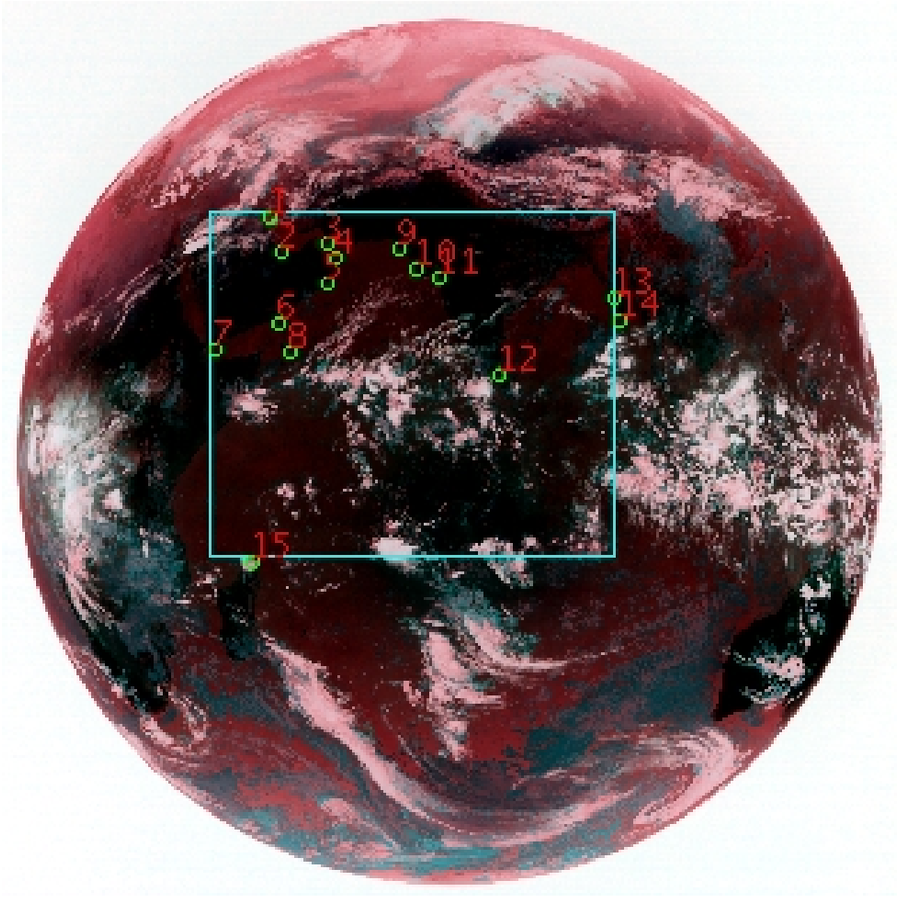
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_30NOV2018_0614

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 30-11-18/06:14 | **Station ID** | BES | **Field View(deg)** | 18.006 |
| **Res(Y,X) [Km]** | (4.0,4.0) | **Res(Y,X) [uRad]** | (112.0,112.0) | | |

(81.207N,-7.294W) (81.207N,155.058E)




(-81.052S,-7.294W) (-81.052S,155.058E)

GCP Distribution overview for 3RIMG30NOV20180614L1BDQE

**Image Width:** 2805 **Image Height:** 2816 **No Of GCPs:** 15

**GCP Coverage(%)** 38.13 **(N-S)** 45.49 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | -4.021 | S | 0.883 | 4.117 |
| Across | 9.875 | E | 1.867 | 10.050 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 10.709 |
| **Min** | 7.552 |
| **Max** | 14.868 |
| **CE90** | 12.362 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.359 | 0.347 | 8.987 |
| Along | 5.217 | 5.431 | 30.434 |
| Across | 4.378 | 0.616 | 9.453 |

