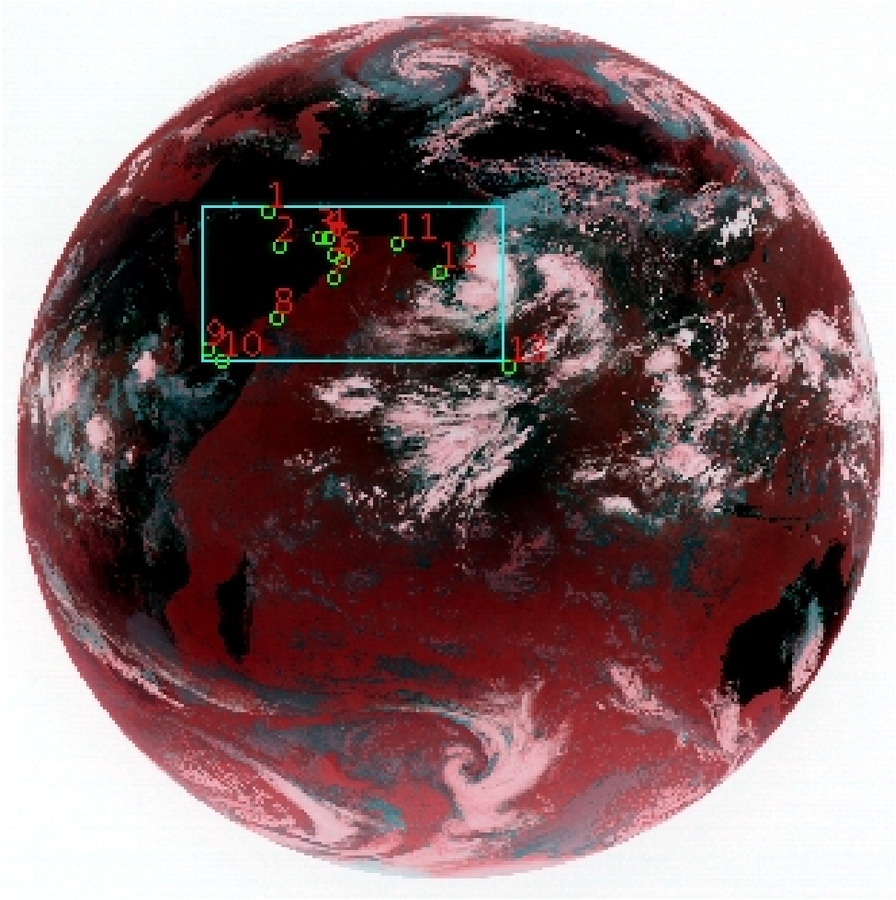
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_21SEP2018_0615

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 21-09-18/06:15 | **Station ID** | BES | **Field View(deg)** | 17.99 |
| **Res(Y,X) [Km]** | (4.0,4.0) | **Res(Y,X) [uRad]** | (112.0,112.0) | | |

(81.025N,-7.243W) (81.025N,155.042E)



(-80.698S,-7.243W) (-80.698S,155.042E)

GCP Distribution overview for 3RIMG21SEP20180615L1BDQE

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

**GCP Coverage(%)** 17.21 **(N-S)** 33.53 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 12.206 | N | 1.954 | 12.362 |
| Across | -27.166 | W | 2.359 | 27.268 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 29.813 |
| **Min** | 23.976 |
| **Max** | 34.812 |
| **CE90** | 32.139 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.548 | 0.440 | 13.703 |
| Along | 4.752 | 0.523 | 18.802 |
| Across | 4.674 | 0.545 | 16.847 |

