Simulink Design Verifier Report

ControllerModeSelector

mabualqu

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Publication date 22-Sep-2021 19:03:49

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Chapter 1. Summary

Analysis Information.

Model:	ControllerModeSelector
Release:	R2022a Prerelease
Checksum:	581064238 1355875432 4094861736 1167236252
Mode:	Design error detection
Model Representation:	Built on 22-Sep-2021 19:03:27
Status:	Completed normally
PreProcessing Time:	7s
Analysis Time:	14s

Objectives Status.

Number of Objectives:	**9**	
Objectives Valid:	1	(11%)
Dead Logic:	2	(22%)

Chapter 2. Analysis Information

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Model Information

File:	ControllerModeSelector
Version:	4.0
Time Stamp:	Wed Sep 22 18:13:09 2021
Author:	mabualqu

Analysis Options

Mode:	DesignErrorDetection
Rebuild Model Representation:	IfChangeIsDetected
Detect dead logic (partial):	on
Run exhaustive analysis for dead logic:	off
Detect integer overflow:	on
Detect division by zero:	on
Detect specified minimum and maximum value violations:	on
Detect out of bound array access:	on
Detect non-finite and NaN floating-point values:	off
Detect subnormal floating-point values:	off
Detect data store access violations:	off
Detect specified block input range violations:	off
Detect usage of remainder and reciprocal operations (hisl_0002):	off
Detect usage of square root operations (hisl_0003):	off
Detect usage of log and log10 operations (hisl_0004):	off

Detect usage of Reciprocal Square Root blocks (hisl_0028):	off
Maximum Analysis Time:	300s
Block Replacement:	off
Parameters Analysis:	off
Include expected output values:	off
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
Acceleration	[-4..2]
Deceleration	[0..9.8]

Chapter 3. Dead Logic

Simulink Design Verifier proved these decisions and conditions to be unreachable or dead logic. This can be a side effect of parameter configurations or minimum and maximum constraints specified on inputs. Simulink Design Verifier ran a partial check for dead logic. Consider enabling the 'Dead logic > Run exhaustive analysis' configuration option in order to perform an exhaustive analysis.

#	Type	Model Item	Description
1	Decision	Saturation	input >= lower limit **can only be true**
2	Decision	Saturation	input > upper limit **can never be true**

Chapter 4. Design Error Detection Objectives Status

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Objectives Valid

#	Type	Model Item	Description	Analysis Time (sec)
14	Design Range	Saturation	Design Range: [-10..2]	7

Chapter 5. Derived Ranges

Signal	Derived Ranges
GreaterThan- Outport 1	[F..T]
Switch- Outport 1	[-9.8..2]
Acceleration- Outport 1	[-4..2]
Deceleration- Outport 1	[0..9.8]
UnaryMinus- Outport 1	[-9.8..0]
Saturation- Outport 1	[-9.8..2]
AccelerationCmd- Outport 1	[-9.8..2]