

# **cellcounting**

## **Design Description**

### **Administrator**

# **cellcounting: Design Description**

by Administrator

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**test auto report**

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# Chapter 1. Model Version

**Version:** 1.230

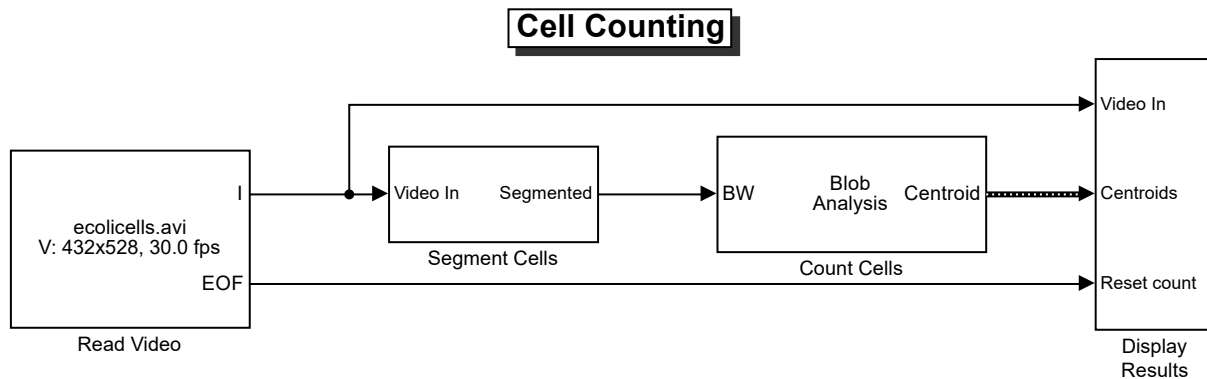
**Last modified:** Sat Dec 27 18:45:16 2014

**Checksum:** 3981530948 2759337264 2512543690 3144251062

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# Chapter 2. Root System

Figure 2.1. cellcounting



## Blocks

## Parameters

### "Count Cells" (S-Function)

Table 2.1. "Count Cells" Parameters

Parameter	Value
visionmasksArea	off
visionmasksCentroid	on
visionmasksBoundingBox	off
visionmasksMajorAxisLength	off
visionmasksMinorAxisLength	off
visionmasksOrientation	off
visionmasksEccentricity	off
visionmasksEquivalentDiameterSquared	off
visionmasksExtent	off
visionmasksPerimeter	off
visionmasksStatisticsOutputDataType	single
visionmasksConnectivity	8
visionmasksOutputLabelMatrix	off

## Chapter 2. Root System

Parameter	Value
visionmasksMaximumNumberOfBlobs	1500
visionmasksWarnIfMaximumNumberOfBlobs	on
visionmasksOutputActualNumberOfBlobs	off
visionmasksSpecifyMinimumBlobAreaInPixels1	on
	7
visionmasksSpecifyMaximumBlobAreaInPixels1	on
	300
visionmasksExcludeBlobsTouchingImageBorder	off
visionmasksOutputBlobStatisticsAsAVariable	on
visionmasksRoundIntegerCalculationsTowards	Floor
visionmasksSaturateOnIntegerOverflow	off
	Binary point scaling
	32
	0
	Binary point scaling
	32
	0
SimulinkmasksLockDataTypeAgainstFxpTools_MP	off

### "Read Video" (S-Function)

**Table 2.2. "Read Video" Parameters**

Parameter	Value
dspsharedFromMMFileInputFileName	ecolicells.avi
dspsharedFromMMFileReadRange	[1 Inf]
dspsharedFromMMFileLoop	on
dspsharedFromMMFileNumberOfTimesToPlayFile	inf
dspsharedFromMMFileOutput	Video only
dspsharedFromMMFileVideoOutputDataType	single
dspsharedFromMMFileAudioOutputDataType	int16
dspsharedFromMMFileInheritSampleTimeFromFile	off
dspsharedFromMMFileDesiredSampleTime	1/30
dspsharedFromMMFileOutputIntensityVideo	off
dspsharedFromMMFileOutputFormat	Intensity
dspsharedFromMMFileImageSignalIs	Separate color signals
dspsharedFromMMFileOutputEndoffileIndicator	on

Parameter	Value
dspsharedFromMMFileSamplesPerAudioFrame	1024
dspsharedFromMMFileComputeAudioFrameSize	off

## Block Execution Order

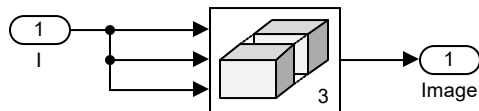
"cellcounting" is a multitasking model. Block execution order is not available for multitasking models.

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# Chapter 3. Subsystems

## Convert to RGB

Figure 3.1. cellcounting/Display Results/Convert to RGB



## Blocks

### Parameters

#### "I" (Inport)

Table 3.1. "I" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

#### "Image" (Outport)

Table 3.2. "Image" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off



Parameter	Value
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outputport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

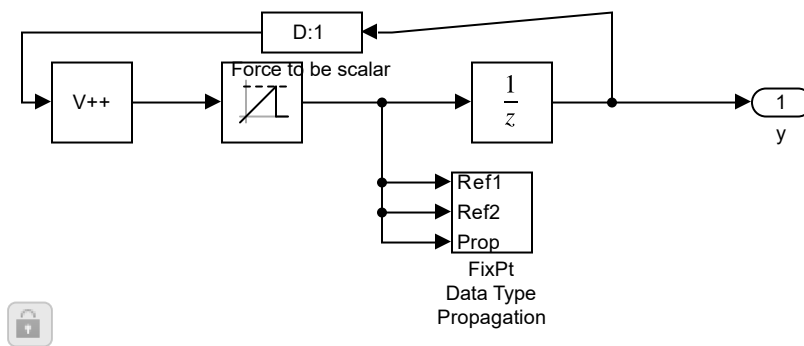
## "Matrix Concatenate" (Concatenate)

**Table 3.3. "Matrix Concatenate" Parameters**

Parameter	Value
Number of inputs	3
Mode	Multidimensional array
Concatenate dimension	3

# Counter Free-Running

**Figure 3.2. cellcounting/Display Results/Counter1/Counter Free-Running**



## Blocks

### Parameters

#### "FixPt Data Type Propagation" (S-Function)

**Table 3.4. "FixPt Data Type Propagation" Parameters**

Parameter	Value
Simulinkmasksx1PropagatedDataType_MP	Specify via dialog
Simulinkmasksx11PropagatedDataTypeeegFixdt116Fixdtsingle_MP	uint(NumBits)
Simulinkmasksx2PropagatedScaling_MP	Specify via dialog
Simulinkmasksx21PropagatedScalingSlopeEg29OrSlopeBiasEg1253_MP	1

#### "Force to be scalar" (SignalSpecification)

**Table 3.5. "Force to be scalar" Parameters**

Parameter	Value
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Require nonvirtual bus	off
Unit (e.g., m, m/s <sup>2</sup> , N*m)	inherit
Dimensions (-1 for inherited)	1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1

#### "Output" (UnitDelay)

**Table 3.6. "Output" Parameters**

Parameter	Value
Initial condition	0.0
Input processing	Elements as channels (sample based)
Sample time (-1 for inherited)	tsamp
State name must resolve to Simulink signal object	off

**"Wrap To Zero" (SubSystem)****Table 3.7. "Wrap To Zero" Parameters**

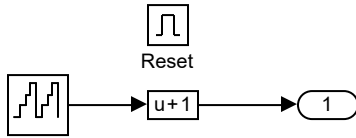
Parameter	Value
SimulinkmasksThreshold_MP	$(2^{(\text{NumBits})})-1$

**"y" (Outport)****Table 3.8. "y" Parameters**

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s <sup>2</sup> , N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

# Counter1

**Checksum:** 4129665556 2839018628 1966587803 2145633784

**Figure 3.3. cellcounting/Display Results/Counter1**

## Interface

### Output Signals

The following tables describe the signals output by this system. The name of the output signal is the name of the signal's parent block, i.e., the block that computes the signal. The number in angle brackets is the number of the port that emits the signal.

