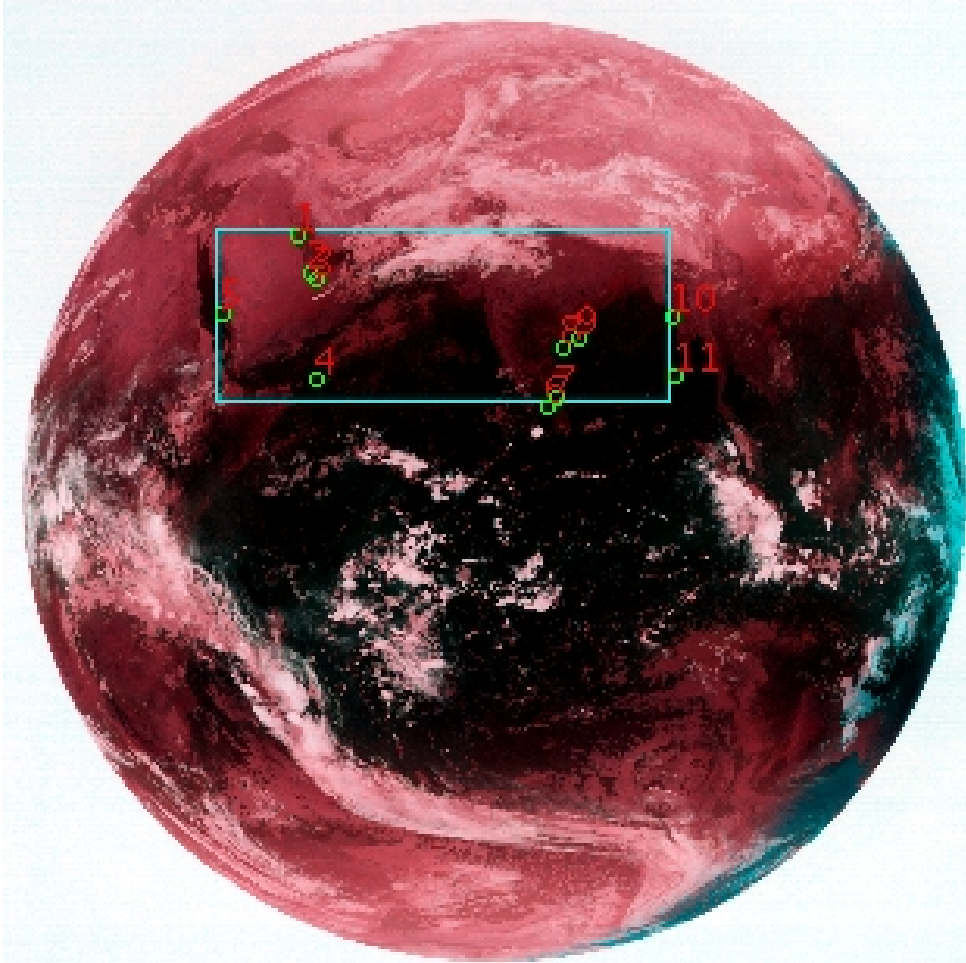


DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_19FEB2019_2145

Satellite INSAT-3DR **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 19-02-19/21:45 **Station ID** BES **Field View(deg)** 18.006
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(81.223N,-7.391W)

(81.223N,154.991E)



(-81.151S,-7.391W)

(-81.151S,154.991E)

GCP Distribution overview for 3RIMG19FEB20192145L1BDQE

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 11

GCP Coverage(%) 17.52 **(N-S)** 46.41 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | -3.874 | S | 0.870 | 3.970 |
| Across | 2.654 | E | 2.107 | 3.389 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.464 | 0.438 | 11.603 |
| Along | 4.419 | 0.239 | 10.470 |
| Across | 4.329 | 0.317 | 8.218 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 3.177 | -0.744 | 0.96 | 1.212 |
| Across | 5.503 | 0.637 | 1.62 | 1.741 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---------|---------|---------|
| 0.01317 | 0.02434 | 0.01579 |

