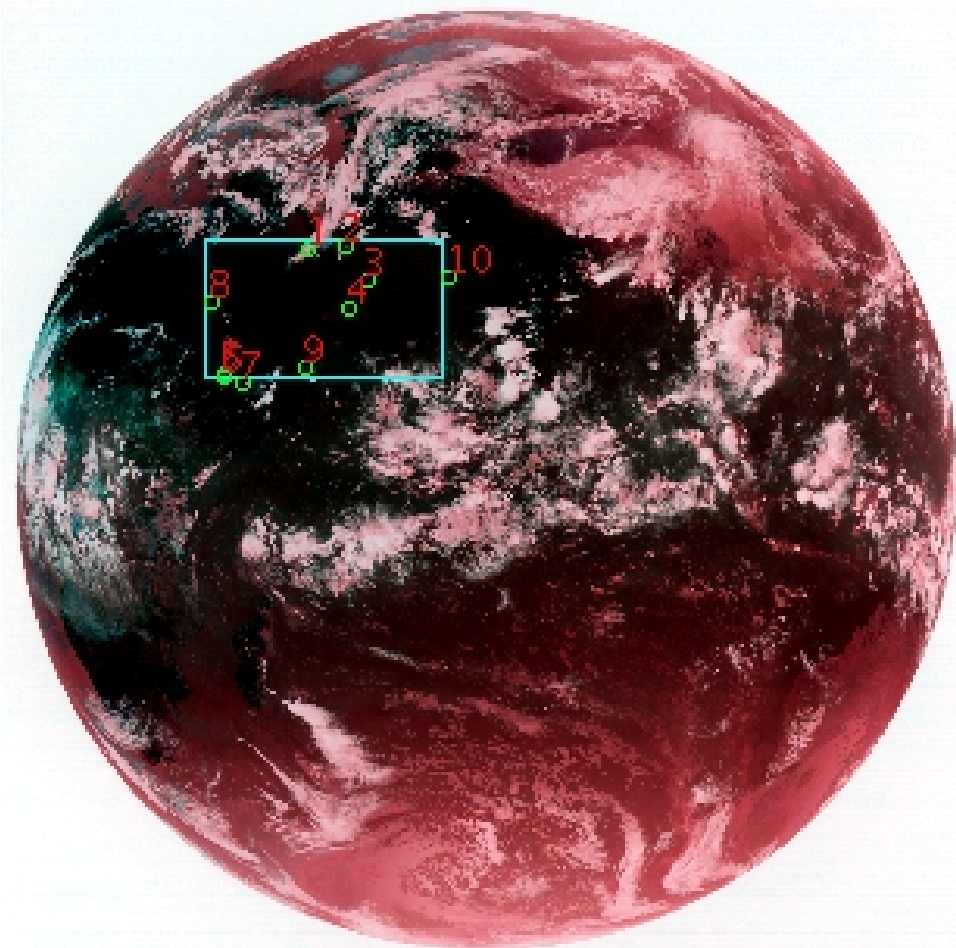


DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_10MAY2018_1215

| | | | | | |
|---------------|----------------|-----------------|---------------|-----------------|----------|
| Satellite | INSAT-3DR | No Of Bands | 6 | Product Type | STANDARD |
| Sensor | IMG | LvlOfProcess | L1B | Selected Band | 2-TIR1 |
| DOP/Time | 10-05-18/24:15 | Station ID | BES | Field View(deg) | 18.006 |
| Res(Y,X) [Km] | (4.0,4.0) | Res(Y,X) [uRad] | (112.0,112.0) | | |

(80.945N,-7.287W)

(80.945N,155.184E)



(-81.168S,-7.287W)

(-81.168S,155.184E)

GCP Distribution overview for 3RIMG10MAY20181215L1BDQE

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

GCP Coverage(%) 13.94 (N-S) 24.11 (E-W)

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|---------|-----------|--------|--------|
| Along | 9.547 | N | 2.055 | 9.765 |
| Across | -28.228 | W | 2.176 | 28.311 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.499 | 0.327 | 12.472 |
| Along | 4.628 | 0.294 | 15.691 |
| Across | 4.634 | 0.268 | 15.855 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 4.148 | -1.510 | 1.32 | 2.003 |
| Across | 2.285 | 1.684 | 0.83 | 1.877 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.15991 | -0.07074 | 0.15269 |