## Internal Distortion (in IR Pixels)

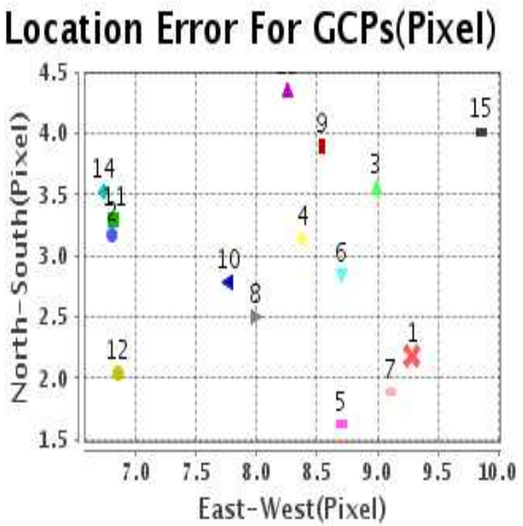
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 2.741 | -0.864 | 0.79 | 1.171 |
| Across | 3.126 | 0.988 | 0.97 | 1.385 |

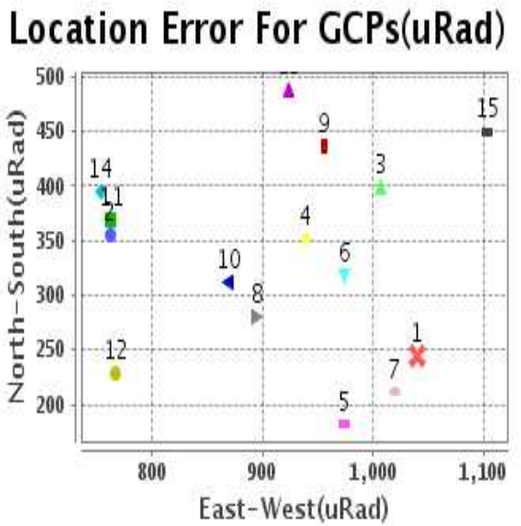
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| 0.05619 | 0.02620 | -0.01882 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 30-11-18 |
| Sensor | IMG | DQE Date | 01-12-2018 |
| PassType | NONE | Aquisition Date | 30-11-18 |
| 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_30NOV2 | 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) | 0.078 |
| Center Lon(deg) | 73.882 |
| 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) | 81.207 |
| NW_Lon(deg) | -7.294 |
| SW_Lat(deg) | -81.052 |
| SW_Lon(deg) | -7.294 |
| NE_Lat(deg) | 81.207 |
| NE_Lon(deg) | 155.058 |
| SE_Lat(deg) | -81.052 |
| SE_Lon(deg) | 155.058 |

## 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 :** **3RIMG30NOV20180614L1BDQE**

(-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 :** 15

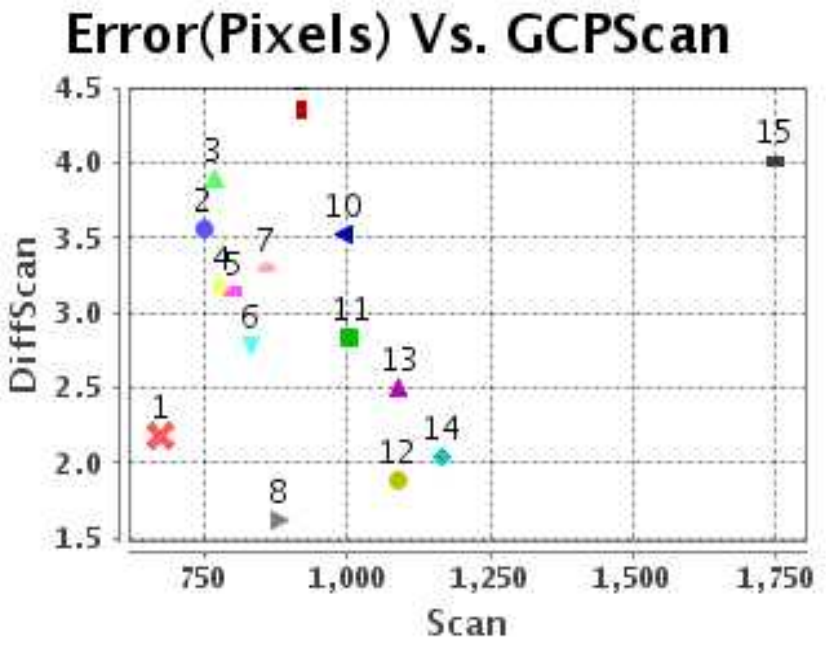
| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 956.5 | 252.1 | 672.8 | 1746.50 | 38.13 (N-S) |
| **GCP Pix** | 1139.5 | 382.6 | 649.2 | 1925.25 | 45.49 (E-W) |