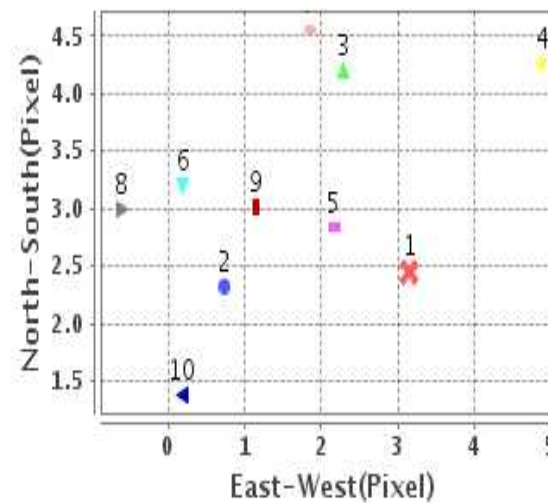
Reference Used

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

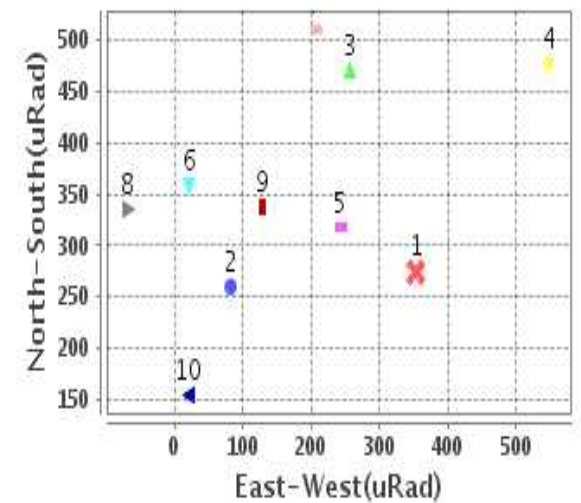
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 4.958 |
| Min | 2.460 |
| Max | 7.951 |
| CE90 | 6.617 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 20-02-19 |
| Sensor | IMG | DQE Date | 21-02-2019 |
| PassType | NONE | Aquisition Date | 19-02-19 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 21:45 |
| 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_19FEB20 | 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) | 0.036 |
| Center Lon(deg) | 73.8 |
| 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) | 81.223 |
| NW_Lon(deg) | -7.391 |
| SW_Lat(deg) | -81.151 |
| SW_Lon(deg) | -7.391 |
| NE_Lat(deg) | 81.223 |
| NE_Lon(deg) | 154.991 |
| SE_Lat(deg) | -81.151 |
| SE_Lon(deg) | 154.991 |

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 : 3RIMG19FEB20192145L1BDQE

(-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

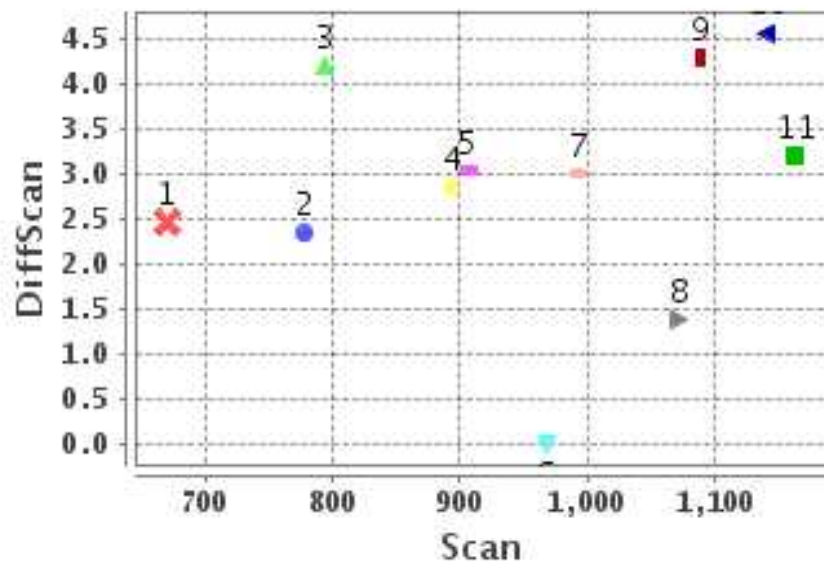
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 11

