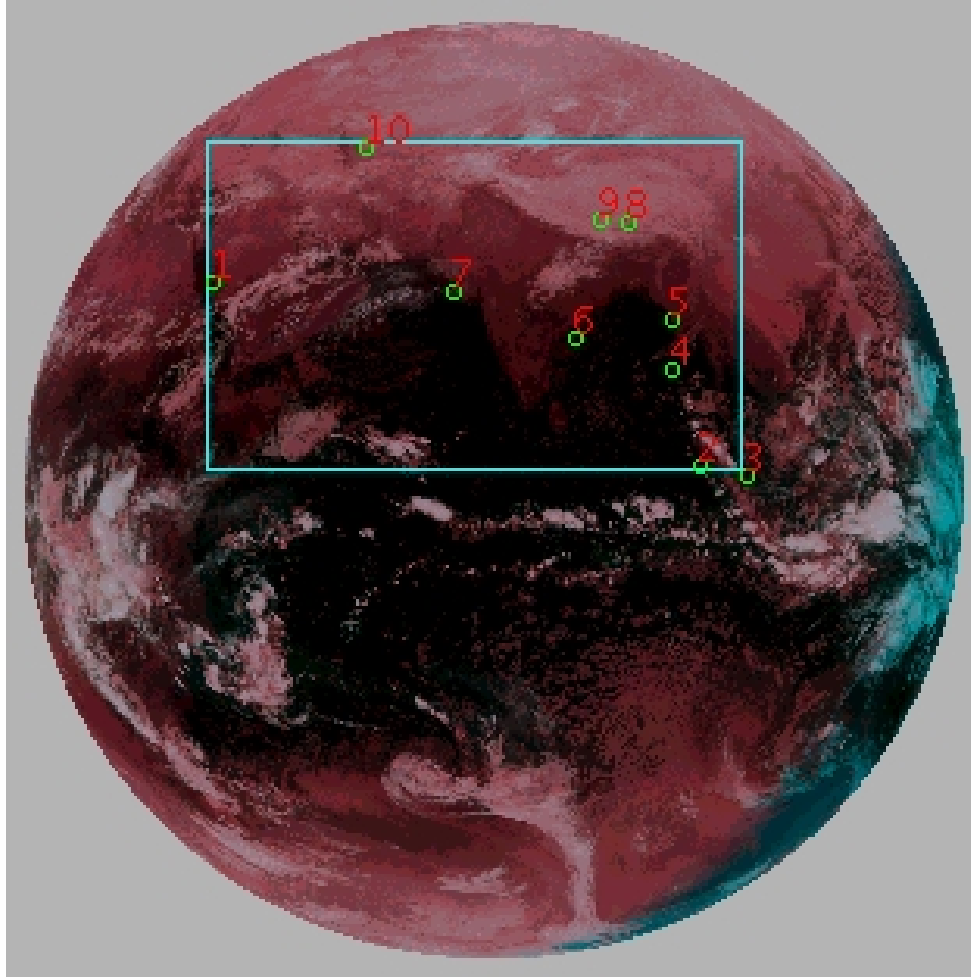


## DQE Report: GDQE - Location parameters for INSAT-3DR-IMG STANDARD(FULL DISK) Product

**Satellite** INSAT-3DR    **No Of Bands** 6    **Product Type** STANDARD  
**Sensor** IMG    **LvlOfProcess** L1B    **Selected Band** 2-TIR1  
**DOP/Time** 11-02-17/21:45    **Station ID** BES    **Field View(deg)** 18.006  
**Res(Y,X) [Km]** (4.0,4.0)    **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,-7.157W)

(81.042N,155.157E)



(-81.042S,-7.157W)

(-81.042S,155.157E)

GCP Distribution overview for 3RIMG11FEB20172145L1BSTD

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

**GCP Coverage(%)** 33.64    **(N-S)** 54.87    **(E-W)**

**Location Error(E)**

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

### Location Error (Km)

|        | Mean    | Direction | Stddev | RMS    |
|--------|---------|-----------|--------|--------|
| Along  | 9.351   | N         | 4.777  | 10.501 |
| Across | -14.516 | W         | 2.995  | 14.821 |

### Scale (Km)

|         | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.528      | 0.483  | 13.207     |
| Along   | 5.631      | 3.493  | 40.776     |
| Across  | 6.266      | 7.560  | 56.644     |

### Internal Distortion (in Pixels)

|        | PeakToPeak | Mean  | Stddev | RMS   |
|--------|------------|-------|--------|-------|
| Along  | 3.467      | 0.589 | 1.00   | 1.162 |
| Across | 1.920      | 0.927 | 0.65   | 1.131 |