## Internal Distortion (in IR Pixels)

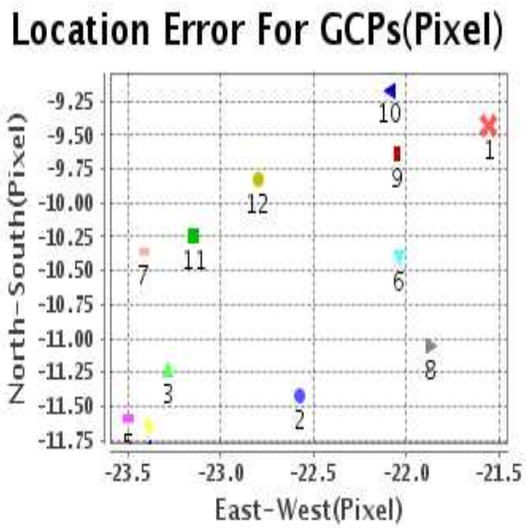
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 2.473 | 1.168 | 0.81 | 1.420 |
| Across | 1.940 | 0.649 | 0.67 | 0.935 |

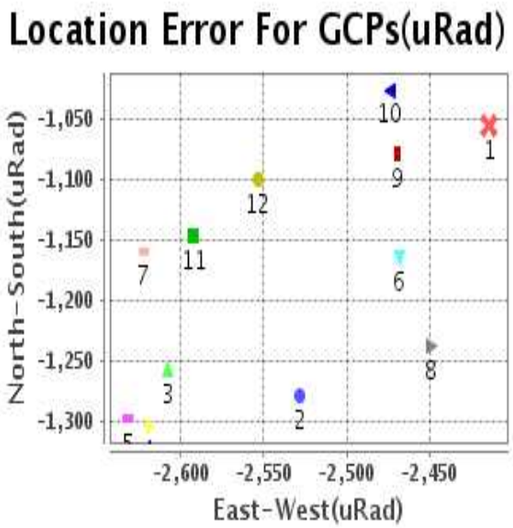
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.15439 | -0.07400 | -0.07214 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 21-09-18 |
| Sensor | IMG | DQE Date | 26-09-2018 |
| PassType | NONE | Aquisition Date | 21-09-18 |
| 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_21SEP20 | 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) | 0.164 |
| Center Lon(deg) | 73.9 |
| 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) | 81.025 |
| NW_Lon(deg) | -7.243 |
| SW_Lat(deg) | -80.698 |
| SW_Lon(deg) | -7.243 |
| NE_Lat(deg) | 81.025 |
| NE_Lon(deg) | 155.042 |
| SE_Lat(deg) | -80.698 |
| SE_Lon(deg) | 155.042 |

## 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 :** **3RIMG21SEP20180615L1BDQE**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

