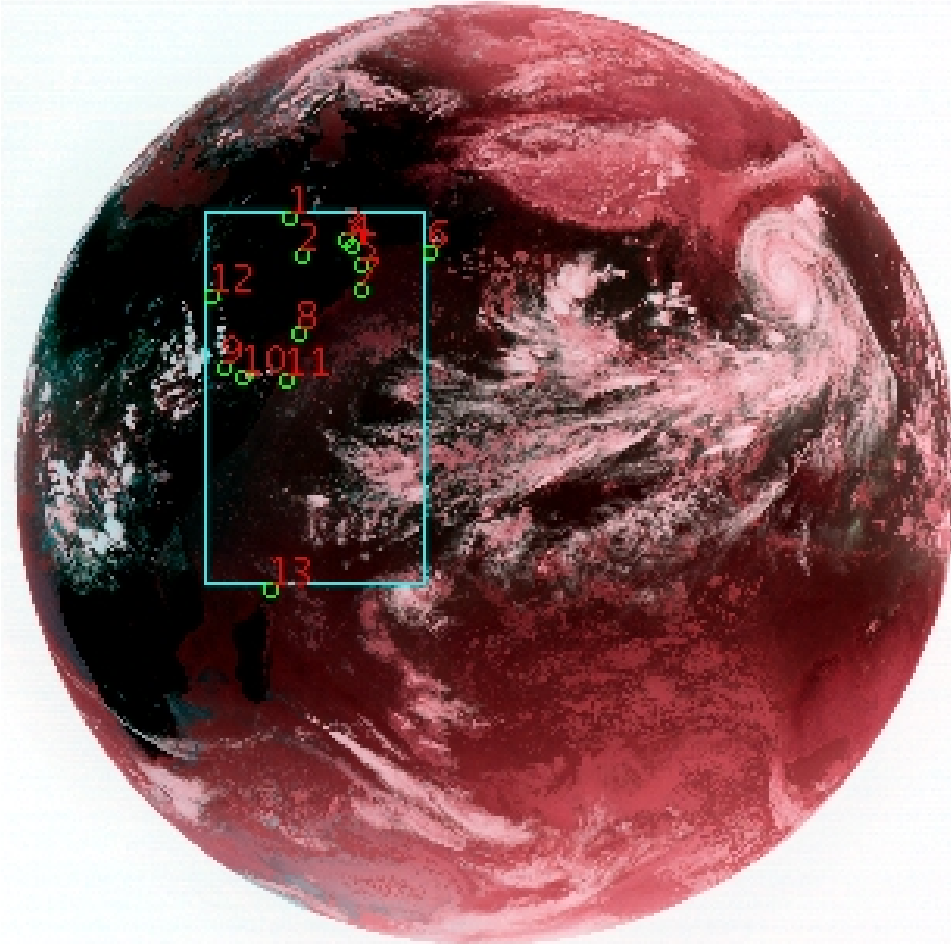


DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_16SEP2018_1215

| | | | | | |
|---------------|----------------|-----------------|---------------|-----------------|----------|
| Satellite | INSAT-3DR | No Of Bands | 6 | Product Type | STANDARD |
| Sensor | IMG | LvlOfProcess | L1B | Selected Band | 2-TIR1 |
| DOP/Time | 16-09-18/24:15 | Station ID | BES | Field View(deg) | 17.99 |
| Res(Y,X) [Km] | (4.0,4.0) | Res(Y,X) [uRad] | (112.0,112.0) | | |

(81.031N,-7.22W)

(81.031N,155.041E)



(-80.706S,-7.22W)

(-80.706S,155.041E)

GCP Distribution overview for 3RIMG16SEP20181215L1BDQE

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

GCP Coverage(%) 38.22 (N-S) 22.20 (E-W)

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|---------|-----------|--------|--------|
| Along | 10.418 | N | 1.906 | 10.591 |
| Across | -30.885 | W | 2.639 | 30.998 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.496 | 0.422 | 12.406 |
| Along | 4.583 | 0.461 | 14.583 |
| Across | 4.846 | 2.079 | 21.139 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|-------|--------|-------|
| Along | 3.406 | 1.407 | 1.06 | 1.763 |
| Across | 4.590 | 0.966 | 1.15 | 1.506 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.17452 | -0.08264 | 0.25497 |

