

SOCET GXP® Spectral capabilities

Anomaly Detection

- » Gaussian mixture
- » Global
- » Local

Atmospheric Correction

- » Dark subtraction
- » Internal average relative reflectance
- » Reflectance calibration (empirical line method)

Band Composites

Band Math

Band Preview

- » Quickly cycle through all bands
- » Single button click for masking and color channel assignment

Band Ratios

- » Customized band ratios
- » Normalized Difference Vegetation Index (NDVI)
- » Normalized Difference Water Index (NDWI)

Band Statistics

Change Detection

Classification Raster Refinement

- » Includes real-time algorithms:
 - » Cluster
 - » Fill
 - » Filter

Colorization (single band)

- » Dynamic look-up table creation

Components Analysis

- » Independent components analysis
- » Minimum noise fraction

Components Analysis (Continued)

- » Principal components analysis
- » Spectral unmixing

Convolution Filters

- » Edge detection
- » Sharpen
- » Smooth

Decorrelation

Generate Vectors

- » Customized auto-attribution (area, perimeter, etc.)
- » Supervised classifications and colorization bins

Histogram Manipulation and Transforms

- » Adjusted linear %
- » Equalization
- » Fixed multiplier
- » Invert pixels (individual or all bands)
- » Linear %
- » Linear 2%
- » Linear fixed
- » Linear piecewise
- » Min/max
- » Normalization
- » Square root

Image Enhancements

- » Brightness, contrast, gamma, saturation, and sharpness
- » Dynamic Range Adjustment (DRA)
- » Lock DRA
- » Pseudocolor/grayscale

Image Pre-processing

- » Basic destriping

Morphological Filters

- » Close
- » Custom
- » Dilate
- » Erode
- » Open

Pan Sharpening

- » Includes real-time algorithms:
 - » Brovey
 - » Ehlers fusion
 - » Intensity, Hue, and Saturation (IHS)
 - » IHS Near Infrared (NIR)

Scatter Plot

- » Color by frequency
- » Classify image from scatter plot
- » Dynamic class color adjustment

Signal-to-Noise Ratio Calculations

Spectral Band Masks

Spectral Profiles

- » Arbitrary
- » Line
- » Point
- » Sample

Supervised Classification

- » Point and polygon pixel selection
- » Real-time thresholding
- » Spectral signatures
- » USGS libraries included

- » Eight matching algorithms included:
 - » Absolute correlation
 - » Adaptive cosine estimator
 - » Adaptive matched filter
 - » Constrained energy minimization

Supervised Classification (Continued)

- » Mahalanobis distance
- » Normalized Euclidean distance
- » Spectral angle mapper
- » Spectral similarity value

Unsupervised Classification

- » Dynamic class color adjustment
- » Includes three algorithms:
 - » ISODATA
 - » K-means clustering
 - » Tasseled cap

Xport Multiport™

- » Real-time simultaneous exploitation of multiple band combinations and spectral algorithms
- » Up to 16 different views of the image

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