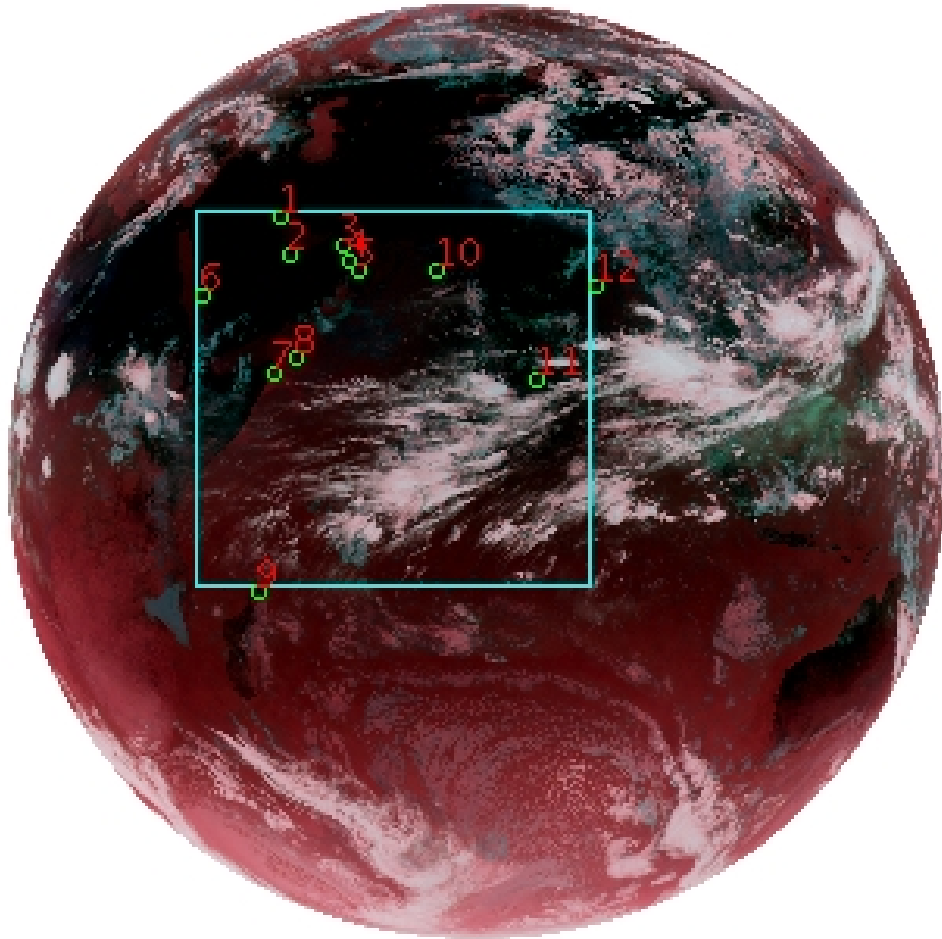


DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_16JUN2018_0615

Satellite INSAT-3DR **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 16-06-18/06:15 **Station ID** BES **Field View(deg)** 18.006
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,-7.157W)

(81.042N,155.157E)



(-81.042S,-7.157W)

(-81.042S,155.157E)

GCP Distribution overview for 3RIMG16JUN20180615L1BSTD

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

GCP Coverage(%) 38.16 **(N-S)** 40.44 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | -0.376 | S | 1.122 | 1.184 |
| Across | -3.026 | W | 1.158 | 3.241 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.467 | 0.405 | 11.682 |
| Along | 5.880 | 10.415 | 47.011 |
| Across | 4.704 | 2.074 | 17.601 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|-------|--------|-------|
| Along | 2.530 | 0.761 | 0.83 | 1.128 |
| Across | 2.457 | 0.903 | 0.86 | 1.250 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|---------|----------|
| -0.01875 | 0.00428 | -0.04130 |

