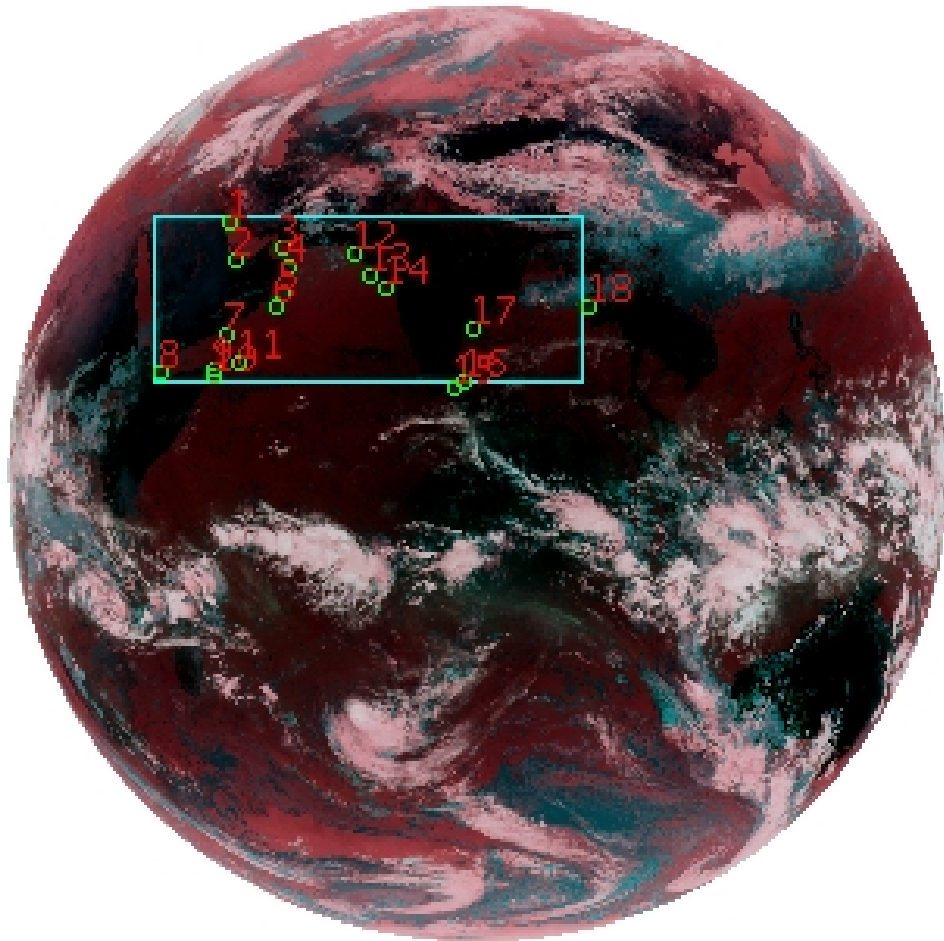


DQE Report: Location Accuracy of INSAT-3D-IMG STANDARD(FULL DISK) Product 3DIMG_07MAR2019_0600

| | | | | | |
|---------------|----------------|-----------------|---------------|-----------------|----------|
| Satellite | INSAT-3D | No Of Bands | 6 | Product Type | STANDARD |
| Sensor | IMG | LvlOfProcess | L1B | Selected Band | 2-TIR1 |
| DOP/Time | 07-03-19/06:00 | 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 3DIMG07MAR20190600L1BSTD

Image Width: 2805 Image Height: 2816 No Of GCPs: 18

GCP Coverage(%) 16.97 (N-S) 44.08 (E-W)

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | 0.831 | N | 1.480 | 1.697 |
| Across | -2.545 | W | 1.034 | 2.747 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.527 | 0.424 | 13.184 |
| Along | 5.322 | 6.293 | 33.057 |
| Across | 4.901 | 3.158 | 22.518 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 4.482 | 1.984 | 1.27 | 2.357 |
| Across | 3.495 | -0.618 | 0.86 | 1.062 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.01333 | -0.01232 | 0.12212 |

