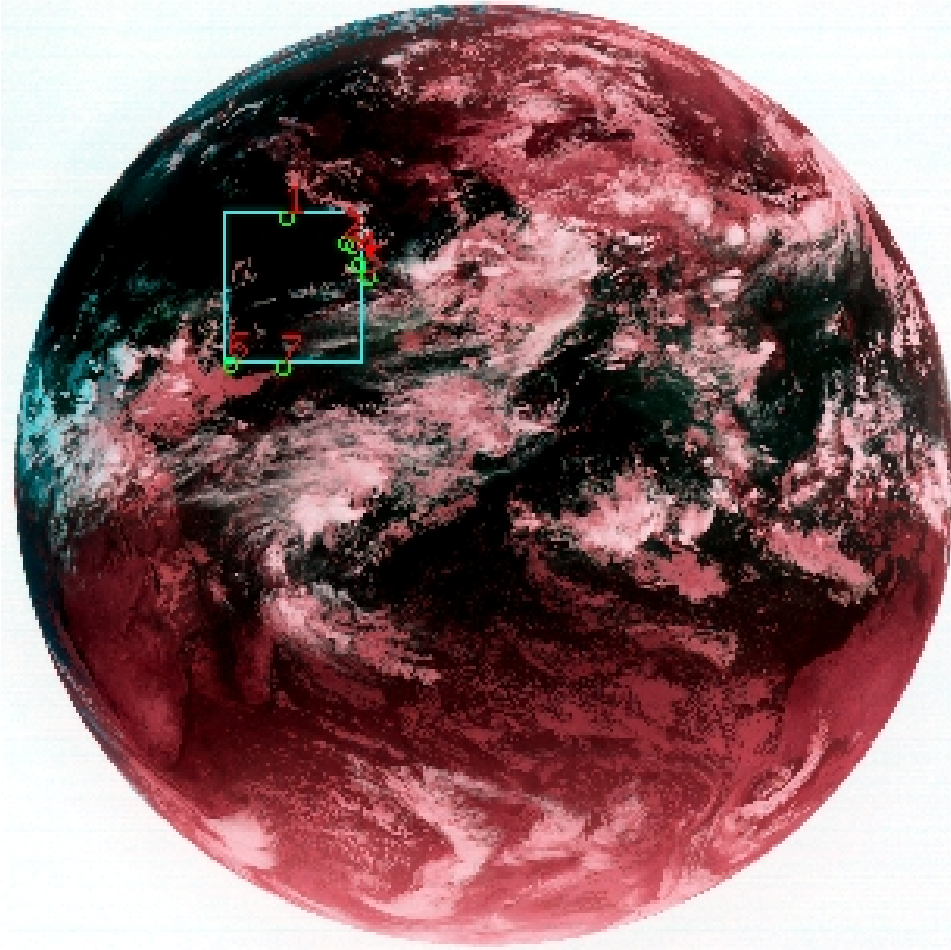


## DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG\_06JUL2020\_1545

**Satellite** INSAT-3DR    **No Of Bands** 6    **Product Type** STANDARD  
**Sensor** IMG    **LvlOfProcess** L1B    **Selected Band** 2-TIR1  
**DOP/Time** 06-07-20/15:45    **Station ID** BES    **Field View(deg)** 18.006  
**Res(Y,X) [Km]** (4.0,4.0)    **Res(Y,X) [uRad]** (112.0,112.0)

(81.154N,-7.182W)

(81.154N,155.171E)



(-80.774S,-7.182W)

(-80.774S,155.171E)

GCP Distribution overview for 3RIMG06JUL20201545L1BDQE

**Image Width:** 2805    **Image Height:** 2816    **No Of GCPs:** 7

**GCP Coverage(%)** 15.26    **(N-S)** 14.18    **(E-W)**

**Location Error(E)**

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

### Location Error (In IR Pixels)

|        | Mean   | Direction | Stddev | RMS   |
|--------|--------|-----------|--------|-------|
| Along  | 4.135  | N         | 1.203  | 4.307 |
| Across | -8.256 | W         | 1.603  | 8.410 |

### Scale (Km)

|         | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.774      | 0.506  | 19.343     |
| Along   | 5.835      | 2.441  | 45.872     |
| Across  | 5.809      | 2.274  | 45.231     |

### Internal Distortion (in IR Pixels)

|        | PeakToPeak | Mean   | Stddev | RMS   |
|--------|------------|--------|--------|-------|
| Along  | 2.897      | 0.101  | 1.08   | 1.081 |
| Across | 4.638      | -1.731 | 1.57   | 2.334 |