**Table 3.9.**

Description:

Data Type: uint16

Width: 1

Dimensions: [1 1]

## Blocks

### Parameters

#### "Bias" (Bias)

**Table 3.10. "Bias" Parameters**

Parameter	Value
Bias	1
Saturate on integer overflow	off

#### "Counter Free-Running" (SubSystem)

**Table 3.11. "Counter Free-Running" Parameters**

Parameter	Value
SimulinkmaskNumberOfBits_MP	16
SimulinkmaskSampleTime_MP	1/30

**"Out1" (Output)****Table 3.12. "Out1" Parameters**

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s <sup>2</sup> , N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

**"Reset" (EnablePort)****Table 3.13. "Reset" Parameters**

Parameter	Value
States when enabling	reset
Propagate sizes of variable-size signals	Only when enabling
Show output port	off
Enable zero-crossing detection	on
Port dimensions	1
Sample time	-1
Minimum	[]
Maximum	[]
Data type	double

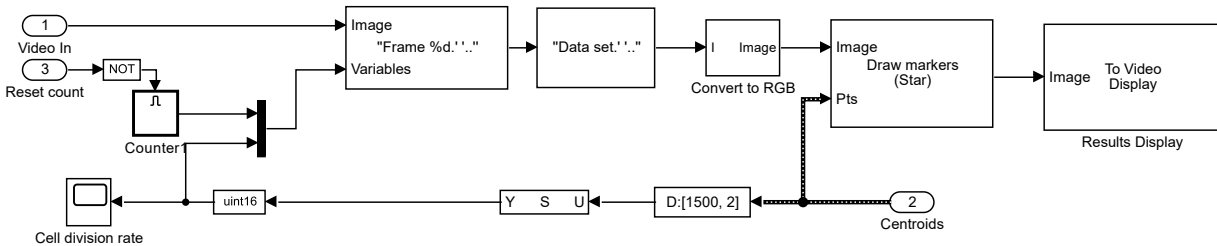
Parameter	Value
Interpolate data	on

## Block Execution Order

"cellcounting" is a multitasking model. Block execution order is not available for multitasking models.

## Display Results

**Figure 3.4. cellcounting/Display Results**



## Blocks

### Parameters

#### "Centroids" (Inport)

**Table 3.14. "Centroids" Parameters**

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

**"Data Type Conversion" (DataTypeConversion)****Table 3.15. "Data Type Conversion" Parameters**

Parameter	Value
Output minimum	[]
Output maximum	[]
Output data type	uint16
Lock output data type setting against changes by the fixed-point tools	off
Input and output to have equal	Real World Value (RWV)
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

**"Draw Markers" (S-Function)****Table 3.16. "Draw Markers" Parameters**

Parameter	Value
visionmasksMarkerShape	Star
visionmasksMarkerSize	3
	Specify via dialog
	User-specified value
visionmasksColorValues	[0 1 0]
visionmasksDrawMarkersIn	Entire image
visionmasksUseAntialiasing	off
visionmasksImageSignal	One multidimensional signal
visionmasksRoundingMode	Floor
visionmasksSaturateOnIntegerOverflow	off
	Specify word length
	16
	Binary point scaling
	32
	14
	Same as product output
SimulinkmasksLockDataTypeAgainstFxpTools_MP	off

**"Insert Text1" (S-Function)****Table 3.17. "Insert Text1" Parameters**

Parameter	Value
visionmasksText	'Frame %d, Count %d'
visionmasksLocationSource	Specify via dialog
visionmasksLocationxY	[10 10]
visionmasksColorValueSource	Specify via dialog
visionmasksColorValue	1
visionmasksIntensity_1	1
visionmasksOpacitySource	Specify via dialog
visionmasksOpacity1	1.0
visionmasksImageSignal	One multidimensional signal
visionmasksInputImageIsTransposed	off
visionmasksFontFace	LucidaTypewriterRegular
visionmasksFontSizepoints	16
visionmasksAntialiased	on

**"Insert Text2" (S-Function)****Table 3.18. "Insert Text2" Parameters**

Parameter	Value
visionmasksText	'Data set courtesy of Jonathan Young and Michael Elowitz, California Institute of Technology'
visionmasksLocationSource	Specify via dialog
visionmasksLocationxY	[1 417]
visionmasksColorValueSource	Specify via dialog
visionmasksColorValue	1
visionmasksIntensity_1	1
visionmasksOpacitySource	Specify via dialog
visionmasksOpacity1	1.0
visionmasksImageSignal	One multidimensional signal
visionmasksInputImageIsTransposed	off
visionmasksFontFace	LucidaSansRegular
visionmasksFontSizepoints	12
visionmasksAntialiased	on



**"Logical Operator" (Logic)****Table 3.19. "Logical Operator" Parameters**

Parameter	Value
Operator	NOT
Number of input ports	2
Icon shape	rectangular
Require all inputs and output to have the same data type	off
Output data type	boolean
Sample time (-1 for inherited)	-1

**"Mux" (Mux)****Table 3.20. "Mux" Parameters**

Parameter	Value
Number of inputs	2
Display option	bar

**"Probe" (Probe)****Table 3.21. "Probe" Parameters**

Parameter	Value
Probe width	off
Probe sample time	off
Detect complex signal	off
Probe signal dimensions	on
Data type for width	uint8
Data type for sample time	double
Data type for signal complexity	double
Data type for signal dimensions	double

**"Reset count" (Inport)****Table 3.22. "Reset count" Parameters**

Parameter	Value
Port number	3

Parameter	Value
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

## "Results Display" (S-Function)

**Table 3.23. "Results Display" Parameters**

Parameter	Value
visionmasksWindowSize	True size (1:1)
visionmasksOpenAtStartOfSimulation	on
visionmasksInputColorFormat	RGB
visionmasksImageSignal	One multidimensional signal

## "Selector" (Selector)

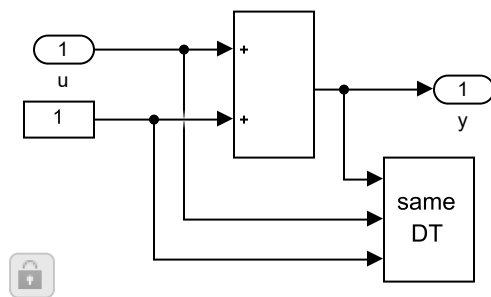
**Table 3.24. "Selector" Parameters**

Parameter	Value
Number of input dimensions	2
Index mode	One-based
Index Option	Index vector (dialog) Index vector (dialog)
Index	1 1
Output Size	99 1
Input port size	3
Sample time (-1 for inherited)	-1
Index Option	Index vector (dialog),Index vector (dialog)
Index	1,1
Output Size	99,1

**"Video In" (Inport)****Table 3.25. "Video In" Parameters**

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

## Increment Real World

**Figure 3.5. cellcounting/Display Results/Counter1/Counter Free-Running/Increment Real World**

## Blocks

### Parameters

**"FixPt Constant" (Constant)****Table 3.26. "FixPt Constant" Parameters**

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]