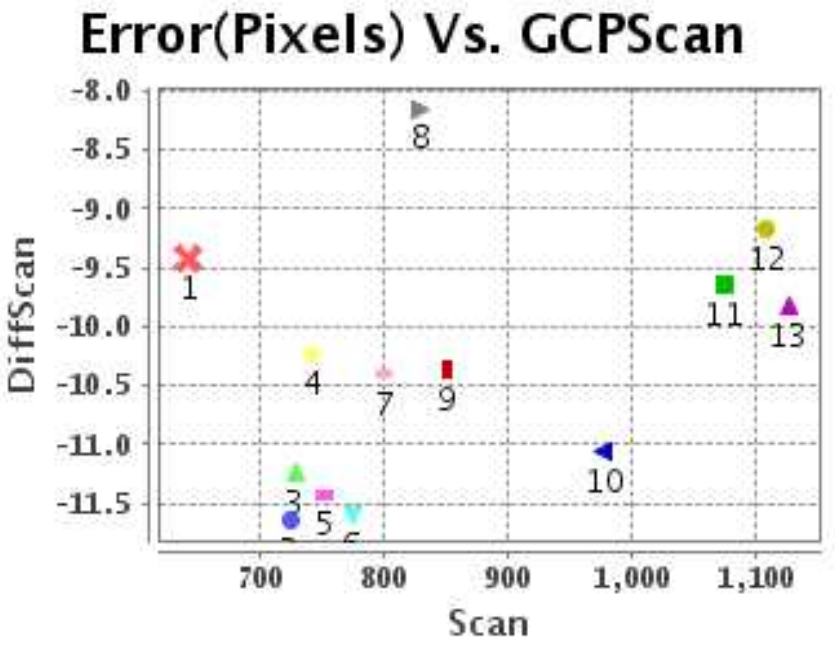
## GCP Distribution Statistics

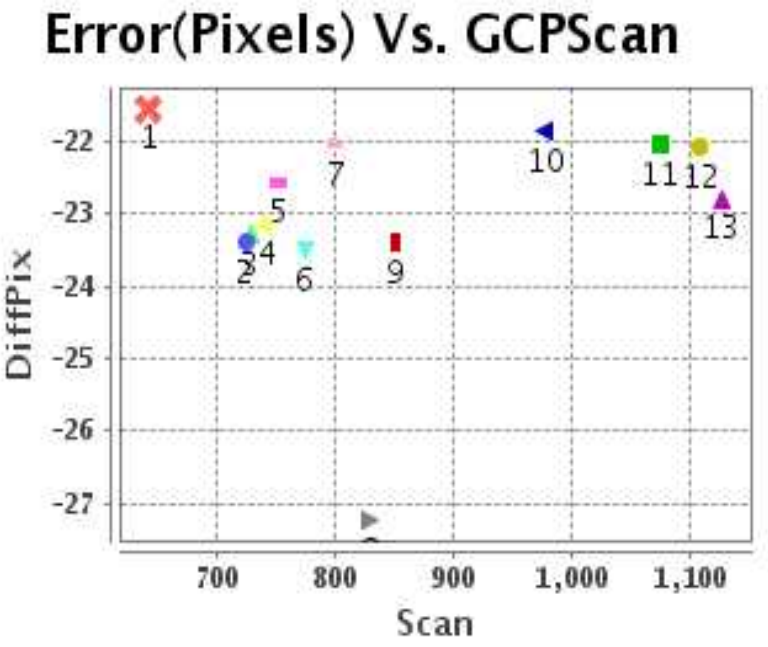
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 13

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 856.3 | 155.1 | 642.2 | 1126.75 | 17.21 (N-S) |
| **GCP Pix** | 1009.8 | 252.8 | 638.5 | 1579.00 | 33.53 (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 | 642.2 | 824.2 | -9.4 | -21.56 | 56.117 | N | 127.441 | W | Accepted |
| 2 | 752.2 | 857.5 | -11.4 | -22.57 | 57.834 | N | 118.202 | W | Accepted |
| 3 | 728.8 | 986.0 | -11.2 | -23.28 | 55.224 | N | 116.089 | W | Accepted |
| 4 | 724.5 | 1009.5 | -11.6 | -23.39 | 58.480 | N | 113.809 | W | Accepted |
| 5 | 774.8 | 1030.2 | -11.6 | -23.50 | 53.825 | N | 110.780 | W | Accepted |
| 6 | 800.0 | 1055.2 | -10.4 | -22.04 | 49.901 | N | 102.074 | W | Accepted |
| 7 | 850.5 | 1029.5 | -10.4 | -23.41 | 45.626 | N | 104.446 | W | Accepted |
| 8 | 977.0 | 850.5 | -11.1 | -21.87 | 48.564 | N | 102.089 | W | Accepted |
| 9 | 1074.8 | 638.5 | -9.6 | -22.05 | 38.430 | N | 111.567 | W | Accepted |
| 10 | 1108.2 | 676.8 | -9.2 | -22.09 | 37.307 | N | 105.940 | W | Accepted |
| 11 | 742.2 | 1228.2 | -10.2 | -23.14 | 49.447 | N | 102.303 | W | Accepted |
| 12 | 830.0 | 1361.5 | -8.1 | -27.22 | 38.088 | N | 111.543 | W | Rejected |
| 13 | 1126.8 | 1579.0 | -9.8 | -22.80 | 35.150 | N | 89.228 | W | Accepted |