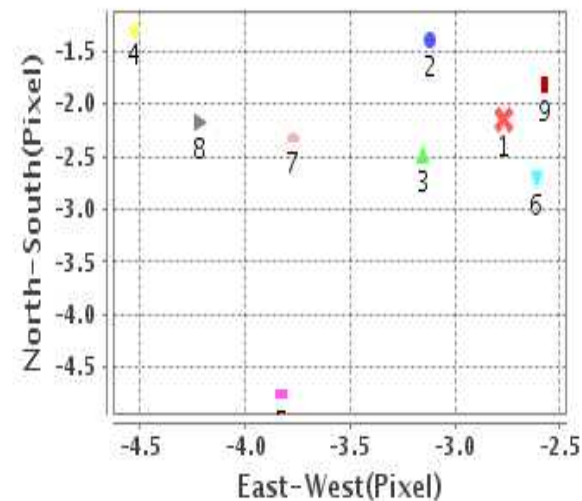
### Attitude Residuals (Deg)

| Pitch    | Roll     | Yaw      |
|----------|----------|----------|
| -0.02479 | -0.01904 | -0.12689 |

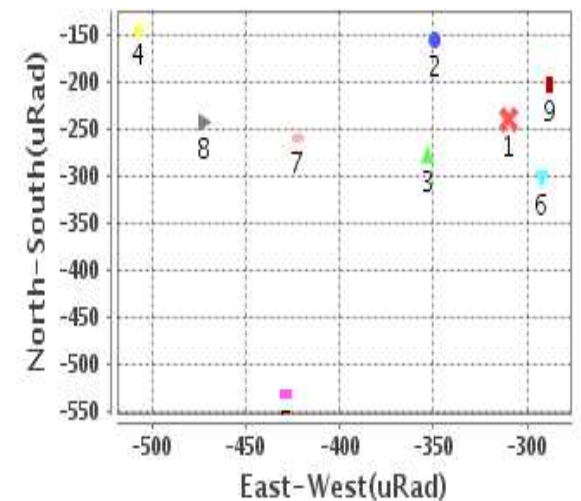
### Reference Used

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

### Location Error For GCPs(Pixel)



### Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

|                   |               |                           |            |
|-------------------|---------------|---------------------------|------------|
| Satellite         | INSAT-3DR     | Generation Date           | 12-02-17   |
| Sensor            | IMG           | DQE Date                  | 15-02-2017 |
| PassType          | NONE          | Aquisition Date           | 11-02-17   |
| Imaging Mode      | FULL_FRAME    | Aquisition Time(GMT)      | 21:45      |
| Sat Altitude(m)   | 3.6E7         | Nominal Altitude(Km)      | 3.6E7      |
| Station           | BES           | Predicted Altitude(Km)    | 0.0        |
| Sat Location(deg) | 0.0 E         | Nominal Center Lat(deg)   | 0.0        |
| Format            | hdf5-1.8.8    | Nominal Center Lon(deg)   | 74.0       |
| LvlOfProcessing   | STANDARD(FULL | Predicted Center Lat(deg) | 0.0        |
| DP JobId          | 3RIMG_11FEB20 | Predicted Center Lon(deg) | 0.0        |
| 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                          | meters | Standardparallel1(deg) | 17.0       |                     |           |
| Zone       | Not Applicable |                               |        | Standardparallel2(deg) | 17.0       |                     |           |

\* -999.99 : Not Applicable/Not Available

## References

**JobId : 3RIMG11FEB20172145L1BSTD**

(-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

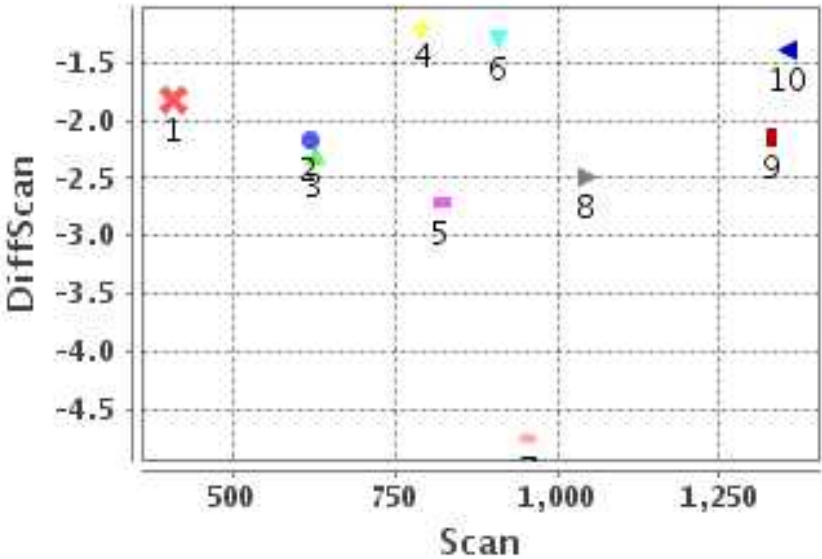
Image Width (pixels) : 2805      Image Height (pixels) : 2816      No of GCPs : 10

