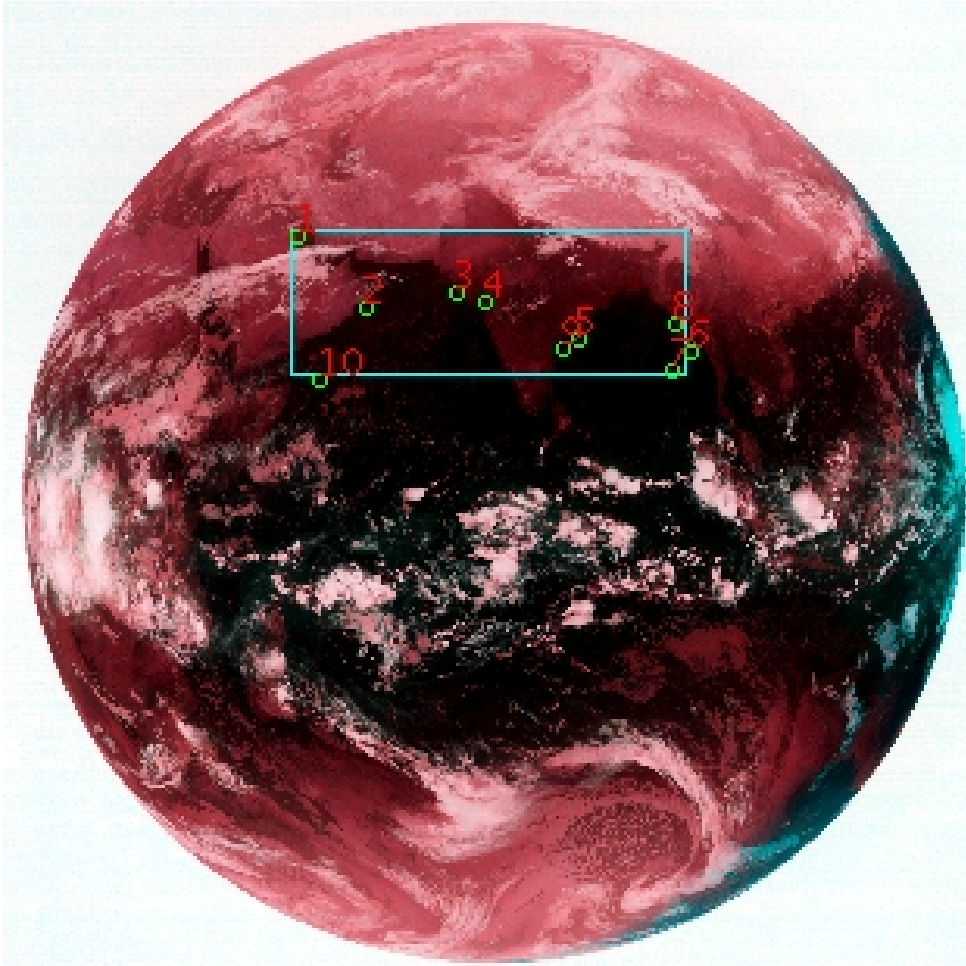


DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_21FEB2019_2145

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

(81.075N,-7.268W)

(81.075N,154.977E)



(-81.223S,-7.268W)

(-81.223S,154.977E)

GCP Distribution overview for 3RIMG21FEB20192145L1BDQE

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

GCP Coverage(%) 14.84 **(N-S)** 40.42 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | -3.768 | S | 0.679 | 3.828 |
| Across | 0.412 | E | 1.563 | 1.616 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.318 | 0.298 | 7.960 |
| Along | 13.854 | 42.313 | 246.363 |
| Across | 7.516 | 15.576 | 87.899 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 3.143 | -0.694 | 0.82 | 1.075 |
| Across | 2.526 | 1.779 | 0.88 | 1.986 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---------|---------|----------|
| 0.00258 | 0.02399 | -0.01353 |