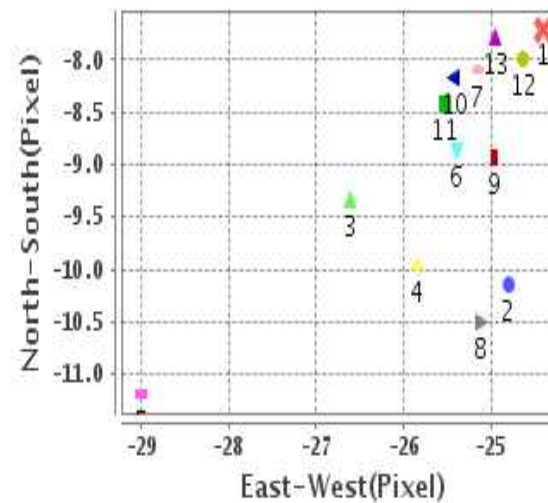
Reference Used

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

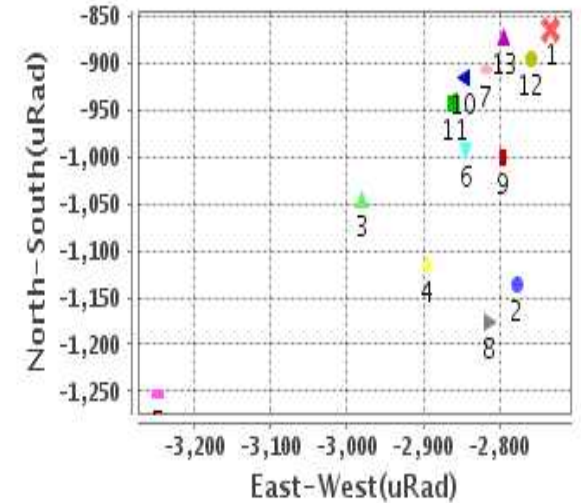
Radial Error (in IR Pixels)

| | |
|------|--------|
| Mean | 32.632 |
| Min | 28.156 |
| Max | 36.866 |
| CE90 | 36.177 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 16-09-18 |
| Sensor | IMG | DQE Date | 20-09-2018 |
| PassType | NONE | Aquisition Date | 16-09-18 |
| 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_16SEP20 | 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) | 0.162 |
| Center Lon(deg) | 73.91 |
| 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) | 81.031 |
| NW_Lon(deg) | -7.22 |
| SW_Lat(deg) | -80.706 |
| SW_Lon(deg) | -7.22 |
| NE_Lat(deg) | 81.031 |
| NE_Lon(deg) | 155.041 |
| SE_Lat(deg) | -80.706 |
| SE_Lon(deg) | 155.041 |

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 | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | -sigma | SemiMinorAxis(m) | 6356752.31 | Used Reference Type | REFINSREF |
| Datum | WGS_84 | Unit | meters | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

References

JobId : 3RIMG16SEP20181215L1BDQE

(-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

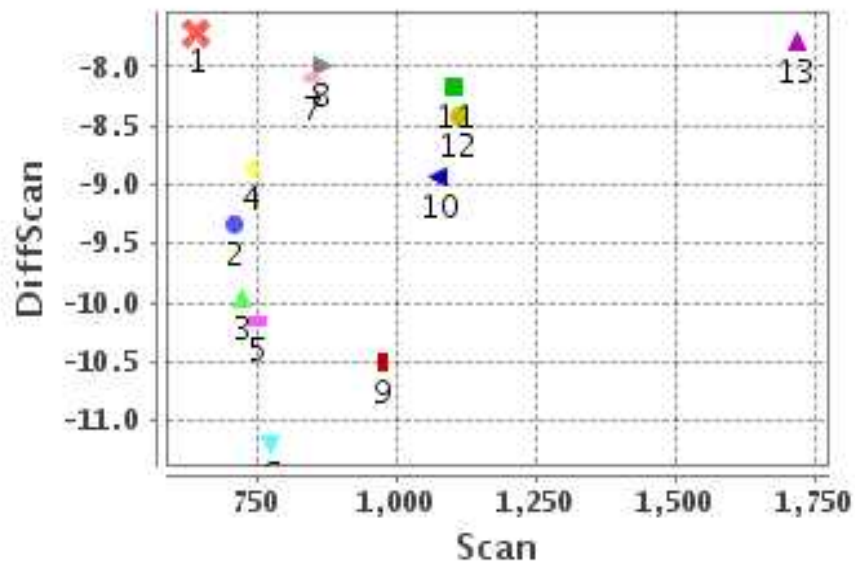
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 13

