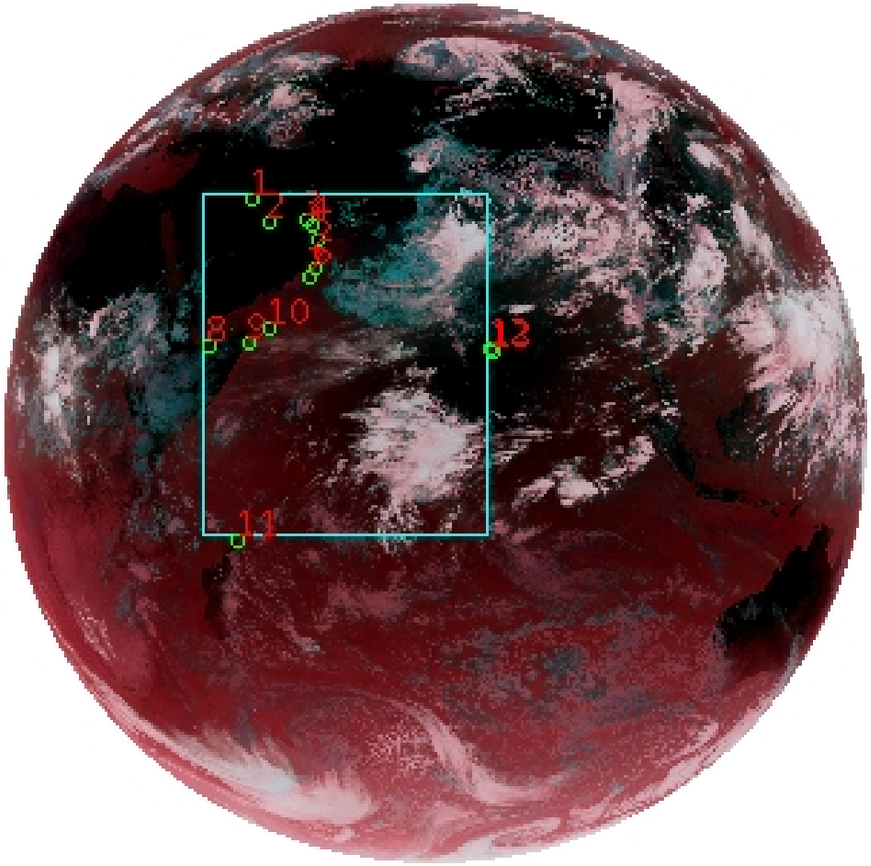
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_23JUL2018_0615

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 23-07-18/06:15 | **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 3RIMG23JUL20180615L1BSTD

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

**GCP Coverage(%)** 37.89 **(N-S)** 31.75 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 0.574 | N | 1.022 | 1.172 |
| Across | -2.744 | W | 0.859 | 2.876 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 2.926 |
| **Min** | 1.539 |
| **Max** | 5.094 |
| **CE90** | 3.419 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.281 | 0.369 | 7.015 |
| Along | 4.299 | 0.303 | 7.483 |
| Across | 4.152 | 0.369 | 3.811 |

## Internal Distortion (in IR Pixels)

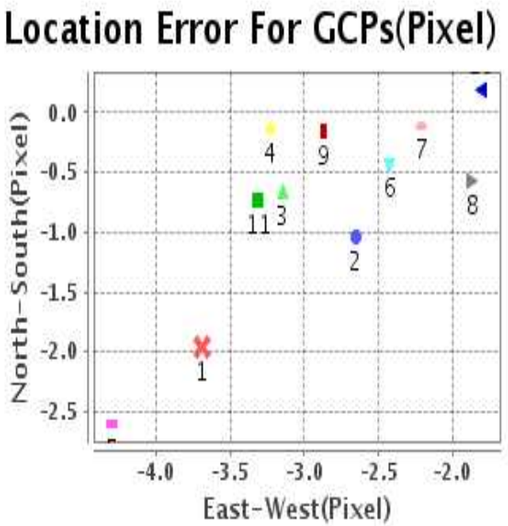
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 2.802 | -1.333 | 0.74 | 1.527 |
| Across | 2.485 | 0.484 | 0.75 | 0.896 |

