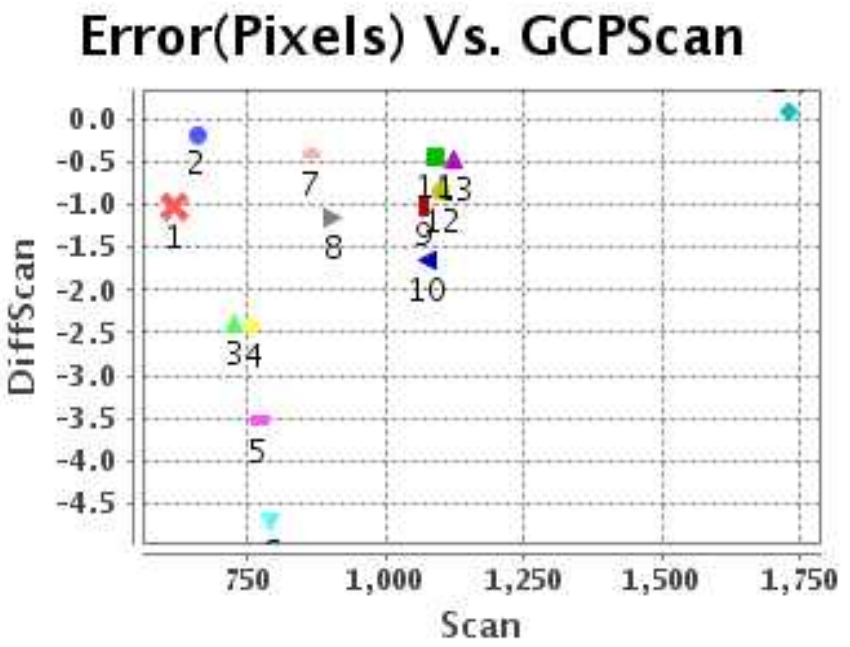
| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 948.8 | 274.4 | 617.2 | 1728.00 | 39.44 (N-S) |
| **GCP Pix** | 928.1 | 267.8 | 626.0 | 1697.50 | 38.20 (E-W) |

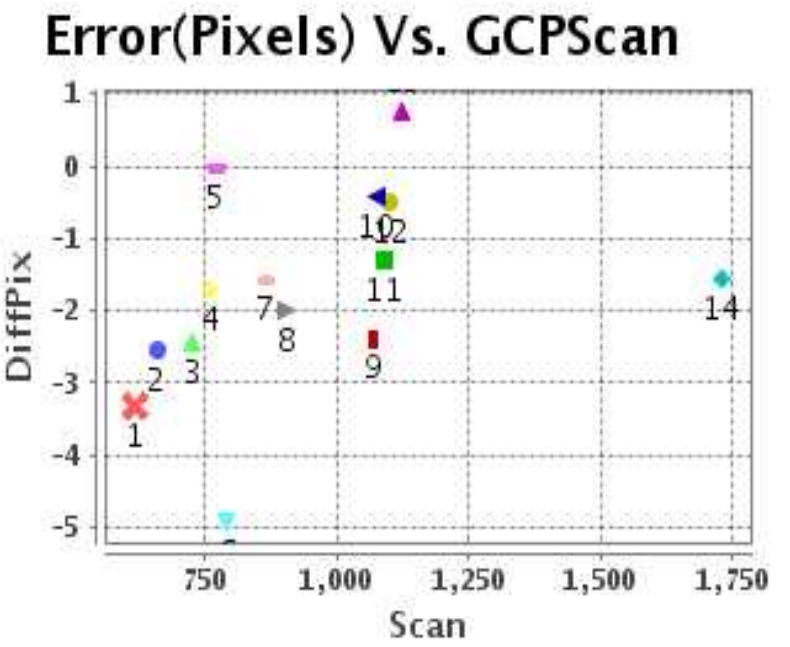
## Identified Control Point details : ( Differences are Reference - Product )

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 660.2 | 818.2 | -0.2 | -2.55 | 0.217 | N | 11.593 | W | Accepted |
| 2 | 770.5 | 849.2 | -3.5 | -0.02 | 15.285 | N | 2.000 | W | Accepted |
| 3 | 727.5 | 983.0 | -2.4 | -2.45 | 10.189 | N | 13.243 | W | Accepted |
| 4 | 793.5 | 1026.2 | -4.7 | -4.92 | 21.442 | N | 23.729 | W | Rejected |
| 5 | 759.0 | 1220.8 | -2.4 | -1.72 | 12.187 | N | 5.180 | W | Accepted |
| 6 | 865.2 | 1021.8 | -0.4 | -1.57 | 0.719 | N | 4.128 | W | Accepted |
| 7 | 904.0 | 990.5 | -1.2 | -1.98 | 5.182 | N | 6.937 | W | Accepted |
| 8 | 1075.5 | 645.5 | -1.7 | -0.43 | 5.032 | N | 0.037 | W | Accepted |
| 9 | 1101.2 | 626.0 | -0.8 | -0.50 | 2.578 | N | 3.256 | W | Accepted |
| 10 | 1124.0 | 669.0 | -0.5 | 0.77 | 2.027 | N | 2.898 | E | Accepted |
| 11 | 1089.5 | 808.8 | -0.5 | -1.29 | 0.706 | S | 2.807 | W | Accepted |
| 12 | 1067.2 | 872.0 | -1.0 | -2.38 | 3.317 | N | 10.551 | W | Accepted |
| 13 | 1728.0 | 764.2 | 0.1 | -1.57 | 0.165 | N | 5.994 | W | Accepted |