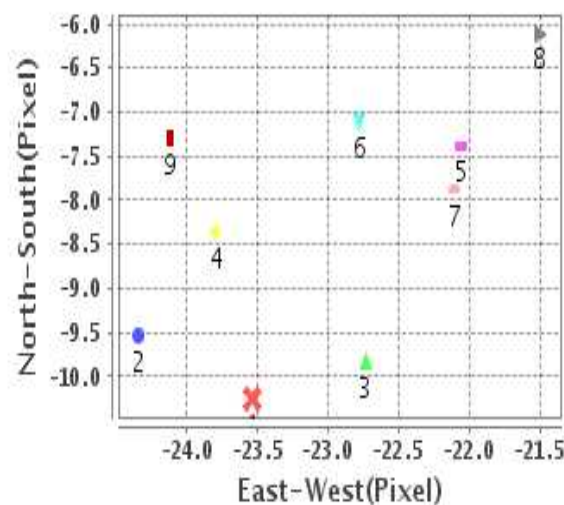
Reference Used

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

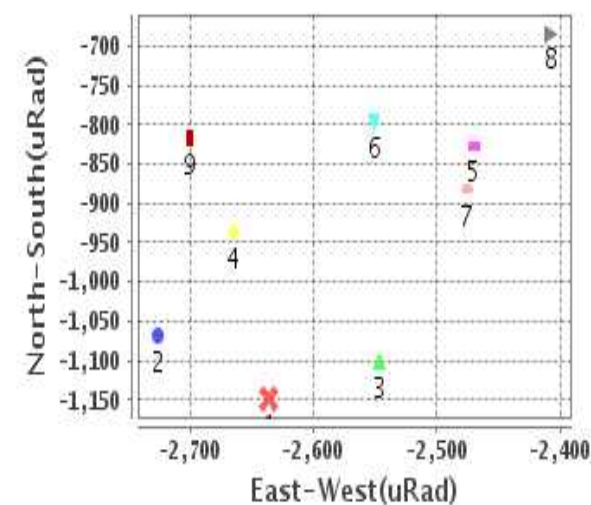
Radial Error (in IR Pixels)

| | |
|------|--------|
| Mean | 29.850 |
| Min | 26.205 |
| Max | 34.001 |
| CE90 | 32.802 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|--------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 10-05-18 |
| Sensor | IMG | DQE Date | 11-05-2018 |
| PassType | NONE | Aquisition Date | 10-05-18 |
| 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_10MAY2 | 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) | -0.112 |
| Center Lon(deg) | 73.949 |
| 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) | 80.945 |
| NW_Lon(deg) | -7.287 |
| SW_Lat(deg) | -81.168 |
| SW_Lon(deg) | -7.287 |
| NE_Lat(deg) | 80.945 |
| NE_Lon(deg) | 155.184 |
| SE_Lat(deg) | -81.168 |
| SE_Lon(deg) | 155.184 |

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 : 3RIMG10MAY20181215L1BDQE

(-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

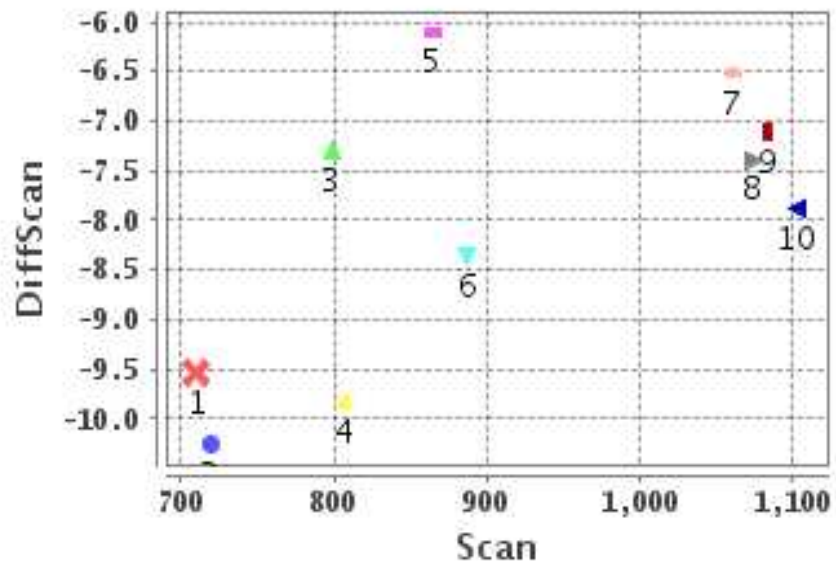
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|---------|----------------|
| GCP Scan | 910.6 | 148.0 | 710.0 | 1102.50 | 13.94 (N-S) |
| GCP Pix | 861.6 | 211.2 | 602.5 | 1278.75 | 24.11 (E-W) |

