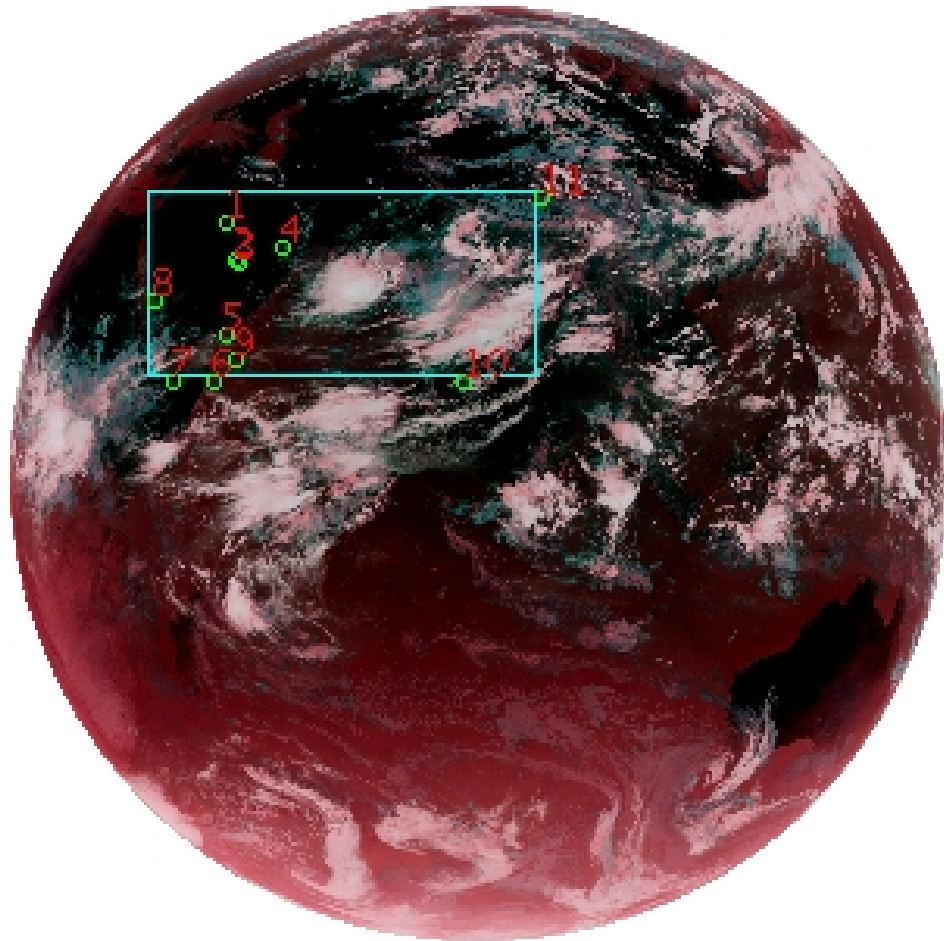


DQE Report: Location Accuracy of INSAT-3D-IMG STANDARD(FULL DISK) Product 3DIMG_06JUL2020_0600

Satellite INSAT-3D **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 06-07-20/06:00 **Station ID** BES **Field View(deg)** 17.974
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,0.843W)

(81.042N,163.157E)



(-81.042S,0.843W)

(-81.042S,163.157E)

GCP Distribution overview for 3DIMG06JUL20200600L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 11

GCP Coverage(%) 19.00 **(N-S)** 39.56 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | 0.047 | N | 1.068 | 1.069 |
| Across | -2.724 | W | 1.012 | 2.906 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.813 | 0.582 | 20.335 |
| Along | 4.796 | 0.328 | 19.887 |
| Across | 5.584 | 0.770 | 39.593 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 2.805 | 1.410 | 0.82 | 1.632 |
| Across | 2.373 | -0.811 | 0.66 | 1.047 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|---------|----------|
| -0.01724 | 0.00697 | -0.08742 |

