



MATLAB Coder – R2013a

Supported Functions and System Objects for Code Generation

You can generate efficient C/C++ code for a subset of MATLAB® functions, toolbox functions, and System objects™ that you call from MATLAB code.

[Supported Functions - Alphabetical List](#)

[Supported Functions - Categorical List](#)

[Supported System Objects](#)

[MATLAB Language Features Supported for C/C++ Code Generation](#)

For more detailed information, *see this list online at Documentation Center* (login required).

Supported Functions — Alphabetical List

Function	Product
<code>abs</code>	MATLAB
<code>abs</code>	Fixed-Point Designer™
<code>accumneg</code>	Fixed-Point Designer
<code>accumpos</code>	Fixed-Point Designer
<code>acos</code>	MATLAB
<code>acosd</code>	MATLAB
<code>acosh</code>	MATLAB
<code>acot</code>	MATLAB
<code>acotd</code>	MATLAB
<code>acoth</code>	MATLAB
<code>acsc</code>	MATLAB
<code>acscd</code>	MATLAB
<code>acsch</code>	MATLAB
<code>add</code>	Fixed-Point Designer
<code>all</code>	MATLAB
<code>all</code>	Fixed-Point Designer
<code>and</code>	MATLAB
<code>angle</code>	MATLAB
<code>any</code>	MATLAB
<code>any</code>	Fixed-Point Designer
<code>asec</code>	MATLAB
<code>asecd</code>	MATLAB
<code>asech</code>	MATLAB
<code>asin</code>	MATLAB
<code>asind</code>	MATLAB
<code>asinh</code>	MATLAB
<code>assert</code>	MATLAB
<code>atan</code>	MATLAB
<code>atan2</code>	MATLAB
<code>atan2</code>	Fixed-Point Designer
<code>atan2d</code>	MATLAB
<code>atand</code>	MATLAB
<code>atanh</code>	MATLAB
<code>barthannwin</code>	Signal Processing Toolbox™
<code>bartlett</code>	Signal Processing Toolbox
<code>besselap</code>	Signal Processing Toolbox
<code>beta</code>	MATLAB

Function	Product
<code>betainc</code>	MATLAB
<code>betaln</code>	MATLAB
<code>bi2de</code>	Communications System Toolbox™
<code>bin2dec</code>	MATLAB
<code>binaryFeatures</code>	Computer Vision System Toolbox™
<code>bitand</code>	MATLAB
<code>bitand</code>	Fixed-Point Designer
<code>bitandreduce</code>	Fixed-Point Designer
<code>bitcmp</code>	MATLAB
<code>bitcmp</code>	Fixed-Point Designer
<code>bitconcat</code>	Fixed-Point Designer
<code>bitget</code>	MATLAB
<code>bitget</code>	Fixed-Point Designer
<code>bitmax</code>	MATLAB
<code>bitor</code>	MATLAB
<code>bitor</code>	Fixed-Point Designer
<code>bitorreduce</code>	Fixed-Point Designer
<code>bitreplicate</code>	Fixed-Point Designer
<code>bitrevorder</code>	Signal Processing Toolbox
<code>bitrol</code>	Fixed-Point Designer
<code>bitror</code>	Fixed-Point Designer
<code>bitset</code>	MATLAB
<code>bitset</code>	Fixed-Point Designer
<code>bitshift</code>	MATLAB
<code>bitshift</code>	Fixed-Point Designer
<code>bitsliceget</code>	Fixed-Point Designer
<code>bitsll</code>	Fixed-Point Designer
<code>bitsra</code>	Fixed-Point Designer
<code>bitsrl</code>	Fixed-Point Designer
<code>bitxor</code>	MATLAB
<code>bitxor</code>	Fixed-Point Designer
<code>bitxorreduce</code>	Fixed-Point Designer
<code>blackman</code>	Signal Processing Toolbox
<code>blackmanharris</code>	Signal Processing Toolbox
<code>blanks</code>	MATLAB
<code>blkdiag</code>	MATLAB
<code>bohmanwin</code>	Signal Processing Toolbox
<code>bsxfun</code>	MATLAB
<code>buttap</code>	Signal Processing Toolbox

Function	Product
<code>butter</code>	Signal Processing Toolbox
<code>buttord</code>	Signal Processing Toolbox
<code>bwlookup</code>	Image Processing Toolbox™
<code>bwmorph</code>	Image Processing Toolbox
<code>cart2pol</code>	MATLAB
<code>cart2sph</code>	MATLAB
<code>cast</code>	MATLAB
<code>cat</code>	MATLAB
<code>ceil</code>	MATLAB
<code>ceil</code>	Fixed-Point Designer
<code>cfirpm</code>	Signal Processing Toolbox
<code>char</code>	MATLAB
<code>cheblap</code>	Signal Processing Toolbox
<code>cheblord</code>	Signal Processing Toolbox
<code>cheb2ap</code>	Signal Processing Toolbox
<code>cheb2ord</code>	Signal Processing Toolbox
<code>chebwin</code>	Signal Processing Toolbox
<code>cheby1</code>	Signal Processing Toolbox
<code>cheby2</code>	Signal Processing Toolbox
<code>chol</code>	MATLAB
<code>circshift</code>	MATLAB
<code>class</code>	MATLAB
<code>compan</code>	MATLAB
<code>complex</code>	MATLAB
<code>complex</code>	Fixed-Point Designer
<code>computer</code>	MATLAB
<code>cond</code>	MATLAB
<code>conj</code>	MATLAB
<code>conj</code>	Fixed-Point Designer
<code>conndef</code>	Image Processing Toolbox
<code>conv</code>	MATLAB
<code>conv</code>	Fixed-Point Designer
<code>conv2</code>	MATLAB
<code>convergent</code>	Fixed-Point Designer
<code>convn</code>	MATLAB
<code>cordicabs</code>	Fixed-Point Designer
<code>cordicangle</code>	Fixed-Point Designer
<code>cordicatan2</code>	Fixed-Point Designer
<code>cordiccart2pol</code>	Fixed-Point Designer

Function	Product
<code>cordicexp</code>	Fixed-Point Designer
<code>cordiccos</code>	Fixed-Point Designer
<code>cordicpol2cart</code>	Fixed-Point Designer
<code>cordicrotate</code>	Fixed-Point Designer
<code>cordicsin</code>	Fixed-Point Designer
<code>cordicsincos</code>	Fixed-Point Designer
<code>corrcoef</code>	MATLAB
<code>cos</code>	MATLAB
<code>cos</code>	Fixed-Point Designer
<code>cosd</code>	MATLAB
<code>cosh</code>	MATLAB
<code>cot</code>	MATLAB
<code>cotd</code>	MATLAB
<code>coth</code>	MATLAB
<code>cov</code>	MATLAB
<code>cross</code>	MATLAB
<code>csc</code>	MATLAB
<code>cscd</code>	MATLAB
<code>csch</code>	MATLAB
<code>ctranspose</code>	MATLAB
<code>ctranspose</code>	Fixed-Point Designer
<code>cumprod</code>	MATLAB
<code>cumsum</code>	MATLAB
<code>cumtrapz</code>	MATLAB
<code>dct</code>	Signal Processing Toolbox
<code>de2bi</code>	Communications System Toolbox
<code>deal</code>	MATLAB
<code>deblank</code>	MATLAB
<code>dec2bin</code>	MATLAB
<code>dec2hex</code>	MATLAB
<code>deconv</code>	MATLAB
<code>del2</code>	MATLAB
<code>det</code>	MATLAB
<code>detrend</code>	MATLAB
<code>diag</code>	MATLAB
<code>diag</code>	Fixed-Point Designer
<code>diff</code>	MATLAB
<code>divide</code>	Fixed-Point Designer
<code>dot</code>	MATLAB

Function	Product
<code>double</code>	MATLAB
<code>double</code>	Fixed-Point Designer
<code>downsample</code>	Signal Processing Toolbox
<code>dpss</code>	Signal Processing Toolbox
<code>eig</code>	MATLAB
<code>ellip</code>	Signal Processing Toolbox
<code>ellipap</code>	Signal Processing Toolbox
<code>ellipke</code>	MATLAB
<code>ellipord</code>	Signal Processing Toolbox
<code>end</code>	Fixed-Point Designer
<code>epipolarLine</code>	Computer Vision System Toolbox
<code>eps</code>	MATLAB
<code>eps</code>	Fixed-Point Designer
<code>eq</code>	MATLAB
<code>eq</code>	Fixed-Point Designer
<code>erf</code>	MATLAB
<code>erfc</code>	MATLAB
<code>erfcinv</code>	MATLAB
<code>erfcx</code>	MATLAB
<code>erfinv</code>	MATLAB
<code>error</code>	MATLAB
<code>estimateFundamentalMatrix</code>	Computer Vision System Toolbox
<code>estimateUncalibratedRectification</code>	Computer Vision System Toolbox
<code>exp</code>	MATLAB
<code>expint</code>	MATLAB
<code>expm</code>	MATLAB
<code>expm1</code>	MATLAB
<code>extractFeatures</code>	Computer Vision System Toolbox
<code>eye</code>	MATLAB
<code>factor</code>	MATLAB
<code>factorial</code>	MATLAB
<code>false</code>	MATLAB
<code>fclose</code>	MATLAB
<code>fft</code>	MATLAB
<code>fft2</code>	MATLAB
<code>fftn</code>	MATLAB
<code>fftshift</code>	MATLAB
<code>fi</code>	Fixed-Point Designer
<code>filter</code>	MATLAB

