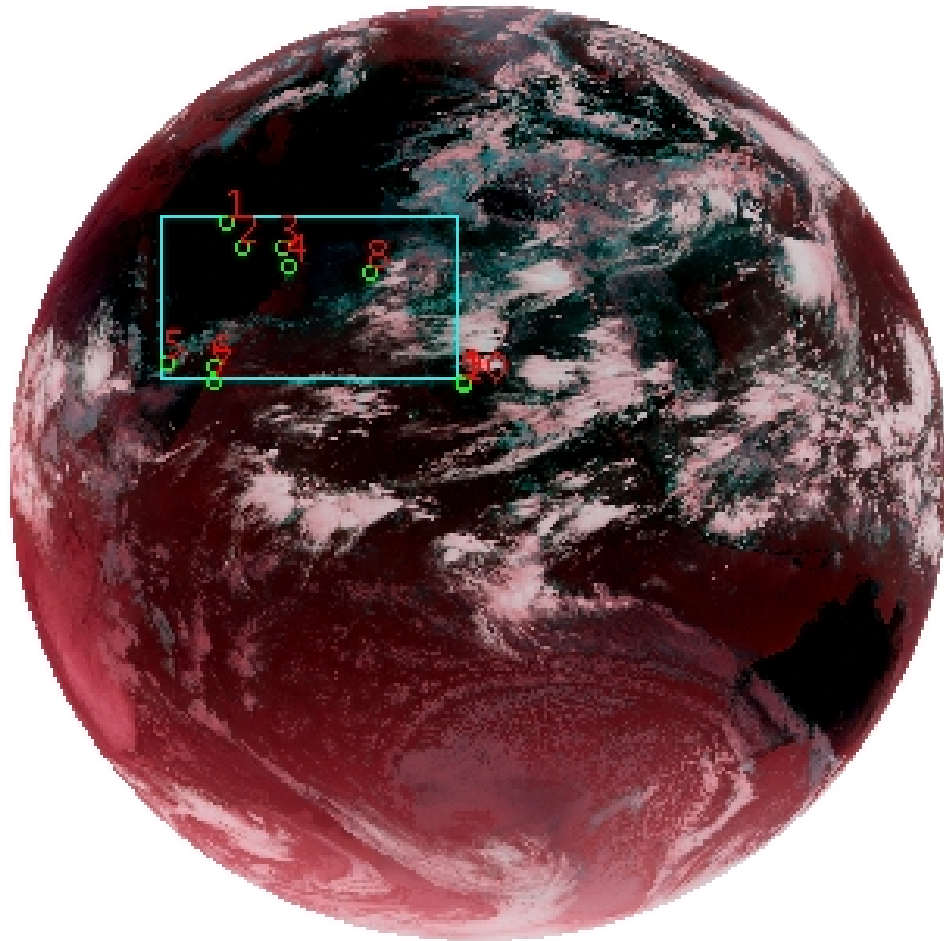


DQE Report: Location Accuracy of INSAT-3D-IMG STANDARD(FULL DISK) Product 3DIMG_04JUL2018_0500

Satellite INSAT-3D **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 04-07-18/05:00 **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 3DIMG04JUL20180500L1BSTD

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

GCP Coverage(%) 16.73 **(N-S)** 30.63 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | -1.005 | S | 1.418 | 1.738 |
| Across | -4.251 | W | 1.698 | 4.578 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.719 | 0.568 | 17.965 |
| Along | 4.683 | 0.764 | 17.063 |
| Across | 4.624 | 0.495 | 15.595 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 4.160 | 0.990 | 1.12 | 1.499 |
| Across | 4.188 | -0.658 | 1.29 | 1.445 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|---------|---------|
| -0.02478 | 0.00387 | 0.03711 |

