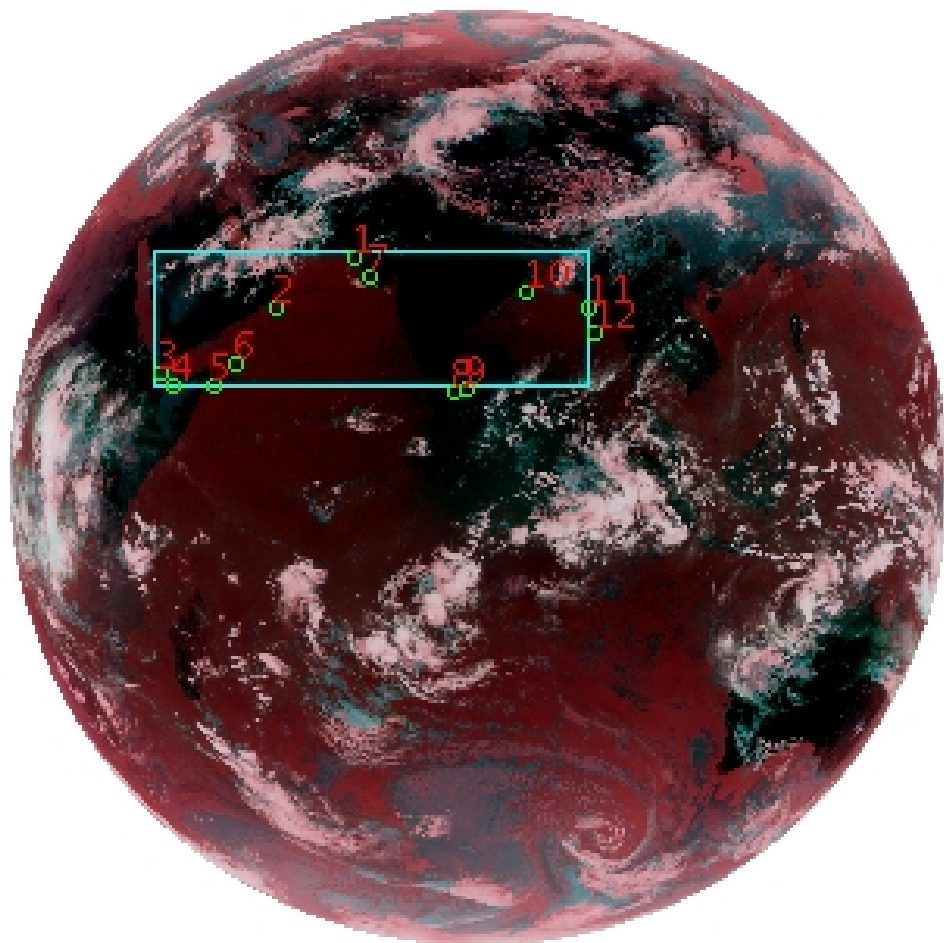


DQE Report: Location Accuracy of INSAT-3D-IMG STANDARD(FULL DISK) Product 3DIMG_10APR2019_0600

Satellite INSAT-3D **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 10-04-19/06:00 **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 3DIMG10APR20190600L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 12

GCP Coverage(%) 13.82 **(N-S)** 44.52 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | -0.352 | S | 1.432 | 1.475 |
| Across | -1.973 | W | 1.413 | 2.427 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.368 | 0.348 | 9.188 |
| Along | 4.402 | 0.701 | 10.047 |
| Across | 4.365 | 0.630 | 9.119 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 4.798 | -1.805 | 1.52 | 2.360 |
| Across | 3.840 | -1.205 | 1.29 | 1.765 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.01381 | -0.00149 | 0.08237 |