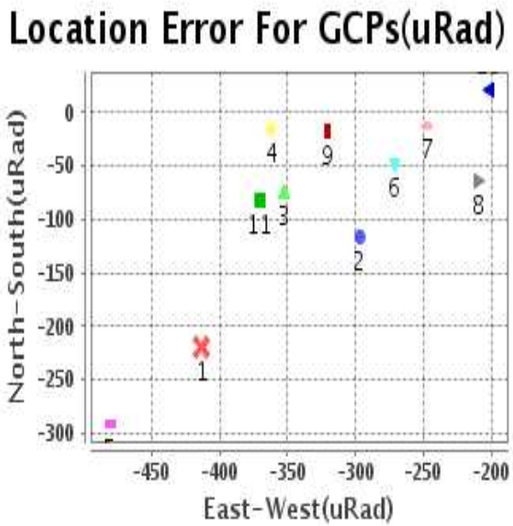
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.01733 | -0.00213 | -0.03418 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 23-07-18 |
| Sensor | IMG | DQE Date | 25-07-2018 |
| PassType | NONE | Aquisition Date | 23-07-18 |
| 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_23JUL20 | 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 :** **3RIMG23JUL20180615L1BSTD**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

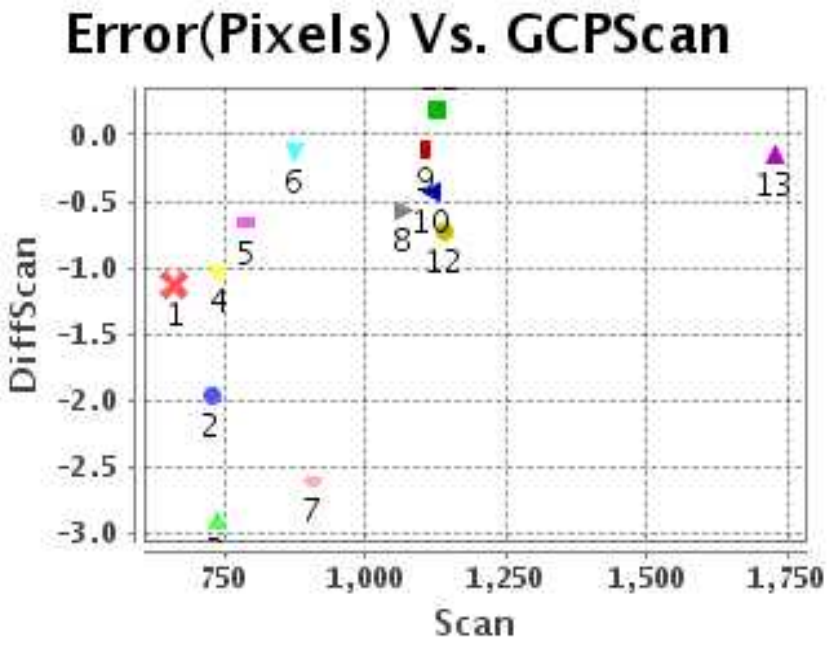
## GCP Distribution Statistics

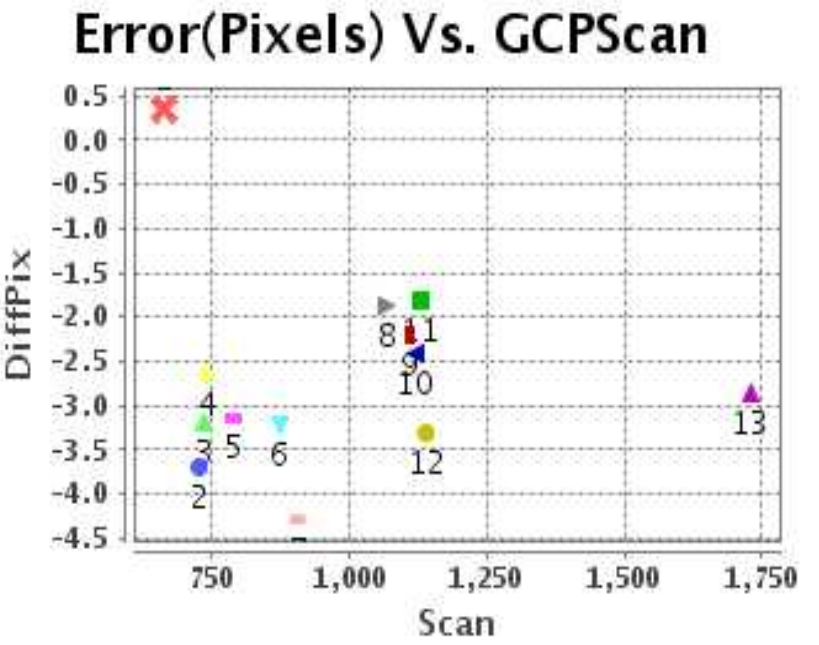
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 13

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 978.5 | 275.5 | 661.2 | 1728.25 | 37.89 (N-S) |
| **GCP Pix** | 997.2 | 264.2 | 683.5 | 1574.00 | 31.75 (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 | 815.2 | -1.1 | 0.35 | 4.835 | N | 1.806 | E | Rejected |