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|---------|----------------|
| GCP Scan | 927.4 | 275.0 | 642.5 | 1718.75 | 38.22 (N-S) |
| GCP Pix | 870.2 | 172.2 | 602.5 | 1225.25 | 22.20 (E-W) |

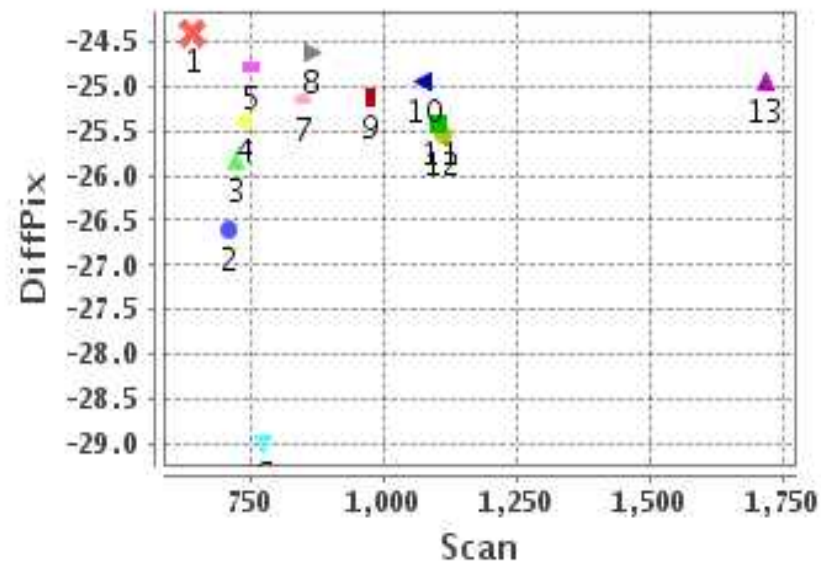
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 642.5 | 821.8 | -7.7 | -24.41 | 45.200 | N | 137.468 | W | Accepted |
| 2 | 752.8 | 855.2 | -10.1 | -24.80 | 50.431 | N | 128.718 | W | Accepted |
| 3 | 710.5 | 988.2 | -9.3 | -26.61 | 47.939 | N | 130.599 | W | Accepted |
| 4 | 724.5 | 1006.8 | -10.0 | -25.85 | 50.279 | N | 123.171 | W | Accepted |
| 5 | 776.5 | 1031.2 | -11.2 | -29.00 | 53.961 | N | 134.918 | W | Accepted |
| 6 | 742.2 | 1225.2 | -8.9 | -25.40 | 42.711 | N | 111.044 | W | Accepted |
| 7 | 850.0 | 1026.2 | -8.1 | -25.16 | 38.205 | N | 112.743 | W | Accepted |
| 8 | 978.5 | 848.8 | -10.5 | -25.12 | 43.948 | N | 114.646 | W | Accepted |
| 9 | 1076.5 | 636.5 | -8.9 | -24.96 | 36.495 | N | 126.475 | W | Accepted |
| 10 | 1104.0 | 686.5 | -8.2 | -25.42 | 35.227 | N | 122.192 | W | Accepted |
| 11 | 1112.8 | 815.8 | -8.4 | -25.53 | 31.954 | N | 112.317 | W | Accepted |
| 12 | 866.8 | 602.5 | -8.0 | -24.63 | 38.154 | N | 142.441 | W | Accepted |
| 13 | 1718.8 | 768.2 | -7.8 | -24.95 | 27.215 | N | 109.286 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