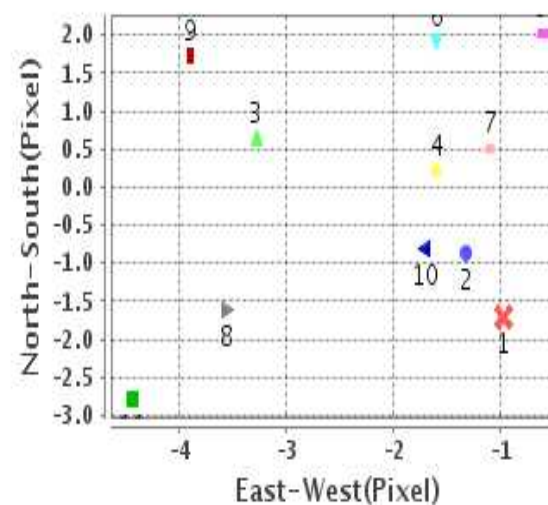
Reference Used

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

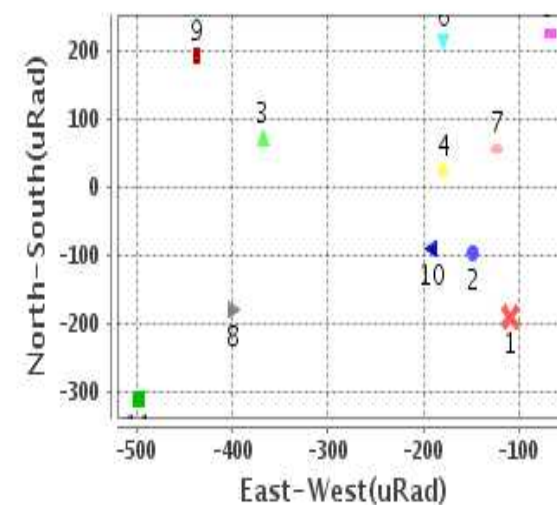
Radial Error (in IR Pixels)

| | |
|------|-------|
| Mean | 2.563 |
| Min | .905 |
| Max | 4.659 |
| CE90 | 3.677 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|-------------------|---------------|---------------------------|------------|
| Satellite | INSAT-3D | Generation Date | 10-04-19 |
| Sensor | IMG | DQE Date | 11-04-2019 |
| PassType | NONE | Aquisition Date | 10-04-19 |
| 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_10APR20 | 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 : 3DIMG10APR20190600L1BSTD

(-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

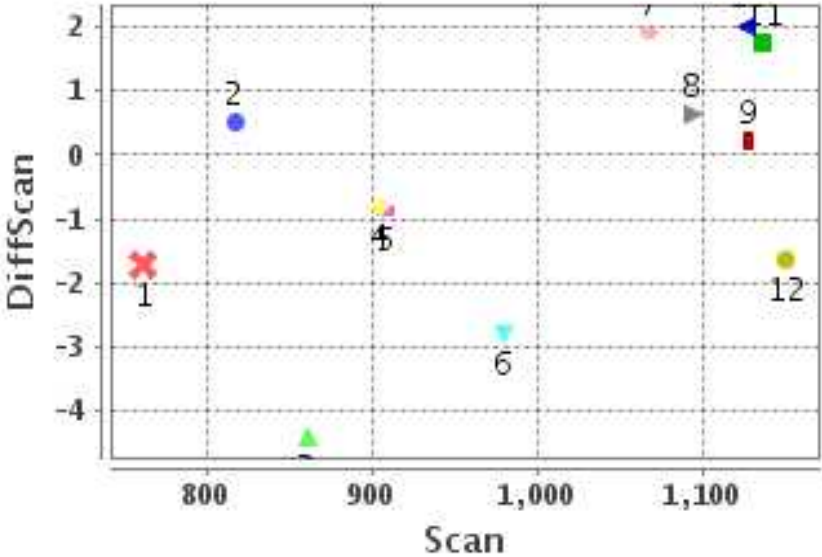
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 12

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| GCP Scan | 994.9 | 133.8 | 761.5 | 1150.75 | 13.82 (N-S) |
| GCP Pix | 1069.3 | 435.5 | 475.0 | 1723.75 | 44.52 (E-W) |