|                 | Mean   | StdDev | Min   | Max     | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| <b>GCP Scan</b> | 886.0  | 288.0  | 407.2 | 1354.50 | 33.64 (N-S)    |
| <b>GCP Pix</b>  | 1588.4 | 461.4  | 580.2 | 2119.25 | 54.87 (E-W)    |

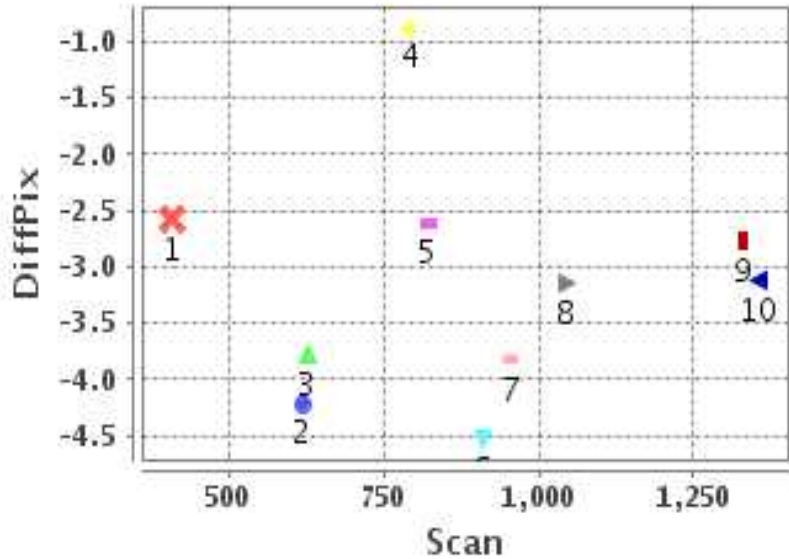
### Identified Control Point details : ( Differences are Reference - Product )

| No | Scan   | Pix    | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status   |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1  | 792.2  | 580.2  | -1.2            | -0.88           | 5.308       | N   | 5.853       | W   | Rejected |
| 2  | 1330.8 | 1987.2 | -2.1            | -2.77           | 5.177       | N   | 10.720      | W   | Accepted |
| 3  | 1354.5 | 2119.2 | -1.4            | -3.12           | 3.317       | N   | 12.999      | W   | Accepted |
| 4  | 1045.2 | 1900.5 | -2.5            | -3.15           | 9.773       | N   | 10.864      | W   | Accepted |
| 5  | 908.8  | 1903.5 | -1.3            | -4.53           | 2.428       | N   | 18.337      | W   | Accepted |
| 6  | 955.5  | 1623.0 | -4.8            | -3.83           | 17.739      | N   | 15.233      | W   | Accepted |
| 7  | 821.2  | 1275.0 | -2.7            | -2.61           | 12.409      | N   | 11.897      | W   | Accepted |
| 8  | 625.5  | 1779.5 | -2.3            | -3.77           | 9.484       | N   | 14.566      | W   | Accepted |
| 9  | 618.5  | 1698.5 | -2.2            | -4.22           | 9.611       | N   | 16.552      | W   | Accepted |
| 10 | 407.2  | 1017.0 | -1.8            | -2.57           | 14.218      | N   | 19.473      | W   | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