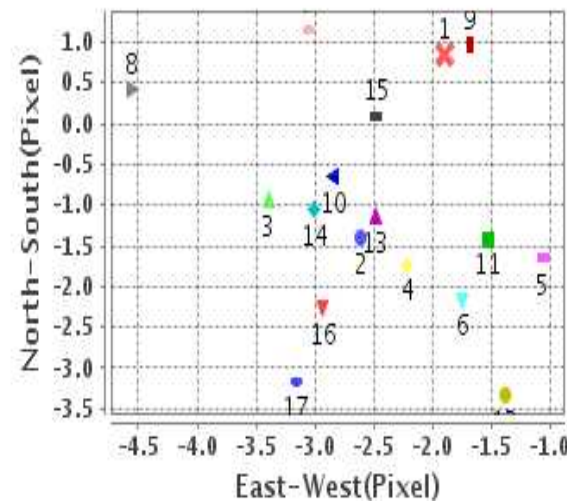
Reference Used

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

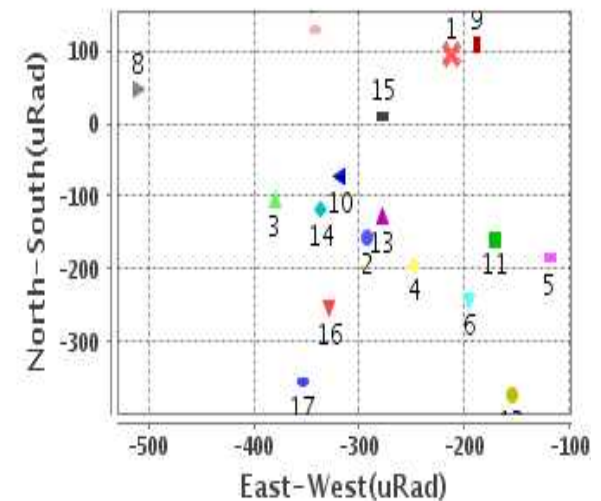
Radial Error (in IR Pixels)

| | |
|------|-------|
| Mean | 3.103 |
| Min | 1.943 |
| Max | 5.380 |
| CE90 | 4.085 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3D | Generation Date | 07-03-19 |
| Sensor | IMG | DQE Date | 08-03-2019 |
| PassType | NONE | Aquisition Date | 07-03-19 |
| 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_07MAR2 | 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 : 3DIMG07MAR20190600L1BSTD

(-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 : 18

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|---------|----------------|
| GCP Scan | 931.9 | 148.3 | 672.5 | 1150.25 | 16.97 (N-S) |
| GCP Pix | 927.3 | 323.5 | 469.2 | 1705.75 | 44.08 (E-W) |

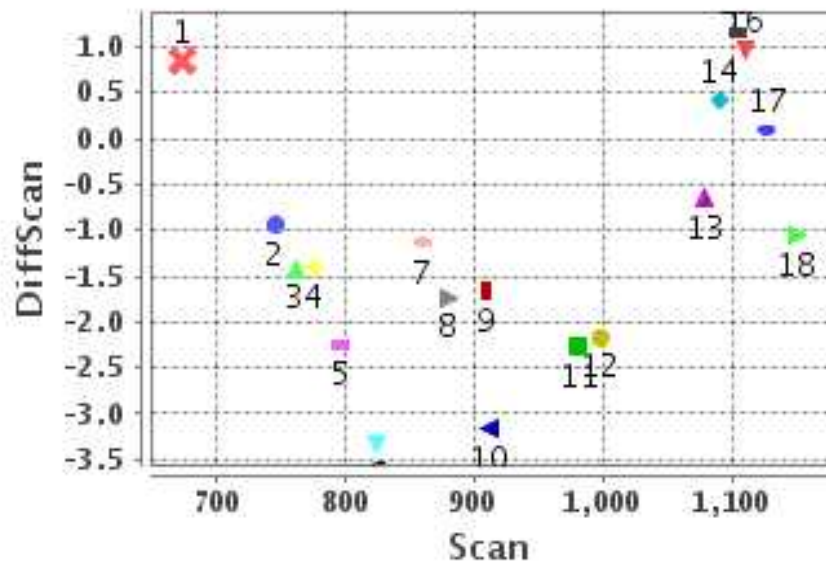
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 672.5 | 666.2 | 0.8 | -1.90 | 6.926 | S | 7.338 | W | Accepted |
| 2 | 775.5 | 685.8 | -1.4 | -2.61 | 5.040 | N | 11.362 | W | Accepted |
| 3 | 745.2 | 825.5 | -0.9 | -3.40 | 4.011 | N | 15.842 | W | Accepted |
| 4 | 796.2 | 844.0 | -2.3 | -6.09 | 11.294 | N | 31.849 | W | Rejected |
| 5 | 879.5 | 825.2 | -1.7 | -2.21 | 5.555 | N | 10.597 | W | Accepted |
| 6 | 909.0 | 801.2 | -1.7 | -1.06 | 7.420 | N | 4.585 | W | Accepted |
| 7 | 997.5 | 664.5 | -2.2 | -1.74 | 7.313 | N | 8.160 | W | Accepted |
| 8 | 1104.0 | 469.2 | 1.2 | -3.05 | 3.902 | S | 15.191 | W | Accepted |
| 9 | 1090.0 | 624.2 | 0.4 | -4.56 | 1.337 | S | 21.478 | W | Accepted |
| 10 | 1110.5 | 626.2 | 1.0 | -1.67 | 6.370 | S | 6.801 | W | Accepted |
| 11 | 1079.8 | 696.2 | -0.7 | -2.84 | 0.389 | S | 12.916 | W | Accepted |
| 12 | 761.2 | 1028.2 | -1.4 | -1.53 | 6.113 | N | 6.466 | W | Accepted |
| 13 | 824.2 | 1075.0 | -3.3 | -1.38 | 14.695 | N | 7.194 | W | Accepted |

