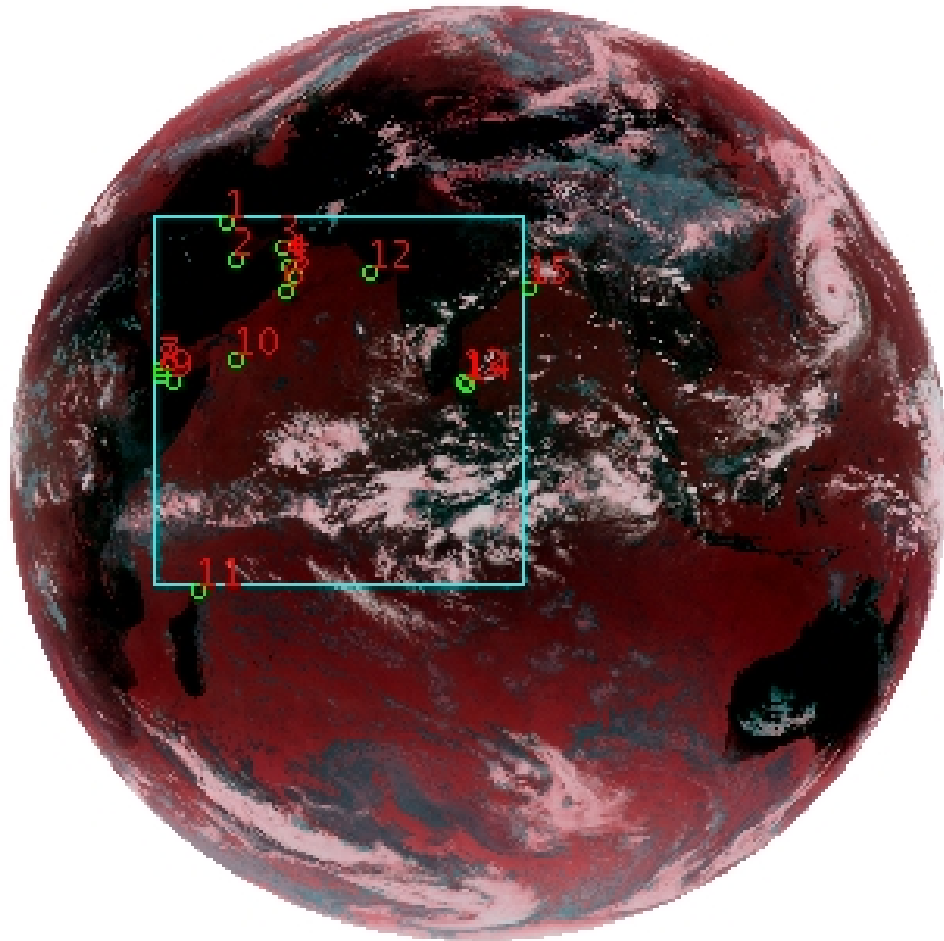


DQE Report: Location Accuracy of INSAT-3D-IMG STANDARD(FULL DISK) Product 3DIMG_26SEP2018_0600

Satellite INSAT-3D **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 26-09-18/06:00 **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 3DIMG26SEP20180600L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 15

GCP Coverage(%) 37.90 **(N-S)** 37.63 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | -0.534 | S | 2.020 | 2.090 |
| Across | -2.862 | W | 1.452 | 3.209 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.571 | 0.508 | 14.283 |
| Along | 5.451 | 10.940 | 36.276 |
| Across | 4.661 | 0.848 | 16.527 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 5.616 | 1.263 | 1.76 | 2.165 |
| Across | 3.550 | -1.003 | 1.15 | 1.525 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.01329 | -0.00280 | 0.09579 |