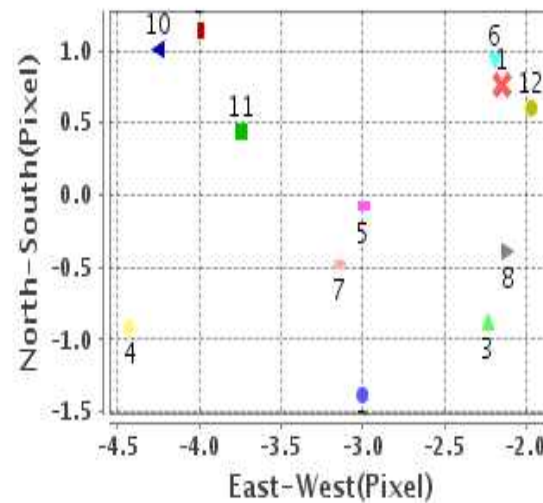
Reference Used

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

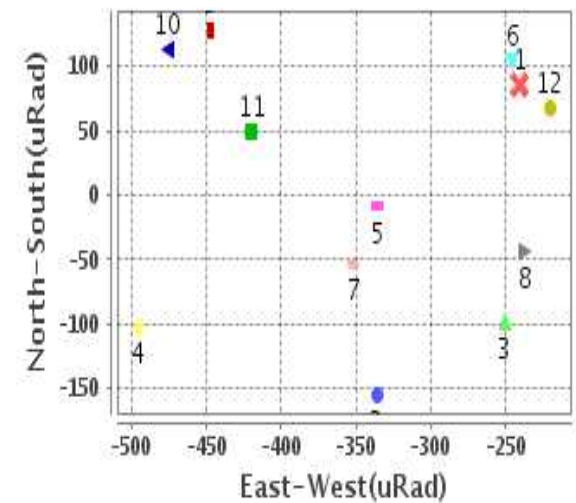
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 3.254 |
| Min | 1.539 |
| Max | 5.250 |
| CE90 | 4.031 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 16-06-18 |
| Sensor | IMG | DQE Date | 21-06-2018 |
| PassType | NONE | Aquisition Date | 16-06-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 06:15 |
| 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_16JUN20 | 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) | 0.0 |
| Center Lon(deg) | 74.0 |
| 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) | -7.157 |
| SW_Lat(deg) | -81.042 |
| SW_Lon(deg) | -7.157 |
| NE_Lat(deg) | 81.042 |
| NE_Lon(deg) | 155.157 |
| SE_Lat(deg) | -81.042 |
| SE_Lon(deg) | 155.157 |

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 : 3RIMG16JUN20180615L1BSTD

(-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

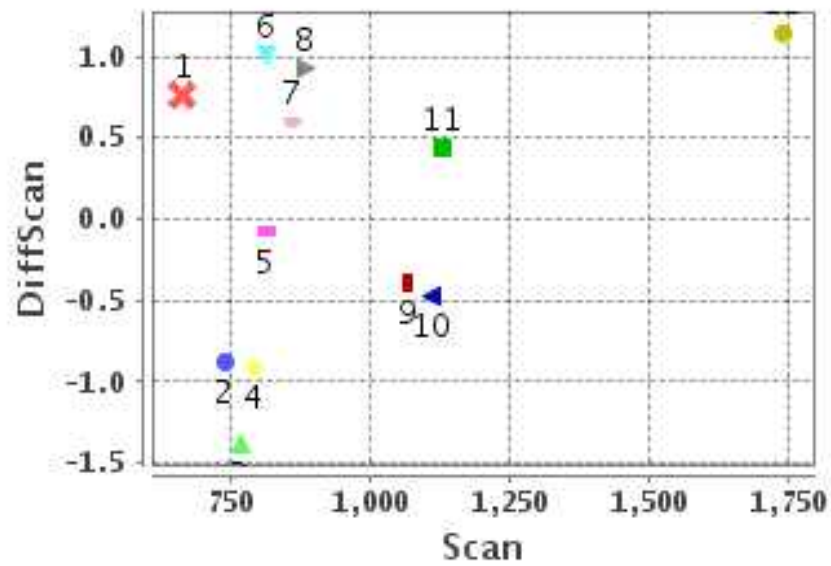
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 12