Parameter	Value
Output data type	Inherit: Inherit via back propagation
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

### "FixPt Data Type Duplicate" (DataTypeDuplicate)

**Table 3.27. "FixPt Data Type Duplicate" Parameters**

Parameter	Value
Number of input ports	3

### "FixPt Sum1" (Sum)

**Table 3.28. "FixPt Sum1" Parameters**

Parameter	Value
Icon shape	rectangular
List of signs	++
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via back propagation
Lock data type settings against changes by the fixed-point tools	on
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

**"u" (Inport)****Table 3.29. "u" Parameters**

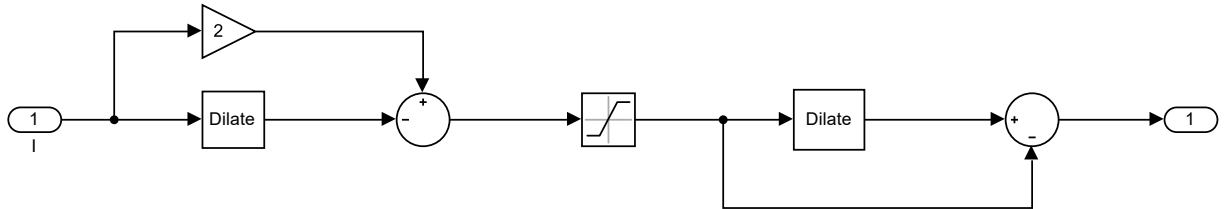
Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

**"y" (Outport)****Table 3.30. "y" Parameters**

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s <sup>2</sup> , N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

# Isolate Cells

Figure 3.6. cellcounting/Segment Cells/Isolate Cells



## Blocks

### Parameters

#### "Dilation" (S-Function)

Table 3.31. "Dilation" Parameters

Parameter	Value
visionmasksNeighborhoodOrStructuringElementSrc	Specify via dialog
visionmasksNeighborhoodOrStructuringElement	strel('square',7)

#### "Dilation1" (S-Function)

Table 3.32. "Dilation1" Parameters

Parameter	Value
visionmasksNeighborhoodOrStructuringElementSrc	Specify via dialog
visionmasksNeighborhoodOrStructuringElement	strel('square',7)

#### "Gain" (Gain)

Table 3.33. "Gain" Parameters

Parameter	Value
Gain	2
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]

Parameter	Value
Parameter data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

### "I" (Inport)

**Table 3.34. "I" Parameters**

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

### "Out" (Outport)

**Table 3.35. "Out" Parameters**

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s <sup>2</sup> , N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit

Parameter	Value
Sample time (-1 for inherited)	-1
Ensure output is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

### "Saturation" (Saturate)

**Table 3.36. "Saturation" Parameters**

Parameter	Value
Upper limit	1
Lower limit	0
Treat as gain when linearizing	on
Enable zero-crossing detection	on
Sample time (-1 for inherited)	-1
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor

### "Subtract" (Sum)

**Table 3.37. "Subtract" Parameters**

Parameter	Value
Icon shape	round
List of signs	+ -
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]



Parameter	Value
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

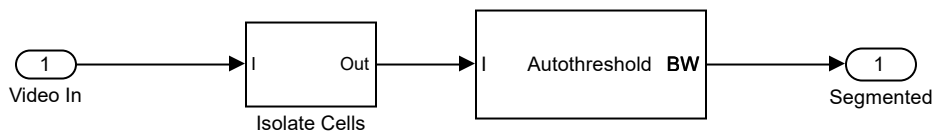
## "Subtract2" (Sum)

**Table 3.38. "Subtract2" Parameters**

Parameter	Value
Icon shape	round
List of signs	+-
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

## Segment Cells

**Figure 3.7. cellcounting/Segment Cells**



## Blocks

### Parameters

#### "Autothreshold" (S-Function)

**Table 3.39. "Autothreshold" Parameters**

Parameter	Value
visionmasksThresholdingOperator	<=
visionmasksOutputThreshold	off
visionmasksOutputEffectivenessMetric	off
visionmasksSpecifyDataRange	off
visionmasksScaleThreshold_MP	on
visionmasksThresholdScalingFactor	single(0.8)
visionmasksRoundingMode	Floor
visionmasksSaturateOnIntegerOverflow	off
	Specify word length
	32
	Same as Product 1
	Specify word length
	32
	Same as Product 2
	Specify word length
	32
	Same as Product 2
	Specify word length
	32
	Binary point scaling
	32
	15
	Same as Product 4
	Specify word length
	32
SimulinkmasksLockDataTypeAgainstFxpTools_MP	off

#### "Segmented" (Output)

**Table 3.40. "Segmented" Parameters**

Parameter	Value
Port number	1

Parameter	Value
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s <sup>2</sup> , N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure output is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

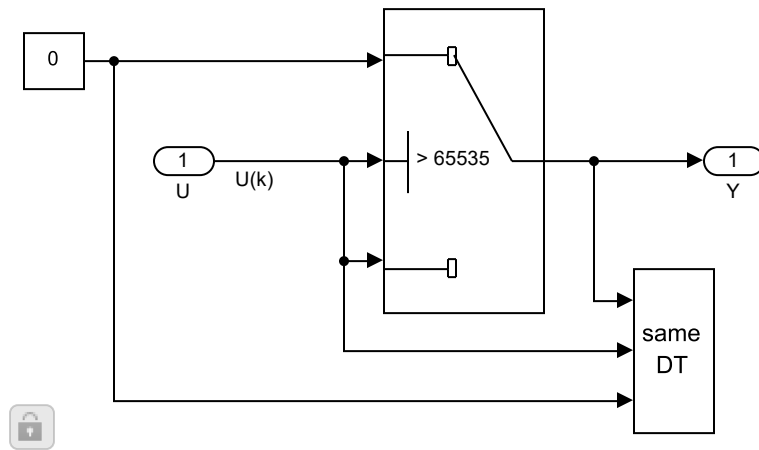
### "Video In" (Inport)

**Table 3.41. "Video In" Parameters**

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

## Wrap To Zero

**Figure 3.8.** cellcounting/Display Results/Counter1/Counter Free-Running/ Wrap To Zero



## Blocks

### Parameters

#### "Constant" (Constant)

**Table 3.42.** "Constant" Parameters

Parameter	Value
Constant value	0
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via back propagation
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

**"FixPt Data Type Duplicate1" (DataTypeDuplicate)****Table 3.43. "FixPt Data Type Duplicate1" Parameters**

Parameter	Value
Number of input ports	3

**"FixPt Switch" (Switch)****Table 3.44. "FixPt Switch" Parameters**

Parameter	Value
Criteria for passing first input	$u_2 > \text{Threshold}$
Threshold	Threshold
Require all data port inputs to have the same data type	off
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via back propagation
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Enable zero-crossing detection	off
Sample time (-1 for inherited)	-1
Allow different data input sizes (Results in variable-size output signal)	off

**"U" (Inport)****Table 3.45. "U" Parameters**

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

**"Y" (Outport)****Table 3.46. "Y" Parameters**

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s <sup>2</sup> , N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

