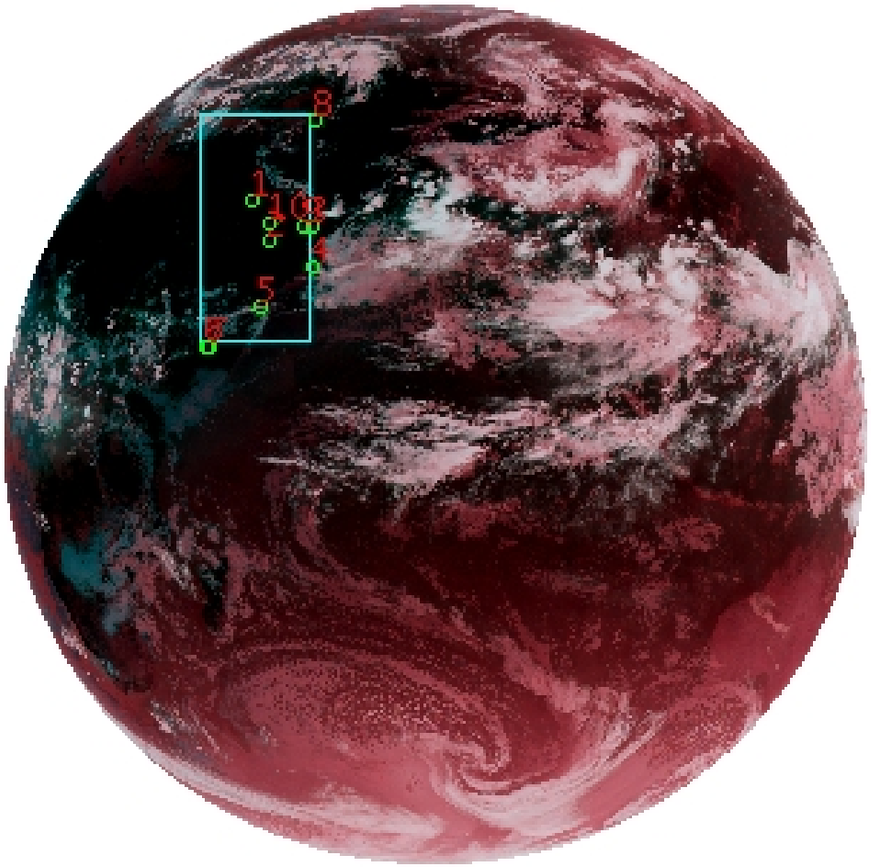
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_18JUL2018_1215

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 18-07-18/24:15 | **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 3RIMG18JUL20181215L1BSTD

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

**GCP Coverage(%)** 25.45 **(N-S)** 12.38 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 1.645 | N | 1.037 | 1.945 |
| Across | -1.094 | W | 1.429 | 1.799 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 2.216 |
| **Min** | .204 |
| **Max** | 4.776 |
| **CE90** | 3.937 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.835 | 0.666 | 20.884 |
| Along | 7.145 | 6.901 | 78.632 |
| Across | 7.508 | 8.690 | 87.709 |

## Internal Distortion (in IR Pixels)

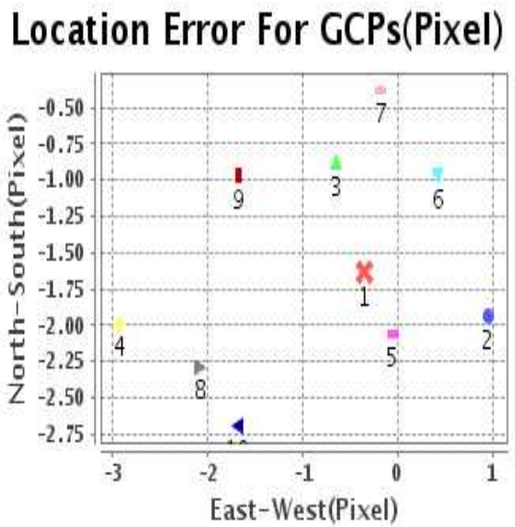
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 2.315 | -0.785 | 0.70 | 1.051 |
| Across | 3.887 | 1.388 | 1.14 | 1.798 |

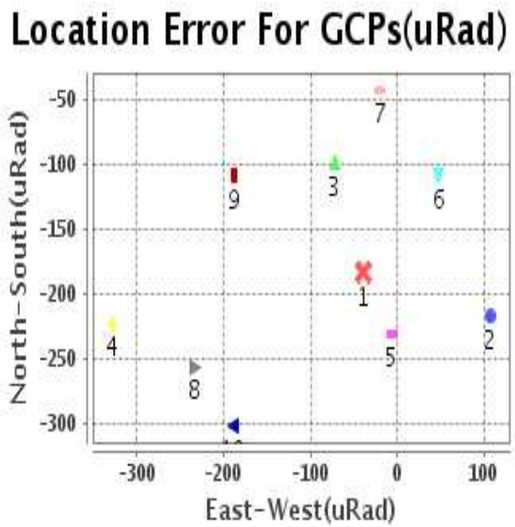
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.03468 | -0.02348 | 0.19787 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 18-07-18 |
| Sensor | IMG | DQE Date | 19-07-2018 |
| PassType | NONE | Aquisition Date | 18-07-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 24:15 |
| 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_18JUL20 | 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 :** **3RIMG18JUL20181215L1BSTD**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