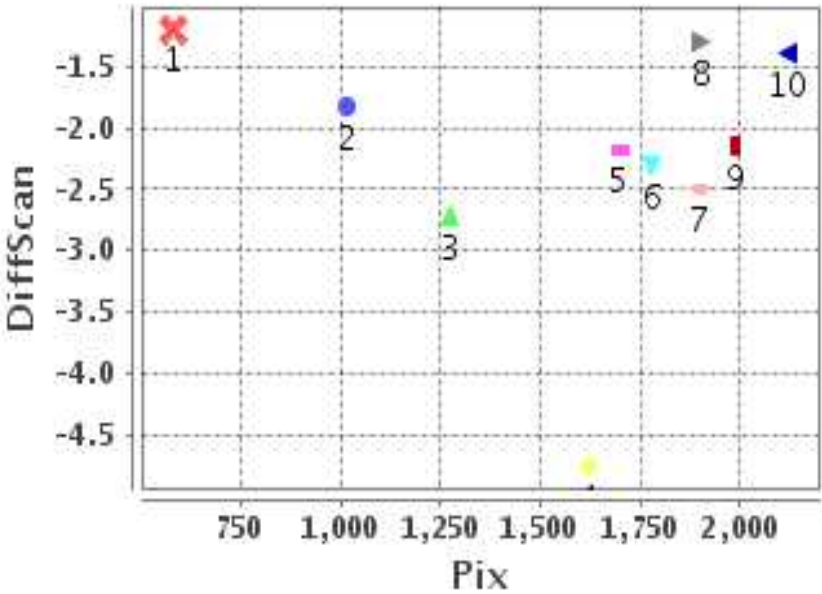
Number Of Points

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

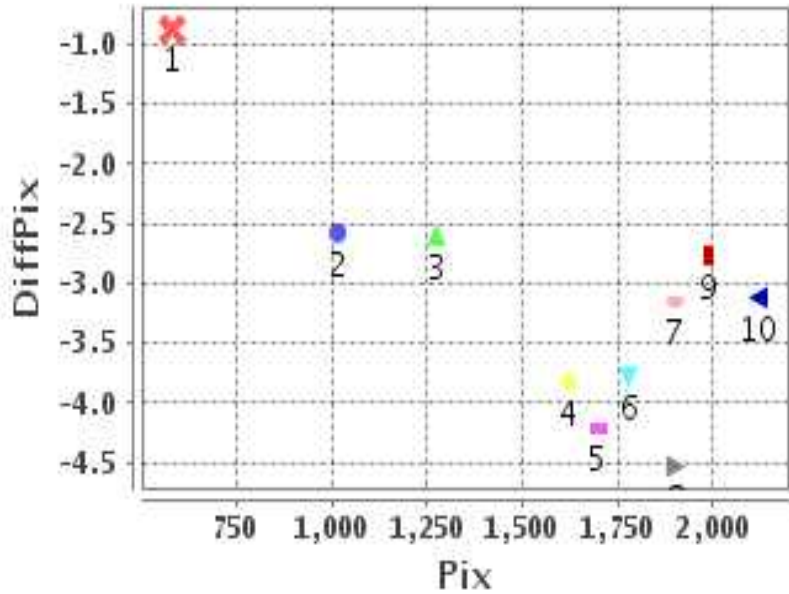
Radial Error ( Km )

|      |        |
|------|--------|
| Mean | 17.737 |
| Min  | 11.904 |
| Max  | 24.111 |
| CE90 | 23.382 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

|               | Mean    | StdDev | RMS    | Dir | * MinRMS | * MaxRMS |
|---------------|---------|--------|--------|-----|----------|----------|
| Along( Km )   | 9.351   | 4.777  | 10.501 | N   | 9.204    | 11.104   |
| Across ( Km ) | -14.516 | 2.995  | 14.821 | W   | 14.133   | 15.257   |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| Scan Range-0-937; 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-0-937; Pix Range-934-1869 |         |       |
| Number of GCPs                       | 4       |       |
| Location Error(Km)                   |         |       |
| Along(Mean,Dir)                      | 11.4275 | N     |
| Across(Mean,Dir)                     | -15.62  | W     |
| Scale(Km)                            |         |       |
| Average Scale (Mean,%Variation)      | 5.13    | 28.18 |
| Internal Distortion(Pixel)           |         |       |
| Along(Mean,Stddev)                   | 0.58    | 0.23  |
| Across(Mean,Stddev)                  | 0.96    | 0.68  |

|                                       |         |         |
|---------------------------------------|---------|---------|
| Scan Range-0-937; Pix Range-1869-2805 |         |         |
| Number of GCPs                        | 1       |         |
| Location Error(Km)                    |         |         |
| Along(Mean,Dir)                       | 2.43    | N       |
| Across(Mean,Dir)                      | -18.34  | 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                       | -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-934-1869 |         |         |
| Number of GCPs                          | 1       |         |
| Location Error(Km)                      |         |         |
| Along(Mean,Dir)                         | 17.74   | N       |
| Across(Mean,Dir)                        | -15.23  | 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                           | 3      |      |
| Location Error(Km)                       |        |      |
| Along(Mean,Dir)                          | 6.092  | N    |
| Across(Mean,Dir)                         | -11.53 | W    |
| Scale(Km)                                |        |      |
| Average Scale (Mean,%Variation)          | 4.13   | 3.31 |
| Internal Distortion(Pixel)               |        |      |
| Along(Mean,Stddev)                       | -0.72  | 0.38 |
| Across(Mean,Stddev)                      | -0.20  | 0.18 |

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