| 2 | 736.5 | 869.0 | -2.9 | -3.20 | 12.724 | N | 18.517 | W | Rejected |
| 3 | 727.0 | 984.2 | -2.0 | -3.69 | 10.436 | N | 17.502 | W | Accepted |
| 4 | 739.5 | 1002.5 | -1.0 | -2.65 | 2.835 | N | 10.074 | W | Accepted |
| 5 | 789.0 | 1023.8 | -0.7 | -3.15 | 3.064 | N | 11.305 | W | Accepted |
| 6 | 873.2 | 1014.5 | -0.1 | -3.23 | 0.083 | S | 12.105 | W | Accepted |
| 7 | 905.5 | 992.8 | -2.6 | -4.29 | 9.424 | N | 15.678 | W | Accepted |
| 8 | 1118.2 | 683.5 | -0.4 | -2.42 | 0.997 | N | 9.317 | W | Accepted |
| 9 | 1108.0 | 808.2 | -0.1 | -2.21 | 0.954 | N | 8.930 | W | Accepted |
| 10 | 1066.8 | 867.5 | -0.6 | -1.87 | 0.117 | S | 6.154 | W | Accepted |
| 11 | 1728.2 | 765.5 | -0.2 | -2.87 | 0.916 | S | 10.476 | W | Accepted |
| 12 | 1127.8 | 1562.2 | 0.2 | -1.81 | 4.070 | S | 5.805 | W | Accepted |
| 13 | 1140.0 | 1574.0 | -0.7 | -3.31 | 2.733 | N | 13.402 | W | Accepted |