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| GCP Scan | 951.5 | 152.3 | 670.0 | 1163.25 | 17.52 (N-S) |
| GCP Pix | 1299.0 | 458.8 | 616.0 | 1917.75 | 46.41 (E-W) |

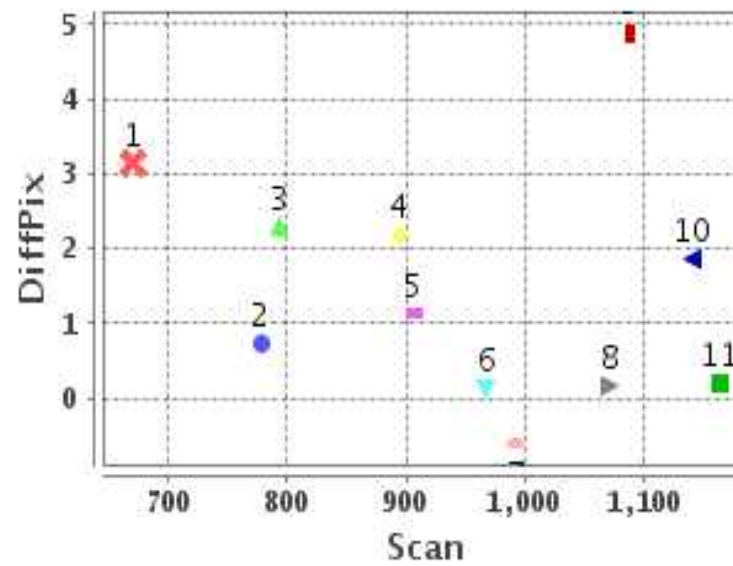
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 670.0 | 834.2 | 2.5 | 3.15 | 14.661 | S | 22.038 | E | Accepted |
| 2 | 778.2 | 869.2 | 2.3 | 0.73 | 13.185 | S | 7.451 | E | Accepted |
| 3 | 794.0 | 886.0 | 4.2 | 2.29 | 20.602 | S | 15.987 | E | Accepted |
| 4 | 1088.2 | 883.5 | 4.3 | 4.89 | 18.490 | S | 25.878 | E | Accepted |
| 5 | 894.0 | 616.0 | 2.8 | 2.17 | 13.066 | S | 16.445 | E | Accepted |
| 6 | 1163.2 | 1554.5 | 3.2 | 0.19 | 13.451 | S | 2.564 | E | Accepted |
| 7 | 1140.8 | 1579.2 | 4.6 | 1.85 | 21.054 | S | 8.039 | E | Accepted |
| 8 | 992.5 | 1599.8 | 3.0 | -0.61 | 15.375 | S | 0.162 | E | Accepted |
| 9 | 967.2 | 1639.2 | -0.0 | 0.13 | 1.481 | S | 0.962 | E | Rejected |
| 10 | 906.5 | 1909.2 | 3.0 | 1.13 | 15.805 | S | 4.253 | E | Accepted |
| 11 | 1071.8 | 1917.8 | 1.4 | 0.17 | 9.259 | S | 3.334 | E | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