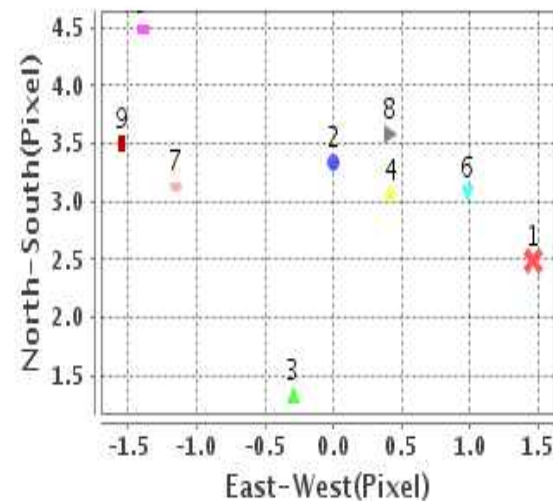
Reference Used

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

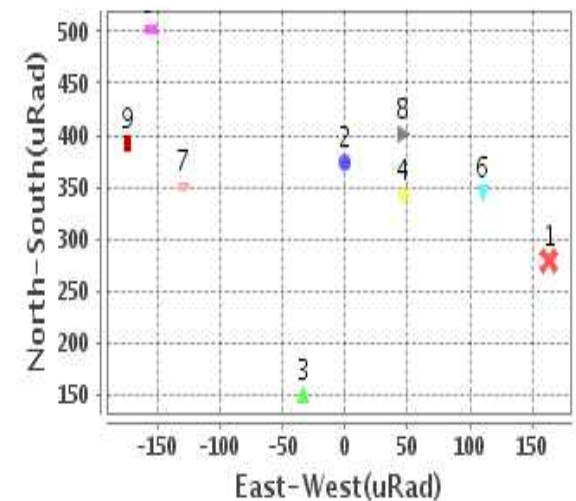
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 4.066 |
| Min | 2.506 |
| Max | 5.382 |
| CE90 | 5.263 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 22-02-19 |
| Sensor | IMG | DQE Date | 22-02-2019 |
| PassType | NONE | Aquisition Date | 21-02-19 |
| 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_21FEB20 | 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) | -0.074 |
| Center Lon(deg) | 73.855 |
| 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) | 81.075 |
| NW_Lon(deg) | -7.268 |
| SW_Lat(deg) | -81.223 |
| SW_Lon(deg) | -7.268 |
| NE_Lat(deg) | 81.075 |
| NE_Lon(deg) | 154.977 |
| SE_Lat(deg) | -81.223 |
| SE_Lon(deg) | 154.977 |

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 : 3RIMG21FEB20192145L1BDQE

(-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

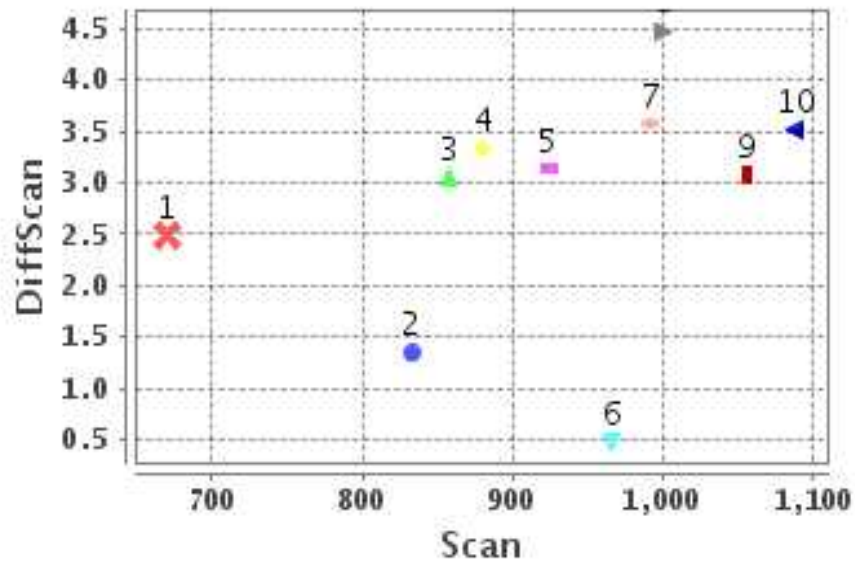
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| GCP Scan | 926.8 | 116.4 | 670.2 | 1088.25 | 14.84 (N-S) |
| GCP Pix | 1446.2 | 406.7 | 835.5 | 1969.25 | 40.42 (E-W) |