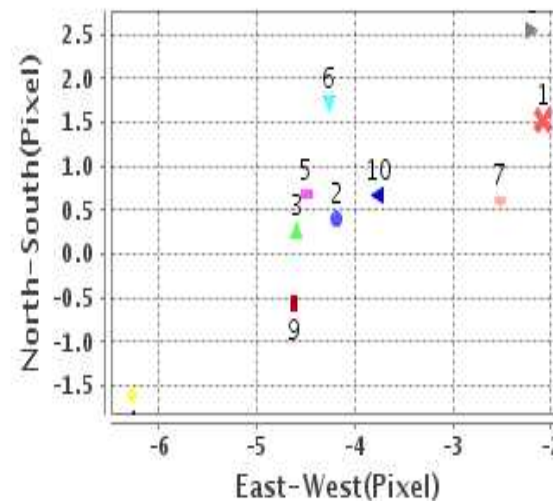
Reference Used

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

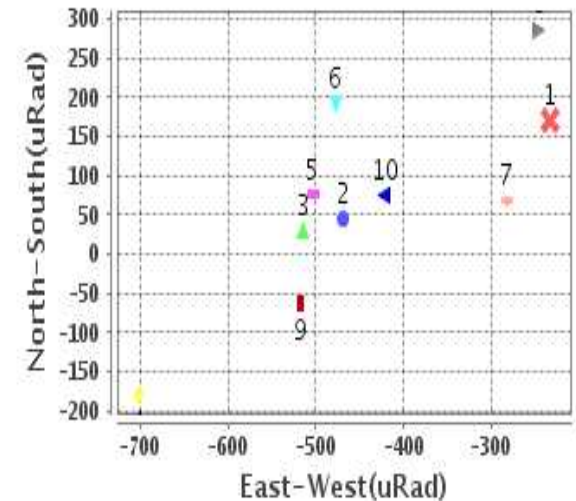
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 4.702 |
| Min | 2.827 |
| Max | 7.847 |
| CE90 | 5.657 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|----------------|----------------------------------|------------|
| Satellite | INSAT-3D | Generation Date | 04-07-18 |
| Sensor | IMG | DQE Date | 27-07-2018 |
| PassType | NONE | Aquisition Date | 04-07-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 05:00 |
| 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_04JUL20 | 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 | meters | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

References

JobId : 3DIMG04JUL20180500L1BSTD

(-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

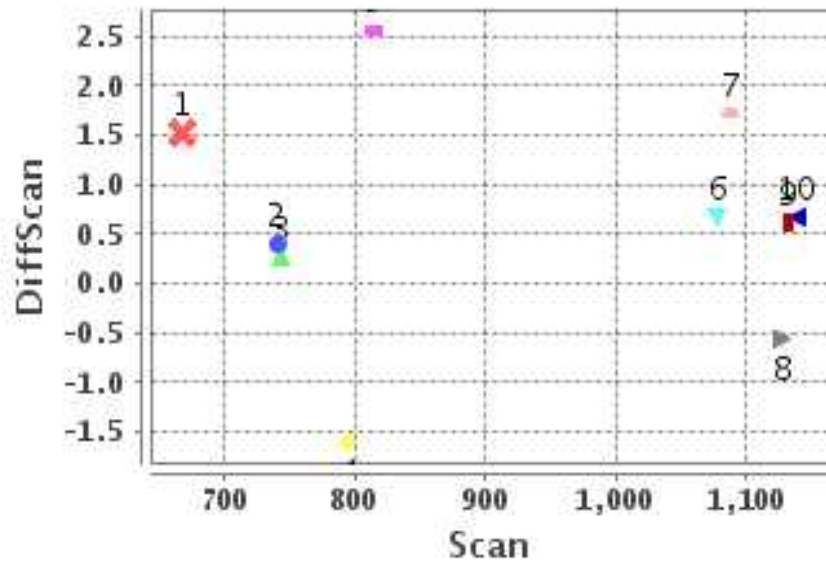
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|---------|----------------|
| GCP Scan | 932.8 | 184.7 | 667.2 | 1138.50 | 16.73 (N-S) |
| GCP Pix | 855.5 | 288.5 | 488.8 | 1348.00 | 30.63 (E-W) |

