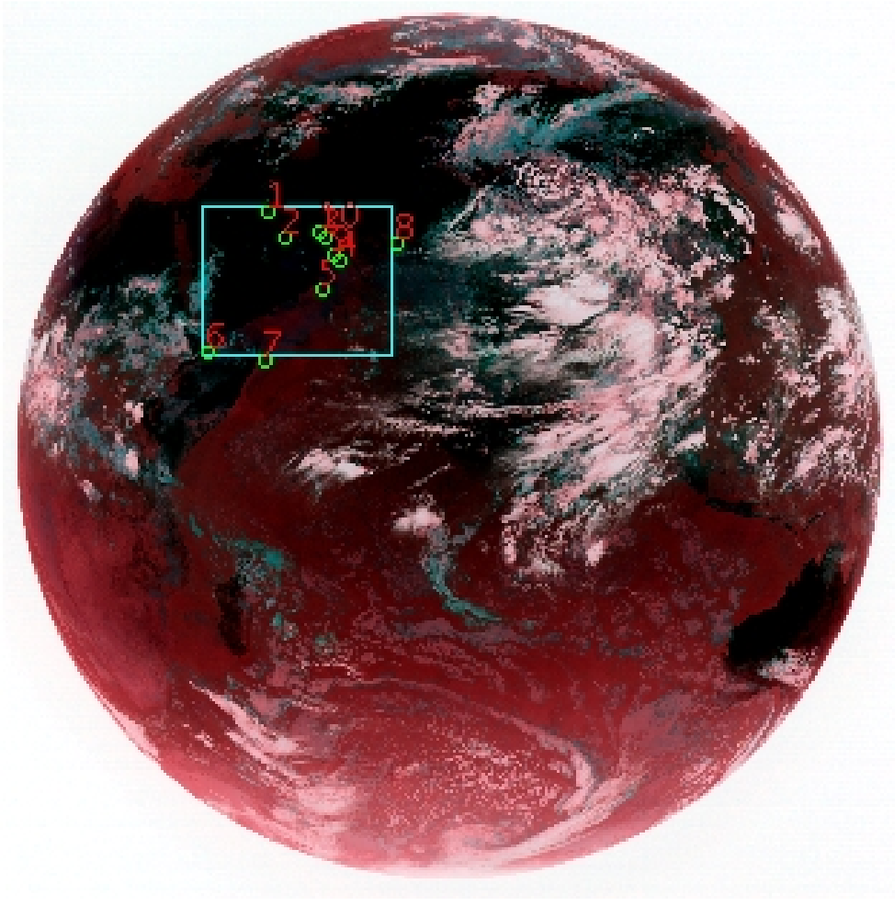
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_30JUL2018_0614

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 30-07-18/06:14 | **Station ID** | BES | **Field View(deg)** | 17.99 |
| **Res(Y,X) [Km]** | (4.0,4.0) | **Res(Y,X) [uRad]** | (112.0,112.0) | | |

(81.077N,-7.239W) (81.077N,155.075E)



(-81.052S,-7.239W) (-81.052S,155.075E)

GCP Distribution overview for 3RIMG30JUL20180614L1BDQE

**Image Width:** 2805 **Image Height:** 2816 **No Of GCPs:** 10

**GCP Coverage(%)** 16.67 **(N-S)** 20.96 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 10.297 | N | 1.670 | 10.431 |
| Across | -27.309 | W | 2.443 | 27.418 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 29.204 |
| **Min** | 25.748 |
| **Max** | 33.363 |
| **CE90** | 32.356 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.809 | 0.502 | 20.215 |
| Along | 4.926 | 0.482 | 23.145 |
| Across | 4.698 | 0.367 | 17.444 |