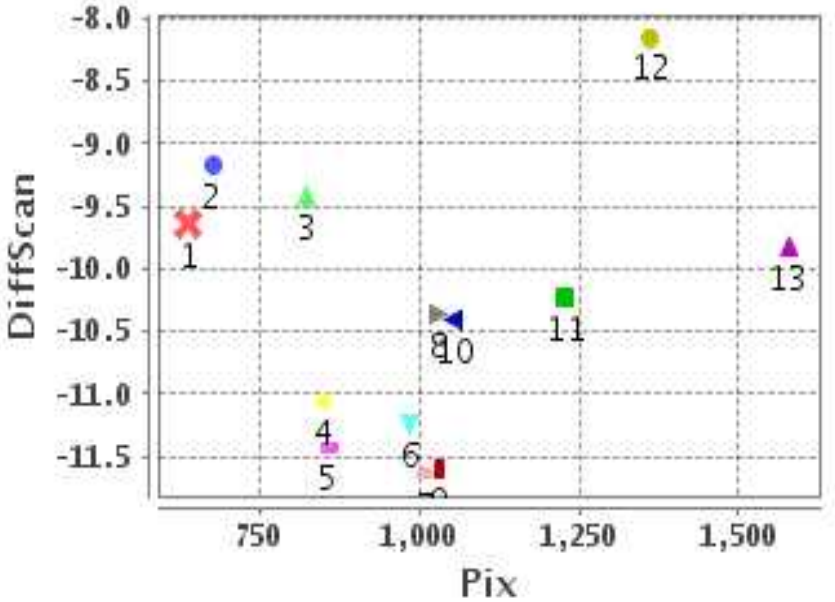



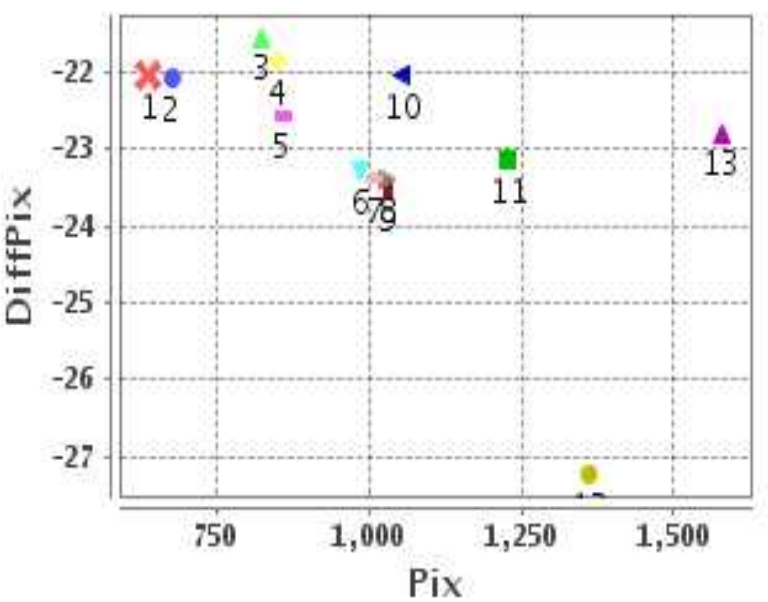

**Number Of Points**

| | |
|---|---|
| North | 12 |
| South | 0 |
| East | 0 |
| West | 12 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 29.813 |
| Min | 23.976 |
| Max | 34.812 |
| CE90 | 32.139 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | 12.206 | 1.954 | 12.362 | N | 12.136 | 12.637 |
| Across ( Km ) | -27.166 | 2.359 | 27.268 | W | 26.812 | 27.675 |

# 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)** | 56.97 | N | |
| **Across(Mean,Dir)** | -122.82 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 5.66 | 41.54 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 1.99 | 0.00 | |
| **Across(Mean,Stddev)** | 1.02 | 0.00 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 6 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 52.085 | N | |
| **Across(Mean,Dir)** | -108.25 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.77 | 19.18 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -0.88 | 0.54 | |
| **Across(Mean,Stddev)** | -0.19 | 0.54 | |

**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** | 3 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 41.4333 | N | |
| **Across(Mean,Dir)** | -106.53 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.50 | 12.40 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -1.66 | 0.24 | |
| **Across(Mean,Stddev)** | -0.07 | 0.11 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 1 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 35.15 | N | |
| **Across(Mean,Dir)** | -89.23 | 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-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