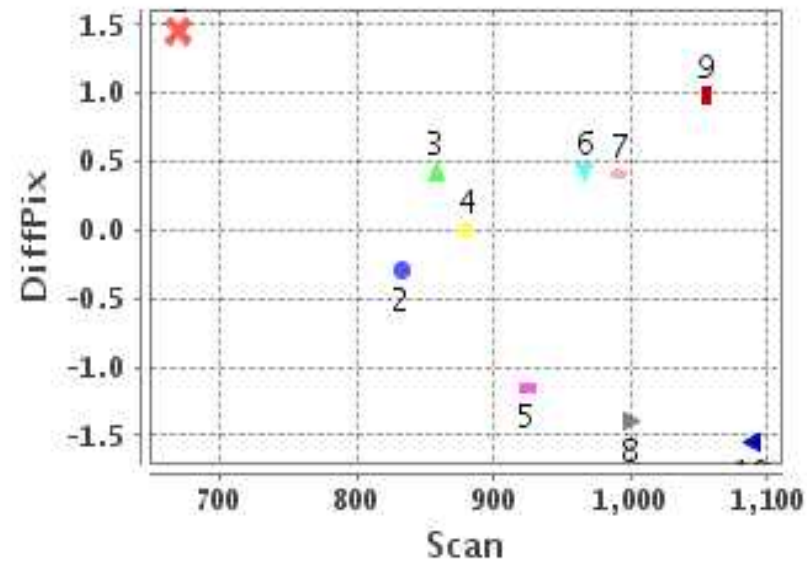
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 670.2 | 835.5 | 2.5 | 1.46 | 15.627 | S | 14.806 | E | Accepted |
| 2 | 880.2 | 1027.8 | 3.3 | 0.00 | 16.178 | S | 5.647 | E | Accepted |
| 3 | 832.8 | 1292.8 | 1.3 | -0.29 | 9.560 | S | 3.011 | E | Accepted |
| 4 | 858.2 | 1368.0 | 3.0 | 0.42 | 14.981 | S | 2.840 | E | Accepted |
| 5 | 966.2 | 1638.2 | 0.5 | 0.42 | 2.818 | S | 2.870 | E | Rejected |
| 6 | 1000.2 | 1969.2 | 4.5 | -1.39 | 19.716 | S | 7.379 | W | Accepted |
| 7 | 1056.0 | 1915.2 | 3.1 | 0.98 | 12.302 | S | 3.600 | E | Accepted |
| 8 | 924.2 | 1918.8 | 3.1 | -1.15 | 15.134 | S | 3.517 | W | Accepted |
| 9 | 991.5 | 1598.0 | 3.6 | 0.41 | 17.348 | S | 1.005 | E | Accepted |
| 10 | 1088.2 | 899.0 | 3.5 | -1.55 | 14.788 | S | 5.192 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