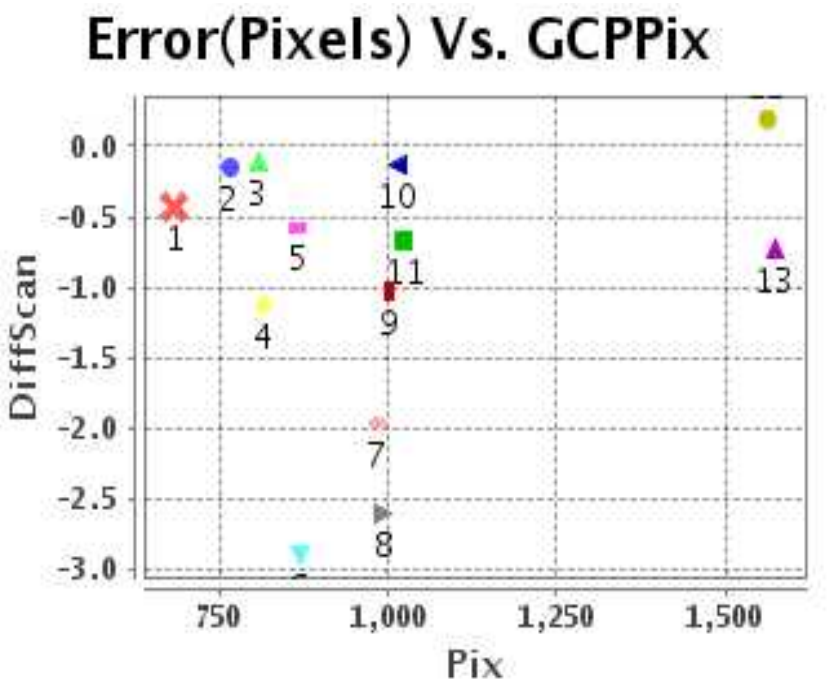



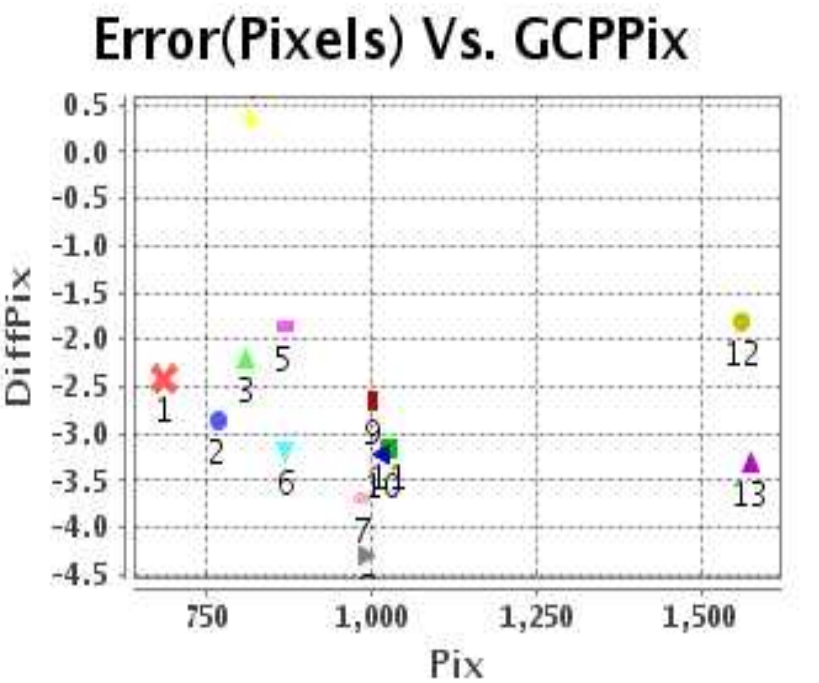

**Number Of Points**

| | |
|---|---|
| North | 7 |
| South | 4 |
| East | 0 |
| West | 11 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 2.926 |
| Min | 1.539 |
| Max | 5.094 |
| CE90 | 3.419 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| **Along( Km )** | 0.574 | 1.022 | 1.172 | N | 0.912 | 1.230 |
| **Across ( Km )** | -2.744 | 0.859 | 2.876 | W | 2.680 | 2.981 |

# Block-Wise Geo location Error Statistics

## Location Accuracy,Scale,ID

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

| | | |
|---|---|---|
| **Number of GCPs** | 5 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | 5.134 | N |
| **Across(Mean,Dir)** | -13.33 | W |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | 4.88 | 22.05 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -0.85 | 0.92 |
| **Across(Mean,Stddev)** | -0.36 | 0.60 |

**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)** | 0.2275 | N |
| **Across(Mean,Dir)** | -8.72 | W |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | 4.18 | 4.45 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -0.35 | 0.14 |
| **Across(Mean,Stddev)** | -0.11 | 0.41 |

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

| | | |
|---|---|---|
| **Number of GCPs** | 2 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | -0.665 | S |
| **Across(Mean,Dir)** | -9.60 | W |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | 3.51 | 12.30 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | 0.93 | 0.00 |
| **Across(Mean,Stddev)** | 1.50 | 0.00 |

**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