---

# Chapter 4. System Design Variables

## Design Variable Summary

**Table 4.1. Functions used in Design Variable Expressions**

Function Name	Parent Blocks	Calling character vector
Count	<a href="#">Insert Text1</a>	'Frame %d, Count %d'
Data	<a href="#">Insert Text2</a>	'Data set courtesy of Jonathan Young and Michael Elowitz, California Institute of Technology'
Inf	<a href="#">Read Video</a>	[1 Inf]
and	<a href="#">Insert Text2</a>	'Data set courtesy of Jonathan Young and Michael Elowitz, California Institute of Technology'
display	<a href="#">Draw Markers</a>	display
fill	<a href="#">Draw Markers</a>	fill
isFill	<a href="#">Count Cells</a>	isFill
set	<a href="#">Insert Text2</a>	'Data set courtesy of Jonathan Young and Michael Elowitz, California Institute of Technology'
single	<a href="#">Autothreshold</a>	single(0.8)
size	<a href="#">Draw Markers</a>	size
square	<a href="#">Dilation</a> <a href="#">Dilation1</a>	strel('square',7) strel('square',7)
stats	<a href="#">Count Cells</a>	stats
strel	<a href="#">Dilation</a> <a href="#">Dilation1</a>	strel('square',7) strel('square',7)

## Design Variable Details

A1FracLength. 30

Used by Blocks:

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A1Mode. 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A1WordLength. 32

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A2FracLength. 22

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A2Mode. 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A2WordLength. 32

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A3FracLength. 14

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A3Mode. 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A3WordLength. 32

**Used by Blocks:**



- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A4FracLength. 4

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A4Mode. 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

A4WordLength. 16

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

EMFracLength. 14

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

EMMode. 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

EMWordLength. 16

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

NumPercentMinWidth. [2 1 0]

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**NumPercentMinWidth.** [0 1 0]

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**OutputDevice.** On-screen video monitor

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

**P1FracLength.** 30

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P1Mode.** 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P1WordLength.** 32

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P2FracLength.** 22

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P2Mode.** 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P2WordLength.** 32

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P3FracLength.** 14

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P3Mode.** 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P3WordLength.** 32

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P4FracLength.** 15

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P4Mode.** 2

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**P4WordLength.** 32

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**Q1FracLength.** 16

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**Q1Mode.** 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**Q1WordLength.** 32

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**SFcnInputFilename.** C:\Users\Administrator\Desktop\MATLAB计算机视觉与深度学习实战-运行代码  
\第 24 章 基于 Simulink 进行图像和视频处理\ecolicells.avi

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**SFcnText.** Frame %d, Count %d

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**SFcnText.** Data set courtesy of Jonathan Young and Michael Elowitz, California Institute of Technology

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**antiAliased.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**antiAliased.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**antialiasing.** 0

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**arConverterPath.**

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**audioDataType.** int16

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**blockFontSize.** 16

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**blockFontSize.** 12

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**blockName.** Results Display

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

**color.** [0 1 0 ]

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**colorVideoFormat.** 2

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

computedAudioFrameSize. 1024

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

conn. 1

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

convSpec. d

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

convSpec.

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

dataOrg. 1

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

dataOrg. 1

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

display. 3

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**Table 4.2. dtInfo**

Field	Value
outputMode	0
outputWordLength	32
outputFracLength	0
accumMode	0
accumWordLength	32
accumFracLength	0
prodOutputMode	0
prodOutputWordLength	32
prodOutputFracLength	16
memoryMode	3
memoryWordLength	0
memoryFracLength	0
firstCoeffMode	0
firstCoeffWordLength	16
firstCoeffFracLength	14
secondCoeffMode	0
secondCoeffWordLength	32
secondCoeffFracLength	16
roundingMode	3
overflowMode	1

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

**Table 4.3. dtInfo**

Field	Value
accumMode	3
accumWordLength	0
accumFracLength	0
prodOutputMode	0
prodOutputWordLength	32
prodOutputFracLength	14
memoryMode	1

memoryWordLength	16
memoryFracLength	0
roundingMode	3
overflowMode	1

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**Table 4.4. dtInfo**

Field	Value
roundingMode	3
overflowMode	1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

effMetricOut. 0

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

excludeBorderBlob. 0

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

fill. 0

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

fillClrSource. 1

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)



**fillValues.** -10

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

**fontFileName.** E:\Program Files\Polyspace\R2019a\sys\java\jre\win64\jre\lib\fonts\LucidaTypewriterRegular.ttf

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**fontFileName.** E:\Program Files\Polyspace\R2019a\sys\java\jre\win64\jre\lib\fonts\LucidaSansRegular.ttf

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**fourcc.** Intensity

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**imagePorts.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**imagePorts.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**imagePorts.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**imagePorts.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

inType. 3

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

inheritSampleTime. 0

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

inputColorFormat. 1

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

inputType. 3

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

inputType. 3

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

inputType. 3

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

intensity. 155

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

isCount. 0

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

isFill. 1

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

isInputTransposed. 0

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

isInputTransposed. 0

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

isLabel. 0

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

isOutVarDim. 1

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

loop. 1

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

maxArea. 300

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

**maxBlobs.** 1500

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

**minArea.** 7

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

**Table 4.5. multimediaFileInfo**

Field	Value
hasAudio	false
hasVideo	true
videoFramesPerSecond	30.0000
videoFPSComputed	30.0000
videoWidthInPixels	528
videoHeightInPixels	432
videoFormat	RGB
useMMReader	false

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**nhdims.** [7 ; 1 ; 1 ; 7 ]

**Used by Blocks:**

- [cellcounting/Segment Cells/Isolate Cells/Dilation](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Isolate Cells/Dilation)

**nhdims.** [7 ; 1 ; 1 ; 7 ]

**Used by Blocks:**

- [cellcounting/Segment Cells/Isolate Cells/Dilation1](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Isolate Cells/Dilation1)

**nhood.** [true true true true true true true true true true true true true true]

**Used by Blocks:**

- [cellcounting/Segment Cells/Isolate Cells/Dilation](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Isolate Cells/Dilation)

**nhood.** [true true true true true true true true true true true true true true]

**Used by Blocks:**

- [cellcounting/Segment Cells/Isolate Cells/Dilation1](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Isolate Cells/Dilation1)

**nhoodsrc.** 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Isolate Cells/Dilation](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Isolate Cells/Dilation)

**nhoodsrc.** 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Isolate Cells/Dilation1](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Isolate Cells/Dilation1)

**noAudioOutput.** 0

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**numPlays.** Inf

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**opacity.** 0

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**openAtMdlStart.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

operator. 2

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

outDT. 2

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

outOfRngOpt. 3

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

outSamplingMode. 2

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

outputEOF. 1

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

outputStreamsStr. Video only

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

pluginPaths.

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**portIndexes.** [1 -1 -1 -1 2 -1 -1 -1 ]

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**portIndexes.** [1 -1 -1 -1 -1 -1 -1 -1 ]

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**readRangeEnd.** 9223372036854775807

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**readRangeStart.** 1

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**scaleFactor.** 0.8000

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**scaleThreshold.** 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**shape.** 4

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**size.** 3

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**stats.** [false true false false false false false false false]

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

**textColor.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**textColor.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**textIntensity.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**textIntensity.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

**textLoc.** [10 10 ]

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

**textLoc.** [1 417 ]

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)



textOpacity. 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text1](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text1)

textOpacity. 1

**Used by Blocks:**

- [cellcounting/Display Results/Insert Text2](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Insert Text2)

threshOut. 0

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

umax. 1

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

umin. 0

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

useMaxArea. 1

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

useMinArea. 1

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

userDefinedRange. 0

**Used by Blocks:**

- [cellcounting/Segment Cells/Autothreshold](#)

**Resolved in:** mask workspace (cellcounting/Segment Cells/Autothreshold)

**userDefinedSampleTime.** 0.0333

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**videoDataType.** single

**Used by Blocks:**

- [cellcounting/Read Video](#)

**Resolved in:** mask workspace (cellcounting/Read Video)

**videoWindowHeight.** 432

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

**videoWindowWidth.** 528

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

**videoWindowX.** 115

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

**videoWindowY.** 153

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

**viewport.** 1

**Used by Blocks:**

- [cellcounting/Display Results/Draw Markers](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Draw Markers)

**warnIfNumBlobsExceeded.** 1

**Used by Blocks:**

- [cellcounting/Count Cells](#)

**Resolved in:** mask workspace (cellcounting/Count Cells)

**windowSizeMode.** 3

**Used by Blocks:**

- [cellcounting/Display Results/Results Display](#)

**Resolved in:** mask workspace (cellcounting/Display Results/Results Display)

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# Chapter 5. Requirements

cellcounting does not contain requirements traceability links.