Function	Product
<code>filter</code>	Fixed-Point Designer
<code>filter2</code>	MATLAB
<code>filtfilt</code>	Signal Processing Toolbox
<code>fimath</code>	Fixed-Point Designer
<code>find</code>	MATLAB
<code>fir1</code>	Signal Processing Toolbox
<code>fir2</code>	Signal Processing Toolbox
<code>fircls</code>	Signal Processing Toolbox
<code>fircls1</code>	Signal Processing Toolbox
<code>firls</code>	Signal Processing Toolbox
<code>firpm</code>	Signal Processing Toolbox
<code>firpmord</code>	Signal Processing Toolbox
<code>firrcos</code>	Signal Processing Toolbox
<code>fix</code>	MATLAB
<code>fix</code>	Fixed-Point Designer
<code>fixed.Quantizer</code>	Fixed-Point Designer
<code>flattopwin</code>	Signal Processing Toolbox
<code>flintmax</code>	MATLAB
<code>flipdim</code>	MATLAB
<code>fliplr</code>	MATLAB
<code>flipud</code>	MATLAB
<code>floor</code>	MATLAB
<code>floor</code>	Fixed-Point Designer
<code>fopen</code>	MATLAB
<code>fprintf</code>	MATLAB
<code>freqspace</code>	MATLAB
<code>freqz</code>	Signal Processing Toolbox
<code>fspecial</code>	Image Processing Toolbox
<code>full</code>	MATLAB
<code>fzero</code>	MATLAB
<code>gamma</code>	MATLAB
<code>gammainc</code>	MATLAB
<code>gammaln</code>	MATLAB
<code>gaussfir</code>	Signal Processing Toolbox
<code>gausswin</code>	Signal Processing Toolbox
<code>gcd</code>	MATLAB
<code>ge</code>	MATLAB
<code>ge</code>	Fixed-Point Designer
<code>get</code>	Fixed-Point Designer

Function	Product
<code>getlsb</code>	Fixed-Point Designer
<code>getmsb</code>	Fixed-Point Designer
<code>gradient</code>	MATLAB
<code>gt</code>	MATLAB
<code>gt</code>	Fixed-Point Designer
<code>hadamard</code>	MATLAB
<code>hamming</code>	Signal Processing Toolbox
<code>hankel</code>	MATLAB
<code>hann</code>	Signal Processing Toolbox
<code>hdlram</code>	Fixed-Point Designer
<code>hex2dec</code>	MATLAB
<code>hex2num</code>	MATLAB
<code>hilb</code>	MATLAB
<code>hist</code>	MATLAB
<code>histc</code>	MATLAB
<code>horzcat</code>	Fixed-Point Designer
<code>hypot</code>	MATLAB
<code>idct</code>	Signal Processing Toolbox
<code>idivide</code>	MATLAB
<code>ifft</code>	MATLAB
<code>ifft2</code>	MATLAB
<code>ifftn</code>	MATLAB
<code>ifftshift</code>	MATLAB
<code>imag</code>	MATLAB
<code>imag</code>	Fixed-Point Designer
<code>imcomplement</code>	Image Processing Toolbox
<code>imfill</code>	Image Processing Toolbox
<code>imhmax</code>	Image Processing Toolbox
<code>imhmin</code>	Image Processing Toolbox
<code>imreconstruct</code>	Image Processing Toolbox
<code>imregionalmax</code>	Image Processing Toolbox
<code>imregionalmin</code>	Image Processing Toolbox
<code>ind2sub</code>	MATLAB
<code>inf</code>	MATLAB
<code>insertMarker</code>	Computer Vision System Toolbox
<code>insertShape</code>	Computer Vision System Toolbox
<code>int8, int16, int32</code>	MATLAB
<code>int8, int16, int32</code>	Fixed-Point Designer
<code>integralImage</code>	Computer Vision System Toolbox

Function	Product
<code>interp1</code>	MATLAB
<code>interp2</code>	MATLAB
<code>intersect</code>	MATLAB
<code>intfilt</code>	Signal Processing Toolbox
<code>intmax</code>	MATLAB
<code>intmin</code>	MATLAB
<code>inv</code>	MATLAB
<code>invhilb</code>	MATLAB
<code>ipermute</code>	MATLAB
<code>iptcheckconn</code>	Image Processing Toolbox
<code>isa</code>	MATLAB
<code>iscell</code>	MATLAB
<code>ischar</code>	MATLAB
<code>iscolumn</code>	MATLAB
<code>iscolumn</code>	Fixed-Point Designer
<code>isdeployed</code>	MATLAB Compiler™
<code>isempty</code>	MATLAB
<code>isempty</code>	Fixed-Point Designer
<code>isEpipoleInImage</code>	Computer Vision System Toolbox
<code>isequal</code>	MATLAB
<code>isequal</code>	Fixed-Point Designer
<code>isequaln</code>	MATLAB
<code>isfi</code>	Fixed-Point Designer
<code>isfield</code>	MATLAB
<code>isfimath</code>	Fixed-Point Designer
<code>isfimathlocal</code>	Fixed-Point Designer
<code>isfinite</code>	MATLAB
<code>isfinite</code>	Fixed-Point Designer
<code>isfloat</code>	MATLAB
<code>isinf</code>	MATLAB
<code>isinf</code>	Fixed-Point Designer
<code>isinteger</code>	MATLAB
<code>isletter</code>	MATLAB
<code>islogical</code>	MATLAB
<code>ismac</code>	MATLAB
<code>ismatrix</code>	MATLAB
<code>ismcc</code>	MATLAB Compiler
<code>ismember</code>	MATLAB
<code>isnan</code>	MATLAB

Function	Product
<code>isnan</code>	Fixed-Point Designer
<code>isnumeric</code>	MATLAB
<code>isnumeric</code>	Fixed-Point Designer
<code>isnumerictype</code>	Fixed-Point Designer
<code>ispc</code>	MATLAB
<code>isprime</code>	MATLAB
<code>isreal</code>	MATLAB
<code>isreal</code>	Fixed-Point Designer
<code>isrow</code>	MATLAB
<code>isrow</code>	Fixed-Point Designer
<code>isscalar</code>	MATLAB
<code>isscalar</code>	Fixed-Point Designer
<code>assigned</code>	Fixed-Point Designer
<code>issorted</code>	MATLAB
<code>isspace</code>	MATLAB
<code>issparse</code>	MATLAB
<code>isstrprop</code>	MATLAB
<code>isstruct</code>	MATLAB
<code>istrellis</code>	Communications System Toolbox
<code>isunix</code>	MATLAB
<code>isvector</code>	MATLAB
<code>isvector</code>	Fixed-Point Designer
<code>kaiser</code>	Signal Processing Toolbox
<code>kaiserord</code>	Signal Processing Toolbox
<code>kron</code>	MATLAB
<code>label2rgb</code>	Image Processing Toolbox
<code>lcm</code>	MATLAB
<code>ldivide</code>	MATLAB
<code>le</code>	MATLAB
<code>le</code>	Fixed-Point Designer
<code>length</code>	MATLAB
<code>length</code>	Fixed-Point Designer
<code>levinson</code>	Signal Processing Toolbox
<code>lineToBorderPoints</code>	Computer Vision System Toolbox
<code>linsolve</code>	MATLAB
<code>linspace</code>	MATLAB
<code>load</code>	MATLAB
<code>log</code>	MATLAB
<code>log2</code>	MATLAB

Function	Product
<code>log10</code>	MATLAB
<code>log1p</code>	MATLAB
<code>logical</code>	MATLAB
<code>logical</code>	Fixed-Point Designer
<code>logspace</code>	MATLAB
<code>lower</code>	MATLAB
<code>lowerbound</code>	Fixed-Point Designer
<code>lsb</code>	Fixed-Point Designer
<code>lt</code>	MATLAB
<code>lt</code>	Fixed-Point Designer
<code>lu</code>	MATLAB
<code>magic</code>	MATLAB
<code>matchFeatures</code>	Computer Vision System Toolbox
<code>max</code>	MATLAB
<code>max</code>	Fixed-Point Designer
<code>maxflat</code>	Signal Processing Toolbox
<code>mean</code>	MATLAB
<code>mean</code>	Fixed-Point Designer
<code>median</code>	MATLAB
<code>median</code>	Fixed-Point Designer
<code>meshgrid</code>	MATLAB
<code>min</code>	MATLAB
<code>min</code>	Fixed-Point Designer
<code>minus</code>	MATLAB
<code>minus</code>	Fixed-Point Designer
<code>mldivide</code>	MATLAB
<code>mod</code>	MATLAB
<code>mode</code>	MATLAB
<code>mpower</code>	MATLAB
<code>mpower</code>	Fixed-Point Designer
<code>mpy</code>	Fixed-Point Designer
<code>mrdivide</code>	MATLAB
<code>mrdivide</code>	Fixed-Point Designer
<code>mtimes</code>	MATLAB
<code>mtimes</code>	Fixed-Point Designer
<code>NaN or nan</code>	MATLAB
<code>nargchk</code>	MATLAB
<code>nargin</code>	MATLAB
<code>nargout</code>	MATLAB

Function	Product
<code>nargoutchk</code>	MATLAB
<code>nchoosek</code>	MATLAB
<code>ndgrid</code>	MATLAB
<code>ndims</code>	MATLAB
<code>ndims</code>	Fixed-Point Designer
<code>ne</code>	MATLAB
<code>ne</code>	Fixed-Point Designer
<code>nearest</code>	Fixed-Point Designer
<code>nextpow2</code>	MATLAB
<code>nnz</code>	MATLAB
<code>nonzeros</code>	MATLAB
<code>norm</code>	MATLAB
<code>normest</code>	MATLAB
<code>not</code>	MATLAB
<code>nthroot</code>	MATLAB
<code>null</code>	MATLAB
<code>num2hex</code>	MATLAB
<code>numberofelements</code>	Fixed-Point Designer
<code>numel</code>	MATLAB
<code>numericity</code>	Fixed-Point Designer
<code>nuttallwin</code>	Signal Processing Toolbox
<code>ones</code>	MATLAB
<code>or</code>	MATLAB
<code>orth</code>	MATLAB
<code>padarray</code>	Image Processing Toolbox
<code>parzenwin</code>	Signal Processing Toolbox
<code>pascal</code>	MATLAB
<code>permute</code>	MATLAB
<code>permute</code>	Fixed-Point Designer
<code>pi</code>	MATLAB
<code>pinv</code>	MATLAB
<code>planerot</code>	MATLAB
<code>plus</code>	MATLAB
<code>plus</code>	Fixed-Point Designer
<code>pol2cart</code>	MATLAB
<code>poly</code>	MATLAB
<code>poly2trellis</code>	Communications System Toolbox
<code>polyfit</code>	MATLAB
<code>polyval</code>	MATLAB