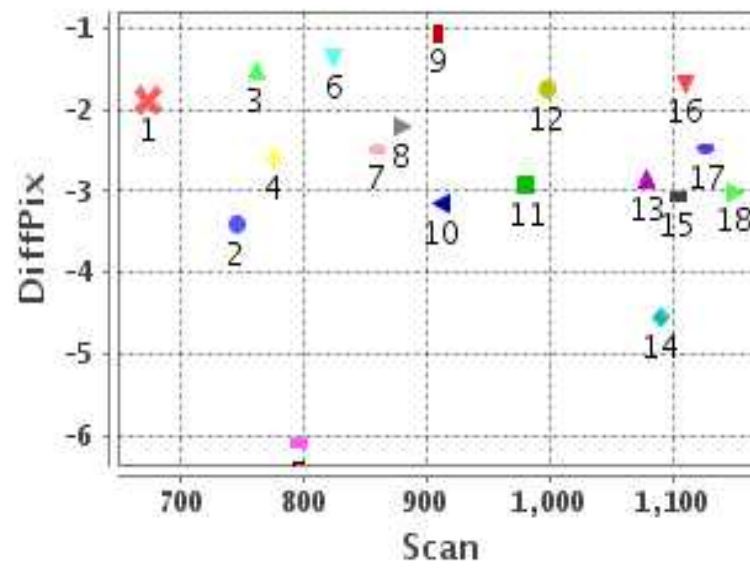
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|--------------------|--------------------|----------------|-----|----------------|-----|----------|
| 14 | 859.0 | 1119.8 | -1.1 | -2.49 | 5.106 | N | 8.000 | W | Accepted |
| 15 | 1150.2 | 1318.8 | -1.1 | -3.00 | 3.041 | N | 8.928 | W | Accepted |
| 16 | 1127.5 | 1345.5 | 0.1 | -2.47 | 2.547 | S | 7.343 | W | Accepted |
| 17 | 980.5 | 1370.0 | -2.3 | -2.93 | 7.736 | N | 11.995 | W | Accepted |
| 18 | 911.5 | 1705.8 | -3.2 | -3.16 | 11.919 | N | 8.842 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