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| GCP Scan | 947.6 | 277.9 | 664.0 | 1738.50 | 38.16 (N-S) |
| GCP Pix | 1029.6 | 323.3 | 599.5 | 1733.75 | 40.44 (E-W) |

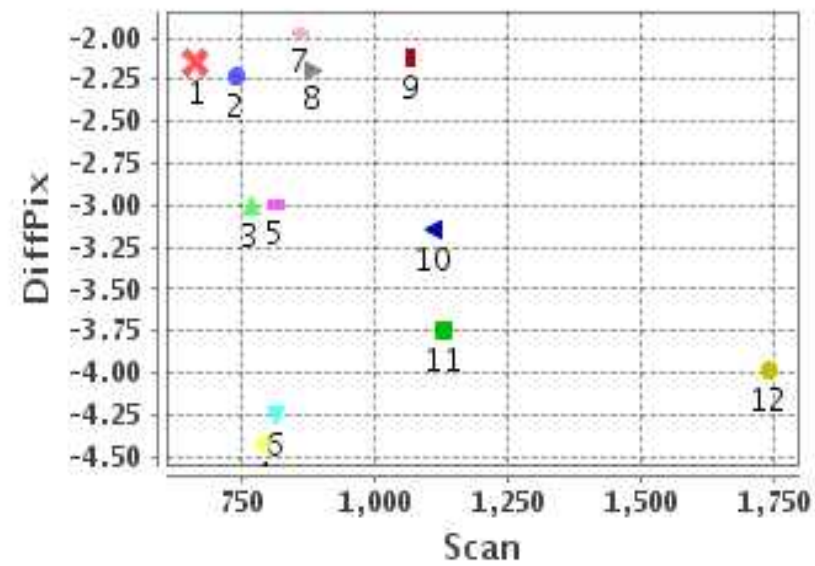
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 664.0 | 819.5 | 0.8 | -2.15 | 3.279 | S | 7.560 | W | Accepted |
| 2 | 768.2 | 852.2 | -1.4 | -3.00 | 6.449 | N | 14.778 | W | Accepted |
| 3 | 739.2 | 1002.0 | -0.9 | -2.24 | 3.325 | N | 10.518 | W | Accepted |
| 4 | 789.2 | 1025.0 | -0.9 | -4.43 | 4.219 | N | 20.267 | W | Accepted |
| 5 | 814.2 | 1049.5 | -0.1 | -3.00 | 0.406 | S | 10.806 | W | Accepted |
| 6 | 882.5 | 599.5 | 0.9 | -2.19 | 6.055 | S | 7.825 | W | Accepted |
| 7 | 1108.2 | 809.2 | -0.5 | -3.14 | 1.404 | N | 12.968 | W | Accepted |
| 8 | 1066.5 | 867.8 | -0.4 | -2.12 | 0.109 | N | 6.154 | W | Accepted |
| 9 | 1738.5 | 756.0 | 1.1 | -3.99 | 7.870 | S | 19.468 | W | Accepted |
| 10 | 814.2 | 1276.5 | 1.0 | -4.25 | 5.750 | S | 14.914 | W | Accepted |
| 11 | 1127.5 | 1564.2 | 0.4 | -3.75 | 4.070 | S | 14.102 | W | Accepted |
| 12 | 858.8 | 1733.8 | 0.6 | -1.97 | 6.116 | S | 5.910 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