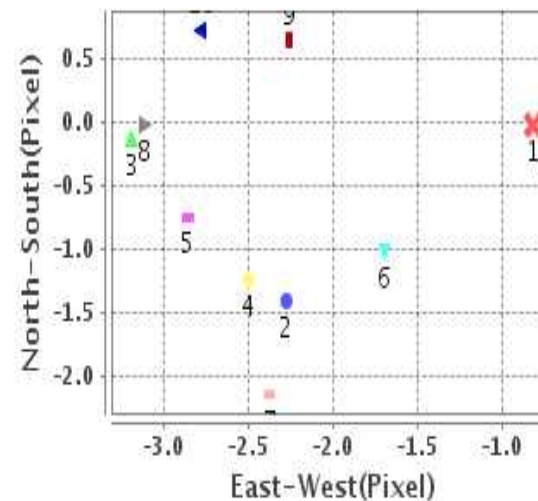
Reference Used

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

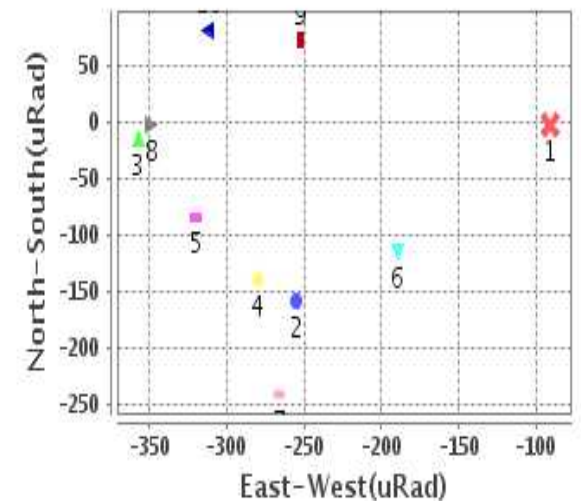
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 2.956 |
| Min | 1.051 |
| Max | 4.220 |
| CE90 | 3.897 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3D | Generation Date | 06-07-20 |
| Sensor | IMG | DQE Date | 07-07-2020 |
| PassType | NONE | Aquisition Date | 06-07-20 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 06:00 |
| 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) | 82.0 |
| LvlOfProcessing | STANDARD(FULL | Predicted Center Lat(deg) | -999.99 |
| DP JobId | 3DIMG_06JUL20 | Predicted Center Lon(deg) | -999.99 |
| ProductCode | NONE | | |
| Field View(deg) | 17.974 | | |

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) | 82.0 |
| 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) | 0.843 |
| SW_Lat(deg) | -81.042 |
| SW_Lon(deg) | 0.843 |
| NE_Lat(deg) | 81.042 |
| NE_Lon(deg) | 163.157 |
| SE_Lat(deg) | -81.042 |
| SE_Lon(deg) | 163.157 |

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 | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | -sigma | 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 : 3DIMG06JUL20200600L1BSTD

(-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

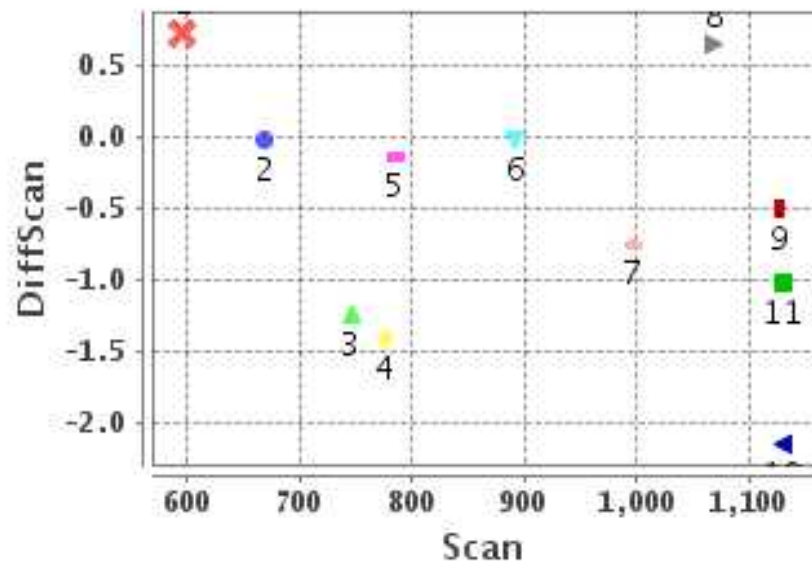
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 11

