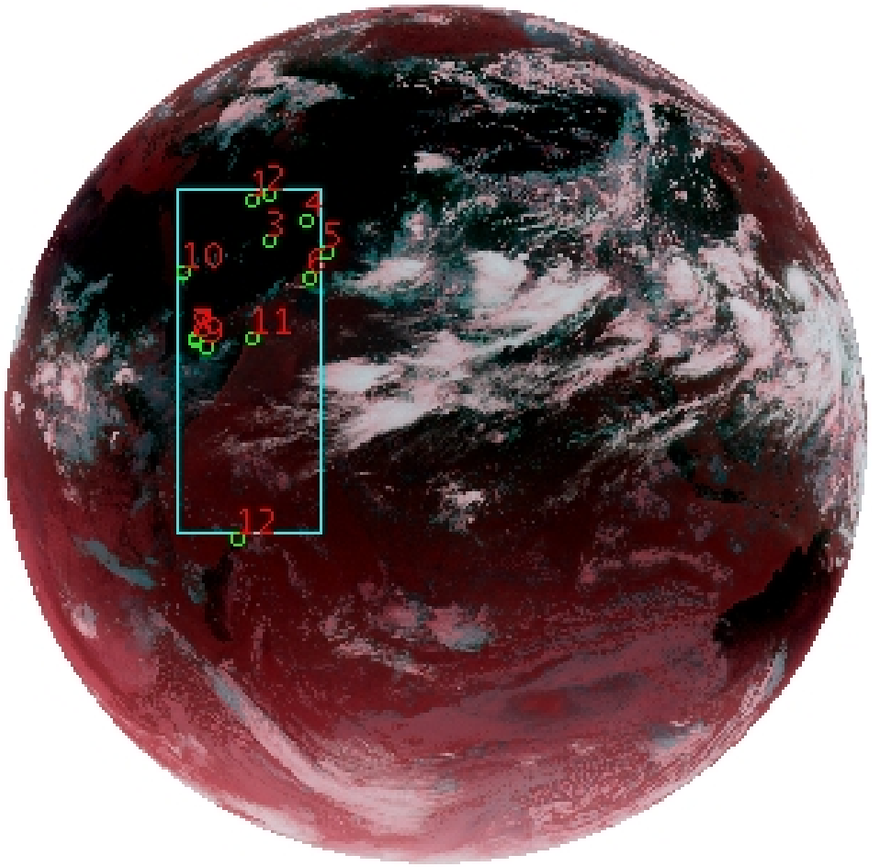
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_15JUL2018_0615

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 15-07-18/06:15 | **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 3RIMG15JUL20180615L1BSTD

**Image Width:** 2805 **Image Height:** 2816 **No Of GCPs:** 12

**GCP Coverage(%)** 38.48 **(N-S)** 16.06 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 0.255 | N | 1.175 | 1.202 |
| Across | -0.808 | W | 1.375 | 1.595 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 1.704 |
| **Min** | .504 |
| **Max** | 4.052 |
| **CE90** | 2.146 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.579 | 0.478 | 14.474 |
| Along | 4.637 | 0.442 | 15.915 |
| Across | 5.039 | 2.721 | 25.984 |

## Internal Distortion (in IR Pixels)

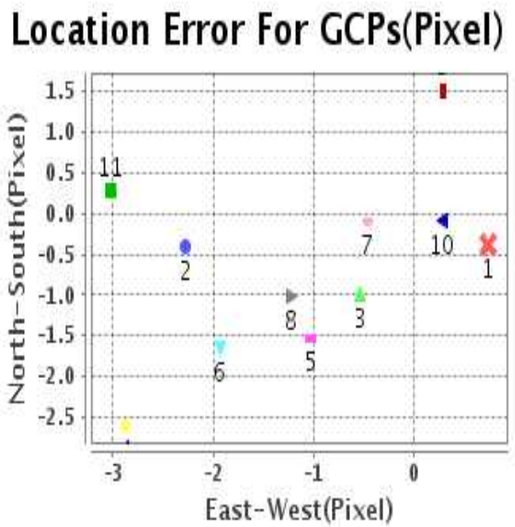
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 4.124 | 0.252 | 1.10 | 1.131 |
| Across | 3.751 | 1.522 | 1.21 | 1.946 |