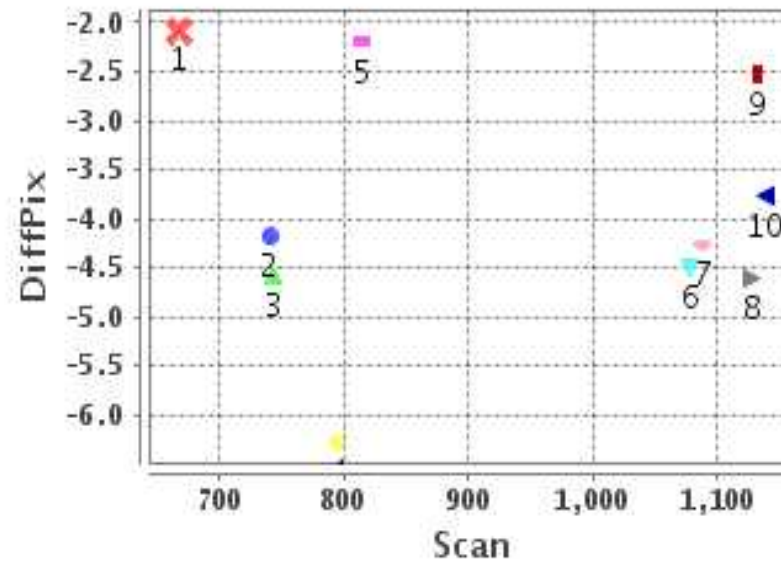
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 667.2 | 665.5 | 1.5 | -2.08 | 10.038 | S | 5.204 | W | Accepted |
| 2 | 740.5 | 705.0 | 0.4 | -4.18 | 3.545 | S | 21.490 | W | Accepted |
| 3 | 744.0 | 826.8 | 0.3 | -4.59 | 0.448 | S | 18.815 | W | Accepted |
| 4 | 795.5 | 844.2 | -1.6 | -6.27 | 7.155 | N | 30.562 | W | Accepted |
| 5 | 1078.0 | 488.8 | 0.7 | -4.49 | 2.557 | S | 20.891 | W | Accepted |
| 6 | 1088.8 | 624.0 | 1.7 | -4.27 | 10.217 | S | 20.191 | W | Accepted |
| 7 | 1131.5 | 629.0 | 0.6 | -2.53 | 4.609 | S | 12.574 | W | Accepted |
| 8 | 815.2 | 1076.0 | 2.6 | -2.20 | 12.862 | S | 8.924 | W | Accepted |
| 9 | 1128.2 | 1347.5 | -0.6 | -4.61 | 1.305 | N | 16.453 | W | Accepted |
| 10 | 1138.5 | 1348.0 | 0.7 | -3.76 | 4.380 | S | 14.946 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