## Internal Distortion (in IR Pixels)

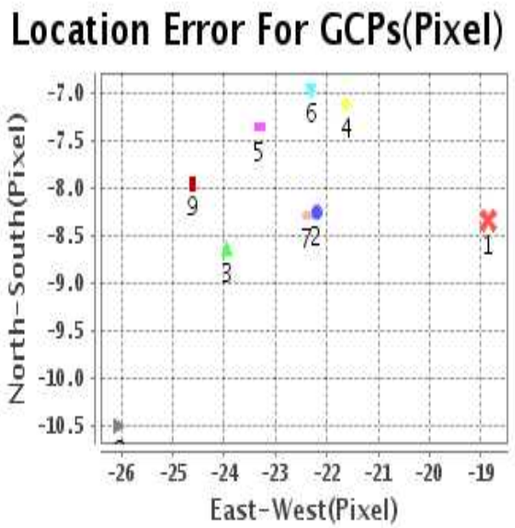
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 3.530 | -0.204 | 1.05 | 1.074 |
| Across | 7.178 | 0.571 | 2.02 | 2.100 |

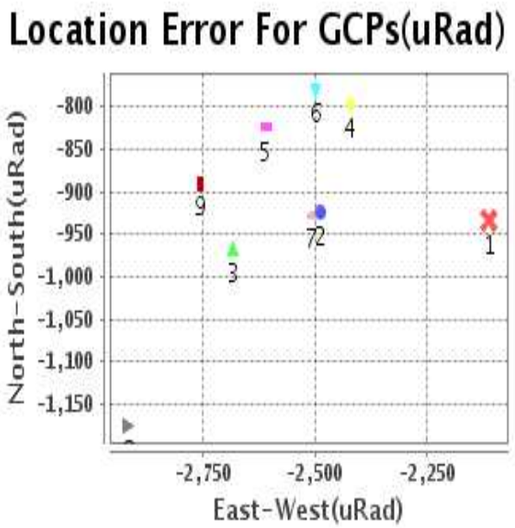
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.15956 | -0.06253 | -0.05822 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 30-07-18 |
| Sensor | IMG | DQE Date | 31-07-2018 |
| PassType | NONE | Aquisition Date | 30-07-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 06:14 |
| 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_30JUL20 | 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) | 0.012 |
| Center Lon(deg) | 73.918 |
| 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) | 81.077 |
| NW_Lon(deg) | -7.239 |
| SW_Lat(deg) | -81.052 |
| SW_Lon(deg) | -7.239 |
| NE_Lat(deg) | 81.077 |
| NE_Lon(deg) | 155.075 |
| SE_Lat(deg) | -81.052 |
| SE_Lon(deg) | 155.075 |

## 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 :** **3RIMG30JUL20180614L1BDQE**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