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# Chapter 6. System Model Configuration

Source: Model  
Source Name: cellcounting

**Table 6.1. cellcounting Configuration Set**

Property	Value
Description	
Components	[ <a href="#">cellcounting Configuration Set.Components(1)</a> , <a href="#">cellcounting Configuration Set.Components(2)</a> , <a href="#">cellcounting Configuration Set.Components(3)</a> , <a href="#">cellcounting Configuration Set.Components(4)</a> , <a href="#">cellcounting Configuration Set.Components(5)</a> , <a href="#">cellcounting Configuration Set.Components(6)</a> , <a href="#">cellcounting Configuration Set.Components(7)</a> , <a href="#">cellcounting Configuration Set.Components(8)</a> , <a href="#">cellcounting Configuration Set.Components(9)</a> ]
Name	Configuration
SimulationMode	normal
ConfigType	Model

**Table 6.2. [cellcounting Configuration Set.Components\(1\)](#)**

Property	Value
Name	Solver
Description	
Components	
StartTime	0.0
StopTime	inf
AbsTol	auto
AutoScaleAbsTol	on
FixedStep	auto
InitialStep	auto
MaxNumMinSteps	-1
MaxOrder	5
ZcThreshold	auto
ConsecutiveZCsStepRelTol	10*128*eps
MaxConsecutiveZCs	1000

ExtrapolationOrder	4
NumberNewtonIterations	1
MaxStep	auto
MinStep	auto
MaxConsecutiveMinStep	1
RelTol	1e-3
SolverMode	MultiTasking
EnableMultiTasking	on
EnableExplicitPartitioning	off
EnableConcurrentExecution	on
ConcurrentTasks	off
Solver	FixedStepDiscrete
SolverName	FixedStepDiscrete
SolverType	Fixed-step
SolverJacobianMethodControl	auto
ShapePreserveControl	DisableAll
ZeroCrossControl	UseLocalSettings
ZeroCrossAlgorithm	Nonadaptive
SolverResetMethod	Fast
PositivePriorityOrder	off
AutoInsertRateTranBlk	off
SampleTimeConstraint	Unconstrained
InsertRTBMode	Whenever possible
SampleTimeProperty	
DecoupledContinuousIntegration	off
MinimalZcImpactIntegration	off
SolverOrder	3

**Table 6.3. cellcounting Configuration Set.Components(2)**

Property	Value
Name	Data Import/Export
Description	
Components	
Decimation	1
ExternalInput	[t, u]
FinalStateName	xFinal
InitialState	xInitial

LimitDataPoints	on
MaxDataPoints	1000
LoadExternalInput	off
LoadInitialState	off
SaveFinalState	off
SaveCompleteFinalSimState	off
SaveOperatingPoint	off
SaveFormat	Array
SaveOutput	off
SaveState	off
SignalLogging	off
DSMLogging	on
InspectSignalLogs	off
SaveTime	off
ReturnWorkspaceOutputs	off
StateSaveName	xout
TimeSaveName	tout
OutputSaveName	yout
SignalLoggingName	logsout
DSMLoggingName	dsmout
OutputOption	RefineOutputTimes
OutputTimes	[]
ReturnWorkspaceOutputsName	out
Refine	1
LoggingToFile	off
DatasetSignalFormat	timeseries
LoggingFileName	out.mat
LoggingIntervals	[-inf, inf]

**Table 6.4. cellcounting Configuration Set.Components(3)**

Property	Value
Name	Optimization
Description	
Components	
BlockReduction	on
BooleanDataType	on
ConditionallyExecuteInputs	on

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DefaultParameterBehavior	Tunable
InlineParams	off
UseDivisionForNetSlopeComputation	off
GainParamInheritBuiltInType	off
UseFloatMulNetSlope	off
DefaultUnderspecifiedDataType	double
UseSpecifiedMinMax	off
InlineInvariantSignals	off
OptimizeBlockIOStorage	on
BufferReuse	on
GlobalBufferReuse	on
GlobalVariableUsage	None
StrengthReduction	off
AdvancedOptControl	
EnforceIntegerDowncast	on
ExpressionFolding	on
BooleansAsBitfields	off
BitfieldContainerType	uint_T
EnableMemcpy	on
MemcpyThreshold	64
PassReuseOutputArgsAs	Structure reference
PassReuseOutputArgsThreshold	12
FoldNonRolledExpr	on
LocalBlockOutputs	on
RollThreshold	5
StateBitsets	off
DataBitsets	off
ActiveStateOutputEnumStorageType	Native Integer
UseTempVars	off
ZeroExternalMemoryAtStartup	on
ZeroInternalMemoryAtStartup	on
InitFltsAndDblsToZero	on
NoFixptDivByZeroProtection	off
EfficientFloat2IntCast	off
EfficientMapNaN2IntZero	on
LifeSpan	inf
EvaledLifeSpan	Inf
MaxStackSize	Inherit from target



BufferReusableBoundary	off
SimCompilerOptimization	off
AccelVerboseBuild	off
OptimizeBlockOrder	off
OptimizeDataStoreBuffers	on
BusAssignmentInplaceUpdate	on
DifferentSizesBufferReuse	off
OptimizationLevel	level2
OptimizationPriority	Balanced
OptimizationCustomize	on
UseRowMajorAlgorithm	off
LabelGuidedReuse	off
MultiThreadedLoops	off
DenormalBehavior	GradualUnderflow

**Table 6.5. cellcounting Configuration Set.Components(4)**

Property	Value
Name	Diagnostics
Description	
Components	
RTPrefix	error
ConsistencyChecking	none
ArrayBoundsChecking	none
SignalInfNanChecking	none
StringTruncationChecking	error
SignalRangeChecking	none
ReadBeforeWriteMsg	UseLocalSettings
WriteAfterWriteMsg	UseLocalSettings
WriteAfterReadMsg	UseLocalSettings
AlgebraicLoopMsg	warning
ArtificialAlgebraicLoopMsg	warning
SaveWithDisabledLinksMsg	warning
SaveWithParameterizedLinksMsg	warning
CheckSSInitialOutputMsg	on
UnderspecifiedInitializationDetection	Classic
MergeDetectMultiDrivingBlocksExec	none
CheckExecutionContextRuntimeOutputMsg	off