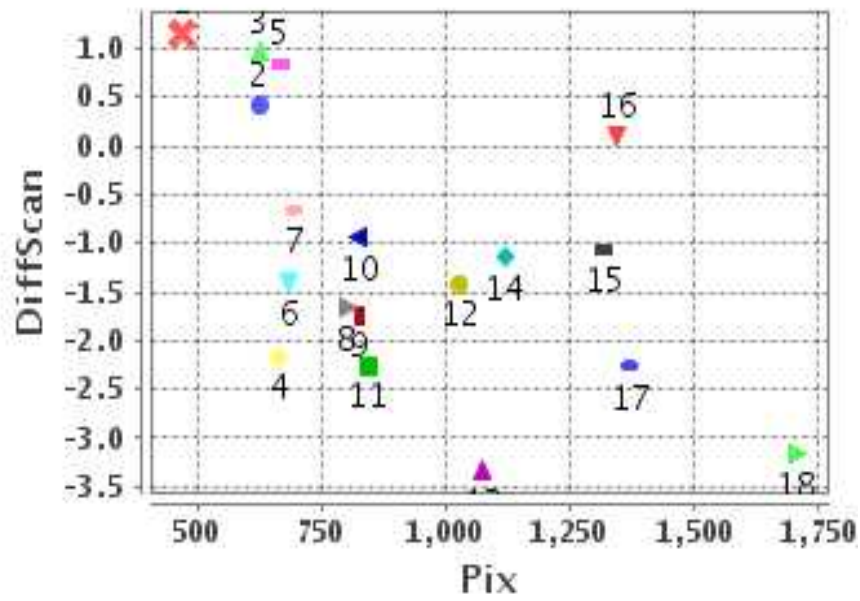
Number Of Points

| | |
|-------|----|
| North | 11 |
| South | 6 |
| East | 0 |
| West | 17 |

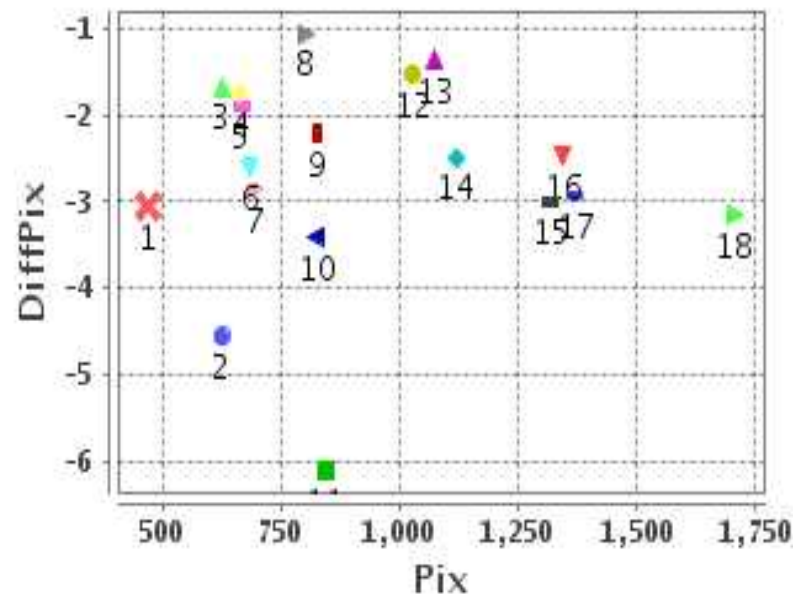
Radial Error (Km)

| | |
|------|-------|
| Mean | 3.103 |
| Min | 1.943 |
| Max | 5.380 |
| CE90 | 4.085 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | 0.831 | 1.480 | 1.697 | N | 1.489 | 1.749 |
| Across (Km) | -2.545 | 1.034 | 2.747 | W | 2.493 | 2.817 |

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) | 3.02 | N |
| Across(Mean,Dir) | -9.94 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 5.38 | 34.41 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 2.28 | 0.31 |
| Across(Mean,Stddev) | 0.42 | 0.84 |

| | | |
|---|-------|-------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 4 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 9.46 | N |
| Across(Mean,Dir) | -7.62 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.53 | 13.18 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 1.13 | 1.00 |
| Across(Mean,Stddev) | 0.81 | 0.73 |

| | | |
|--|---------|----------|
| 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) | -0.938 | S |
| Across(Mean,Dir) | -12.91 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.78 | 19.43 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -2.63 | 0.71 |
| Across(Mean,Stddev) | -0.35 | 1.16 |

| | | |
|--|---------|------|
| Scan Range-937-1876; Pix Range-934-1869 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 2.74333 | N |
| Across(Mean,Dir) | -9.42 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.04 | 1.12 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -1.77 | 0.58 |
| Across(Mean,Stddev) | -0.30 | 0.23 |

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