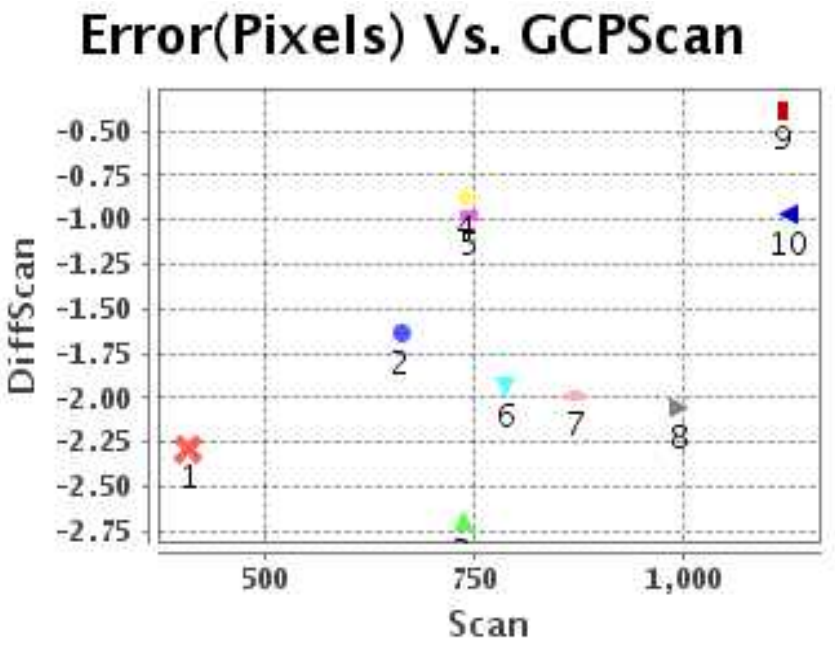
## GCP Distribution Statistics

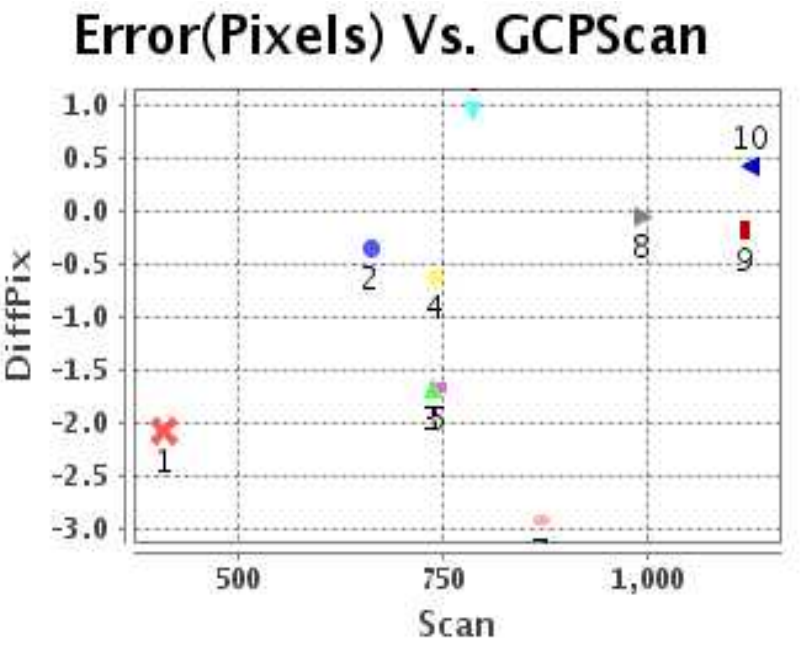
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 818.0 | 207.2 | 407.8 | 1124.50 | 25.45 (N-S) |
| **GCP Pix** | 874.2 | 121.5 | 669.2 | 1016.50 | 12.38 (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 | 661.8 | 816.0 | -1.6 | -0.35 | 4.835 | N | 3.296 | W | Accepted |
| 2 | 786.2 | 866.0 | -1.9 | 0.95 | 8.625 | N | 2.765 | E | Accepted |
| 3 | 739.2 | 1000.5 | -0.9 | -0.64 | 3.325 | N | 1.555 | W | Accepted |
| 4 | 869.2 | 1004.2 | -2.0 | -2.93 | 8.246 | N | 12.892 | W | Accepted |
| 5 | 992.8 | 843.0 | -2.1 | -0.05 | 5.757 | N | 0.928 | W | Accepted |
| 6 | 1124.5 | 669.2 | -1.0 | 0.43 | 2.027 | N | 2.454 | E | Accepted |
| 7 | 1118.2 | 681.2 | -0.4 | -0.18 | 0.772 | N | 0.267 | E | Accepted |
| 8 | 407.8 | 1016.5 | -2.3 | -2.08 | 13.920 | N | 13.084 | W | Accepted |
| 9 | 744.0 | 978.0 | -1.0 | -1.68 | 5.325 | N | 8.538 | W | Accepted |
| 10 | 736.2 | 867.5 | -2.7 | -1.69 | 12.970 | N | 8.933 | W | Accepted |