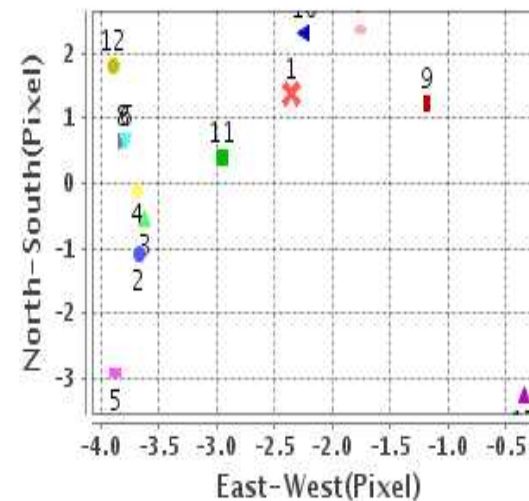
Reference Used

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

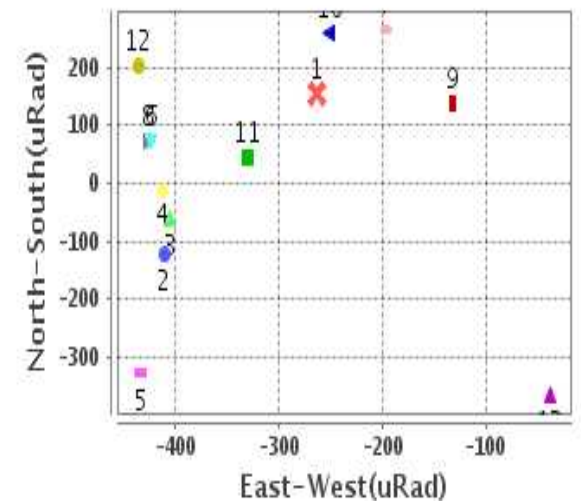
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 3.738 |
| Min | 2.322 |
| Max | 5.404 |
| CE90 | 4.651 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|----------------|----------------------------------|------------|
| Satellite | INSAT-3D | Generation Date | 26-09-18 |
| Sensor | IMG | DQE Date | 27-09-2018 |
| PassType | NONE | Aquisition Date | 26-09-18 |
| 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_26SEP20 | 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 : 3DIMG26SEP20180600L1BSTD

(-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 : 15

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|---------|----------------|
| GCP Scan | 983.1 | 255.9 | 667.2 | 1734.50 | 37.90 (N-S) |
| GCP Pix | 850.4 | 324.2 | 475.0 | 1530.50 | 37.63 (E-W) |

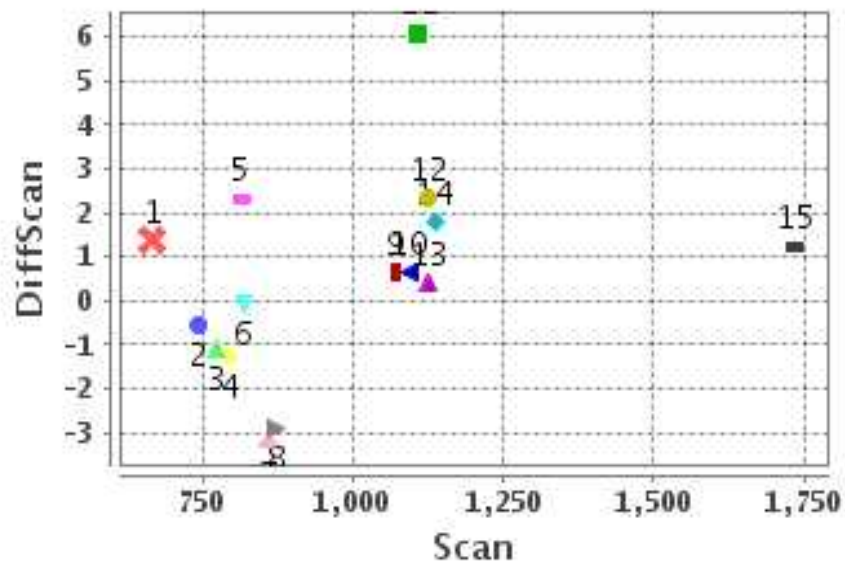
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 667.2 | 665.8 | 1.4 | -2.36 | 9.277 | S | 5.648 | W | Accepted |
| 2 | 775.2 | 686.8 | -1.1 | -3.67 | 4.797 | N | 17.973 | W | Accepted |
| 3 | 744.8 | 825.8 | -0.5 | -3.62 | 0.203 | S | 13.712 | W | Accepted |
| 4 | 795.2 | 845.0 | -1.3 | -7.08 | 6.914 | N | 35.043 | W | Rejected |
| 5 | 819.2 | 863.8 | -0.1 | -3.69 | 0.215 | S | 14.533 | W | Accepted |
| 6 | 872.5 | 835.5 | -2.9 | -3.87 | 12.016 | N | 17.971 | W | Accepted |
| 7 | 1094.2 | 475.5 | 0.6 | -3.79 | 3.500 | S | 18.303 | W | Accepted |
| 8 | 1109.0 | 475.0 | 6.1 | -2.69 | 25.254 | S | 10.898 | W | Rejected |
| 9 | 1125.2 | 505.2 | 2.4 | -1.75 | 10.669 | S | 6.287 | W | Accepted |
| 10 | 1069.5 | 687.2 | 0.7 | -3.80 | 4.275 | S | 16.940 | W | Accepted |
| 11 | 1734.5 | 581.2 | 1.2 | -1.19 | 7.284 | S | 5.762 | W | Accepted |
| 12 | 815.5 | 1076.0 | 2.3 | -2.25 | 12.862 | S | 9.146 | W | Accepted |
| 13 | 1127.2 | 1346.0 | 0.4 | -2.96 | 2.771 | S | 11.528 | W | Accepted |