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|---------|----------------|
| GCP Scan | 901.4 | 189.5 | 595.5 | 1130.50 | 19.00 (N-S) |
| GCP Pix | 794.1 | 329.5 | 457.5 | 1567.25 | 39.56 (E-W) |

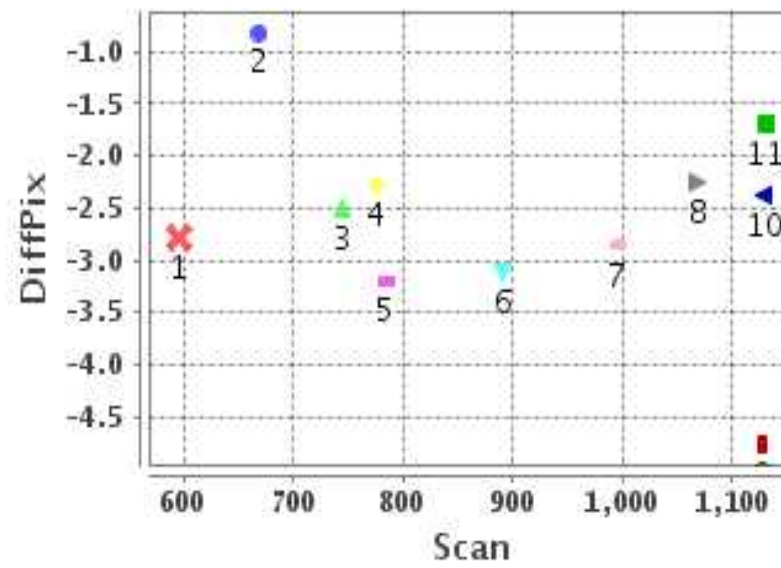
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 668.8 | 664.2 | -0.0 | -0.82 | 3.691 | S | 2.010 | W | Accepted |
| 2 | 775.5 | 685.5 | -1.4 | -2.28 | 5.040 | N | 10.918 | W | Accepted |
| 3 | 784.5 | 701.5 | -0.1 | -3.19 | 1.854 | S | 14.271 | W | Accepted |
| 4 | 745.5 | 824.8 | -1.2 | -2.50 | 4.256 | N | 9.852 | W | Accepted |
| 5 | 996.2 | 665.5 | -0.8 | -2.86 | 2.232 | N | 12.863 | W | Accepted |
| 6 | 1130.5 | 629.0 | -1.0 | -1.69 | 2.294 | N | 8.404 | W | Accepted |
| 7 | 1129.8 | 506.0 | -2.2 | -2.37 | 6.557 | N | 14.140 | W | Accepted |
| 8 | 891.5 | 457.5 | -0.0 | -3.12 | 1.775 | S | 16.788 | W | Accepted |
| 9 | 1069.5 | 685.8 | 0.7 | -2.26 | 4.275 | S | 7.134 | W | Accepted |
| 10 | 1128.2 | 1347.8 | -0.5 | -4.76 | 1.081 | N | 16.010 | W | Rejected |
| 11 | 595.5 | 1567.2 | 0.7 | -2.78 | 6.893 | S | 12.578 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