Function	Product
<code>pow2</code>	Fixed-Point Designer
<code>power</code>	MATLAB
<code>power</code>	Fixed-Point Designer
<code>primes</code>	MATLAB
<code>prod</code>	MATLAB
<code>qr</code>	MATLAB
<code>quad2d</code>	MATLAB
<code>quadgk</code>	MATLAB
<code>quantize</code>	Fixed-Point Designer
<code>quatconj</code>	Aerospace Toolbox
<code>quatdivide</code>	Aerospace Toolbox
<code>quatinv</code>	Aerospace Toolbox
<code>quatmod</code>	Aerospace Toolbox
<code>quatmultiply</code>	Aerospace Toolbox
<code>quatnorm</code>	Aerospace Toolbox
<code>quatnormalize</code>	Aerospace Toolbox
<code>rand</code>	MATLAB
<code>randi</code>	MATLAB
<code>randn</code>	MATLAB
<code>randperm</code>	MATLAB
<code>range</code>	Fixed-Point Designer
<code>rank</code>	MATLAB
<code>rcond</code>	MATLAB
<code>rcosfir</code>	Communications System Toolbox
<code>rdivide</code>	MATLAB
<code>rdivide</code>	Fixed-Point Designer
<code>real</code>	MATLAB
<code>real</code>	Fixed-Point Designer
<code>reallog</code>	MATLAB
<code>realmax</code>	MATLAB
<code>realmax</code>	Fixed-Point Designer
<code>realmin</code>	MATLAB
<code>realmin</code>	Fixed-Point Designer
<code>realpow</code>	MATLAB
<code>realsqrt</code>	MATLAB
<code>rectwin</code>	Signal Processing Toolbox
<code>reinterpretcast</code>	Fixed-Point Designer
<code>rem</code>	MATLAB
<code>removefimath</code>	Fixed-Point Designer

Function	Product
<code>repmat</code>	MATLAB
<code>repmat</code>	Fixed-Point Designer
<code>resample</code>	Signal Processing Toolbox
<code>rescale</code>	Fixed-Point Designer
<code>reshape</code>	MATLAB
<code>reshape</code>	Fixed-Point Designer
<code>rng</code>	MATLAB
<code>roots</code>	MATLAB
<code>rosser</code>	MATLAB
<code>rot90</code>	MATLAB
<code>round</code>	MATLAB
<code>round</code>	Fixed-Point Designer
<code>rsf2csf</code>	MATLAB
<code>schur</code>	MATLAB
<code>sec</code>	MATLAB
<code>secd</code>	MATLAB
<code>sech</code>	MATLAB
<code>setdiff</code>	MATLAB
<code>setfimath</code>	Fixed-Point Designer
<code>setxor</code>	MATLAB
<code>sfi</code>	Fixed-Point Designer
<code>sgolay</code>	Signal Processing Toolbox
<code>shiftdim</code>	MATLAB
<code>sign</code>	MATLAB
<code>sign</code>	Fixed-Point Designer
<code>sin</code>	MATLAB
<code>sin</code>	Fixed-Point Designer
<code>sind</code>	MATLAB
<code>single</code>	MATLAB
<code>single</code>	Fixed-Point Designer
<code>sinh</code>	MATLAB
<code>size</code>	MATLAB
<code>size</code>	Fixed-Point Designer
<code>sort</code>	MATLAB
<code>sort</code>	Fixed-Point Designer
<code>sortrows</code>	MATLAB
<code>sosfilt</code>	Signal Processing Toolbox
<code>sph2cart</code>	MATLAB
<code>squeeze</code>	MATLAB

Function	Product
<code>sqrt</code>	MATLAB
<code>sqrt</code>	Fixed-Point Designer
<code>sqrtn</code>	MATLAB
<code>std</code>	MATLAB
<code>storedInteger</code>	Fixed-Point Designer
<code>storedIntegerToDouble</code>	Fixed-Point Designer
<code>str2func</code>	MATLAB
<code>strcmp</code>	MATLAB
<code>strcmpi</code>	MATLAB
<code>strfind</code>	MATLAB
<code>strjust</code>	MATLAB
<code>strncmp</code>	MATLAB
<code>strncmpi</code>	MATLAB
<code>strrep</code>	MATLAB
<code>strtok</code>	MATLAB
<code>strtrim</code>	MATLAB
<code>struct</code>	MATLAB
<code>structfun</code>	MATLAB
<code>sub</code>	Fixed-Point Designer
<code>sub2ind</code>	MATLAB
<code>subsasgn</code>	Fixed-Point Designer
<code>subspace</code>	MATLAB
<code>subsref</code>	Fixed-Point Designer
<code>sum</code>	MATLAB
<code>sum</code>	Fixed-Point Designer
<code>svd</code>	MATLAB
<code>swapbytes</code>	MATLAB
<code>tan</code>	MATLAB
<code>tand</code>	MATLAB
<code>tanh</code>	MATLAB
<code>taylorwin</code>	Signal Processing Toolbox
<code>times</code>	MATLAB
<code>times</code>	Fixed-Point Designer
<code>toeplitz</code>	MATLAB
<code>trace</code>	MATLAB
<code>trapz</code>	MATLAB
<code>transpose</code>	MATLAB
<code>transpose</code>	Fixed-Point Designer
<code>triang</code>	Signal Processing Toolbox

Function	Product
<code>tril</code>	MATLAB
<code>tril</code>	Fixed-Point Designer
<code>triu</code>	MATLAB
<code>triu</code>	Fixed-Point Designer
<code>true</code>	MATLAB
<code>tukeywin</code>	Signal Processing Toolbox
<code>typecast</code>	MATLAB
<code>ufi</code>	Fixed-Point Designer
<code>uint8, uint16, uint32</code>	MATLAB
<code>uint8, uint16, uint32</code>	Fixed-Point Designer
<code>uminus</code>	MATLAB
<code>uminus</code>	Fixed-Point Designer
<code>union</code>	MATLAB
<code>unique</code>	MATLAB
<code>unwrap</code>	MATLAB
<code>upfirdn</code>	Signal Processing Toolbox
<code>uplus</code>	MATLAB
<code>uplus</code>	Fixed-Point Designer
<code>upper</code>	MATLAB
<code>upperbound</code>	Fixed-Point Designer
<code>upsample</code>	Signal Processing Toolbox
<code>vander</code>	MATLAB
<code>var</code>	MATLAB
<code>vertcat</code>	Fixed-Point Designer
<code>wilkinson</code>	MATLAB
<code>xcorr</code>	Signal Processing Toolbox
<code>xor</code>	MATLAB
<code>yulewalk</code>	Signal Processing Toolbox
<code>zeros</code>	MATLAB
<code>zp2tf</code>	MATLAB

Supported Functions — Categorical List

Aerospace Toolbox Functions

Function	Description
<code>quatconj</code>	Calculate conjugate of quaternion
<code>quatdivide</code>	Divide quaternion by another quaternion
<code>quatinv</code>	Calculate inverse of quaternion
<code>quatmod</code>	Calculate modulus of quaternion
<code>quatmultiply</code>	Calculate product of two quaternions
<code>quatnorm</code>	Calculate norm of quaternion
<code>quatnormalize</code>	Normalize quaternion

Arithmetic Operator Functions

Function	Description
<code>ctranspose</code>	Complex conjugate transpose (')
<code>idivide</code>	Integer division with rounding option
<code>isa</code>	Determine if input is object of given class
<code>ldivide</code>	Left array divide
<code>minus</code>	Minus (-)
<code>mldivide</code>	Left matrix divide (\)
<code>mpower</code>	Equivalent of array power operator (.^)
<code>mrdivide</code>	Right matrix divide
<code>mtimes</code>	Matrix multiply (*)
<code>plus</code>	Plus (+)
<code>power</code>	Array power
<code>rdivide</code>	Right array divide
<code>times</code>	Array multiply
<code>transpose</code>	Matrix transpose (')
<code>uminus</code>	Unary minus (-)
<code>uplus</code>	Unary plus (+)

Bit-Wise Operation Functions

Function	Description
<code>flintmax</code>	Largest consecutive integer in floating-point format
<code>swapbytes</code>	Swap byte ordering

Casting Functions

Data Type	Description
<code>cast</code>	Cast variable to different data type
<code>char</code>	Create character array (string)
<code>class</code>	Query class of object argument
<code>double</code>	Convert to double-precision floating point
<code>int8, int16, int32</code>	Convert to signed integer data type
<code>logical</code>	Convert to Boolean <code>true</code> or <code>false</code> data type
<code>single</code>	Convert to single-precision floating point
<code>typecast</code>	Convert data types without changing underlying data
<code>uint8, uint16, uint32</code>	Convert to unsigned integer data type

Communications System Toolbox Functions

Function	Remarks/Limitations
<code>bi2de</code>	—
<code>de2bi</code>	—
<code>istrellis</code>	—
<code>poly2trellis</code>	—
<code>rcosfir</code>	—

