Hypersignal ImPro Lab Function List

1 Channel X Display
Displays input from a single channel

1 to 2 Demultiplexer
Demultiplexes one input channel to two channel output based on a select input

135 Degree Line Detector
Detects the 135 degree lines on an image

1D to Matrix Converter
Converts a 1 dimensional signal to a matrix

2 to 1 Multiplexer
Multiplexes two channel input to one channel output based on a select input

2-D Complex to Real
Converts complex image to real/imag images

2-D Exp
Performs the exponential function on the input image

2-D FFT
Two-dimensional Fast Fourier Transform for Real Images

2-D Inverse FFT
Two-dimensional Inverse Fast Fourier Transform for Real Images

2-D Log
Takes the natural log of the input

2-D Magnitude
Performs magnitude function on the output of 2-D FFT

2-D Phase
Performs phase function on the output of 2-D FFT

2-D Real to Complex
Converts real/imag images to complex images

45 Degree Line Detector
Detects the 45 degree lines on an image

Absolute Value
Outputs the absolute value of the input signal

Add
Adds two input signals

Add Constant
Add a constant to an image

Add Gaussian Noise
Adds noise with a Gaussian distribution to an image

Add Image
Adds two input images

Add Impulsive Noise
Adds impulsive noise to an image

Add Laplacian Noise
Adds noise with Laplacian distribution to an image

Add Uniform Noise
Adds noise with a uniform distribution to an image

AND Constant
Performs the logical AND function on an image with a constant

AND Two Images
Performs the logical AND function on two input images

Annunciator
Changes appearance based on different threshold values

Arbitrary Signal Generator
Generates an arbitrary waveform via a mouse

AVI Read
Reads an AVI file

AVI Write
Writes image data to an AVI file

Bit Mask
Masks off user-specified bits in the input signal

Bitmap Display
Displays a selected bitmap

Bitmap Read
Reads a Windows bitmap file and outputs the red, green and blue planes

Bitmap Write
Write a bitmap to a file

Brightness
Measures the average intensity of an image

Buffer
Buffers and outputs a specified number of the input samples

CD Knob
CD Control Knob

Channel Information
Displays a channels information

Chaos Game Generator
Generates a fractal based on the chaos game

Clip Image
Clips an image by comparing with two specified threshold levels

Color Pattern Generator
Generate a color image (bleeds 5 colors horizontally)

Command Switch
Switch for controlling (starting/stopping, etc.) worksheets, typically used for power switch

Complex to Real
Converts the complex input values to the corresponding real and imaginary values

Contrast
Measures the variance of an image

Convolution
Convolves two input signals together

Delay
Delays input by specified number of samples

DFT
Calculates the discrete Fourier transform of the input signal

Digital Display
Displays the input signal using digital numbers

Equal
Checks for Equal condition and controls the block connected to this block

Exponential Transform Histogram
Performs the exponential transform histogram on an image

FFT
Calculates the Fast Fourier Transform of the input signal

File Read
This block reads an input file.

File Write
Writes the input signal to a data file

FIR Filter
Applies an existing FIR filter to the input signal

Five Position Toggle Switch
Five Position Vertical Toggle Switch

Fixed Offset
Adds a specified offset value to each element of the input signal

Flip Image
Flips an image

Four Position Toggle Switch
Four Position Vertical Toggle Switch

Frame Maximum
Finds the maximum of each frame of the input signal

Frame Minimum
Finds the minimum value for each frame of the input signal

Gain
Multiplies each element of the input signal by a constant

General Filter
Filters an image with a specified weighting value

General Knob
General knob used for offsets, etc.

Global Maximum
Finds the maximum value of all data passed through this block

Global Minimum
Finds the minimum value of all data passed through this block

Global Variable
Global Variable to allow dynamic assignment, or placeholder, function

Gray Scale Generator

Generates a gray scale image

Greater Than

Checks for Greater Than condition to control the block connected to this block

Greater Than / Equal

Checks for Greater Than/Equal condition to control the block connected to this block

Hamming Window

Performs Hamming windowing on the input signal

Histogram

Calculates the histogram of an image

Histogram Equalization

Performs a uniform histogram on an image

Horizontal Bar Chart

Horizontal bar chart

Horizontal Bar Graph

Graph data horizontally

Horizontal Line Detector

Detects the horizontal lines on an image

Horizontal Slider

Horizontal slider control

IF-ELSE/COUNTER

Checks for IF-ELSE (with counter) condition to control the block connected to this block