### Attitude Residuals (Deg)

| Pitch    | Roll     | Yaw     |
|----------|----------|---------|
| -0.05789 | -0.04508 | 0.30908 |

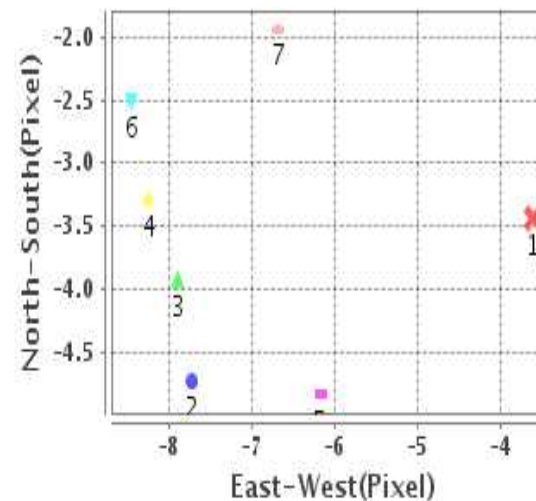
### Reference Used

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

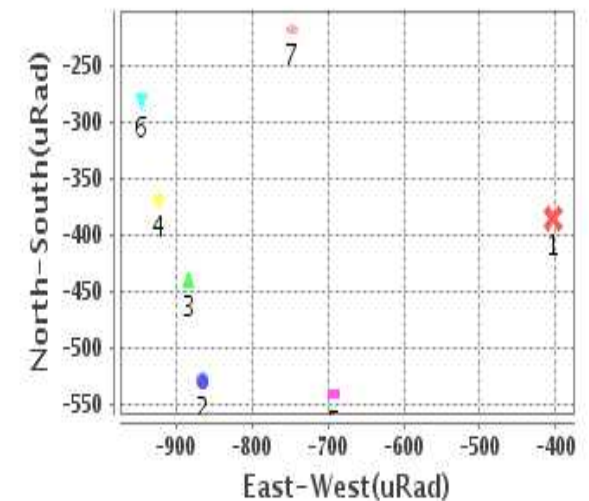
### Radial Error (in IR Pixels)

|      |        |
|------|--------|
| Mean | 9.342  |
| Min  | 7.110  |
| Max  | 10.959 |
| CE90 | 10.600 |

### Location Error For GCPs(Pixel)



### Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

|                   |               |                           |            |
|-------------------|---------------|---------------------------|------------|
| Satellite         | INSAT-3DR     | Generation Date           | 06-07-20   |
| Sensor            | IMG           | DQE Date                  | 07-07-2020 |
| PassType          | NONE          | Aquisition Date           | 06-07-20   |
| Imaging Mode      | FULL_FRAME    | Aquisition Time(GMT)      | 15:45      |
| 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_06JUL20 | 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)   | 0.19    |
| Center Lon(deg)   | 73.995  |
| 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) | 81.154  |
| NW_Lon(deg) | -7.182  |
| SW_Lat(deg) | -80.774 |
| SW_Lon(deg) | -7.182  |
| NE_Lat(deg) | 81.154  |
| NE_Lon(deg) | 155.171 |
| SE_Lat(deg) | -80.774 |
| SE_Lon(deg) | 155.171 |

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 :** 3RIMG06JUL20201545L1BDQE

(-999.99 - Not Available/Not Computed)

| Ref.No | Source | File Name       | Resolution ( m ) | Projection |
|--------|--------|-----------------|------------------|------------|
| 1      | ETM    | world_Band1.img | 500.0            | GCP        |