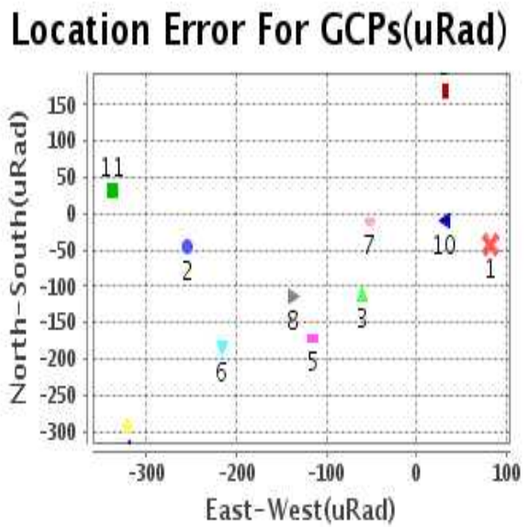
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.02248 | -0.02520 | 0.33364 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 15-07-18 |
| Sensor | IMG | DQE Date | 20-07-2018 |
| PassType | NONE | Aquisition Date | 15-07-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 06:15 |
| 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_15JUL20 | 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 :** **3RIMG15JUL20180615L1BSTD**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

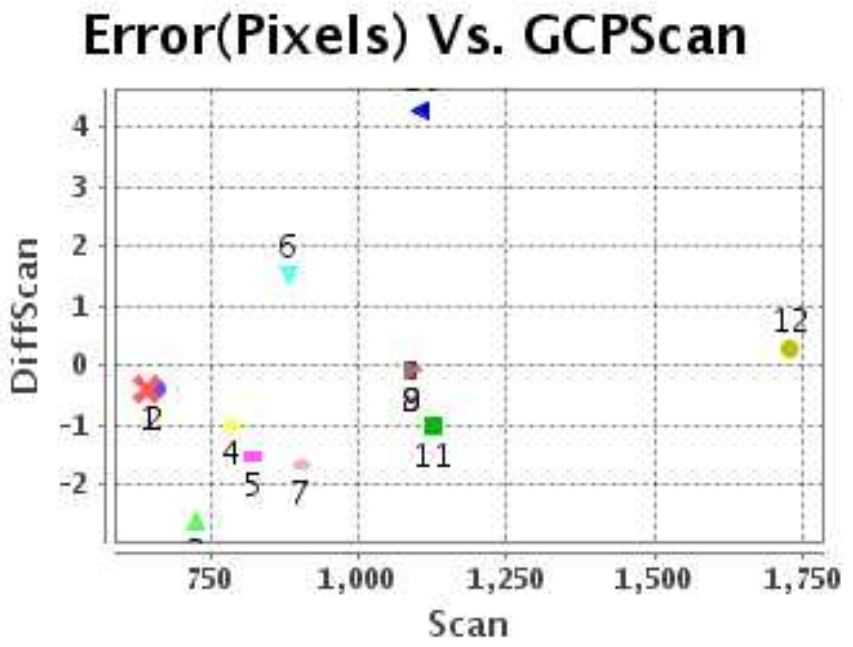
## GCP Distribution Statistics

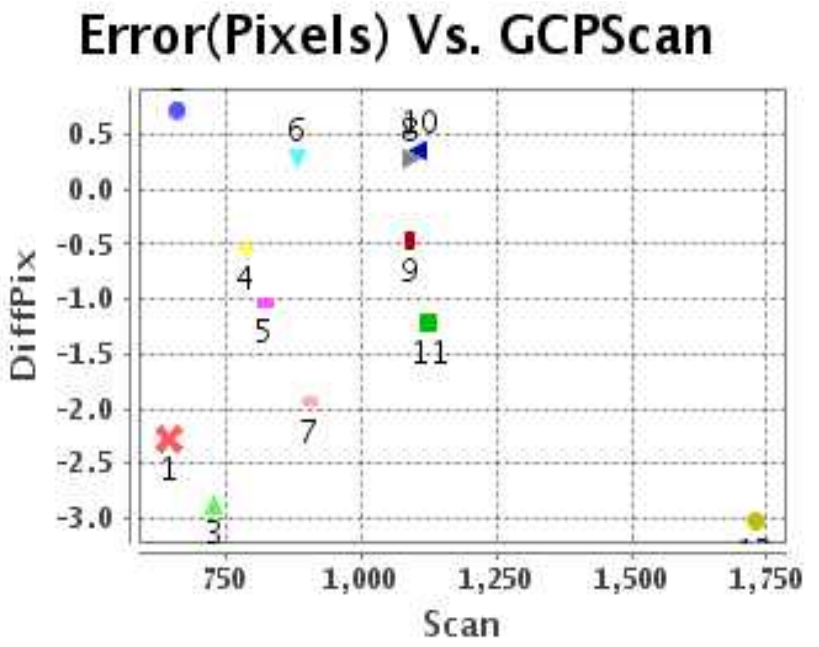
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 12

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 963.8 | 284.8 | 644.2 | 1727.75 | 38.48 (N-S) |