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SignalResolutionControl	TryResolveAllWithWarning
BlockPriorityViolationMsg	warning
MinStepSizeMsg	warning
TimeAdjustmentMsg	none
MaxConsecutiveZCsMsg	error
MaskedZcDiagnostic	warning
IgnoredZcDiagnostic	warning
SolverPrmCheckMsg	warning
InheritedTsInSrcMsg	warning
MultiTaskDSMMsg	warning
MultiTaskCondExecSysMsg	none
MultiTaskRateTransMsg	error
SingleTaskRateTransMsg	none
TasksWithSamePriorityMsg	warning
SigSpecEnsureSampleTimeMsg	warning
CheckMatrixSingularityMsg	none
IntegerOverflowMsg	warning
Int32ToFloatConvMsg	warning
ParameterDowncastMsg	error
ParameterOverflowMsg	error
ParameterUnderflowMsg	none
ParameterPrecisionLossMsg	warning
ParameterTunabilityLossMsg	warning
FixptConstUnderflowMsg	none
FixptConstOverflowMsg	none
FixptConstPrecisionLossMsg	none
UnderSpecifiedDataTypeMsg	none
UnnecessaryDatatypeConvMsg	none
VectorMatrixConversionMsg	none
FcnCallInpInsideContextMsg	warning
SignalLabelMismatchMsg	none
UnconnectedInputMsg	warning
UnconnectedOutputMsg	warning
UnconnectedLineMsg	warning
UseOnlyExistingSharedCode	error
SFcnCompatibilityMsg	none
FrameProcessingCompatibilityMsg	error
UniqueDataStoreMsg	none

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BusObjectLabelMismatch	none
RootOutputRequireBusObject	warning
AssertControl	UseLocalSettings
Echo	
EnableOverflowDetection	off
AllowSymbolicDim	on
ModelReferenceIOMsg	none
ModelReferenceVersionMismatchMessage	none
ModelReferenceIOMismatchMessage	none
ModelReferenceCSMismatchMessage	none
ModelReferenceSimTargetVerbose	off
UnknownTsInhSupMsg	warning
ModelReferenceDataLoggingMessage	warning
ModelReferenceSymbolNameMessage	warning
ModelReferenceExtraNoncontSigs	error
StateNameClashWarn	warning
OperatingPointInterfaceChecksumMismatchMsg	warning
NonCurrentReleaseOperatingPointMsg	error
PregeneratedLibrarySubsystemCodeDiagnostic	warning
InitInArrayFormatMsg	warning
StrictBusMsg	ErrorLevel1
BusNameAdapt	WarnAndRepair
NonBusSignalsTreatedAsBus	none
SFUnusedDataAndEventsDiag	warning
SFUnexpectedBacktrackingDiag	warning
SFInvalidInputDataAccessInChartInitDiag	warning
SFNoUnconditionalDefaultTransitionDiag	warning
SFTransitionOutsideNaturalParentDiag	warning
SFUnconditionalTransitionShadowingDiag	warning
SFUnreachableExecutionPathDiag	warning
SFUndirectedBroadcastEventsDiag	warning
SFTransitionActionBeforeConditionDiag	warning
SFOutputUsedAsStateInMooreChartDiag	error
SFTemporalDelaySmallerThanSampleTimeDiag	warning
SFUnconditionalPathOutOfParentDiag	warning
SFSelfTransitionDiag	warning
SFExecutionAtInitializationDiag	none
SFMachineParentedDataDiag	warning

SFUnreachableStateOrJunctionDiag	warning
SFDanglingTransitionDiag	warning
IntegerSaturationMsg	warning
AllowedUnitSystems	all
UnitsInconsistencyMsg	warning
AllowAutomaticUnitConversions	on
RCSCRenamedMsg	warning
RCSCObservableMsg	warning
ForceCombineOutputUpdateInSim	off
UnderSpecifiedDimensionMsg	none
DebugExecutionForFMUViaOutOfProcess	off
ArithmeticOperatorsInVariantConditions	warning

**Table 6.6. cellcounting Configuration Set.Components(5)**

Property	Value
Name	Hardware Implementation
Description	
Components	
ProdBitPerChar	8
ProdBitPerShort	16
ProdBitPerInt	32
ProdBitPerLong	32
ProdBitPerLongLong	64
ProdBitPerFloat	32
ProdBitPerDouble	64
ProdBitPerPointer	32
ProdBitPerSizeT	32
ProdBitPerPtrDiffT	32
ProdLargestAtomicInteger	Char
ProdLargestAtomicFloat	None
ProdIntDivRoundTo	Undefined
ProdEndianness	Unspecified
ProdWordSize	32
ProdShiftRightIntArith	on
ProdLongLongMode	off
ProdHWDeviceType	32-bit Generic
TargetBitPerChar	8

TargetBitPerShort	16
TargetBitPerInt	32
TargetBitPerLong	32
TargetBitPerLongLong	64
TargetBitPerFloat	32
TargetBitPerDouble	64
TargetBitPerPointer	64
TargetBitPerSizeT	64
TargetBitPerPtrDiffT	64
TargetLargestAtomicInteger	Char
TargetLargestAtomicFloat	None
TargetShiftRightIntArith	on
TargetLongLongMode	on
TargetIntDivRoundTo	Zero
TargetEndianess	LittleEndian
TargetWordSize	64
TargetPreprocMaxBitsSint	32
TargetPreprocMaxBitsUint	32
TargetHWDeviceType	Generic->MATLAB Host Computer
TargetUnknown	off
ProdEqTarget	off
UseEmbeddedCoderFeatures	on
UseSimulinkCoderFeatures	on
HardwareBoardFeatureSet	EmbeddedCoderHSP

**Table 6.7. cellcounting Configuration Set.Components(6)**

Property	Value
Name	Model Referencing
Description	
Components	
UpdateModelReferenceTargets	IfOutOfDateOrStructuralChange
SkipRefExpFcnMdlSchedulingOrderCheck	off
EnableRefExpFcnMdlSchedulingChecks	on
CheckModelReferenceTargetMessage	error
EnableParallelModelReferenceBuilds	off
ParallelModelReferenceErrorOnInvalidPool	on
ParallelModelReferenceMATLABWorkerInit	None

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ModelReferenceNumInstancesAllowed	Multi
PropagateVarSize	Infer from blocks in model
ModelDependencies	
ModelReferencePassRootInputsByReference	on
ModelReferenceMinAlgLoopOccurrences	off
PropagateSignalLabelsOutOfModel	off
SupportModelReferenceSimTargetCustomCode	off

**Table 6.8. cellcounting Configuration Set.Components(7)**

Property	Value
Name	Simulation Target
Description	
Components	
SimCustomSourceCode	
SimCustomHeaderCode	
SimCustomInitializer	
SimCustomTerminator	
SimReservedNameArray	
SimUserSources	
SimUserIncludeDirs	
SimUserLibraries	
SimUserDefines	
SFSimEnableDebug	off
SFSimOverflowDetection	on
SFSimEcho	on
SimBlas	on
SimCtrlC	on
SimExtrinsic	on
SimIntegrity	on
SimUseLocalCustomCode	off
SimParseCustomCode	on
SimAnalyzeCustomCode	off
SimBuildMode	sf_incremental_build
SimDataInitializer	
SimGenImportedTypeDefs	off
CompileTimeRecursionLimit	50
EnableRuntimeRecursion	on

MATLABDynamicMemAlloc	on
MATLABDynamicMemAllocThreshold	65536
CustomSymbolStrEMXArray	nothing
CustomSymbolStrEMXArrayFcn	nothing
CustomCodeFunctionArrayLayout	
DefaultCustomCodeFunctionArrayLayout	NotSpecified