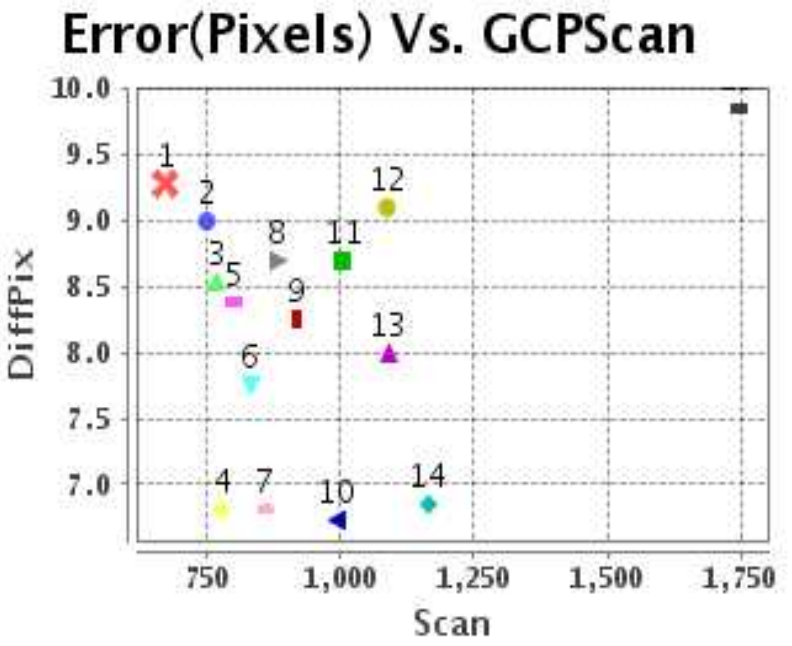
## Identified Control Point details : ( Differences are Reference - Product )

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 672.8 | 819.2 | 2.2 | 9.28 | 18.516 | S | 56.515 | E | Accepted |
| 2 | 778.5 | 856.5 | 3.2 | 6.80 | 19.461 | S | 39.973 | E | Accepted |
| 3 | 750.0 | 1004.8 | 3.6 | 8.99 | 19.524 | S | 48.050 | E | Accepted |
| 4 | 800.8 | 1026.0 | 3.1 | 8.38 | 19.149 | S | 40.430 | E | Accepted |
| 5 | 881.8 | 1006.5 | 1.6 | 8.70 | 11.851 | S | 40.972 | E | Accepted |
| 6 | 1004.2 | 848.0 | 2.8 | 8.70 | 13.570 | S | 40.824 | E | Accepted |
| 7 | 1088.8 | 649.2 | 1.9 | 9.11 | 11.458 | S | 48.103 | E | Accepted |
| 8 | 1090.2 | 886.8 | 2.5 | 7.99 | 11.674 | S | 39.484 | E | Accepted |
| 9 | 768.2 | 1224.2 | 3.9 | 8.53 | 20.496 | S | 39.545 | E | Accepted |
| 10 | 832.0 | 1278.5 | 2.8 | 7.76 | 13.232 | S | 35.179 | E | Accepted |
| 11 | 858.5 | 1355.2 | 3.3 | 6.81 | 17.253 | S | 30.083 | E | Accepted |
| 12 | 1164.8 | 1541.5 | 2.0 | 6.85 | 10.456 | S | 28.342 | E | Accepted |
| 13 | 918.5 | 1904.0 | 4.4 | 8.25 | 20.654 | S | 33.619 | E | Accepted |

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

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 992.5 | 1925.2 | 3.5 | 6.73 | 16.623 | S | 28.638 | E | Accepted |
| 15 | 1746.5 | 767.0 | 4.0 | 9.85 | 17.358 | S | 42.767 | E | Accepted |