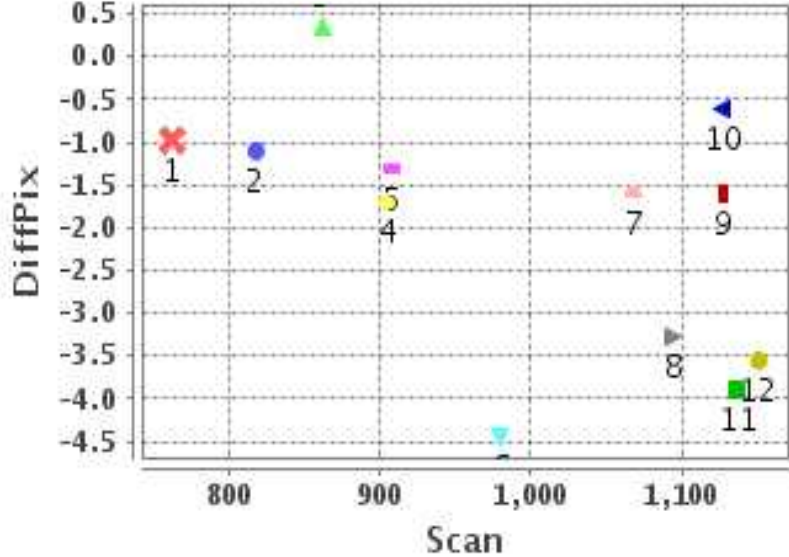
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 761.5 | 1027.8 | -1.7 | -0.97 | 6.356 | N | 1.985 | W | Accepted |
| 2 | 908.2 | 801.5 | -0.9 | -1.32 | 2.710 | N | 4.585 | W | Accepted |
| 3 | 1094.2 | 475.0 | 0.6 | -3.29 | 3.500 | S | 18.303 | W | Accepted |
| 4 | 1127.5 | 505.2 | 0.2 | -1.60 | 2.279 | S | 6.686 | W | Accepted |
| 5 | 1127.5 | 628.0 | 2.0 | -0.61 | 9.767 | S | 1.571 | W | Accepted |
| 6 | 1068.2 | 685.0 | 1.9 | -1.60 | 8.614 | S | 6.513 | W | Accepted |
| 7 | 817.2 | 1074.8 | 0.5 | -1.10 | 3.460 | S | 1.071 | W | Accepted |
| 8 | 1150.8 | 1319.2 | -1.6 | -3.56 | 3.264 | N | 13.409 | W | Accepted |
| 9 | 1137.2 | 1356.8 | 1.7 | -3.90 | 8.005 | S | 12.337 | W | Accepted |
| 10 | 861.2 | 1529.8 | -4.4 | 0.36 | 18.768 | N | 5.360 | E | Rejected |
| 11 | 904.8 | 1704.5 | -0.8 | -1.71 | 0.042 | S | 5.337 | W | Accepted |
| 12 | 979.8 | 1723.8 | -2.8 | -4.45 | 7.833 | N | 15.021 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