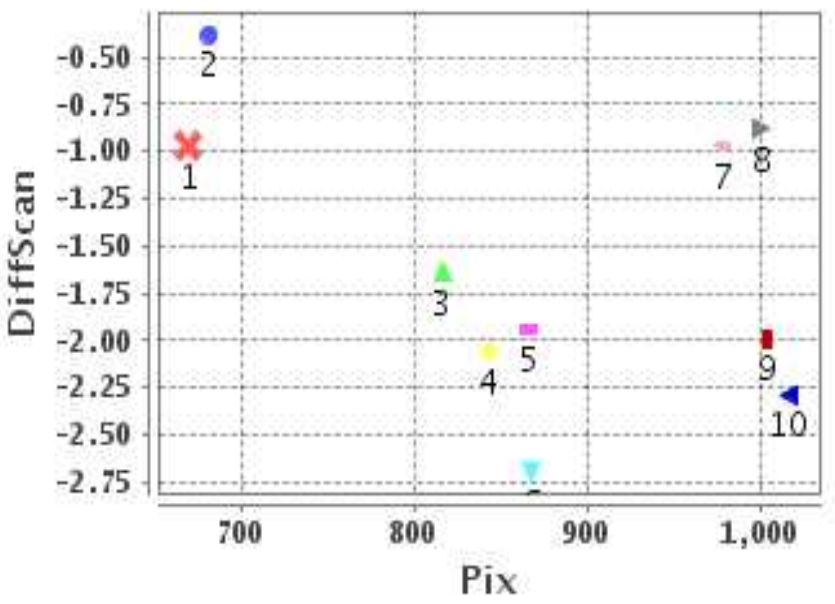



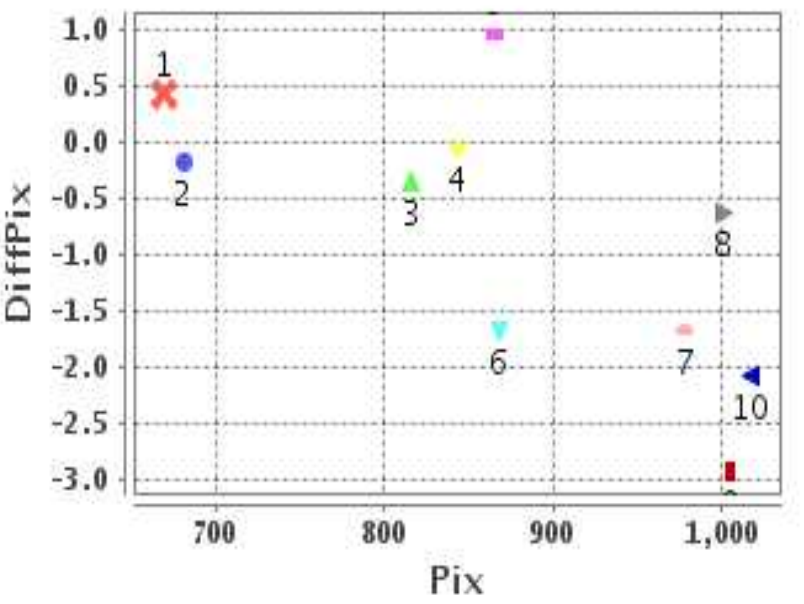

## Number Of Points

| | |
|---|---|
| North | 10 |
| South | 0 |
| East | 3 |
| West | 7 |

## Radial Error ( Km

| | |
|---|---|
| Mean | 2.216 |
| Min | .204 |
| Max | 4.776 |
| CE90 | 3.937 |




## Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | 1.645 | 1.037 | 1.945 | N | 1.690 | 2.049 |
| Across ( Km ) | -1.094 | 1.429 | 1.799 | W | 1.552 | 1.896 |

# Block-Wise Geo location Error Statistics

## Location Accuracy,Scale,ID

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 3 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 8.81 | N | |
| **Across(Mean,Dir)** | -3.16 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 5.68 | 41.92 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | 0.69 | 0.38 | |
| **Across(Mean,Stddev)** | 0.01 | 1.32 | |

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

| | | | |
|---|---|---|---|
| **Number of GCPs** | 4 | | |
| **Location Error(Km)** | | | |
| **Along(Mean,Dir)** | 7.705 | N | |
| **Across(Mean,Dir)** | -9.02 | W | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 5.53 | 38.25 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -1.01 | 0.50 | |
| **Across(Mean,Stddev)** | 0.21 | 0.94 | |

**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)** | 2.84667 | N | |
| **Across(Mean,Dir)** | 0.60 | E | |
| **Scale(Km)** | | | |
| **Average Scale (Mean,%Variation)** | 4.19 | 4.74 | |
| **Internal Distortion(Pixel)** | | | |
| **Along(Mean,Stddev)** | -1.38 | 0.30 | |
| **Across(Mean,Stddev)** | 0.54 | 0.06 | |

**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