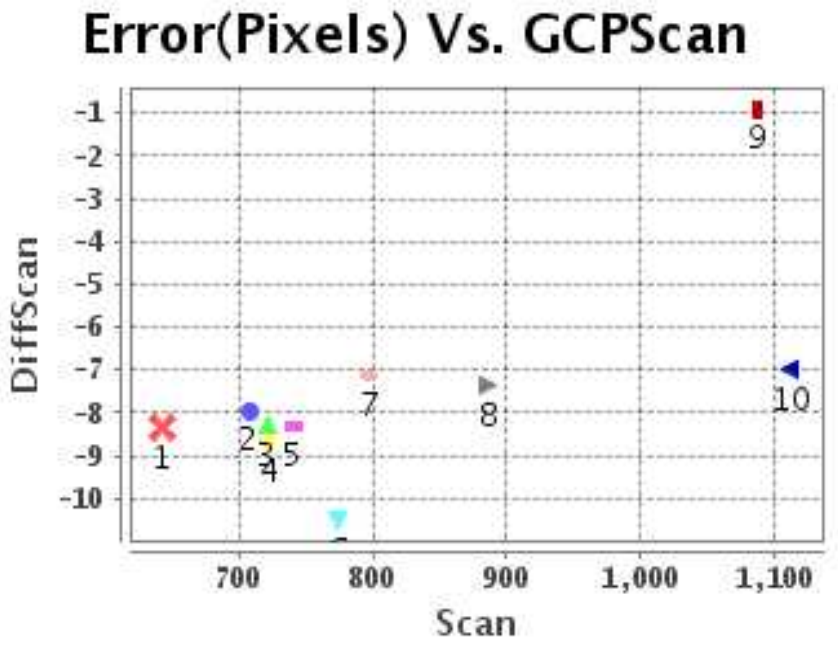
## GCP Distribution Statistics

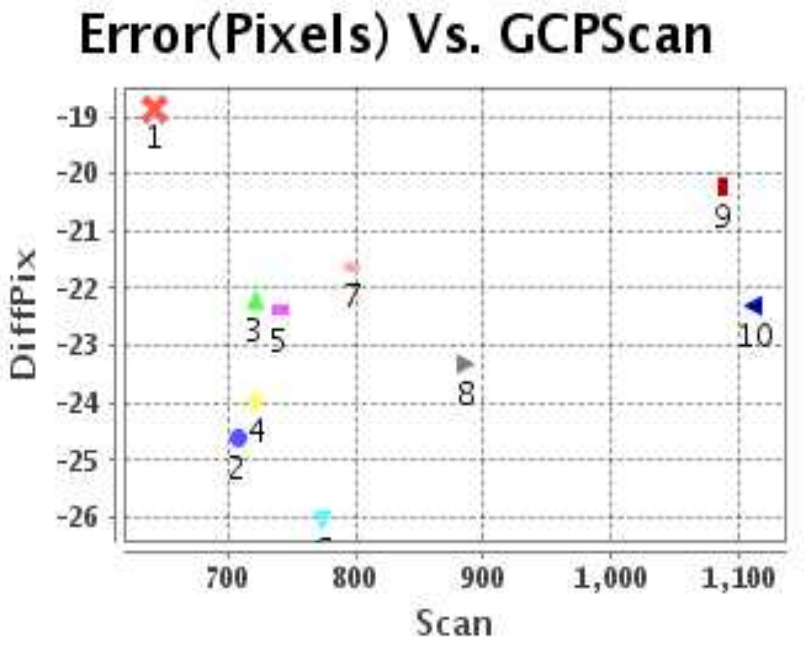
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 819.2 | 152.9 | 642.5 | 1112.00 | 16.67 (N-S) |
| **GCP Pix** | 944.8 | 154.2 | 636.8 | 1224.75 | 20.96 (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 | 642.5 | 819.2 | -8.3 | -18.86 | 48.333 | N | 112.134 | W | Accepted |
| 2 | 721.2 | 876.5 | -8.3 | -22.21 | 44.144 | N | 114.139 | W | Accepted |
| 3 | 722.0 | 1007.5 | -8.6 | -23.95 | 45.591 | N | 114.874 | W | Accepted |
| 4 | 797.0 | 1052.2 | -7.1 | -21.63 | 35.040 | N | 98.036 | W | Accepted |
| 5 | 886.0 | 995.5 | -7.4 | -23.31 | 34.021 | N | 102.774 | W | Accepted |
| 6 | 1088.0 | 636.8 | -0.9 | -20.24 | 6.032 | N | 96.530 | W | Rejected |
| 7 | 1112.0 | 815.5 | -7.0 | -22.30 | 29.438 | N | 98.695 | W | Accepted |
| 8 | 740.2 | 1224.8 | -8.3 | -22.39 | 40.384 | N | 96.979 | W | Accepted |
| 9 | 774.5 | 1031.0 | -10.5 | -26.04 | 50.746 | N | 123.426 | W | Accepted |
| 10 | 708.0 | 989.0 | -7.9 | -24.60 | 42.980 | N | 122.080 | W | Accepted |