**Table 6.9. cellcounting Configuration Set.Components(8)**

Property	Value
Name	Code Generation
SystemTargetFile	grt.tlc
HardwareBoard	None
ShowCustomHardwareApp	off
ShowEmbeddedHardwareApp	off
TLCOptions	
CodeGenDirectory	
GenCodeOnly	off
MakeCommand	make_rtw
GenerateMakefile	on
PackageGeneratedCodeAndArtifacts	off
PackageName	
TemplateMakefile	grt_default_tmf
PostCodeGenCommand	
Description	
GenerateReport	off
SaveLog	off
RTWVerbose	on
RetainRTWFile	off
ProfileTLC	off
TLCDebug	off
TLCCoverage	off
TLCAssert	off
ProcessScriptMode	Default
ConfigurationMode	Optimized
ProcessScript	
ConfigurationScript	
ConfigAtBuild	off

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RTWUseLocalCustomCode	off
RTWUseSimCustomCode	off
CustomSourceCode	
CustomHeaderCode	
CustomInclude	
CustomSource	
CustomLibrary	
CustomDefine	
CustomBLASCallback	
CustomLAPACKCallback	
CustomFFTCallback	
CustomInitializer	
CustomTerminator	
Toolchain	Automatically locate an installed toolchain
BuildConfiguration	Faster Builds
CustomToolchainOptions	
IncludeHyperlinkInReport	off
LaunchReport	off
RecursionLimit	50
PortableWordSizes	off
GenerateErtSFunction	off
CreateSILPILBlock	None
CodeExecutionProfiling	off
CodeExecutionProfileVariable	executionProfile
CodeProfilingSaveOptions	SummaryOnly
CodeProfilingInstrumentation	off
CodeCoverageSettings	<a href="#">cellcounting Configuration Set.Components(8).CodeCoverageSettings</a>
SILDebugging	off
TargetLang	C
IncludeERTFirstTime	on
GenerateTraceInfo	off
GenerateTraceReport	off
GenerateTraceReportSl	off
GenerateTraceReportSf	off
GenerateTraceReportEml	off
GenerateCodeInfo	off
GenerateWebview	off



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GenerateCodeMetricsReport	off
GenerateCodeReplacementReport	off
RTWCompilerOptimization	off
ObjectivePriorities	
RTWCustomCompilerOptimizations	
CheckMdlBeforeBuild	Off
CustomRebuildMode	OnUpdate
DataInitializer	
Components	[ <a href="#">cellcounting Configuration Set.Components(8).Components(1)</a> , <a href="#">cellcounting Configuration Set.Components(8).Components(2)</a> ]

**Table 6.10. [cellcounting Configuration Set.Components\(9\)](#)**

Property	Value
Description	Simulink Coverage Configuration Component
Components	
Name	Simulink Coverage
CovEnable	off
CovScope	EntireSystem
CovIncludeTopModel	on
RecordCoverage	off
CovPath	/
CovSaveName	covdata
CovCompData	
CovMetricSettings	dw
CovFilter	
CovHTMLOptions	
CovNameIncrementing	off
CovHtmlReporting	on
CovForceBlockReductionOff	on
CovEnableCumulative	on
CovSaveCumulativeToWorkspaceVar	on
CovSaveSingleToWorkspaceVar	on
CovCumulativeVarName	covCumulativeData
CovCumulativeReport	off
CovSaveOutputData	on
CovOutputDir	slcov_output/\$ModelName\$

CovDataFileName	\$ModelName\$_cvdata
CovShowResultsExplorer	on
CovReportOnPause	on
CovModelRefEnable	off
CovModelRefExcluded	
CovExternalEMLEnable	off
CovSFCnEnable	on
CovBoundaryAbsTol	1.0000e-05
CovBoundaryRelTol	0.0100
CovUseTimeInterval	off
CovStartTime	0
CovStopTime	0
CovMetricStructuralLevel	Decision
CovMetricLookupTable	off
CovMetricSignalRange	off
CovMetricSignalSize	off
CovMetricObjectiveConstraint	off
CovMetricSaturateOnIntegerOverflow	off
CovMetricRelationalBoundary	off
CovLogicBlockShortCircuit	off
CovUnsupportedBlockWarning	on
CovHighlightResults	on
CovMcdcMode	Masking

**Table 6.11. cellcounting Configuration Set.Components(8).CodeCoverageSettings**

Property	Value
TopModelCoverage	off
ReferencedModelCoverage	off
CoverageTool	None

**Table 6.12. cellcounting Configuration Set.Components(8).Components(1)**

Property	Value
Name	Code Appearance
Description	
Components	

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ForceParamTrailComments	off
GenerateComments	on
CommentStyle	Auto
IgnoreCustomStorageClasses	on
IgnoreTestpoints	off
IncHierarchyInIds	off
MaxIdLength	31
ShowEliminatedStatement	off
OperatorAnnotations	off
IncAutoGenComments	off
SimulinkDataObjDesc	off
SFDataObjDesc	off
MATLABFcnDesc	off
IncDataTypeInIds	off
PrefixModelToSubsysFcnNames	on
MangleLength	1
SharedChecksumLength	8
CustomSymbolStr	\$R\$N\$M
CustomSymbolStrGlobalVar	\$R\$N\$M
CustomSymbolStrType	\$N\$R\$M_T
CustomSymbolStrField	\$N\$M
CustomSymbolStrFcn	\$R\$N\$M\$F
CustomSymbolStrSimulinkFcn	\$R\$N
CustomSymbolStrFcnArg	rt\$I\$N\$M
CustomSymbolStrBlkIO	rtb_\$N\$M
CustomSymbolStrTmpVar	\$N\$M
CustomSymbolStrMacro	\$R\$N\$M
CustomSymbolStrUtil	\$N\$C
CustomSymbolStrEmxType	emxArray_\$M\$N
CustomSymbolStrEmxFcn	emx\$M\$N
CustomUserTokenString	
CustomCommentsFcn	
DefineNamingRule	None
DefineNamingFcn	
ParamNamingRule	None
ParamNamingFcn	
SignalNamingRule	None
SignalNamingFcn	

InsertBlockDesc	off
InsertPolySpaceComments	off
SimulinkBlockComments	on
BlockCommentType	BlockPathComment
StateflowObjectComments	on
MATLABSourceComments	off
EnableCustomComments	off
InternalIdentifier	Shortened
InlinedPrmAccess	Literals
ReqsInCode	off
UseSimReservedNames	off
ReservedNameArray	

**Table 6.13. cellcounting Configuration Set.Components(8).Components(2)**

Property	Value
Name	Target
Description	
Components	
IsERTTarget	off
TargetLibSuffix	
TargetPreCompLibLocation	
GenFloatMathFcnCalls	NOT IN USE
TargetLangStandard	C89/C90 (ANSI)
TargetFunctionLibrary	NOT IN USE
CodeReplacementLibrary	None
UtilityFuncGeneration	Auto
MultiwordTypeDef	System defined
MultiwordLength	2048
DynamicStringBufferSize	256
GenerateFullHeader	on
InferredTypesCompatibility	off
ExistingSharedCode	
SharedCodeLocation	
GenerateSampleERTMain	off
GenerateTestInterfaces	off
ModelReferenceCompliant	on
ParMdlRefBuildCompliant	on