Complex Number Functions

Function	Description
<code>complex</code>	Construct complex data from real and imaginary components
<code>conj</code>	Return the conjugate of a complex number
<code>imag</code>	Return the imaginary part of a complex number
<code>isnumeric</code>	Return <code>true</code> for numeric arrays
<code>isreal</code>	Return <code>false</code> (0) for a complex number
<code>isscalar</code>	Return <code>true</code> if array is a scalar
<code>real</code>	Return the real part of a complex number
<code>unwrap</code>	Correct phase angles to produce smoother phase plots

Computer Vision System Toolbox Functions

Function	Description
<code>binaryFeatures</code>	Object for storing binary feature vectors
<code>epipolarLine</code>	Compute epipolar lines for stereo images
<code>estimateFundamentalMatrix</code>	Estimate fundamental matrix from corresponding points in stereo image
<code>estimateUncalibratedRectification</code>	Uncalibrated stereo rectification
<code>extractFeatures</code>	Extract interest point descriptors
<code>insertMarker</code>	Insert markers in image or video
<code>insertShape</code>	Insert shapes in image or video
<code>integralImage</code>	Compute integral image
<code>isEpipoleInImage</code>	Determine whether image contains epipole
<code>vision.KalmanFilter</code>	Kalman filter for object tracking
<code>lineToBorderPoints</code>	Intersection points of lines in image and image border
<code>matchFeatures</code>	Find matching image features

Data and File Management Functions

Function	Description
<code>computer</code>	Information about computer on which MATLAB® software is running
<code>fclose</code>	Close one or all open files
<code>fopen</code>	Open file, or obtain information about open files
<code>fprintf</code>	Write data to text file
<code>load</code>	Load data from MAT-file into workspace

Data Type Functions

Function	Description
<code>deal</code>	Distribute inputs to outputs
<code>iscell</code>	Determine whether input is cell array
<code>nargchk</code>	Validate number of input arguments Note: <code>nargchk</code> will be removed in a future release.
<code>nargoutchk</code>	Validate number of output arguments
<code>str2func</code>	Construct function handle from function name string
<code>structfun</code>	Apply function to each field of scalar structure

Derivative and Integral Functions

Function	Description
<code>cumtrapz</code>	Cumulative trapezoidal numerical integration
<code>del2</code>	Discrete Laplacian
<code>diff</code>	Differences and approximate derivatives
<code>gradient</code>	Numerical gradient
<code>trapz</code>	Trapezoidal numerical integration
<code>cumtrapz</code>	Cumulative trapezoidal numerical integration

Discrete Math Functions

Function	Description
<code>factor</code>	Return a row vector containing the prime factors of n
<code>gcd</code>	Return an array containing the greatest common divisors of the corresponding elements of integer arrays
<code>isprime</code>	Array elements that are prime numbers
<code>lcm</code>	Least common multiple of corresponding elements in arrays
<code>nchoosek</code>	Binomial coefficient or all combinations
<code>primes</code>	Generate list of prime numbers

Error Handling Functions

Function	Description
<code>assert</code>	Generate error when condition is violated
<code>error</code>	Display message and abort function

Exponential Functions

Function	Description
<code>exp</code>	Exponential
<code>expm</code>	Matrix exponential
<code>expm1</code>	Compute $\exp(x) - 1$ accurately for small values of x
<code>factorial</code>	Factorial function
<code>log</code>	Natural logarithm
<code>log2</code>	Base 2 logarithm and dissect floating-point numbers into exponent and mantissa

Function	Description
<code>log10</code>	Common (base 10) logarithm
<code>log1p</code>	Compute $\log(1+x)$ accurately for small values of x
<code>nextpow2</code>	Next higher power of 2
<code>nthroot</code>	Real n th root of real numbers
<code>reallog</code>	Natural logarithm for nonnegative real arrays
<code>realpow</code>	Array power for real-only output
<code>realsqrt</code>	Square root for nonnegative real arrays
<code>sqrt</code>	Square root

Filtering and Convolution Functions

Function	Description
<code>conv</code>	Convolution and polynomial multiplication
<code>conv2</code>	2-D convolution
<code>convn</code>	N-D convolution
<code>deconv</code>	Deconvolution and polynomial division
<code>detrend</code>	Remove linear trends
<code>filter</code>	1-D digital filter
<code>filter2</code>	2-D digital filter

Fixed-Point Designer Functions

Function
<code>abs</code>
<code>accumneg</code>
<code>accumpos</code>
<code>add</code>
<code>all</code>
<code>any</code>
<code>atan2</code>
<code>bitand</code>
<code>bitandreduce</code>
<code>bitcmp</code>
<code>bitconcat</code>
<code>bitget</code>
<code>bitor</code>
<code>bitorreduce</code>
<code>bitreplicate</code>

Function
<code>bitrol</code>
<code>bitror</code>
<code>bitset</code>
<code>bitshift</code>
<code>bitsliceget</code>
<code>bitsll</code>
<code>bitsra</code>
<code>bitsrl</code>
<code>bitxor</code>
<code>bitxorreduce</code>
<code>ceil</code>
<code>complex</code>
<code>conj</code>
<code>conv</code>
<code>convergent</code>
<code>cordicabs</code>
<code>cordicangle</code>
<code>cordicatan2</code>
<code>cordiccart2pol</code>
<code>cordicexp</code>
<code>cordiccos</code>
<code>cordicpol2cart</code>
<code>cordicrotate</code>
<code>cordicsin</code>
<code>cordicsincos</code>
<code>cos</code>
<code>ctranspose</code>
<code>diag</code>
<code>divide</code>
<code>double</code>
<code>end</code>
<code>eps</code>
<code>eq</code>
<code>fi</code>
<code>filter</code>
<code>fimath</code>
<code>fix</code>
<code>fixed.Quantizer</code>
<code>floor</code>
<code>ge</code>
<code>get</code>

Function
<code>getlsb</code>
<code>getmsb</code>
<code>gt</code>
<code>hdlram</code>
<code>horzcat</code>
<code>imag</code>
<code>int8, int16, int32</code>
<code>iscolumn</code>
<code>isempty</code>
<code>isequal</code>
<code>isfi</code>
<code>isfimath</code>
<code>isfimathlocal</code>
<code>isfinite</code>
<code>isinf</code>
<code>isnan</code>
<code>isnumeric</code>
<code>isnumerictype</code>
<code>isreal</code>
<code>isrow</code>
<code>isscalar</code>
<code>assigned</code>
<code>isvector</code>
<code>le</code>
<code>length</code>
<code>logical</code>
<code>lowerbound</code>
<code>lsb</code>
<code>lt</code>
<code>max</code>
<code>mean</code>
<code>median</code>
<code>min</code>
<code>minus</code>
<code>mpower</code>
<code>mpy</code>
<code>mrdivide</code>
<code>mtimes</code>
<code>ndims</code>
<code>ne</code>
<code>nearest</code>

Function
<code>numberofelements</code>
<code>numericity</code>
<code>permute</code>
<code>plus</code>
<code>pow2</code>
<code>power</code>
<code>quantize</code>
<code>range</code>
<code>rdivide</code>
<code>real</code>
<code>realmax</code>
<code>realmin</code>
<code>reinterpretpcast</code>
<code>removefimath</code>
<code>repmat</code>
<code>rescale</code>
<code>reshape</code>
<code>round</code>
<code>setfimath</code>
<code>sfi</code>
<code>sign</code>
<code>sin</code>
<code>single</code>
<code>size</code>
<code>sort</code>
<code>sqrt</code>
<code>storedInteger</code>
<code>storedIntegerToDouble</code>
<code>sub</code>
<code>subsasgn</code>
<code>subsref</code>
<code>sum</code>
<code>times</code>
<code>transpose</code>
<code>tril</code>
<code>triu</code>
<code>ufi</code>
<code>uint8, uint16, uint32</code>
<code>uminus</code>
<code>uplus</code>
<code>upperbound</code>
<code>vertcat</code>

Histogram Functions

Function	Description
<code>hist</code>	Non-graphical histogram
<code>histc</code>	Histogram count

Image Processing Toolbox Functions

Function
<code>bwlookup</code>
<code>bwmorph</code>
<code>conndef</code>
<code>fspecial</code>
<code>imcomplement</code>
<code>imfill</code>
<code>imhmax</code>
<code>imhmin</code>
<code>imreconstruct</code>
<code>imregionalmax</code>
<code>imregionalmin</code>
<code>iptcheckconn</code>
<code>label2rgb</code>
<code>padarray</code>

Input and Output Functions

Function	Description
<code>nargin</code>	Return the number of input arguments a user has supplied
<code>nargout</code>	Return the number of output return values a user has requested

Interpolation and Computational Geometry Functions

Function	Description
<code>cart2pol</code>	Transform Cartesian coordinates to polar or cylindrical
<code>cart2sph</code>	Transform Cartesian coordinates to spherical
<code>interp1</code>	1-D data interpolation (table lookup)

Function	Description
<code>interp2</code>	2-D data interpolation (table lookup)
<code>meshgrid</code>	Generate X and Y arrays for 3-D plots
<code>pol2cart</code>	Transform polar or cylindrical coordinates to Cartesian
<code>sph2cart</code>	Transform spherical coordinates to Cartesian

Linear Algebra

Function	Description
<code>linsolve</code>	Solve linear system of equations
<code>null</code>	Null space
<code>orth</code>	Range space of matrix
<code>rsf2csf</code>	Convert real Schur form to complex Schur form
<code>schur</code>	Schur decomposition
<code>sqrtm</code>	Matrix square root