## Location Accuracy

### GCP Distribution Statistics

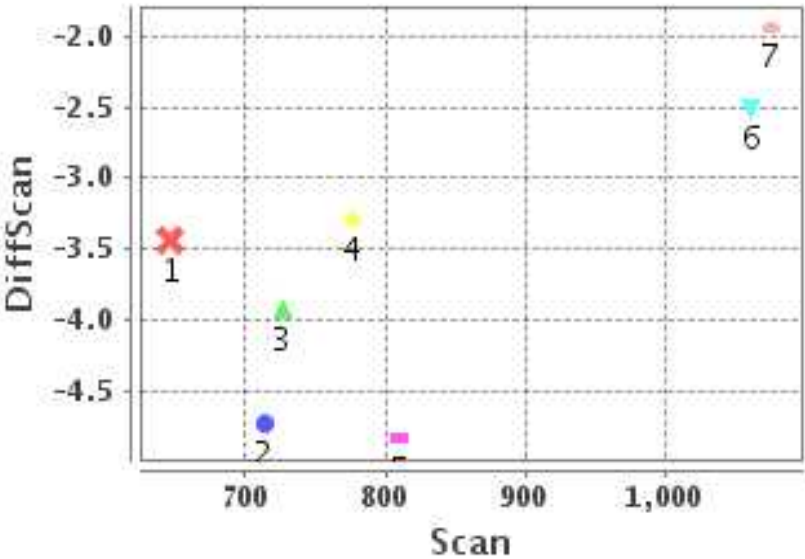
Image Width (pixels) : 2805      Image Height (pixels) : 2816      No of GCPs : 7

|          | Mean  | StdDev | Min   | Max     | Coverage(in %) |
|----------|-------|--------|-------|---------|----------------|
| GCP Scan | 830.1 | 158.5  | 646.2 | 1076.00 | 15.26 (N-S)    |
| GCP Pix  | 903.6 | 138.0  | 649.8 | 1047.50 | 14.18 (E-W)    |

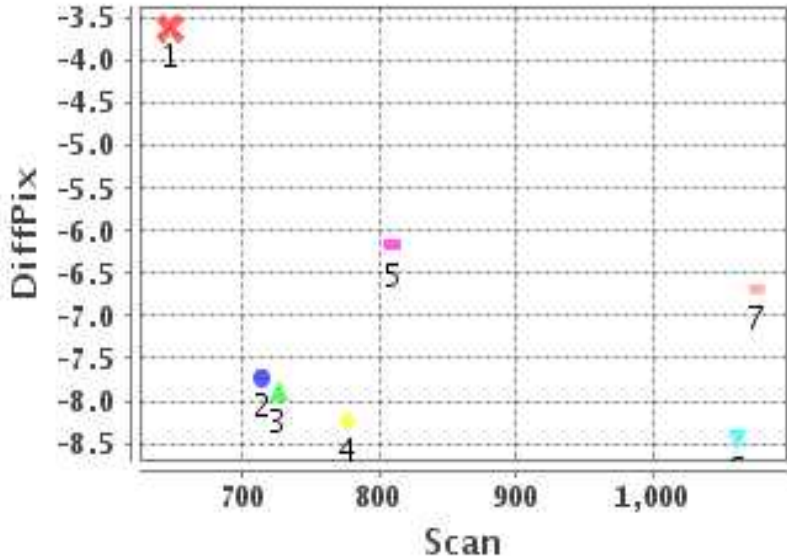
### Identified Control Point details : ( Differences are Reference - Product )

| No | Scan   | Pix    | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status   |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1  | 646.2  | 814.5  | -3.4            | -3.60           | 18.474      | N   | 21.621      | W   | Accepted |
| 2  | 713.8  | 983.0  | -4.7            | -7.72           | 20.817      | N   | 38.578      | W   | Accepted |
| 3  | 726.2  | 1002.5 | -3.9            | -7.89           | 18.848      | N   | 37.982      | W   | Accepted |
| 4  | 776.0  | 1023.5 | -3.3            | -8.24           | 16.684      | N   | 36.862      | W   | Accepted |
| 5  | 810.2  | 1047.5 | -4.8            | -6.17           | 22.125      | N   | 27.667      | W   | Accepted |
| 6  | 1062.2 | 649.8  | -2.5            | -8.45           | 10.451      | N   | 39.528      | W   | Accepted |
| 7  | 1076.0 | 804.5  | -1.9            | -6.68           | 8.394       | N   | 28.936      | W   | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