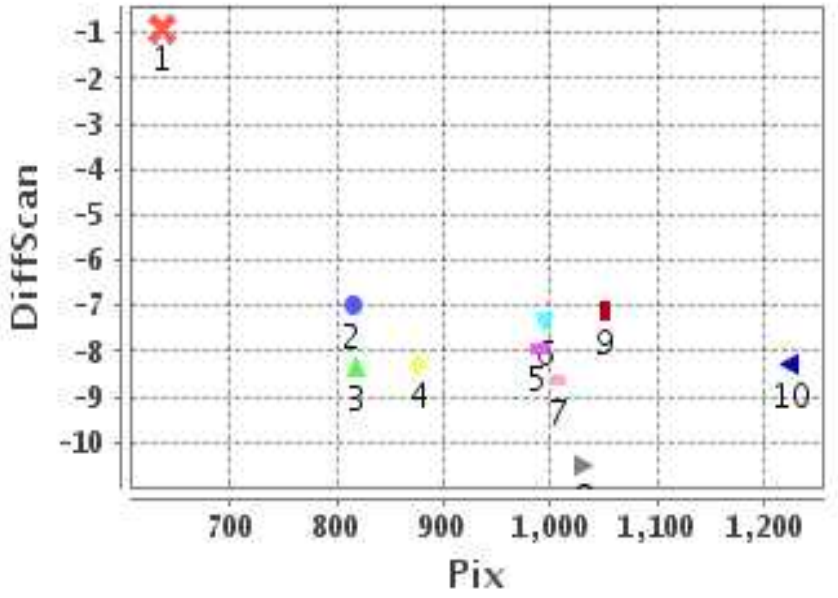



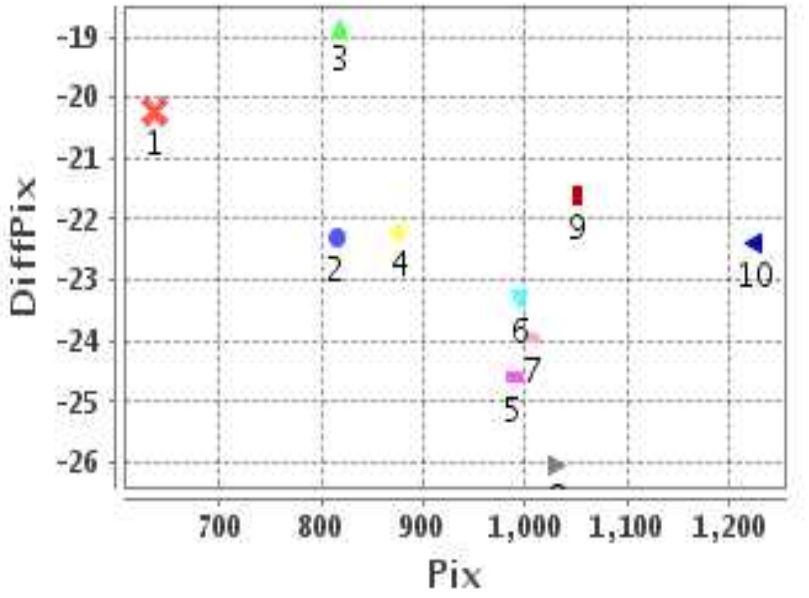

**Number Of Points**

| | |
|---|---|
| North | 9 |
| South | 0 |
| East | 0 |
| West | 9 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 29.204 |
| Min | 25.748 |
| Max | 33.363 |
| CE90 | 32.356 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | 10.297 | 1.670 | 10.431 | N | 10.114 | 10.754 |
| Across ( Km ) | -27.309 | 2.443 | 27.418 | W | 26.958 | 27.790 |

# 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)** | 46.245 | N | |
| **Across(Mean,Dir)** | -113.14 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 5.93 | 48.19 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.08 | 0.00 | |
| **Across(Mean,Stddev)** | 3.35 | 0.00 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 6 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 41.4583 | N | |
| **Across(Mean,Dir)** | -109.70 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.82 | 20.49 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.43 | 1.20 | |
| **Across(Mean,Stddev)** | -1.14 | 1.51 | |

**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** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 29.44 | N | |
| **Across(Mean,Dir)** | -98.70 | 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-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