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

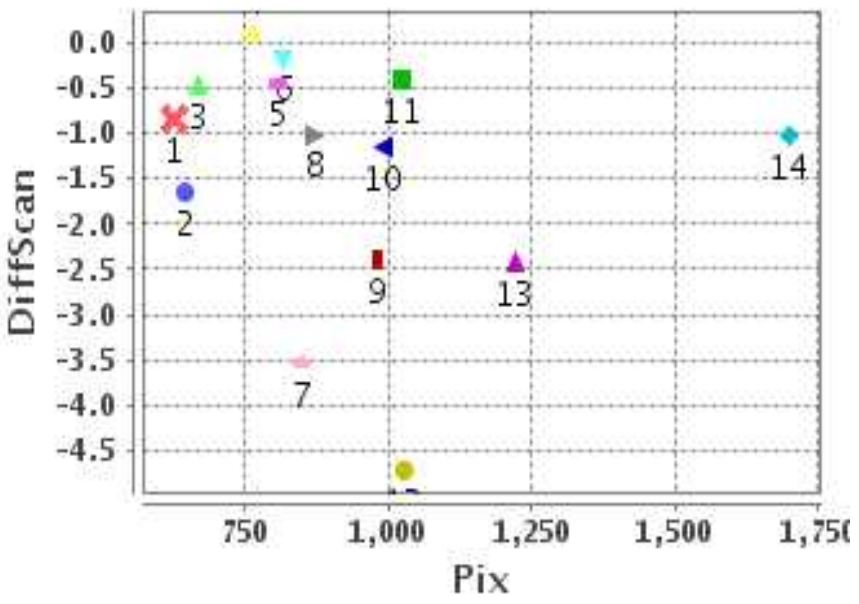
| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 617.2 | 1697.5 | -1.0 | -3.33 | 3.942 | N | 12.736 | W | Accepted |

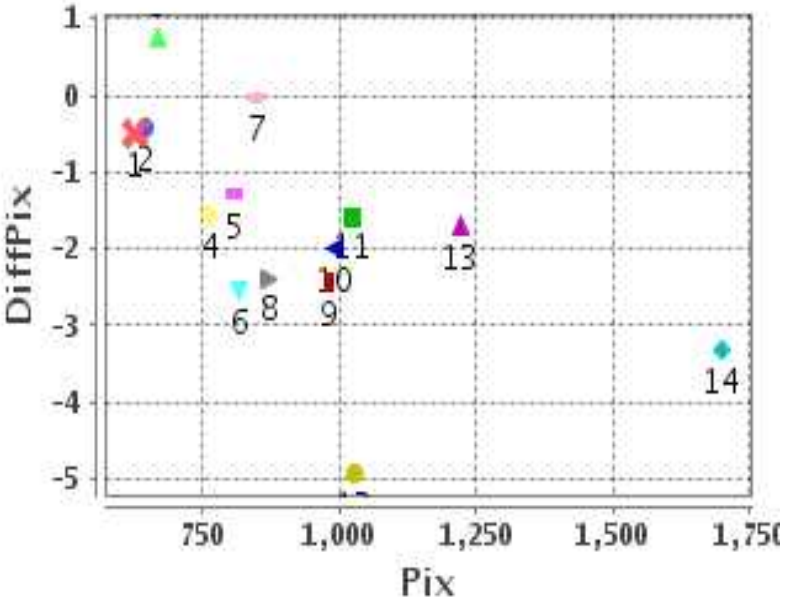



| Number Of Points | |
|---|---|
| North | 12 |
| South | 1 |
| East | 1 |
| West | 12 |

| Radial Error ( Km | |
|---|---|
| Mean | 2.227 |
| Min | .724 |
| Max | 4.177 |
| CE90 | 3.333 |




## Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | 1.156 | 1.198 | 1.665 | N | 1.336 | 1.733 |
| Across ( Km ) | -1.453 | 1.207 | 1.889 | W | 1.718 | 1.966 |

# 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)** | 7.75 | N | |
| **Across(Mean,Dir)** | -6.80 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 5.69 | 42.30 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 3.35 | 0.00 | |
| **Across(Mean,Stddev)** | -2.53 | 0.00 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 5 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 6.444 | N | |
| **Across(Mean,Dir)** | -8.45 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.53 | 13.24 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.58 | 0.86 | |
| **Across(Mean,Stddev)** | -0.30 | 0.70 | |

**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** | 6 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 2.06833 | N | |
| **Across(Mean,Dir)** | -3.29 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.37 | 9.35 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.34 | 0.58 | |
| **Across(Mean,Stddev)** | 0.48 | 1.07 | |

**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