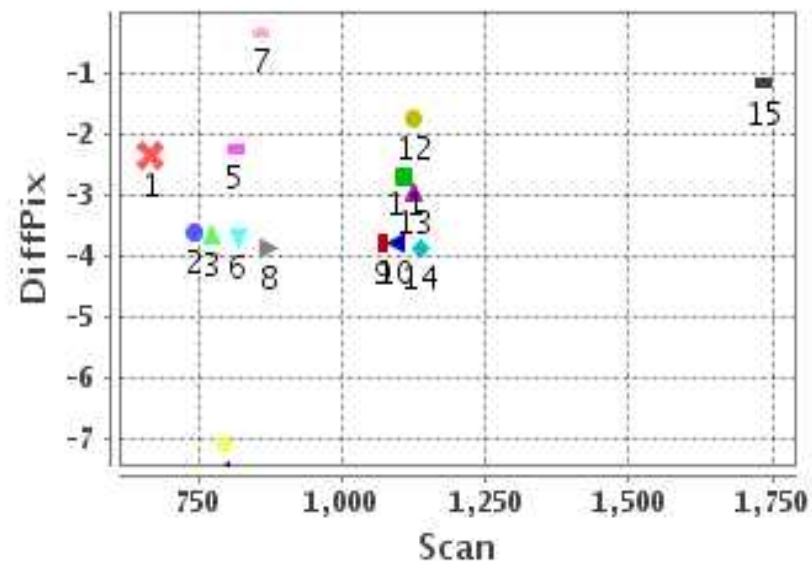
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|--------------------|--------------------|----------------|-----|----------------|-----|----------|
| 14 | 1137.2 | 1356.8 | 1.8 | -3.90 | 8.228 | S | 12.337 | W | Accepted |
| 15 | 860.0 | 1530.5 | -3.3 | -0.35 | 14.717 | N | 1.322 | E | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