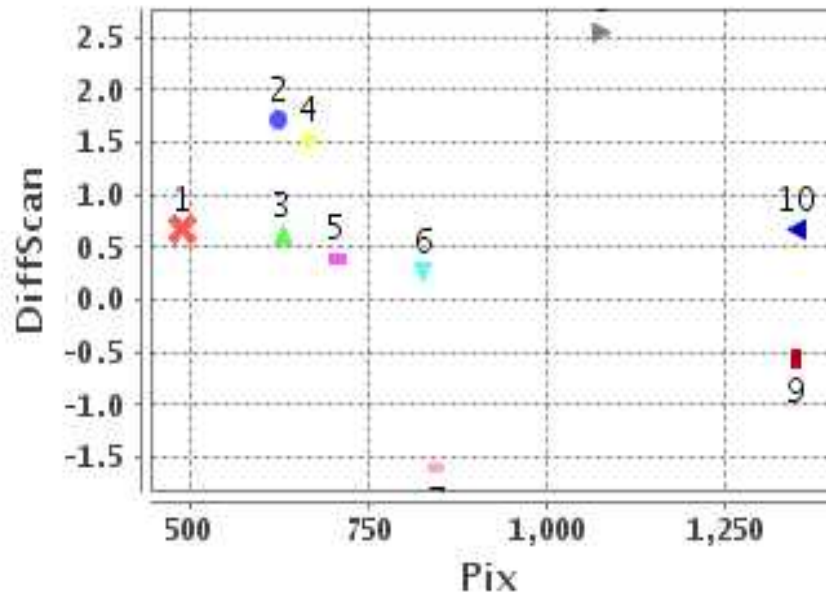
Number Of Points

| | |
|-------|----|
| North | 2 |
| South | 8 |
| East | 0 |
| West | 10 |

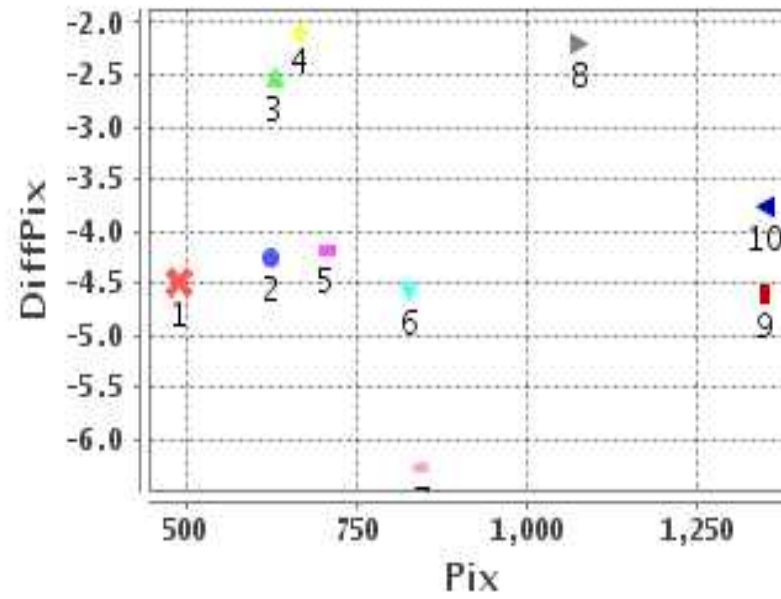
Radial Error (Km)

| | |
|------|-------|
| Mean | 4.702 |
| Min | 2.827 |
| Max | 7.847 |
| CE90 | 5.657 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | -1.005 | 1.418 | 1.738 | S | 1.486 | 1.831 |
| Across (Km) | -4.251 | 1.698 | 4.578 | W | 4.098 | 4.806 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | | |
|--|--------|-------|--|
| Scan Range-0-937; Pix Range-0-934 | | | |
| Number of GCPs | 4 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -1.715 | S | |
| Across(Mean,Dir) | -19.02 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 5.81 | 45.13 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | 1.83 | 0.91 | |
| Across(Mean,Stddev) | 2.93 | 0.90 | |

| | | | |
|---|---------|---------|--|
| Scan Range-0-937; Pix Range-934-1869 | | | |
| Number of GCPs | 1 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -12.86 | S | |
| Across(Mean,Dir) | -8.92 | 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 | 3 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -5.79667 | S | |
| Across(Mean,Dir) | -17.89 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 5.07 | 26.76 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -0.48 | 0.56 | |
| Across(Mean,Stddev) | -1.09 | 0.87 | |

| | | | |
|--|--------|-------|--|
| Scan Range-937-1876; Pix Range-934-1869 | | | |
| Number of GCPs | 2 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -1.535 | S | |
| Across(Mean,Dir) | -15.70 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 4.46 | 11.59 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -1.22 | 0.00 | |
| Across(Mean,Stddev) | -0.85 | 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