Logical Operator Functions

Function	Description
<code>and</code>	Logical AND (&&)
<code>bitand</code>	Bitwise AND
<code>bitcmp</code>	Bitwise complement
<code>bitget</code>	Bit at specified position
<code>bitor</code>	Bitwise OR
<code>bitset</code>	Set bit at specified position
<code>bitshift</code>	Shift bits specified number of places
<code>bitxor</code>	Bitwise XOR
<code>not</code>	Logical NOT (~)
<code>or</code>	Logical OR ()
<code>xor</code>	Logical exclusive-OR

MATLAB Compiler Functions

Function	Description
<code>isdeployed</code>	Determine whether code is running in deployed or MATLAB mode
<code>ismcc</code>	Test if code is running during compilation process (using mcc)

MATLAB Desktop Environment Functions

Function	Description
<code>ismac</code>	Determine if version is for Mac OS X platform
<code>ispc</code>	Determine if version is for Windows® (PC) platform
<code>isunix</code>	Determine if version is for UNIX® platform

Matrix and Array Functions

Function	Description
<code>abs</code>	Return absolute value and complex magnitude of an array
<code>all</code>	Test if all elements are nonzero
<code>angle</code>	Phase angle
<code>any</code>	Test for any nonzero elements
<code>blkdiag</code>	Construct block diagonal matrix from input arguments
<code>bsxfun</code>	Applies element-by-element binary operation to two arrays with singleton expansion enabled
<code>cat</code>	Concatenate arrays along specified dimension
<code>circshift</code>	Shift array circularly
<code>compan</code>	Companion matrix
<code>cond</code>	Condition number of a matrix with respect to inversion
<code>cov</code>	Covariance matrix
<code>cross</code>	Vector cross product
<code>cumprod</code>	Cumulative product of array elements
<code>cumsum</code>	Cumulative sum of array elements
<code>det</code>	Matrix determinant
<code>diag</code>	Return a matrix formed around the specified diagonal vector and the specified diagonal (0, 1, 2,...) it occupies
<code>diff</code>	Differences and approximate derivatives
<code>dot</code>	Vector dot product
<code>eig</code>	Eigenvalues and eigenvectors
<code>eye</code>	Identity matrix
<code>false</code>	Return an array of 0s for the specified dimensions
<code>find</code>	Find indices and values of nonzero elements
<code>flipdim</code>	Flip array along specified dimension
<code>fliplr</code>	Flip matrix left to right

Function	Description
<code>flipud</code>	Flip matrix up to down
<code>full</code>	Convert sparse matrix to full matrix
<code>hadamard</code>	Hadamard matrix
<code>hankel</code>	Hankel matrix
<code>hilb</code>	Hilbert matrix
<code>ind2sub</code>	Subscripts from linear index
<code>inv</code>	Inverse of a square matrix
<code>invhilb</code>	Inverse of Hilbert matrix
<code>ipermute</code>	Inverse permute dimensions of array
<code>iscolumn</code>	True if input is a column vector
<code>isempty</code>	Determine whether array is empty
<code>isequal</code>	Test arrays for equality
<code>isequaln</code>	Test arrays for equality, treating NaNs as equal
<code>isfinite</code>	Detect finite elements of an array
<code>isfloat</code>	Determine if input is floating-point array
<code>isinf</code>	Detect infinite elements of an array
<code>isinteger</code>	Determine if input is integer array
<code>islogical</code>	Determine if input is logical array
<code>ismatrix</code>	True if input is a matrix
<code>isnan</code>	Detect NaN elements of an array
<code>isrow</code>	True if input is a row vector
<code>issparse</code>	Determine whether input is sparse
<code>isvector</code>	Determine whether input is vector
<code>kron</code>	Kronecker tensor product
<code>length</code>	Return the length of a matrix
<code>linspace</code>	Generate linearly spaced vectors
<code>logspace</code>	Generate logarithmically spaced vectors
<code>lu</code>	Matrix factorization
<code>magic</code>	Magic square
<code>max</code>	Maximum elements of a matrix
<code>min</code>	Minimum elements of a matrix
<code>ndgrid</code>	Generate arrays for N-D functions and interpolation
<code>ndims</code>	Number of dimensions
<code>nnz</code>	Number of nonzero matrix elements
<code>nonzeros</code>	Nonzero matrix elements
<code>norm</code>	Vector and matrix norms
<code>normest</code>	2-norm estimate
<code>numel</code>	Number of elements in array or subscripted array
<code>ones</code>	Create a matrix of all 1s

Function	Description
<code>pascal</code>	Pascal matrix
<code>permute</code>	Rearrange dimensions of array
<code>pinv</code>	Pseudoinverse of a matrix
<code>planerot</code>	Givens plane rotation
<code>prod</code>	Product of array element
<code>qr</code>	Orthogonal-triangular decomposition
<code>rand</code>	Uniformly distributed pseudorandom numbers
<code>randi</code>	Uniformly distributed pseudorandom integers
<code>randn</code>	Normally distributed random numbers
<code>randperm</code>	Random permutation
<code>rank</code>	Rank of matrix
<code>rcond</code>	Matrix reciprocal condition number estimate
<code>repmat</code>	Replicate and tile an array
<code>reshape</code>	Reshape one array into the dimensions of another
<code>rng</code>	Control random number generation
<code>rosser</code>	Classic symmetric eigenvalue test problem
<code>rot90</code>	Rotate matrix 90 degrees
<code>shiftdim</code>	Shift dimensions
<code>sign</code>	Signum function
<code>size</code>	Return the size of a matrix
<code>sort</code>	Sort elements in ascending or descending order
<code>sortrows</code>	Sort rows in ascending order
<code>squeeze</code>	Remove singleton dimensions
<code>sub2ind</code>	Single index from subscripts
<code>subspace</code>	Angle between two subspaces
<code>sum</code>	Sum of matrix elements
<code>toeplitz</code>	Toeplitz matrix
<code>trace</code>	Sum of diagonal elements
<code>tril</code>	Extract lower triangular part
<code>triu</code>	Extract upper triangular part
<code>true</code>	Return an array of logical (Boolean) 1s for the specified dimensions
<code>vander</code>	Vandermonde matrix
<code>wilkinson</code>	Wilkinson's eigenvalue test matrix

Function	Description
<code>zeros</code>	Create a matrix of all zeros

Nonlinear Numerical Methods

Function	Description
<code>fzero</code>	Find root of continuous function of one variable
<code>quad2d</code>	Numerically evaluate double integral over planar region
<code>quadgk</code>	Numerically evaluate integral, adaptive Gauss-Kronrod quadrature

Polynomial Functions

Function	Description
<code>poly</code>	Polynomial with specified roots
<code>polyfit</code>	Polynomial curve fitting
<code>polyval</code>	Polynomial evaluation
<code>roots</code>	Polynomial roots

Relational Operator Functions

Function	Description
<code>eq</code>	Equal (<code>==</code>)
<code>ge</code>	Greater than or equal to (<code>>=</code>)
<code>gt</code>	Greater than (<code>></code>)
<code>le</code>	Less than or equal to (<code><=</code>)
<code>lt</code>	Less than (<code><</code>)
<code>ne</code>	Not equal (<code>~=</code>)

Rounding and Remainder Functions

Function	Description
<code>ceil</code>	Round toward plus infinity
<code>ceil</code>	Round toward positive infinity
<code>convergent</code>	Round toward nearest integer with ties rounding to nearest even integer

Function	Description
<code>fix</code>	Round toward zero
<code>fix</code>	Round toward zero
<code>floor</code>	Round toward minus infinity
<code>floor</code>	Round toward negative infinity
<code>mod</code>	Modulus (signed remainder after division)
<code>nearest</code>	Round toward nearest integer with ties rounding toward positive infinity
<code>rem</code>	Remainder after division
<code>round</code>	Round toward nearest integer
<code>round</code>	Round <code>fi</code> object toward nearest integer or round input data using <code>quantizer</code> object

Set Functions

Function	Description
<code>intersect</code>	Set intersection of two arrays
<code>ismember</code>	Array elements that are members of set array
<code>issorted</code>	Determine whether set elements are in sorted order
<code>setdiff</code>	Set difference of two arrays
<code>setxor</code>	Set exclusive OR of two arrays
<code>union</code>	Set union of two arrays
<code>unique</code>	Unique values in array

Signal Processing Functions in MATLAB

Function	Description
<code>chol</code>	Cholesky factorization
<code>conv</code>	Convolution and polynomial multiplication
<code>fft</code>	Discrete Fourier transform
<code>fft2</code>	2-D discrete Fourier transform
<code>fftn</code>	N-D discrete Fourier transform
<code>fftshift</code>	Shift zero-frequency component to center of spectrum
<code>filter</code>	Filter a data sequence using a digital filter that works for both real and complex inputs
<code>freqspace</code>	Frequency spacing for frequency response
<code>ifft</code>	Inverse discrete Fourier transform
<code>ifft2</code>	2-D inverse discrete Fourier transform

Function	Description
<code>ifftn</code>	N-D inverse discrete Fourier transform
<code>ifftshift</code>	Inverse discrete Fourier transform shift
<code>svd</code>	Singular value decomposition
<code>zp2tf</code>	Convert zero-pole-gain filter parameters to transfer function form

Signal Processing Toolbox Functions

Function
barthannwin
bartlett
besselap
bitrevorder
blackman
blackmanharris
bohmanwin
buttap
butter
buttord
cfirpm
cheblap
cheb2ap
cheblord
cheb2ord
chebwin
cheby1
cheby2
dct
downsample
dpss
ellip
ellipap
ellipord
filtfilt
fir1
fir2
fircls
fircls1
firls
firpm
firpmord
firrcos
flattopwin
freqz
gaussfir
gausswin
hamming
hann
idct