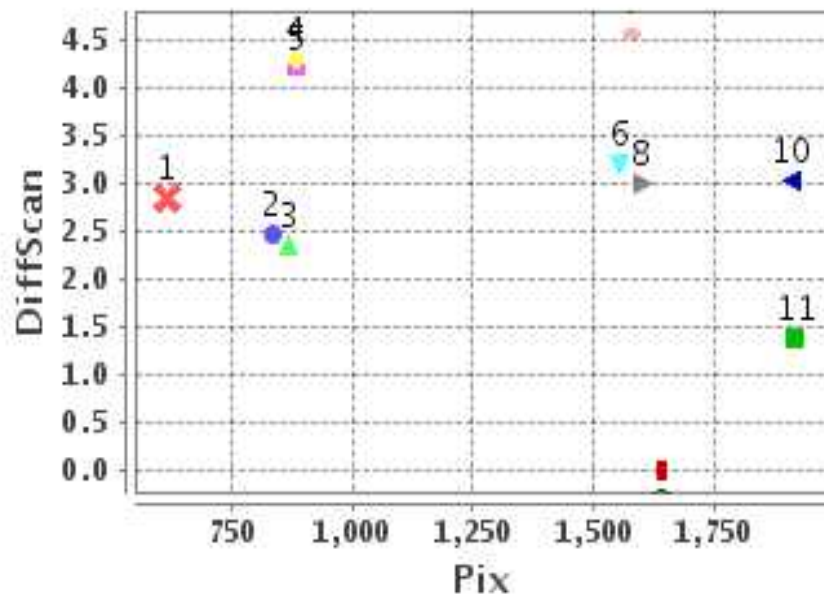
Number Of Points

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

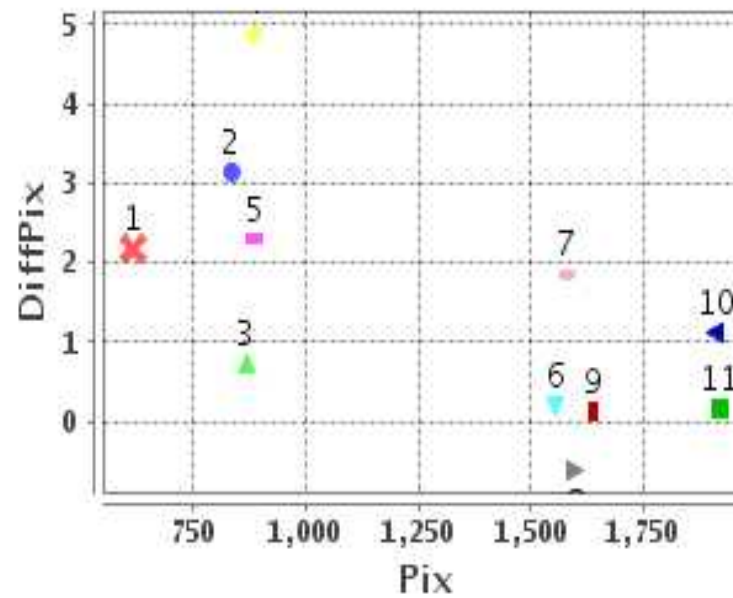
Radial Error (Km)

| | |
|------|-------|
| Mean | 4.958 |
| Min | 2.460 |
| Max | 7.951 |
| CE90 | 6.617 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | -3.874 | 0.870 | 3.970 | S | 3.799 | 4.113 |
| Across (Km) | 2.654 | 2.107 | 3.389 | E | 2.848 | 3.572 |

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) | -15.38 | S | |
| Across(Mean,Dir) | 15.48 | E | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 5.21 | 30.28 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -0.67 | 0.79 | |
| Across(Mean,Stddev) | 0.11 | 1.00 | |

| | | | |
|---|---------|----------|--|
| Scan Range-0-937; 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-0-937; Pix Range-1869-2805 | | | |
| Number of GCPs | 1 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -15.81 | S | |
| Across(Mean,Dir) | 4.25 | E | |
| 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 | 1 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -18.49 | S | |
| Across(Mean,Dir) | 25.88 | E | |
| 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-934-1869 | | | |
| Number of GCPs | 3 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -16.6233 | S | |
| Across(Mean,Dir) | 3.59 | E | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 4.10 | 2.50 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -0.88 | 0.68 | |
| Across(Mean,Stddev) | -0.43 | 1.23 | |

| | | | |
|---|---------|---------|--|
| Scan Range-937-1876; Pix Range-1869-2805 | | | |
| Number of GCPs | 1 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -9.26 | S | |
| Across(Mean,Dir) | 3.34 | E | |
| 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