

Simulink Design Verifier Report

AHRS_voter

bpotter

Simulink Design Verifier Report: AHRS_voter

bpotter

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Chapter 1. Summary

Analysis Information.

Model:	AHRS_voter
Mode:	Test generation
Model Representation:	Cache from 14-May-2020 08:21:36
Test generation target:	Model
Status:	Completed normally
PreProcessing Time:	9s
Analysis Time:	36s

Objectives Status.

Number of Objectives:	2
Objectives Satisfied:	2

Chapter 2. Analysis Information

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Model Information

File:	AHRS_voter
Version:	1.69
Time Stamp:	Wed May 13 13:30:04 2020
Author:	bpotter

Analysis Options

Mode:	TestGeneration
Rebuild Model Representation:	IfChangeIsDetected
Test generation target:	Model
Test Suite Optimization:	IndividualObjectives
Maximum Testcase Steps:	10000time steps
Test Conditions:	UseLocalSettings
Test Objectives:	UseLocalSettings
Model Coverage Objectives:	MCDC
Include Relational Boundary Objectives:	on
Floating point absolute tolerance:	1.0000e-05
Floating point relative tolerance:	0.0100
Maximum Analysis Time:	300s
Block Replacement:	off
Parameters Analysis:	off
Include expected output values:	on
Randomize data that do not affect the outcome:	off
Additional analysis to reduce instances of rational approximation:	on
Save Data:	on
Save Harness:	off
Save Report:	on

Constraints

Design Min Max Constraints

Name	Design Min Max Constraint
AHRS1	[-180..180]
AHRS1	[-180..180]
AHRS1	[-180..180]
AHRS1	[-180..180]
AHRS1	[-180..180]
AHRS2	[-180..180]
AHRS2	[-180..180]
AHRS2	[-180..180]
AHRS2	[-180..180]
AHRS2	[-180..180]
AHRS3	[-180..180]
AHRS3	[-180..180]
AHRS3	[-180..180]
AHRS3	[-180..180]
AHRS3	[-180..180]

Chapter 3. Test Objectives Status

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Objectives Satisfied	4
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Objectives Satisfied

Simulink Design Verifier found test cases that exercise these test objectives.

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
1	Decision	MultiportSwitch	integer input value = 0 (output is from input port 0)	35	1 [6]
2	Decision	Mid_Value/MinMax3	Logic to determine output element 3 input 2 is the maximum	35	2 [7]

Chapter 4. Model Items

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MultiportSwitch	5
Mid_Value/MinMax3	5

This section presents, for each object in the model defining coverage objectives, the list of objectives and their individual status at the end of the analysis. It should match the coverage report obtained from running the generated test suite on the model, either from the harness model or by using the `sldvruntime` command.

MultiportSwitch

#:	Type	Description	Status	Test Case
1	Decision	integer input value = 0 (output is from input port 0)	Satisfied	1 [6]

Mid_Value/MinMax3

#:	Type	Description	Status	Test Case
2	Decision	Logic to determine output element 3 input 2 is the maximum	Satisfied	2 [7]

Chapter 5. Test Cases

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This section contains detailed information about each generated test case. Some input signals are unused. Input data will not be reported for them.

Test Case 1

Summary.

Length: 0 second (1 sample period)
Objectives Satisfied: 1

Objectives.

Step	Time	Model Item	Objectives
1	0	MultiportSwitch	integer input value = 0 (output is from input port 0)

Generated Input Data.

Time	0
Step	1
AHRS1.theta	-180
AHRS1.phi	-180
AHRS1.q	-180
AHRS1.p	-180
AHRS1.r	-180
AHRS1.valid	0
AHRS2.theta	-180
AHRS2.phi	-180
AHRS2.q	-180
AHRS2.p	-180
AHRS2.r	-180
AHRS2.valid	0
AHRS3.theta	-180
AHRS3.phi	-180
AHRS3.q	-180

Time	0
Step	1
AHRS3.p	-180
AHRS3.r	-180
AHRS3.valid	0

Expected Output. These output values are expected assuming that inputs that do not affect the test objectives (- in the table above) are given a default value - 0 for numeric types, and default value for enumerated types.

Time	0
Step	1
voted_fb	[0 0 0 0 0]

Test Case 2

Summary.

Length: 0 second (1 sample period)

Objectives Satisfied: 1

Objectives.

St-ep	Time	Model Item	Objectives
1	0	Mid_Value/MinMax3	Logic to determine output element 3 input 2 is the maximum

Generated Input Data.

Time	0
Step	1
AHRS1.theta	-180
AHRS1.phi	-180
AHRS1.q	-180
AHRS1.p	-180
AHRS1.r	-180
AHRS1.valid	1
AHRS2.theta	-180
AHRS2.phi	-180
AHRS2.q	-180
AHRS2.p	-180
AHRS2.r	-179
AHRS2.valid	1

Time	0
Step	1
AHRS3.theta	-180
AHRS3.phi	-180
AHRS3.q	-180
AHRS3.p	-180
AHRS3.r	-178
AHRS3.valid	1

Expected Output. These output values are expected assuming that inputs that do not affect the test objectives (- in the table above) are given a default value - 0 for numeric types, and default value for enumerated types.

Time	0
Step	1
voted_fb	[-180 -180 -179 -180 -180]