| **GCP Pix** | 806.4 | 145.8 | 597.0 | 1047.50 | 16.06 (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 | 660.5 | 815.0 | -0.4 | 0.73 | 1.254 | S | 4.601 | E | Accepted |
| 2 | 644.2 | 864.8 | -0.4 | -2.28 | 1.449 | N | 7.834 | W | Accepted |
| 3 | 785.2 | 867.5 | -1.0 | -0.54 | 3.074 | N | 0.429 | W | Accepted |
| 4 | 727.8 | 983.5 | -2.6 | -2.87 | 9.943 | N | 12.799 | W | Accepted |
| 5 | 822.5 | 1047.5 | -1.5 | -1.02 | 5.408 | N | 2.776 | W | Accepted |
| 6 | 904.5 | 990.5 | -1.7 | -1.93 | 5.182 | N | 6.715 | W | Accepted |
| 7 | 1090.2 | 632.0 | -0.1 | -0.47 | 0.706 | S | 1.886 | W | Accepted |
| 8 | 1106.2 | 632.5 | 4.3 | 0.36 | 19.633 | S | 7.604 | E | Rejected |
| 9 | 1124.5 | 670.8 | -1.0 | -1.23 | 2.251 | N | 2.027 | W | Accepted |
| 10 | 882.0 | 597.0 | 1.5 | 0.29 | 7.655 | S | 3.888 | E | Accepted |
| 11 | 1089.8 | 810.0 | -0.1 | 0.28 | 2.553 | S | 1.538 | E | Accepted |
| 12 | 1727.8 | 765.8 | 0.3 | -3.02 | 3.935 | S | 11.097 | W | Accepted |