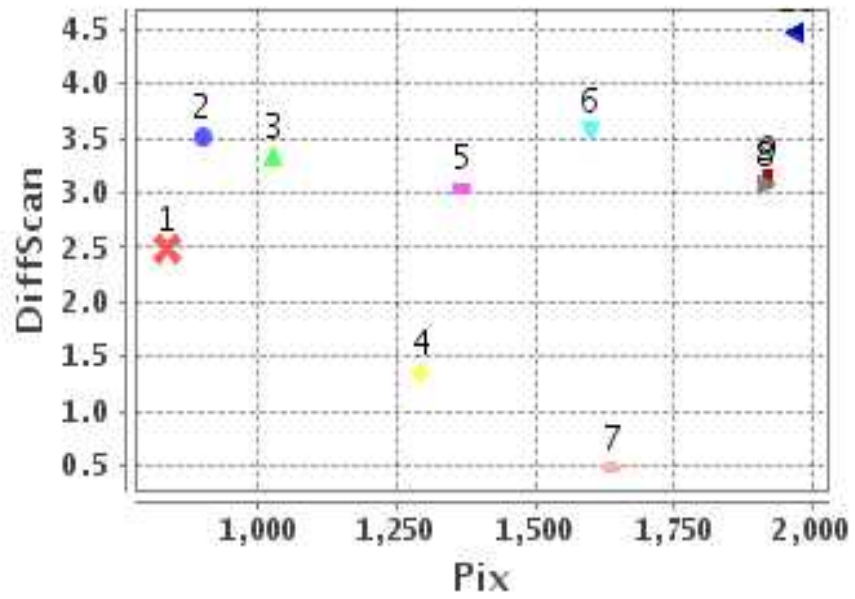
Number Of Points

| | |
|-------|---|
| North | 0 |
| South | 9 |
| East | 6 |
| West | 3 |

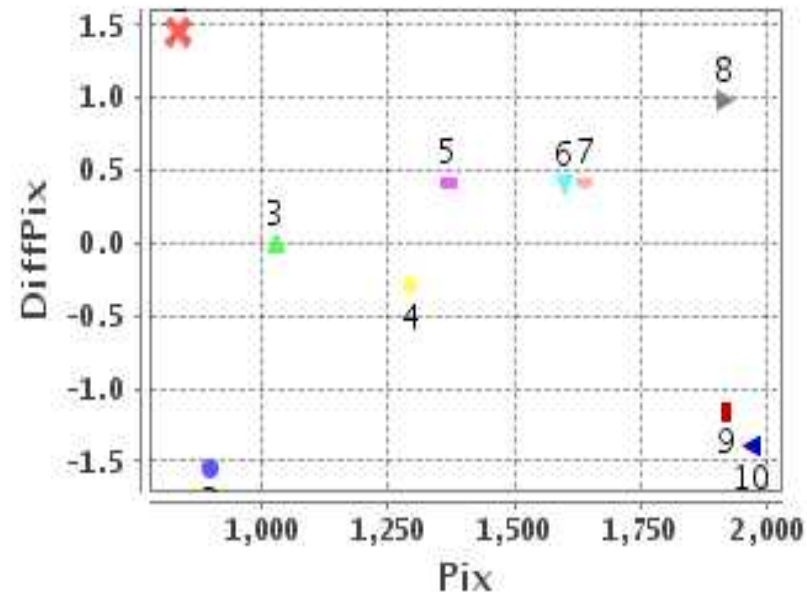
Radial Error (Km)

| | |
|------|-------|
| Mean | 4.066 |
| Min | 2.506 |
| Max | 5.382 |
| CE90 | 5.263 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | -3.768 | 0.679 | 3.828 | S | 3.668 | 3.972 |
| Across (Km) | 0.412 | 1.563 | 1.616 | E | 1.107 | 1.712 |

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) | -15.63 | S |
| Across(Mean,Dir) | 14.80 | 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-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -13.5733 | S |
| Across(Mean,Dir) | 3.83 | E |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.27 | 6.81 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -1.85 | 0.14 |
| Across(Mean,Stddev) | -0.06 | 0.36 |

| | | |
|--|---------|---------|
| Scan Range-0-937; Pix Range-1869-2805 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -15.13 | S |
| Across(Mean,Dir) | -3.52 | 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-937-1876; Pix Range-0-934 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -14.78 | S |
| Across(Mean,Dir) | -5.19 | 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-937-1876; Pix Range-934-1869 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -17.34 | S |
| Across(Mean,Dir) | 1.00 | 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-1869-2805 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -16.01 | S |
| Across(Mean,Dir) | -1.89 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.44 | 10.91 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 1.41 | 0.00 |
| Across(Mean,Stddev) | 2.37 | 0.00 |

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