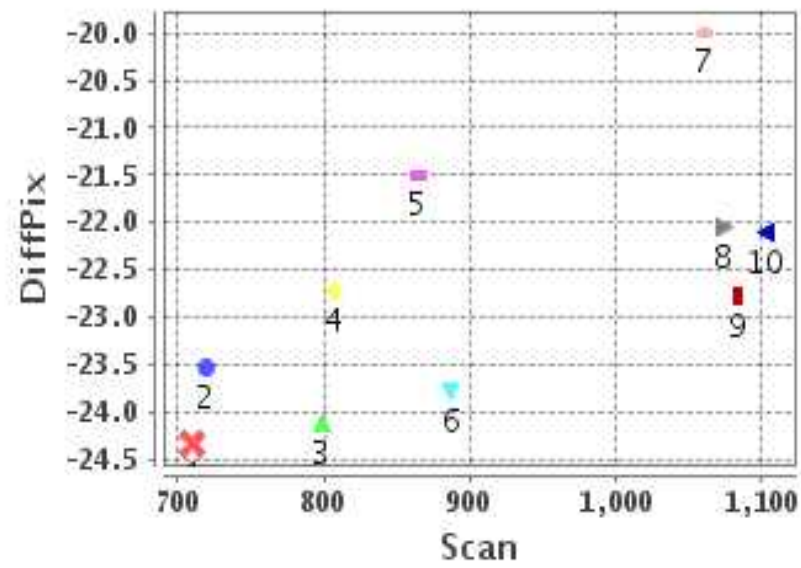
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 718.8 | 873.0 | -10.3 | -23.54 | 51.575 | N | 125.846 | W | Accepted |
| 2 | 710.0 | 988.2 | -9.5 | -24.34 | 51.226 | N | 120.793 | W | Accepted |
| 3 | 806.5 | 1052.2 | -9.8 | -22.73 | 44.958 | N | 103.937 | W | Accepted |
| 4 | 887.2 | 995.2 | -8.4 | -23.79 | 37.373 | N | 106.191 | W | Accepted |
| 5 | 1074.0 | 636.5 | -7.4 | -22.05 | 33.029 | N | 110.945 | W | Accepted |
| 6 | 1084.0 | 631.2 | -7.1 | -22.77 | 31.722 | N | 116.131 | W | Accepted |
| 7 | 1102.5 | 686.2 | -7.9 | -22.11 | 31.774 | N | 108.127 | W | Accepted |
| 8 | 864.2 | 602.5 | -6.1 | -21.50 | 30.926 | N | 124.116 | W | Accepted |
| 9 | 1060.0 | 871.5 | -6.5 | -20.00 | 27.121 | N | 87.043 | W | Rejected |
| 10 | 798.8 | 1278.8 | -7.3 | -24.11 | 31.097 | N | 100.102 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