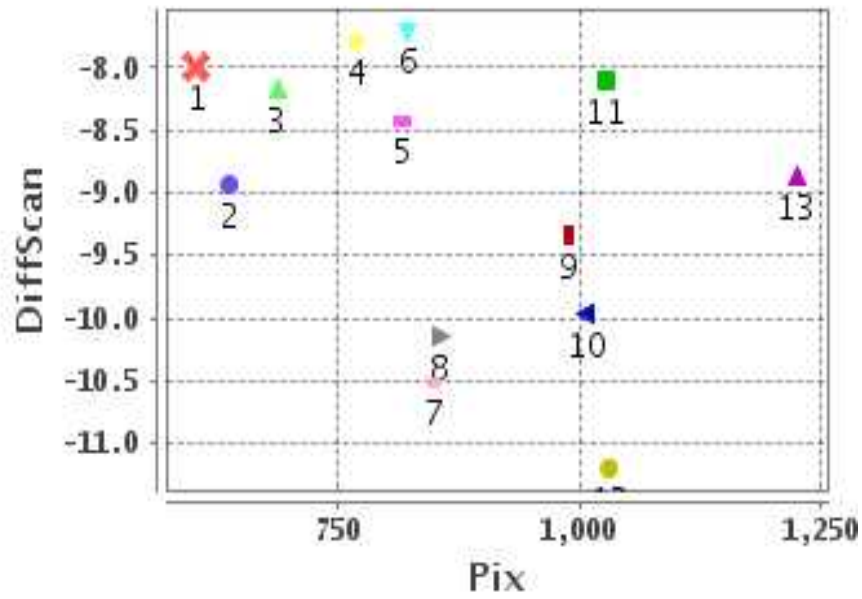
Number Of Points

| | |
|-------|----|
| North | 13 |
| South | 0 |
| East | 0 |
| West | 13 |

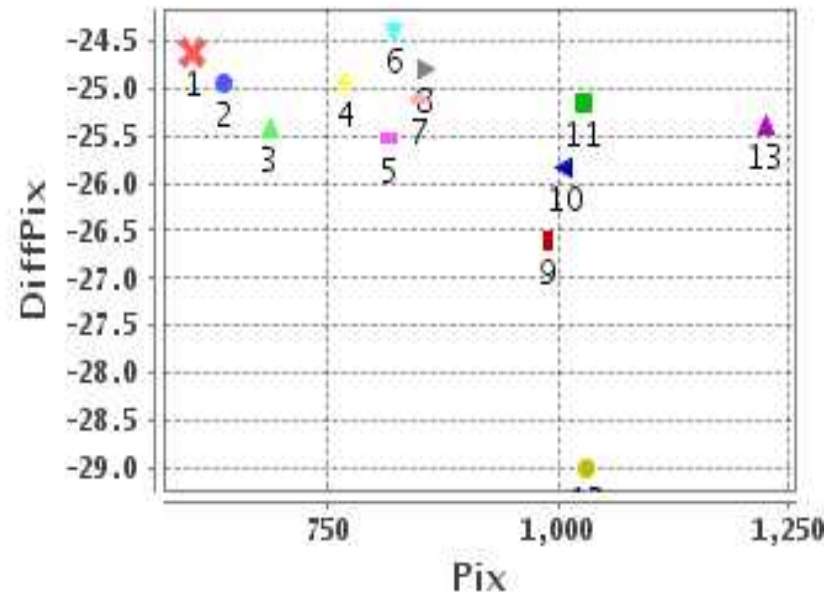
Radial Error (Km)

| | |
|------|--------|
| Mean | 32.632 |
| Min | 28.156 |
| Max | 36.866 |
| CE90 | 36.177 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|---------|--------|--------|-----|----------|----------|
| Along(Km) | 10.418 | 1.906 | 10.591 | N | 10.312 | 10.847 |
| Across (Km) | -30.885 | 2.639 | 30.998 | W | 30.582 | 31.284 |

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) | 44.59330000 | N |
| Across(Mean,Dir) | -136.21 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.89 | 22.29 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 1.36 | 1.07 |
| Across(Mean,Stddev) | -0.03 | 0.20 |

| | | |
|---|---------|-------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 5 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 46.618 | N |
| Across(Mean,Dir) | -122.50 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.81 | 20.22 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 0.20 | 1.17 |
| Across(Mean,Stddev) | -0.25 | 1.55 |

| | | |
|--|---------|----------|
| 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 | 5 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 34.966 | N |
| Across(Mean,Dir) | -116.98 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.29 | 7.28 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -2.17 | 0.42 |
| Across(Mean,Stddev) | 0.30 | 0.23 |

| | | |
|--|---------|----------|
| 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