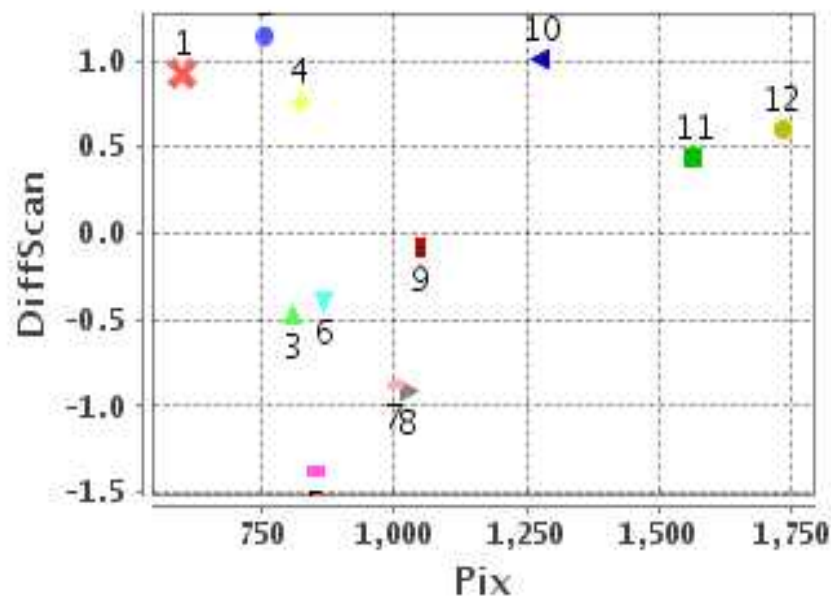
Number Of Points

| | |
|-------|----|
| North | 5 |
| South | 7 |
| East | 0 |
| West | 12 |

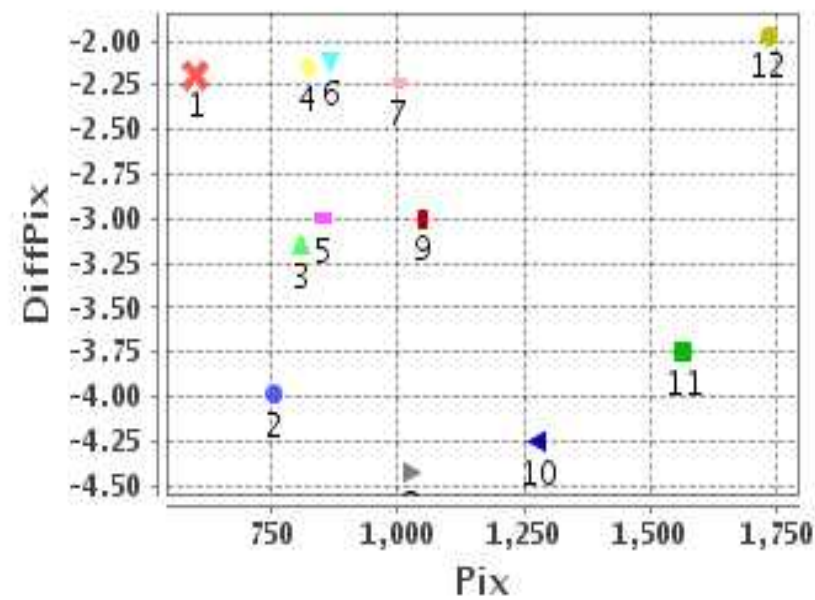
Radial Error (Km)

| | |
|------|-------|
| Mean | 3.254 |
| Min | 1.539 |
| Max | 5.250 |
| CE90 | 4.031 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | -0.376 | 1.122 | 1.184 | S | 1.085 | 1.236 |
| Across (Km) | -3.026 | 1.158 | 3.241 | W | 3.020 | 3.355 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | |
|--|-----------|-------|
| Scan Range-0-937; Pix Range-0-934 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -0.963333 | S |
| Across(Mean,Dir) | -10.05 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.90 | 22.59 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 0.99 | 1.15 |
| Across(Mean,Stddev) | 0.38 | 0.43 |

| | | |
|---|--------|-------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 5 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -0.948 | S |
| Across(Mean,Dir) | -12.48 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.58 | 14.54 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -1.03 | 0.73 |
| Across(Mean,Stddev) | 1.18 | 1.00 |

| | | |
|--|---------|----------|
| 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) | -2.11667 | S |
| Across(Mean,Dir) | -12.87 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.05 | 1.14 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.72 | 0.82 |
| Across(Mean,Stddev) | -1.36 | 0.51 |

| | | |
|--|---------|---------|
| Scan Range-937-1876; Pix Range-934-1869 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -4.07 | S |
| Across(Mean,Dir) | -14.10 | 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-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