Function
<code>intfilt</code>
<code>kaiser</code>
<code>kaiserord</code>
<code>levinson</code>
<code>maxflat</code>
<code>nuttallwin</code>
<code>parzenwin</code>
<code>rectwin</code>
<code>resample</code>
<code>sgolay</code>
<code>sosfilt</code>
<code>taylorwin</code>
<code>triang</code>
<code>tukeywin</code>
<code>upfirdn</code>
<code>upsample</code>
<code>xcorr</code>
<code>yulewalk</code>

Special Values

Symbol	Description
<code>eps</code>	Floating-point relative accuracy
<code>inf</code>	IEEE® arithmetic representation for positive infinity
<code>intmax</code>	Largest possible value of specified integer type
<code>intmin</code>	Smallest possible value of specified integer type
<code>NaN</code> or <code>nan</code>	Not a number
<code>pi</code>	Ratio of the circumference to the diameter for a circle
<code>realmax</code>	Largest positive floating-point number
<code>realmin</code>	Smallest positive floating-point number

Specialized Math

Symbol	Description
<code>beta</code>	Beta function
<code>betainc</code>	Incomplete beta function
<code>betaln</code>	Logarithm of beta function
<code>ellipke</code>	Complete elliptic integrals of first and second kind
<code>erf</code>	Error function
<code>erfc</code>	Complementary error function

Symbol	Description
<code>erfcinv</code>	Inverse of complementary error function
<code>erfcx</code>	Scaled complementary error function
<code>erfinv</code>	Inverse error function
<code>expint</code>	Exponential integral
<code>gamma</code>	Gamma function
<code>gammainc</code>	Incomplete gamma function
<code>gammainln</code>	Logarithm of the gamma function

Statistical Functions

Function	Description
<code>corrcoef</code>	Correlation coefficients
<code>mean</code>	Average or mean value of array
<code>median</code>	Median value of array
<code>mode</code>	Most frequent values in array
<code>std</code>	Standard deviation
<code>var</code>	Variance

String Functions

Function	Description
<code>bin2dec</code>	Convert binary number string to decimal number
<code>bitmax</code>	Maximum double-precision floating-point integer
<code>blanks</code>	Create string of blank characters
<code>char</code>	Create character array (string)
<code>deblank</code>	Strip trailing blanks from end of string
<code>dec2bin</code>	Convert decimal to binary number in string
<code>dec2hex</code>	Convert decimal to hexadecimal number in string
<code>hex2dec</code>	Convert hexadecimal number string to decimal number
<code>hex2num</code>	Convert hexadecimal number string to double-precision number
<code>ischar</code>	True for character array (string)
<code>isletter</code>	Array elements that are alphabetic letters
<code>isspace</code>	Array elements that are space characters
<code>isstrprop</code>	Determine whether string is of specified category
<code>lower</code>	Convert string to lowercase

Function	Description
<code>num2hex</code>	Convert singles and doubles to IEEE hexadecimal strings
<code>strcmp</code>	Compare strings (case sensitive)
<code>strcmpi</code>	Compare strings (case insensitive)
<code>strfind</code>	Find one string within another
<code>strjust</code>	Justify character array
<code>strncmp</code>	Compare first n characters of strings (case sensitive)
<code>strncmpi</code>	Compare first n characters of strings (case insensitive)
<code>strrep</code>	Find and replace substring
<code>strtok</code>	Selected parts of string
<code>strtrim</code>	Remove leading and trailing white space from string
<code>upper</code>	Convert string to uppercase

Structure Functions

Function	Description
<code>isfield</code>	Determine whether input is structure array field
<code>struct</code>	Create structure
<code>isstruct</code>	Determine whether input is a structure

Trigonometric Functions

Function	Description
<code>acos</code>	Inverse cosine
<code>acosd</code>	Inverse cosine; result in degrees
<code>acosh</code>	Inverse hyperbolic cosine
<code>acot</code>	Inverse cotangent; result in radians
<code>acotd</code>	Inverse cotangent; result in degrees
<code>acoth</code>	Inverse hyperbolic cotangent
<code>acsc</code>	Inverse cosecant; result in radians
<code>acscd</code>	Inverse cosecant; result in degrees
<code>acsch</code>	Inverse cosecant and inverse hyperbolic cosecant
<code>asec</code>	Inverse secant; result in radians
<code>asecd</code>	Inverse secant; result in degrees
<code>asech</code>	Inverse hyperbolic secant
<code>asin</code>	Inverse sine
<code>asinh</code>	Inverse hyperbolic sine

Function	Description
<code>atan</code>	Inverse tangent
<code>atan2</code>	Four quadrant inverse tangent
<code>atan2d</code>	Four-quadrant inverse tangent, result in degrees
<code>atand</code>	Inverse tangent; result in degrees
<code>atanh</code>	Inverse hyperbolic tangent
<code>cos</code>	Cosine
<code>cosd</code>	Cosine; result in degrees
<code>cosh</code>	Hyperbolic cosine
<code>cot</code>	Cotangent; result in radians
<code>cotd</code>	Cotangent; result in degrees
<code>coth</code>	Hyperbolic cotangent
<code>csc</code>	Cosecant; result in radians
<code>cscd</code>	Cosecant; result in degrees
<code>csch</code>	Hyperbolic cosecant
<code>hypot</code>	Square root of sum of squares
<code>sec</code>	Secant; result in radians
<code>secd</code>	Secant; result in degrees
<code>sech</code>	Hyperbolic secant
<code>sin</code>	Sine
<code>sind</code>	Sine; result in degrees
<code>sinh</code>	Hyperbolic sine
<code>tan</code>	Tangent
<code>tand</code>	Tangent; result in degrees
<code>tanh</code>	Hyperbolic tangent

Supported System Objects for Code Generation

[Computer Vision System Toolbox System Objects](#)

[Communications System Toolbox System Objects](#)

[DSP System Toolbox System Objects](#)

Computer Vision System Toolbox System Objects

Object	Description
Analysis & Enhancement	
<code>vision.BoundaryTracer</code>	Trace object boundaries in binary images.
<code>vision.ContrastAdjuster</code>	Adjust image contrast by linear scaling.
<code>vision.Deinterlacer</code>	Remove motion artifacts by deinterlacing input video signal.
<code>vision.EdgeDetector</code>	Find edges of objects in images.
<code>vision.ForegroundDetector</code>	Detect foreground using Gaussian Mixture Models. This object supports tunable properties in code generation.
<code>vision.HistogramEqualizer</code>	Enhance contrast of images using histogram equalization.
<code>vision.TemplateMatcher</code>	Perform template matching by shifting template over image.
Conversions	
<code>vision.Autothresher</code>	Convert intensity image to binary image.
<code>vision.ChromaResampler</code>	Downsample or upsample chrominance components of images.
<code>vision.ColorSpaceConverter</code>	Convert color information between color spaces.
<code>vision.DemosaicInterpolator</code>	Demosaic Bayer's format images.
<code>vision.GammaCorrector</code>	Apply or remove gamma correction from images or video streams.
<code>vision.ImageComplementer</code>	Compute complement of pixel values in binary, intensity, or RGB images.
<code>vision.ImageDataTypeConverter</code>	Convert and scale input image to specified output data type.
Feature Detection, Extraction, and Matching	
<code>vision.CornerDetector</code>	Corner metric matrix and corner detector. This object supports tunable properties in code generation.

Object	Description
Filtering	
<code>vision.Convolver</code>	Compute 2-D discrete convolution of two input matrices.
<code>vision.ImageFilter</code>	Perform 2-D FIR filtering of input matrix.
<code>vision.MedianFilter</code>	2D median filtering.
Geometric Transformations	
<code>vision.GeometricRotator</code>	Rotate image by specified angle.
<code>vision.GeometricScaler</code>	Enlarge or shrink image size.
<code>vision.GeometricShearer</code>	Shift rows or columns of image by linearly varying offset.
<code>vision.GeometricTransformer</code>	Apply projective or affine transformation to an image.
<code>vision.GeometricTransformEstimator</code>	Estimate geometric transformation from matching point pairs.
<code>vision.GeometricTranslator</code>	Translate image in two-dimensional plane using displacement vector.
Morphological Operations	
<code>vision.ConnectedComponentLabeler</code>	Label and count the connected regions in a binary image.
<code>vision.MorphologicalClose</code>	Perform morphological closing on image.
<code>vision.MorphologicalDilate</code>	Perform morphological dilation on an image.
<code>vision.MorphologicalErode</code>	Perform morphological erosion on an image.
<code>vision.MorphologicalOpen</code>	Perform morphological opening on an image.
Object Detection	
<code>vision.HistogramBasedTracker</code>	Track object in video based on histogram. This object supports tunable properties in code generation.
Sinks	
<code>vision.VideoPlayer</code>	Send video data to computer screen. This System object does not generate code. It is automatically declared as an extrinsic variable using the <code>coder.extrinsic</code> function.
<code>vision.DeployableVideoPlayer</code>	Send video data to computer screen.
<code>vision.VideoFileWriter</code>	Write video frames and audio samples to multimedia file.
Sources	
<code>vision.VideoFileReader</code>	Read video frames and audio samples from compressed multimedia file.
Statistics	
<code>vision.Autocorrelator</code>	Compute 2-D autocorrelation of input matrix.
<code>vision.BlobAnalysis</code>	Compute statistics for connected regions in a binary image.