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CompOptLevelCompliant	on
ConcurrentExecutionCompliant	on
IncludeMdlTerminateFcn	on
CombineOutputUpdateFcns	off
CombineSignalStateStructs	off
GroupInternalDataByFunction	off
SuppressErrorStatus	off
ERTFirstTimeCompliant	off
IncludeFileDelimiter	Auto
ERTCustomFileBanners	off
SupportAbsoluteTime	on
LogVarNameModifier	rt_
MatFileLogging	on
MultiInstanceERTCode	off
CodeInterfacePackaging	Nonreusable function
PurelyIntegerCode	off
SupportNonFinite	on
SupportComplex	on
SupportContinuousTime	on
SupportNonInlinedSFcns	on
RemoveDisableFunc	off
RemoveResetFunc	off
SupportVariableSizeSignals	off
ParenthesesLevel	Nominal
CastingMode	Nominal
PreserveStateflowLocalDataDimensions	off
GenerateClassInterface	off
ModelStepFunctionPrototypeControlCompliant	off
CPPClassGenCompliant	on
GRTInterface	on
GenerateAllocFcn	off
UseToolchainInfoCompliant	on
GenerateSharedConstants	on
LUObjectStructOrderExplicitValues	Size,Breakpoints,Table
LUObjectStructOrderEvenSpacing	Size,Breakpoints,Table
ArrayLayout	Column-major
UnsupportedSFcnMsg	error
ERTHeaderFileRootName	\$R\$E

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ERTSourceFileRootName	\$R\$E
ERTDataFileRootName	\$R_data
ExtMode	off
ExtModeStaticAlloc	off
ExtModeTesting	off
ExtModeStaticAllocSize	1000000
ExtModeTransport	0
ExtModeMexFile	ext_comm
ExtModeMexArgs	
ExtModeIntrfLevel	Level1
RTWCAPISignals	off
RTWCAPIParams	off
RTWCAPIStates	off
RTWCAPIRootIO	off
GenerateASAP2	off
MultiInstanceErrorCode	Error

---

# Chapter 7. Glossary

**Atomic Subsystem.** A subsystem treated as a unit by an implementation of the design documented in this report. The implementation computes the outputs of all the blocks in the atomic subsystem before computing the next block in the parent system's block execution order (sorted list).

**Block Diagram.** A Simulink block diagram represents a set of simultaneous equations that relate a system or subsystem's inputs to its outputs as a function of time. Each block in the diagram represents an equation of the form  $y = f(t, x, u)$  where  $t$  is the current time,  $u$  is a block input,  $y$  is a block output, and  $x$  is a system state (see the Simulink documentation for information on the functions represented by the various types of blocks that make up the diagram). Lines connecting the blocks represent dependencies among the blocks, i.e., inputs whose current values are the outputs of other blocks. An implementation of a design described in this document computes a root or atomic system's outputs at each time step by computing the outputs of the blocks in an order determined by block input/output dependencies.

**Block Parameter.** A variable that determines the output of a block along with its inputs, for example, the gain parameter of a Gain block.

**Block Execution Order.** The order in which Simulink evaluates blocks during simulation of a model. The block execution order determined by Simulink ensures that a block executes only after all blocks on whose outputs it depends are executed.

**Checksum.** A number that indicates whether different versions of a model or atomic subsystem differ functionally or only cosmetically. Different checksums for different versions of the same model or subsystem indicate that the versions differ functionally.

**Design Variable.** A symbolic (MATLAB) variable or expression used as the value of a block parameter. Design variables allow the behavior of the model to be altered by altering the value of the design variable.

**Signal.** A block output, so-called because block outputs typically vary with time.

**Virtual Subsystem.** A subsystem that is purely graphical, i.e., is intended to reduce the visual complexity of the block diagram of which it is a subsystem. An implementation of the design treats the blocks in the subsystem as part of the first nonvirtual ancestor of the virtual subsystem (see Atomic Subsystem).

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# Chapter 8. About this Report

## Report Overview

This report describes the design of the cellcounting system. The report was generated automatically from a Simulink model used to validate the design. It contains the following sections:

**Model Version.** Specifies information about the version of the model from which this design description was generated. Includes the model checksum, a number that indicates whether different versions of the model differ functionally or only cosmetically. Different checksums for different versions indicate that the versions differ functionally.

**Root System.** Describes the design's root system.

**Subsystems.** Describes each of the design's subsystems.

**Design Variables.** Describes system design variables, i.e., MATLAB variables and expressions used as block parameter values.

**System Model Configuration.** Lists the configuration parameters, e.g., start and stop time, of the model used to simulate the system described by this report.

**Requirements.** Shows design requirements associated with elements of the design model. This section appears only if the design model contains requirements links.

**Glossary.** Defines Simulink terms used in this report.

## Root System Description

This section describes a design's root system. It contains the following sections:

**Diagram.** Simulink block diagram that represents the algorithm used to compute the root system's outputs.

**Description.** Description of the root system. This section appears only if the model's root system has a Documentation property or a Doc block.

**Interface.** Name, data type, width, and other properties of the root system's input and output signals. The number of the block port that outputs the signal appears in angle brackets appended to the signal name. This section appears only if the root system has input or output ports.

**Blocks.** This section has two subsections:



- **Parameters.** Describes key parameters of blocks in the root system. This section also includes graphical and/or tabular representations of lookup table data used by lookup table blocks, i.e., blocks that use lookup tables to compute their outputs.
- **Block Execution Order.** Order in which blocks must be executed at each time step in order to ensure that each block's inputs are available when it executes.

**State Charts.** Describes state charts used in the root system. This section appears only if the root system contains Stateflow blocks.

## Subsystem Descriptions

This section describes a design's subsystems. Each subsystem description contains the following sections:

**Checksum.** This section appears only if the subsystem is an atomic subsystem. The checksum indicates whether the version of the model subsystem used to generate this report differs functionally from other versions of the model subsystem. If two model checksums differ, the corresponding versions of the model differ functionally.

**Diagram.** Simulink block diagram that graphically represents the algorithm used to compute the subsystem's outputs.

**Description.** Description of the subsystem. This section appears only if the subsystem has a Documentation property or contains a Doc block.

**Interface.** Name, data type, width, and other properties of the subsystem's input and output signals. The number of the block port that outputs the signal appears in angle brackets appended to the signal name. This section appears only if the subsystem is atomic and has input or output ports.

**Blocks.** Blocks that this subsystem contains. This section has two subsections:

- **Parameters.** Key parameters of blocks in the subsystem. This section also includes graphical and/or tabular representations of lookup table data used by lookup table blocks, blocks that use lookup tables to compute their outputs.
- **Block Execution Order.** Order in which the subsystem's blocks must be executed at each time step in order to ensure that each block's inputs are available when the block executes. This section appears only if the subsystem is atomic. Note: in Acrobat(PDF) reports, the number in square brackets next to the block name is a hyperlink to the block parameter table. The number has no model significance.

**State Charts.** Describes state charts used in the subsystem. This section appears only if the root system contains Stateflow blocks.

## State Chart Descriptions

This section describes the state machines used by Stateflow blocks to compute their outputs, i.e., Stateflow blocks. Each state machine description contains the following sections:

**Chart.** Diagram representing the state machine.

**States.** Describes the state machine's states. Each state description includes the state's diagram and diagrams and/or descriptions of graphical functions, Simulink functions, truth tables, and MATLAB functions parented by the state.

**Transitions.** Transitions between the state machine's states. Each transition description specifies the values of key transition properties. Appears only if a transition has properties that do not appear on the chart.

**Junctions.** Transition junctions. Each junction description specifies the values of key junction properties. Appears only if a junction has properties that do not appear on the chart.

**Events.** Events that trigger state transitions. Each event description specifies the values of key event properties.

**Data.** Data types and other properties of the Stateflow block's inputs, outputs, and other state machine data.

**Targets.** Executable implementations of the state machine used to compute the outputs of the corresponding Stateflow block.

**MATLAB Supporting Functions.** List of functions invoked by MATLAB functions defined in the chart.