IIR Filter

Applies an existing IIR filter to the input signal

Image Delay

Delay a specified number of images

Image Negative

Creates a negative image

Image Resize

Resizes an image by either stretching or clipping

Image Square

Produces the square of an image

Image Square Root

Calculates the square root of an image

In Range

Checks to see if a value is between a range

Internet Receiver

Receive data through the internet

Internet Transmitter

Transmit data through the internet

Inverse DFT

Calculates the inverse Discrete Fourier Transform of the input signal

Inverse FFT

Calculates the inverse Fast Fourier Transform of the input signal

Isotropic Edge Detector

Detects the edges of an image using the Isotropic method

Knob

Implements a knob control

Laplace Edge Detector

Detects the edges of an image using the Laplace method

LED

Simple two bitmap LED control

LED

User control LED which gets set when a threshold is reached

LED Button

Simple LED Button

LED Meter

Implements a light emitting diode meter control

LED Meter

LED Meter indicator

Less Than

Checks for Less Than condition to control the block connected to this block

Less Than / Equal

Checks for Less Than/Equal condition to control the block connected to this block

Log Transform Histogram
Performs the log transform histogram on an image

Logical AND
Performs logical AND function on two input signals

Logical NAND
Performs logical NAND function on two input signals

Logical NOR
Performs logical NOR function on two input signals

Logical NOT
Performs the logical NOT function on the input signal

Logical OR
Performs logical OR function on two input signals

Logical XOR
Performs logical XOR (Exclusive-OR) function on two input signals

Loop Counter
Performs the Loop Counter operation to control the block connected to this block

Mandelbrot Fractal Generator
Generates a Mandelbrot Fractal with specified parameters

Matrix Addition
Adds two matrices

Matrix Generator by manual entry
Generates a manually entered matrix

Matrix Invert
Matrix Invert

Matrix Multiply
Multiplies two matrices

Matrix Order
Outputs the row and column values of a matrix

Matrix Scale
Multiply a matrix by a scalar value

Matrix Subtraction

Subtracts two matrices

Matrix to 1D Converter
Converts matrix data into 1 dimensional data

Maximum Filter
Performs a maximum filter on an image

Median Filter
Performs a median filter on an image

Minimum Filter
Performs a minimum filter on an image

Momentary Button
Output different values when the button is in the pressed or non-pressed state

Moving Average Filter
Performs a moving average filter on an image

Multiply
Multiplies the corresponding elements of two input signals

Multiply by Constant
Multiplies an image by a constant

Multiply Image
Multiplies the two input images

Noise Generator
Generates a noise waveform with normal distribution

Noise Pattern Generator
Generates an image of noise

Not
Creates the logical opposite of the input signal.

Not Equal
Checks for Not Equal condition to control the block connected to this block

Numeric Indicator
Numeric display to display a single value

Object Counting
Detects and counts objects

Object Tracker
Tracks an object(s) in an image

OR Constant

Performs the logical OR function on an image with a constant

OR Two Images

Performs the logical OR function on two input images

Order Statistical Filter

Performs a order statistical filter on an image

Point Detector

Detects the isolated points on an image

Prewitt Edge Detector

Detects the edges of an image using the Prewitt method

Real to Complex

Converts real and imaginary values into the corresponding complex values

Replace Subset

Replaces a subset of data at a specified location within a frame

RGB Display

Displays an image in RGB format

Roberts Edge Detector

Detects the edges of an image using the Roberts method

Root Mean Square

Calculates the frame root mean square of the input signal

Rotate Image

Rotates an image

Sharpening Filter

Performs a sharpening filter on the input image

Sine Generator

Generates a sine waveform

Single Channel Display

Displays input from a single channel in several different display modes

Sobel Edge Detector

Detects the edges of an image using the Sobel method

Sprite

Generates a sprite image

Standard Video Input Device

Captures video images from a video device driver

Static Array (buffer)

Array used for holding results and feeding other blocks (ignores Data Ready condition)

Subset

The Subset block outputs a subset of the input data.

Subtract

Subtracts the corresponding elements of channel 1 input from channel 0 input

Subtract Image

Subtracts two input images

Terminate Block Diagram

Stops simulation at this block

Three Position Toggle Switch

Three position vertical toggle switch

Threshold

Examines an image and outputs zero if the image element is not greater than the specified threshold

Threshold

Examines the input data and outputs zero if the data is not greater than the specified threshold

Time Sweep Control Knob

Time Sweep Control Knob

Timer

Generates a pulse or level change at a specified time interval

Toggle Button

User control button used to create an alternating 0/1 output value

Two Position Toggle Switch

Two position vertical toggle switch

Variable Signal Generator

Generates a signal based on the given equation

Vertical Bar Chart

Vertical bar chart

Vertical Bar Graph

Graph data vertically

Vertical Line Detector
Detects the vertical lines on an image

Vertical Scaling Knob
General knob used for vertical trace control, etc.

Vertical Slider
Vertical slider control

XOR Constant
Performs the logical XOR function on an image with a constant

XOR Two Images
Performs the logical XOR function on two input images

Zoom Image
Zooms an image based on the specified parameters