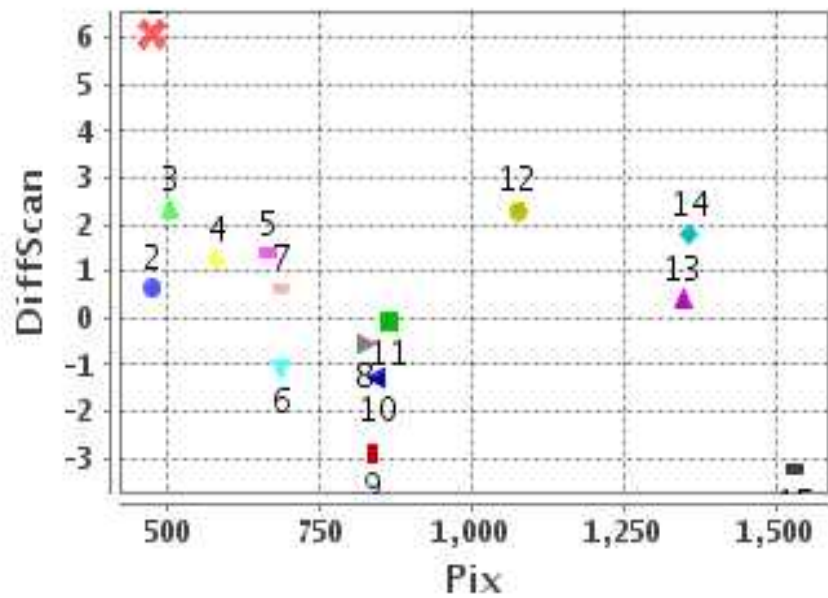
Number Of Points

| | |
|-------|----|
| North | 3 |
| South | 10 |
| East | 1 |
| West | 12 |

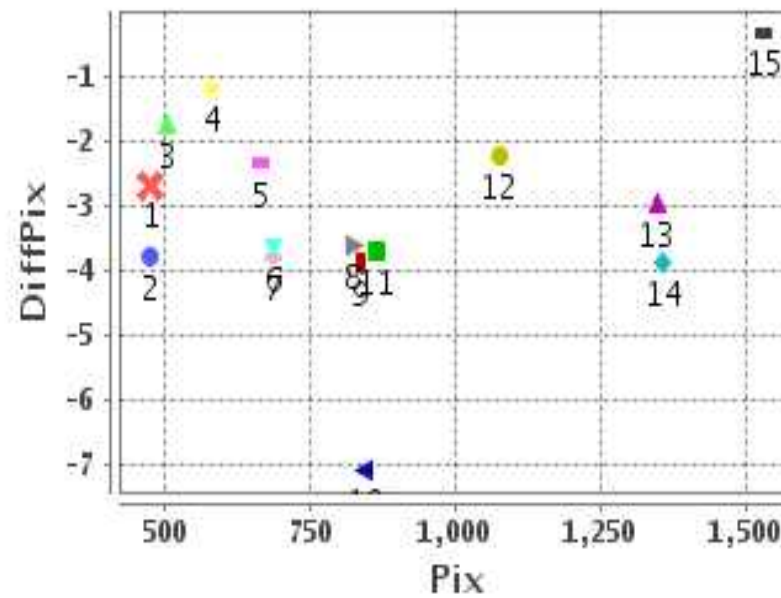
Radial Error (Km)

| | |
|------|-------|
| Mean | 3.738 |
| Min | 2.322 |
| Max | 5.404 |
| CE90 | 4.651 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | -0.534 | 2.020 | 2.090 | S | 1.898 | 2.175 |
| Across (Km) | -2.862 | 1.452 | 3.209 | W | 3.068 | 3.339 |

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) | 1.426 | N |
| Across(Mean,Dir) | -13.97 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 5.46 | 36.60 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 2.55 | 1.07 |
| Across(Mean,Stddev) | 1.36 | 0.09 |

| | | |
|---|-------|------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 0.925 | N |
| Across(Mean,Dir) | -3.91 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.25 | 6.14 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 5.56 | 0.00 |
| Across(Mean,Stddev) | -1.90 | 0.00 |

| | | |
|--|---------|----------|
| 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) | -6.43 | S |
| Across(Mean,Dir) | -11.82 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.66 | 16.62 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.76 | 0.72 |
| Across(Mean,Stddev) | -1.54 | 1.12 |

| | | |
|--|--------|------|
| Scan Range-937-1876; Pix Range-934-1869 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -5.5 | S |
| Across(Mean,Dir) | -11.93 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.05 | 1.23 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -1.41 | 0.00 |
| Across(Mean,Stddev) | 0.94 | 0.00 |

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