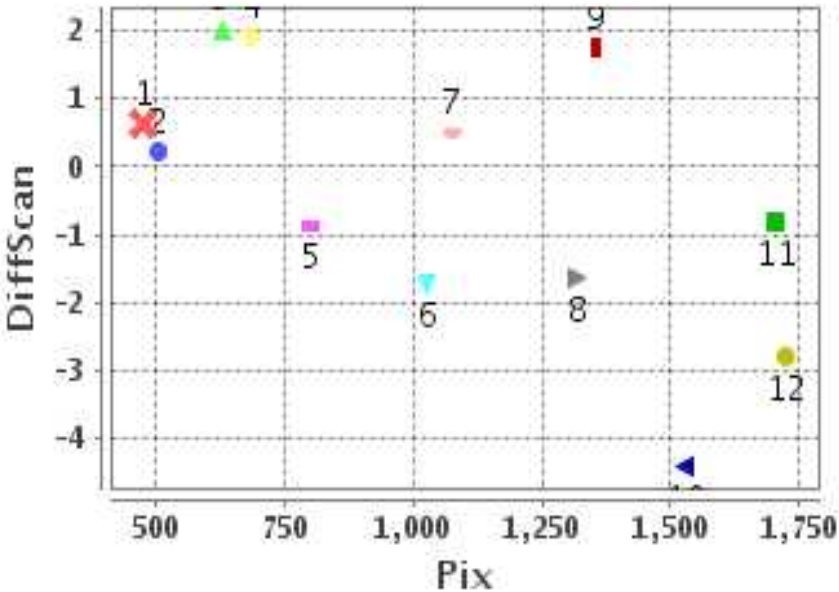
Number Of Points

| | |
|-------|----|
| North | 4 |
| South | 7 |
| East | 0 |
| West | 11 |

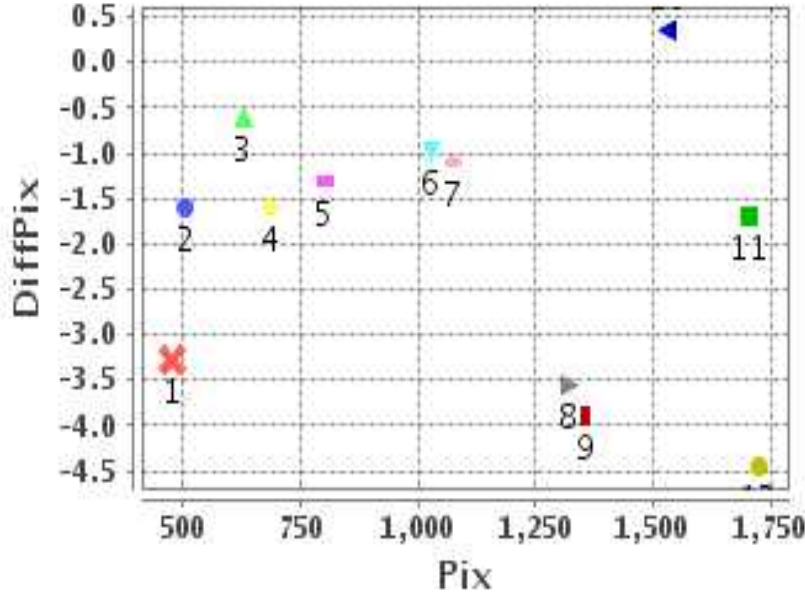
Radial Error (Km)

| | |
|------|-------|
| Mean | 2.563 |
| Min | .905 |
| Max | 4.659 |
| CE90 | 3.677 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | -0.352 | 1.432 | 1.475 | S | 1.340 | 1.547 |
| Across (Km) | -1.973 | 1.413 | 2.427 | W | 2.094 | 2.544 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | | |
|-----------------------------------|---------|---------|--|
| Scan Range-0-937; Pix Range-0-934 | | | |
| Number of GCPs | 1 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | 2.71 | N | |
| Across(Mean,Dir) | -4.58 | 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-934-1869 | | | |
| Number of GCPs | 3 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | 0.953333 | N | |
| Across(Mean,Dir) | -2.79 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 4.54 | 13.45 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -1.55 | 0.66 | |
| Across(Mean,Stddev) | 0.44 | 0.30 | |

| | | | |
|---------------------------------------|---------|----------|--|
| 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) | -6.04 | S | |
| Across(Mean,Dir) | -8.27 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 5.10 | 27.41 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | 0.95 | 0.77 | |
| Across(Mean,Stddev) | -2.02 | 0.47 | |

| | | | |
|---|---------|------|--|
| Scan Range-937-1876; Pix Range-934-1869 | | | |
| Number of GCPs | 3 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | 1.03667 | N | |
| Across(Mean,Dir) | -13.59 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 3.96 | 0.97 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -2.84 | 1.68 | |
| Across(Mean,Stddev) | 0.62 | 0.28 | |

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