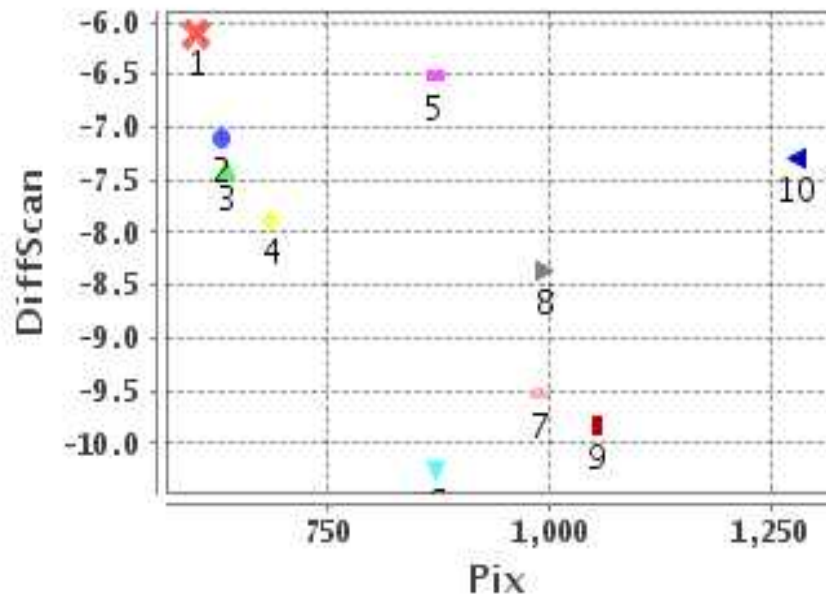
Number Of Points

| | |
|-------|---|
| North | 9 |
| South | 0 |
| East | 0 |
| West | 9 |

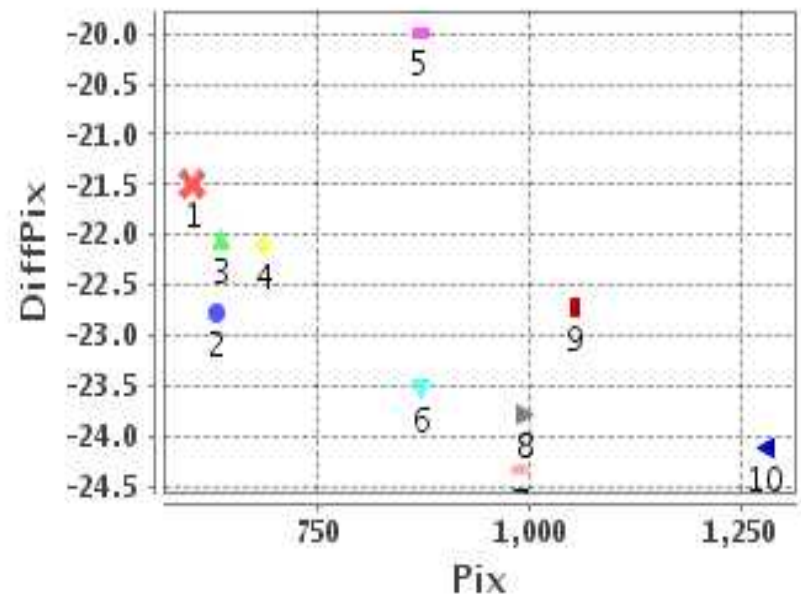
Radial Error (Km)

| | |
|------|--------|
| Mean | 29.850 |
| Min | 26.205 |
| Max | 34.001 |
| CE90 | 32.802 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|---------|--------|--------|-----|----------|----------|
| Along(Km) | 9.547 | 2.055 | 9.765 | N | 9.301 | 9.991 |
| Across (Km) | -28.228 | 2.176 | 28.311 | W | 27.892 | 28.696 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | |
|--|---------|-------|
| Scan Range-0-937; Pix Range-0-934 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 41.245 | N |
| Across(Mean,Dir) | -124.98 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.53 | 13.29 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -4.15 | 0.00 |
| Across(Mean,Stddev) | 2.04 | 0.00 |

| | | |
|---|---------|-------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 4 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 41.165 | N |
| Across(Mean,Dir) | -107.76 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.58 | 14.56 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -1.04 | 1.04 |
| Across(Mean,Stddev) | -0.79 | 0.59 |

| | | |
|--|---------|----------|
| 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) | 32.18 | N |
| Across(Mean,Dir) | -111.74 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.76 | 19.00 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 0.10 | 0.39 |
| Across(Mean,Stddev) | -0.69 | 0.03 |

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