Object	Description
<code>vision.Crosscorrelator</code>	Compute 2-D cross-correlation of two input matrices.
<code>vision.Histogram</code>	Generate histogram of each input matrix. This object has no tunable properties.
<code>vision.LocalMaximaFinder</code>	Find local maxima in matrices.
<code>vision.Maximum</code>	Find maximum values in input or sequence of inputs.
<code>vision.Mean</code>	Find mean value of input or sequence of inputs.
<code>vision.Median</code>	Find median values in an input.
<code>vision.Minimum</code>	Find minimum values in input or sequence of inputs.
<code>vision.PSNR</code>	Compute peak signal-to-noise ratio (PSNR) between images.
<code>vision.StandardDeviation</code>	Find standard deviation of input or sequence of inputs.
<code>vision.Variance</code>	Find variance values in an input or sequence of inputs.
Text & Graphics	
<code>vision.AlphaBlender</code>	Combine images, overlay images, or highlight selected pixels.
<code>vision.MarkerInserter</code>	Draw markers on output image.
<code>vision.ShapeInserter</code>	Draw rectangles, lines, polygons, or circles on images.
<code>vision.TextInserter</code>	Draw text on image or video stream.
Transforms	
<code>vision.DCT</code>	Compute 2-D discrete cosine transform.
<code>vision.FFT</code>	Two-dimensional discrete Fourier transform.
<code>vision.HoughLines</code>	Find Cartesian coordinates of lines that are described by rho and theta pairs.
<code>vision.HoughTransform</code>	Find lines in images via Hough transform.
<code>vision.IDCT</code>	Compute 2-D inverse discrete cosine transform.
<code>vision.IFFT</code>	Two-dimensional inverse discrete Fourier transform.
<code>vision.Pyramid</code>	Perform Gaussian pyramid decomposition.
Utilities	
<code>vision.ImagePadder</code>	Pad or crop input image along its rows, columns, or both.

Communications System Toolbox System Objects

Object	Description
Source Coding	
<code>comm.DifferentialDecoder</code>	Decode binary signal using differential decoding
<code>comm.DifferentialEncoder</code>	Encode binary signal using differential coding
Channels	
<code>comm.AWGNChannel</code>	Add white Gaussian noise to input signal
<code>comm.LTEMIMOChannel</code>	Filter input signal through LTE MIMO multipath fading channel
<code>comm.MIMOChannel</code>	Filter input signal through MIMO multipath fading channel
<code>comm.BinarySymmetricChannel</code>	Introduce binary errors
Equalizers	
<code>comm.MLSEEqualizer</code>	Equalize using maximum likelihood sequence estimation
Filters	
<code>comm.IntegrateAndDumpFilter</code>	Integrate discrete-time signal with periodic resets
Measurements	
<code>comm.ACPR</code>	Measure adjacent channel power ratio
<code>comm.CCDF</code>	Measure complementary cumulative distribution function
<code>comm.EVM</code>	Measure error vector magnitude
<code>comm.MER</code>	Measure modulation error ratio
Sources	
<code>comm.BarkerCode</code>	Generate Barker code
<code>comm.HadamardCode</code>	Generate Hadamard code
<code>comm.KasamiSequence</code>	Generate a Kasami sequence
<code>comm.OVSFCode</code>	Generate OVSF code
<code>comm.PNSequence</code>	Generate a pseudo-noise (PN) sequence
<code>comm.WalshCode</code>	Generate Walsh code from orthogonal set of codes
Error Detection and Correction – Block Coding	
<code>comm.BCHDecoder</code>	Decode data using BCH decoder
<code>comm.BCHEncoder</code>	Encode data using BCH encoder
<code>comm.LDPCDecoder</code>	Decode binary low-density parity-check code
<code>comm.LDPCEncoder</code>	Encode binary low-density parity-check code
<code>comm.RSDecoder</code>	Decode data using Reed-Solomon decoder
<code>comm.RSEncoder</code>	Encode data using Reed-Solomon encoder
Error Detection and Correction – Convolutional Coding	
<code>comm.ConvolutionalEncoder</code>	Convolutionally encode binary data
<code>comm.ViterbiDecoder</code>	Decode convolutionally encoded data using Viterbi algorithm

Object	Description
Error Detection and Correction – Cyclic Redundancy Check Coding	
<code>comm.CRCDetector</code>	Detect errors in input data using cyclic redundancy code
<code>comm.CRCGenerator</code>	Generate cyclic redundancy code bits and append to input data
<code>comm.HDLCRCGenerator</code>	Generate CRC code bits and append to input data, optimized for HDL code generation
<code>comm.TurboDecoder</code>	Decode input signal using parallel concatenated decoding scheme
<code>comm.TurboEncoder</code>	Encode input signal using parallel concatenated encoding scheme
Interleavers – Block	
<code>comm.AlgebraicDeinterleaver</code>	Deinterleave input symbols using algebraically derived permutation vector
<code>comm.AlgebraicInterleaver</code>	Permute input symbols using an algebraically derived permutation vector
<code>comm.BlockDeinterleaver</code>	Deinterleave input symbols using permutation vector
<code>comm.BlockInterleaver</code>	Permute input symbols using a permutation vector
<code>comm.MatrixDeinterleaver</code>	Deinterleave input symbols using permutation matrix
<code>comm.MatrixInterleaver</code>	Permute input symbols using permutation matrix
<code>comm.MatrixHelicalScanDeinterleaver</code>	Deinterleave input symbols by filling a matrix along diagonals
<code>comm.MatrixHelicalScanInterleaver</code>	Permute input symbols by selecting matrix elements along diagonals
Interleavers – Convolutional	
<code>comm.ConvolutionalDeinterleaver</code>	Restore ordering of symbols using shift registers
<code>comm.ConvolutionalInterleaver</code>	Permute input symbols using shift registers
<code>comm.HelicalDeinterleaver</code>	Restore ordering of symbols using a helical array
<code>comm.HelicalInterleaver</code>	Permute input symbols using a helical array
<code>comm.MultiplexedDeinterleaver</code>	Restore ordering of symbols using a set of shift registers with specified delays
<code>comm.MultiplexedInterleaver</code>	Permute input symbols using a set of shift registers with specified delays
MIMO	
<code>comm.OSTBCCCombiner</code>	Combine inputs using orthogonal space-time block code
<code>comm.OSTBCEncoder</code>	Encode input message using orthogonal space-time block code

Object	Description
Digital Baseband Modulation – Phase	
<code>comm.BPSKDemodulator</code>	Demodulate using binary PSK method
<code>comm.BPSKModulator</code>	Modulate using binary PSK method
<code>comm.DBPSKModulator</code>	Modulate using differential binary PSK method
<code>comm.DPSKDemodulator</code>	Demodulate using M-ary DPSK method
<code>comm.DPSKModulator</code>	Modulate using M-ary DPSK method
<code>comm.DQPSKDemodulator</code>	Demodulate using differential quadrature PSK method
<code>comm.DQPSKModulator</code>	Modulate using differential quadrature PSK method
<code>comm.DBPSKDemodulator</code>	Demodulate using M-ary DPSK method
<code>comm.QPSKDemodulator</code>	Demodulate using quadrature PSK method
<code>comm.QPSKModulator</code>	Modulate using quadrature PSK method
<code>comm.PSKDemodulator</code>	Demodulate using M-ary PSK method
<code>comm.PSKModulator</code>	Modulate using M-ary PSK method
<code>comm.OQPSKDemodulator</code>	Demodulate offset quadrature PSK modulated data
<code>comm.OQPSKModulator</code>	Modulate using offset quadrature PSK method
Digital Baseband Modulation – Amplitude	
<code>comm.GeneralQAMDemodulator</code>	Demodulate using arbitrary QAM constellation. This object has no tunable properties in code generation.
<code>comm.GeneralQAMModulator</code>	Modulate using arbitrary QAM constellation
<code>comm.PAMDemodulator</code>	Demodulate using M-ary PAM method
<code>comm.PAMModulator</code>	Modulate using M-ary PAM method
<code>comm.RectangularQAMDemodulator</code>	Demodulate using rectangular QAM method
<code>comm.RectangularQAMModulator</code>	Modulate using rectangular QAM method
Digital Baseband Modulation – Frequency	
<code>comm.FSKDemodulator</code>	Demodulate using M-ary FSK method
<code>comm.FSKModulator</code>	Modulate using M-ary FSK method
Digital Baseband Modulation – Trellis Coded	
<code>comm.GeneralQAMTCMDemodulator</code>	Demodulate convolutionally encoded data mapped to arbitrary QAM constellation
<code>comm.GeneralQAMTCMModulator</code>	Convolutionally encode binary data and map using arbitrary QAM constellation
<code>comm.PSKTCMDemodulator</code>	Demodulate convolutionally encoded data mapped to M-ary PSK constellation
<code>comm.PSKTCMModulator</code>	Convolutionally encode binary data and map using M-ary PSK constellation
<code>comm.RectangularQAMTCMDemodulator</code>	Demodulate convolutionally encoded data mapped to rectangular QAM constellation
<code>comm.RectangularQAMTCMModulator</code>	Convolutionally encode binary data and map using rectangular QAM constellation

Object	Description
Digital Baseband Modulation – Continuous Phase	
<code>comm.CPFSKDemodulator</code>	Demodulate using CPFSK method and Viterbi algorithm
<code>comm.CPFSKModulator</code>	Modulate using CPFSK method
<code>comm.CPMDemodulator</code>	Demodulate using CPM method and Viterbi algorithm
<code>comm.CPMModulator</code>	Modulate using CPM method
<code>comm.GMSKDemodulator</code>	Demodulate using GMSK method and the Viterbi algorithm
<code>comm.GMSKModulator</code>	Modulate using GMSK method
<code>comm.MSKDemodulator</code>	Demodulate using MSK method and the Viterbi algorithm
<code>comm.MSKModulator</code>	Modulate using MSK method
RF Impairments	
<code>comm.MemorylessNonlinearity</code>	Apply memoryless nonlinearity to input signal
<code>comm.PhaseFrequencyOffset</code>	Apply phase and frequency offsets to input signal. The <code>PhaseOffset</code> property of this object is not tunable in code generation.
<code>comm.PhaseNoise</code>	Apply phase noise to complex baseband signal
<code>comm.ThermalNoise</code>	Add receiver thermal noise
Synchronization – Timing Phase	
<code>comm.EarlyLateGateTimingSynchronizer</code>	Recover symbol timing phase using early-late gate method
<code>comm.GardnerTimingSynchronizer</code>	Recover symbol timing phase using Gardner's method
<code>comm.GMSKTimingSynchronizer</code>	Recover symbol timing phase using fourth-order non-linearity method
<code>comm.MSKTimingSynchronizer</code>	Recover symbol timing phase using fourth-order non-linearity method
<code>comm.MuellerMullerTimingSynchronizer</code>	Recover symbol timing phase using Mueller-Muller method
Synchronization Utilities	
<code>comm.CPMCarrierPhaseSynchronizer</code>	Recover carrier phase of baseband CPM signal
<code>comm.DiscreteTimeVCO</code>	Generate variable frequency sinusoid
Converters	
<code>comm.BitToInteger</code>	Convert vector of bits to vector of integers
<code>comm.IntegerToBit</code>	Convert vector of integers to vector of bits
Sequence Operators	
<code>comm.Descrambler</code>	Descramble input signal
<code>comm.GoldSequence</code>	Generate Gold sequence
<code>comm.Scrambler</code>	Scramble input signal