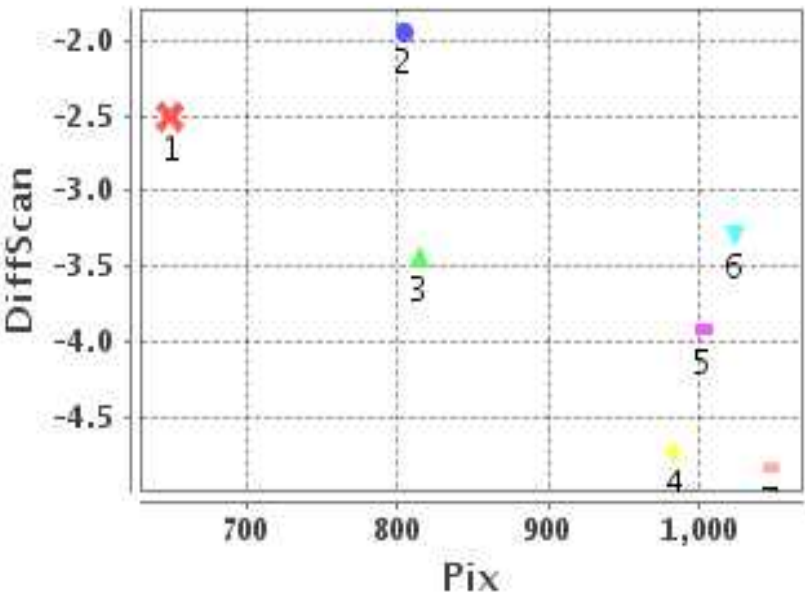
Number Of Points

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

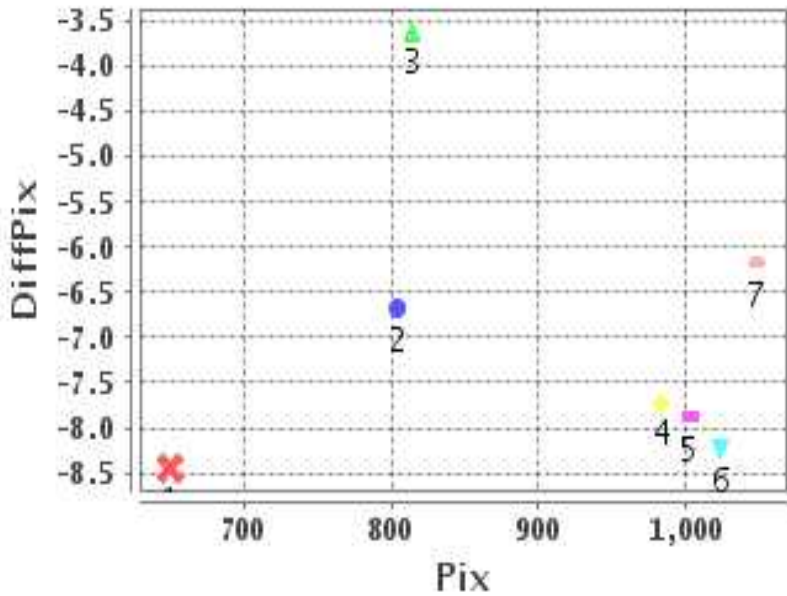
Radial Error ( Km )

|      |        |
|------|--------|
| Mean | 9.342  |
| Min  | 7.110  |
| Max  | 10.959 |
| CE90 | 10.600 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

|               | Mean   | StdDev | RMS   | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along( Km )   | 4.135  | 1.203  | 4.307 | N   | 4.067    | 4.572    |
| Across ( Km ) | -8.256 | 1.603  | 8.410 | W   | 8.139    | 8.812    |

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)                   | 18.47   | N       |  |
| Across(Mean,Dir)                  | -21.62  | 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-934-1869 |         |       |  |
| Number of GCPs                       | 4       |       |  |
| Location Error(Km)                   |         |       |  |
| Along(Mean,Dir)                      | 19.6225 | N     |  |
| Across(Mean,Dir)                     | -35.28  | W     |  |
| Scale(Km)                            |         |       |  |
| Average Scale (Mean,%Variation)      | 5.18    | 29.52 |  |
| Internal Distortion(Pixel)           |         |       |  |
| Along(Mean,Stddev)                   | -0.72   | 0.63  |  |
| Across(Mean,Stddev)                  | -0.29   | 0.90  |  |

|                                       |         |          |  |
|---------------------------------------|---------|----------|--|
| 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                       | 2      |       |  |
| Location Error(Km)                   |        |       |  |
| Along(Mean,Dir)                      | 9.425  | N     |  |
| Across(Mean,Dir)                     | -34.23 | W     |  |
| Scale(Km)                            |        |       |  |
| Average Scale (Mean,%Variation)      | 4.81   | 20.16 |  |
| Internal Distortion(Pixel)           |        |       |  |
| Along(Mean,Stddev)                   | -0.57  | 0.00  |  |
| Across(Mean,Stddev)                  | -1.77  | 0.00  |  |

|                                         |         |          |  |
|-----------------------------------------|---------|----------|--|
| Scan Range-937-1876; 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-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