

RUNTIME DISPLAY/DATA ENTRY

```
*-----*
|           MITRE IMAGE QUALITY MEASURE (IQM)           |
|                                     v7.3                 |
|-----|
*-----*
```

Enter number:

- 1 CONCISE Output
- 11 CONCISE Output with Data Dump File
- 2 VERBOSE Output
- 3 Determine Image Format (only)
- 4 Help & Info

1

RETURN key (will use Default Preferences file)
or
type filename (User Preferences file)

Auxdata Filename (program creates this file if nonexistent)
auxtest

AuxDataFile is created from following user inputs,
when done, the file can be edited off-line

Enter Sensor Number (or H for help):

- 1 General Aerial/Space Digital Sensor
- 2 Oblique Aerial/Space Digital Sensor
- 3 Aerial/Space Film Camera
- 4 General Sensor
- 5 Ground-Based Digital Camera

1

ImageFileName:
airport.tif

```
HEADER_bytes, WIDTH_pixels, HEIGHT_pixels:  
768 256 256
```

```
if bpp = 8,   BitOrder = B or L  
if bpp = 16,  BitOrder = B, L, -B, or -L
```

```
enter:  bpp, BitOrder
```

```
8  B
```

```
RETURN          (to process entire image)  
or  
#subs           (number of subimages to be processed)
```

```
Enter 1, 2, or 3:
```

```
1      GSD known  
2      Range, Focal_Length, Detector_Pixel_width known  
3      Range, Instant_Angular_Field_of_View known
```

```
1
```

```
GSD (feet)?
```

```
3.
```

```
Is this a COLOR image? y/n
```

```
n
```

```
Another Image? y/n
```

```
n
```

```
Aux data file completed for 1 images
```

```
Image Read Verification:
```

```
gray levels of 4 pixels, as read by IQM, are displayed:  
toprow col#1, col#2,   bottomrow col#1, col#2 of Entire image  
if these values are not correct, image was not read-in correctly.
```

```
If multiple subimages: only first subimage info (IQ, NIIRS) is displayed.
```

```
NIIRS= 5.12892 pixels: 73 59 58 51 airport.tif
```

```
Finished run, output file is: IQM_OUTPUT
```

PROGRAM-CREATED AUXDATAFILE:

```
# Wdth_Hght_Hdr_Bpp_Ord_Cpix_FL_GSD_Alt_Pxl_Az_Lok_Fwd_Side_Gam_Ep_Ptch_Rol_Yw_Snsr_Mod_Mag

airport.tif          GRAY
256  256  768  8 B    0  0.0  3.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  1  1  1.0

#   pound sign in column 1 or 2 implies a comment line
#   a line with only 3 or 4 data values is subimage line: ULcol, ULrow, width, nmpx
#   for details of parameters, see IQM_Guide section: Sensor Parameters & AuxDataFile
```

CONCISE OUTPUT (IQM_OUTPUT FILE):

mdy: 4/11/2007 hms: 12: 3:46 IQM v7.3

normalization = DC

NIIRS = 1.60920 *log(IQ) + 8.68490 (NIIRS is not applicable to sensors 4, 5, 6)

prefs data file: DefaultPrefs

aux data file: auxtest

....IQ.....NIIRS...Codes.....Contrast..AvgGry..Width....Col...Row..Sensr.bpp.....pixel1

0.616902E-02 5.13 0.46064 83.5 256 0 0 1 8 GRAY 73 airport.tif

Problem Codes (thresholds set in Prefs file):

blank is normal image, freqmin = 0.01000 freqmax = 0.70711

1 significant blur: adjfreq = 0.10000 midfreqslope > 999.0000

2 severe blur: lowfreqslope > 80.000

3 severe haze: contrast < 0.0200

4 1-D smear: wedgeratio > 40.00 for wedge angle = 4.000 degrees

5 severe noise, IQMstd Noise Filter Applied, noiseratio < 1.100

6 significant noise, IQMstd Noise Filter Applied, noiseratio < 5.000

8 sensor pixel banding: power(0.5cy/pix) > 3.0 * power(0.45cy/pix)

(problem codes not applied if image width < 33 pixels)

Sensor:

1 General Aerial/Space Digital Sensor

2 Oblique Aerial/Space Digital Sensor

3 Aerial/Space Film Camera

4 General Sensor

5 Ground-Based Digital Camera (IQ >100 implies IQ dependent on # of sensor pixels)

"avg: 3" IQ, NIIRS, contrast are averages from 3 subimages;
for subimage info, in prefsfile set: SubImageInfo = Y

"peak: 4" peak IQ & NIIRS from 4 subimages; contrast is for this peak subimage

Image polarity check: "pixel1" must equal true graylevel of UpperLeftCorner pixel
of entire image; if RGB image, pixel1 value is for Blue layer

NIIRS = -999 implies NIIRS not applicable