DSP System Toolbox System Objects

Object	Description
Estimation	
<code>dsp.BurgAREstimator</code>	Compute estimate of autoregressive model parameters using Burg method
<code>dsp.BurgSpectrumEstimator</code>	Compute parametric spectral estimate using Burg method
<code>dsp.CepstralToLPC</code>	Convert cepstral coefficients to linear prediction coefficients
<code>dsp.LevinsonSolver</code>	Solve linear system of equations using Levinson-Durbin recursion
<code>dsp.LPCToAutocorrelation</code>	Convert linear prediction coefficients to autocorrelation coefficients
<code>dsp.LPCToCepstral</code>	Convert linear prediction coefficients to cepstral coefficients
<code>dsp.LPCToLSF</code>	Convert linear prediction coefficients to line spectral frequencies
<code>dsp.LPCToLSP</code>	Convert linear prediction coefficients to line spectral pairs
<code>dsp.LPCToRC</code>	Convert linear prediction coefficients to reflection coefficients
<code>dsp.LSFToLPC</code>	Convert line spectral frequencies to linear prediction coefficients
<code>dsp.LSPToLPC</code>	Convert line spectral pairs to linear prediction coefficients
<code>dsp.RCToAutocorrelation</code>	Convert reflection coefficients to autocorrelation coefficients
<code>dsp.RCToLPC</code>	Convert reflection coefficients to linear prediction coefficients
Filters	
<code>dsp.AffineProjectionFilter</code>	Adaptive filter using the Affine Projection algorithm
<code>dsp.AllpoleFilter</code>	IIR Filter with no zeros. Only the <code>Denominator</code> property is tunable for code generation.
<code>dsp.BiquadFilter</code>	Model biquadratic IIR (SOS) filters
<code>dsp.CICDecimator</code>	Decimate input using Cascaded Integrator-Comb filter
<code>dsp.CICInterpolator</code>	Interpolate signal using Cascaded Integrator-Comb filter

Object	Description
<code>dsp.DigitalFilter</code>	Filter each channel of input over time using discrete-time filter implementations. The <code>SOSMatrix</code> and <code>ScaleValues</code> properties are not supported for code generation.
<code>dsp.FIRDecimator</code>	Filter and downsample input signals
<code>dsp.FIRFilter</code>	Static or time-varying FIR filter. Only the <code>Numerator</code> property is tunable for code generation.
<code>dsp.FIRInterpolator</code>	Upsample and filter input signals
<code>dsp.FIRRateConverter</code>	Upsample, filter and downsample input signals
<code>dsp.IIRFilter</code>	Infinite Impulse Response (IIR) filter. Only the <code>Numerator</code> and <code>Denominator</code> properties are tunable for code generation.
<code>dsp.LMSFilter</code>	Compute output, error, and weights using LMS adaptive algorithm
<code>dsp.RLSFilter</code>	Adaptive filter using the Recursive Least Squares (RLS) algorithm
Math Operations	
<code>dsp.ArrayVectorAdder</code>	Add vector to array along specified dimension
<code>dsp.ArrayVectorDivider</code>	Divide array by vector along specified dimension
<code>dsp.ArrayVectorMultiplier</code>	Multiply array by vector along specified dimension
<code>dsp.ArrayVectorSubtractor</code>	Subtract vector from array along specified dimension
<code>dsp.CumulativeProduct</code>	Compute cumulative product of channel, column, or row elements
<code>dsp.CumulativeSum</code>	Compute cumulative sum of channel, column, or row elements
<code>dsp.LDLFactor</code>	Factor square Hermitian positive definite matrices into lower, upper, and diagonal components
<code>dsp.LevinsonSolver</code>	Solve linear system of equations using Levinson-Durbin recursion
<code>dsp.LowerTriangularSolver</code>	Solve $LX = B$ for X when L is lower triangular matrix
<code>dsp.LUFactor</code>	Factor square matrix into lower and upper triangular matrices
<code>dsp.Normalizer</code>	Normalize input
<code>dsp.UpperTriangularSolver</code>	Solve $UX = B$ for X when U is upper triangular matrix
Quantizers	

Object	Description
<code>dsp.ScalarQuantizerDecoder</code>	Convert each index value into quantized output value
<code>dsp.ScalarQuantizerEncoder</code>	Perform scalar quantization encoding
<code>dsp.VectorQuantizerDecoder</code>	Find vector quantizer codeword for given index value
<code>dsp.VectorQuantizerEncoder</code>	Perform vector quantization encoding
Scopes	
<code>dsp.SpectrumAnalyzer</code>	Display frequency spectrum of time-domain signals. This System object does not generate code. It is automatically declared as an extrinsic variable using the <code>coder.extrinsic</code> function.
<code>dsp.TimeScope</code>	Display time-domain signals. This System object does not generate code. It is automatically declared as an extrinsic variable using the <code>coder.extrinsicfunction</code> .
Signal Management	
<code>dsp.Counter</code>	Count up or down through specified range of numbers
<code>dsp.DelayLine</code>	Rebuffer sequence of inputs with one-sample shift
Signal Operations	
<code>dsp.Convolver</code>	Compute convolution of two inputs
<code>dsp.Delay</code>	Delay input by specified number of samples or frames
<code>dsp.Interpolator</code>	Interpolate values of real input samples
<code>dsp.NCO</code>	Generate real or complex sinusoidal signals
<code>dsp.PeakFinder</code>	Determine extrema (maxima or minima) in input signal
<code>dsp.PhaseUnwrapper</code>	Unwrap signal phase
<code>dsp.VariableFractionalDelay</code>	Delay input by time-varying fractional number of sample periods
<code>dsp.VariableIntegerDelay</code>	Delay input by time-varying integer number of sample periods
<code>dsp.Window</code>	Generate or apply window function. This object has no tunable properties for code generation.
<code>dsp.ZeroCrossingDetector</code>	Calculate number of zero crossings of a signal
Sinks	
<code>dsp.AudioPlayer</code>	Write audio data to computer's audio device
<code>dsp.AudioFileWriter</code>	Write audio file
<code>dsp.UDPSEnder</code>	Send UDP packets to the network

Object	Description
Sources	
<code>dsp.AudioFileReader</code>	Read audio samples from an audio file
<code>dsp.AudioRecorder</code>	Read audio data from computer's audio device
<code>dsp.SignalSource</code>	Import variable from workspace
<code>dsp.SineWave</code>	Generate discrete sine wave. This object has no tunable properties for code generation.
<code>dsp.UDPReceiver</code>	Receive UDP packets from the network
Statistics	
<code>dsp.Autocorrelator</code>	Compute autocorrelation of vector inputs
<code>dsp.Crosscorrelator</code>	Compute cross-correlation of two inputs
<code>dsp.Histogram</code>	Output histogram of an input or sequence of inputs. This object has no tunable properties for code generation.
<code>dsp.Maximum</code>	Compute maximum value in input
<code>dsp.Mean</code>	Compute average or mean value in input
<code>dsp.Median</code>	Compute median value in input
<code>dsp.Minimum</code>	Compute minimum value in input
<code>dsp.RMS</code>	Compute root-mean-square of vector elements
<code>dsp.StandardDeviation</code>	Compute standard deviation of vector elements
<code>dsp.Variance</code>	Compute variance of input or sequence of inputs
Transforms	
<code>dsp.AnalyticSignal</code>	Compute analytic signals of discrete-time inputs
<code>dsp.DCT</code>	Compute discrete cosine transform (DCT) of input
<code>dsp.FFT</code>	Compute fast Fourier transform (FFT) of input
<code>dsp.IDCT</code>	Compute inverse discrete cosine transform (IDCT) of input
<code>dsp.IFFT</code>	Compute inverse fast Fourier transform (IFFT) of input

MATLAB Language Features Supported for C/C++ Code Generation

MATLAB® supports the following language features in generated code:

- N-dimensional arrays
- Matrix operations, including deletion of rows and columns
- Variable-sized data
- Subscripting
- Complex numbers
- Numeric classes
- Double-precision, single-precision, and integer math
- Fixed-point arithmetic
- Program control statements `if`, `switch`, `for`, and `while`
- Arithmetic, relational, and logical operators
- Local functions
- Persistent variables
- Global variables
- Structures
- Characters
- Function handles
- Frames
- Variable length input and output argument lists
- Subset of MATLAB toolbox functions
- MATLAB classes
- Ability to call functions

MATLAB Language Features Not Supported for C/C++ Code Generation

MATLAB does not support the following features in generated code:

- Anonymous functions
- Cell arrays
- Java®
- Nested functions
- Recursion
- Sparse matrices
- `try/catch` statements