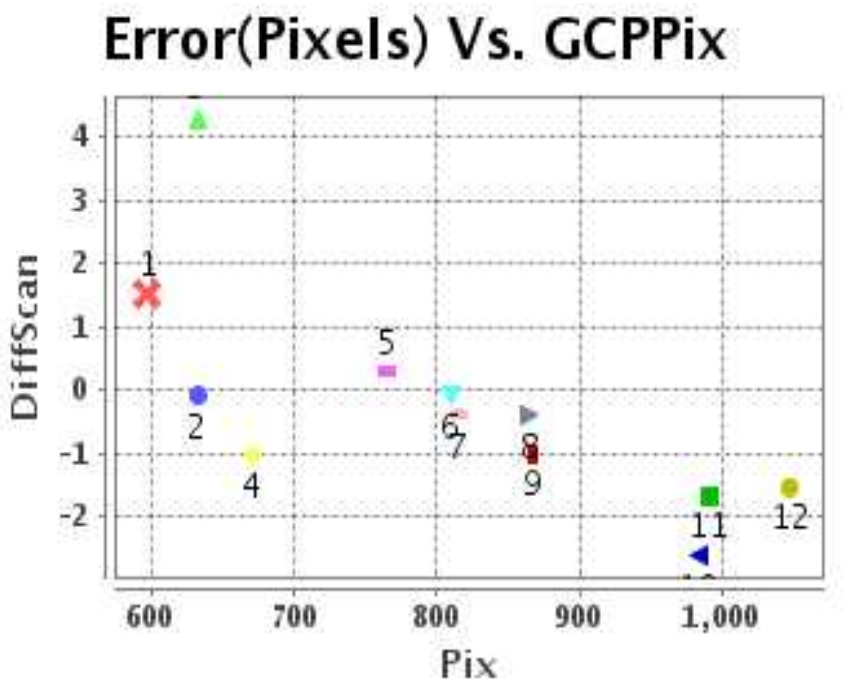



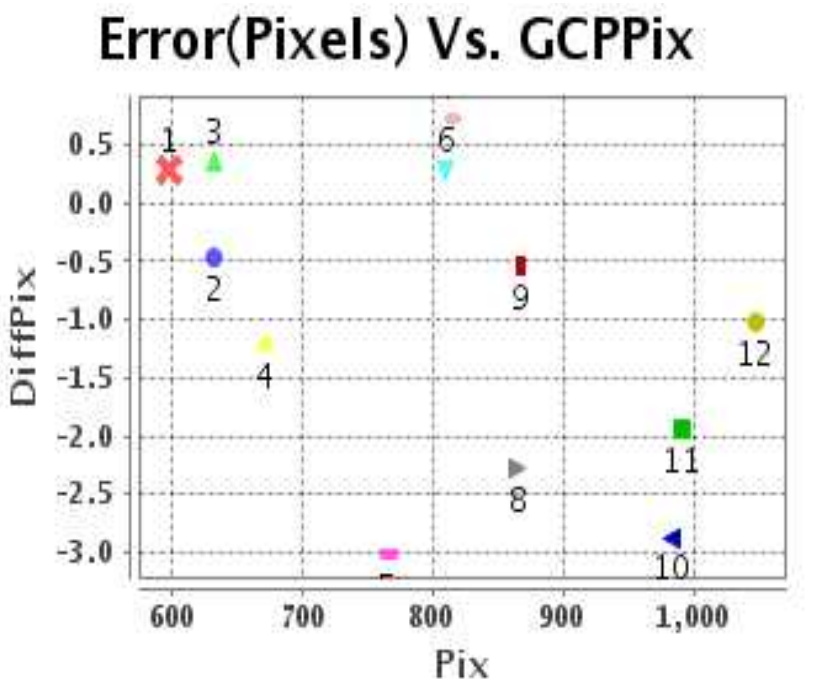

**Number Of Points**

| | |
|---|---|
| North | 6 |
| South | 5 |
| East | 3 |
| West | 8 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 1.704 |
| Min | .504 |
| Max | 4.052 |
| CE90 | 2.146 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | 0.255 | 1.175 | 1.202 | N | 0.985 | 1.259 |
| Across ( Km ) | -0.808 | 1.375 | 1.595 | W | 1.332 | 1.672 |

# Block-Wise Geo location Error Statistics

## Location Accuracy,Scale,ID

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 4 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -1.095 | S | |
| **Across(Mean,Dir)** | 0.06 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.88 | 22.02 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.45 | 1.07 | |
| **Across(Mean,Stddev)** | 0.98 | 1.23 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 3 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 6.84333 | N | |
| **Across(Mean,Dir)** | -7.43 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.80 | 20.04 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -1.01 | 0.07 | |
| **Across(Mean,Stddev)** | -1.39 | 0.46 | |

**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** | 4 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -1.235 | S | |
| **Across(Mean,Dir)** | -3.37 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.35 | 8.67 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.19 | 0.55 | |
| **Across(Mean,Stddev)** | 0.85 | 1.35 | |

**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