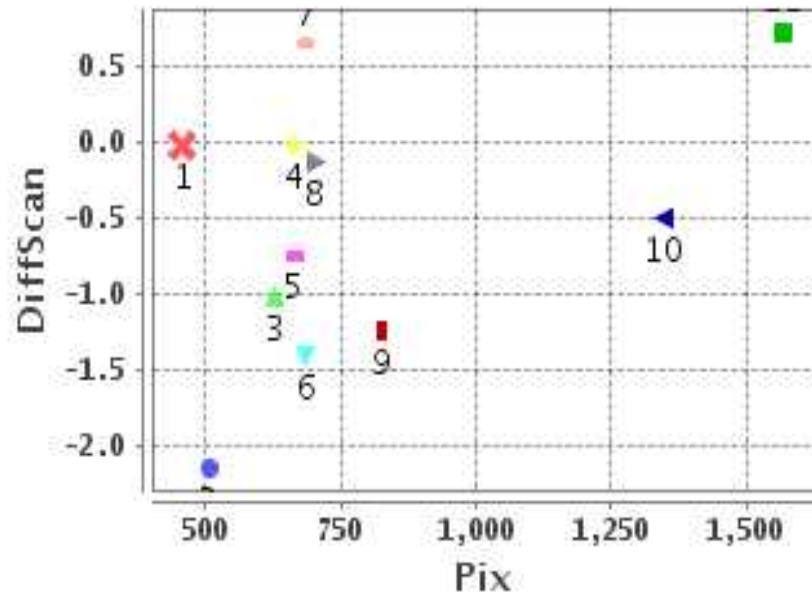
Number Of Points

| | |
|-------|----|
| North | 5 |
| South | 5 |
| East | 0 |
| West | 10 |

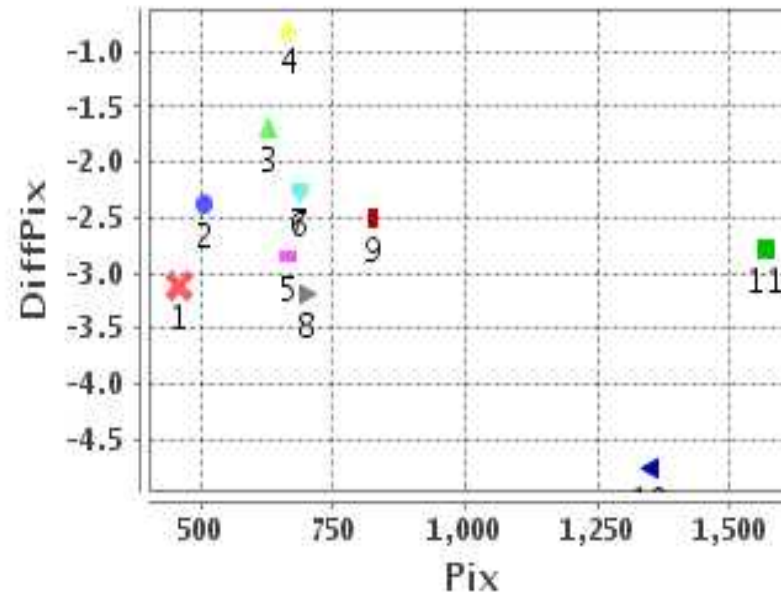
Radial Error (Km)

| | |
|------|-------|
| Mean | 2.956 |
| Min | 1.051 |
| Max | 4.220 |
| CE90 | 3.897 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | 0.047 | 1.068 | 1.069 | N | 0.969 | 1.117 |
| Across (Km) | -2.724 | 1.012 | 2.906 | W | 2.725 | 3.058 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | | |
|--|--------|-------|--|
| Scan Range-0-937; Pix Range-0-934 | | | |
| Number of GCPs | 5 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | 0.394 | N | |
| Across(Mean,Dir) | -10.77 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 5.38 | 34.42 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | 0.68 | 0.63 | |
| Across(Mean,Stddev) | -0.92 | 0.86 | |

| | | | |
|---|---------|---------|--|
| Scan Range-0-937; Pix Range-934-1869 | | | |
| Number of GCPs | 1 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -6.9 | S | |
| Across(Mean,Dir) | -12.58 | 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-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 | 4 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | 1.705 | N | |
| Across(Mean,Dir) | -10.64 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 4.56 | 13.93 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | 0.09 | 1.15 | |
| Across(Mean,Stddev) | -0.10 | 0.47 | |

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