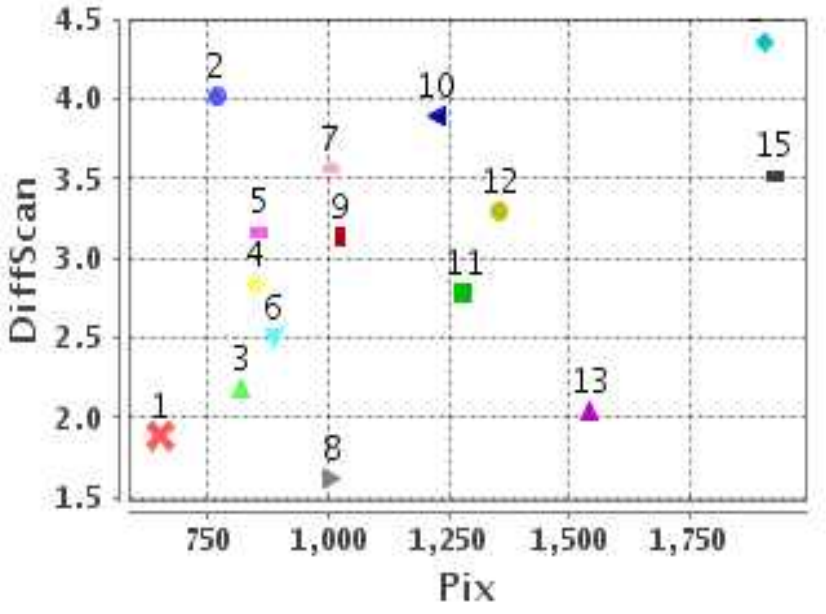



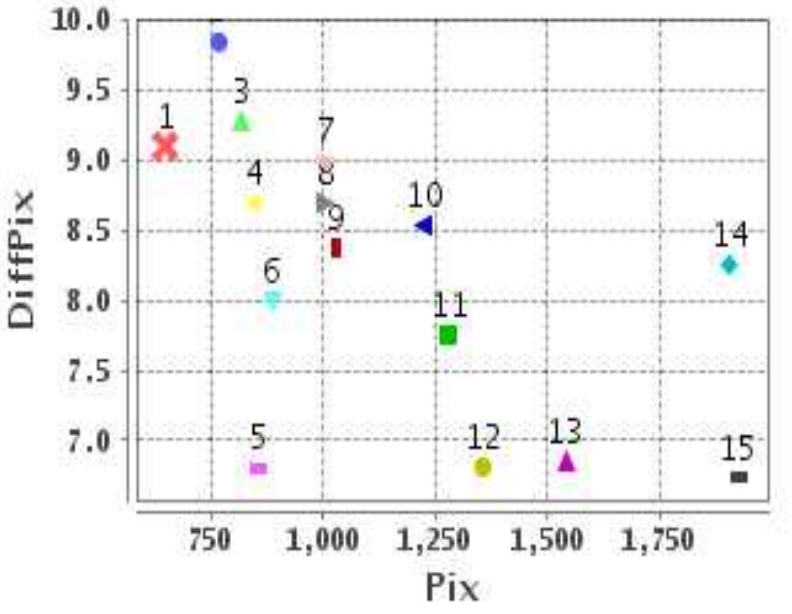

**Number Of Points**

| | |
|---|---|
| North | 0 |
| South | 15 |
| East | 15 |
| West | 0 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 10.709 |
| Min | 7.552 |
| Max | 14.868 |
| CE90 | 12.362 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| **Along( Km )** | -4.021 | 0.883 | 4.117 | S | 4.032 | 4.204 |
| **Across ( Km )** | 9.875 | 1.867 | 10.050 | E | 9.694 | 10.229 |

# 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)** | -18.985 | S | |
| **Across(Mean,Dir)** | 48.24 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 5.80 | 45.01 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.99 | 0.00 | |
| **Across(Mean,Stddev)** | 2.48 | 0.00 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 6 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -16.92 | S | |
| **Across(Mean,Dir)** | 39.04 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.46 | 11.54 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.62 | 0.75 | |
| **Across(Mean,Stddev)** | 0.95 | 0.69 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -20.65 | S | |
| **Across(Mean,Dir)** | 33.62 | E | |
| **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)** | -13.515 | S | |
| **Across(Mean,Dir)** | 42.79 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.22 | 5.46 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.04 | 0.89 | |
| **Across(Mean,Stddev)** | 0.26 | 0.77 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | -10.45 | S | |
| **Across(Mean,Dir)** | 28.34 | E | |
| **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)** | -16.62 | S | |
| **Across(Mean,Dir)** | 28.64 | E | |
| **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